



Sustainable Finance Jobs Transformation Map

April 2024

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Foreword

Talent and skills form the foundation of any thriving sector, and as Singapore moves towards a low-carbon economy, the demand for sustainable finance is on the rise. It is crucial to understand the sustainable finance roles and skills required by the Financial Services (FS) sector to prepare its workforce adequately for this transition.

The urgency to address climate change has shifted global priorities, recognising that sustainable practices are not only environmentally responsible but also essential for achieving a net-zero economy. The financial services sector, through sustainable financing, investing, and insuring decisions, plays a pivotal role in shaping company behavior and driving the economy's transition.

In the ASEAN context, significant investments are necessary for the region's transformation towards low-carbon and climate-resilient economies. As sustainable finance gains prominence in ASEAN, the Singapore FS sector is poised to capture new financing opportunities, requiring an upskilling of professionals to meet the growing demand for financing. This upskilling is a continual evolution due to the ever-changing sustainable finance regulations.

This foreword underscores the crucial role of the FS sector in facilitating this transformative journey and emphasises the need for ongoing upskilling to navigate the evolving landscape. As Singapore aims to be the APAC sustainable financing and human capital hub for sustainability, this study lays the foundation for understanding workforce requirements.

This study provides an overview of sustainable finance trends, analyses the roles and skills required, and offers actionable recommendations for financial institutions, government bodies, associations, and training providers to support sustainable finance development.

It is important to recognise that the sustainability and sustainable finance landscape is continually evolving. The insights from this study should be seen as a dynamic representation of the current state, subject to shifts and refinements as the world progresses on its sustainability journey. We hope this study serves as a guide for the Singapore Financial Services sector, as they build the organisational capacity needed to meet their sustainability goals.

Antony Ruddenklau
Head of Financial Services Advisory
KPMG in Singapore



Prelude

With sustainability trends evolving rapidly and becoming mainstream, building a deep talent pool in sustainable finance over the next decade will enable Singapore's Financial Services (FS) sector to capture new business opportunities and support the region's transition to net zero. The Jobs Transformation Map (JTM) is jointly commissioned by the Monetary Authority of Singapore (MAS) and the Institute of Banking and Finance (IBF), supported by Workforce Singapore (WSG), to provide actionable insights into the impact of sustainability trends on jobs in Singapore's FS sector, and emerging skills that the workforce will require to serve sustainable financing demand in the region. KPMG in Singapore was commissioned to conduct the JTM study.

The study identifies key global and regional sustainability trends that are anticipated to impact Singapore's FS sector, and assesses the impact of such trends on job roles in Singapore's FS sector. This includes how existing job tasks may change, and new job tasks that may be needed for existing job roles. This study also outlines the new skills needed for each job role that is augmented, which in turn informs the interventions needed.



Study conducted by



Commissioned by



Supported by



How to utilise this study's findings

The findings of this study will be useful to various stakeholders within the FS ecosystem to inform their business, operational, hiring, training and career decisions. This includes Financial Institutions (FIs), training providers, industry associations, FS professionals and individuals who are keen to join the FS sector.

Chief Executive Officers / Chief Sustainability Officers (CEO / CSOs)



Strategic planning and organisation design

CEO/CSOs can use this report to understand key real economy investment trends and opportunities driving demand for sustainable finance. Additionally, CEO/CSOs can develop long-term sustainability strategies that are aligned with these trends, understand the potential changes needed in their organisations and help business lines achieve their outcomes, including growth in sustainable finance volumes, helping customers with their transition plans and enhanced risk management.

Business Unit Heads



Business impetus, recruitment, and talent development

Business Unit Heads across various career functions (from Relationship Management, Product Development, Risk Management and Support Functions) can understand key trends affecting their business and workforce, plan for potential organisational changes and hiring needs, refine job roles, and attract and develop talent with the necessary sustainable finance-related skills for their business areas.

Human Resources



Workforce planning

Human Resources (HR) professionals who support the organisation's functional units can use the report's analysis to set the overall direction and initiatives for talent management in the context of sustainability, and ensure that staff are equipped with the right skills and capabilities to support the organisation's sustainability and risk management strategy. This includes establishing, in partnership with the sustainability office or business unit heads, initiatives and policies to facilitate upskilling for identified roles.

Learning and development

HR professionals who support learning and development needs within their organisations can collaborate with training providers to design programmes that address the upskilling needs to meet business requirements. This can sharpen the competitive advantage for the business through talent development and ensuring the market readiness of the organisation.

Industry Associations



Industry collaboration planning

Industry associations can identify areas of collaboration and synergies within the industry through insights derived from the report, creating opportunities for joint initiatives between industry players and training providers. They could bring together FIs and professional bodies to facilitate discussions on sustainable finance and further enhance the mainstreaming of sustainable finance into professional FS qualifications and training courses.

Member engagement

Industry associations can extract salient findings from the report to create educational materials, workshops or webinars for their members. This would help keep members informed about industry trends pertaining to sustainability.

Training Providers



Curriculum development

Training providers can develop relevant training programmes to address the skills gaps identified in the report, and help upskill the workforce to ensure they remain effective.



1. Introduction

1. Introduction

ASEAN is projected to require between S\$4 to S\$5 trillion¹ in sustainable financing² over the next 10 years, from 2023 to 2032, representing an estimated 9% compound annual growth rate (CAGR)³. The largest demand drivers behind ASEAN's sustainable financing needs are from the Energy sector and the Construction and Real Estate sector stemming from electricity distribution infrastructure, renewable energy deployment and greening of commercial buildings. Other sectors that will require substantial financing needs include Manufacturing, Transportation, Utilities and Agriculture.

As set out in the MAS' Finance for Net Zero (FiNZ) Action Plan that was published in April 2023⁴, there is a window of opportunity for Singapore to be APAC's sustainable finance hub.

To seize these opportunities, the FS sector⁵ workforce in Singapore will have to undergo timely upskilling to deepen sustainable finance capabilities over the next three years. KPMG projects that more than half (56%) of existing job roles, amounting to over 50,000 existing FS professionals in these roles, will see new sustainable finance-related job tasks added to their critical work functions, to a moderate to high degree⁶. These job roles span across career tracks such as *Risk, Compliance and Legal, Product Solutioning and Management, and Sales, After Sales, Distribution and Relationship Management*. This is largely driven by the need to monitor and comply with relevant sustainability regulations and align with standards, and to address the growing demand for sustainable finance products (refer to Exhibit 1.1).

In addition, KPMG projects that between 4,000 to 5,000 new sustainable finance-related jobs⁷ will be created in Singapore⁸ over the next 10 years to support the origination of sustainable finance across the Banking, Asset Management and Insurance sectors. A significant number of these new jobs will arise from financial institutions' (FIs') need to ramp up resources in existing job roles where there will be a moderate to high degree of augmentation in job tasks. There will also be new jobs created from new job roles pertaining to Sustainability Risk and Sustainability Strategy, to provide specialised technical knowledge and expertise.

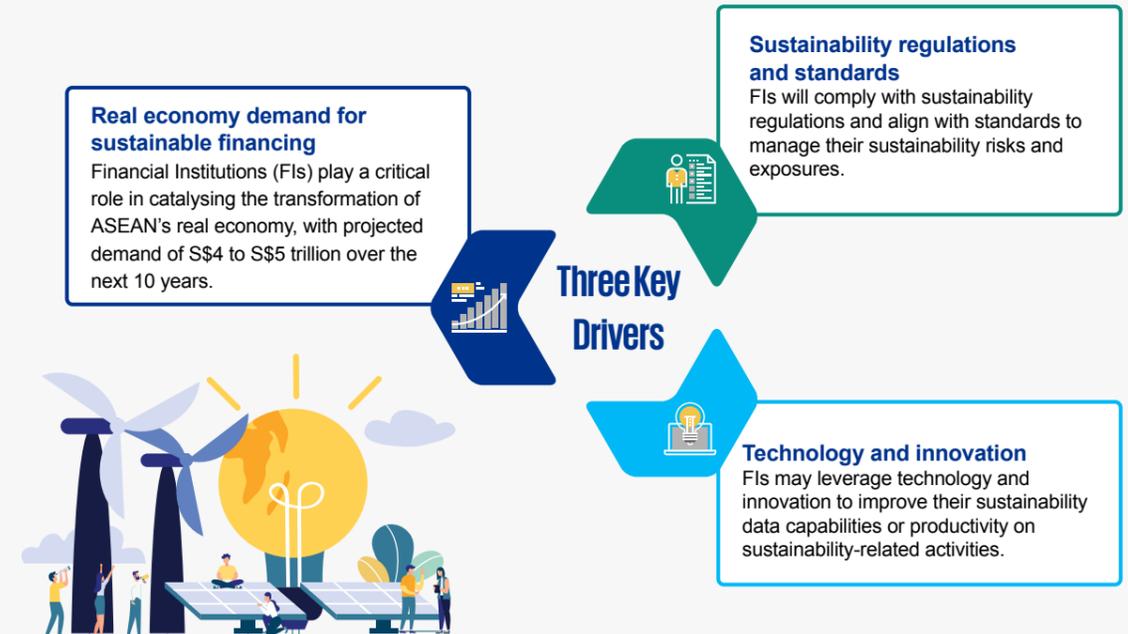
The potential for Singapore to capture greater market share of ASEAN's sustainable financing demand, particularly in areas such as carbon markets, blended finance, and financing for transition activities, gives further upside to the estimated job growth reflected above. MAS has launched comprehensive initiatives in the areas above as part of the FiNZ Action Plan. For instance, MAS' Guidelines on Transition Planning for Financial Institutions⁹ and the Singapore-Asia Taxonomy¹⁰ provide Singapore's FS sector with credible and trusted frameworks to develop transition plans, as well as lead and originate financing of transition activities for the region.

The Singapore government is also working closely with the industry to develop Singapore as a leading carbon services and trading hub. Singapore houses over 100 firms in carbon trading, brokerage and project financing, the highest concentration in the region.¹¹ Having a robust and skilled workforce will strengthen Singapore's competitiveness in serving the growing sustainable finance market in ASEAN, as well as the broader Asia and global markets.

Exhibit 1.1: Top key insights

Drivers of sustainable finance jobs

Sustainable finance activities are being shaped by three key drivers:



Impact to Singapore's FS sector workforce



1. KPMG analysis.
2. Sustainable financing includes both financing for green activities (e.g. solar panel deployment and green buildings construction) and financing for transition activities. Financing for transition activities is critical in greening real economy sectors, especially for hard to abate sectors such as Energy and Transport, that have limited viable green technologies or infrastructural constraints.
3. KPMG analysis.
4. MAS, MAS Launches Finance for Net Zero Action Plan, accessed February 2024.
5. This comprises sub-sectors such as Corporate Banking, Retail Banking, Private Banking and Wealth Management, Investment Banking, Insurance and Asset Management.
6. KPMG analysis.
7. The baseline number of jobs is based on employment data from the Ministry of Manpower and MAS' Manpower Survey.
8. This is equivalent to about 10% of annual net job growth in Singapore's FS sector over the past decade.
9. MAS, MAS Guidelines for Financial Institutions on Transition Planning for a Net Zero Economy, accessed February 2024.
10. MAS, MAS Launches World's First Multi-Sector Transition Taxonomy, accessed March 2024.
11. COP28 Singapore Pavilion, Carbon Services and Trading Hub, accessed March 2024.

1.1 Drivers of sustainable finance jobs in Singapore

Sustainable finance-related activities in the FS sector are being shaped by three key drivers: (i) real economy demand for sustainable financing, (ii) sustainability regulations and standards, and (iii) technological innovation. These drivers will give rise to changes in the job roles across the FS sector's value chain and activities, including incorporating sustainability considerations in investment decisions and portfolio allocations as well as managing sustainability risks as part of an FI's risk management processes.

1.1.1 Real economy demand for sustainable financing

ASEAN's sustainable financing demand is projected to grow steadily over the next decade at an estimated 9% CAGR¹², stemming from six key real economy sectors - Energy, Construction and Real Estate, Manufacturing, Transportation, Utilities and Agriculture. KPMG projected the total cumulative demand for sustainable financing in ASEAN to be between S\$4 to S\$5 trillion over the next 10 years¹³. This demand is driven primarily by investment needs in renewable energy, low carbon fuel alternatives, zero or low carbon vehicles, carbon capture technologies, green buildings, and circular economy. The FS sector plays a critical role in catalysing the transformation in the real economy through sustainable finance products and services such as green and transition public and private debt including bonds, loans, blended finance, private equity, venture capital and insurance.

The study does not project the growth in assets under management for public market sustainable funds¹⁴, as these financing flows do not directly flow into the real economy sectors' sustainable financing needs. KPMG's projection of 4,000 to 5,000 new sustainable finance-related jobs over the next decade does not factor in this consideration, which suggests that there is more upside to the projection.

1.1.2 Sustainability regulations and standards

Sustainability regulations and standards will have a direct impact on FS job roles as FIs will comply with sustainability regulations, and align with standards such as the disclosure standards from the International Sustainability Standards Board (ISSB). Job roles that will be augmented most are those in the risk management, compliance and

reporting functions.

Since the signing of the Paris Agreement in 2015, financial regulators and international governing bodies have been actively guiding and enabling the growth of sustainable finance through the establishment of sustainability regulations and standards. These regulations and standards set the guardrails for the FS sector, and FIs in Singapore are expected to manage their sustainability risks and financed exposures to ensure the smooth transition to a net zero economy. In the short term (i.e. over the next three years), KPMG expects regulators to continue to provide guidance to FIs on environmental risk management, such as deepening climate scenario analysis and stress testing. In the long term (i.e. over the next five to 10 years), KPMG expects that the focus on sustainability themes will shift beyond environmental topics to increasingly encompass social and inclusion themes.

1.1.3 Technology and innovation

Deployment of technology that enhances sustainability data gathering, aggregating, and processing could increase the productivity of FS professionals in performing the sustainable finance-related job tasks needed in their specific job functions. Arising from this, there could be some marginal manpower savings, and the expected amount of additional resources needed by a FI to perform these sustainable finance-related job tasks could be slightly lower compared to if such technologies were not implemented.

For instance, there are technology solutions that exist in the market or are being developed which aim to solve common issues such as the availability of sustainability data, credibility of reports and comparability of sustainability data. Some examples of these solutions include Artificial Intelligence (AI) and machine-learning solutions to interpret sustainability data, blockchain solutions to tamper-proof transactional records and cloud platforms to store traceable data¹⁵. FIs can secure more sustainable finance volumes as the technologies can empower FIs to make informed decisions with a higher agility in response to emerging trends in sustainability. Ultimately, business outcomes for individual FIs will vary, influenced by the differing rates of technology adoption. Individual FIs will have their own respective organisational willingness and capability to integrate technology into their business and operational frameworks.

1.2 Impact on FS sector job roles arising from sustainable finance

Collectively, these three key drivers will impact specific job roles because of changes in existing job tasks needed to integrate sustainable finance-related activities. For instance, regulations set out how FIs should incorporate sound sustainability risk management practices in their businesses. As a result, FS professionals in job roles responsible for principal risk types, such as credit risk, will now need to be familiar with and develop sustainability risk management policies.

Based on the analysis, KPMG projected the following implications on FS sector job roles:

1. 56% of job roles will be highly or moderately augmented, with new sustainable finance-related job tasks added.
2. Most FS professionals will need to perform their augmented job roles within the next three years.
3. FS professionals in 20 unique job roles will need to be prioritised for upskilling, given the large extent to which these job roles drive sustainability outcomes and need new skills.
4. New job roles will emerge in areas such as Sustainability Risk and Sustainability Strategy.

1.2.1 56% of job roles will be highly or moderately augmented, with new sustainable finance-related job tasks added.

Of the 218 job roles¹⁶ analysed, 56% (or 121 job roles)¹⁷ will need to take on new sustainable finance-related job tasks as part of their critical work functions, to a moderate to high degree.

For instance, the Portfolio / Investment / Fund Management job role will experience high degree of augmentation as FS professionals in the job role need to adapt to changing investor preferences and regulatory requirements. These FS professionals will be responsible for defining material sustainability targets, metrics and outcomes for sustainability-related investment portfolios and incorporating them into the investment decision-making processes. Performing these job tasks will require a deep understanding of sustainability

factors and its material impact. Hence, FS professionals in this job role will require upskilling in several Sustainable Finance Technical Skills and Competencies (SF TSCs)¹⁸ including:

- Impact Indicators, Measurement and Reporting
- Sustainable Investment Management
- Non-Financial Industry Sustainability Developments
- Sustainability Stewardship Development
- Carbon Markets and Decarbonisation Strategies Management
- Climate Change Management
- Taxonomy Application

Conversely, the Client Investment Performance and Reporting job role will experience a moderate degree of augmentation. When developing investment reports, annual reports and fund prospectuses, FS professionals in this job role will additionally need to incorporate sustainability outcomes (e.g. sustainability ratings, carbon footprint) of investment funds and portfolios managed by the firm. Hence, they will need to be able to document the investment performance and determine whether the investment of the project contributes to sustainability outcomes. The SF TSCs that the job role holder requires include:

- Impact Indicators, Measurement and Reporting
- Taxonomy Application

An estimated 4,000 to 5,000 new jobs will be created from new job roles in areas such as Sustainability Risk and Sustainability Strategy to support sustainable finance-related activities in Singapore over the next 10 years. This is about 10% of the average new jobs creation in the FS sector over the past 10 years. These new jobs primarily arise as additional headcount are needed to perform existing job roles, given the increase in number and complexity of sustainable finance-related job tasks. Job roles which will experience a high degree of augmentation to their job tasks, such as those in Portfolio Management and Credit Risk job roles, will see a larger proportion of new jobs. To a smaller extent, new jobs will also be created from new job roles in areas such as Sustainability Risk and Sustainability strategy. At the same time, based on the analysis, no existing job roles are expected to be made obsolete as a result of these trends.

12, 13. KPMG analysis.

14. Examples include active or passive public market equity or bond funds that embed sustainability investment processes such as e.g. negative screening, positive screening, integration, thematic funds, impact investing etc. This covers both active and passive funds. The study focuses on the growth in assets under management associated with sustainable and transition direct financing such as private debt or equity necessary for the real economy's transition to achieving net zero targets. Composition of sustainable funds by asset managers were not directly taken into consideration.

15. KPMG, Enabling tomorrow: The emergent ESG fintech ecosystem, accessed May 2023.

16. Include job roles as set out in the Skills Frameworks for the Financial Services and other relevant sectors (Accountancy, Human Resource and Infocomm Technology). Title of job roles are taken from Skills Framework for Financial Services.

17. KPMG analysis.

18. Skills Framework for Financial Services - [SFw for FS \(ibf.org.sg\)](https://ibf.org.sg).

1.2.2 Most FS professionals will need to perform their augmented job roles within the next three years.

With the growing demand for sustainable finance products and services in the upcoming years, FS professionals in more than 80% of job roles¹⁹ will

need to perform new job tasks using sustainable finance skills within the next three years. Therefore, there is a pressing need for upskilling across the majority of job roles, particularly those involved in steering sustainability strategies, defining sustainability risk frameworks, creating products, or advising clients on sustainability solutions.

Career Tracks	Level of impact	Rationale
Risk, Compliance and Legal	A mix of moderately and highly augmented	FS professionals in this career track will need to incorporate sustainability risks into principal risk types, Enterprise Risk Management (ERM) framework, and define relevant sustainability risk management strategies, framework and policies for the FIs.
Product Solutioning and Management	A mix of moderately and highly augmented	FS professionals in this career track will need to build and structure specialised products to meet the sustainable financing demand. This includes products across sub-sectors such as sustainability-linked lending instruments, sustainable investing and sustainable insurance and re-insurance solutions.
Sales, After Sales, Distribution and Relationship Management	Moderately augmented	FS professionals in this career track will need to understand and explain new products to their clients. They will also need to provide advisory services to their clients with respect to the client's sustainability transformation and transition journeys, especially for corporate and commercial clients.
Digital and Data Analytics	Moderately augmented	FS professionals in this career track will be responsible for the operationalisation of sustainable finance. They will need to focus on driving business process transformation, identifying technologies and innovation and data models to aggregate and democratise data for analysis.
Support functions (e.g. Accountancy, HR, Infocomm Technology)	A mix of low to moderate augmentation	<p>FS professionals in the Accountancy function will see their job roles moderately augmented due to the need for sustainability reporting, and will be responsible for ensuring that mergers and acquisition, and treasury management align to the FI's overall sustainability strategy.</p> <p>On the other hand, FS professionals in other support functions will see low augmentation to their job roles, with some FS professionals in Infocomm Technology function needed to manage new platforms for sustainable finance, as well as FS professionals in HR function needing to support the business with sourcing, developing and retaining sustainable finance talents.</p>

1.2.3 FS professionals in 20 unique job roles will need to be prioritised for upskilling, given the large extent to which these job roles drive sustainability outcomes and need new skills.

(refer to Section 5: Impact on Job Roles). As such, there is a pressing need for FS professionals in these job roles to be upskilled. 20 unique job roles have been identified as high-priority due to their ability to drive sustainability outcomes and need for new sustainable finance skills to perform the relevant job tasks (refer to Exhibit 1.2).

The majority of job roles within FIs are expected to be augmented as FIs shift towards sustainability-related practices and sustainable finance products

Exhibit 1.2: High-priority unique job roles across all FS sub-sectors²⁰

Risk, Compliance and Legal

- Risk / Compliance Analytics
- Risk Strategy (Sustainability Risk)

Sales, After Sales, Distribution and Relationship Management

- Business Development - Brokers
- Business Management
- Client Support / Account Management
- Investment Counselling
- Product Origination and Structuring
- Product Sales
- Relationship Management (Commercial, Corporate and Large Multi-National Companies, Private Banking)

Digital and Data Analytics

- Data Analytics / Data Scientist
- Innovation Management

Product Solutioning and Management

- Client Portfolio Management
- Portfolio / Investment / Fund Management
- Product Development
- Product Management
- Pricing Actuary
- Reserving Actuary

Sustainability

- Sustainability Strategy (Policy, Finance / Products, Integration, Insights)

Trading and Execution

- Trading

Operations

- Underwriting

1.2.4 New job roles will emerge, in areas such as Sustainability Risk and Sustainability Strategy.

(ii) Sustainability Strategy: This stems from FIs' need for a dedicated and specialised central position to shape sustainability strategies, drive financial outcomes, and operationalise / develop capabilities to deliver enterprise level sustainability strategies and sustainability risk management requirements. These considerations will need to be embedded at the client, product and transactional level.

As FIs embed sustainable finance-related activities into existing job roles and career tracks, there may be situations where FIs see value in creating new job roles. This could be due to various reasons, such as regulations that mandate the integration of sustainability or where there is a large skills gap among FS professionals within current job roles that renders upskilling unfeasible. The emergence of new job roles is likely to be in the following areas:

(i) Sustainability Risk: A dedicated Sustainability Risk job role can be created as FS professionals in this job role will need deep technical knowledge on how to assess sustainability risk and long-term financial performance, and subsequently integrating these risks into the FI's ERM framework.

Some of these job roles have emerged in some FIs, although there are variances in how organisations define the job tasks under these job roles at this juncture. As FIs increasingly embed sustainability within their core business strategies, KPMG anticipates that these functions will become more important, with FIs creating more of such new job roles in their organisations.

19. KPMG analysis.

20. High-priority unique job roles are not distinguished by sub-sectors. Refer to Section 7: Impact on Financial Services Sub-sectors for list of high-priority job roles in each sub-sector. With sub-sector differentiation, there will be 57 high-priority job roles based on existing Skills Framework for Financial Services. Emerging job roles (Sustainability Strategy and Sustainability Risk) are included in this prioritisation as these job roles have been identified within FIs.

1.3 Impact on skills needed for FS professionals

FS professionals can capitalise on the opportunities brought about by these trends. For those in job roles where job tasks are likely to change, they can upskill themselves in accordance with future skills which will enable them to discharge their additional job responsibilities.

Referencing the 12 SF TSCs²¹, the top four SF TSCs needed based on the number of unique job roles in which FS professionals need these skills within the next three years, are:

- 1. Sustainability Risk Management:** This is critical for the *Product Solutioning and Management and Risk, Compliance and Legal* career tracks where job tasks change to a large extent. These tend to belong to job roles in which FS professionals are responsible for ensuring that sustainability risks are incorporated in the ERM framework and considered when developing sustainable finance products.
- 2. Taxonomy Application:** This is critical across all career tracks, especially for the *Product Solutioning and Management and Risk, Compliance and Legal*, as it provides a standardised classification of green and transition activities for financial products. This enables FS professionals to have more

effective relationship management with clients and better collaboration across different business units within FIs.

- 3. Climate Change Management:** This is critical across the *Risk, Compliance and Legal, Product Solutioning and Management and Sales, After Sales, Distribution and Relationship Management* career tracks as it facilitates effective identification of climate change risks to mitigate potential financial losses and protect investments. This enables relevant FS professionals to integrate climate risks into FIs' wider risk management strategies, identify opportunities to develop products that support climate change adaptation and mitigation, as well as engage clients on their exposure to climate risks.
- 4. Impact Indicators, Measurement and Reporting:** This is critical across all career tracks, especially for *Risk, Compliance and Legal and Product Solutioning and Management and Support Functions*, as it enables FS professionals to effectively and accurately measure sustainability outcomes from investments or financial products. This facilitates informed decision-making by clients and fosters accountability within the FS sector.

Understanding impact at a job role level

FS professionals in job roles which require the application of technical sustainable finance knowledge to develop frameworks and policies will experience high degree of augmentation. These FS professionals in these job roles will experience significant changes to existing job tasks and therefore need significant upskilling as intermediate to advanced SF TSCs proficiency are needed to perform job tasks. An example of such job role is Risk Strategy (refer to Exhibit 1.3). FIs will be expected to expand the responsibilities of the Risk Strategy job role to include coordinating the management of enterprise-wide risks and incorporating sustainability considerations when developing and implementing ERM frameworks and policies. As such, FS professionals in the job role will need intermediate to advanced SF TSCs to effectively shape the FI's sustainability risk framework in response to climate change, natural capital policies and non-financial sustainability industry developments.

Exhibit 1.3: Changes in the Risk Strategy job role

Jobrole

Highly augmented

Risk Strategy

The Risk Strategy job role holder is responsible for coordinating the management of enterprise-wide risks.

The job role holder also needs to establish risk criteria within different business units, develop risk reporting mechanisms and propose controls.

As sustainability becomes increasing integrated into the organisation's business practices, the job role will need to include considerations of sustainability risks when developing and implementing ERM frameworks and policies.

- Maintain ERM framework**
+ Define sustainability risk strategy and framework
- Identify and implement controls for enterprise risk**
+ Incorporate sustainability risks into controls to manage enterprise risk
- Implement ERM and consequence management activities**
+ Incorporate sustainability risk management strategy into consequence management activities
- Monitor risk exposure**
+ Monitor sustainability risk exposure

SF TSCs needed

- Climate Change Management (L4 - L5)
- Natural Capital Management (L4 - L5)
- Non-Financial Industry Sustainability Developments (L4 - L5)
- Sustainability Risk Management (L4 - L5)

Skills proficiency level needed is defined according to Level 3 (L3) to Level 5 (L5) of the TSCs levels in the Skills Framework for Financial Services.

On the other hand, job roles experiencing a moderate degree of augmentation are those in which FS professionals will need to apply sustainable finance knowledge to conduct sustainability analysis to assess and evaluate alignment to frameworks and policies, sustainable financing needs, sustainability impact and performance. The upskilling needed is mostly at the intermediate proficiency level SF TSCs. An example of such job role is Relationship Management - Corporate and Large Multi-National Companies (MNCs) (refer to Exhibit 1.4). As FS professionals in the job role will be expected to understand clients' sustainability goals and provide appropriate loan and investment recommendations, intermediate proficiency level SF TSCs will be needed in relevant areas, such as climate change management, natural capital management and non-financial sustainability industry development.

Exhibit 1.4: Changes in the Relationship Management - Corporate and Large MNCs job role

Jobrole

Moderately augmented

Relationship Manager

The Relationship Management - MNCs job role holder is responsible for active client management and acquisition according to the bank's sustainability agenda.

The job role holder also needs to understand the client's sustainability goals and sustainable financing products available.

MNCs pick up pace in implementing their sustainability strategies, the job role holder will need to understand clients' sustainability goals and provide appropriate loan and investment recommendations

- Acquire and manage clients**
+ Understand sector-specific market trends in sustainability to identify prospects interested in sustainable finance products
- Advise clients on recommended products, services and solutions**
+ Advise clients on sustainable finance products that are aligned to FIs' and clients' transition plans
- Provide ongoing credit analysis and support**
+ Understand sustainability risks of clients

SF TSCs needed

- Climate Change Management (L3 - L4)
- Natural Capital Management (L3 - L4)
- Non-Financial Industry Sustainability Developments (L3 - L4)
- Sustainable Lending Instruments Structuring (L3 - L4)



21. Skills Framework for Financial Services - [SFw for FS \(ibf.org.sg\)](https://www.ibf.org.sg).

1.4 Recommendations

FIs, government bodies, industry associations and training providers can work together to accelerate upskilling across the workforce, so as to deepen sustainable finance capabilities and enable Singapore to capture the opportunities available.

Recommendations include:

- (i). **Government bodies and industry associations** should define specific sustainable finance certification and accreditation required to establish a standardised sustainable finance skills certification framework. This will be useful in providing clarity on the qualifications required to operationalise their sustainability strategy, allowing FIs to provide targeted training for FS professionals.
- (ii). **Training providers and FIs** should develop practical training content, and enhance training delivery and training effectiveness in skills such as Sustainability Risk Management and Sustainable Lending Instruments Structuring, in order to address existing training gaps.
- (iii). **Government bodies and FIs** should work together to chart long term career paths for new sustainable finance job roles identified and existing FS professionals who are upskilling. For example, FIs may tap on WSG's Career Conversion Programmes to reskill their employees to take on new or enhanced job roles in growth areas.
- (iv). **FIs** should support capability transfer from overseas experts to local FS professionals in targeted job roles.
- (v). **Industry associations** should establish a community of sustainability professionals, FIs and training providers to provide feedback and facilitate sharing of experience, insights and knowledge.

(vi). **Government bodies and industry associations** should build partnerships between the FS and non-FS ecosystems across academia, real economy organisations, sustainability service providers, data providers etc. Such partnerships present opportunities to tap into diverse expertise, enhance the integration of sustainability considerations, and expedite the implementation of sustainability initiatives. This will allow FIs to access sustainability analytics tools and resources through the partnerships.

1.5 Conclusion

As set out in MAS' FiNZ Action Plan, Singapore's FS sector is in a good position to capture significant opportunities as the net zero transition agenda expands in the region. FIs can position themselves to seize new opportunities and capture a significant share of ASEAN's sustainable finance market. To do this, it is crucial for FS professionals to upskill themselves and have the necessary knowledge and skills to capture sustainable investment opportunities, develop new financial products and services and effectively manage risks as a result of sustainability.

Public and private sector collaboration is vital in addressing skills gaps to uplift capabilities of the FS workforce.

By working together with MAS, IBF and WSG, the private sector can leverage expertise and resources to create a skilled and adaptable workforce to meet the evolving demands of the industry.



2. Objectives

2. Objectives

The study's objectives are:

To validate Singapore's FS sector's sustainable finance strategy, by determining and quantifying the dollar impact of sustainability trends over the next three, five, and 10 years.

To support workforce job planning for the FS sector by identifying, assessing, and quantifying the impact of sustainability trends on FS sector jobs.

To support workforce skills planning of the FS sector, by identifying and assessing the skills gap for the augmented FS sectors' job roles.

To support the development of Singapore's FS sector workforce roadmap for growth, with recommendations on how to close the jobs and skills gaps.

1. Trends

The key drivers expected to shape and define Singapore's FS sector's job roles and skills over the next 10 years. These include:

- Real economy demand for sustainable financing
- Sustainability regulations and standards
- Technology and innovation

2. Impact

The impact of these key trends on 218 FS job roles across six sub-sectors²², focusing on how the FS sector's job roles and numbers are expected to change in the next 10 years, based on new demand and new job tasks.

3. Skills

The sustainable finance skills required for the augmented job roles. The study also aims to identify and prioritise the skills and competencies most needed, and provides recommendations to close the skills gap.

The detailed methodology is outlined in Section 3: Methodology.

22. For the purpose of this study, the FS sector is split into six sub-sectors based on the Skills Framework for Financial Services. The six sub-sectors include 1) Retail Banking, 2) Private Banking and Wealth Management, 3) Corporate Banking, 4) Investment Banking, 5) Asset Management and 6) Insurance.



3. Methodology

3. Methodology: How we had approached the study

A three-phase methodology using both quantitative and qualitative data was used to assess the impact of sustainability trends on jobs and skills in Singapore's FS sector.

1. Trends analysis:

The trends analysis identified key sustainability drivers expected to shape and define Singapore's FS sector job roles and skills in the next 10 years.

2. Impact analysis:

The impact analysis studied and quantified the impact of these drivers on 218 FS job roles in the next 10 years.

3. Skills analysis:

The skills analysis identified the relevant SF TSCs for each augmented job role and the timeline these SF TSCs will be needed.



3.1 Scope of the study

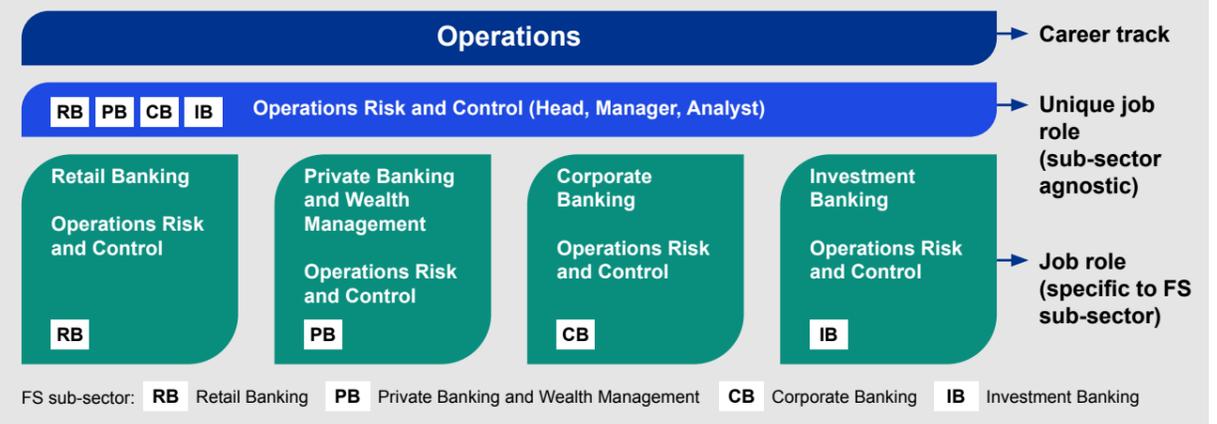
The study analysed all 218 job roles across eight FS sector career tracks, referencing the Skills Framework for Financial Services²³, as well as the Skills Frameworks for Accountancy²⁴, Human Resource²⁵, Infocomm Technology²⁶ and inputs from KPMG's industry consultations²⁷.

These include job roles in the six FS sub-sectors of Retail Banking, Private Banking and Wealth Management, Corporate Banking, Investment Banking, Asset Management, and Insurance (refer to Exhibit 3.1 and Exhibit 3.2).

Exhibit 3.1: Count of job roles across FS sub-sectors and career tracks which were analysed in the study²⁸

Financial Services Career Tracks	Retail Banking	Private Banking and Wealth Management	Corporate Banking	Investment Banking	Asset Management	Insurance	Total
Digital and Data Analytics	6	6	6	6	6	6	36
Operations	6	5	6	5	3	3	28
Product Solutioning and Management	4	8	2	5	6	5	30
Risk, Compliance and Legal	10	10	10	10	8	8	56
Sales, After Sales, Distribution and Relationship Management	5	6	7	4	3	7	32
Trading and Execution	0	1	0	3	2	0	6
Family Office	0	1	0	0	0	0	1
Support Functions	Accountancy (7), Human Resource (7), Infocomm Technology (15)						29
Total FS job roles							218

Exhibit 3.2: Illustration of job role classification



23. Skills Framework for Financial Services - [SFw for FS \(ibf.org.sg\)](https://www.ibf.org.sg).
 24. Skills Framework for Accountancy [SSG | Accountancy \(skillsfuture.gov.sg\)](https://www.skillsfuture.gov.sg).
 25. Skills Framework for Human Resource [SSG | Human Resource \(skillsfuture.gov.sg\)](https://www.skillsfuture.gov.sg).
 26. Skills Framework for Infocomm Technology [SSG | Infocomm Technology \(skillsfuture.gov.sg\)](https://www.skillsfuture.gov.sg).
 27. Industry consultations resulted in an addition of four job roles: 1) Risk Strategy in Asset Management, 2) Market and Liquidity Risk in Insurance, 3) Product Development in Private Banking and Wealth Management, 4) Product Sales in Private Banking and Wealth Management.
 28. The count of job roles includes sub-sector differentiation. For example, under the career track of Operations, the Operations Risk and Control job role is relevant for four sub-sectors, namely Retail Banking Corporate Banking, Private Banking and Wealth Management and Asset Management. Accordingly, the study considered this as four distinct job roles.

3.2 Phase 1: Trends Analysis

KPMG analysed the key drivers expected to shape and define Singapore's FS sector job roles and skills in the next 10 years covering:

1. Real economy demand for sustainable financing

To obtain the real economy's sustainable financing demand applicable to Singapore, KPMG prioritised six real economy sectors based on their Gross Value Added (GVA) in the ASEAN region and the sectors' emission profiles²⁹. These real economy sectors are Agriculture, Construction and Real Estate, Energy, Manufacturing, Transportation, and Utilities.

Preliminary assessments were carried out to identify and prioritise key drivers³⁰ that impact real economy sectors for the next deep dive. Based on these prioritised drivers, KPMG identified relevant investment areas that require sustainable financing, leveraged industry knowledge and guidance from widely accepted green taxonomies (such as Climate Bonds Initiative, International Capital Market Association and ASEAN Green Bond Standards), and incorporated insights from sectoral experts, KPMG's experts and analysis of major industry publications. Subsequently, KPMG quantified the financing needs of each investment area, and aggregated them to derive the total financing needs from the real economy sectors.

2. Sustainability regulations and standards

KPMG conducted research and analysis on how the regulatory landscape and industry standards are likely to evolve over the last decade. Seven major areas³¹ were identified that FIs will need to consider when incorporating sustainability into their business strategies, operations and services.

3. Technology and innovation

KPMG studied the main challenges that FIs face when operationalising their sustainability agenda and the available technology solutions to support sustainability-related activities such as scope 3 emissions data gathering.

Findings from the Trends Analysis were then validated through interviews with Chief Sustainability Officers and other industry leaders from both the FS sector and real economy sectors.

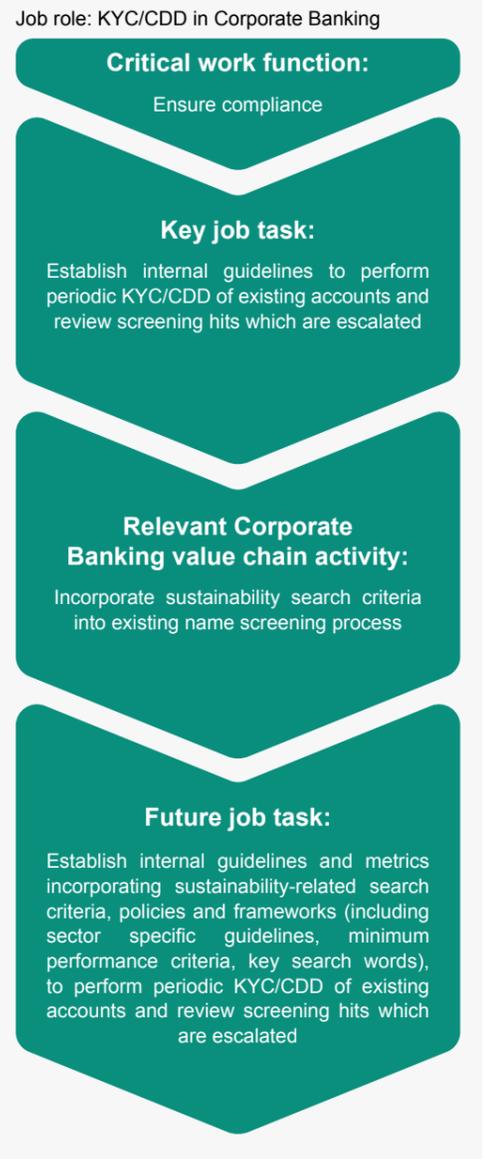
3.3 Phase 2: Impact Analysis

The following steps were taken to determine the impact of sustainability drivers identified in Phase 1 on FS job roles:

1. Analysing impact on job tasks

KPMG analysed how the trends identified would impact the FS value chain³² activities and accordingly, how critical work functions and job tasks of each of the 218 FS job roles would be augmented (refer to Exhibit 3.3).

Exhibit 3.3: Illustrative example on the process to determine the augmentation on each job task



2. Determining overall level of augmentation on each job role

A scoring matrix was used to classify each future key job task of a job role into different levels of augmentation: low augmentation, moderate augmentation or high augmentation (refer to Exhibit 3.4). The scoring matrix was based on two factors:

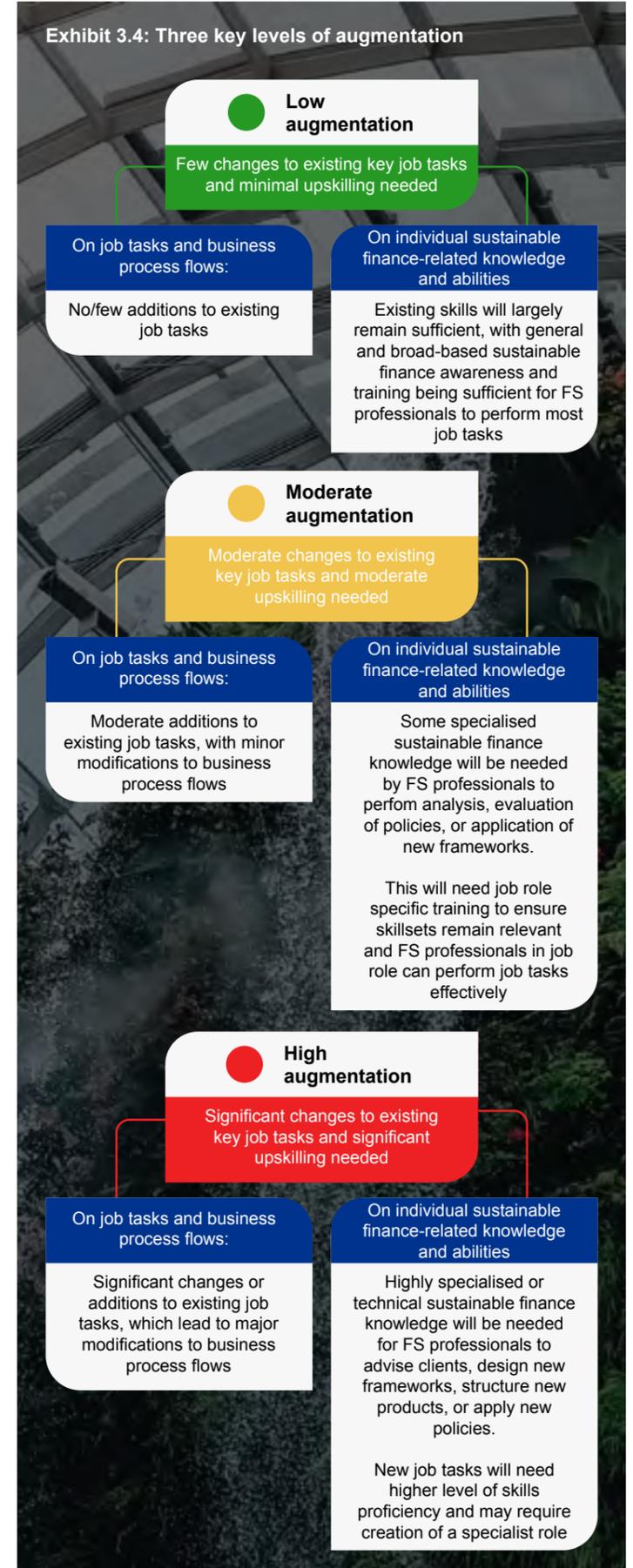
- Job task augmentation: extent of changes or additions to existing key job tasks.
- Skills augmentation: extent of changes in skills and knowledge needed.

The overall level of augmentation on each job role was determined based on the aggregated impact of all job tasks relating to the job role. The impact analysis was validated with industry representatives through focus group discussions and industry platforms such as the IBF Industry Workgroups.

3. Projecting the impact on number of jobs

To project the number of net new jobs that will be created to support sustainable finance-related activities, KPMG used employment data from the Ministry of Manpower and MAS' Manpower Survey, and layered on the following:

- **Increase in number of jobs resulting from business impact:** Additional number of Full Time Equivalents (FTEs) will be needed based on the assumption that there will be increased business demand from the trends analysis³³. The projection was done using basic regressions on historical demand.
- **Increase in number of jobs resulting from activity impact:** Additional job tasks that FS professionals in each job role need to perform were analysed to derive an additional number of FTEs needed, based on the assumption that more manpower is needed to carry out more job tasks.
- **Decrease in number of jobs resulting from technology impact:** Using insights from a market intelligence platform for technology trends, the decrease in the number of FTEs was projected based on the assumption that technology will increase productivity.



29. Refer to Section 4: Key Drivers That Will Impact the Value Chain of FS Sector for more information on the proportion of the six real economy sectors' economic value add and GHG emissions in the ASEAN region.

30. These drivers were developed from KPMG's 3 broad hypotheses outlining likely transformation in real economy sectors due to sustainability trends: 1) Transition to low-carbon economy, 2) Protecting and preserving the environment, and 3) Building a harmonious society.

31. Refer to Section 4: Key Drivers That Will Impact the Value Chain of FS Sector.

32. The FS value chain details activities across the end-to-end stages of the client and product lifecycle for each FS sub-sector. In the case of Corporate Banking for example, it includes activities from prospecting, onboarding, advising to transacting, monitoring, mitigating and offboarding of clients. Activities across the value chain will be impacted as FIs incorporate sustainability into their business activities.

33. Refer to Section 4: Key Drivers That Will Impact the Value Chain of FS Sector.

3.4 Phase 3: Skills Analysis

The 12 SF TSCs were referenced to determine the skills needs of FS professionals in each job role. For each future key job task determined in Phase 2, KPMG analysed the skills needed, including SF TSCs, to execute the new responsibilities. Where there were skills gaps, KPMG has identified the specific SF TSCs and corresponding proficiency levels needed.

The identified SF TSCs relevant to FS professionals in each job role were validated by the FS sector through focus group discussions and industry platforms.

3.5 Validation Through Industry Consultations

Various stakeholder groups representing both the FS and real economy sectors³⁴ were consulted across all phases of the study.



A Steering Committee comprising 15 senior leaders in the Sustainability and HR fields, including representatives from asset management firms, banks and insurers, provided guidance and steer across the entire study. This included validating and providing feedback to KPMG's analysis, based on their sustainable finance expertise and understanding of FS needs.



24 consultations with CSOs and equivalent industry leaders across the six FS sub-sectors were conducted. These consultations aimed to understand FIs' approaches towards incorporating sustainable finance in their operations as well as the impact of sustainable finance on job roles and SF TSCs needed by FS professionals.



7 focus group discussions involving 89 industry practitioners were conducted to understand how job roles across each FS sub-sector and career track would be augmented, new capabilities and TSCs needed by FS professionals, and expected timeline for the augmentation. Additionally, FIs' approaches to attracting talent and upskilling the workforce were also discussed.

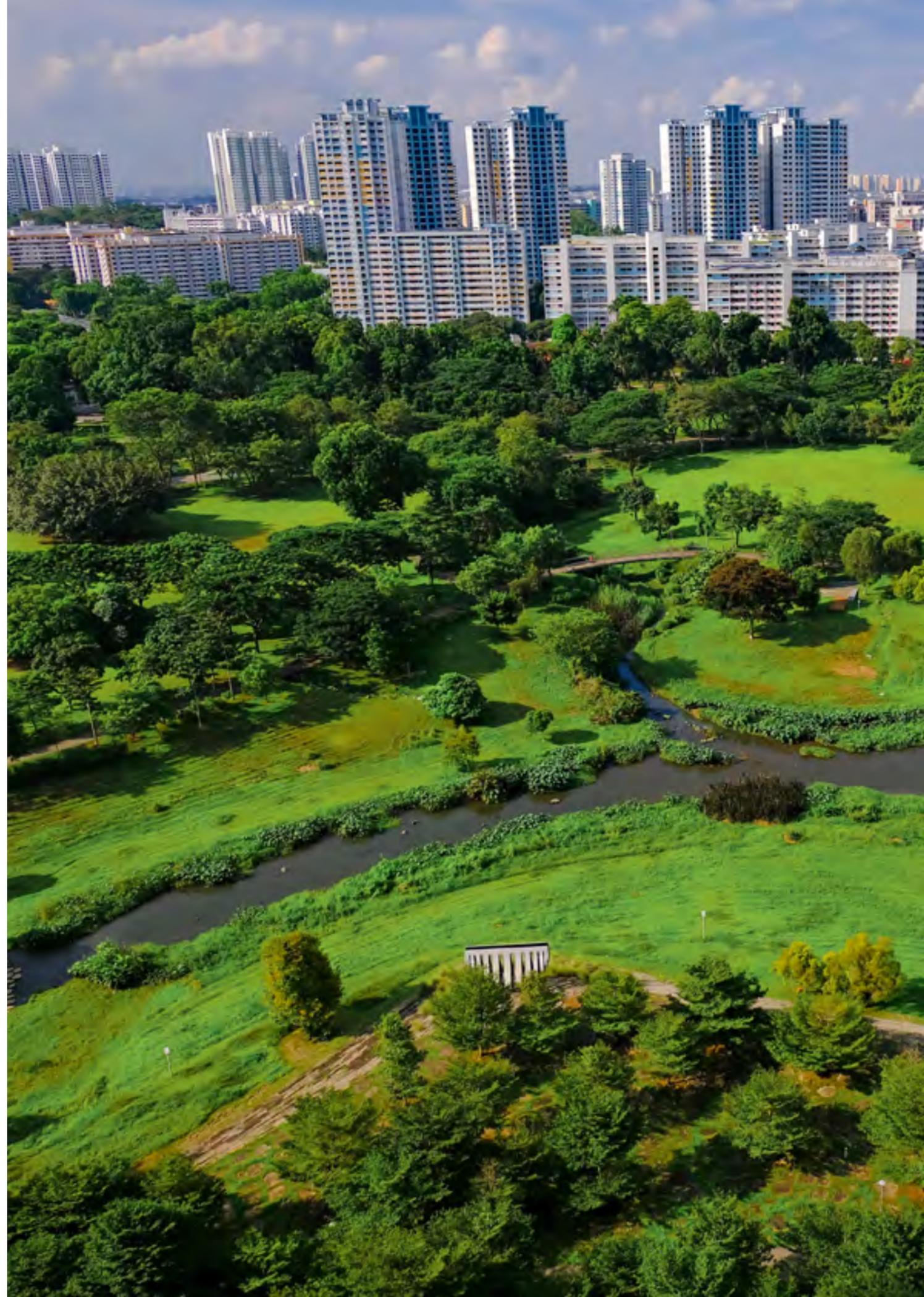


7 real economy sector interviews across six major sectors (i.e. Construction and Real Estate, Manufacturing, Transportation, Energy, Utilities and Agriculture) were conducted to understand sustainability trends and support needed from FS sector.



Engagement at various industry platforms such as the IBF Council, IBF Industry Workgroups, Financial Sector Tripartite Committee and Human Resources Industry Group, to share findings and gather feedback on analysis.

34. Refer to Acknowledgements for the list of industry participants from the FS and real economy sectors.





4. Key Drivers That Will Impact the Value Chain of FS Sector

4. Key Drivers That Will Impact the Value Chain of FS Sector

Sustainable finance activities in the FS sector are being shaped by three key drivers: (i) real economy demand for sustainable financing, (ii) sustainability regulations and standards, and (iii) technology and innovation. These drivers will give rise to changes in job roles across the FS sector's value chains and activities, such as the incorporation of sustainability considerations in investment decisions and portfolio allocation, or managing sustainability risks. Collectively, these three key drivers will impact specific job roles as new job tasks will be included in those job roles. For instance, FS professionals in the Risk Strategy job role will have to be familiar with the latest sustainability regulations and establish sustainability risk management policies in order to comply with these regulations.



35. Financing for green activities involves financial instruments directed at initiatives that meet the criteria established by global green taxonomies. Financing for transition activities involves financial instruments directed at initiatives that transition from a less sustainable ecosystem to a more environmentally friendly one, but do not meet the criteria established by global green taxonomies.

36. Green Finance Industry Taskforce, Identifying a Green Taxonomy and Relevant Standards for Singapore and ASEAN, accessed April 2023.

37. Association of Southeast Asian Nations (ASEAN), ASEAN Taxonomy for Sustainable Finance, accessed April 2023.

38. KPMG analysis.

39. KPMG's analysis shows that Corporate Banking is expected to provide sustainable financing mostly through debt financing instruments, Asset Management through project financing (e.g. Special Purpose Vehicles (SPVs) for infrastructure projects) and green building financing, Retail Banking and Private Banking through electric vehicle loans, loans for farmers and green residential properties.

40. Examples include active or passive public market equity or bond funds that embed sustainability investment processes such as e.g. negative screening, positive screening, integration, thematic funds, impact investing etc. This covers both active and passive funds. The study focuses on the growth in assets under management associated with direct financing for transition and green activities such as private debt or equity necessary for the real economy's transition to achieving net zero targets. Composition of sustainable funds by asset managers were not directly taken into consideration.

4.1. Real economy demand for sustainable financing

4.1.1 Background

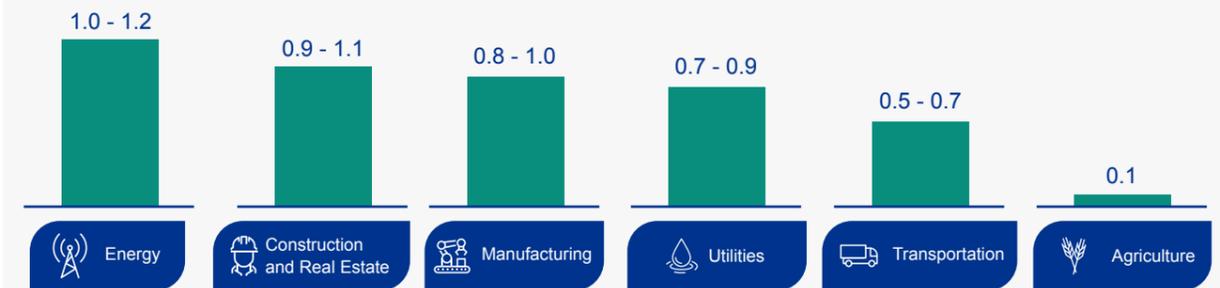
The section focuses on projecting the expected sustainable financing demands from green and transition activities³⁵ in ASEAN over the next 10 years as Singapore-based FIs support both domestic and regional financing needs. The FS sector plays a critical role in catalysing the transformation in the real economy through products and services such as green and transition bonds and loans, blended finance, private equity and venture capital, and insurance. Through these projections, it facilitates KPMG in estimating future net jobs added analysing how job tasks can be augmented.

In developing the projections, KPMG prioritised six sectors based on the GVA in the ASEAN region and the emissions profile of each sector. These real economy sectors are Agriculture, Construction and Real Estate, Energy, Manufacturing, Transportation, and Utilities. The forecasted growth in financing for transition activities is expected to the six sectors make up approximately 95% of ASEAN's Greenhouse Gas

(GHG) emissions³⁶ and a large proportion of GVA to the ASEAN economy³⁷.

ASEAN's sustainable financing demand from these six real economy sectors are estimated to grow at 9% CAGR over the next 10 years, with cumulative demand projected to be within the range of S\$4 trillion to S\$5 trillion by 2032³⁸ (refer to Exhibit 4.1). The projected sustainable financing demand spans both green projects (e.g. solar farms, zero emissions passenger and commercial vehicles), as well as transition projects (e.g. retrofitting of buildings and liquefied natural gas (LNG) technologies on vessels). Specifically, financing channeled towards transition activities is much needed in ASEAN as the region undergoes rapid urbanisation and economic development. The forecasted growth in financing for transition activities is expected to outpace financing for green activities, at 13% CAGR and 7% CAGR respectively. This is particularly so in the Energy sector where ASEAN remains highly dependent on fossil fuels, and in hard-to-abate sectors such as Transportation and Manufacturing.

Exhibit 4.1: Projected cumulative sustainable financing demand in ASEAN across the six real economy sectors from 2023 to 2032 (S\$ trillion)



As set out in MAS' FINZ Action Plan, Singapore's FS sector is in a good position to capture significant opportunities as the net zero transition agenda expands in the region. Across Singapore's six FS sub-sectors, the Corporate Banking sub-sector is expected to provide the majority of financing needs, followed by Asset Management, Retail Banking, and Private Banking³⁹. This is because a large proportion of sustainable financing demand stems from the real economy sectors

seeking to finance their efforts of transitioning to a low-carbon economy via debt instruments. The study does not project the growth in assets under management for public market sustainable funds⁴⁰, which suggests that there may be more upside to the projection. FIs should position themselves to seize new opportunities across sub-sectors and capture a significant share of ASEAN's sustainable finance market.

4.1.2 How FIs are supporting real economy sustainable finance needs

FIs need to understand sustainability trends in the real economy in order to create their sectoral transition plans and develop new sustainable finance products. For example, when developing sector-specific transition plans, FIs should ensure that the plans are aligned with industry best practices and real economy decarbonisation pathways (e.g. International Energy Agency's Net Zero Emissions by 2050 (IEA NZE)⁴¹).

Achieving sectoral net zero targets will require FIs to embed sustainable finance-related job tasks across multiple career tracks and job roles⁴². For example, FS professionals in the the Relationship Management job role need to keep abreast with real economy sectors' market developments and sector-specific decarbonisation strategies, in order to identify sustainable finance opportunities that can support their clients' net zero transitions (e.g. financing for renewable energy, nature-based solutions). In parallel, FS professionals in the Risk Strategy job role will need to stay informed about environmental risks that are material to different real economy sectors, in order to integrate these material risks into the FI's existing ERM framework.

FIs will need to stay up to date with the latest sustainability-related regulatory developments that affect all the real economy sectors covered in their portfolio. For example, changing government regulations in the real economy sectors would require FS professionals in the Portfolio / Investment / Fund Management job role to update these changes in their due diligence processes as they need to integrate the latest sustainability Key Performance Indicators (KPIs). For example, the Singapore government issued a data centre moratorium in 2019, pausing new developments of data centres (DC) due to large energy usage and emissions. In 2022, the moratorium was lifted, however the government stated its intent to be more selective on DC projects and sought to prioritise DCs that are outperforming in resource efficiency. As such, the latest KPI figures for energy efficiency⁴³ and GHG emissions will need to be updated accordingly in the FIs' due diligence for the client.

4.1.3 Drivers for sustainable financing in real economy sectors

The following sections elaborate on the drivers of sustainable financing for each of the six economy sectors in this study.

4.1.3.1 Energy

ASEAN's Energy sector's cumulative sustainable financing demand is projected to be S\$1 trillion to S\$1.3 trillion from 2023 to 2032⁴⁴. KPMG analysed investment demand from green and transition activities including the development of renewable energy capacity (solar, wind, hydropower, geothermal), hydrogen fuel production, and deployment of Carbon Capture, Utilisation and Storage (CCUS) in natural gas power stations.

Sustainable financing demand is mostly driven by large investment demand from renewable energy generation and electricity distribution network projects to meet net zero goals. Much of

the demand in ASEAN is expected to be directed towards green activities, such as the development of transmission and distribution systems for renewable energy, as well as solar photovoltaic facilities. This is driven by the necessity to support broader electricity access particularly in countries like Vietnam, Indonesia and Thailand, where solar energy is the most feasible mode of renewable energy regionally⁴⁵.

Apart from investments in renewable energy generation and electricity distribution networks, a smaller portion of the demand will also come from the early deployment of new emerging fuel alternatives, such as green and blue hydrogen, as well as bioenergy and biofuels. While markets for these solutions are relatively nascent, there are key initiatives in the pipeline that are expected to further mature in the longer term. For example, Singapore has launched the National Hydrogen Strategy⁴⁶ and expects its first hydrogen power plant to be launched by 2026⁴⁷.



41. IEA, Net Zero by 2050: a roadmap for the global energy sector, accessed April 2024.

42. Refer to Section 5: Impact on Job Roles, for holistic analysis on augmentation of job roles.

43. The Straits Times, "Singapore pilots sustainable way to grow data centre capacity", accessed April 2024.

44. KPMG analysis.

45. DBS, UN Environment Inquiry, Green Finance Opportunities in ASEAN, accessed May 2023.

46. Ministry of Trade and Industry Singapore, Singapore's National Hydrogen Strategy, accessed April 2024.

47. The Straits Times, First hydrogen power plant in S'pore expected by first half of 2026, accessed April 2024.

4.1.3.2 Construction and Real Estate

Sustainable financing demand in the Construction and Real Estate sector is projected to be approximately S\$800 billion to S\$1 trillion from 2023 to 2032⁴⁸. For green and transition activities in this sector, KPMG analysed financing requirements for the construction of new green buildings, retrofitting of existing buildings to meet green or transition standards⁴⁹. Retrofitting and lowering energy consumption within existing brown buildings, especially commercial buildings, is likely to be driving the demand for sustainable finance as it would be the primary method to decarbonise the Construction & Real Estate sector in ASEAN. This is because governments have more oversight over commercial buildings and retrofitting is also a quicker and more economical option compared to constructing new green buildings⁵⁰.

With the implementation of the Singapore Green

Building Masterplan⁵¹, Singapore is anticipated to take the lead among ASEAN nations to deploy capital on green buildings and is estimated to represent 30% of the ASEAN Construction and Real Estate sustainable financing needs. The masterplan sets ambitious targets, aiming to reach the following targets by 2030: 80% of buildings (by floor area) are green, 80% of new developments (by floor area) are Super Low Energy, and best-in-class green buildings achieve an 80% improvement in energy efficiency. The retrofitting of existing buildings is seen as a crucial measure in the sector's decarbonisation efforts and the achievement of these targets, therefore resulting in significant estimated sustainable financing demand.



48. KPMG analysis.

49. The classification of green and transition activities within Construction & Real Estate sector was assessed on a project basis. Financing for projects with a long-term carbon emission goal and approved plans according to various certification standards (e.g. BCA Green Mark, LEED, etc.) can be classified as financing for green activities. Meanwhile, financing for projects with minimum certifications or adherence to mandatory energy efficiency requirements without any clear long-term vision can be classified as financing for transition activities.

50. JLL, *Retrofits: The Better Way to Decarbonise Real Estate*, accessed May 2023.

51. Building and Construction Authority and Singapore Green Building Council, *Singapore Green Building Masterplan 4th Edition*, accessed May 2023.

4.1.3.3 Manufacturing

Sustainable financing demand in the Manufacturing sector is projected to be approximately S\$700 billion to S\$900 billion over the next 10 years⁵². The manufacturing sector is widely acknowledged as one of the most challenging sectors to decarbonise. The high levels of energy required by industrial facilities cannot be met only through electrification. Existing fossil fuel sources may be difficult to replace, and future replacement technologies are at varying stages of commercial development. As such, there is a need for substantial sustainable financing demand in this sector. As part of the analysis, sub-segments analysed in the Manufacturing sector include Electronics, Machinery, Automotive, Chemicals, Textiles, Food, Iron and Steel. KPMG examined financing requirements for green and transition activities such as the adoption of abatement technologies (including CCUS), smart factories or industry 4.0 technologies, and procurement of high efficiency machinery and equipment.

Increased pressure to set energy efficiency and sustainability KPIs at an organisational level (e.g. KPIs on emissions intensity, energy consumption, water consumption, waste produced) is

expected to drive companies involved in the manufacturing value chain to transition towards high efficiency manufacturing processes and adopt sustainable practices in their operations. Procurement of high efficiency machinery and equipment is projected to be key areas that require sustainable finance. For example, higher efficiency motors and variable speed drives could save energy in the cooling systems of a food producer, while aligning with system load requirements⁵³.

Aside from capital expenditures into high efficiency equipment, the Manufacturing sector will also need to invest in areas such as smart factories or industry 4.0 technologies (sensors and equipment), sustainable packaging, additive manufacturing, and abatement technologies to capture carbon equivalent emissions. As corporates' awareness and consumers' demand patterns strengthen, financing demand for these investment areas will increase as these considerations prompt the optimisation of operations and resource utilisation through the latest technologies and establishment of decarbonisation goals within production facilities.



52. KPMG analysis.

53. ABB, *Achieving the Paris Agreement: The vital role of high-efficiency motors and drives in reducing energy consumption*, accessed May 2023.

4.1.3.4 Transport

Sustainable financing demand in Transport is projected to be approximately S\$500 billion to S\$700 billion from 2023 to 2032⁵⁴. As part of the Sustainable Development Goals (SDGs), sustainable transport is recognised as essential to achieving certain SDG targets such as clean energy, prevention of marine pollution, and limiting climate change through decarbonisation⁵⁵. Green and transition activities that were analysed include zero emissions passenger and commercial vehicles, low-carbon transport infrastructure, as well as vessels transitioning to low-carbon fuels, and aircraft running on sustainable aviation fuels.

Investments into green activities such as vehicle electrification, infrastructure for low-carbon transport, electric railway, and low-carbon ammonia fuel for shipping are expected to drive most of the sustainable financing demand for the Transport sector. For instance, electric scooters for retail consumers and electric buses for fleet operators will require EV charging infrastructure. Major new rail investments are needed across

ASEAN to address worsening traffic congestion in expanding urban agglomerations, and it is critical for ASEAN to adopt fully electrified rail systems to reduce overall tailpipe emissions.

Sustainable financing is also required in Transport sub-sectors that are particularly difficult to decarbonise, such as maritime and aviation. Investments in the implementation of CCUS technologies on vessels, and the adoption of Sustainable Aviation Fuels (SAF) are still important, as the development of green (fully electrified, hydrogen or ammonia) vessels and aircraft is in its early stages. Meanwhile, financing to encourage the broader adoption of vehicles with lower emissions, such as transitioning from heavy-duty vehicles that run on diesel to vessels that run on petrol or other lower-carbon fuels, will remain necessary in countries such as Vietnam and Malaysia, where the development of electric charging infrastructure networks is still lagging.



4.1.3.5 Utilities

Sustainable finance demand in the Utilities sector are forecasted to range from approximately S\$700 billion to S\$900 billion from 2023 to 2032⁵⁶. Two main sub-segments within the Utilities sector, namely Waste and Water, were analysed. KPMG examined both green and transition activities in the Waste sub-segment including waste management (reuse, recycling), biological treatment, and waste-to-energy facilities and technology. Green and transition activities examined in the Water sub-segment include water monitoring, storage, and treatment⁵⁷.

Waste management needs are anticipated to more than double by 2030, exceeding the 2016 waste volume of 150 million tonnes by a significant margin⁵⁸. However, the conventional landfill approach of waste management requires significant land area and is not sustainable in the long run. This necessitates the exploration of alternative waste disposal methods. On the other hand, ASEAN nations have experienced an increase in water scarcity due to droughts exacerbated by climate change⁵⁹, a trend expected to worsen in the future and leading to increasing demand for water management efforts⁶⁰. The majority of the sustainable financing needs will be driven by circular economy-related activities and waste-to-energy plants in waste management, as well as desalination plants in water management. Therefore, sustainable waste management practices such as incineration (a waste-to-energy technology) will become increasingly critical in ASEAN as most cities are running out of landfill sites for conventional waste disposal. As for water management, more ASEAN countries are turning to desalination as a solution to ensure water security while mitigating the impact of climate change⁶¹.

4.1.3.6 Agriculture

The projected sustainable finance needs in the Agriculture sector for ASEAN are estimated to range from approximately S\$68 billion to S\$84 billion from 2023 to 2032⁶². Due to the widespread usage of low-technology farming techniques in the region (such as tillage or the use of pesticides) which can decrease soil quality and reduce resilience against the impacts of climate change⁶³, there is a pressing need to transition towards sustainable agriculture farming techniques and technologies. Embracing sustainable farming techniques is crucial to enhancing the stability of the food production chain, as it increases climate resilience and support soil conservation. Furthermore, Agriculture accounts for the highest GHG emissions in ASEAN, at 39.7%, highlighting a need to decarbonise the sector. KPMG examined financing demand from green and transition activities such as precision agriculture, genetic engineering, and hydroponics.

Sustainable financing needs in the Agriculture sector are anticipated to be driven by substantial demand from the deployment of precision farming techniques, such as measured fertilisation and watering, or monitoring land area and harvest in the region. Other examples of sustainable finance investments in Agriculture include the development of vertical farming and hydroponics in Singapore, supported by the Singapore government's aim of increasing local production to 30% by 2030⁶⁴, as well as working capital financing needs for engineered crops and seeds. The latter is underpinned by a growing recognition of the need to safeguard agriculture output in risk-prone areas within the region, and to enhance the yield per arable land for key agricultural products. All these highlight the need for investments in engineered seeds and crop initiatives that focus on productivity and climate resilience.

54. KPMG analysis.

55. Sustainable Development Goals Knowledge Platform, Sustainable Transport, accessed March 2024. UNECE Sustainable Development Goals, Transport and the Sustainable Development Goals, accessed March 2024.

56. KPMG analysis.

57. Projects with a focus on improving energy efficiency and have zero to negative GHG emissions over its lifetime were categorised as green activities. However, projects with a focus on improving energy efficiency and have relatively low GHG emissions were categorised as transition activities.

58. United Nations Environment Programme, Waste Management in ASEAN Countries: Summary Report, accessed March 2024.

59. Association of Southeast Asian Nations (ASEAN), ASEAN State of Climate Change Report, accessed March 2024.

60. Centre for Non-Traditional Security Studies S Rajaratnam School of International Studies, Climate Change and its Impact on Peace and Security in Southeast Asia, accessed March 2024.

61. Infrastructure Asia, Water and Sanitation in Asia, accessed March 2024.

62. KPMG analysis.

63. World Economic Forum, 5 sustainable farming methods assessed, accessed March 2024.

64. Singapore Food Agency, 30 by 30, accessed May 2023.

4.2 Sustainability regulations and standards

4.2.1 Background

Within the FS sector, regulations and industry standards are guiding and accelerating FIs' responses to sustainability and the growth of sustainable finance. They serve to act as guardrails to help FIs manage sustainability risks and facilitate a smooth transition to a net zero economy.

Regulations require compliance from all relevant FIs, and will drive rapid operational changes. On the other hand, standards are non-compulsory in nature but FIs can be driven to voluntarily align with these standards. This can be driven by a variety of factors such as stakeholder expectations or reputational risks. Hence, both regulations and standards represent major drivers for how FIs might transform job roles and activities to operationalise sustainability.

Regulations and standards have primarily aimed to address the following key concerns around sustainability:

1. Manage sustainability risks:

Encourage FIs to establish clear sustainability risk management frameworks and identify and manage material sustainability risks.

2. Support sustainable finance:

Support the development of sustainable finance products through regulations and standards such as definitions and labelling requirements, use-of-proceeds monitoring, and sustainability outcomes monitoring.

3. Improve transparency:

Provide clear labelling, classification of projects and activities and standardise sustainability disclosures to mitigate greenwashing.

4. Accelerate transition:

Encourage FIs to set sustainability targets and have a sound and credible transition planning process.

FS job roles will be directly augmented as FIs comply with sustainability regulations and act towards their voluntary commitments and targets. Examples of how FIs are complying with sustainability regulations and aligning with standards, how they are integrating them into their operations, and the consequent impact on job roles and skills are outlined in the subsequent paragraphs.

4.2.2 How FIs are adopting sustainability regulations and standards

FIs are increasingly embracing sustainability regulations and standards, either through integrating sustainability into existing policies or introducing new policies and processes.

According to MAS' Information Papers on Environmental Risk Management for Banks, Asset Managers, and Insurers⁶⁵, FIs have progressively integrated environmental risks into their existing frameworks with a variety of capacity-building measures. These include:

- Setting up dedicated functions and decision-making bodies for sustainability
- Adding climate risk oversight responsibilities to Head of Risk Strategy or Head of Credit Risk
- Conducting targeted sustainability training for staff such as:
 - Relationship Management job role in Banking
 - Portfolio/Fund/Investment Management job role in Asset Management
 - Underwriting job role in Insurance

For sustainability standards and frameworks that are voluntary in nature, many FIs have signalled their commitment to adopt standards on a voluntary basis, such as those around sustainability risk management and disclosures (e.g. Task Force on Climate-Related Financial Disclosures (TCFD) Recommendations, International Sustainability Standards Board (ISSB) IFRS S1 and S2 for sustainability disclosures), as well as those around sustainable finance product labelling (e.g. International Capital Market Association (ICMA) principles for Green, Social, Sustainable and Other Labelled bonds (GSS+)). Alignment with these standards and frameworks necessitates changes in job roles across the organisation to incorporate sustainable finance-related job tasks. For example:

- FS professionals in Financial Accounting and Data Analytics job roles need to measure and disclose GHG emissions of FIs' portfolio.
- FS professionals in Risk Strategy job roles need to integrate sustainability considerations into existing risk management.
- FS professionals in Product Origination and Structuring job roles need to develop and issue green bonds according to the ICMA Green Bond Principles.

4.2.3 Impact of sustainability regulations and standards on Singapore's FIs

To analyse trends and find the most pertinent guidelines for the FS sector to consider when integrating sustainability considerations into their business strategies, operations, and services, KPMG has analysed sustainability regulations and standards in the following categories:

- Standards set by major international bodies (e.g. TCFD Recommendations, ISSB Standards)
- Regional regulations and standards (e.g. EU Taxonomy, Sustainable Finance Disclosure Regulation (SFDR)) which may impact Singapore-based FIs that are headquartered outside of Singapore, or FIs which operate in those regions
- Major local regulations and guidelines in Singapore (e.g. MAS Environmental Risk Management (ENRM) Guidelines, Singapore Exchange (SGX) Sustainability Reporting requirements)

KPMG has compiled the following key trends observed among sustainability regulations and standards, and assessed how these developments impact the workforce across the FS sector. For each area, KPMG has provided an overview of what the regulations and standards are, and examples of KPMG's projections on how job roles will be affected. For more details of impact on job roles, please refer to Section 5: Impact on Job Roles, and the Appendix A: Job Role Analysis detailing impact on each specific job role.

65. MAS, Information Papers on Environmental Risk Management, accessed March 2024.

4.2.3.1 Environmental Risk Management Guidelines

Environmental risks impact all of the FS Sector's principal risk types (e.g. credit risk, reputational risk, market risk). With this in mind, the MAS ENRM⁶⁶ Guidelines was published to enhance the management of environmental risk. The ENRM Guidelines for Banks, Insurers and Asset Managers cover three broad areas, including governance and strategy, risk management, and disclosures.

Examples of how ENRM guidelines will impact job roles in the FS sector:

FS professionals in the Credit Risk job role would need to:

- Assess the impact of environmental risks impacting the credit quality of their customers.
- Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on credit risk exposure.

4.2.3.2 Transition planning guidelines

Transition planning frameworks can assist FIs by enhancing their internal processes to facilitate effective climate change mitigation and adaptation measures by their customers and investee companies, in the global transition to a net zero economy and mitigate expected physical effects of climate change. MAS has consulted on a set of Guidelines on Transition Planning (TPG)⁶⁷ to set out MAS' supervisory expectations on FIs' risk management processes to prepare for both risks and potential changes in business models associated with the global transition to a net zero economy and the expected physical effects of climate change.

Examples of how transition planning guidelines will impact job roles in the FS sector:

FS professionals in the Relationship Management - MNC job role would need to:

- Understand clients' sustainability strategy and targets, in order to appropriately respond to their queries on sustainability-related topics and issues.
- Provide tailored advice and solutions to support clients' transition journey (e.g. recommending loans to retrofit older commercial buildings with building management systems to reduce power consumption).

4.2.3.3 Sustainability reporting

Sustainability reporting is a channel to communicate an organisation's sustainability practices and performance to its stakeholders. While FIs report on a wide range of sustainability topics, the recent focuses of regulators and standard setters have been on climate-related disclosures. In Singapore, the Accounting and Corporate Regulatory Authority (ACRA) and the Singapore Exchange Regulation (SGX RegCo) have rolled out mandatory ISSB-aligned climate-related disclosures for listed issuers and Large Non-Listed Companies. From FY2025, all listed issuers will be required to report and file annual climate-related disclosures that are aligned with the ISSB Standards. Large Non-Listed Companies (defined as those with annual revenue of at least S\$1 billion and total assets of at least S\$500 million) will need to report by FY2027⁶⁸.

Examples of how sustainability reporting will impact job roles in the FS sector:

FS professionals in the Financial Accounting job role would need to:

- Understand and apply sustainability reporting regulations and internationally recognised frameworks (e.g. TCFD Recommendations, ISSB Standards) to establish standardised and effective reporting practices.
- Determine the methodologies and metrics used in sustainability reporting, to provide the most relevant and accurate data.

4.2.3.4 Taxonomy classification frameworks

Taxonomies for sustainable finance serve to guide FIs on how to identify and classify activities that can be considered green, or transitioning towards green. These aim to accelerate financial flows to sustainable economic activities and reduce flows to activities that are not sustainable.

MAS launched the Singapore-Asia Taxonomy in December 2023⁶⁹ to serve as a guide for allocating capital into green and transition activities for the region. The Singapore-Asia Taxonomy establishes detailed thresholds and criteria to define both green and transition activities that contribute to climate change mitigation across eight focus sectors. This is the first multi-sector taxonomy that provides reliable definitions for transition activities. FIs can utilise the taxonomy to support the transition of hard-to-abate sectors, especially in Asia, as the taxonomy offers clear definitions for transition activities.

Examples of how taxonomy classification frameworks will impact job roles in the FS sector:

FS professionals in the Product Management job role would need to:

- Structure green and sustainable labelled loans, bonds, and other financial instruments in alignment with taxonomies.

FS professionals in the Client Investment Performance Reporting job role would need to:

- Understand taxonomy classification frameworks, in order to determine whether the underlying activities of companies in funds and portfolios contribute to the fund's sustainability objectives.

4.2.3.5 Sustainable financing product frameworks

Sustainable financing product frameworks define the standards, definitions, eligibility, management and reporting criteria for sustainable financing products. An agreed common framework for the issuance of sustainable financing products will boost the effective functioning and integrity of the sustainable financing product market.

Since 2017, major FIs in Singapore have been using the ICMA product principles and guidelines for the issuance of sustainable financing instruments such as GSS+ bonds.

Examples of how sustainable financing product frameworks will impact job roles in the FS sector:

FS professionals in the Product Origination and Structuring job role would need to:

- Develop sustainable finance products in accordance with sustainable finance product frameworks, alongside metrics and targets to monitor sustainability performance of the client.
- When developing prospectus for sustainable finance products, incorporate sustainability disclosures aligned with regulations or internationally recognised standards and frameworks.

66. MAS, Information Papers on Environmental Risk Management, accessed March 2024.

67. MAS, Guidelines for Financial Institutions on Transition Planning for a Net Zero Economy, accessed March 2024.

68. SGX, Climate reporting to help companies ride the green transition, accessed March 2024.

69. MAS, Singapore-Asia Taxonomy, accessed March 2024.

4.2.3.6 Sustainable investment labelling frameworks

Sustainable investment labelling frameworks are needed to address investor protection in the securities market to promote transparency and standardisation of product and fund labels when disclosing sustainability performance and risks. These include guidelines on the specific portfolio and/or disclosure requirements, in order to label investments with terminology such as "green" or "sustainability".

MAS has released the Disclosure and Reporting Guidelines for retail ESG funds in July 2022, aimed at reducing greenwashing risks, and enabling retail investors in Singapore to better understand the funds they invest in. These guidelines have been in effect since January 2023⁷⁰.

Examples of how sustainable investment labelling frameworks will impact job roles in the FS sector:

FS professionals in the Portfolio / Investment / Fund Management job role would need to:

- Incorporate sustainable investment labelling frameworks (e.g. MAS Disclosure and Reporting Guidelines for retail ESG Funds, SFDR Article 8 & 9⁷¹) into the creation and labelling of existing and new products, and perform the disclosures as required for their respective labels.
- Keep up to date with latest regulations and standards, to ensure products and reporting processes remain compliant.

4.2.3.7 Stewardship principles

Investors are encouraged to effect changes in their investees through active, constructive, and purposeful engagement with investee executives, directors, and other stakeholders, where relevant. This involves encouraging them to transition towards more sustainable business activities, internal policies, and practices. The guidance on good practices in stewardship and engagement are outlined in stewardship codes or principles.

In Singapore, the MAS and SGX supported the creation of the Singapore Stewardship Principles for Responsible Investors (SSP)⁷². Sustainability is incorporated into these principles, recognising that stewardship is a factor in sustaining long-term value creation. In addition, under the MAS ENRM Guidelines for Asset Managers, asset managers are expected to exercise sound stewardship to help shape the corporate behaviour of their investee companies positively, and to consider aligning their stewardship initiatives to the SSP. Furthermore, under the MAS TPG's proposed recommendations, FIs should choose engagement rather than divestment in steering their investee companies to transition in an orderly manner.

Examples of how stewardship principles will impact job roles in the FS sector:

FS professionals in the Portfolio / Fund / Investment Management job role would need to:

- Incorporate sustainability factors into shareholder/proxy voting and escalation policies, to ensure investee's business activities are aligned with the portfolio/fund's sustainability agenda.
- Request for and advise on transition plans from investees, to facilitate operational changes in investees towards their sustainability targets.

4.2.4 Regulatory and standards landscape over the next ten years

In the next three years, KPMG expects to see the following trends surrounding sustainability regulations and standards globally, which will likely impact Singapore and the Southeast Asia region:

1. A focus on increasing the granularity and depth of climate-related disclosures, such as using climate scenario analysis and stress testing to identify the financial impact of climate-related risks and opportunities. This expectation is prompted by the emergence of mandatory regulatory standards aligned with the ISSB Standards. In Singapore, ISSB-aligned climate-related disclosures will be mandatory for listed companies by FY2025 and for Large Non-Listed Companies by FY2027⁷³. This will consequently lead to an increase in capacity building to support climate scenario analysis and stress testing, specifically in job roles such as Credit Risk.
2. National-level regulations and standards are expected to converge with major regional and global ones. This is seen through the increasing alignment of national and international standards (e.g. a key objective of the Singapore-Asia Taxonomy is to be as interoperable as possible with other international taxonomies, with a particular focus on the EU Taxonomy and the ASEAN Taxonomy)⁷⁴ and the convergence of existing widely internationally adopted standards (e.g. convergence of the TCFD Recommendations and Sustainability Accounting Standards Board (SASB) Standards into the ISSB Standards). Interoperability will improve data standardisation and reduce the complexity of navigating varying regulations and standards. For job roles such as Financial Accounting and Compliance Advisory, this can lead to a streamlining of their work and an overall improvement in efficiency.
3. Product labelling guidelines in some jurisdictions could start to refer to taxonomy classification frameworks to differentiate sustainable and non-sustainable activities and products. For instance, the SFDR now requires product labelling alignment with the EU Taxonomy⁷⁵. Product Development and Product Management job roles will be expected to comply with these guidelines for existing products and any new products

created with labels such as "Green Bonds" or "Sustainability Funds".

In the next five to 10 years, KPMG expects regulations and standards to revolve around:

1. **Scaling up disclosure beyond climate to cover other environmental and sustainability themes:** There is an emerging trend of standards targeting disclosure themes beyond climate (e.g. nature, biodiversity, and social topics). Example standards and frameworks include the Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations, the Science Based Targets (SBT) for Nature and for Biodiversity, and ISSB IFRS S1. While mandatory sustainability disclosures around the world are currently focused on climate, disclosure themes beyond climate are expected to receive wider attention and become mandatory, for example, the SFDR includes mandatory non-climate environmental metrics (e.g. activities negatively affecting biodiversity-sensitive areas, hazard waste ratio), as well as social metrics (e.g. unadjusted gender pay gap, board gender diversity)⁷⁶. Consequently, the Financial Accounting job role will have to broaden their areas of knowledge and capabilities to support these additional areas for disclosure.
2. **Further improvement to interoperability will facilitate training and capacity building:** Improvements to the interoperability of regulations and standards can be a long process and typically involve multiple stages of consultations with stakeholders in the industry, alongside operational, administrative, and political concerns. Global efforts to achieve interoperability is expected to continue across the next five to 10 years. As discussed in the previous section regarding short-term developments in interoperability, newer regulations and standards are aligning themselves with internationally recognised standards and frameworks. Over the next decade, as standards converge into a global baseline, and regulators cooperate to improve alignment with one another, training and capacity building will become more streamlined and standardised across different jurisdictions and regions, further improving talent mobility and elevating standards of professional services in sustainability.

70. MAS, Disclosure and Reporting Guidelines for Retail ESG Funds, MAS, accessed March 2024.

71. European Union, Regulation (EU) 2019/2088 on sustainability-related disclosures in the financial services sector, accessed March 2024.

72. Stewardship Asia, Singapore Stewardship Principles For Responsible Investors (SSP), accessed March 2024.

73. Accounting and Corporate Regulatory Authority (ACRA), Response to Public Consultation on Climate Reporting and Assurance Roadmap for Singapore, accessed March 2024.

74. MAS, Singapore-Asia Taxonomy, accessed March 2024.

75. European Commission, "FAQ: What is the EU Taxonomy and how will it work in practice?", accessed March 2024.

76. Novata, SFDR Reporting: Mandatory and Additional PAI Indicators, accessed March 2024.

4.3 Technology and innovation

4.3.1 Background

The FS sector has seen a major trend of digitalisation and technological integration over the past decade. Similar to how technological innovation has supported new activities and additional productivity in Banking, Insurance and Asset Management, FIs may leverage technology and innovations to improve their sustainability data capabilities, and improve productivity in sustainability-related activities.

4.3.1.1 Data

Technology is a key enabler in solving the problems that FIs face along the sustainability data continuum⁷⁷ of gathering, aggregating, processing and utilising sustainability data.

Technology that enhances sustainability data processes aim to improve the quantity and quality of data available to FS professionals, which in turn facilitates sustainability-related processes. The following are the main benefits that technology and innovation bring to sustainability data capabilities:

- 1. Availability:** Increase the amount of sustainability data available to FIs, especially from entities that do not face sustainability reporting requirements (e.g. unlisted companies, Small and Medium Enterprises (SMEs)) or are in other jurisdictions.
- 2. Credibility:** Improve verifiability and traceability of sustainability data collected, to support a variety of use cases such as risk, assurance, and greenwashing mitigation.
- 3. Comparability:** Sustainability data can be calculated and disclosed using different methodologies, frameworks, and standards. Standardising and harmonising sustainability data is necessary to make them useful for comparison between companies, industries and regions.
- 4. Data analytics:** Technology can aggregate and analyse large quantities of sustainability data, to generate timely and useful insights for FS professionals that can support decision-making.

4.3.1.2 Productivity and efficiency

Technology is a key enabler in solving the problems that FIs face along the sustainability data continuum of gathering, aggregating, processing, and utilising sustainability data.

- 1. Digitalisation:** Manual processes can be digitalised (e.g. through Internet of Things (IoT) sensors, Application Programming Interfaces (API) data pulls) to improve efficiency and speed, especially across large physical distances and across jurisdictions.
- 2. Automation:** Automation helps reduce human error, which increases productivity and efficiency in sustainability-related processes, in particular for tasks that are repetitive or tedious.

4.3.2 How FIs are adopting sustainability-related technology

The following are some examples of how FIs can utilise technology and innovation to support their sustainability-related processes.

- When conducting sustainability due diligence, the Know Your Customer (KYC) / Customer Due Diligence (CDD) job role will need to determine if a prospective client's portfolio meets the FI's sustainability agenda and targets. IoT platforms can be implemented by FIs to enable data collection through connected devices⁷⁸. This can potentially allow for regular and automated monitoring of various environmental metrics (e.g. energy consumption, waste generation and water consumption) and provide accurate sustainability data from the client's operations.
- The FS professionals in the Financial Accounting job role will need to disclose and compare sustainability-related information using internationally recognised frameworks and standards (e.g. TCFD Recommendations, ISSB Standards). FIs can adopt AI models to enable the calculation of sustainability metrics such as portfolio emissions as soon as information is available. It also allows generation of charts for data visualisation and preparing sustainability reports. This can effectively reduce the effort needed in data collection, measurement and sustainability reporting.

4.3.3 How technology and innovation will augment job roles and their activities

From analysing technology and innovation trends, KPMG compiled the following key areas of use cases for technology and innovation and how they impact the workforce across the FS sector. For each area, KPMG has provided an overview of the use case and examples of KPMG's projections on how job roles will be affected. For more details of impacts on job roles, please refer to Section 5: Impact on Job Roles, and Appendix A: Job Role Analysis detailing impact on each specific job role.

4.3.3.1 Upstream data collection

A major challenge related to sustainability data is the lack of available data from clients and their value chains, especially from unlisted companies and SMEs which are usually not required to make sustainability disclosures. This data is becoming increasingly necessary as FIs are beginning to perform sustainability assessments on their clients and the clients' respective value chains. To address these challenges, many technology companies have been developing innovative solutions that support upstream data collection.

Examples of emerging technologies that enable and facilitate the collection of sustainability data include:

- Cloud-based IoT platforms to enable the collection of sustainability data (e.g. power usage, water usage) through IoT devices that are connected to the network.
- APIs to extract and share sustainability data in a standardised format across different organisations.

Examples of how upstream data collection technology can augment job roles in FS:

FS professionals in the Data Engineer job role can:

- Develop new systems or enhance existing systems to integrate cloud based IoT platforms and APIs, in order for the FI's systems to collect sustainability data from external sources (e.g. clients' databases, data aggregators' databases)

4.3.3.2 Verification and approved provenance of data

Value chains of clients tend to be very complex. Entities in parts of the value chain can be too remote for a company to directly monitor, and it can be difficult to verify the authenticity of data from these entities. In addition, this data may not have undergone third-party verification, thus lacking the necessary credibility for FIs to use in key processes such as risk assessment or regulatory reporting. To address these challenges, emerging technological infrastructure such as blockchains and cloud platforms are increasingly being leveraged.

Examples of emerging technologies that enable and facilitate the collection of sustainability data include:

- Blockchain platforms to create tamper-proof⁷⁹, irrevocable transactional records of sustainability data shared by all participants in a blockchain network, enhancing credibility and integrity⁸⁰.
- Cloud platforms and databases with data lineage and traceability features, to track where sustainability data originates from and who it has been processed by.

Examples of how data verification technology can augment job roles in the FS sector:

FS professionals in the Risk Strategy job role can:

- Enhance existing sustainability risk assessment processes with verified and traceable data from clients' value chains, to manage sustainability risks across the value chains (e.g. sustainability issues such as human rights violations in clients' supply chain partners may lead to the FI suffering reputational damage and/or sanctions from regulators).

77. KPMG, Enabling tomorrow: The emergent ESG Fintech ecosystem, accessed May 2023.

78. IBM, What is IoT with blockchain?, IBM, accessed May 2023.

79. IBM, What is IoT with blockchain?, accessed May 2023.

80. Forbes, Blockchain Promised Democratization of Finance – Collaborating with Microfinance Can Make This A Reality, accessed May 2023.

4.3.3.3 Aggregating and connecting data sets

Sustainability data can be selectively reported by firms, leading to potential data gaps. FIs and data providers often use proxy data to fill in these data gaps, which involves subjective judgments and variance in calculation methods, thus decreasing the accuracy and comparability of data. Concurrently, qualitative sustainability information can have large variances resulting from degrees of subjectivity present in measurement and analysis. These variances make sustainability data less comparable, leading to FIs and investors being unable to measure and compare performance among firms and sectors, and to pinpoint material risks for those sectors. In response, technology has been leveraged to map unstructured and non-standardised data to recognised standards, and make data commonly understood between systems.

Examples of emerging technologies to aggregate and connect unstructured and non-standardised datasets include:

- AI technologies can integrate similar fields of quantitative and pictorial data from different datasets, reducing noise while retaining the data's value and filling in data gaps.
- Natural Language Processing (NLP) can also be used to analyse text and extract potential predictive data indicators.

Examples of how data aggregation technology can augment job roles in FS:

FS professionals in the Risk Strategy job role can:

- Enhance risk assessment processes using aggregated data from real economy sectors to identify material sector-specific sustainability risks.

4.3.3.4 Data analytics

Due to the aforementioned data gaps and lack of standardisation, along with having large pools of sustainability data that need to be analysed, analysing and interpreting sustainability data to generate useful insights can often be a difficult and time-consuming. This process may also require significant expertise and experience in sustainability, financial services, and/or real economy sectors. To address these challenges, data analytics tools can be used to analyse sustainability data, automatically calculate metrics, and generate useful insights from large datasets, with both structured and unstructured sustainability data from multiple sources.

Examples of emerging technologies to interpret data include:

- AI technologies (e.g. optical character recognition, image recognition) to recognise patterns in pictures, numbers and other types of data. Once sustainability data is interpreted into usable text and numerical data, these can then be used by FS professionals for analysis.

Examples of how data interpretation technology can augment job roles in FS:

FS professionals in the Market and Liquidity Risk job role can:

- Conduct scenario analysis with insights generated by AI, to assess and evaluate potential risks arising from extreme sustainability-related events and their financial impact.

FS professionals in the Pricing Actuary job role can:

- Use insights to account for changing sustainability risks in insurers' actuarial pricing models (e.g. more frequent and severe weather-related events will increase premiums).

4.3.3.5 Disclosure

Preparing sustainability disclosures can be a tedious process, especially for first timers. It can require significant amounts of time and manpower for information collection, calculation of metrics, preparation of the report document, as well as internal and external assurance. In addition, FIs that operate in multiple jurisdictions may need to prepare disclosures with different formats and metrics, based on the respective requirements in each jurisdiction. All these resourcing requirements can be a major difficulty for FIs, especially smaller ones. As a result, many FIs are turning to technology and innovation to facilitate their disclosure processes.

Technologies that can facilitate disclosures include:

- Automation of disclosure processes, such as auto-population of sustainability data based on API-pulls from databases, or automatic calculation of emissions against benchmarks.
- Automated mapping of metrics across different reporting standards (e.g. ISSB Standards) and national/regional disclosure requirements (e.g. SFDR).

Examples of how disclosure technology can augment job roles in FS:

FS professionals in the Financial Accounting job role can:

- Leverage automation of processes to significantly reduce time and manpower required for sustainability disclosures, and increase the frequency of disclosures.
- Leverage automated mapping to meet disclosure requirements across different jurisdictions while minimising repeated work.

4.3.3.6 Decision-making

Sustainability-related decision-making in the FS sector can often be complex and time-sensitive, and can involve a variety of sustainability and non-sustainability factors. Technology can often be used to improve the precision and speed of decision-making, through being more comprehensive in considering input factors, reducing likelihood of human error, etc.

Examples of emerging technologies to support decision-making include:

- Fully automating simple decisions that require few inputs.
- AI can augment complex decisions by providing FS professionals with analysis and insights through data aggregation and interpretation processes. These insights, when presented to FS professionals (e.g. through a dashboard), will allow a larger variety of input factors to be taken into consideration for complex and important decisions.

Example of how decision-making technology can augment job roles in FS:

FS professionals in the Data Analysis / Data Scientist job role can:

- Leverage AI technology to convert and organise large sustainability datasets, in order to identify and investigate leads, trends, patterns, correlations, and regularities that can be turned into insights to support decision-making.

FS professionals in the Risk Analytics job role can:

- Develop sustainability risk dashboard to present risk analytics findings, in order to support senior management decision-making.



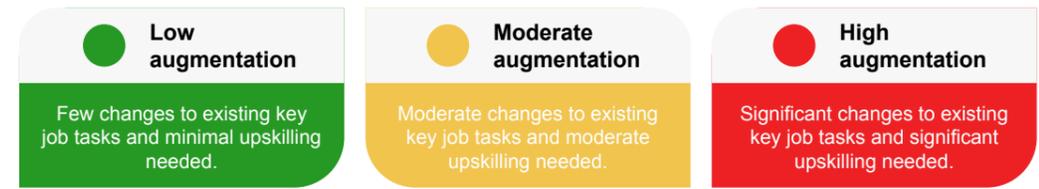
5. Impact on Job Roles

5. Impact on Job Roles

In view of the key drivers discussed in the earlier section, FIs are increasing their offerings of sustainable finance products and services to meet real economy demand, incorporating sustainability considerations across functions to meet regulations and standards, and addressing relevant technology and data requirements. These drivers are leading to activity changes across FIs' value chains, which will impact the work conducted by FS professionals⁸¹.

Job roles across the FS sector will be augmented as job tasks that focus on sustainable finance will be scoped in. For instance, regulations set out how FIs should incorporate sound sustainability risk management practices in their businesses. As a result, FS professionals from the *Risk, Compliance and Legal* career track, such as Risk Strategy, will now need to be familiar with and be able to establish sustainability risk management policies. This in turn will impact the skills needed by relevant job roles in the FS sector.

The job impact analysis assessed how the identified key drivers would affect the 218 different job roles in the scope of this report. The analysis identified that varying levels of augmentation⁸² would be needed across these job roles:



From the analysis conducted, the following key implications on FS job roles were identified:

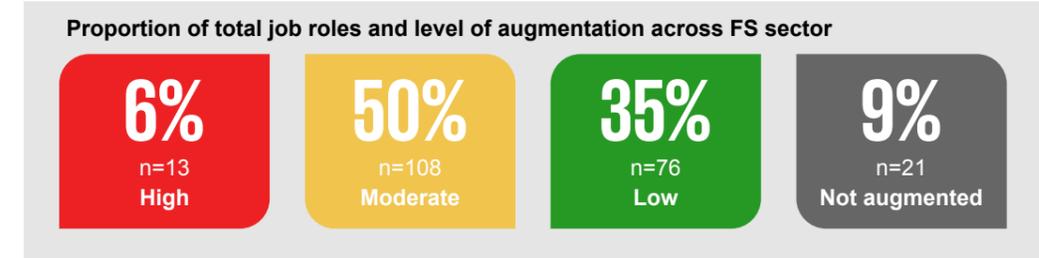


At the same time, while most job roles will experience some levels of augmentation, no job roles are expected to be made obsolete as existing job tasks still need to be performed.

5.1 Implication 1: 56% of job roles will be highly or moderately augmented, with new sustainable finance-related job tasks added

5.1.1 Augmentation of job roles across FS sub-sectors

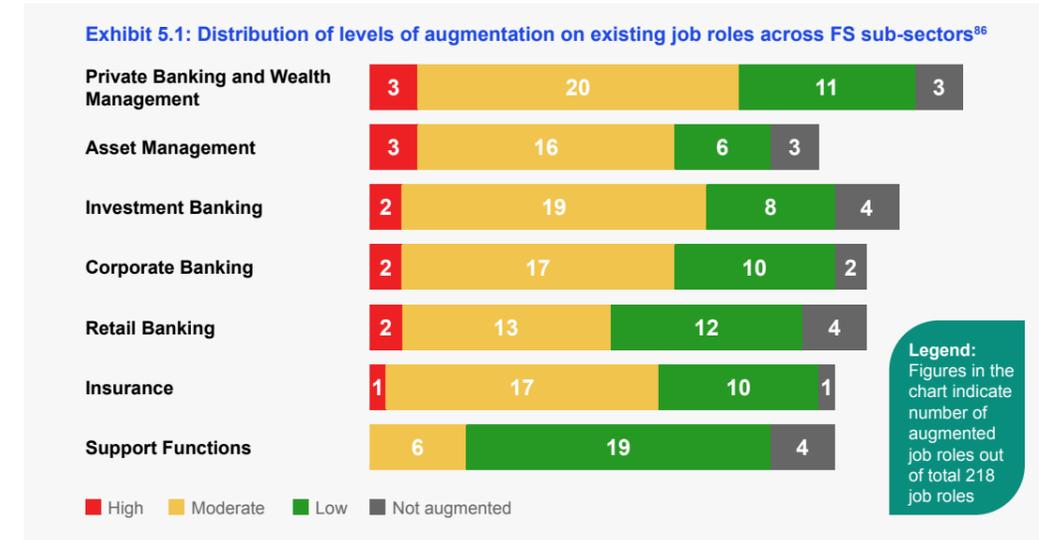
Of the 218 job roles analysed⁸³, 56% (or 121 job roles) will need to take on new sustainable finance-related job tasks as part of their critical work functions, to a moderate to high degree. More than 50,000 FS professionals⁸⁴ are currently in such job roles.



At the sub-sector level, there are varying degrees of job role augmentation (refer to Exhibit 5.1)⁸⁵, reflecting the differences in FS sub-sector value chain activities and how these are impacted by the previously identified key drivers.

For instance, the Relationship Management job role will be augmented to different extents depending on its sub-sector. In Corporate Banking and Private Banking and Wealth Management, where relationship managers serve corporate and high-net-worth clients who need personalised sustainability strategies, the job role is expected to experience a higher level of augmentation compared to the same job role in Retail Banking, where the products are expected to be less complex and relationship managers are not expected to provide technical advice to retail customers on sustainability themes.

Similarly, the Credit Risk job role in Corporate and Investment Banking will experience a higher level of augmentation than Retail Banking, and Private Banking and Wealth Management. The sustainability considerations are much larger for institutional clients, whose business strategy, activities and long-term impact of sustainability factors on the client's industry need to be included into the client's credit risk assessment. In comparison, the sustainability-related credit risk assessment for retail and private banking clients may only be relevant for specific lending products (e.g. green mortgages for retail clients) and the focus will be on maintaining existing credit risk models according to regulatory and FIs' guidelines.



81. Refer to Section 4: Key Drivers That Will Impact the Value Chain of FS Sector for identified trends.

82. Refer to Section 3: Methodology for more details on the classification of level of augmentation.

83. Refer to Section 3: Methodology for more information on job roles covered in the analysis.

84. The projection is based on employment data from the Ministry of Manpower and MAS' Manpower Survey.

85. Refer to Appendix A: Job Role Analysis for more details on impact on job roles, job tasks and SF TSCs needed.

86. Total number of job roles within each sub-sector: Retail Banking (n = 31), Private Banking and Wealth Management (n = 37), Corporate Banking (n = 31), Investment Banking (n = 33), Asset Management (n = 28), Insurance (n = 29), Support Functions (n = 29).

5.1.2 Augmentation of job roles across FS career tracks

An organisation-wide effort is needed to drive sustainability transformation, as activities in the front-, mid- and back-office will need to evolve to support this. Job roles across all career tracks will undergo varying degrees of augmentation to their job tasks and responsibilities.

The highest augmentation is expected for job roles in the *Risk, Compliance and Legal* career track, followed by *Product Solutioning and Management*, *Digital and Data Analytics* and *Sales, After Sales, Distribution and Relationship Management* career tracks (refer to Exhibit 5.2). These career tracks see a greater number of highly and moderately augmented job roles, due to a higher degree of job task augmentation within these job roles.

This reflects the nature of job task impact that KPMG has observed, arising from sustainable finance. FS professionals in the *Risk, Compliance and Legal* and *Digital and Data Analytics* career tracks in particular face significant changes to their job tasks as they assess sustainability information, data and risks which are new and need interpretation, such as those arising from regulations and standards. For instance, the Compliance Advisory job role holder will need to understand the guidelines for sustainability risk management and sustainability reporting to facilitate compliance controls and remediation activities within the FI.

In comparison, job roles in *Operations*, *Support Functions* as well as *Trading and Execution* face augmentation to a lesser degree. Within *Operations*, many FS professionals job roles are expected to perform limited additional job tasks or face limited changes to job task complexity, with the exception of the Underwriting job role within the Insurance sub-sector.

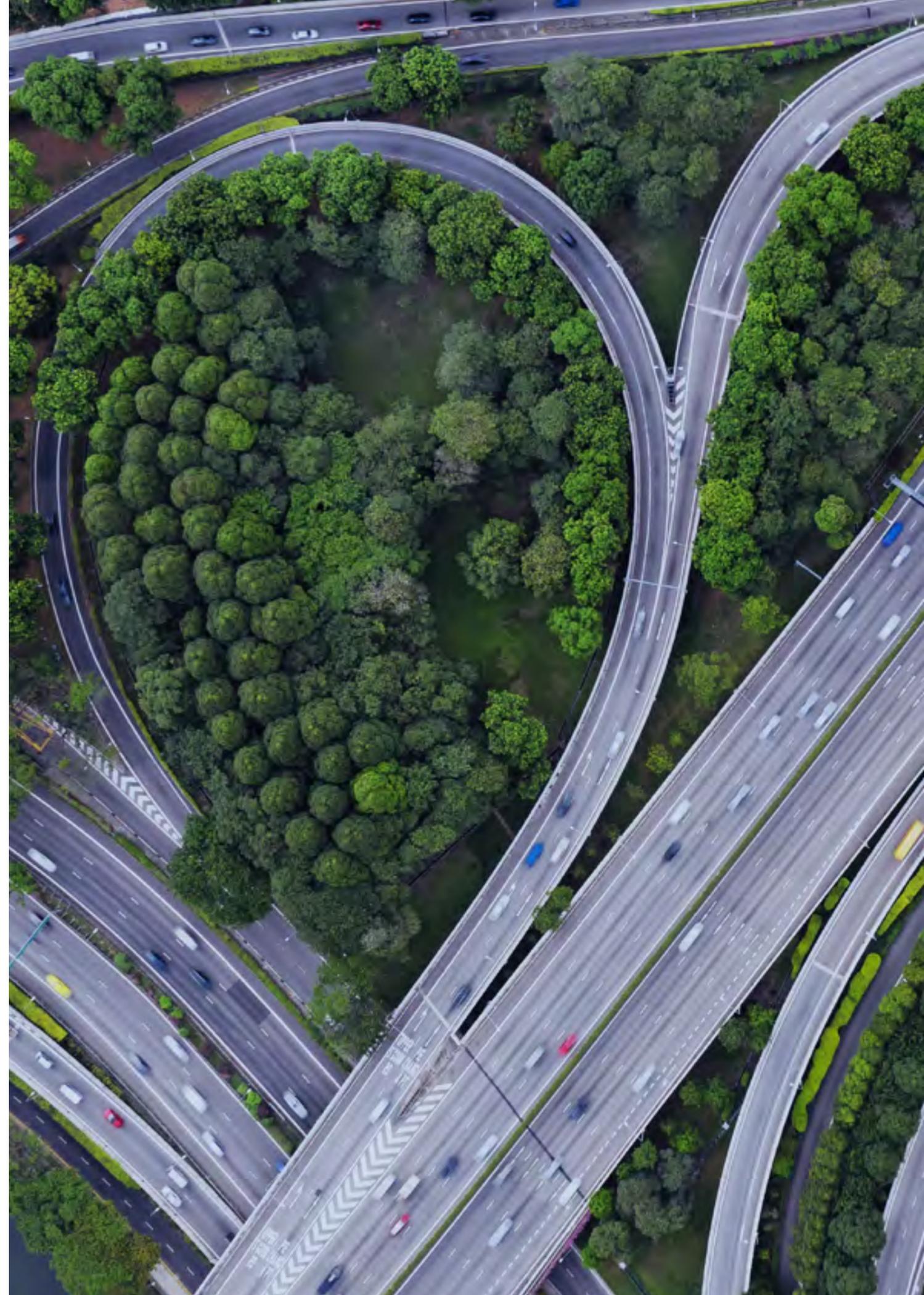
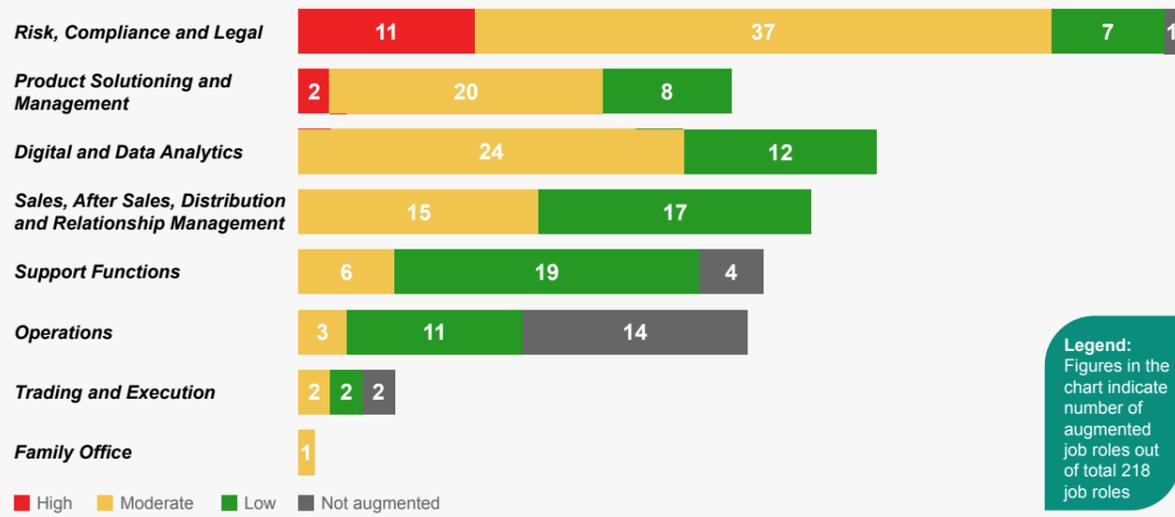


Exhibit 5.2: Distribution of levels of augmentation on existing job roles across FS career tracks⁸⁷



⁸⁷ Total number of job roles within each career track: *Risk, Compliance and Legal* (n = 56), *Product Solutioning and Management* (n = 30), *Digital and Data Analytics* (n = 36), *Sales, After Sales, Distribution and Relationship Management* (n = 32), *Support Functions* (n = 29), *Operations* (n = 28), *Trading and Execution* (n = 6), *Family Office* (n = 1).

“There is a need for in-depth knowledge of sustainability risks to integrate them into existing models or build specialised models for sustainability risks.”

Corporate and Investment Banking Industry Participant

“The job scope of Risk Strategy will include setting up frameworks for mitigating sustainability risks.”

Insurance Industry Participant

5.1.2.1 Risk, Compliance, and Legal

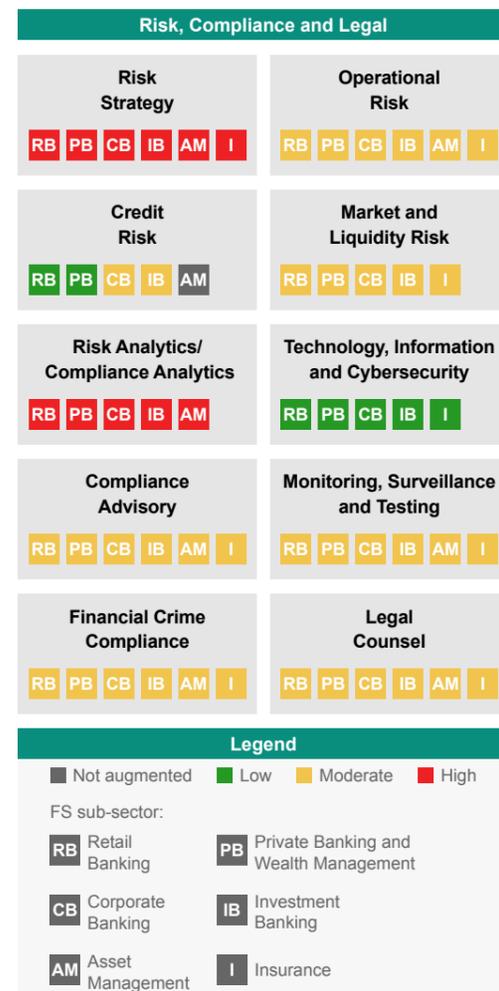
There are 56 job roles in the *Risk, Compliance and Legal* career track, and most are expected to face moderate to high (moderate = 66%, high = 20%) levels of augmentation as regulations and standards represent a major driver in defining FS activities (refer to Exhibit 5.3). Importantly, FIs need to establish clear risk management frameworks and mitigate sustainability risks.

Highly augmented job roles are **Risk Strategy and Risk / Compliance Analytics** – FS professionals in these job roles have direct influence on the FI’s ongoing sustainability agenda. FS professionals in the Risk Strategy job role will need to lead the development of sustainability risk management strategies, frameworks, and policies for the FI. They also need to ensure that sustainability risks are integrated into principal risk types and ERM frameworks. On the other hand, the FS professionals in the Risk / Compliance Analytics job role will be directly involved in developing sustainability data models to monitor sustainability risks and compliance. Therefore, these FS professionals in highly augmented job roles need proficiency in highly technical sustainable finance knowledge to execute their augmented job tasks effectively.

In comparison, FS professionals in moderately augmented job roles, such as **Operational Risk and Credit Risk**, will be more focused on ensuring relevant sustainability risks are considered to mitigate greenwashing risks. FS professionals in these job roles will additionally

be tasked with executing and adhering to the FI’s established sustainability risk management framework. They also need to apply additional analysis (e.g. embed sustainability considerations into credit risk assessments) to identify and manage risks stemming from sustainability that could have material financial implications on the principal risk type. Executing these augmented job tasks may only need some technical knowledge on sustainability risks. Therefore, in contrast to highly augmented job roles, FS professionals in moderately augmented job roles will only experience some job task additions and lesser adjustments to existing business process flows.

Exhibit 5.3: Levels of augmentation for job roles in Risk, Compliance and Legal career track



“Currently, product specialist teams consist of finance and sustainability experts. The sustainability experts typically join the deal team when sustainable finance products are involved in the deal structure. However, as sustainability becomes intrinsically weaved into all product lines, the expectation is that FS professionals will be proficient in both finance and sustainability matters as the sustainability rollout matures.”

Investment Banking Industry Participant

5.1.2.2 Product Solutioning and Management

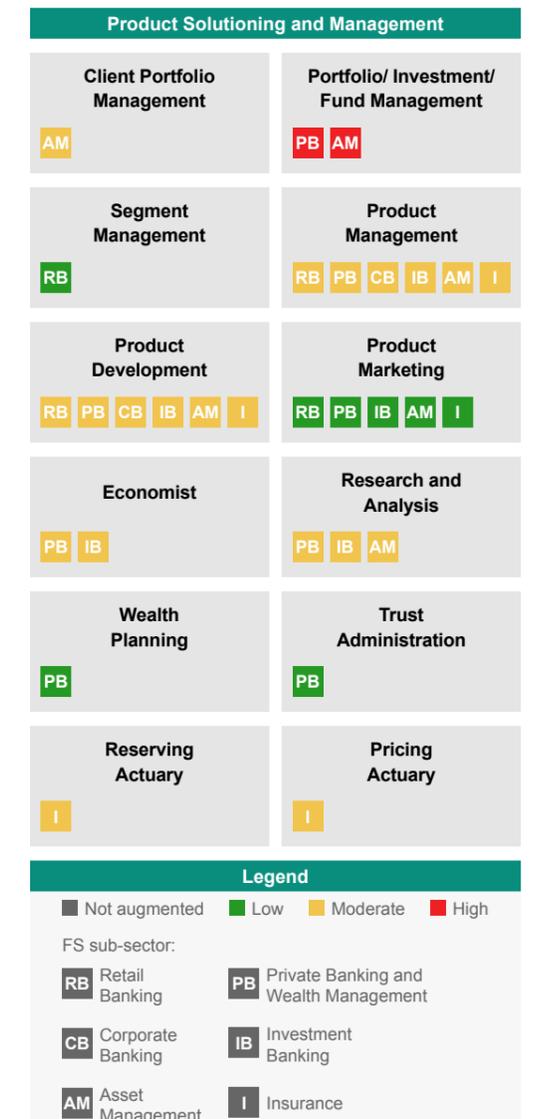
There are 30 job roles in the *Product Solutioning and Management* career track. Most job roles will be moderately augmented (67%) as FS professionals need to adequately develop product solutions and seize market opportunities (refer to Exhibit 5.4).

There is one job role that has been identified to be highly augmented, specifically the **Portfolio / Investment / Fund Management** job role. FS professionals in this job role will be responsible for defining material sustainability targets, metrics and outcomes for sustainability-related investment portfolios and incorporating them into investment decision-making processes. Consequently, they will have a direct impact on investment portfolio’s strategies, ensuring that the business outcomes of investment targets contribute sufficiently to the fund’s investment objectives and sustainability agenda. Hence, job tasks will also be expanded which will cause significant changes in existing business process flows. To perform these augmented job tasks effectively, FS professionals in this job role not only needs knowledge of thematic sustainability topics (e.g. climate change, carbon markets, non-financial industry sustainability-related developments), but also in-depth technical expertise in sustainable investment management.

Some examples of moderately augmented job roles are **Product Development, Product Management, and Research and Analysis**. More specifically, FS professionals in these job roles will generally be responsible for developing sustainable finance products that cater to clients’

evolving sustainable financing needs, such as sustainability-linked lending instruments, sustainable investing and sustainable insurance and re-insurance solutions. At the same time, they need to ensure that both new products and existing products are in compliance with internal product frameworks for financing of green and transition activities, regulators’ taxonomies, and performance standards. Therefore, where relevant, these FS professionals will need to conduct additional analysis, evaluation of policies and application of appropriate frameworks. Executing these job tasks may only need some technical knowledge related to sustainable finance and adjustments to existing job tasks as these FS professionals will only need to layer on an additional sustainable finance aspect to their routine job tasks.

Exhibit 5.4: Levels of augmentation for job roles in Product Solutioning and Management career track



“FS professionals in the Data Analysis / Data Scientist job role need a functional understanding of sustainability to interpret the data effectively in the sustainability context.”

Retail Banking and Private Banking and Wealth Management Industry Participant

“As the Customer Experience / User Experience job role’s responsibility is mostly implementation-focused rather than developing and defining strategies, the sustainable finance knowledge needed is low.”

Insurance Industry Participant

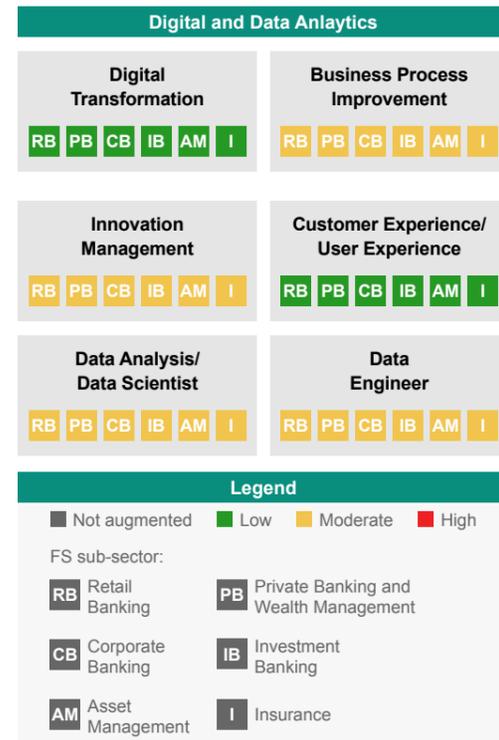
5.1.2.3 Digital and Data Analytics

There are 36 job roles in the **Digital and Data Analytics** career track. The majority are expected to be moderately augmented (67%) (refer to Exhibit 5.5). Some examples of moderately augmented job roles are Data Analysis / Data Scientist and Data Engineer. FS professionals in these job roles will need to develop data models which can enable stakeholders to overcome challenges in gathering, aggregating, and interpreting sustainability data. Moreover, they will need to keep abreast of changes to regulations and standards regarding sustainability reporting, risk management and regulatory compliance in order to update software and hardware configurations (e.g. codes, scripts) to support the work of business units. Therefore, they will have expanded job tasks and need some technical sustainable finance knowledge to incorporate data requirements effectively.

There are 12 job roles (33%) which will see low augmentation, such as Customer Experience / User Experience and Digital Transformation. FS professionals in these job roles perform more of a support job role in the FI’s sustainability transformation journey, such as through the enhancement of usability

of digital interfaces and designing interactive dashboards and data visualisation tools to help clients understand the environmental and social impact of their investments. These job tasks do not differ significantly from existing job tasks and a broad-based sustainable finance awareness will be sufficient. Hence, only minor changes are expected for FS professionals in these job roles.

Exhibit 5.5: Levels of augmentation for job roles in Digital and Data Analytics career track



“Large companies have a significant impact on a bank’s sustainability agenda, hence relationship managers of MNCs will need a more sophisticated level of understanding of sustainability.”

Corporate and Investment Banking Industry Participant

5.1.2.4 Sales, After Sales, Distribution, and Relationship Management

There are 32 job roles in the **Sales, After Sales, Distribution and Relationship Management** career track, all of which will see low to moderate augmentation (low = 53%, moderate = 47%) (refer to Exhibit 5.6). Those which are moderately augmented include client-facing job roles, such as Relationship Management, Investment Counselling and Product Sales. FS professionals in these job roles will be responsible for providing advice on financing options according to clients’ sustainability preferences. They need to be well-versed in FIs’ product offerings as well as sector-specific sustainability-related developments such as transition plans. Therefore, while FS professionals in these job roles may additionally be tasked to keep updated with sustainable finance products and relevant sustainability considerations for their clients, the core job tasks and processes of client advisory are unlikely to change significantly. Possessing foundational to intermediate proficiency levels of sustainable finance knowledge will adequately enable these FS professionals to effectively engage with clients.

Job roles with low levels of augmentation include **Customer Service and Claims Liaison**. FS professionals in these job roles are primarily focused on supporting client queries and escalating queries to relevant internal stakeholders, which can be done with more general and foundational sustainable finance knowledge.

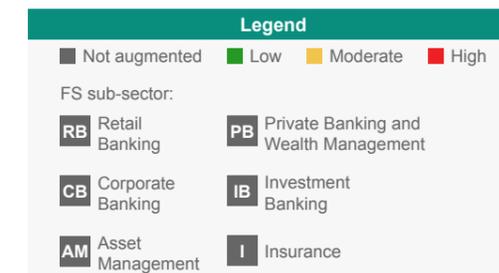
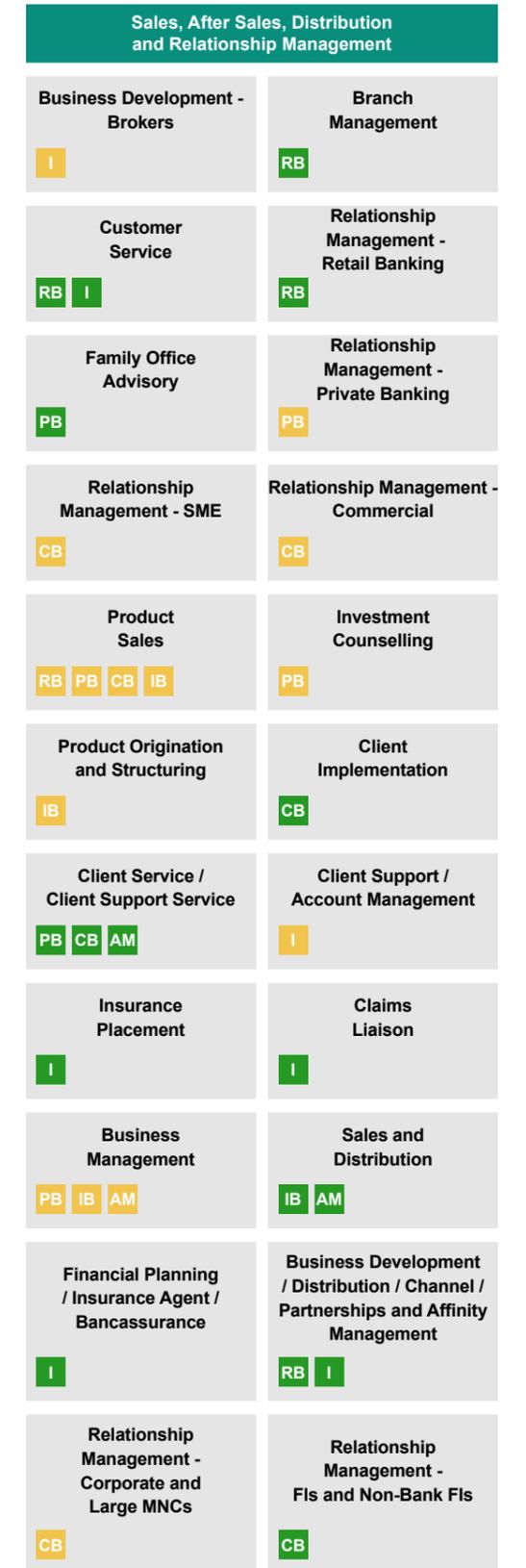


Exhibit 5.6: Levels of augmentation for job roles in Sales, After Sales, Distribution, and Relationship Management career track



“Many job roles in FIs will be affected by sustainability trends, including job roles in Human Resources. For example, FS professionals in the Learning and Organisation Development job role will need to figure out a training plan as everyone in the firm will need some form of awareness and FS professionals in certain job roles will need specific training.”

Human Resources Industry Participant

5.1.2.5 Support Functions

There are 29 job roles in the *Support Functions* career track which are expected to experience minimal augmentation, with most job roles experiencing low (65%) augmentation, and only some experiencing moderate (21%) augmentation (refer to Exhibit 5.7). Moderately augmented job roles are generally those in the Accountancy function, such as Financial Accounting and Reporting, Internal Audit, Mergers and Acquisitions and Treasury. FS professionals in these job roles focus on sustainability reporting and ensuring that sustainability accounting standards, mergers and acquisitions, and treasury management are aligned to the FI's overall sustainability strategy. Hence, their job tasks will be expanded to include appropriate analysis and reporting, requiring technical sustainable finance knowledge.

Other job roles will experience low levels of augmentation, with some Infocomm and Technology job roles (e.g. Applications Support, Database Support, Infrastructure Support) needing to manage new platforms for sustainability, as well as HR job roles (e.g. Talent Attraction, Learning and Organisation Development) needing to support the business with sourcing, developing and retaining sustainable finance talent. Limited understanding of sustainable finance will suffice for these job tasks and hence limited changes to these job roles are expected.

Legend			
■ Not augmented	■ Low	■ Moderate	■ High
*Job roles in Support Functions are not distinguished by FS sub-sectors			

Exhibit 5.7: Levels of augmentation for job roles in Support Functions career track



“Job roles from the Operations career track will only experience low to moderate augmentation as these job roles are focused on execution of frameworks and policies instead of defining and interpreting them.”

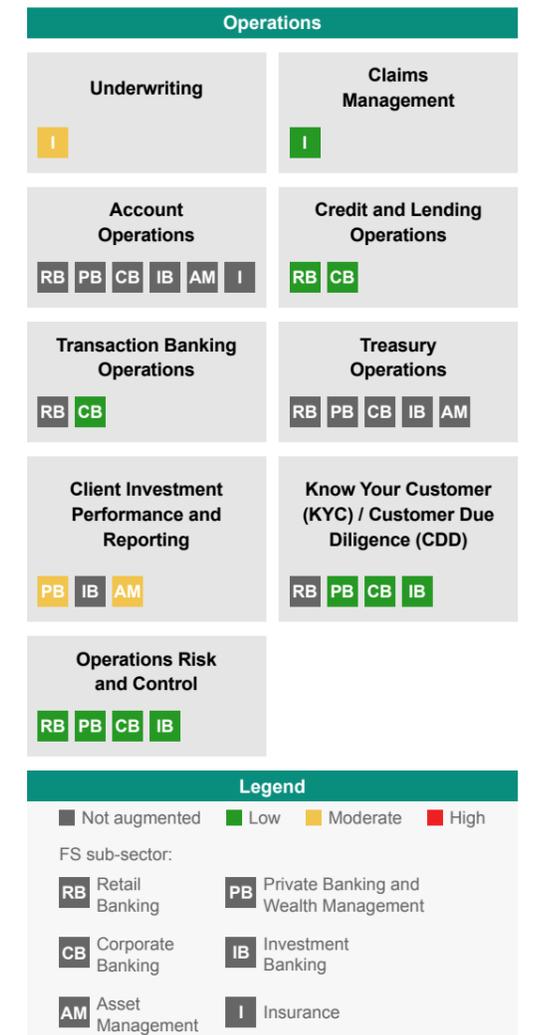
Retail Banking and Private Banking and Wealth Management Industry Participant

5.1.2.6 Operations

There are 28 job roles in the *Operations* career track. These job roles are expected to experience limited changes as only some job roles are expected to experience low (39%) to moderate (11%) augmentation, with most job roles not being augmented (50%) (refer to Exhibit 5.8). The moderately augmented job roles includes Client Investment Performance and Reporting. FS professionals in this job role are involved in incorporating sustainability outcomes (e.g. sustainability ratings, carbon footprint) of investment funds and portfolios managed by the firm when developing investment reports, annual reports and fund prospectuses. Additionally, the Underwriting job role will also be moderately augmented. FS professionals in this job role will be responsible for assessing sustainability risks underlying the assets they are underwriting, as well as conducting sustainability risk screening for clients in high-risk sectors.

FS professionals in job roles that will experience a low degree of augmentation, such as Credit and Lending Operations and KYC / CDD, will only need to adapt their work processes to incorporate sustainability requirements which are defined by others in the *Risk, Compliance and Legal* and *Product Solutioning and Management* career tracks.

Exhibit 5.8: Levels of augmentation for job roles in Operations career track



“In future, almost all analysts across the FI will need to integrate sustainability considerations into their job role regardless of whether they are doing investment related job tasks or trading related job tasks.”

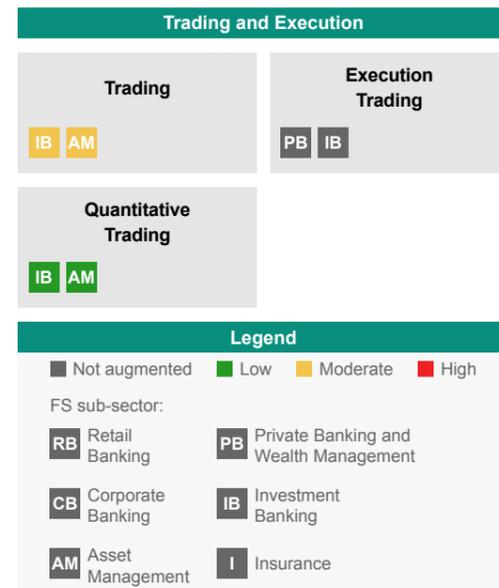
Global Bank Industry Participant

5.1.2.7 Trading and Execution

There are six job roles in the *Trading and Execution* career track and the majority are expected to experience low to moderate (low = 33%, moderate = 34%) levels of augmentation, with the remaining job roles not augmented (33%) (refer to Exhibit 5.9). Job roles that will be moderately augmented include the Trading job role as the responsibilities will be expanded to lead research on carbon markets and develop trading strategies that are in compliance with emerging carbon trading regulations. They may also need to learn more about new exchanges and platforms where carbon trading can be performed.

On the other hand, FS professionals in low augmentation job roles include **Quantitative Trading**, who will need to consider an additional factor on sustainability, amongst other existing quantitative factors, when developing trading strategies and models for trading of sustainability-related financial instruments. These job tasks are similar to the job role’s existing responsibilities, thus fewer changes are anticipated.

Exhibit 5.9: Levels of augmentation for job roles in Trading and Execution career track



“There is plenty of mainstream interest in sustainability-related investing observed. Philanthropic capital, coming from family offices, high net worth individuals and multilateral development banks, are areas which can be focused on in the upcoming years.”

Global Bank Industry Participant

5.1.2.8 Family Office

There is one job role in the *Family Office* career track. The job role is **Family Office Management** and will experience a moderate level of augmentation (100%) (refer to Exhibit 5.10). FS professionals in this job role are expected to understand clients' sustainability preferences in order to advise investment strategies for the assets being managed. They may also need to consider philanthropic investment trends that are related to sustainability factors (e.g. human longevity, education), and applicable philanthropy tax incentive schemes. Additionally, there is also a need to identify relevant impact measurements and metrics to analyse and report performance of sustainability-related assets and investments. Therefore, job tasks will be expanded to include sustainability analysis and some changes to workflow will be expected. FS professionals in this job role may also need some technical knowledge on sustainable finance to effectively perform augmented job tasks.

Exhibit 5.10: Levels of augmentation for job roles in Family Office career track



5.1.3 Net new jobs will be created to support sustainability-related activities

Overall, we estimate that, approximately 4,000 to 5,000 net jobs will be created to support sustainability-related activities in Singapore over the next ten years. This is about 10% of the average net jobs growth in the financial sector over the past 10 years.

The estimations were developed by projecting the additional FTEs needed arising from the three key drivers of sustainable finance⁸⁸ - increased demand for sustainable finance products and services (using basic regressions on historical data), increased number of job tasks and added complexity of the job tasks performed by each job role holder (using bottom-up role-by-role analysis), and ongoing automation in the FS sector that could increase productivity (using data from a third-party tool)⁸⁹. Part of the increase in job numbers will come from new job roles being created⁹⁰. KPMG has projected the FTE increase of highly augmented job roles within each sub-sector⁹¹.



88. Refer to Section 4: Key Drivers That Will Impact the Value Chain of FS Sector.

89. Refer to Section 3: Methodology.

90. Refer to Section 5.4 for more details on emerging job roles.

91. Refer to Appendix A: Job Role Analysis for more details on the projected increase in FTE.

5.2 Implication 2: Most FS professionals will need to perform their augmented job roles within the next three years

Insights gathered from industry consultations, along with analysis of key drivers, suggest that due to the growing demand for sustainable finance products and services in upcoming years, coupled with the existing skills gap in sustainable finance, FS professionals across most job roles should be upskilled within one year (26%) to three years (58%) (refer to Exhibit 5.11). These include FS professionals who are engaged in establishing the foundational aspects of sustainable finance or meeting immediate client demands, regulatory, and business needs. These FS professionals are deeply involved in the following job tasks:

- Driving the sustainability strategy for FIs
- Defining sustainability risk management strategies, frameworks and policies
- Creating sustainable finance products to capture demand
- Building relationships and advising clients on sustainable finance products
- Identifying appropriate technological tools for gathering, aggregating and interpreting sustainability data and metrics
- Operationalising sustainability initiatives
- Developing sustainability reports

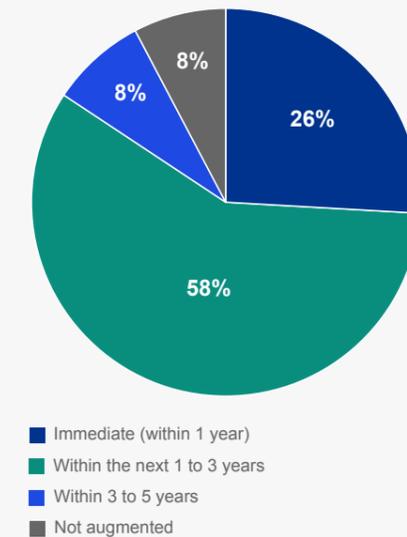
Timely upskilling of FS professionals in these job roles is not only critical in driving FIs' sustainability transformation, but also in strengthening Singapore's competitiveness in serving the growing sustainable finance market in ASEAN, as well as the broader Asia and global markets.

A smaller proportion of FS professionals (8%) will have a longer runway of within three to five years to be upskilled. Examples of these job roles include Partnerships and Affinity Management and Market and Liquidity Risk. Unlike FS professionals in job roles requiring upskilling within the next three years, these FS professionals are primarily focused on job tasks such as:

- Developing marketing plans and placement strategies around sustainable finance products
- Incorporating impact of sustainability on the FS sector into models and analyses that are not integral to immediate client, regulatory and business needs

Thus, FS professionals in these job roles can expect augmentation to take place over a longer timeframe as some of their job tasks hinge on the foundational work of sustainable finance and will take some time to be more firmly established. In addition, some of these job tasks may also be viewed as an additional service or a good-to-have, rather than addressing an immediate need (e.g. client demands, regulatory, and business needs).

Exhibit 5.11: Timeframe of impact on job roles⁹²



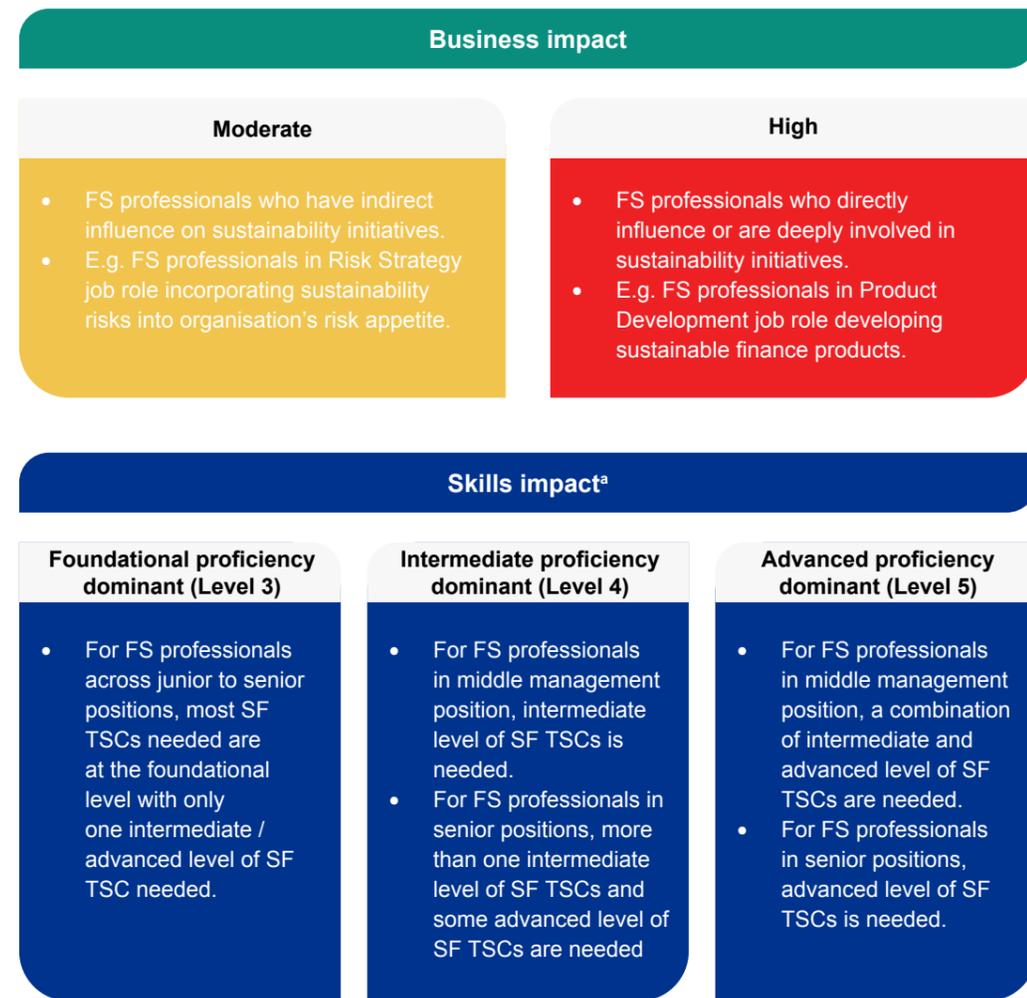
92. Refer to Appendix A: Job Role Analysis for more details on the timeframe of impact to each job role.

5.3 Implication 3: FS professionals in 20 unique job roles will need to be prioritised for upskilling, given the large extent to which these job roles drive sustainability outcomes and need new skills

The majority of FS professionals within FIs are expected to be upskilled within the next three years to effectively capture the demand for sustainable finance. To prioritise interventions, two factors were considered (refer to Exhibit 5.12):

- **Business impact:** Refers to level of influence that FS professionals in each job role exerts on the FI's sustainability initiatives.
- **Skills impact:** Refers to the SF TSCs proficiency levels needed by FS professionals in each job role. The greater the skills impact, the deeper the knowledge and SF TSCs that are needed for the FS professional to perform the augmented job tasks that are relevant to the job role.

Exhibit 5.12: Job role prioritisation matrix



a Foundational, intermediate and advanced proficiency levels are defined according to Level 3 to Level 5 of the TSCs levels in the Skills Framework for Financial Services.

The analysis revealed that FS professionals in 20 unique job roles⁹³ are of high priority for interventions as they exert high business impact and need intermediate to advanced proficiency levels of SF TSCs⁹⁴ to perform their job tasks effectively (refer to Exhibit 5.13).

These FS professionals either have direct influence or are deeply involved in sustainability initiatives of FIs. In addition, the middle to senior positions in these job roles also need greater upskilling in SF TSCs, at intermediate to advanced proficiency levels. For instance, as elaborated in Section 5.1.2.2, the Product Development job role holder is responsible for developing sustainable finance products that cater to clients' evolving sustainable financing needs. The Product Development Manager needs seven SF TSCs, with four SF TSCs at the intermediate level.

Exhibit 5.13: High-priority unique job roles across all FS sub-sectors⁹⁵



- a Risk Strategy and Sustainability Risk are considered as one unique job role in this prioritisation as the considerations for sustainability risks may be taken up by the Risk Strategy job role as they directly influence FIs' risk strategy, share similar responsibilities (develop risk management strategies, identify and implement controls for risks, implement risk strategies, and monitor risk exposures) and similar SF TSCs needs; FIs may choose to create Sustainability Risk as a dedicated and specialised job role focusing solely on sustainability risks.
- b Relationship Management is considered as a single function and treated as one unique job role for this prioritisation.

93. High-priority unique job roles are not distinguished by sub-sectors. Refer to Section 7: Impact on Financial Services Sub-sectors for list of high-priority job roles in each sub-sector. With sub-sector differentiation, there will be 57 high-priority job roles based on existing Skills Framework for Financial Services. Emerging job roles (Sustainability Strategy and Sustainability Risk) are included in this prioritisation as these job roles have been identified within FIs.

94. In FIs where the Credit Risk job role holder is needed to analyse clients' decarbonisation strategies and transition risks, intermediate proficiency of additional SF TSCs may be needed and would make the job role high priority for interventions.

95. Refer to Appendix A: Job Role Analysis for more details on impact on job roles, job tasks and SF TSCs needed.

5.4 Implication 4: New job roles will emerge, in areas such as Sustainability Risk and Sustainability Strategy

As FIs embed sustainability-related activities into existing job roles and career tracks, there may be situations where FIs see value in creating new job roles. This could be due to various reasons, such as regulations that mandate the integration of sustainability or where there is a large skills gap within the FI's existing workforce that renders upskilling unfeasible.

To identify and anticipate new job roles needed by the integration of sustainability within the FS sector, both top-down and bottom-up approaches were used.

- **Top-down approach:** Inputs from a market intelligence platform which contains global labour market data and proprietary client workforce data on emerging job roles were analysed. The platform provides insights into new job roles that are evolving and becoming essential in response to sustainable financing demands and emerging trends across markets.
- **Bottom-up approach:** Activities which had been laid out in the value chain analysis but whose task steps were not adequately addressed by existing job roles were identified. This would suggest gaps in current job roles that do not cover essential sustainability-related activities.

Findings from both approaches were aggregated, determining that Sustainability Risk and Sustainability Strategy are emerging job roles.

5.4.1 Sustainability Risk

A dedicated Sustainability Risk job role can be created as FS professionals in this job role will need deep technical knowledge on how to assess sustainability risk and long-term financial performance. While the Risk Strategy job role currently exists across FS sectors, FIs may choose to create this dedicated and specialised Sustainability Risk job role which focuses solely on sustainability risks, given the complex interlinkages between sustainability risks and financial performance. FS professionals in the Sustainability Risk job role will need to work with those in Risk Strategy, who are responsible for coordinating the management of enterprise-wide risks through collaboration across the FI's risk disciplines. This ensures that sustainability risks are adequately incorporated into ERM framework.

The Sustainability Risk job role is needed across all FS sub-sectors immediately. Key job tasks of FS professionals in this job role include:

- Defining sustainability risk management strategies, frameworks and policies
- Setting the acceptable risk tolerance and risk appetite levels around sustainability risks
- Overseeing the monitoring and management of sustainability risk exposure
- Identifying key risk indicators and material sustainability risks
- Setting, implementing, and monitoring risk and control indicators

5.4.2 Sustainability Strategy

Sustainability Strategy is a key emerging job role that is central to defining the sustainability strategy in FIs over the next three to five years. Having a dedicated and specialised central position to shape sustainability strategies, drive financial outcomes, and operationalise / develop capability to deliver on enterprise-level sustainability strategy, could help FIs ensure greater coordination in achieving its sustainability agenda. They can take the lead in shaping the FI's sustainability strategies and defining the steps and sustainability transformation roadmap for the FI, which will then guide further plans and considerations at the client, product and transactional level.

Industry consultations with CSOs indicated that staffing central positions with real economy sector professionals with deeper sustainability expertise has proven advantageous, even for smaller FIs. They would be able to better lead and support other business units by imparting sustainability-related knowledge and ensuring that sustainability is integrated into every part of FIs' activities and decision-making processes.

Four key areas of responsibilities of the Sustainability Strategy job role were identified, covering strategy setting, business and product management, sustainability integration and thematic expertise and advisory.

Depending on the FI's business strategy and sustainability maturity, these responsibilities of the Sustainability Strategy job role could be performed by separate FS professionals in one job role or be further carved out to a few job roles that sit within a centralised sustainability team structure. For example, Sustainability Insights could be a job role undertaken by an external hire who is an expert from the real economy sector. Additionally, a few key variations of the job role's focus and team compositions are expected to arise as various FIs, with different models and business strategies, progress through their sustainability transformation journey⁹⁶.

1. Sustainability Policy Key job tasks include:

- Formulate the FI's sustainability strategy and framework
- Proactively drive external stakeholder engagement, stewardship and market awareness
- Develop internal sustainability initiatives
- Develop FI's organisation's sustainable finance capabilities

2. Sustainable Finance / Products Key job tasks include:

- Lead the sustainable finance/ products business
- Support business development activities
- Support development of sustainable finance products
- Build and maintain business partnerships with key ecosystem stakeholders

3. Sustainability Integration Key job tasks include:

- Manage integration of sustainability regulations and provide internal advisory services
- Lead the exploration, testing and implementation of sustainability-related technologies and tools
- Encourage collaboration across functions and business units

4. Sustainability Insights Key job tasks include:

- Provide subject matter expertise on key thematic topics in relevant real economy sectors (e.g. job roles may include transportation expert with decarbonisation technology and renewable technology expertise)
- Identify viable technology and green innovation (e.g. renewable technology)
- Support sales, product and risk teams during client conversations and expand FI's sustainable finance business opportunities
- Lead Sustainability Centre of Excellence, including exploration, testing and implementation of sustainability-related technologies and tools



96. Refer to Appendix B: Variations of Sustainability Strategy.

5.4.3 Specialist versions of existing job roles

KPMG's analysis and industry consultations revealed that FS professionals in most job roles will assume additional job tasks stemming from sustainable finance-related activities. Only two emerging job roles which need extensive knowledge of sustainable finance were identified. FS professionals in these job roles offer strategic guidance on FIs' sustainability transformation as well as sustainability risk management practices.

Some FIs may find it more beneficial to have specialised job roles for various reasons, such as:

1st

Applicability of changes across the job family – The effects of sustainable finance may not affect job tasks for all FS professionals in a job role, requiring only a subset to undergo upskilling.

2nd

Skill gaps – For job roles with larger skills gaps, it may be more efficient to concentrate on upskilling specific FS professionals rather than requiring everyone across the entire job role to undergo training. FIs may choose to have a specialist to spearhead the work at the start, and to upskill others in the team over time.

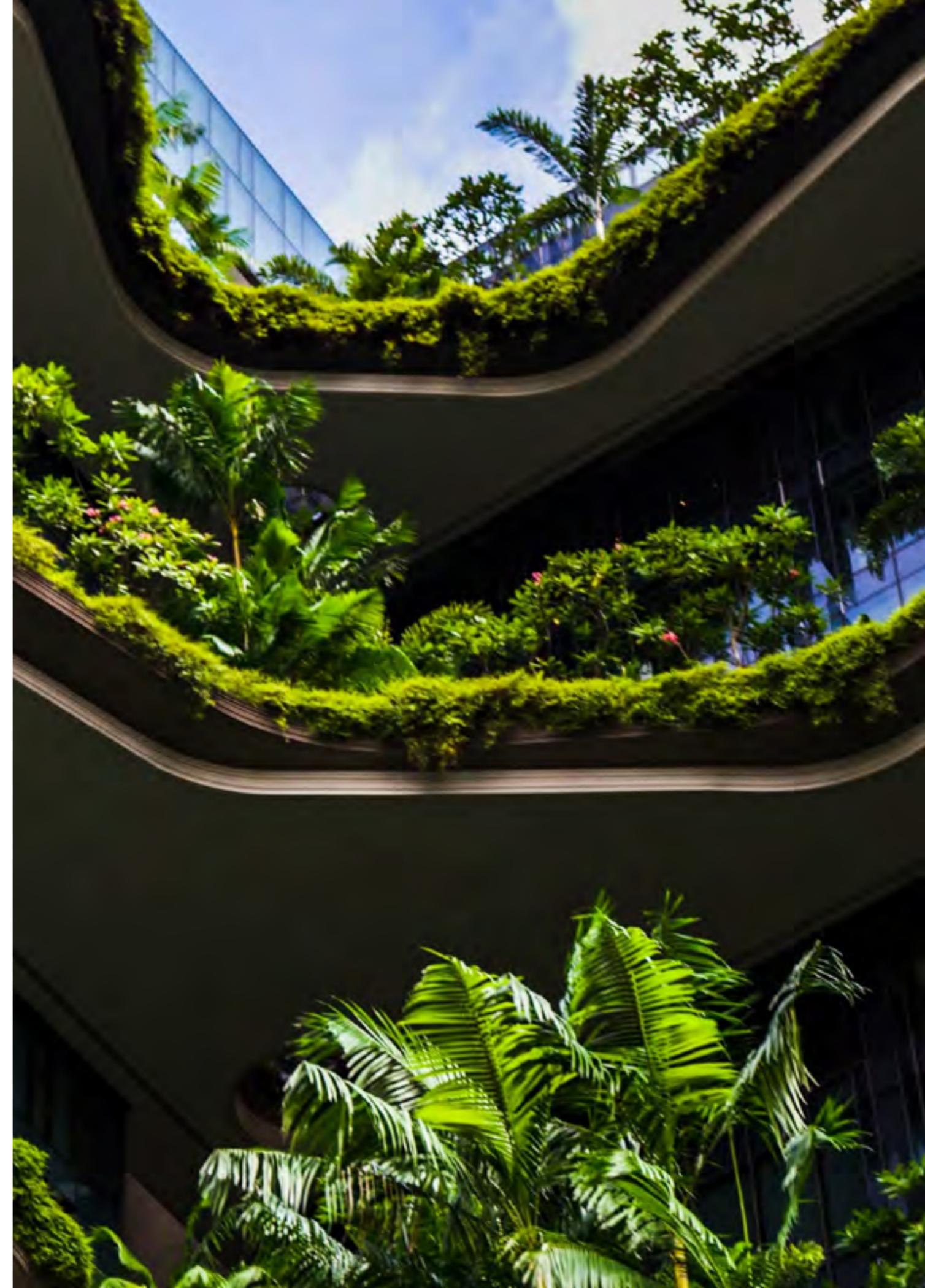
3rd

Business strategy, model and risk appetite – FIs may incorporate sustainability into their business strategy and invest in developing or hiring specialist job roles to support the FI in reaching its sustainability agenda.

4th

Pace of evolution of certain sustainability topics – FIs may prefer to have specialists who can stay current with rapid developments in new technology, sustainability themes and regulations, so as to enable the firm to stay ahead of the competition. There may also be instances where FIs prefer to assign responsibility and ownership to individual specialists, such as those in Legal Counsel and Product Development job roles.

Notwithstanding the above, different FIs have different organisation structures and deviations in job roles and responsibilities are expected.



6. Impact on skills



6.1 Impact on skills

FS professionals will have to acquire new sustainable finance knowledge and skillsets that are needed arising from the augmentation of their job roles to perform their job tasks effectively. The skills analysis identified the most applicable SF TSCs needed across FS professionals and also highlighted sub-sector applicability of TSCs where relevant.

IBF and MAS set out 12 SF TSCs⁹⁷ within the Skills Framework for Financial Services in 2022 to support FIs and FS professionals in building sustainable finance capabilities. These SF TSCs cover a range of thematic and functional knowledge topics needed by FS professionals to perform job tasks related to sustainable finance.

Each SF TSC addresses different topics on sustainable finance that vary in complexity and breadth. The functional TSCs cover sustainable finance applications for the major functions in the FS sector while the thematic TSCs address more cross-cutting themes and topics such as climate change and natural capital.

6.2 Timeline for SF TSCs needed

Insights gathered from industry consultations and research suggested that 11 out of the 12 SF TSCs will be relevant across most FS job roles within the next three years. This urgency is driven by increasing climate and sustainability-related policies, standards and regulations, and investor and stakeholder demands. Without acquiring these skills (outlined in the SF TSCs, such as Sustainable Investment Management and Climate Change Management), FS professionals will find it challenging to perform the new and more complex sustainable finance-related job tasks in their augmented job roles. This includes keeping abreast of evolving sustainability-related investor preferences to remain competitive on product offerings, or understanding sustainability regulations and adopting best practices on standards to reduce possible non-compliance, legal liabilities or reputational risks.

FS professionals have a slightly longer runway to acquire knowledge outlined in the remaining Natural Capital Management TSC. While FIs globally have embarked on understanding their risk exposures to natural capital, disclosures and financing solutions, the extent of integrating natural capital into business and risk considerations varies significantly across the FS sector and has not reached the scale seen in climate change. That said, there is growing

momentum and recognition internationally and in the FS sector on the importance of natural capital, including its significant interlinkages to climate change. KPMG expects this SF TSC to become more mainstream across FS professionals in multiple job roles within the next three to five years, in tandem with related regulations and standards becoming more prevalent.

Additionally, insights from industry consultations conducted by KPMG highlight that FS professionals in several job roles will also need to acquire knowledge in social issues over time. For instance, FS professionals in the KYC / CDD job role may have to incorporate social considerations, such as human and labour rights, in their customer screening processes to safeguard against potential reputational risks should the client be found to have violations in such areas. FS professionals in the Risk Strategy job role may also be expected to incorporate similar social considerations in the management of enterprise-wide risks, including establishing risk criteria, developing risk reporting mechanisms and proposing relevant controls to address this new risk area.

6.3 Sub-sector agnostic SF TSCs

The skills analysis revealed that eight out of 12 SF TSCs are relevant across all FS sub-sectors:

Functional SF TSCs

1. Sustainability Risk Management
2. Impact Indicators, Measurement and Reporting
3. Sustainability Reporting
4. Non-Financial Industry Sustainability Developments

Thematic SF TSCs

5. Taxonomy Application
6. Climate Change Management
7. Carbon Markets and Decarbonisation Strategies Management
8. Natural Capital Management

Of these SF TSCs, the top four SF TSCs that will be relevant to the highest number of augmented job roles within the next three years were identified. These SF TSCs are prioritised based on the count of unique job roles for which the SF TSC is relevant.

The top four SF TSCs are:

1. Sustainability Risk Management
2. Taxonomy Application
3. Climate Change Management
4. Impact Indicators, Measurement and Reporting



6.3.1 Sustainability Risk Management

Globally, regulators have set out guidelines on environmental risk management. In 2020, the European Central Bank issued its guide on climate-related and environmental risks⁹⁸. Risk Management is also needed for sustainability reporting frameworks such as the ISSB Standards⁹⁹. It is therefore critical for FIs to build resilience against physical effects of climate change, biodiversity loss and transition risks arising from the net zero transition. However, the complex nature of sustainability risks and their associated financial impact makes them difficult to predict and quantify. FIs should therefore be prepared to respond promptly and be agile in risk management.

Within Singapore, MAS issued the Guidelines on Environmental Risk Management (ENRM) in 2020 for banks¹⁰⁰, asset managers¹⁰¹ and insurers¹⁰², with the aim to enhance the sector's resilience to and management of environmental risk through the establishment of sound risk management practices. FIs have responded by adopting governance practices and policies to oversee environmental risk.

The Sustainability Risk Management TSC is needed by FS professionals in 30 unique job roles. There are nine unique job roles under the career track of *Risk, Compliance and Legal*¹⁰³ and five unique job roles under the career track of *Product Solutioning and Management*¹⁰⁴ across all FS sub-sectors.

- Risks (e.g. physical risks, transition risks, reputational, legal and supply chain risks) impact all FS sector's principal risk types (e.g. credit risk, operational risk, market risk, liquidity risk) through macro- and micro-economic transmission channels. Hence, the TSC is needed for those in the *Risk, Compliance and Legal* career track who are involved in risk management (e.g. Risk Strategy Manager), to be able to clearly define these risks and incorporate relevant considerations into an FI's ERM framework, strategies, and policies.

- At the same time, some FS professionals in the *Product Solutioning and Management* career track (e.g. Product Analyst) will need to understand the interlinkages between sustainability risks with financial risks of products. Such knowledge will enable FS professionals who are involved in product development to effectively collaborate with relevant teams (e.g. Risk Management) in instances to develop innovative sustainable finance solutions while ensuring that product offerings account for the level of financial risks involved.

The Sustainability Risk Management TSC is also relevant to FS professionals in other job roles in career tracks such as those in *Digital and Data Analytics*, but to a lesser degree than for the career tracks involving *Sales, After Sales, Distribution and Relationship Management, Operations and Trading and Execution*. Those in *Digital and Data Analytics* will need deeper understanding of sustainability risks in order to implement effective systems and technical modelling to ensure compliance with relevant regulations and guidelines. FS professionals in *Sales, After Sales, Distribution and Relationship Management, Operations and Trading and Execution* will mainly need a foundational understanding of sustainability risks to effectively identify and articulate them to clients, as well as implement operational processes for sustainability risk management as defined in ERM framework.

6.3.1 Sustainability Risk Management

Role application example: Credit Risk

FS professionals in the Credit Risk job role under the career track of *Risk, Compliance and Legal*, in Corporate Banking Investment Banking, Private Banking and Wealth Management, and Retail Banking sub-sectors will be responsible for incorporating sustainability considerations into the assessment of credit applications and embedding sustainability considerations into credit risk policies and frameworks. An understanding of sustainability risk metrics, risk measurement and modelling techniques is needed in order to effectively assess borrowers' creditworthiness (e.g. probability of default) and monitor clients' and portfolios' sustainability risk exposure.

Additionally, the job tasks will be augmented as sustainability considerations are incorporated within processes related to credit recovery plans, workouts and structuring to effectively manage clients and portfolios with high risk exposure. Therefore, FS professionals in the job role will need the Sustainability Risk Management TSC to perform the augmented job tasks effectively.

Role application example: Relationship Management - FIs and Non-Bank FIs

In the Corporate Banking sector, FS professionals in the Relationship Management - FIs and Non-Bank FIs (NBFIs) job role, under the career track of *Sales, After Sales, Distribution and Relationship Management* will need an understanding of the risks related to sustainable finance products in order to adequately articulate them during client engagements. Examples of job tasks where this knowledge is used include embedding sustainability risks into credit review processes to understand the risks arising from sustainability regulatory requirements. As FIs and NBFIs may offer sustainable finance products (e.g. sustainable thematic funds) or require supporting financial products and services to realise intended financial outcomes (e.g. syndicated financing for large green projects), FS professionals in the job role will need to understand potential sustainability risk that their clients are exposed to.

98. European Central Bank, Guide on climate and environmental risks, 2020.

99. ISSB Standards include two inaugural standards issued by ISSB - IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and S2 Climate-related Disclosures, accessed March 2024.

100. MAS, Guidelines on Environmental Risk Management for Banks, 2020.

101. MAS, Guidelines on Environmental Risk Management for Asset Managers, 2020.

102. MAS, Guidelines on Environmental Risk Management for Insurers, 2020.

103. Compliance Advisory, Credit Risk, Financial Crime Compliance, Legal Counsel, Market and Liquidity Risk, Monitoring, Surveillance and Testing, Operational Risk, Risk / Compliance Analytics, and Risk Strategy.

104. Pricing Actuary, Product Development, Product Management, Research and Analysis, and Reserving Actuary.

6.3.2 Taxonomy Application

Taxonomies facilitate consistent understanding and application of standardised classifications of green and transition activities. This helps to enable the flow of capital to green or transition activities while mitigating the risk of greenwashing. Globally, different taxonomies have been published, including the EU and ASEAN taxonomies.

Singapore launched the Singapore-Asia Taxonomy at the end of 2023, which details the thresholds and criteria for defining green and transition activities that contribute to climate change mitigation. As FIs increasingly need to integrate knowledge and application of taxonomies, these global taxonomy developments underscore the importance of having a common framework to ensure that sustainable finance achieves its intended outcomes.

Based on KPMG's analysis, the Taxonomy Application TSC is relevant to all sub-sectors and 20 unique job roles across all career tracks¹⁰⁵.

- Being equipped with the Taxonomy Application TSC will enable relevant FS professionals in *Product Solutioning and Management* job roles to structure green and transition loans, bonds, and other financial instruments in alignment with taxonomies.
- FS professionals in *Risk, Compliance and Legal* job roles will be able to identify and disclose an institution's financed activities and labelled products, aligned with a common set of definitions.

6.3.2 Taxonomy Application

Role application example: Product Origination and Structuring

In the Investment Banking sub-sector, FS professionals in the Product Origination and Structuring job role, under the *Sales, After Sales, Distribution and Relationship Management* career track, will need an understanding of taxonomy when structuring sustainable finance products for clients. They will need to categorise relevant assets and investments into appropriate categories to create customised products that align with clients' investment objectives.

The knowledge of taxonomy also provides a foundation for market analysis which enables the FS professionals in the Product Origination and Structuring job role to track and evaluate trends within specific asset classes or industries. By understanding how assets are grouped, these FS professionals can conduct comparative analysis, identify emerging opportunities, and assess market dynamics when structuring sustainable finance product solutions. Therefore, the Taxonomy Application TSC will be relevant for FS professionals in the job role to perform their job tasks.

Role application example: Data Engineer

FS professionals in the Data Engineer job role, under the *Digital and Data Analytics* career track, will need to be familiar with relevant taxonomies in order to collect and process data on the underlying activities of products offered, and use this data to tag activities based on the taxonomies.

Additionally, the processing of sustainability data may need complex data transformation tasks, such as data cleaning and enrichment. With taxonomy as a guideline for standardised data formats, FS professionals in the job role can develop codes, scripts and data pipelines to process structured and unstructured sustainability data that align with classification and reporting standards. This will support the FI's efforts in gaining insights into sustainability trends and performance of their client portfolio.

Having an understanding of taxonomies also facilitates communication and collaboration across different functions within the FI. It allows FS professionals in the job role to work with other departments, such as Risk Management, Compliance, and Product Development, to ensure that sustainability data is managed and utilised consistently and effectively across the FI.

¹⁰⁵ Business Management, Product Origination and Structuring, Product Sales, Relationship Management - Retail Banking, Client Portfolio Management, Portfolio / Investment / Fund Management, Product Development, Product Management, Legal Counsel, Monitoring, Surveillance and Testing, Client Investment Performance and Reporting, Credit and Lending Operations, Know Your Customer (KYC) / Customer Due Diligence (CDD), Transaction Banking Operations, Data Engineer, Digital Transformation, Trading, Quantitative Trading, Mergers and Acquisitions and Tax.

6.3.3 Climate Change Management

Climate change poses significant risks to FIs and their investments. These risks include physical risks such as extreme weather events, transition risks associated with policy changes and market shifts towards low-carbon technologies, and liability risks due to potential legal actions related to climate impacts. Given the severity of these risks, FS professionals need to understand and effectively manage climate change risks, for both the FI and its clients, to mitigate potential financial losses and protect FIs' investments. This TSC will enable integration of climate risks into wider risk management strategies as well as identification of opportunities to develop products that support climate change mitigation and adaptation.

Globally, government and regulatory bodies are increasingly implementing policies and regulations aimed at addressing climate change, following the Paris Agreement¹⁰⁶. In Singapore, MAS has conducted climate stress testing and scenario analysis as part of Industry-Wide Stress Tests in 2018¹⁰⁷ and 2022¹⁰⁸. For climate-related disclosures, TCFD recommendations were mandated for SGX-listed issuers since FY2022, and ISSB-aligned climate disclosures will also be introduced in a phased approach starting with SGX-listed issuers from FY2025¹⁰⁹. FIs are also needed to assess and disclose their climate risks, making it essential for them to integrate climate change management into their operations and reporting practices.

Based on KPMG's analysis, the Climate Change Management TSC is relevant to all sub-sectors and 18 unique job roles across the *Risk, Compliance and Legal, Product Solutioning and Management* and *Sales, After Sales, Distribution and Relationship Management* career tracks¹¹⁰.

- This TSC will enable FS professionals in relevant job roles in the *Risk, Compliance and Legal* career track (e.g. Risk Strategy) to integrate climate risks into FIs' wider risk management strategies, and those in the *Product Solutioning and Management* career track (e.g. Product Development) to identify opportunities for the development of products that support climate change adaptation and mitigation (e.g. climate-linked insurance products, green bonds).
- At the same time, client-facing FS professionals in the *Sales, After Sales, Distribution and Relationship Management* career track (e.g. Relationship Manager for Corporate and Large MNC) will need to explain major sources of climate change risks on their clients' industry sector and the impact on clients' financing in climate change adaptation and mitigation, aiding clients in making informed decisions on their sustainability strategies.

6.3.3 Climate Change Management

Role application example: Risk Strategy

FS professionals in the Risk Strategy job role in the *Risk, Compliance and Legal* career track are responsible for integrating climate risks into FIs' ERM frameworks and policies, while ensuring that they are aligned to relevant regulations and frameworks. In doing so, these professionals in the job role will need to identify the impact of climate change on the region and sectors that are relevant to the FI, before synthesising the information to determine the impact on the FI and its clients' operations, investments and financial performance.

The knowledge of climate change management will enable FS professionals in the job role to identify and assess climate change risks and their potential impact on the FI and its clients. Understanding how climate change impacts each industry sector will also enable them to develop climate-related scenarios for scenario analysis and stress testing to evaluate the resilience of FIs' portfolio to various climate-related scenarios.

Role application example: Relationship Management Corporate and Large MNCs

Within the *Sales, After Sales, Distribution and Relationship Management* career track, FS professionals in the Relationship Management Corporate and Large MNCs job role in the Corporate Banking sub-sector need an understanding of climate risks and opportunities as well as the impact on clients' financing in climate change adaptation and mitigation.

Knowledge in these areas allows FS professionals in the job role to engage with clients on their climate change strategies, ambitions, targets and plans, driving clients' sustainable financing demand for climate change adaptation and mitigation initiatives. They will also be able to provide clients with tailored advice, ideas and solutions on their climate-related targets and propose suitable bespoke sustainable finance products.

106. United Nations Framework Convention on Climate Change, The Paris Agreement, accessed April 2024.

107. As part of the 2018 Industry-Wide Stress Test exercise, MAS subjected insurers to a scenario featuring extreme flooding in Singapore. MAS, Sustainable Finance - Regulatory and Supervisory Approach, accessed April 2024.

108. MAS incorporated a range of long-term climate scenarios as part of the 2022 Industry-Wide Stress Test exercise. MAS, Sustainable Finance - Regulatory and Supervisory Approach, accessed April 2024.

109. Singapore Exchange Regulation, Consultation Paper on Sustainability Reporting: Enhancing Consistency and Comparability, accessed April 2024.

110. Business Development - Brokers, Business Management, Client Support / Account Management, Investment Counselling, Product Sales, Relationship Management - Private Banking, Relationship Management - Commercial, Relationship Management - Corporate and Large MNCs, Relationship Management - SMEs, Client Portfolio Management, Economist, Portfolio / Investment / Fund Manager, Product Development, Research and Analysis, Credit Risk, Operational Risk, Risk/ Compliance Analytics and Risk Strategy.

6.3.4 Impact Indicators, Measurement and Reporting

Proficiency in Impact Indicators, Measurement and Reporting TSC enables FS professionals to analyse, monitor and report the impact of sustainability actions and lead FIs in setting and monitoring tangible sustainability targets. The TSC will enable effective and accurate measurement of sustainability outcomes from investments or financial products.

FIs can leverage relevant impact measurement frameworks, regulations, and tools such as SFDR Principal Adverse Impact (PAI) indicators¹¹¹, and the IRIS+ System by Global Impact Investing Network¹¹². These indicators cover diverse topics on sustainability such as impact on climate, social inclusion, biodiversity conservation, and corporate governance practices, and also clearly indicate the FI's sustainability performance and progress towards its targets.

The Impact Indicators, Measurement and Reporting TSC is therefore deemed to be relevant across all FS sub-sectors and 18 unique job roles across all career tracks¹¹³. As FIs and businesses begin to put in place impact missions with the aim to be more sustainable, FS professionals who are involved in analysing, monitoring, reporting and communicating clients' progress and performance will need to be equipped with the TSC.

- The TSC will enable client-facing FS professionals in the *Sales, After Sales, Distribution and Relationship Management* and *Family Office* career tracks (e.g. Relationship Manager for FIs and NBFIs) to explain suitable metrics used for investment performance measurement and describe impact measurement trends and developments to clients.
- Those in the *Product Solutioning and Management* and *Risk, Compliance and Legal* career tracks (e.g. FS professionals in Product Management and Risk / Compliance Analytics job roles) who are involved in impact measurement will be able to track the performance of products developed, identify risk indicators, and ensure that the products contribute positively to sustainability goals.
- Additionally, FS professionals in the *Operations, Digital and Data Analytics*, as well as *Support Function* career tracks will need the TSC to accurately identify, analyse and report impact-related data to support financial decision-making.

6.3.4 Impact Indicators, Measurement and Reporting

Role application example: Product Development

Within the *Product Solutioning and Management* career track, FS professionals in the Product Development job role across the Private Banking and Wealth Management, Corporate Banking and Investment Banking sub-sectors need to identify relevant metrics for sustainability performance measurement. In doing so, they need to be familiar with the techniques to apply different measurement methodologies as well as the systems and tools available to collect data on the impact of each sustainable finance product for measurement. This will allow FS professionals in the job role to understand the effectiveness of sustainability initiatives, providing valuable insights into the outcomes of each product offered.

By comprehensively understanding the techniques, methodologies and tools for impact measurement, the role can contribute to the FI's ability to achieve its overarching sustainability goals.

Role application example: Financial Accounting

Within the *Support Function* career track, FS professionals in the Financial Accounting job role need to support the FI for strategic planning and sustainability objective setting. The job tasks include having to incorporate sustainability metrics in impact measurement to gain insights on the sustainability impact of the investment decision. In addition, FS professionals in the job role need to understand sustainability impact on the valuation process before incorporating it into existing valuation models for financial accounting and corporate reporting purposes.

Consequently, FS professionals in the job role will need relevant knowledge of suitable metrics for impact measurement as well as best practices to quantify sustainability impact, and reporting to translate sustainability impact into commercial value.

111. SFDR Reporting: Mandatory and Additional PAI Indicators, Novata.com, accessed March 2024.

112. Global Impact Investing Network, IRIS+ System | About, accessed March 2024.

113. Relationship Management - FIs and Non-Bank FIs, Family Office Advisory, Family Office Management, Client Portfolio Management, Portfolio Investment / Fund Management, Product Development, Product Management, Research and Analysis, Client Investment Performance and Reporting, Risk / Compliance Analytics, Data Analyst / Data Scientist, Data Engineer, Innovation Management, Business Valuation, Financial Accounting, Internal Audit, Mergers & Acquisitions and Treasury.

Beyond the top four SF TSCs, proficiency in the other sub-sectors agnostic SF TSCs ensures that FS professionals possess a comprehensive set of capabilities to perform the expanded and augmented sustainable finance-related job tasks. Relative to the top four, each of these other TSCs is needed across fewer unique job roles.

Functional Competencies¹¹⁴

<p>Sustainability Reporting</p>	<p>The TSC is relevant to seven unique job roles across three FS career tracks, namely, <i>Support Function, Risk, Legal and Compliance</i> and <i>Digital and Data Analytics</i>.</p> <p>Across these career tracks, FS professionals who need the TSC are those directly involved in the development of the FI's sustainability reporting and accounting policies, including consolidating sustainability data and ensuring that the reporting processes are aligned with regulatory requirements for sustainability reporting. For instance, SGX requires all SGX-listed issuers to provide sustainability reports by FY2025 and Large Non-Listed Companies (Annual revenue ≥\$1B and total assets ≥\$0.5B) to report by FY2027¹¹⁵.</p> <p>Therefore, this TSC is relevant for FS professionals in the following job roles:</p> <ul style="list-style-type: none"> • Support Function career track: Internal Audit, Financial Accounting, Mergers & Acquisitions • Risk, Legal and Compliance career track: Compliance Advisory • Digital and Data Analytics career track: Business Process Improvement, Data Analyst / Data Scientist, Innovation Management
<p>Non-Financial Industry Sustainability Developments</p>	<p>The TSC is relevant to 15 unique job roles across three FS career tracks, namely, <i>Risk, Legal and Compliance, Sales, After Sales, Distribution and Relationship Management</i> and <i>Product Solutioning and Management</i>.</p> <p>Across these career tracks, FS professionals who need the TSC are typically those involved in understanding, synthesising and articulating key sustainability issues of the non-financial industries, including real economy sectors, that are relevant to the FIs and their clients. Such knowledge will be relevant in ensuring that sustainability risks of the non-financial industries are taken into considerations during risk framework development, client engagement, as well as product and investment portfolio development.</p> <p>Therefore, this TSC is relevant for FS professionals in the following job roles:</p> <ul style="list-style-type: none"> • Risk, Legal and Compliance career track: Credit Risk, Risk Strategy • Sales, After Sales, Distribution and Relationship Management career track: Business Development - Brokers, Business Management, Client Support / Account Management, Investment Counselling, Relationship Management - Private Banking, Relationship Management - Commercial, Relationship Management - Corporate and Large MNCs, Relationship Management - SMEs, Sales and Distribution / Coverage • Product Solutioning and Management career track: Client Portfolio Management, Portfolio / Investment / Fund Management, Product Development, Research and Analysis

Thematic Competencies

<p>Carbon Markets and Decarbonisation Strategies Management</p>	<p>The TSC is relevant to seven unique job roles across four FS career tracks, namely <i>Product Solutioning and Management, Risk, Compliance and Legal, Sales, After Sales, Distribution and Relationship Management</i> and <i>Trading and Execution</i>.</p> <p>Across these career tracks, FS professionals who need the TSC generally include those facilitating the FI's strategies and policies in response to carbon policy, market developments and decarbonisation strategies. Additionally, FS professionals involved in portfolio management and providing advisory support for the FI and its clients who are on their decarbonisation and net zero journey will also need the TSC.</p> <p>Therefore, this TSC is relevant for FS professionals in the following job roles:</p> <ul style="list-style-type: none"> • Product Solutioning and Management career track: Client Portfolio Management, Portfolio / Investment / Fund Manager • Risk, Compliance and Legal career track: Risk / Compliance Analytics • Sales, After Sales, Distribution and Relationship Management career track: Relationship Management - Private Banking, Investment Counselling • Trading and Execution career track: Trading, Quantitative Trading
<p>Natural Capital Management</p>	<p>The TSC is relevant to 14 unique job roles across three FS career tracks, namely <i>Product Solutioning and Management, Risk, Compliance and Legal</i> and <i>Sales, After Sales, Distribution and Relationship Management</i>.</p> <p>Across these career tracks, FS professionals who need the TSC are those supporting the development of FI's strategies and policies in response to natural capital policies and market developments. An understanding of the linkages between natural capital and financial risks is also relevant not only for the development of risk and product frameworks but also for articulating such risks to clients during client engagement.</p> <p>Therefore, this TSC is relevant for FS professionals in the following job roles:</p> <ul style="list-style-type: none"> • Product Solutioning and Management career track: Client Portfolio Management, Economist, Portfolio / Investment / Fund Management, Product Development, Research and Analysis • Risk, Compliance and Legal career track: Risk / Compliance Analytics, Risk Strategy • Sales, After Sales, Distribution and Relationship Management career track: Business Management, Investment Counselling, Product Sales, Relationship Management - Private Banking, Relationship Management - Commercial, Relationship Management - Corporate and Large MNCs, Relationship Management - SMEs

114. Illustrations on job tasks of the relevant job roles in career tracks and how the TSC is applicable to the job tasks, are not exhaustive.

115. Consultation Paper on Sustainability Reporting: Enhancing Consistency and Comparability, SGX RegCo 2024.

6.4 Sub-sectors specific SF TSCs

Four functional SF TSCs are focused on specific products and services and are therefore only applicable to certain FS sub-sectors.

While the top four TSCs are needed across all sub-sectors, there are also a few functional SF TSCs that are relevant to certain sub-sectors only (refer to Exhibit 6.2).

Exhibit 6.2: Sub-sector applicability of SF TSC

Sustainable Finance TSC	Sustainable Investment Management	Sustainable Lending Instruments Structuring	Sustainability Insurance and the Re-Insurance Solutions and Applications	Sustainability Stewardship Development
Retail Banking	■	■	■	■
Private Banking	■	■	■	■
Corporate Banking	■	■	■	■
Investment Banking	■	■	■	■
Asset Management	■	■	■	■
Insurance	■	■	■	■

■ Sustainable Finance TSC mapped to relevant roles in the sub-sector
 ■ Sustainable Finance TSC not mapped to any roles in the sub-sector

6.4.1 Sustainable Investment Management

The Sustainable Investment Management TSC is relevant to FS professionals in 17 unique job roles across the *Sales, After Sales, Distribution and Relationship Management, Product Solutioning and Management* and *Family Office* career tracks in the Retail Banking, Private Banking and Wealth Management, Asset Management and Insurance sub-sectors¹¹⁶.

With the shifting of investor preferences towards sustainable finance products and services, FS professionals in front-office job roles, such as Relationship Management and Investment

Counselling, will need to acquire such knowledge to understand clients' investment objectives and sustainability preferences, explain different sustainable investment approaches and provide suitable recommendations to clients. Additionally, FS professionals in these client-facing job roles across *Sales, After Sales, Distribution and Relationship Management* and *Family Office* will need to collaborate with those in *Product Solutioning and Management* job roles during portfolio construction to customise sustainable finance product solutions that meet clients' sustainability preferences.

6.4.2 Sustainable Lending Instruments Structuring

The Sustainable Lending Instruments Structuring TSC is relevant to FS professionals in 13 unique job roles across the *Sales, After Sales, Distribution and Relationship Management, Product Solutioning and Management* and *Operations* career tracks in the Retail, Corporate and Investment Banking sub-sectors¹¹⁷. The TSC will enable FS professionals in *Sales, After Sales, Distribution and Relationship Management* and *Product Solutioning and Management* job roles to advise and structure sustainable lending instruments (e.g. bonds, loans, project and trade financing, blended finance) that meet their clients' sustainability targets and objectives. At the same time, the TSC will allow them to develop mechanisms to incentivise (e.g. lower cost of borrowing, preferential rates, redeem loans early) the adoption of sustainable lending instruments among their corporate clients.

Additionally, FS professionals in the *Operations* career track will need an understanding of international and regional developments on sustainable lending instruments, including principles, standards, and frameworks such as ICMA's Sustainability Linked Loan Principles and Green Bond Principles. For example, FS professionals in the Credit and Lending Operations job role will need to review existing bank facility documentation as FIs cater for new sustainability loans. Knowledge of up-to-date sustainability terms and conditions will be needed for FS professionals in the job role to accurately incorporate these into bank facility documentation.

6.4.3 Sustainable Insurance and Re-Insurance Solutions and Applications

The Sustainable Insurance and Re-Insurance Solutions and Applications TSC is relevant to FS professionals in 13 unique job roles across the *Sales, After Sales, Distribution and Relationship Management, Product Solutioning and Management* and *Operations* career tracks in the Insurance sub-sector¹¹⁸. FS professionals in *Sales, After Sales, Distribution and Relationship Management* job roles will need an understanding

of new sustainable insurance solutions and applications to effectively support customers with financial planning and identification of appropriate sustainable finance products. Those in *Product Solutioning and Management* job roles will need to understand changes in sustainable insurance demand and adapt product offerings for sustainability-liability products and ensure pricing models are reflective and accurate to market demand. Similarly, those in *Operations* job roles will need the TSC to support the underwriting of assets and products.

6.4.4 Sustainability Stewardship Development

The Sustainability Stewardship Development TSC is relevant to FS professionals in four unique job roles across *Sales, After Sales, Distribution and Relationship Management* and *Product Solutioning and Management* career tracks in the Private Banking and Wealth management, and Asset Management sub-sectors¹¹⁹. As private bankers and asset managers act as fiduciaries of their customers' assets, they should uphold stewardship principles and consider material sustainability risks in their investment selection and portfolio construction processes to ensure that they act in the best interests of their clients to achieve investment and sustainability goals. Active engagement and stewardship, through activities such as proxy voting, will be beneficial in guiding investee companies' transition to a low-carbon future and mitigating portfolio's exposure to sustainability risks. Therefore, FS professionals in job roles such as Relationship Management in *Sales, After Sales, Distribution and Relationship Management* and Client Portfolio Management in *Product Solutioning and Management* career tracks need to be proficient in this TSC, to support client engagement and discussion on investment strategies. For instance, a Relationship Manager will need to understand the purpose of sustainability stewardship and identify material and thematic stewardship issues relevant to clients. On the other hand, a Client Portfolio Analyst will need to uphold FI's stewardship principles and incorporate sustainability stewardship considerations that are relevant to the client's investment objectives in portfolio construction and client communications.

116. Business Management, Family Office Advisory, Investment Counselling, Product Sales, Relationship Management - Retail Banking, Relationship Management - Private Banking, Sales and Distribution/ Coverage, Family Office Management, Client Portfolio Management, Portfolio/ Investment/ Fund Management, Product Development, Product Management, Product Marketing, Research and Analysis, Segment Management, Wealth Planning and Treasury.
 117. Business Management, Product Origination and Structuring, Product Sales, Relationship Management - Retail Banking, Relationship Management - Commercial, Relationship Management - Corporate and Large MNCs, Relationship Management - SMEs, Sales and Distribution/ Coverage, Product Development, Product Management, Product Marketing, Segment Management and Credit and Lending Operation.
 118. Business Development - Brokers, Business Development / Distribution / Channel / Partnerships and Affinity Management, Claims Liaison, Client Support / Account Management, Financial Planning / Insurance Agent / Bancassurance, Insurance Placement, Pricing Actuary, Product Development, Product Management, Product Marketing, Reserving Actuary, Claims Management and Underwriting.
 119. Relationship Management - Private Banking, Client Portfolio Management, Portfolio / Investment / Fund Management and Research and Analysis.

7. Impact on Financial Services Sub-sectors



Key trends identified in the real economy demand, regulations and standards, and technology innovation will have varying impact on each FS sub-sector's value chain.

As the value chain activities are different across sub-sectors, the impact on job task augmentation, SF TSCs, and competency levels needed will vary accordingly. Additionally, the job roles that should be prioritised for upskilling are different across FS sub-sectors. For each FS sub-sector, FS professionals identified as high-priority for upskilling are in job roles with high business impact and need mostly intermediate to advanced proficiency in SF TSCs to perform their job tasks effectively. These job roles directly influence the FI's sustainable finance initiatives and have a longer training roadmap in order to develop the depth of expertise needed.

This section highlights the salient changes of each FS sub-sector, including changes in value chain activities, career tracks, high-priority job roles, and SF TSCs needed.

7.1 Retail Banking

The Retail Banking value chain is expected to evolve to incorporate sustainability-related activities which are common across FS such as preparing and disclosing sustainability reporting to convey periodic progress, establishing and operationalising net zero targets and credible transition plans, and setting up governance and processes to manage sustainability risks.

Specifically, retail banks will also need to transform and manage Retail Banking products and services to account for sustainability preferences of retail customers by providing sustainable investment options and developing sustainable finance products (e.g. green mortgages, sustainable mutual funds, green deposits).

The following are key activities that need to be incorporated into the sub-sector's value chain:

- Onboard sustainable thematic funds in bank's suite of retail investment products (e.g. Taxonomy, SFDR article 8, 9, Paris-Aligned Benchmark (PAB) aligned).
- Incorporate sustainability ratings into product risk ratings (e.g. retail sustainability funds).
- Establish sustainability risk criteria (e.g. GHG, deforestation) to identify investments in sensitive sectors.
- Suggest appropriate sustainable finance solutions (e.g. green renovation loans, green car loans and sustainable investment options) to clients based on their identified sustainability lending requirements.
- Establish monitoring process to ensure clients' financing activities and investment products align with classification framework and obtain the progress with bank's sustainability targets.
- Disclose and compare sustainability information using internationally recognised frameworks and standards (e.g. TCFD, ISSB).

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

Sales, After Sales, Distribution and Relationship Management career track which are client-facing will need to provide financial advisory services on sustainable investing products and sustainable lending instruments which are appropriate to retail customers.

Product Solutioning and Management career track will be responsible for ensuring that sustainable finance products and sustainable investment products cater to customers' sustainability needs, while ensuring that products are in compliance with product frameworks for financing green and transition activities, taxonomies and global bond or loan standards and frameworks.

Digital and Data Analytics career track will need to provide recommendations on technology and innovation which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data.

Risk, Compliance and Legal career track will need to define sustainability risk strategies, frameworks and policies. They are expected to ensure that relevant environmental and social risks which could have material financial implications on principal risk types such as credit risk, market and liquidity risk and operational risk are integrated into the ERM framework and considered in all relevant decision-making processes.

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Retail Banking sub-sector in achieving its sustainability agenda within the next three years.

- Sales, After Sales, Distribution and Relationship Management**
 - Product Sales
- Product Solutioning and Management**
 - Product Development
 - Product Management
- Digital and Data Analytics**
 - Data Analysis / Data Scientist
 - Innovation Management
- Risk, Compliance and Legal**
 - Risk / Compliance Analytics
 - Risk Strategy / Sustainability Risk
- Sustainability**
 - Sustainability Strategy

Ranking of SF TSCs needed by FS professionals in high-priority unique job roles

- 1st** Taxonomy Application
- 2nd** Sustainable Investment Management
- 3rd** Sustainable Lending Instruments Structuring
- 4th** Sustainability Risk Management
- 5th** Impact Indicators, Measurement and Reporting
- 6th** Sustainability Reporting
- 7th** Climate Change Management
- 8th** Natural Capital Management
- 9th** Carbon Markets and Decarbonisation Strategies Management
- 10th** Non-Financial Industry Sustainability Developments

7.2 Private Banking and Wealth Management

The Private Banking and Wealth Management value chain is expected to evolve in order to incorporate sustainability-related activities which are common across FS such as establishing and operationalising net zero targets, identifying clients' sustainability preferences, establishing sustainability risk criteria and defining sustainability risk management frameworks, and preparing and disclosing sustainability reporting to convey periodic progress.

Specifically, private banks and wealth managers will also need to identify sustainable investment opportunities, such as philanthropy and impact investing opportunities for (ultra-) high net-worth clients. As part of their role in active management of clients' investment portfolios, they also need to establish metrics and targets to measure sustainability impact of investment portfolios.

The following are key activities that need to be incorporated into the sub-sector's value chain:

- Identify prospective clients' sustainability investment and wealth management needs (e.g. philanthropy, impact investing, sustainability thematic funds) that align to the bank's sustainability commitments and targets.
- Define sustainability risk management frameworks by incorporating sustainability risk scores in clients' assessments to measure their portfolio's sustainability materiality.
- Incorporate sustainability guidelines and labels (e.g. Ecolabel, SFDR article 8,9) as considerations when identifying potential investment products.
- Develop sector-specific sustainability policies to define bank's expectations of clients investing in high-risk sectors.
- Conduct enhanced due diligence process of high sustainability risk investment products during transactions by conducting expert consultations to ensure alignment with client's sustainability preferences.
- Incorporate sustainability data findings derived from standardised disclosures (e.g. TCFD, ISSB) in client communication materials.
- Measure, monitor and disclose client portfolio's sustainability performance against sustainability benchmarks and guidelines (e.g. PAB, SFDR Article 8 & 9).

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

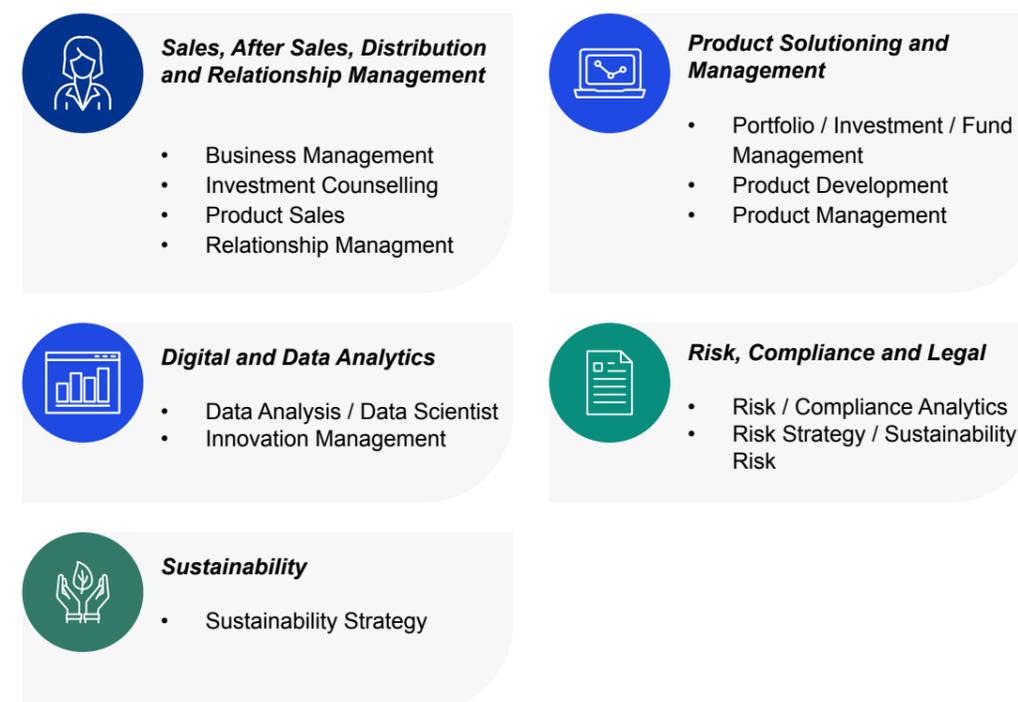
Sales, After Sales, Distribution and Relationship Management career track will need to provide investment advisory to clients that are aligned to their sustainability preferences. As private banking clients may have different sustainability preferences, such as a focus on environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy, FS professionals in most job roles across this career track will need an understanding of how to embed sustainability factors into different investment mandates, opportunities and products.

Product Solutioning and Management career track will be primarily responsible for designing sustainable finance products and identifying sustainable investment products which meet demands of private banking clients, while incorporating sustainability considerations and regulatory requirements across the portfolio and product management lifecycle.

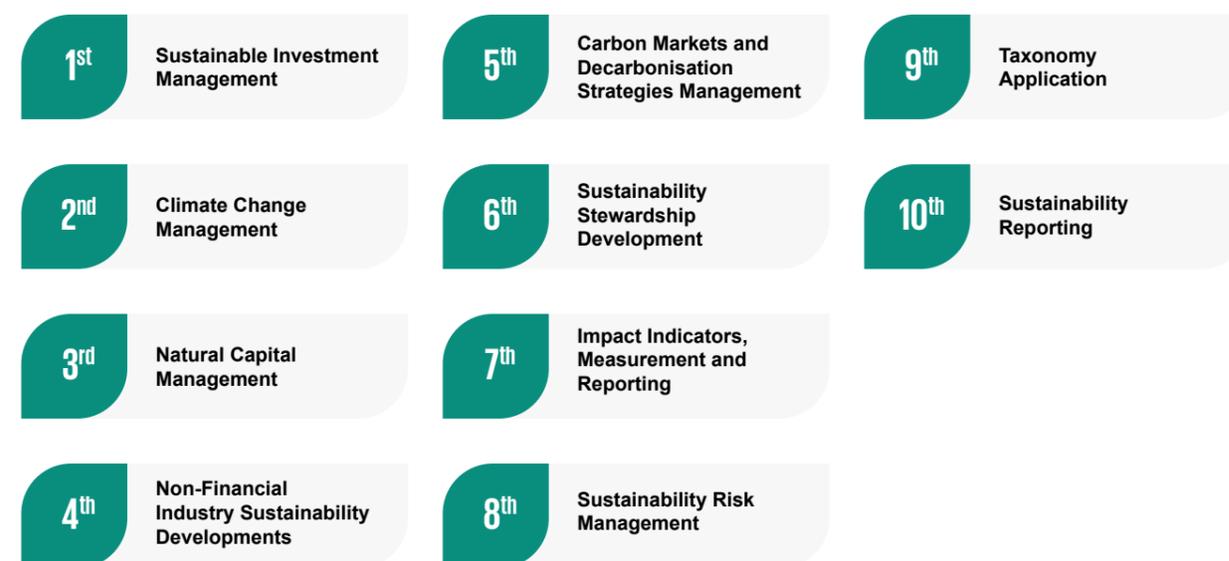
Digital and Data Analytics career track will need to provide recommendations on technology and innovation which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data.

Risk, Compliance and Legal career track will need to define sustainability risk strategies, frameworks and policies. They are expected to ensure that these relevant risks, which could have material financial implications on principal risk types such as credit risk, market and liquidity risk and operational risk, are considered in all decision-making processes, along with the ERM framework. Additionally, they also need to identify data models to monitor sustainability risks and compliance.

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Private Banking and Wealth Management sub-sector in achieving its sustainability agenda within the next three years.



Ranking of SF TSCs needed by FS professionals in high-priority unique job roles



7.3 Corporate Banking

The Corporate Banking value chain is expected to evolve to incorporate sustainability-related activities which are common across FS such as establishing and operationalising the net zero targets, identifying client's sustainability preferences, establishing sustainability risk criteria and defining sustainability risk management framework, preparing and disclosing sustainability reporting to convey periodic progress.

Specifically, corporate banks will also need to provide sustainable finance products (e.g. green loans, sustainability-linked loans, social bonds, carbon credits) to Corporate Banking clients who are on their sustainability journeys towards net zero. Corporate banks will need to assess the credibility of clients' transition plans, stay up to date with emerging trends (e.g. nature-based solutions) and be aware of the broader country and national policies that may impact their clients' operations.

The following are key activities that need to be incorporated into the sub-sector's value chain:

- Expand exclusion list to include activities and sectors that contradict with bank's sustainability agenda and sustainability targets.
- Establish sustainability metrics (e.g. GHG emission, deforestation) to identify high-risk sectors.
- Validate the alignment of client's business activities with green and transition activities frameworks (e.g. regulators' taxonomy, internal product frameworks).
- Incentivise (e.g. lower cost of borrowing) clients to make progress on pre-agreed sustainability performance targets, to demonstrate their commitment to achieving their transition plans.
- Conduct enhanced due diligence process including the expansion of scope and depth to evaluate potential impact of material sustainability risks associated with client's value chain in sensitive sectors.
- Develop qualitative and quantitative tools and metrics to monitor and assess bank's portfolio exposures to sustainability risks.
- Take follow-up actions (e.g. adjust loan pricing terms) for clients who fall behind in meeting their sustainability objectives to minimise bank's sustainability risk exposure.
- Perform periodic and ad-hoc reviews of sustainability-related practices to ensure they are up-to-date with highest industry standards (e.g. sustainability risk management framework).
- Disclose and compare sustainability information using internationally recognised frameworks and standards (e.g. TCFD, ISSB).

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

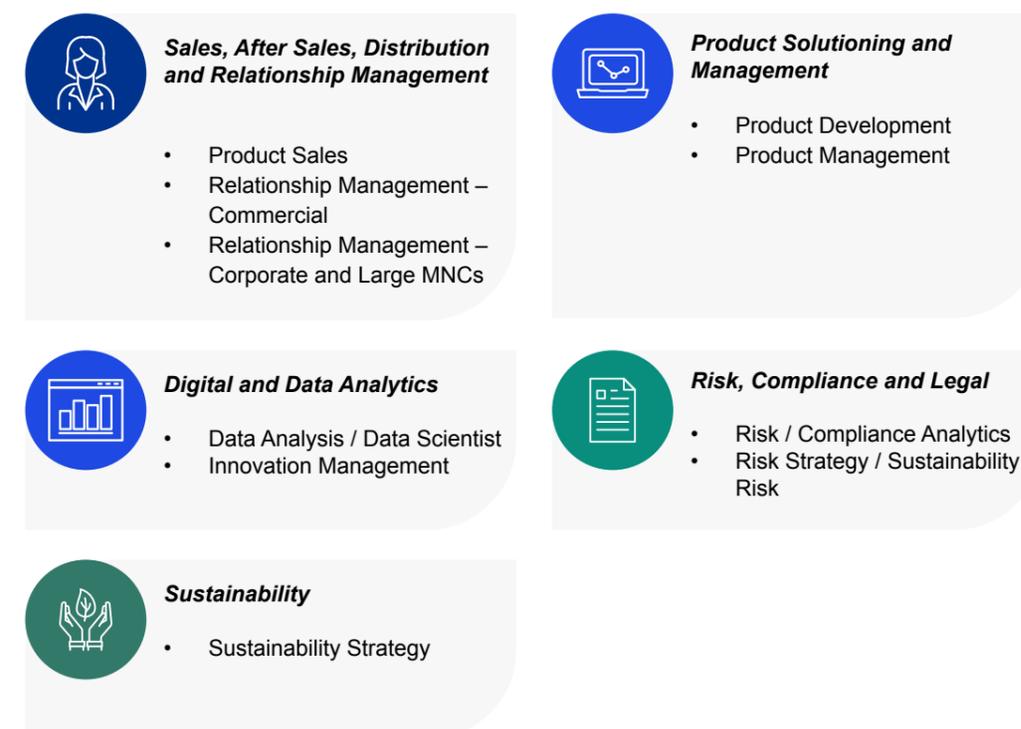
Sales, After Sales, Distribution and Relationship Management career track will need to provide financing advisory to real economy sectors which have sector-specific net zero targets. Given the interdisciplinary nature of this, they not only need to be well-versed in the bank's sustainability agenda and product offerings, but also sector-specific sustainability developments and their impact on real economy clients.

Product Solutioning and Management career track will be responsible for developing sustainable finance products that cater to client's sustainability needs, while ensuring that products are in compliance with product frameworks for financing green and transition activities, regulators' taxonomies, and performance standards.

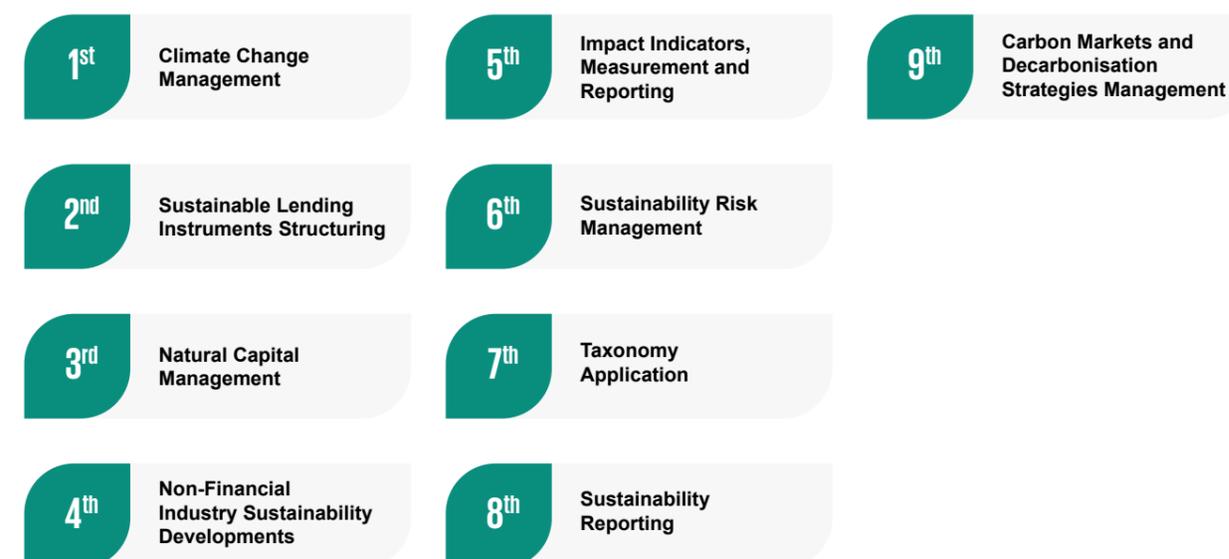
Digital and Data Analytics career track will need to provide recommendations on technology and innovation tools which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data.

Risk, Compliance and Legal career track will need to define sustainability risk strategies, frameworks and policies. They are expected to ensure that these relevant risks, which could have material financial implications on principal risk types such as credit risk, market and liquidity risk and operational risk, are considered in all decision-making processes, along with the ERM framework. They also need to identify data models to monitor sustainability risks and compliance.

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Corporate Banking sub-sector in achieving its sustainability agenda within the next three years.



Ranking of SF TSCs needed by FS professionals in high-priority unique job roles



7.4. Investment Banking

The Investment Banking value chain is expected to evolve to incorporate sustainability-related activities which are common across FS such as establishing and operationalising the net zero targets, identifying client's sustainability preferences, establishing sustainability risk criteria and defining sustainability risk management framework, preparing and disclosing sustainability reporting to convey periodic progress.

Specifically, investment banks will need to facilitate capital raising for sustainable business activities. Additionally, when facilitating mergers and acquisitions (M&A) of sustainable businesses / assets, FS professionals need to account for their client's sustainability needs and objectives as considerations when screening potential investment targets, performing due diligence on the target as well as conducting target valuations.

The following are key activities that need to be incorporated into the sub-sector's value chain:

- For sustainable M&A deals, define client's sustainability transformation needs (e.g. transform asset base, operations, etc.).
- Ensure client's capital raising objectives align with internationally recognised guidelines and classification frameworks.
- Assess potential investors' sustainability risk appetite and past investment experience (e.g. SFDR article 8, 9 funds) to ensure client's financing and sustainability objectives are fulfilled.
- Conduct sustainability risk assessment for clients in sensitive sectors and incorporate enhanced due diligence process (e.g. site visits, expert consultation) to assess sustainability risks and establish monitoring and escalation process accordingly.
- Incorporate sustainability factors in cashflow projections (e.g. impact of future water shortages on operations).
- Incorporate sustainability factors in price multiple analysis (e.g. apply premium/ discount to the target comparables based on sustainability performance).
- Incorporate sustainability factors in scenario analysis (e.g. establish probabilities and magnitude of different sustainability-related events that impact the target).

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

Sales, After Sales, Distribution and Relationship Management career track will need a strong understanding of sustainability trends as well as sustainable finance products and investment opportunities to support client conversations. They need to explain the impact of sustainability factors on investment valuation and help clients align investments with their sustainability preferences and objectives during IPOs and M&As.

Product Solutioning and Management career track will be primarily responsible for designing sustainable finance products which meet sustainability demands of investors, while incorporating sustainability considerations and regulatory requirements across the product management lifecycle.

Digital and Data Analytics career track will need to provide recommendations on technology and innovation which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data to inform capital raising, M&A activities and risk management decisions.

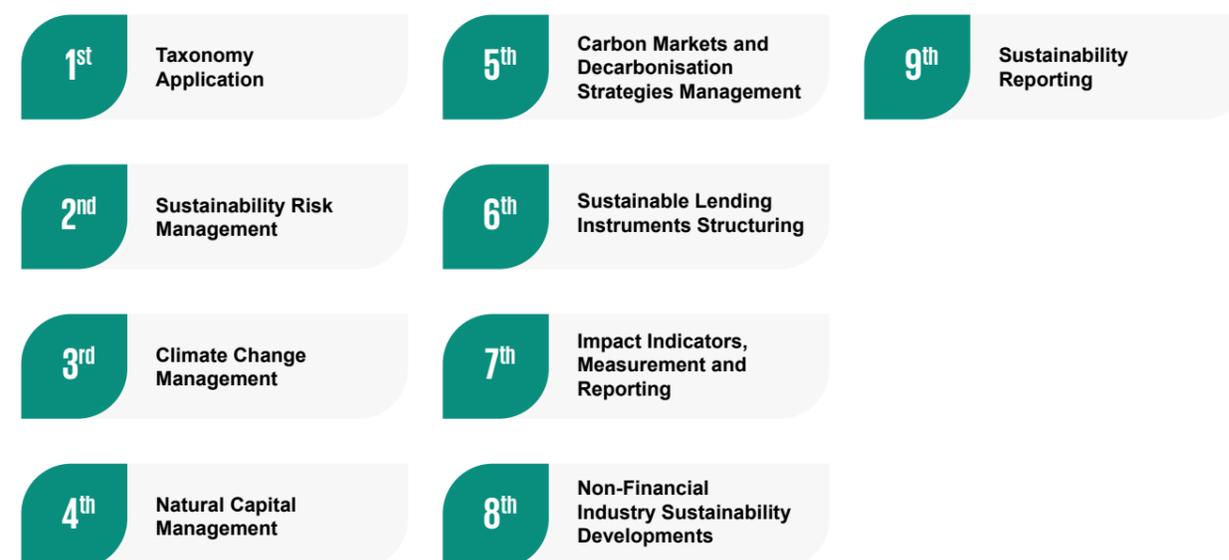
Risk, Compliance and Legal career track will need to define sustainability risk strategy, policies and frameworks. They are expected to ensure that relevant risks stemming from sustainability, which could have material financial implications on principal risk types such as credit risk, market and liquidity risk and operational risk, are considered in all decision-making processes, along with the ERM framework. Additionally, they also need to identify sustainability data models to monitor sustainability risks and compliance.

Trading and Execution career track will be responsible for incorporating sustainability considerations when developing trading strategies and models for trading of sustainability-related financial instruments. This includes strategies for sustainability-related asset classes (e.g. green bonds, carbon credits) and asset classes that are not directly sustainability-related (e.g. impact of sustainability ratings on company share prices).

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Investment Banking sub-sector in achieving its sustainability agenda within the next three years.



Ranking of SF TSCs needed by FS professionals in high-priority unique job roles



7.5 Asset Management

The Asset Management value chain is expected to evolve to incorporate sustainability-related activities which are common across FS such as establishing and operationalising the net zero targets, identifying investee's sustainability preferences, establishing sustainability risk criteria and defining sustainability risk management framework.

Specifically, asset managers will also need to provide sustainability-screened or -aligned investment funds and alternative investment opportunities (e.g. projects generating carbon credits, impact investing, sustainable investing, thematic investing, sustainability alignment, sustainability integration) for investors seeking different exposures to investment opportunities in the sustainability transformation of the real economy, along with preparing and disclosing fund's performance to convey periodic progress. Asset managers will also need to engage with investees as stewards to support them with their sustainability journeys.

The following are key activities that need to be incorporated into the sub-sector's value chain:

- Incorporate sustainability factors in establishing fund's risk appetite and investment preferences.
- Create and promote innovative funds that are integrated with sustainability data or ratings internally and externally (e.g. PAB).
- Customise sustainability evaluation criteria to account for different asset classes (e.g. real assets, commodities).
- Assess the alignment of investment target's business and operating activities to classification frameworks.
- Conduct scenario analysis using data-analytical tools to assess and evaluate potential risks arising from sustainability-related events on investment and their financial impact.
- Disclose the sustainability principal adverse risk impacts that may impact investment/ fund value, and outline process in place to identify, mitigate, and monitor the impacts.
- Incorporate sustainability factors into shareholder / proxy voting and escalation policies to ensure investee's business activities are aligned with the clients' and the fund's investment objectives.

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

Sales, After Sales, Distribution and Relationship Management career track will be responsible for identifying potential business opportunities and leading the strategic development of business plans relating to the sales of sustainable finance products. Hence, they need to stay abreast of sustainability trends and opportunities to engage effectively with internal and external stakeholders.

Product Solutioning and Management career track will be responsible for designing sustainability-screened or -aligned investment funds and identifying alternative investment opportunities (e.g. projects generating carbon credits) which meet sustainability demands of investors, while incorporating sustainability considerations and regulatory requirements across the portfolio and product management lifecycle.

Digital and Data Analytics career track will need to provide recommendations on technology and innovation which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data of investment funds.

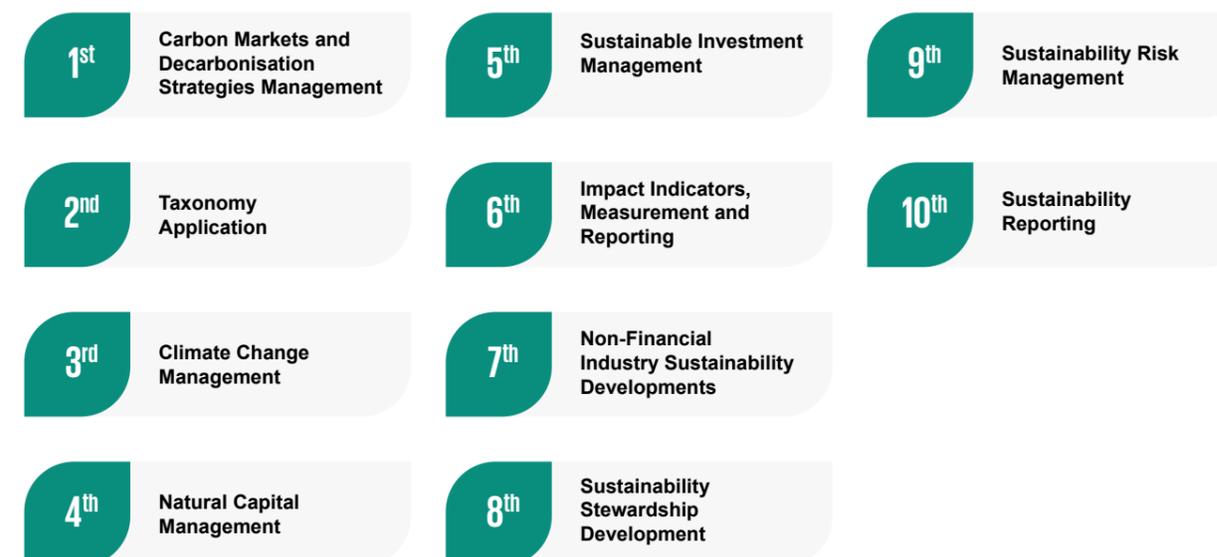
Risk, Compliance and Legal career track will need to define sustainability risk strategies, frameworks, and policies. They are expected to ensure that these relevant risks, which could have material financial implications on principal risk types such as credit risk, market and liquidity risk and operational risk, are considered in all decision-making processes, along with the ERM framework. Additionally, they also need to identify data models to and sustainability risks and compliance.

Trading and Execution career track will need to incorporate sustainability considerations when developing trading strategies and models for trading of sustainability-related financial instruments. This includes strategies for sustainability-related asset classes (e.g. green bonds, carbon credits) and asset classes that are not directly sustainability-related (e.g. impact of sustainability ratings on company share prices). Additionally, they need to ensure compliance with sustainability-related trading regulations and internal policies and procedures.

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Asset Management sub-sector in achieving its sustainability agenda within the next three years.



Ranking of SF TSCs needed by FS professionals in high-priority unique job roles



7.6 Insurance

The Insurance value chain is expected to evolve to incorporate sustainability-related activities which are common across FS such as establishing and operationalising the net zero targets, identifying client's sustainability preferences, establishing sustainability risk criteria and defining sustainability risk management framework, preparing and disclosing sustainability reporting to convey periodic progress.

Specifically, insurers will also need to provide sustainability-liability products which insure sustainable business activities and sustainability risks. Additionally, insurance companies will also need to allocate funds towards sustainable activities through Insurance Based Investment Products (IBIP), enabling policyholders to align their investments with their sustainability preferences while benefitting from insurance coverage.

The following are key activities that need to be incorporated into the sub-sector's value chain:

- Develop new insurance products to account for sustainability-related underlying events (e.g. wildfires, crop failures).
- Identify potential investment targets engaging in sustainability-related activities aligned with classification frameworks (e.g. taxonomies), and incorporate targets into insurance based investment products (IBIP).
- Assess the business activities of prospective clients interested in insuring their innovation's technical risk against classification frameworks (e.g. taxonomies).
- Disclose sustainability-related target market, use cases, coverage and exclusions for insurance products.
- Account for the increasing sustainability risks in insurers' actuarial pricing models (e.g. more frequent and severe weather-related events will increase premiums).
- Reduce exposure and transfer excess sustainability risks to third-parties through re-insurance, risk pooling, and other market instruments (e.g., Insurance-Linked Securities).
- Establish equity capital buffers to ensure sufficient reserves are available to pay-out claims and benefits in the event of sustainability risks occurring (e.g. natural disasters).
- Measure and report investment portfolio's sustainability data via a standardised methodology (e.g. TCFD, ISSB).

These activities will result in changes to work processes and will need the involvement of job roles across all career tracks. For instance, FS professionals in relevant job roles from:

Sales, After Sales, Distribution and Relationship Management career track will be responsible for communicating emerging sustainability-liabilities in new or updated products based on the client's profile and needs, specifically for sustainability-focused investment products. They will not only need to keep abreast of sustainability trends, but also understand the insurer's sustainability goals in relation to client and business acceptance, so that they can articulate the impact of the company's sustainability strategy on the business relationships to clients.

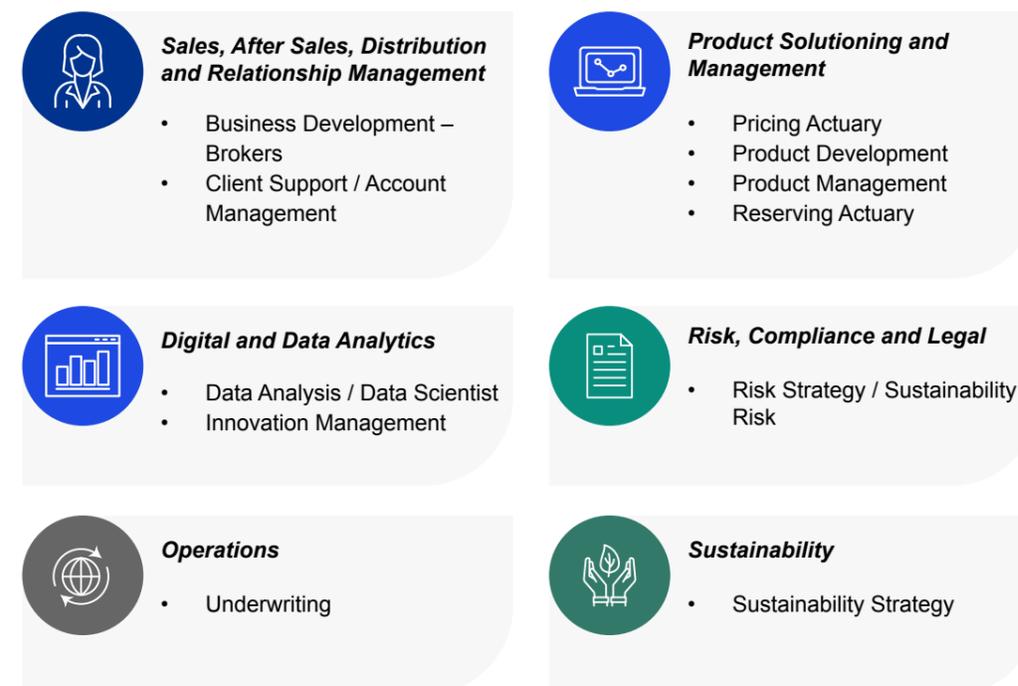
Product Solutioning and Management career track will need to adapt to changing customer preferences, regulatory landscape, relevant risks and the increasing importance of sustainability-liability within the FI's product offerings. This will be needed in developing the right product mix, pricing and reserving strategies.

Digital and Data Analytics career track will need to provide recommendations on technology and innovation which enable stakeholders to overcome challenges in gathering, aggregating and interpreting sustainability data to develop and manage sustainability-liability products, IBIPs and risk management decisions.

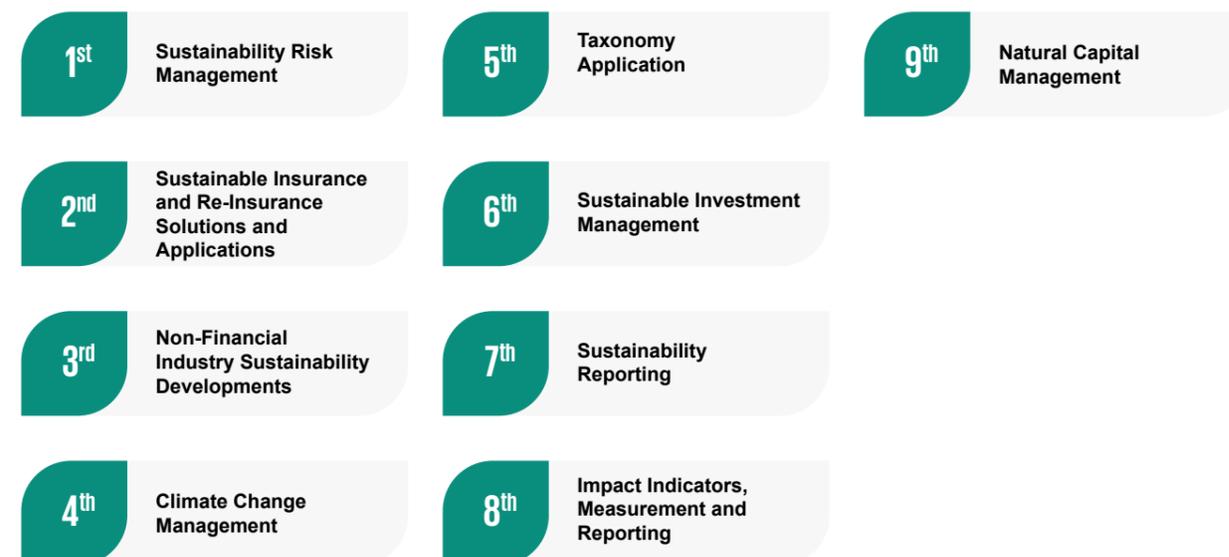
Risk, Compliance and Legal career track will need a deep level understanding of sustainability risks both on its FI and its client to ensure that relevant risks are considered, along with the ERM framework. FS professionals in these job roles will need to understand sustainability risks, how they will impact insurance products and IBIPs and similarly the material financial implications on insurer's operational, market and liquidity risk.

Operations career track are expected to be responsible for assessing sustainability risks underlying the assets that the insurer is underwriting, as well as conducting sustainability risk screening for clients in high-risk sectors. They also have to ensure that the underwriting processes comply with evolving sustainability regulatory requirements.

KPMG has identified the high-priority unique job roles and SF TSCs which are crucial for the Insurance sub-sector in achieving its sustainability agenda within the next three years.



Ranking of SF TSCs needed by FS professionals in high-priority unique job roles





8. Recommendations

8. Recommendations

Stakeholders across the FS and non-FS ecosystem need to work collaboratively to support and equip the FS sector workforce with the necessary skills and expertise needed in sustainable finance. We have identified six recommendations for the consideration of four stakeholder groups – FIs, government bodies, industry associations, and training providers (refer to Exhibit 8.1). While a particular stakeholder may take the lead in executing each recommendation, collaboration with other identified stakeholders in the ecosystem will support higher quality outcomes.

R1 Government bodies and industry associations should define specific sustainable finance certifications and accreditations required to establish a standardised sustainable finance skills certification framework. This will be useful in providing clarity on the qualifications required to operationalise their sustainability strategy, allowing FIs to provide targeted training for FS professionals.

R2 Training providers and FIs should develop practical training content, and enhance training delivery and training effectiveness in skills such as Sustainability Risk Management and Sustainable Lending Instruments Structuring to address existing training gaps.

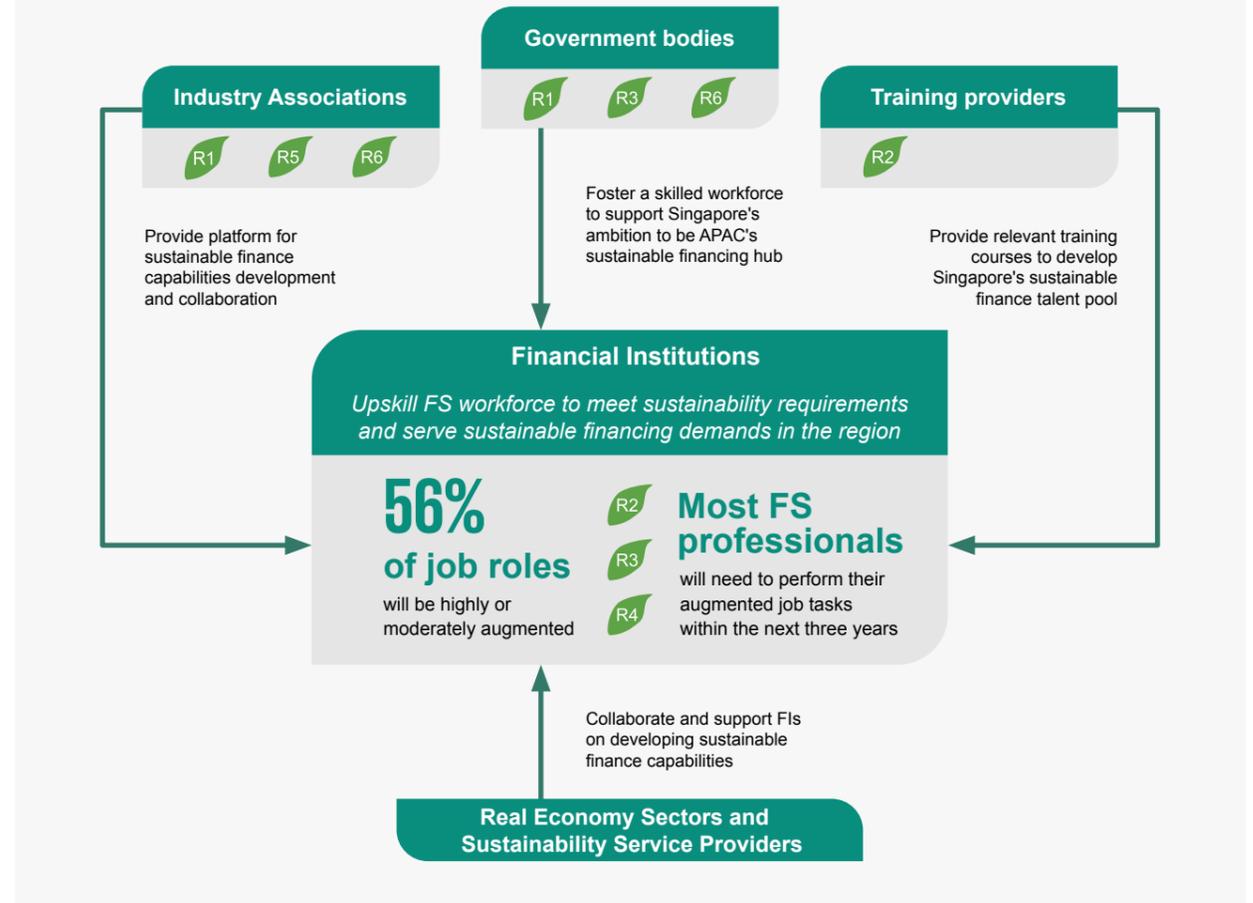
R3 Government bodies and FIs should work together to chart long term career paths for new sustainable finance job roles identified and existing FS professionals who are upskilling. For example, FIs may tap on WSG's Career Conversion Programmes to reskill FS professionals to take on new or enhanced job roles in growth areas.

R4 FIs should support capability transfer from overseas experts to local FS professionals in targeted job roles.

R5 Industry associations should establish a community of sustainable finance professionals, FIs and training providers to provide feedback and facilitate sharing of experiences, insights and knowledge.

R6 Government bodies and industry associations should build partnerships between the FS and non-FS ecosystems across academia, real economy organisations, sustainability service providers, data providers etc. Such partnerships present opportunities to tap into diverse expertise, enhance the integration of sustainability considerations and expedite the implementation of sustainability initiatives as they allow FIs to access sustainability analytics tools and resources through the partnerships.

Exhibit 8.1: Interdependencies of FS and non-FS stakeholders in the implementation of recommendations



Recommendation 1: Define specific sustainable finance certifications and accreditations

Government bodies and industry associations should work collaboratively together to define specific certifications and accreditations needed by each FS career track.



Recommended actions

1. Develop a structured and standardised sustainable finance skills certification framework

Government bodies and industry associations should work collaboratively to develop a structured and standardised sustainable finance skills certification framework for each career track.

This will provide a means of skills recognition and benchmarking across the sector, so that FIs and FS professionals have a common frame of reference in developing their plans for upskilling (whether at the individual or organisation level), as well as facilitate job mobility and recruitment.

Recommendation 2: Develop applicable training content, enhance training delivery and training effectiveness

Training providers and FIs should work together to develop practical training content, enhance training delivery and training effectiveness, especially in areas such as Sustainability Risk Management and Sustainable Lending Instruments Structuring to address existing training gaps.



Recommended actions

1. Develop training content that addresses the current training gaps for FS professionals in the 20 high-priority unique job roles and incorporate sustainability in mainstream courses

Training providers can refer to the training gaps analysis results (refer to Exhibit 8.2) to identify potential areas of focus and develop new training courses and / or refine existing training offerings that address the gaps. These offerings should also be mapped to the Skills Framework for Financial Services.

Institutes of Higher Learnings (IHLs) should also integrate sustainability content into their course offerings to equip students with broad-based sustainable finance knowledge. This will increase students' job-readiness when they enter the FS sector upon graduation, as they would be expected to be proficient in this area, at least at a foundational level, to take on a majority of job roles in the sector.

2. Ensure training content is relevant to FIs and kept up to date, reflecting the latest sustainability-related developments

Training providers need to make sure that their training content is relevant and aligned to the needs of FS professionals. On an ongoing basis, they should ensure their training content is kept up to date with the latest sustainability developments, given the rapidly evolving landscape of regulatory requirements and external standards in this fast-evolving space. For example, to keep pace with ongoing developments in sustainability reporting and disclosure, including the release of ISSB standards in 2023, the increasingly granular considerations needed to effectively conduct climate scenario analysis and stress testing should be incorporated into the training provider's curriculum.

To ensure continued relevance of training content as well as to stay updated on latest sustainability trends and developments, training providers can collaborate with the following stakeholders (refer to Exhibit 8.3).

Exhibit 8.3: Examples of collaboration that can be undertaken with stakeholders

Stakeholder	Recommended action
FS professionals	<p>Training providers should engage with FS professionals and their respective HR partners, who can provide feedback and insights into the requirements and practicality of courses.</p> <p>This can potentially be done by establishing networks and facilitating regular sessions to exchange information and gain insights from the community of FIs, FS professionals and other training providers (this recommendation is further elaborated in Recommendation 5).</p>
Real economy professionals	<p>Training providers should collaborate with practitioners from the real economy, such as professionals in energy efficiency, carbon removal technologies, green fintech and environmental science, to leverage their technical expertise and identify relevant training needs.</p>
Research professionals	<p>Training providers should develop research partnerships with other providers to expedite research processes and accelerate insights in the rapidly evolving sustainability space. IHLs should also establish cross-faculty research and courses (e.g. joint study between finance and energy departments to study how financing demands from transition activities can impact the energy transition) to develop valuable and relevant content for sustainable investment management courses.</p>
External vendors	<p>Training providers should partner with external vendors, such as consulting firms, to validate as well as seek feedback on existing curriculum.</p> <p>Training providers should also build partnerships with overseas partners to keep abreast of broader global developments and ensure that training faculty is constantly learning from overseas experts who may be more advanced in specialised areas.</p>

Exhibit 8.2: Training gaps analysis

Training Gaps

Training gaps were identified by analysing the potential business demand (based on the projected number of FS professionals in the 20 high-priority unique job roles) and the current availability of training courses for a particular SF TSC at each of the three proficiency levels.

Primary gaps existed where there were four or fewer available courses at the time the analysis was conducted, but with a high projected business demand. Secondary gaps were determined where there were four or fewer available courses with a moderate projected business demand, or where there were five or more available courses with a high projected business demand.

Proficiency Level: L3 Foundational

Primary Gaps <ul style="list-style-type: none"> Natural Capital Management 	Secondary Gaps <ul style="list-style-type: none"> Climate Change Management Impact Indicators, Measurement and Reporting Non-Financial Industry Sustainability Developments Sustainability Stewardship Development Taxonomy Application
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Proficiency Level: L4 Intermediate + L5 Advanced

Primary Gaps <ul style="list-style-type: none"> Sustainability Risk Management Sustainable Lending Instruments Structuring 	Secondary Gaps <ul style="list-style-type: none"> Carbon Markets and Decarbonisation Strategies Management Natural Capital Management Non-Financial Industry Sustainability Developments Sustainable Insurance and Re-Insurance Solutions and Applications Sustainable Investment Management
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Recommendation 2 3. Develop application-based training content that is contextualised to specific job roles and aligned to the strategic outcomes of MAS' FiNZ Action Plan

Training providers should incorporate case studies and hands-on exercises in green and transition solutions and market-related training courses. The exercises and case studies should also be tailored to the type of knowledge needed by FS professionals in different job roles (refer to Exhibit 8.4).

Exhibit 8.4: Example of job roles requiring blended finance knowledge

Job role	Knowledge needed	Case studies/hands-on exercises
Relationship Management - Commercial	Identify marginally bankable projects with commercial and development returns	Case studies given may revolve around past blended finance projects, allowing participants to gain an idea of potential projects that qualify for blended finance.
Sales and Distribution / Coverage	Identify marginally bankable projects with commercial and development returns	
Product Development	Attune themselves to structuring syndicated loans with both commercial and development performance targets	Hands-on practices identifying specific projects that meet the criteria for specific loan structures can be incorporated, followed by the actual process of structuring the loan to the necessary performance targets.

Training providers will also need to offer courses on specific real economy sectors, to provide FS professionals with a foundational understanding of the trending topics specific to each sector, such as their transition plans. Examples of knowledge needed in real economy sectors include waste-to-energy incineration and landfill gas capture and utilisation for the Utilities sector, and high-emission activities (e.g. manufacturing of basic chemicals and cement) for the manufacturing sector.

Recommended actions

1. Embed sustainable finance training into the FI's performance targets and scorecards as part of their institutional strategy and review for skills gaps

FIs should clearly outline the needed SF TSCs in performance targets and scorecards, fostering FS professionals' motivation to prioritise sustainability training and apply their acquired knowledge (refer to Exhibit 8.5). An FS professional's level of training on her scorecard would signal the skills level and knowledge depth that the professional brings to the job role.

Exhibit 8.5: Integrating sustainable finance training into the performance target and scorecard of a FS professional in the Credit Risk job role

Job role	Objective	Metrics	SF TSCs needed
Credit Risk	Enhance sustainability risk management by integrating sustainability-related components into credit evaluation and mitigating risk in the FI's lending portfolio	Specific proportion (e.g. 10-20%) of analyst's credit evaluations dedicated to sustainability risk assessments	Sustainability Risk Management (Level 3)

2. Empowering senior management oversight in driving and upholding sustainable finance training culture

To instill a culture of sustainable finance training, FIs should initiate this process with their senior management, particularly the board of directors. The board has the responsibility of setting strategic direction and values of the organisation. Thus, FIs should firstly prioritise relevant SF TSC training for their board of directors as this can signal the board's commitment to sustainability training, sending a clear message to all levels of the organisation about the significance of these efforts. This will also enable the board to advocate for the sustainability agenda and sustainable finance training initiatives for FS professionals.

Recommendation 3: Chart long term sustainable finance career paths

Government bodies and FIs should work together to chart long term career paths to help FS professionals in sustainable finance job roles better understand how they can progress in their careers through different job roles and as they deepen their skills. This will also enable FIs to attract and retain specialised talent.



Recommended actions

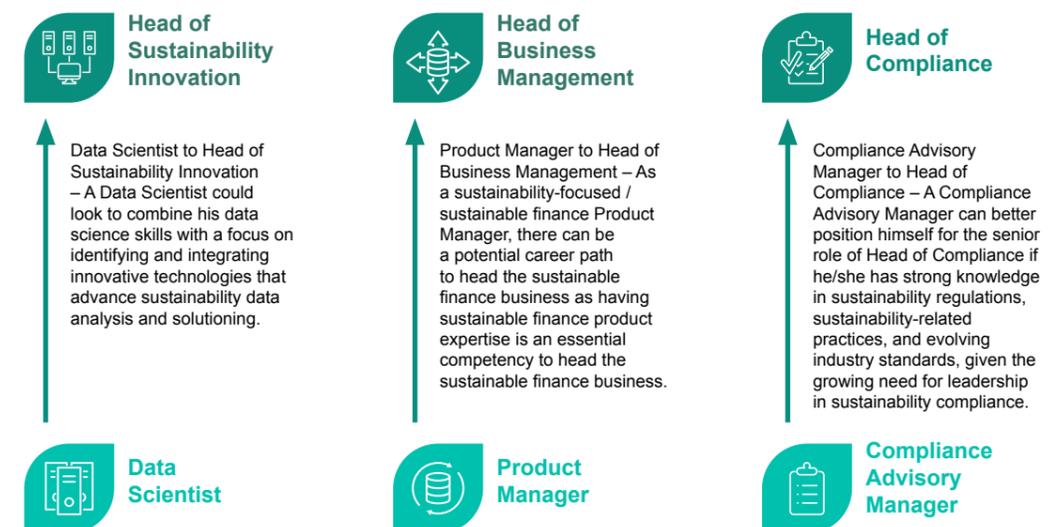
1. Identify career paths for FS professionals developing sustainable finance specialisation

Government bodies and FIs can leverage the Skills Frameworks to highlight how FS professionals can transition into related job roles in which they can leverage the sustainable finance skills that they have acquired in their existing job roles.

Horizontal movements: FS professionals could move into adjacent job roles within the same career track to expand their experience and skills. For example:



Vertical and Diagonal movements: FS professionals could also take on more senior roles in the same or related areas, having acquired more specialised sustainable finance skills. For example:



Recommendation 3 **2. Develop career paths that lead to the new sustainable finance job roles identified**

As new job roles that are needed for sustainable finance emerge, such as in Sustainability Risk or Sustainability Strategy, it provides additional opportunities for FS professionals to chart and grow their careers into these roles. FS professionals in adjacent job roles can consider taking up new job roles which had been identified (refer to Exhibit 8.6).

Exhibit 8.6: FS professionals in adjacent job roles that can consider these new job roles in their career paths

New job roles	Adjacent job roles
 Sustainability Risk	Risk Strategy, Credit Risk, Market and Liquidity Risk and Operational Risk.
 Sustainability Strategy	<p>As FS professionals in this job role could comprise one or more areas of responsibilities, potential adjacent job roles may vary:</p> <ol style="list-style-type: none"> Sustainability Policy: Business Management. Sustainable Finance/ Products: Product Management and Product Development. Sustainability Integration: Monitoring, Surveillance and Testing, Compliance Advisory and Innovation and Business Process Improvement Management. Sustainability Insights: Adjacent roles relate to those in the real economy sectors or academia.



WSG's Career Conversion Programme (CCP)

Companies in Singapore can tap on WSG's CCP to reskill mid-career new hires or existing employees to acquire knowledge and competencies to take on new or enhanced job roles in growth areas. The programme manager for the CCP for the FS sector is the IBF.

- New-Hire CCP – The FI hires job seekers without prior experience to take on new or enhanced job roles in growth areas.
- Job Redesign Reskilling (JRR) CCP – As a result of changes in business strategies or business transformation, the FI identifies existing employees to take on growth job roles aligned to the Sustainable Finance JTM, in which the reskilling meets any one of these four examples below and a minimum of two new emerging skills identified in the Sustainable Finance JTM:
 - Job Enlargement – Retain the existing job scope while introducing a new set of job tasks at the same job level;
 - Job Enrichment – Retain the existing job scope while introducing a value-added component at a higher level;
 - Job Reconfiguration – Review the existing job scope to adjust job tasks and achieve a different set of objectives; and
 - Job Simplification – Identify redundant job tasks and / or streamline job roles.
- Salary support of up to 90% of monthly salary during the duration of the CCP for both New-Hire CCP and JRR CCP. The duration of the New-Hire CCP and JRR CCP is 6 months and 3 months respectively.

Recommendation 4: Support capability transfer in targeted roles

FIs should support capability transfer in targeted job roles to enable local FS professionals to deepen specialised capabilities.



Recommended actions

1. Facilitate opportunities for FS professionals to acquire specialised capabilities through overseas postings

FIs should facilitate opportunities for FS professionals to go on overseas job rotations to the FIs' global or regional offices that have more experience and expertise in the area of sustainable finance, to facilitate capability transfer. These FS professionals can be identified based on their existing skill sets, career aspirations, and the strategic needs of the FI in Singapore. FIs should assign them mentors in the overseas office who can guide and support them in their learning, and also ensure that there is a suitable job role that the FS professional can eventually return to that can best leverage the capabilities he has acquired.

2. Support capability transfer from overseas experts to local FS professionals in targeted job roles where deep expertise is currently lacking locally

FIs should identify specific areas of capabilities that they would like to embed in the Singapore office and specific global subject matter experts who can support the FI in doing so. Factors such as area of skills proficiency, potential for building local workforce with the requisite skillsets, and alignment with organisational goals, need to be taken into consideration, to maximise the impact of the program.

Exhibit 8.7: Relevant government schemes that FIs may tap on



MAS' International Postings Programme (iPOST)

- FIs can tap on iPOST to send Singaporeans on overseas postings.
- Up to 50% funding is available.



WSG's Capability Transfer Programme (CTP)

- The CTP supports the transfer of global capabilities into Singapore, which are not readily available in Singapore and aims to improve local-foreign workforce complementarity by facilitating transfer of capabilities of foreign specialists to locals. Companies / associations / professional bodies in Singapore can acquire new capabilities to build deep capabilities and develop the local workforce with requisite skillsets.
- Funding support can be provided for the following:
 - Bringing in foreign specialists to Singapore to train locals in new capabilities on a time-limited basis;
 - Facilitating remote capability transfer from foreign specialists; and
 - Sending locals for overseas training attachments to acquire new capabilities.
- Up to 50% funding support is available, for funding components such as salary support, cost of living allowance and airfare for the foreign specialist.

Recommendation 5: Establish a community of FS sector’s sustainable finance professionals

Industry associations should establish a community of FS professionals, FIs and training providers who are interested in sustainable finance upskilling.

Recommended actions

1. Set up a sustainable finance charter group

Industry associations should establish a sustainable finance charter group for FS sector’s sustainable finance professionals, FIs and training providers, who are interested in upskilling. The sustainable finance charter can act as a feedback mechanism for training courses by training providers and the sustainable finance skills certification framework. Examples of activities that the charter group can run include:

- Curated events and forums where participants can gain better understanding of the latest sustainability trends.
- Dedicated working groups that are focused on various areas such as the practicality and relevance of training courses and other industry-wide initiatives such as the skills certification framework. Members of these groups can work with the relevant training partners or government bodies to provide feedback and facilitate collaborations.
- Share periodic communication materials based on major developments, sustainability trends, and insights gathered from the working groups.

2. Develop a network of sustainable finance alumni and alumni events

Industry associations should also develop a network of sustainable finance alumni comprising FS professionals who have completed the specified sustainable finance learning paths to facilitate sharing of experience, insights and knowledge. For example, alumni can be invited as guest speakers at training workshops and conferences, or serve as mentors to guide other FS professionals in how they can develop their skills.



Recommendation 6: Build partnerships with non-FS ecosystems

Government bodies and industry associations should build partnerships among players in the FS and non-FS ecosystems (e.g. academic institutions, real economy organisations, sustainability service providers, data providers).

Recommended actions

1. Identify partnership opportunities among the FS and non-FS ecosystems to foster networking and co-learning

FIs and non-FS organisations should identify partnership opportunities in areas where there are complementary objectives, to ensure more comprehensive and impactful efforts of sustainability integration. Industry associations can also facilitate greater cross-sector engagements to foster networking and co-learning, such as through industry events. For example:



Non-FS player

Examples of possible collaborations



Academic Institutions

Proactive partnerships with academic institutions can be fostered to leverage on their research capabilities and subject matter expertise in sustainable finance.

FIs can also build collaborative research projects focused on sustainable finance challenges such as lack of impact measurement methodologies, sustainability integration frameworks, or innovative financial instruments. Diverse skills of both financial experts and academics allow FIs to draw valuable insights. These insights can not only advance academic knowledge but also directly inform and enhance sustainability-related practices within FIs.



Real economy professionals

FIs can initiate collaborative ventures with organisations in real economy sectors to assess main challenges and co-create tailored sustainable finance products and solutions. This cross-disciplinary collaboration gives FS professionals a chance to learn from experts in relevant real economy sectors, to enhance their understanding and knowledge of the needs of these sectors



Sustainability Service Providers

FIs can engage sustainability service providers, such as sustainability consultants or sustainability data providers to enhance their sustainable finance capabilities by effectively incorporating sustainability considerations into their decision-making.

Additionally, FIs can leverage on the products and solutions from the service providers such as customised sustainability frameworks and analytic tools, to better integrate sustainability factors into their daily operations including risk management and assessment processes. These collaborations not only provide FIs and FS professionals with a better understanding of how sustainability factors might affect their organisation and strategies to handle them, but they also promote the enhancement of sustainable finance capabilities among FIs through the engagement process.

9. Conclusion

Sustainable finance is not just a trend but a fundamental shift in how FIs operate. FS job roles are evolving and FS professionals in most job roles will need to take on new job tasks within the next three years.

These findings underscore the need to take timely action to upskill the workforce. FIs will require the support of stakeholders both within the FS ecosystem, as well as those beyond the sector to work collaboratively in driving the transformation.

Effective upskilling initiatives, guided by the insights and recommendations garnered from this report, will be instrumental in preparing a skilled workforce capable of capturing new business opportunities and supporting the region's transition to net zero.





Appendix A

Job Role Analysis

How to use Appendix A: Job Role Analysis

This Appendix provides a detailed analysis of the impact of sustainability trends on each of the 121 FS job roles that are expected to be augmented to a moderate to high degree. The job roles are categorised into seven sections, covering the six FS sub-sectors of Retail Banking, Private Banking and Wealth Management, Corporate Banking, Investment Banking, Asset Management, Insurance, as well as the Support Functions (Accountancy, Human Resource and Infocomm Technology)¹²⁰.

Each job role analysis provides:

- 1. Overall level of augmentation on the job role:** this was determined by averaging the rating for the level of augmentation across all Critical Work Functions (CWFs) of the job role, which was determined by the extent of changes to key job tasks and skills needed¹²¹.
- 2. Context of change and impact on job tasks:** how the job role is likely to be augmented to integrate relevant sustainability-related activities.
- 3. Time horizon of impact:** immediate (within 1 year), within the next three years, or within three to five years.
- 4. [Only for highly augmented job roles] Projected % increase in FTE (by year):** projected increase in FTE due to sustainability trends for the respective years, provided as a proportion (%) of the existing number¹²² of FTE for the job role.
- 5. Impact on key job tasks:** additional key job tasks identified from sustainability-related activities, which are categorised according to relevant CWFs defined in the Skills Framework for Financial Services¹²³.
- 6. Sustainable Finance Technical Skills and Competencies (SF TSCs) required¹²⁴:** SF TSCs (and corresponding level of proficiency) that are needed to perform additional key job tasks identified.

Level of augmentation

- Low augmentation:** Few changes to existing key job tasks and minimal upskilling needed
- Moderate augmentation:** Moderate changes to existing key job tasks and moderate upskilling needed
- High augmentation:** Significant changes to existing key job tasks and significant upskilling needed

The proficiency level of each SF TSC is classified as

- L3 Foundational**
- L4 Intermediate**
- L5 Advanced**

The dark blue boxes indicate the required SF TSCs proficiency across the hierarchy (e.g. Analyst, Manager and Head) of the job role. As proficiency levels may progressively increase as FS professionals advance in their careers, there may be two to three dark blue boxes indicated for a single SF TSC.

Detailed descriptions of SF TSCs, including the list of knowledge and abilities needed under each proficiency level, and range of application can be found in the Skills Framework for Financial Services.

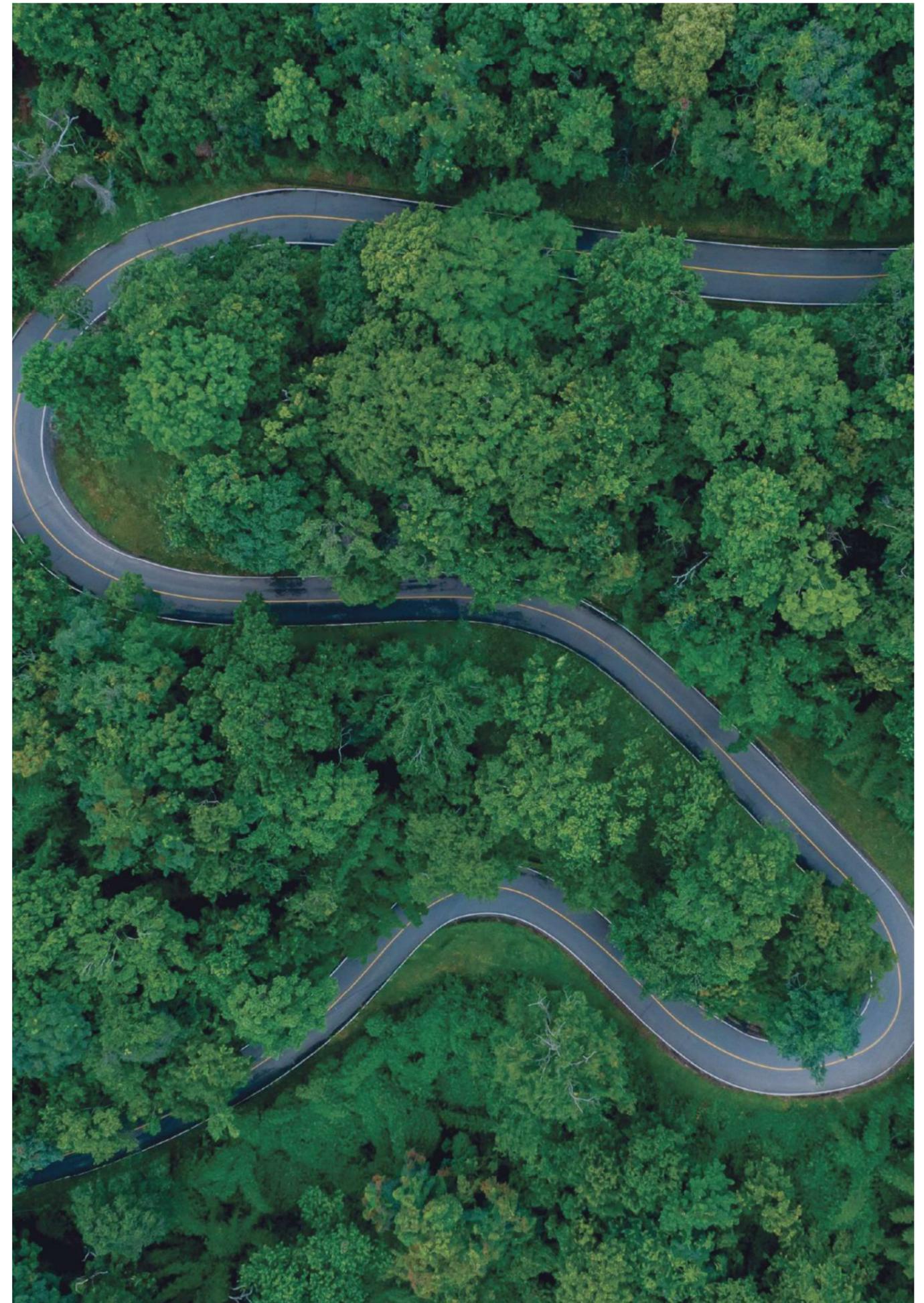
120. Job roles which are lowly augmented (n = 76) and not augmented (n = 21) by sustainable finance are not included in the appendix.
 121. Refer to Section 3: Methodology for more details on the Methodology of impact and skills analysis.
 122. FTE figures in 2022 were used as baseline to calculate projected percentage increase in FTEs for the highly augmented job roles.
 123. The CWFs and additional job tasks in this analysis only include those which are augmented from the impact of sustainability, and do not cover other responsibilities of the job roles. CWFs and job tasks of the broader scope can be found in the Skills Framework for Financial Services.
 124. As the scope of the analysis was focused on SF TSCs only, the non-SF TSCs needed by job roles are not covered here. Details of these can be found in the Skills Framework for Financial Services.



Table of Contents for Appendix A

Representing career tracks for all job roles with high or moderate augmentation

FS sub-sectors and support function	Career track / function
Retail Banking	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management
Private Banking and Wealth Management	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management • Operations • Family Office
Corporate Banking	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management
Investment Banking	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management • Trading and Execution
Asset Management	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management • Operations • Trading and Execution
Insurance	<ul style="list-style-type: none"> • Risk, Compliance and Legal • Product Solutioning and Management • Digital and Data Analytics • Sales, After Sales, Distribution and Relationship Management • Operations
Support Function	<ul style="list-style-type: none"> • Accountancy • Infocomm Technology





Retail Banking

Risk Analytics / Compliance Analytics

Context of change and impact on job tasks

As a result of changes in industry regulations to integrate sustainability-related targets into the organisation as well as emerging considerations of sustainability risks, the job role holder will need to support the organisation by developing and deploying sustainability-related quantitative data models and / or data analytics tools to support risk management and regulatory compliance management activities.

The job role holder would need to work with business unit stakeholders to define business requirements and parameters for sustainability data analysis. Subsequently, they would develop and propose suitable sustainability-related quantitative data models and / or tools based on identified sustainability insights. The job role holder would also be involved in the deployment of sustainability-related quantitative data models and / or tools to identify, monitor and mitigate sustainability risk and compliance risks.

Additionally, this job role holder would be responsible for the development of sustainability-related quantitative data models that facilitate the tracking of the organisation's and clients' decarbonisation initiatives to ensure that organisation's sustainability commitments are met.

Overall, this job role holder will see significant changes in tasks and will be expected to expand their knowledge specific to sustainability risks and compliance risks.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
10%	12%	12%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and manage data models for risk and compliance	<ul style="list-style-type: none"> Engage actively with business unit stakeholders to determine and ensure quantitative solutions are aligned with sustainability business requirements Oversee the build, test and quality assurance phases of the developed quantitative models Conduct quality assurance, stress testing and periodic reviews on approved sustainability data models and algorithms for output accuracy and proof-of-concept (PoC) Oversee and perform validation and user acceptance testing (UAT) on sustainability risk and compliance models and / or analytics solutions Direct, implement and monitor sustainability-related model and risk management activities in accordance with defined procedures Develop and maintain user requirements, parameters and configurations for sustainability risk and compliance quantitative models 	●
Manage the documentation and reporting of risk and compliance data analytics	<ul style="list-style-type: none"> Oversee, execute and support risk and compliance solutions based on identified sustainability-related analytics requirements Compile, interpret and challenge the results of sustainability data modelling, monitoring and analysis activities in standardised reporting structures based on reporting requirements Develop summary sustainability-related reports to communicate data analysis findings, trends analysis, baseline benchmarking and modelling outputs to stakeholders Analyse, document and report on sustainability-related regulatory compliance and / or baselines of client behaviour Develop sustainability reporting dashboard to present risk and compliance data analytics findings suitable for senior management and decision-making 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Analytics / Compliance Analytics

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Supervise risk and / or compliance data analytics and model usage	<ul style="list-style-type: none"> Set direction for the identification of rules, parameters and criteria for sustainability data analysis Develop and deploy techniques and methodologies, identify required data sets and conduct data mining and data collection activities for sustainability data analysis Prepare preliminary interpretations of sustainability data analysis for non-technical reports and communicate findings to stakeholders Highlight risks and weaknesses of the sustainability-related model which may impact data analysis findings Identify and articulate business and use cases for sustainability-related solutions on risk issues and influence senior management to adopt models and / or analytics solutions for the organisation Identify and evaluate appropriate methods to automate manual sustainability data analysis and monitoring systems and seek approval from senior management 	●
Support the implementation and use of risk and compliance models and / or data analytics	<ul style="list-style-type: none"> Build and validate data sets to facilitate sustainability data analysis for risk and compliance teams Oversee the implementation and deployment of sustainability-related models and / or analytics solutions into the organisation's systems infrastructure Maintain, update and ensure that documentation and references are in place to support the deployment and integration of sustainability-related models and / or analytics solutions Establish, develop and conduct training initiatives to upskill employees on the use of sustainability-related quantitative analytic approaches and data analytic tools in risk and compliance Manage internal stakeholders throughout the lifecycle of sustainability-related quantitative solutions implementation 	●

SF TSCs needed

● Climate Change Management	L3	L4	L5
● Impact Indicators, Measurement and Reporting	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

Risk Strategy

Context of change and impact on job tasks

As sustainability becomes increasingly integrated into the core of the Retail Banking through the launch of sustainable financial products (e.g. green deposits, green mortgages and sustainability funds), this job role holder will need to consider sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices, governance risks such as board effectiveness and anti-corruption measures) and how they will impact a Retail Bank's investments, investment offerings and financing when developing and implementing Enterprise Risk Management (ERM) policies and frameworks.

A deep understanding of sustainability risks is needed to identify key risk indicators (KRIs) and develop risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation. Similarly, the organisation's risk tolerance and risk appetite should be updated to include sustainability-related factors and specifications on exclusion lists for investment activities and sectors that contradict with organisation's sustainability agenda and sustainability targets.

The job role holder will need to work closely with all risks disciplines in the organisation to communicate sustainability risks and ensure that sustainability risks are embedded within all risks types (e.g. market and liquidity risks, credit risks, operational risks) and decision making processes. In addition to current activities in monitoring the external market conditions, the job role holder will need to keep track of evolving guidelines and industry standards which are related to sustainability risks to identify possible impact on the organisation.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
11%	14%	14%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain Enterprise Risk Management (ERM) framework	<ul style="list-style-type: none"> Aggregate key risk indicators (KRIs) for sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures) and integrate them into ERM framework Incorporate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation and across different business portfolios within the organisation Define acceptable risk tolerance and risk appetite levels for organisation-wide risks, including considerations for sustainability risks and exclusion list that specifies activities and sectors for investments that contradict with bank's sustainability agenda and sustainability targets 	●
Identify and implement controls for enterprise / organisation risks	<ul style="list-style-type: none"> Keep abreast of sustainability-related regulatory changes which are relevant to the organisation and assess how changes in regulations impact its ERM framework and communicate required actions to manage risks Work with various risk disciplines in the organisation, including sustainability risks disciplines (if relevant), to align enterprise risk controls with different disciplines and to establish appropriate strategies to control identified priority areas of risks 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Strategy

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Implement ERM and consequence management activities	<ul style="list-style-type: none"> Determine business impact and implications of sustainability-related disruptive events on organisation (e.g. natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, and exacerbating liquidity stresses in banks) and develop clear incident response plan which are aligned to organisation's sustainability objectives Recommend mechanisms to address gaps in sustainability risk controls and consequence management activities Include sustainability risks disciplines (if relevant) when developing cross-functional risk management initiatives and projects 	●
Monitor risk exposure	<ul style="list-style-type: none"> Identify sustainability risk categories and implement sustainability risk identification procedures and methodology Conduct and collate stress testing results using different sustainability risks and climate scenarios, review findings and develop summary reports 	●

SF TSCs needed

- Climate Change Management
- Natural Capital Management
- Non-Financial Industry Sustainability Developments
- Sustainability Risk Management

L3	L4	L5

● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainability focused products, this job role holder will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability-related compliance is likely to be a key focus for this job role. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and frameworks. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

This job role holder will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and standards are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and standards and oversee response activities to cater to these changes 	●
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulations and frameworks impacts the organisation's existing policies Recommend sustainability regulations and standards and ensure organisation central compliance frameworks are relevant to emerging sustainability industry trends 	●
Promote compliance literacy and culture of compliance awareness	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability KPIs 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability-related policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new / updated sustainability regulations and standards 	●

SF TSCs needed

- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainability, this job role holder will need to identify sustainability-related non-compliant activities being performed by clients and stakeholders. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainability-related investigative frameworks.

The FCC job role holder should be well-versed with sustainability-related developments, trends and regulations as well as common non-compliant activities within the industry (e.g. fraudulent sustainability investment products, sustainability-theme phishing scams). They will need to incorporate sustainability-related parameters to existing financial crime risk assessment procedures to enable effective detection of sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability-type offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability-related parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability consideration considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability-related non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Develop strategies, frameworks and policies for dealing with sustainability-related non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: <ul style="list-style-type: none"> Environmental: investment products funding deforestation Social: investment products funding human trafficking or migrant smuggling activities Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability-related activities which could be linked to financial crime risks 	●
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sectors, industries and products with high risk for sustainability-related non-compliant activities (e.g. logging, mining, waste trafficking, forestry, carbon offsetting programs and nature-based climate mitigation solutions) Determine the downstream impact of emerging sustainability-related non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability-related non-compliant activities 	●
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainability-related investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability-related non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability-related non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability-related FCC violations 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability-related non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management L3 L4 L5

● Legal Counsel

Context of change and impact on job tasks

sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting retail banks and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

This job role holder will need to manage risks emerging from regulations imposed on financial services, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand the contractual terms pertaining to new products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with emerging guidelines and regulations.

Overall, the job role holder will need to develop an understanding of how sustainability is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability regulations and standards in financial services industries and understand the implications of public policy related changes in this space on the organisation's legal strategy. Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainability, imposed on financial services, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for structured products and handle legal disputes pertaining to green washing for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the financial services on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability regulations and standards, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Sustainability Risk Management L3 L4 L5
- Taxonomy Application L3 L4 L5

● Market and Liquidity Risk

Context of change and impact on job tasks

Sustainability-related events may influence retail bank's market and liquidity positions hence this job role holder will need to include considerations of sustainability risks. Since retail banks rely heavily on deposits for funding, a sudden surge in deposit withdrawals caused by sustainability-related events, such as extreme weather events, may impact the bank's liquidity. Retail banks may also experience difficulties in liquidating assets impacted by weather events. Additionally, depositors and investors, who are increasingly environmentally-conscious, may also cut back on sources of funding for retail banks that finance activities with a negative impact on the environment. Therefore, retail banks may be exposed to a decline in valuation and increased volatility in their investments

Hence, when analysing its loan portfolios, capital structure and funding sources, this job role holder will incorporate sustainability considerations into valuation modelling and analysis of liquidity risks. The job role holder will also conduct scenario analysis and stress testing to understand the potential impact of environmental-related financial risks on liquidity buffers and develop methodologies to manage such risks. The market and liquidity risk management policies and frameworks will also need to be updated with sustainability-risks considerations and aligned to the organisation's Enterprise Risk Management (ERM) framework.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain market and liquidity risk management policies and frameworks	<ul style="list-style-type: none"> Incorporate sustainability considerations into market risk and liquidity risk policies and frameworks, for example: <ul style="list-style-type: none"> Market risk: Impact on financial asset valuations from physical risk over longer time horizons, risk premiums on carbon-intensive investments, impact of potential carbon taxes or climate-triggered supply chain disruptions on global commodity prices Liquidity risk: Natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, exacerbating liquidity stresses in banks. Both assets and collateral assets impacted by weather events may also be difficult to liquidate Work with Risk Strategy team to ensure alignment between market and liquidity risk management policies, frameworks and activities with organisation's ERM framework which incorporates sustainability risks 	●
Manage risk appetite and risk controls	<ul style="list-style-type: none"> Incorporate sustainability considerations to valuation modelling and analysis of liquidity risks (e.g. whether environmental-related financial risks assessed as material over relevant time horizons could have a significant impact to net cash outflows or depletion of liquidity buffers) Incorporate sustainability considerations when establishing liquidity risk limits in terms of proportion of organisation's financial products, portfolios and services which are sustainability-focused 	●
Monitor and identify market and financial risks	<ul style="list-style-type: none"> Identify plausible extreme sustainability-related events as potential scenarios that may impact market and liquidity risks Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on market risk exposure and liquidity buffers 	●
Develop risk mitigation and consequence management activities	<ul style="list-style-type: none"> Incorporate sustainability considerations into risk positions of products 	●

SF TSCs needed

- Sustainability Risk Management

L3

L4

L5

Sustainable Finance Jobs Transformation Map

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulation develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and standards and build compliance control measures (e.g. green loan verification testing) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability-related activities (e.g. mislabelling of green loans). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability-related regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability-related regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in tasks but will be expected to expand their knowledge specific to sustainability regulations, internal sustainability policies and frameworks.

Time horizon of impact: Within three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and / or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and / or industry trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability parameters in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations and standards 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability-related activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability-related activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability-related activities (e.g. mislabelling of green loans) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability-related activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability-related activities 	●
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability-related activities (e.g. mislabelling of green loans) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability-related activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability-related activities 	●

Sustainable Finance Jobs Transformation Map

● Monitoring, Surveillance and Testing

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> • Liaise, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities • Understand sustainability regulations and act as a subject matter expert to engage / advise business stakeholders on compliance monitoring and surveillance activities • Develop regular monitoring, surveillance and compliance testing reports for management and regulators in relation to sustainability regulatory standards and requirements 	●

SF TSCs needed

- Sustainability Risk Management
- Taxonomy Application

L3	L4	L5
L3	L4	L5

● Operational Risk

Context of change and impact on job tasks

With the growing recognition of sustainability as a risk factor for financial institutions, this job role holder will need to consider sustainability regulations and sustainability-related events which may impact the organisation's operational risk.

As regulators set out sustainability regulations, guidance, and recommendations to mandate the integration of sustainability in the financial sector, the job role holder will need to monitor changing regulations, review and update its Operational Risk Management (ORM) policies and framework accordingly. This is critical in ensuring that the organisation remains compliant to regulations and avoid legal and reputational risks.

Additionally, the job role holder will need to identify sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff. This may also include physical and transition risks of the organisation. Therefore, the job role holder would need to integrate relevant sustainability considerations to ORM and Business Continuity Management (BCM) policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> • Define, articulate and ensure business requirements relating to sustainability regulations and standards are incorporated into the system used for monitoring, testing and surveillance • Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and / or industry trends relating to compliance and update monitoring and surveillance policies and frameworks • Determine and implement sustainability parameters in monitoring and surveillance tools • Understand and perform benchmarking against sustainability regulations 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> • Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks • Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> • Conduct periodic assessments of business continuity plans to test for adequacy against the risk of non compliance to sustainability risk regulations and internal frameworks • Develop and maintain BCM policies and frameworks based on identified sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff 	●
Manage Operational Risk Management (ORM) Framework	<ul style="list-style-type: none"> • Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability related factors • Update ORM frameworks to account for changing regulations, emerging global trends and industry best practices related to sustainability risk 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> • Monitor operational risk management activities to track their effectiveness in addressing sustainability-related operational risks as well as internal frameworks and guidelines • Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

SF TSCs needed

- Climate Change Management
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Product Development

Context of change and impact on job tasks

Retail Banks are providing new sustainable products to customers to address market gaps. Such retail banking products aim to have a positive impact on sustainability (e.g. green mortgages, sustainable mutual funds, green deposits). This job role holder will need to incorporate sustainability considerations across all stages of product development for new sustainable finance products to meet sustainability demands of retail customers.

The job role holder needs to keep abreast of market trends and conditions for sustainable finance products in order to ideate new sustainable finance products. When designing new sustainable finance products, the Product Development job role holder will need to consider market sustainability preferences and balance such considerations with internal capabilities. New products should also be able to fulfil the Bank's sustainability goals as well as ensure alignment with internal sustainability frameworks and regulatory taxonomies.

The job role holder should understand market dynamics and incorporate sustainability considerations into pricing models and strategies in order to effectively price sustainable finance products and ensure successful product adoption. There is also a need to craft value propositions that resonate with retail consumers and conduct market testing to assess product and market fit.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategies for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainable finance products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Develop sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

SF TSCs needed

• Sustainable Investment Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Management

Context of change and impact on job tasks

Retail Banking products are focused on providing sustainable investments and sustainable financing for retail banking clients (e.g. green car loans, sustainable mutual funds). This job role holder will need to incorporate sustainability considerations across the product management lifecycle, from assessment of suitability for sustainable finance products to channel management decisions.

The job role holder should ensure that the bank's sustainable finance product mix is suitable to address the sustainable finance product demand from retail customers. The job role holder also needs to recognise and analyse the different sustainability preferences and needs of different retail market segments. The ability to manage channels for different sustainable finance products would also be required (e.g. selection of marketing and customer acquisition channels for different sustainable finance products). The job role holder needs to consider sustainability KPIs during the analysis of product performance.

A familiarity with sustainability considerations in the pricing model is required to appropriately adjust pricing for sustainable finance products. The sustainability risks and financial risks due to offering the sustainable finance product would also need to be managed by the role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and suitability	<ul style="list-style-type: none"> Evaluate overall product portfolio against suitability to business sustainability strategies Ensure that products are in compliance with sustainability-related regulatory and international trade guidelines Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and / or client channels and strategies	<ul style="list-style-type: none"> Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and strategic sustainability objectives are met Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainability financial products Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

SF TSCs needed

• Sustainability Risk Management	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Business Process Improvement

Context of change and impact on job task

With the rise in sustainable and responsible investing (SRI) and sustainable financing there will increasingly be the integration of sustainable finance-related job tasks, controls, process governance and management information into existing core processes of retail banks. This job role holder will need to driving efficiency and transparency throughout the organisation, ensuring that the organisation's operations align with regulatory requirements, best practices and governance frameworks.

The job role holder should liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand business process gaps between current and future states. They will need to identify process improvement changes for new sustainable finance products being offered to drive better user experience.

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. The job role holder will also conduct regular monitoring business processes to ensure it is aligned with evolving sustainability regulations, disclosure requirements and responsible banking standards.

Time horizon of impact: Within the next three years

Impact on key job task

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability metrics to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, sustainability scenario analysis) and risk mitigation measures into processes Regulatory compliance: ensure that banking processes are aligned with evolving sustainability regulations, disclosure requirements, and responsible banking standards 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability-related considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability-integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the financial sector moves towards achieving its sustainability commitments, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. This job role holder will need to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and / or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs.

Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organise and manipulate sustainability data from internal systems and external sources according to specific data needs Direct, oversee and conduct data mining activities to identify and investigate leads, trends, patterns, correlations and regularities within large sustainability data sets Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainability data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability-related information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and / or analytics findings 	●
Build data analysis mechanisms and processing systems (Only applicable to Head of Data Analytics)	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability insights into clear, predictive business-focused deliverables for senior stakeholders 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability analytical tools and / or develop sustainability analytical tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of designed sustainability data analytics solutions to stakeholders 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5
- Sustainability Reporting L3 L4 L5
- Sustainability Risk Management L3 L4 L5

● Data Engineer

Context of change and impact on job tasks

Retail Banks are receiving more sustainability data on products being offered to retail banking customers (e.g. sustainability market trends on sustainable mutual funds) as well as sustainability data on customer spending behaviours (e.g. carbon footprint of credit card spending). The Retail Banking Data Engineer will need to understand available sustainability data sources for such products and appropriate techniques to clean sustainability data to enable subsequent usage of data for analytics.

A familiarity with relevant taxonomies may be required when collecting data on the underlying activities of products offered as well as customer spending behaviours in order to tag the activities as sustainable. The job role holder may also support the sustainability reporting process by collecting relevant sustainability KPIs for reporting.

The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and interconnections in large sustainability datasets through data mining. To ensure efficient storage, transfer or analysis of sustainability data, the job role holder needs to update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability goals and strategy. Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time Implement data governance structures for sustainability data including data ownership, data lineage, hierarchy etc. to drive data literacy, ensure security and data quality 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting tools Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation to outline them. 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5
- Taxonomy Application L3 L4 L5

● Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the role of an innovation executive would be to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role holder would be responsible for conducting Proof of Concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role holder will see significant changes in tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technology that has helped similar organisations scale successfully Draft, develop and endorse sustainability-related policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainability-related innovative ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability-related innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability-related improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability-related innovation and process improvement Ensure that processes are aligned with the organisation's sustainability priorities and benchmarks as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability innovation initiatives Endorse and drive selected sustainability-related initiatives and systems to improve processes and systems 	●

● Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire / partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition / partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions / partnerships of disruptive sustainability-related technologies Lead and conduct deal negotiations for the acquisitions / partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions / partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Identify, implement and oversee the implementation of employees' innovative ideas in sustainability into existing business processes Research and assess the potential impacts on business processes caused by the implementation of innovative solutions in sustainability Develop a business case for innovation solution in sustainability and propose it to heads of business units and senior stakeholders Assist and design the implementation plans for innovation initiatives / solutions in sustainability 	●

SF TSCs needed

● Impact Indicators, Measurement and Reporting	L3	L4	L5
● Sustainability Reporting	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

● Product Sales

Context of change and impact on job tasks

Retail banking clients are increasingly interested in sustainable finance products. This job role holder will need to adapt their sales strategies and sustainable finance products knowledge, in order to provide financial advisory services which caters to the client's sustainability agenda and requirements.

Retail Banking clients can exhibit investment sustainability preferences across the sustainable investment product spectrum (e.g. environmental, social or governance, a combination of them, or sustainability-neutral). In addition, new retail financial products that are targeted at addressing consumer needs related to sustainability are increasingly being offered by Retail Banks (e.g. green mortgage loans and green car loans). Hence, the job role holder is expected to be familiar with the range of sustainable finance products and support RMs that have clients interested in these products. The job role holder should have a good understanding of the competitive landscape, industry trends and customers' needs, risk profile, and preferences, to effectively position its application to client's portfolio.

With evolving sustainable finance product offerings, it is necessary for Product Sales to develop appropriate sales strategies for different types of sustainable finance products

Time horizon of impact: Immediate

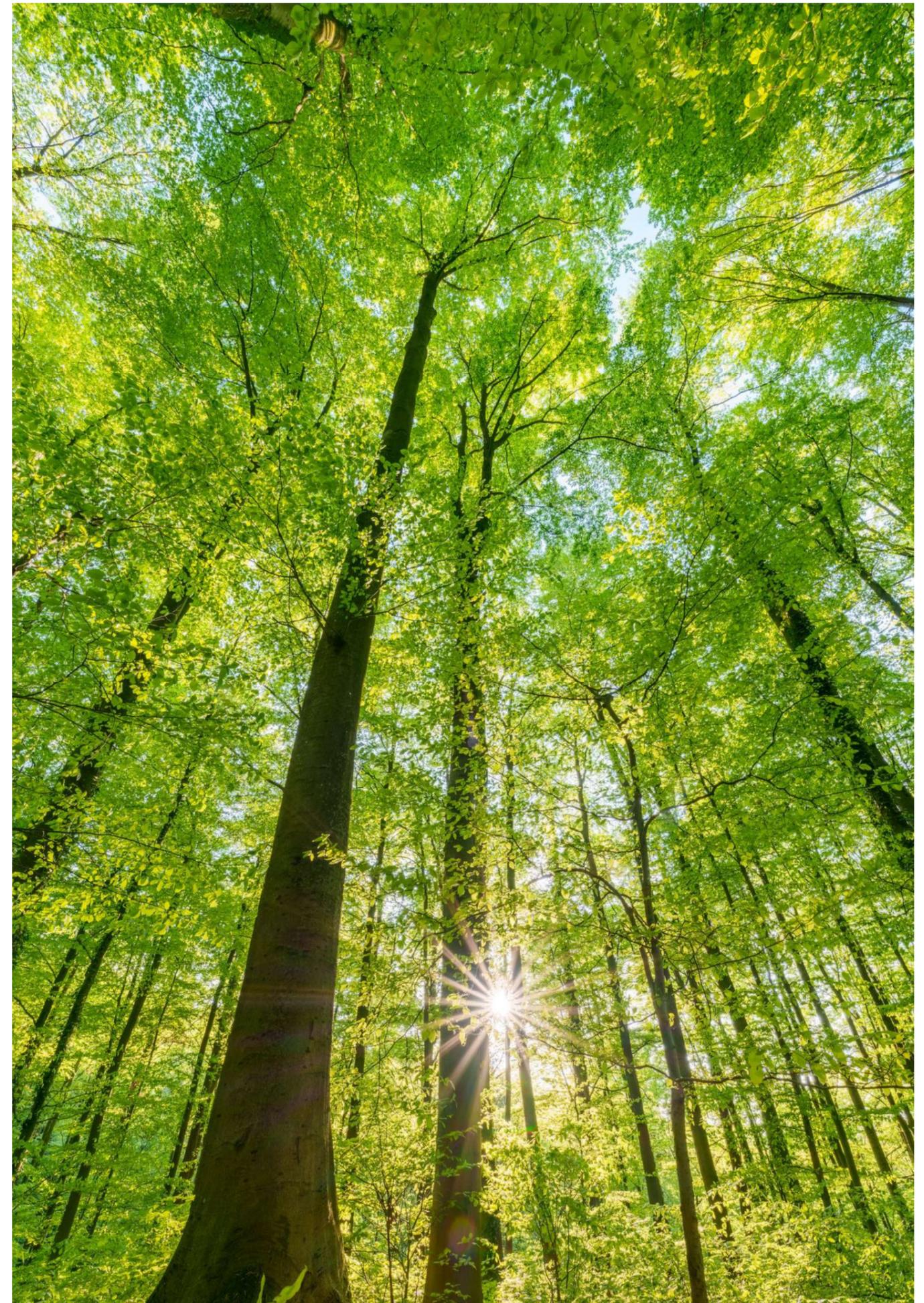
Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage organisation's products	<ul style="list-style-type: none"> Develop sales strategies for sustainable finance products through collaboration with the product marketing department Keep up-to-date with repackaged or restructured sustainable finance products Keep up-to-date with new sustainable finance products Monitor sales developments for different types of sustainable finance products and conduct periodic review of sales strategies Conduct sustainability risk assessments to identify and mitigate potential sustainability related risks associated with the products Use green marketing strategies to communicate the sustainability advantages of the products through various channels 	●
Provide product advisory services	<ul style="list-style-type: none"> Provide financial advisory services on sustainable finance products to clients referred from client-facing teams Ensure advisory procedures and documentation adhere to business processes for sustainable finance products and sustainability-related regulatory requirements (e.g. Equator Principles) Communicate relevant and timely sustainable finance product-related information to customer and client networks 	●
Support product trading activities	<ul style="list-style-type: none"> Develop relationships with market counterparties with sustainable finance product offerings to obtain information Train sales teams and employees to effectively communicate sustainability value proposition of products Ensure awareness of the taxonomy and framework on how to classify various sustainable finance products 	●

SF TSCs needed

• Sustainable Investment Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5



Private Banking and Wealth Management

Risk Analytics / Compliance Analytics

Context of change and impact on job tasks

As a result of changes in industry regulations to integrate sustainability-related targets into the organisation as well as emerging considerations of sustainability risks, this job role holder will support the organisation by developing and deploying sustainability-related quantitative data models and/or data analytics tools to support risk management and regulatory compliance management activities.

The job role holder would need to work with business unit stakeholders to define business requirements and parameters for sustainability data analysis. Subsequently, he/she would develop and propose suitable sustainability-related quantitative data models and/or tools based on identified sustainability insights. The job role holder would also be involved in the deployment of sustainability-related quantitative data models and/or tools to identify, monitor and mitigate sustainability risk and compliance risks.

Additionally, this job role holder would be responsible for the development of sustainability-related quantitative data models that facilitate the tracking of the organisation's and clients' decarbonisation initiatives to ensure that organisation's sustainability commitments are met.

Overall, this job role holder will see significant changes in tasks and will be expected to expand their knowledge specific to sustainability risks and compliance risks.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
10%	12%	12%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and manage data models for risk and compliance	<ul style="list-style-type: none"> Engage actively with business unit stakeholders to determine and ensure quantitative solutions are aligned with sustainability business requirements Oversee the build, test and quality assurance phases of the developed quantitative models Conduct quality assurance, stress testing and periodic reviews on approved sustainability data models and algorithms for output accuracy and proof-of-concept (PoC) Oversee and perform validation and user acceptance testing (UAT) on sustainability risk and compliance models and/or analytics solutions Direct, implement and monitor sustainability model and risk management activities in accordance with defined procedures Develop and maintain user requirements, parameters and configurations for sustainability risk and compliance quantitative models 	●
Manage the documentation and reporting of risk and compliance data analytics	<ul style="list-style-type: none"> Oversee, execute and support risk and compliance solutions based on identified sustainability-related analytics requirements Compile, interpret and challenge the results of sustainability data modelling, monitoring and analysis activities in standardised reporting structures based on reporting requirements Develop summary sustainability-related reports to communicate data analysis findings, trends analysis, baseline benchmarking and modelling outputs to stakeholders Analyse, document and report on sustainability-related regulatory compliance and/or baselines of client behaviour Develop sustainability reporting dashboard to present risk and compliance data analytics findings suitable for senior management and decision-making 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Analytics / Compliance Analytics

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Supervise risk and / or compliance data analytics and model usage	<ul style="list-style-type: none"> Set direction for the identification of rules, parameters and criteria for sustainability data analysis Develop and deploy techniques and methodologies, identify required data sets and conduct data mining and data collection activities for sustainability data analysis Prepare preliminary interpretations of sustainability data analysis for non-technical reports and communicate findings to stakeholders Highlight risks and weaknesses of the sustainability-related model which may impact data analysis findings Identify and articulate business and use cases for sustainability-related solutions on risk issues and influence senior management to adopt models and/or analytics solutions for the organisation Identify and evaluate appropriate methods to automate manual sustainability data analysis and monitoring systems and seek approval from senior management 	●
Support the implementation and use of risk and compliance models and / or data analytics	<ul style="list-style-type: none"> Build and validate data sets to facilitate sustainability data analysis for risk and compliance teams Oversee the implementation and deployment of sustainability-related models and/or analytics solutions into the organisation's systems infrastructure Maintain, update and ensure that documentation and references are in place to support the deployment and integration of sustainability-related models and/or analytics solutions Establish, develop and conduct training initiatives to upskill employees on the use of sustainability-related quantitative analytic approaches and data analytic tools in risk and compliance Manage internal stakeholders throughout the lifecycle of sustainability-related quantitative solutions implementation 	●

SF TSCs needed

● Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
● Climate Change Management	L3	L4	L5
● Impact Indicators, Measurement and Reporting	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

Risk Strategy

Context of change and impact on job tasks

As sustainability becomes increasingly integrated into the core of the Private Banking wealth management practices as clients develop sustainability preferences and risk appetites, this job role holder will need to consider sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices, governance risks such as board effectiveness and anti-corruption measures) and how they will impact a client's investments and philanthropic activities when developing and implementing Enterprise Risk Management (ERM) policies and frameworks.

A deep understanding of sustainability risks is needed to understand key risk indicators (KRIs) and integrate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation's investment portfolios. Similarly, the organisation's risk tolerance and risk appetite should be updated to include sustainability-related factors and specifications on exclusion lists for activities and sectors that contradict with organisation's and client's sustainability agenda and sustainability targets.

The job role holder will need to work closely with all risks disciplines in the organisation to communicate sustainability risks and ensure that sustainability risks are embedded within all risks types (e.g. market and liquidity risks, credit risks, operational risks) and decision making processes. In addition to current activities in monitoring the external market conditions, the job role holder will need to keep track of evolving guidelines and industry standards which are related to sustainability risks to identify possible impact on its clients and to the organisation.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
11%	14%	14%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain Enterprise Risk Management (ERM) framework	<ul style="list-style-type: none"> Aggregate key risk indicators (KRIs) for sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures) and integrate them into ERM framework Incorporate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation and across different business portfolios within the organisation Define acceptable risk tolerance and risk appetite levels for organisation-wide risks, including considerations for sustainability risks and exclusion list that specifies activities and sectors for investments that contradict with bank's sustainability agenda and sustainability targets 	●
Identify and implement controls for enterprise / organisation risks	<ul style="list-style-type: none"> Keep abreast of sustainability-related regulatory changes which are relevant to the organisation and assess how changes in regulations impact its ERM framework and communicate required actions to manage risks Work with various risk disciplines in the organisation, including sustainability risks disciplines (if relevant), to align enterprise risk controls with different disciplines and to establish appropriate strategies to control identified priority areas of risks 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Strategy

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Implement ERM and consequence management activities	<ul style="list-style-type: none"> Determine business impact and implications of sustainability-related disruptive events on client portfolios (e.g. natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, and exacerbating liquidity stresses in banks) and develop clear incident response plan which are aligned to client's and organisation's sustainability agenda Recommend mechanisms to address gaps in sustainability risk controls and consequence management activities Include sustainability risks disciplines (if relevant) when developing cross-functional risk management initiatives and projects 	●
Monitor risk exposure	<ul style="list-style-type: none"> Identify sustainability risk categories and implement sustainability risk identification procedures and methodology Conduct and collate stress testing results using different sustainability risks and climate scenarios, review findings and develop summary reports 	●

SF TSCs needed

● Climate Change Management	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Non-Financial Industry Sustainability Developments	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainability focused products, this job role will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability-related compliance is likely to be a key focus for this job role holder. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and frameworks. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

The compliance advisory will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and frameworks are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and oversee response activities to cater to these changes 	●
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulations and frameworks impacts the organisation's existing policies Recommend sustainability regulations and ensure organisation central compliance frameworks are relevant to emerging sustainability industry trends 	●
Promote compliance literacy and culture of compliance awareness	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability KPIs 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability-related policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new/updated sustainability regulations and frameworks 	●

SF TSCs needed

- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainable finance, this job role holder will need to identify sustainability-related non-compliant activities being performed by potential clients and stakeholders. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainability-related investigative frameworks.

The FCC job role holder should be well-versed with sustainability-related developments, trends and regulations as well as common non-compliant activities within the industry and identify sectors and industries with high risk for sustainability-related non-compliant activities (e.g. logging, mining, waste trafficking, forestry). These sustainability factors should be incorporated into existing financial crime risk assessment procedures to enable effective detection of sustainability-related violations that can either disclose an offence itself, or proceeds of crime from sustainability-type offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability-related parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability-related non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Implement strategies, frameworks and policies for dealing with sustainability-related non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: <ul style="list-style-type: none"> Environmental: overall reputational risk from funding non-compliant environmental activities Social: investment products linked to human trafficking or migrant smuggling activities Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability-related activities which could be linked to financial crime risks 	●
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sustainability-related violations that can either disclose an offence itself, or proceeds of crime from sustainability-type offences that are predicate offences (e.g. Prevention of Human Trafficking Act 2014, Wildlife Act 1965) Determine the downstream impact of emerging sustainability-related non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability-related non-compliant activities Identify the proportion of the source of wealth attributable to sustainability risks and assess the materiality of the sustainability and associated reputational risks and whether that is within the risk appetite of the organisation 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainability-related investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability-related non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability-related non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability-related FCC violations 	●
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability-related non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management

L3 L4 L5

● Legal Counsel

Context of change and impact on job tasks

Sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting private banks and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

This job role holder will need to manage risks emerging from regulations imposed on financial services, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand the contractual terms pertaining to new / structured products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with classification frameworks.

Overall, the job role holder will need to develop an understanding of how sustainability is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability related regulations in financial services industries and understand the implications of public policy related changes in this space on the organisation's legal strategy. Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainability/sustainable finance, imposed on financial services, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for structured products and handle legal disputes pertaining to green washing for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the financial services on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability related regulations, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Sustainability Risk Management
- Taxonomy Application

L3 **L4** L5
L3 **L4** L5

● Market and Liquidity Risk

Context of change and impact on job tasks

Sustainability-related events may influence the market and liquidity positions of investment portfolios of private banking clients hence the job role of Market and Liquidity Risk will be expanded to include considerations of sustainability risks. Private banking involves understanding and aligning with clients' risk tolerance and investment objectives to provide appropriate advise on asset allocation strategies. For clients who are environmentally-conscious, private banks will need to consider how sustainability-related investments impact its market and liquidity risks.

Hence, when developing asset allocation strategies, the market liquidity and risk job role holder should incorporate sustainability considerations into its valuation modelling and analysis of liquidity risks. They will also conduct scenario analysis and stress testing to understand the potential impact of environmental-related financial risks on liquidity buffers and develop methodologies to manage such risks. The market and liquidity risk management policies and frameworks will also need to be updated with sustainability risks considerations and aligned to the organisation's Enterprise Risk Management (ERM) framework.

Time horizon of impact: Within three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain market and liquidity risk management policies and frameworks	<ul style="list-style-type: none"> Incorporate sustainability considerations into market risk and liquidity risk policies and frameworks, for example: <ul style="list-style-type: none"> Market risk: Impact on financial asset valuations from physical risk over longer time horizons, risk premiums on carbon-intensive investments, impact of potential carbon taxes or climate-triggered supply chain disruptions on global commodity prices Liquidity risk: Natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, exacerbating liquidity stresses in banks. Both assets and collateral assets impacted by weather events may also be difficult to liquidate Work with Risk Strategy team to ensure alignment between market and liquidity risk management policies, frameworks and activities with organisation's ERM framework which incorporates sustainability risks 	●
Manage risk appetite and risk controls	<ul style="list-style-type: none"> Incorporate sustainability considerations to valuation modelling and analysis of liquidity risks (e.g. whether environmental-related financial risks assessed as material over relevant time horizons could have a significant impact to net cash outflows or depletion of liquidity buffers) Incorporate sustainability considerations when establishing liquidity risk limits in terms of proportion of organisation's financial products, portfolios and services which are sustainability-focused 	●
Monitor and identify market and financial risks	<ul style="list-style-type: none"> Identify plausible extreme sustainability-related events as potential scenarios that may impact market and liquidity risks Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on market risk exposure and liquidity buffers 	●
Develop risk mitigation and consequence management activities	<ul style="list-style-type: none"> Incorporate sustainability considerations into risk positions of products 	●

SF TSCs needed

- Sustainability Risk Management

L3

L4

L5

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulation develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and build compliance control measures (e.g. sustainability impact measurement testing) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability-related activities (e.g. misalignment of social impact bonds). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability-related regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability-related regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in tasks but will be expected to expand their knowledge specific to sustainability regulations and standards, internal sustainability policies and frameworks.

Time horizon of impact: Within three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and / or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and/or industry trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability parameters in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations and standards 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations and standards, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability-related activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability-related activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Develop and drive compliance testing checks related to sustainability-related activities to determine regulatory compliance in the organisation's daily operations Identify and evaluate gaps in compliance controls in relation to sustainability-related activities and recommend corrective steps to central compliance management teams Address issues, and challenges in closing compliance gaps and implement corrective actions for compliance violations related to sustainability-related activities 	●

● Monitoring, Surveillance and Testing

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability-related activities (e.g. misalignment of social impact bonds) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability-related activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability-related activities 	●
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> Liaise, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities Understand sustainability regulations and act as a subject matter expert to engage/advise business stakeholders on compliance monitoring and surveillance activities Develop regular monitoring, surveillance and compliance testing reports for management and regulators in relation to sustainability regulatory standards and requirements 	●

SF TSCs needed

- Sustainability Risk Management
- Taxonomy Application

L3	L4	L5
L3	L4	L5

● Operational Risk

Context of change and impact on job tasks

With the growing recognition of sustainability and sustainability as a risk factor for financial institutions, this job role holder will need to consider sustainability regulations and sustainability-related events which may impact the organisation's operational risk.

As regulators set out sustainability regulations, guidance, and recommendations to mandate the integration of sustainability in the financial sector, the job role holder will need to monitor changing regulations, review and update its Operational Risk Management (ORM) policies and framework accordingly. This is critical in ensuring that the organisation remains compliant to regulations and avoid legal and reputational risks.

Additionally, the job role holder will need to identify sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff. This may also include physical and transition risks of the organisation. Therefore, the job role holder would need to integrate relevant sustainability considerations to ORM and Business Continuity Management (BCM) policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> Conduct investigations on and provide recommendations to improve operational risk mitigation actions aimed at addressing issues related to compliance to sustainability risk regulations and internal frameworks Lead the identification of key sustainability indicators relevant to operational risks (e.g. number of workplace incidents) and embed them into identification procedures 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> Conduct periodic assessments of business continuity plans to test for adequacy against the risk of non compliance to sustainability risk regulations and internal frameworks Develop and maintain BCM policies and frameworks based on identified sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff 	●
Manage Operational Risk Management (ORM) Framework	<ul style="list-style-type: none"> Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability related factors Update ORM frameworks to account for changing regulations, emerging global trends and industry best practices related to sustainability risk 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> Monitor operational risk management activities to track their effectiveness in addressing sustainability-related operational risks as well as internal frameworks and guidelines Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

SF TSCs needed

- Climate Change Management
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Portfolio / Investment / Fund Management

Context of change and impact on job tasks

Private banking and wealth management firms are increasingly creating sustainability-screened or -aligned investment funds and alternative sustainable investment opportunities as sustainability gains prominence in the investment industry. This job role holder will need to adapt to changing investor preferences and regulatory landscapes, and the increasing importance of sustainability factors in investment decision-making.

This job role holder will need to incorporate sustainability factors into investment decision-making processes. In order to do so, they will need to define material sustainability targets, KPIs and outcomes for the sustainability-related portfolio.

During investor meetings to determine sustainability strategies, this job role holder should uphold sustainability stewardship, apply knowledge on taxonomy alignment and sustainable investment objectives, as well as considerations for key sustainability trends and social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments. They also need to understand and articulate relevant impact measurements and metrics (e.g. taxonomy alignment, sustainability risk rating, MSCI rating) when sharing research findings on financial forecasting and valuation.

Additionally, they need to keep abreast of new sustainability investment guidelines and ensure that investment portfolios are aligned to sustainability related guidelines and labels (e.g. Ecolabel, SFDR article 8,9, Paris Aligned Benchmarks). They should also work with compliance team to update sustainability-related policies accordingly.

Time horizon of impact: Within the next three years

Projected % increase in FTE (by year)^a

2025	2027	2032
6%	10%	10%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Execute strategic decisions and evaluate performance	<ul style="list-style-type: none"> Define organisations investment strategies for sustainability alignment, integration and impact investments Define material sustainability targets, KPIs and outcomes for the sustainability-related portfolio Incorporate financially material sustainability factors into organisation's criteria for portfolio strategies to manage financial and/or operational performance Incorporate sustainability KPIs (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) into evaluation criteria to measure performance with reference to internationally recognised frameworks and standards (e.g. TCFD, ISSB) Provide recommendations to enhance the sustainability performance of the portfolio, incorporating understanding on whether investment target's business activities contributed sufficiently to the fund's investment objective and sustainability agenda 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

● Portfolio / Investment / Fund Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Gather and present information to relevant stakeholders	<ul style="list-style-type: none"> When determining sustainability strategies with investors, uphold sustainability stewardship, apply knowledge on taxonomy alignment and sustainable investment objectives (e.g. impact investing, sustainable investing, thematic investing, impact first investing, sustainability alignment, sustainability integration), as well as considerations for key sustainability trends and social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments Incorporate information on sustainability-related performance and risk metrics (e.g. taxonomy alignment, sustainability risk rating, SFDR, TCFD, ISSB, MSCI) when preparing and presenting information to relevant stakeholders Understand impact measurements when evaluating research findings on financial forecasting and valuation 	●
Ensure compliance with investment management guidelines	<ul style="list-style-type: none"> Ensure investment portfolios are aligned to sustainability related guidelines and labels (e.g. Ecolabel, SFDR article 8,9, Paris Aligned Benchmarks) Keep abreast of new sustainability investment guidelines and ensure that strategies and investment processes are compliant with international standards and best practices Work with compliance team to update sustainability-related policies according to new sustainability investment guidelines 	●

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Stewardship Development	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Economist

Context of change and impact on job tasks

As Private Banking clients are increasingly interested in investing towards sustainable initiatives, this job role holder will need to support and facilitate the investment process by validating investment trend findings and providing qualitative recommendations to clients.

The job role would be responsible for conducting and validating secondary research on sustainability policies, industries and companies to discover sustainability insights that could be beneficial to clients when making investment decisions. Hence, the job role will require an understanding of the complex interlinkages between climate change, natural capital and social factors, including how they impact economic stability and macroeconomic indicators to inform organisation policies.

Additionally, the job role would be tasked to compile qualitative recommendations for sustainability investments based on macro and micro-research and investment analysis.

Overall, this job role will not see significant changes in tasks but will be expected to have a broad-based understanding of sustainability to better perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct research, gather report findings and recommendations	<ul style="list-style-type: none"> Conduct, validate and ensure comprehensiveness of secondary research on sustainability policies, industries and companies by assessing public information Study, review and endorse the socioeconomic impact of new public policies related to sustainability on the financial services sector for circulation to stakeholders 	●
Provide strategic inputs for organisation's policy formation	<ul style="list-style-type: none"> Develop strategic inputs based on sustainability developments (related to climate change, natural capital and social factors) and their impact on the organisation for potential organisational policy amendments 	●
Facilitate investment processes	<ul style="list-style-type: none"> Draft, compile and communicate qualitative recommendations, including recommendations for sustainability investment, based on macro and micro-research to relevant business units on potential investment opportunities Conduct and validate sustainability investment trend analysis findings to steer business development activities 	●

SF TSCs needed

- Climate Change Management L3 L4 L5
- Natural Capital Management L3 L4 L5

● Product Development

Context of change and impact on job tasks

Private Banks are providing new sustainable products to address market gaps. Such private banking products aim to have a positive impact on sustainability (e.g. sustainability structured products, impact investment funds). This job role holder will need to incorporate sustainability considerations across all stages of product development for new sustainable finance products to meet sustainability demands of private banking customers.

The job role holder needs to keep abreast of market trends and conditions for sustainable finance products in order to ideate new sustainable finance products. When designing new sustainable finance products, the job role holder will need to consider external market sustainability preferences and balance such considerations with internal capabilities. New products should also be able to fulfil the Bank's sustainability goals as well as ensure alignment with internal sustainability frameworks and regulatory taxonomies. The job role holder will need to determine acceptable impact indicators for key performance indicators (KPIs) embedded into impact investing products and philanthropy.

The job role holder should incorporate sustainability considerations into pricing models and strategies to effectively price sustainable finance products and ensure successful product adoption. There is also a need to craft value propositions that resonate with private banking consumers and conduct market testing to assess product and market fit.

As market offerings of sustainable finance products for private banking consumers continue to evolve, there is a need to keep abreast of market trends and conditions for sustainable finance products.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategies for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainability financial products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Develop sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5
- Sustainable Investment Management L3 L4 L5
- Taxonomy Application L3 L4 L5

● Product Management

Context of change and impact on job tasks

Private Banking products are focused on providing sustainable investments as well as philanthropy and impact investing opportunities for private banking clients (e.g. sustainability structured products, social impact funds). This job role holder will need to incorporate sustainability considerations across the product management lifecycle, from assessment of suitability for sustainable finance products to channel management decisions.

The job role holder should ensure that the bank's sustainable finance product mix is suitable to address the sustainable finance product demand from private banking customers. The job role holder also needs to recognise and analyse the different sustainability preferences and needs of different private banking customer market segments.

Management of channels for different sustainable finance products would be required (e.g. selection of marketing and customer acquisition channels for different sustainable finance products). The job role holder needs to consider sustainability performance metrics during the analysis of product performance. This is important for impact investing products as familiarity with the relevant impact indicators and metrics are required to measure and report the impact the investments have made to private banking clients.

A familiarity with sustainability considerations in the pricing model is required to appropriately adjust pricing for sustainable finance products. The sustainability risks and financial risks due to offering the sustainable finance product would also need to be managed by the job role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and suitability	<ul style="list-style-type: none"> Evaluate overall product portfolio against suitability to business sustainability strategies Ensure that products are in compliance with sustainability-related regulatory and international trade guidelines Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and/or client channels and strategies	<ul style="list-style-type: none"> Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and strategic sustainability objectives are met Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainable finance products Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

● Product Management

SF TSCs needed

- **Impact Indicators, Measurement and Reporting**
- **Sustainable Investment Management**
- **Sustainability Risk Management**
- **Taxonomy Application**

L3	L4	L5

● Research and Analysis

Context of change and impact on job tasks

Private banking clients are increasingly interested in investing towards sustainable initiatives. When performing equity research, this job role holder will need to research sustainability-related issues and investment risks for its given sector and company to ensure that each investment aligns with the fund's investment strategy.

The job role holder should monitor the financial markets and keep abreast of sustainability developments and events which may impact the performance of company and its specific sector (e.g. real estate, automotive, transport, utilities, chemicals). They may need to work with relevant business units to complete valuations of companies, taking into account relevant sustainability KPIs which reflect material sustainability-related financial risks.

Subsequently, when drafting communication and equity research reports, the job role holder should incorporate the above relevant sustainability performance and risk metrics and articulate how they contribute to investment recommendations.

Additionally, they may need to work with management to incorporate relevant sustainability considerations into investment research policies and processes.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct research, gather report findings and recommendations	<ul style="list-style-type: none"> Conduct research on sustainability factors (e.g. sustainable finance target, corporate governance, transition risks affecting commodity price/ exchange rate volatility, location of operations prone to weather events) which may impact performance Incorporate relevant sustainability performance and risk metrics (e.g. sustainability risk rating) in communication reports and recommendations 	●
Provide strategic inputs for organisation's policy formation	<ul style="list-style-type: none"> Keep up-to-date with sustainability developments and events which may impact the performance of company or each specific sector (e.g. Real estate, automotive, transport, utilities, chemicals) Support management with identifying material sustainability issues and sustainability considerations that should be integrated into investment policies and processes 	●
Facilitate investment processes	<ul style="list-style-type: none"> Work with other business units to complete valuations of companies and investments, taking into account relevant sustainability KPIs which reflect relevant sustainability-related financial risks for a given company and sector 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Nature Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Business Process Improvement

Context of change and impact on job tasks

With the rise in sustainable and responsible investing (SRI), there will increasingly be the integration of sustainability-related tasks, controls, process governance and management information into existing core processes of Private Banking and Wealth Management organisations. This job role holder will need to driving efficiency and transparency throughout the organisation, ensuring that the organisation's investment processes align with regulatory requirements, best practices and governance frameworks.

The job role holder should liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand process gaps between current and future states. They will need to identify process improvement changes for new sustainable finance products being offered to drive better user experience.

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. This helps to ensure that relevant sustainability factors are taken into considerations to support sound investment decisions. The job role holder will also conduct regular monitoring processes to ensure it is aligned with evolving sustainability regulations, disclosure requirements and sustainable investing standards.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: <ul style="list-style-type: none"> Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability KPIs to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, scenario analysis) and risk mitigation measures into processes Regulatory compliance: ensure that banking processes are aligned with evolving sustainability regulations, disclosure requirements, and responsible banking standards 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability-related considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the financial sector moves towards achieving its sustainability commitments, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. This job role holder will need to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and/or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs.

Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organise and manipulate sustainability data from internal systems and external sources according to specific data needs Direct, oversee and conduct data mining activities to identify and investigate leads, trends, patterns, correlations and regularities within large sustainability data sets Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainability data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability-related information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and / or analytics findings 	●
Build data analysis mechanisms and processing systems <small>(Only applicable to Head of Data Analytics)</small>	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability-related insights into clear, predictive business-focused deliverables for senior stakeholders 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability analytical tools and / or develop sustainability analytical tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of designed sustainability data analytics solutions to stakeholders 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5
- Sustainability Reporting L3 L4 L5
- Sustainability Risk Management L3 L4 L5

● Data Engineer

Context of change and impact on job tasks

Private Banks are utilising more sustainability data to enable products being offered (e.g. sustainability index linked structured products) and receiving more sustainability data as a result of offering certain products to private banking customers (e.g. sustainability data on philanthropy and impact investing opportunities). The Private Banking Data Engineer will need to understand available sustainability data sources for such products and clean the sustainability data to enable subsequent usage of data for analytics.

A familiarity with relevant taxonomies may be required when collecting data on the underlying activities of products offered in order to tag the activities as sustainable. The job role holder may also support the sustainability reporting process by collecting relevant sustainability metrics for reporting. The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and understand the interconnectedness within large sustainability datasets through data mining.

For impact investing products, an understanding of which sustainability performance indicators are relevant for those products is needed. To ensure efficient storage, transfer or analysis of sustainability data, the job role holder needs to understand if current software and hardware implementations are sufficient and update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability goals and strategy. Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time Implement data governance structures for sustainability data including data ownership, data lineage, hierarchy etc. to drive data literacy, ensure security and data quality 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting tools Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation to outline them. 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Taxonomy Application

L3	L4	L5
L3	L4	L5

● Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the role of an innovation executive would be to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally, including profiling tools which incorporate the client's sustainability preferences and risk appetite. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role holder would be responsible for conducting Proof of Concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role holder will see significant changes in tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technology that has helped similar organisations scale successfully Draft, develop and endorse sustainability-related policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainability-related innovative ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability-related innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability-related improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability-related innovation and process improvement Ensure that processes are aligned with the organisation's sustainability priorities and benchmarks as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability innovation initiatives Endorse and drive selected sustainability-related initiatives and systems to improve processes and systems 	●

● Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire / partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition/partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions/partnerships of disruptive sustainability technologies Lead and conduct deal negotiations for the acquisitions/partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions/partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition/partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions/partnerships of disruptive sustainability technologies Lead and conduct deal negotiations for the acquisitions/partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions/partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5
L3	L4	L5

● Business Management

Context of change and impact on job tasks

As private banking clients become more interested in investing or sustainability initiatives, Private Banks are expected to take into account clients' sustainability preferences when developing sustainable finance solutions (e.g. sustainable investing and impact investing).

This job role will need to identify potential business opportunities and lead the strategic development of business plans relating to sustainable finance products. The job role holder is also expected to set and track sustainability-related Key Performance Indicators and recommend improvement initiatives to improve the performance of sustainable finance products.

As such, the job role holder would need to have a good understanding of key sustainability concepts and frameworks (e.g. climate change, natural capital and non-financial industry sustainability developments, taxonomy) and their relevance to business and product development. This understanding of sustainable finance solutions ensures that they are able to develop business strategies for the sales and delivery of sustainable finance products.

Overall, this job role holder will see significant changes in tasks, specifically the need to expand their knowledge of key sustainability concepts and be aware of new/updated sustainable finance products that are offered.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee front office performance	<ul style="list-style-type: none"> Formulate, execute and evaluate business plans and sustainability Key Performance Indicators for front office teams in alignment with the organisation's sustainability agenda Identify business opportunities and develop business strategies for the sales of sustainable finance products Gather relevant feedback from front office, lead change, develop and implement new sales initiatives and programs related to sustainability to capture key demographics 	●
Connect business units to support delivery to clients	<ul style="list-style-type: none"> Assist and liaise with key partners on resource management and allocation to deliver timely rollout of sustainability initiatives and projects across the business Work and collaborate with business unit heads to identify improvement opportunities, lead change initiatives and drive the implementation of strategic plans related to sustainability across the organisation 	●
Manage operational issues	<ul style="list-style-type: none"> As an independent party from the business, ensure that compliance issues and client complaints related to sustainability are resolved Drive and implement the development work processes, procedures and controls to ensure compliance with sustainability regulations and standards both internally and externally Track adherence to compliance with sustainability regulations and standards across products, processes and services Assist relevant parties with client sustainability due diligence and onboarding procedures 	●

SF TSCs needed

- Climate Change Management
- Natural Capital Management
- Non-Financial Industry Sustainability Developments
- Sustainable Investment Management
- Taxonomy Application

L3	L4	L5

● Investment Counselling

Context of change and impact on job tasks

Private banking clients are increasingly interested in investing towards sustainable initiatives. This job role holder will need to include sustainability considerations throughout the investment decision making processes.

When developing asset allocation methodology and portfolio construction strategies, Investment Counsellors will need to incorporate client's investment objectives and sustainability preferences and align them with the bank's sustainability commitments. They may leverage profiling tools which incorporate sustainability preferences and the client's risk appetite when providing recommendations. They have to keep abreast of emerging sustainability considerations and lead the factoring of relevant trends into portfolio construction strategies to enhance the sustainability performance of the portfolio.

When developing investment portfolios, the job role holder will require knowledge on the opportunities and risks when supporting climate change adaptation and mitigation, carbon markets related funds and natural capital investments. They will also require understanding of key international and regional regulatory sustainability developments in the non-financial industries and explain how it might impact client's investment portfolios.

Additionally, the job role holder will need to have a clear understanding of sustainable finance products available and may need to work with product specialist and sustainability / sector experts to develop new product offerings and investment strategies.

As sustainability policies continue to evolve, the job role holder would need to keep abreast of updates to the bank's credit and operational risk policies due to sustainability considerations and monitor client's profile and escalate conflicts accordingly.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Review client portfolio performance	<ul style="list-style-type: none"> Incorporate sustainability metrics and targets (e.g. data related to sustainability metrics, carbon footprints, social impact and governance practices) when evaluating portfolio performance and align to relevant classification frameworks (e.g. Ecolabel, SFDR article 8,9) Ensure investment strategies are aligned to organisational policies and compliant with regulations, including ERM policies and frameworks which takes into account sustainability risks as well as bank's sustainability commitments and targets 	●
Provide product advisory services	<ul style="list-style-type: none"> Incorporate client's investment objectives and sustainability preferences (e.g. focus on either environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy) and align them with the bank's sustainability commitments Incorporate key sustainability trends in the financial and non-financial industries into portfolio construction strategies Consider opportunities and risks when supporting climate change adaptation and mitigation, carbon markets related funds and natural capital investments Suggest appropriate investment products with sustainability labels (e.g. Ecolabel) to clients based on their identified sustainability investment preferences 	●

● Investment Counselling

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Partner internal teams to develop and execute investment strategies	<ul style="list-style-type: none"> Incorporate sustainability related guidelines and labels (e.g. Ecolabel, SFDR article 8,9) as considerations when proposing new product or identifying potential investment products Support client-facing teams in articulating investment concepts to clients to encourage clients with high sustainability risk portfolios to shift towards sustainable investments that are aligned with banks risk standards and targets Work with products team to determine if there is a need to re-label sustainable financial products based on updates in classification frameworks 	●

SF TSCs needed

● Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
● Climate Change Management	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Non-Financial Industry Sustainability Developments	L3	L4	L5
● Sustainable Investment Management	L3	L4	L5

● Product Sales

Context of change and impact on job tasks

Private banking clients are increasingly interested in investing sustainably. This job role holder will need to adapt their sales strategies and sustainable finance product knowledge in order to provide financial advisory services which caters both to the client's sustainability objectives and requirements, whilst also considering the impact of sustainability risks on the product portfolio.

When providing product advisory services, the job role holder will require clear understanding of sustainable finance products offered by the bank (e.g. sustainability themed funds with a focus on the energy generation sector). As high net-worth and ultra-high net-worth clients may have unique requirements, they will be responsible for constructing tailored recommendations and explaining to clients on the features of the sustainable finance products and how they are aligned to client's sustainability agenda and financial goals.

Additionally, they need to develop appropriate sales strategies for different types of sustainable finance products.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage organisation's products	<ul style="list-style-type: none"> Develop sales strategies for sustainable finance products through collaboration with the product marketing department Keep up-to-date with repackaged or restructured sustainable finance products Keep up-to-date with new sustainable finance products Monitor sales developments for different types of sustainable finance products and conduct periodic review of sales strategies 	●
Provide product advisory services	<ul style="list-style-type: none"> Provide financial advisory services on sustainable finance products to clients referred from client-facing teams Ensure advisory procedures and documentation adhere to business processes for sustainable finance products and sustainability-related regulatory requirements Communicate relevant and timely sustainable finance product-related information to customer and client networks 	●
Support product trading activities	<ul style="list-style-type: none"> Develop relationships with market counterparties with sustainable finance product offerings to obtain information 	●

SF TSCs needed

- Climate Change Management
- Natural Capital Management
- Sustainable Investment Management
- Taxonomy Application

L3	L4	L5

● Relationship Manager - Private Banking

Context of change and impact on job tasks

Private banking clients are increasingly interested in investing towards sustainable initiatives. Private Banking Relationship Manager (RM) will need to provide recommendations to meet client's sustainability agenda, along with managing the internal processes and risk management from prospecting to potential exit.

When identifying new clients, RMs will need to conduct preliminary sustainability risk assessment to determine if prospect's existing portfolio meets bank's sustainability commitments and targets.

When advising customers on products, services and investment strategies, RMs will need to consider client's investment objectives and sustainability preferences and incorporate them with the bank's sustainability commitments. In order to engage clients effectively, RMs will need to be equipped with knowledge of opportunities and risks when supporting climate change adaptation and mitigation, carbon markets related funds and natural capital investments. RMs may leverage profiling tools which incorporate sustainability preferences and the client's risk appetite when providing recommendations hence would need to understand the framework behind the tool. RMs also need to keep abreast of key international and regional sustainability developments in the non-financial industries and explain how they might impact client's investments.

Additionally, RMs will need to have a clear understanding of sustainable finance products available and may need to work with product specialist and sustainability / sector experts to support the development of robust investment strategies for clients.

As sustainability policies continue to evolve, RMs would need to keep abreast of updates to the bank's credit and operational risk policies due to sustainability considerations and monitor client's profile and escalate conflicts (e.g. capital allocation) accordingly.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Acquire and manage portfolio of customers	<ul style="list-style-type: none"> Conduct preliminary sustainability risk assessment to determine if prospect's portfolio meets bank's sustainability commitments and targets when identifying new clients Work with product specialist to customise sustainable finance product solutions to meet client's needs Keep abreast of credit and operational risk policies updates, including updates due to sustainability risks, to manage and minimise losses 	●
Advise customers on products, services and investment strategies	<ul style="list-style-type: none"> Determine service offerings based on client's investment objectives and sustainability preferences (e.g. focus on either environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy) Incorporate considerations for bank's sustainability commitments and targets Incorporate key sustainability trends in the financial and non-financial industries when providing financial advice Consider opportunities and risks when supporting climate change adaptation and mitigation, carbon markets related funds and natural capital investments 	●
Manage customer lifecycle end-to-end	<ul style="list-style-type: none"> Escalate conflicts (e.g. capital allocation) which are misaligned to client's sustainability preferences and bank's sustainability commitments and targets 	●

● Relationship Manager - Private Banking

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Stewardship Development	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5

● Client Investment Performance and Reporting

Context of change and impact on job tasks

As demand for sustainable and responsible investing grows, this job role holder will need to include sustainability outcomes (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) of investment funds and portfolios managed by the firm.

When analysing investment performance, the job role holder will need to consider client's investment objectives and sustainability preferences (e.g. focus on either environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy) and incorporate appropriate outcome indicators. Additionally, sustainability factors may need to be integrated into traditional valuation models to evaluate the financial implications of sustainability considerations on investment decisions. In order to do so, this job role holder may need to work more closely with sustainability specialists and experts to identify and integrate sustainability data effectively into investment performance analysis.

This job role holder will require understanding of relevant frameworks, regulatory disclosure and reporting guidelines when developing reports such as investment reports, annual reports and fund prospectuses. These reports should include relevant metrics that reflect financial risks for a given portfolio or sector, and articulate the ways in which sustainability-related issues may impact long-term returns.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Gather data for portfolio performance analysis	<ul style="list-style-type: none"> Gather appropriate sustainability data, impact metrics and benchmarks to assess investment performance in terms of both financial returns and sustainability outcomes (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) Gather and analyse non-financial data related to sustainability metrics, carbon footprints, social impact and governance practices 	●
Analyse portfolio performance	<ul style="list-style-type: none"> Analyse appropriate sustainability KPIs, metrics and targets into the calculation of portfolio performance and reporting, with reference to taxonomy classification, sustainability benchmarks, guidelines (e.g. EU Paris-Aligned Benchmark, MAS EnRM Guidelines, SFDR Article 8 & 9) Verify that portfolio performances and risk figures align to classification framework, sustainability benchmarks and guidelines (e.g. PAB, SFDR Article 8 & 9) and customer's sustainability objectives (e.g. responsible impact investing, sustainable impact investing, thematic impact investing), where relevant 	●
Report portfolios' performance	<ul style="list-style-type: none"> Incorporate sustainability KPIs and targets, sustainability scores and impact measurements (e.g. data related to sustainability metrics, carbon footprints, social impact and governance practices) with respect to portfolio performance to presentations and reports 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Family Office Management

Context of change and impact on job tasks

As clients become increasingly interested in sustainable investing, high-net worth clients are likely to modify their investment strategies through their family office. Job role holders will need to adapt to their clients' changing preferences, and the increasing importance placed on sustainability themes in investment decision-making.

This job role holder will need to incorporate the family's sustainability preferences, risk appetite and philanthropic factors into investment decision-making processes. To achieve this, they will need to understand what these preferences are, and how they can translate through investments based on opportunities in the market.

While developing sustainability strategies, this job role holder should be clear on sustainable investment objectives, as well as place considerations for key sustainability trends and social/environmental risks, and non-financial industry sustainability developments, to adequately align to family office objectives. They also need to understand and define relevant impact measurements and metrics (e.g. sustainability risk rating, MSCI rating), to analyse and report performance of sustainability/Sustainable Finance assets and investments, as well as manage and maintain Investment Policy strategies and milestones. They will need to assess the risks and opportunities associated with different investment options and advise clients accordingly.

Additionally, they need to support and facilitate opportunities to participate in sustainable investment education, and provide necessary training and resources for implementation, sustainability analysis, and performance monitoring within the family office.

Time horizon of impact: Within the next three years

Impact on key job tasks

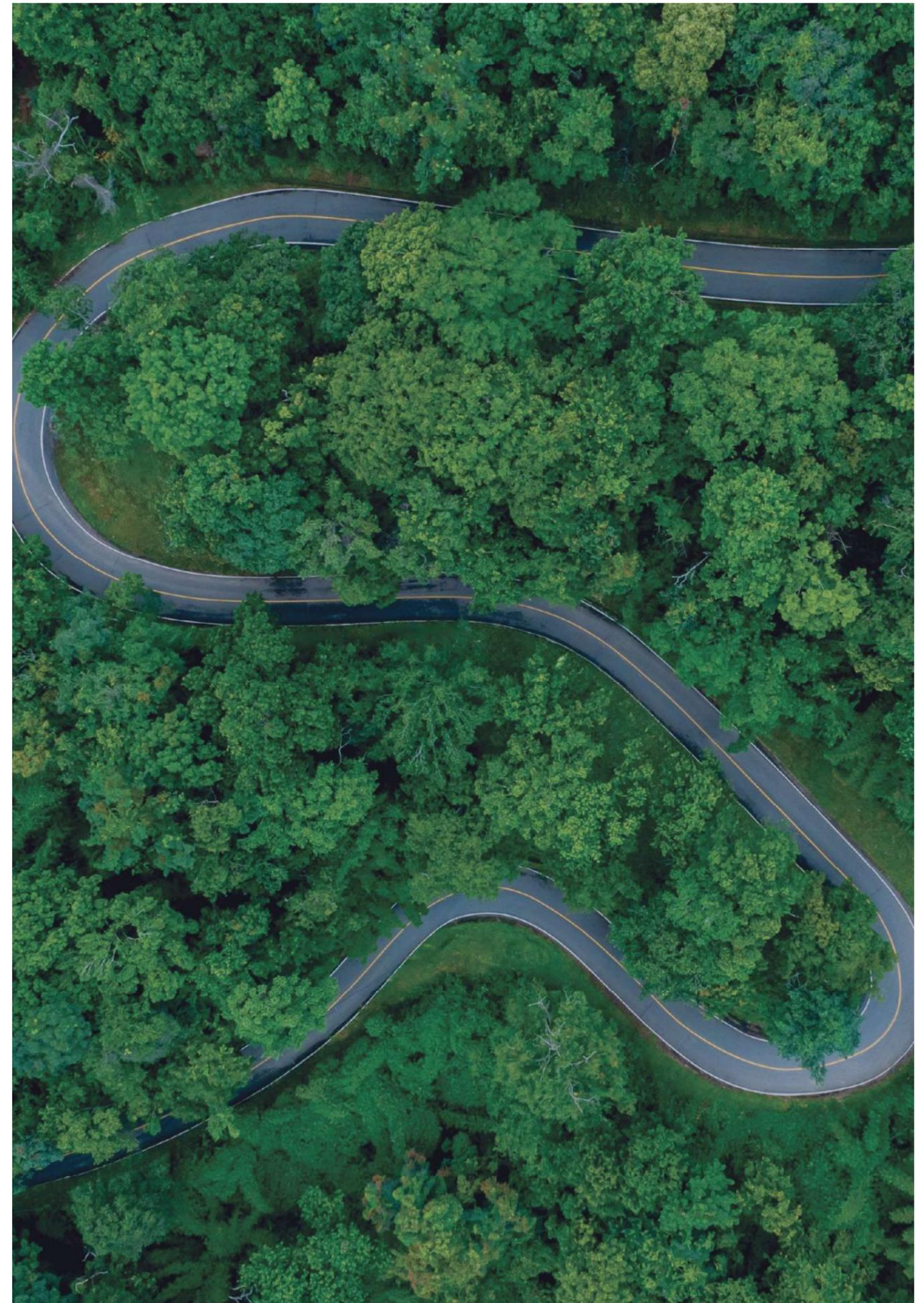
● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage assets	<ul style="list-style-type: none"> Understand family's sustainability preferences (e.g. focus on either environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy) Identify and articulate the right impact indicators and metrics to communicate investment performance and provide necessary training and resources for implementation, sustainability analysis, and performance monitoring Modify family office Investment Policy to ensure investment decisions are consistent with family commitments to responsible, sustainable and ethical financial practices Ensure tactical asset allocation leverages sustainability data and analysis to identify suitable sustainable investment opportunities and mitigate risks 	●
Support management of assets	<ul style="list-style-type: none"> Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Support the family's needs	<ul style="list-style-type: none"> Understand the relevant impact indicators and due diligence required to align with investment goals and preferences 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Sustainable Investment Management

L3	L4	L5
L3	L4	L5





Corporate Banking

Risk Analytics / Compliance Analytics

Context of change and impact on job tasks

As a result of changes in industry regulations to integrate sustainability agenda into the organisation as well as emerging considerations of sustainability risks, the job role holder will need to support the organisation by developing and deploying sustainability-related quantitative data models and / or data analytics tools to support risk management and regulatory compliance management activities.

The job role holder would need to work with business unit stakeholders to define business requirements and parameters for sustainability-related data analysis. Subsequently, he / she would develop and propose suitable sustainability-related quantitative data models and / or tools based on identified sustainability insights. The job role holder would also be involved in the deployment of sustainability-related quantitative data models and / or tools to identify, monitor and mitigate sustainability risks and compliance risks.

Additionally, this job role holder would be responsible for the development of sustainability-related quantitative data models that facilitate the tracking of the organisation's and clients' decarbonisation initiatives to ensure that organisation's sustainability agenda are met.

Overall, this job role holder will see significant changes in job tasks and will be expected to expand their knowledge specific to sustainability risks and compliance risks.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
10%	12%	12%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and manage data models for risk and compliance	<ul style="list-style-type: none"> Engage actively with business unit stakeholders to determine and ensure quantitative solutions are aligned with sustainability business requirements Oversee the build, test and quality assurance phases of the developed quantitative models Conduct quality assurance, stress testing and periodic reviews on approved sustainability-related data models and algorithms for output accuracy and proof-of-concept (PoC) Oversee and perform validation and user acceptance testing (UAT) on sustainability risk and compliance models and / or analytics solutions Direct, implement and monitor sustainability-related model and risk management activities in accordance with defined procedures Develop and maintain user requirements, parameters and configurations for sustainability risk and compliance quantitative models 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Analytics / Compliance Analytics

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage the documentation and reporting of risk and compliance data analytics	<ul style="list-style-type: none"> Oversee, execute and support risk and compliance solutions based on identified sustainability analytics requirements Compile, interpret and challenge the results of sustainability-related data modelling, monitoring and analysis activities in standardised reporting structures based on reporting requirements Develop summary sustainability reports to communicate data analysis findings, trends analysis, baseline benchmarking and modelling outputs to stakeholders Analyse, document and report on sustainability-related regulatory compliance and / or baselines of client behaviour Develop sustainability reporting dashboard to present risk and compliance data analytics findings suitable for senior management and decision-making 	●
Supervise risk and / or compliance data analytics and model usage	<ul style="list-style-type: none"> Set direction for the identification of rules, parameters and criteria for sustainability-related data analysis Develop and deploy techniques and methodologies, identify required data sets and conduct data mining and data collection activities for sustainability-related data analysis Prepare preliminary interpretations of sustainability-related data analysis for non-technical reports and communicate findings to stakeholders Highlight risks and weaknesses of the sustainability-related model which may impact data analysis findings Identify and articulate business and use cases for sustainability solutions on risk issues and influence senior management to adopt models and / or analytics solutions for the organisation Identify and evaluate appropriate methods to automate manual sustainability-related data analysis and monitoring systems and seek approval from senior management 	●
Support the implementation and use of risk and compliance models and / or data analytics	<ul style="list-style-type: none"> Build and validate data sets to facilitate sustainability-related data analysis for risk and compliance teams Oversee the implementation and deployment of sustainability-related models and / or analytics solutions into the organisation's systems infrastructure Maintain, update and ensure that documentation and references are in place to support the deployment and integration of sustainability-related models and / or analytics solutions Establish, develop and conduct training initiatives to upskill employees on the use of sustainability-related quantitative analytic approaches and data analytic tools in risk and compliance Manage internal stakeholders throughout the lifecycle of sustainability-related quantitative solutions implementation 	●

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

Risk Strategy

Context of change and impact on job tasks

As sustainability becomes increasingly integrated into the core of Corporate Banking business practices, the job role holder will need to include considerations of sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices, governance risks such as board effectiveness and anti-corruption measures) and how it will impact corporate clients (non-financial industries) when developing and implementing Enterprise Risk Management (ERM) policies and frameworks.

A deep understanding of sustainability risks is needed to identify key risk indicators (KRIs) and develop risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation. Similarly, the organisation's risk tolerance and risk appetite should be updated to include sustainability-related factors and specifications on exclusion lists for activities and sectors that contradict with organisation's sustainability agenda.

The job role holder will need to work closely with all risks disciplines in the organisation to communicate sustainability risks and ensure that sustainability risks are embedded within all risks types (e.g. market and liquidity risks, credit risks, operational risks) and decision making processes.

In addition to current activities in monitoring the external market conditions, the job role holder will need to keep track of evolving guidelines and industry standards which are related to sustainability risks to identify possible impact on its clients and ultimately to the organisation

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
11%	14%	14%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain Enterprise Risk Management (ERM) framework	<ul style="list-style-type: none"> Aggregate key risk indicators (KRIs) for sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures) and integrate them into ERM framework Incorporate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation and across different business portfolios within the organisation Define acceptable risk tolerance and risk appetite levels for organisation-wide risks, including considerations for sustainability risks and exclusion list that specifies activities and sectors for investments that contradict with bank's sustainability agenda 	●
Identify and implement controls for enterprise / organisation risks	<ul style="list-style-type: none"> Keep abreast of sustainability-related regulatory changes which are relevant to the organisation and assess how changes in regulations impact its ERM framework and communicate required actions to manage risks Work with various risk disciplines in the organisation, including sustainability risks disciplines (if relevant), to align enterprise risk controls with different disciplines and to establish appropriate strategies to control identified priority areas of risks 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Strategy

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Implement ERM and consequence management activities	<ul style="list-style-type: none"> Determine business impact and implications of sustainability-related disruptive events on organisation (e.g. natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, and exacerbating liquidity stresses in banks) and develop clear incident response plan which are aligned to organisation's sustainability agenda Recommend mechanisms to address gaps in sustainability risk controls and consequence management activities Include sustainability risks disciplines (if relevant) when developing cross-functional risk management initiatives and projects 	●
Monitor risk exposure	<ul style="list-style-type: none"> Identify sustainability risk categories and implement sustainability risk identification procedures and methodology Conduct and collate stress testing results using different sustainability risks and climate scenarios, review findings and develop summary reports 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainable finance products, this job role holder will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability-related compliance is likely to be a key focus for this job role holder. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and frameworks. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

The compliance advisory will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and frameworks are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and oversee response activities to cater to these changes 	●
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulations and frameworks impacts the organisation's existing policies Propose recommendations with sustainability regulations as the driving force, to ensure organisation central compliance frameworks are relevant to the industry 	●
Promote compliance literacy and culture of compliance awareness	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability metrics 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new / updated sustainability regulations and frameworks 	●

SF TSCs needed

- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5

● Credit Risk

Context of change and impact on job tasks

Corporate banks are beginning to integrate sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures, physical risks, transition risks, natural capital risks, supply chain risk) within credit risk assessments and management processes for both sustainable and regular financing products in order to account for sustainability risks that could lead to credit default. Corporate banking clients are at varying stages along their sustainability journey and operate in real economy sectors which present different types of material sustainability risks.

The job role holder will evolve as they will be responsible for incorporating sustainability considerations into the assessment of credit applications and embedding sustainability considerations into credit risk policies and frameworks. The job role holder will thus be required to understand how financing provided fits with the bank's sustainability agenda as well as comply with relevant regulatory guidelines and standards. An understanding of sustainability risk related metrics, sustainability risk measurement and modelling techniques is needed in order to effectively assess borrowers' credit worthiness (e.g. probability of default) and monitor clients' and portfolios' sustainability risk exposure.

Additionally, the job role holder will be incorporating sustainability considerations within processes related to credit recovery plans, workouts and structuring to effectively manage clients and portfolios with high sustainability risk exposure.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and maintain credit risk policies	<ul style="list-style-type: none"> Incorporate sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures, physical risks, transition risks, natural capital risks, supply chain risk) associated with borrowers, projects, or companies seeking credit or funding when defining and executing credit risk policies Ensure strategic credit risk positions are aligned with bank's sustainability agenda 	●
Conduct credit risk assessments and management activities	<ul style="list-style-type: none"> Include review of sustainability risks which may result in potential credit default when performing regular periodic checks, security monitoring, portfolio reviews and regular compliance checks, and keep management abreast of early warning signals which could impact Probability of Default (PD) and Loss Given Default (LGD) Assess the level of sustainability-related credit risk exposure derived through sustainability risk modelling findings and use sustainability risk management strategies to mitigate credit risk arising from sustainability-related issues 	●
Manage credit risk portfolios within credit risk appetite and limits	<ul style="list-style-type: none"> Ensure that actions plans for credit portfolio optimisation and positioning are aligned to the bank's sustainability agenda Incorporate sustainability considerations and risk assessments of target markets, sectors and industries when planning for target market credit allocation and credit risk portfolio management within pre-defined limits 	●
Review and rate counterparty risk applications	<ul style="list-style-type: none"> Review sustainable financial and credit transactions to verify the transaction's sustainability credibility based on defined guidelines for sustainability verification Approve credit application for sustainable loan transaction processing and incorporate sustainability metrics into decision process 	●

Credit Risk

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report on credit risk portfolio	<ul style="list-style-type: none"> Monitor problem accounts arising due to sustainability-related issues affecting credit risk. Determine strategies to monitor problem accounts with credit risk affected by sustainability-related issues Identify and report sustainability-related issues impacting credit risk based on early warning indicators (e.g. deterioration of sustainability scores) 	●
Data mining and modelling	<ul style="list-style-type: none"> Monitor early warning systems related to sustainability indicators to identify false positives impacting credit risk and take action to improve monitoring accuracy Benchmark performance between past financial records of borrowers and current loan portfolio, taking into account sustainability factors that impact credit performance 	●

SF TSCs needed^a

• Climate Change Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

^a In FIs where the Credit Risk job role holder is needed to analyse clients' decarbonisation strategies and transition risks, Level 4 proficiency of additional SF TSCs may be needed and would make the job role high priority for interventions.

Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainable finance, the job role holder will need to include identification of sustainability-related non-compliant activities being performed by potential clients and stakeholders. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainability-related investigative frameworks.

The FCC job role holder should be well-versed with sustainability developments, trends and regulations as well as common non-compliant activities within the industry and identify sectors and industries with high risk for sustainability-related non-compliant activities (e.g. logging, mining, waste trafficking, forestry). They should understand the link between sustainability or climate change initiatives to financial crime and how it could be manifested in client's organisation activities and transactions. These sustainability factors should be incorporated into existing financial crime risk assessment procedures to enable effective detection of sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability-related offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability-related parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability-related non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Develop strategies, frameworks and policies for dealing with sustainability-related non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: <ul style="list-style-type: none"> Environmental: clients with different accounts held in multiple countries who transact via payment schemes or clients who constantly make use of cash might indicate illegal trade in ozone depleting substances and unreported fishing; whether sustainable loans are funding deforestation; whether the set-up of carbon sequestration scheme involve a bribe to government officials Social: clients making fictitious donations, transfer cash in small amounts or structure funds below thresholds may indicate connection to human trafficking or migrant smuggling activities Governance: whether clients have strong board composition and structure to prevent corruption, bribery, embezzlement and influence peddling Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability-related activities which could be linked to financial crime risks 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability-related offences that are predicate offences (e.g. Prevention of Human Trafficking Act 2014, Wildlife Act 1965) Determine the downstream impact of emerging sustainability-related non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability-related non-compliant activities 	●
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainability-related investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability-related non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability-related non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability-related FCC violations 	●
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability-related non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management L3 L4 L5

● Legal Counsel

Context of change and impact on job tasks

Sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting corporate banks and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

The job role holder is likely to evolve to manage risks emerging from regulations imposed on the FS sector, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand the contractual terms pertaining to new / structured products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with classification frameworks.

Overall, the job role holder will need to develop an understanding of how sustainability is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability regulations in the FS sector and understand the implications of public policy related changes in this space on the organisation's legal strategy. Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainability, imposed on the FS sector, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for structured products and handle legal disputes pertaining to green washing for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the FS sector on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability regulations, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Sustainability Risk Management L3 L4 L5
- Taxonomy Application L3 L4 L5

● Market and Liquidity Risk

Context of change and impact on job tasks

Sustainability-related events may influence corporate bank's market and liquidity positions hence the job role holder will need to include considerations of sustainability risks. Since corporate banks provide loans (e.g. green loans) and rely heavily on deposits for funding, a sudden surge in deposit withdrawals caused by extreme weather or sustainability-related events may impact the bank's liquidity. Corporate banks may also experience difficulties in liquidating assets impacted by weather events. Additionally, depositors and investors, who are increasingly environmentally-conscious, may also cut back on sources of funding for retail banks that finance activities with a negative impact on the environment. Therefore, corporate banks may be exposed to a decline in valuation and increased volatility in their investments.

Hence, when analysing its loan portfolios, capital structure and funding sources, corporate banks should incorporate sustainability considerations into its valuation modelling and analysis of liquidity risks. Corporate banks should also conduct scenario analysis and stress testing to understand the potential impact of sustainability-related financial risks on liquidity buffers and develop methodologies to manage such risks.

The market and liquidity risk management policies and frameworks will need to be updated with sustainability risks considerations and aligned to the organisation's Enterprise Risk Management (ERM) framework.

Time horizon of impact: Between the next three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain market and liquidity risk management policies and frameworks	<ul style="list-style-type: none"> Incorporate sustainability considerations into market risk and liquidity risk policies and frameworks, for example: Market risk: Impact on financial asset valuations from physical risk over longer time horizons, risk premiums on carbon-intensive investments, impact of potential carbon taxes or climate-triggered supply chain disruptions on global commodity prices Liquidity risk: Natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, exacerbating liquidity stresses in banks. Both assets and collateral assets impacted by weather events may also be difficult to liquidate Work with Risk Strategy team to ensure alignment between market and liquidity risk management policies, frameworks and activities with organisation's ERM framework which incorporates sustainability risks 	●
Manage risk appetite and risk controls	<ul style="list-style-type: none"> Incorporate sustainability considerations to valuation modelling and analysis of liquidity risks (e.g. whether sustainability-related financial risks assessed as material over relevant time horizons could have a significant impact to net cash outflows or depletion of liquidity buffers) Incorporate sustainability considerations when establishing liquidity risk limits in terms of proportion of organisation's financial products, portfolios and services which are sustainability-focused 	●
Monitor and identify market and financial risks	<ul style="list-style-type: none"> Identify plausible extreme sustainability-related events as potential scenarios that may impact market and liquidity risks Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on market risk exposure and liquidity buffers 	●

● Market and Liquidity Risk

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop risk mitigation and consequence management activities	<ul style="list-style-type: none"> Incorporate sustainability considerations into risk positions of products 	●

SF TSCs needed

- Sustainability Risk Management** L3 L4 L5

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulations develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and build compliance control measures (e.g. green bond verification testing) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability-related activities (e.g. mislabelling of green bonds). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability-related regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in job tasks but will be expected to expand their knowledge specific to sustainability regulations, internal sustainability policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and / or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and / or industry trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability factors in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability-related activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability-related activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Develop and drive compliance testing checks related to sustainability-related activities to determine regulatory compliance in the organisation's daily operations Identify and evaluate gaps in compliance controls in relation to sustainability-related activities and recommend corrective steps to central compliance management teams Address issues, and challenges in closing compliance gaps and implement corrective actions for compliance violations related to sustainability-related activities 	●

● Monitoring, Surveillance and Testing

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability-related activities (e.g. mislabelling of green bonds) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability-related activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability-related activities 	●
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> Liase, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities Understand sustainability regulations and act as a subject matter expert to engage / advise business stakeholders on compliance monitoring and surveillance activities Develop regular monitoring, surveillance and compliance testing reports for management and regulators in relation to sustainability regulatory standards and requirements 	●

SF TSCs needed

- Sustainability Risk Management** L3 L4 L5
- Taxonomy Application** L3 L4 L5

● Operational Risk

Context of change and impact on job tasks

With the growing recognition of sustainability as a risk factor for financial institutions, the job role holder will need to consider sustainability regulations and sustainability-related events which may impact the organisation's operational risk.

As regulators set out sustainability regulations, guidance, and recommendations to mandate the integration of sustainability in the FS sector, the job role holder will need to monitor changing regulations, review and update its Operational Risk Management (ORM) policies and framework accordingly. This is critical in ensuring that the organisation remains compliant to regulations and avoid legal and reputational risks.

Additionally, the job role holder will need to identify sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff. This may also include physical and transition risks of the organisation. Therefore, the job role holder would need to integrate relevant sustainability considerations to ORM and Business Continuity Management (BCM) policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> Conduct investigations on and provide recommendations to improve operational risk mitigation actions aimed at addressing issues related to compliance to sustainability risk regulations and internal frameworks Lead the identification of key sustainability indicators relevant to operational risks (e.g. number of workplace incidents) and embed them into identification procedures 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> Conduct periodic assessments of business continuity plans to test for adequacy against the risk of non compliance to sustainability risk regulations and internal frameworks Develop and maintain BCM policies and frameworks based on identified sustainability-related business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff 	●
Manage Operational Risk Management (ORM) Framework	<ul style="list-style-type: none"> Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability related factors Update ORM frameworks to account for changing regulations, emerging global trends and industry best practices related to sustainability risk 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> Monitor operational risk management activities to track their effectiveness in addressing sustainability-related operational risks as well as internal frameworks and guidelines Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

SF TSCs needed

- Climate Change Management L3 L4 L5
- Sustainability Risk Management L3 L4 L5

● Product Development

Context of change and impact on job tasks

Corporate Banks are providing new sustainable finance products to address market gaps and support clients in their sustainability journey (e.g. green bonds, social bonds, carbon credits). Products may also be developed specifically to address the requirements of clients who are seeking specific sustainable finance products. The job role holder will need to incorporate sustainability considerations during product development and structuring of sustainable finance products to meet clients' sustainability needs.

As sustainable finance product offerings continue to evolve, there is a need to keep abreast of market trends and conditions in order to effectively ideate new sustainable finance products. This requires an understanding of emerging sustainability trends ranging from climate risks and opportunities, natural capital and biodiversity issues as well as developments across the non-financial industry.

When developing new sustainable finance products, the job role holder will need to balance external market demands for sustainable finance products including carbon-related products with internal capabilities and needs. The job role holder needs to ensure the product fulfils the Bank's sustainability agenda and align with internal sustainability frameworks and regulatory taxonomies. The job role holder will need to determine acceptable impact indicators for KPIs to embed into sustainable finance products .

The job role holder should incorporate sustainability considerations into pricing models and strategies to effectively price sustainable finance products and ensure successful product adoption. There is also a need to craft value propositions that resonate with corporate clients and conduct market testing to assess product and market fit.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Structure sustainable lending instruments according to client's sustainability preferences Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategies for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainable finance products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Develop sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

● Product Development

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Management

Context of change and impact on job tasks

Corporate Banks are supporting their clients on their sustainability journey and providing sustainable financing. The job role holder will need to incorporate sustainability considerations across the product management lifecycle of sustainable finance products, from assessment of suitability to channel management decisions.

The job role holder should ensure that the bank's sustainable finance product mix is suitable to address the sustainable finance product demand from corporate banking clients as well as analyse the different sustainability preferences and needs of different corporate banking client sectors or market segments.

Management of channels for different sustainable finance products would also be required (e.g. selection of marketing and customer acquisition channels for different sustainable finance products). The job role holder should also monitor key sustainability performance metrics during the analysis of product performance.

A familiarity with sustainability considerations is required to appropriately adjust pricing for sustainable finance products. The sustainability risks and financial risks due to offering the sustainable finance product would also need to be managed by the job role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and suitability	<ul style="list-style-type: none"> Evaluate overall product portfolio against suitability to business sustainability strategies Ensure that products are in compliance with sustainability regulatory and international trade guidelines Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and / or client channels and strategies	<ul style="list-style-type: none"> Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and sustainability agenda are met Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainable finance products Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Business Process Improvement

Context of change and impact on job tasks

With the rise in sustainable financing, there will increasingly be the integration of sustainability job tasks, controls, process governance and management information into existing core processes of Corporate Banks. The job role holder will be responsible for driving efficiency and transparency throughout the organisation, ensuring that the organisation's operations align with regulatory requirements, best practices and governance frameworks.

The job role holder should liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand business process gaps between current and future states. They will need to identify process improvement changes for new sustainable finance products being offered to drive better user experience.

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. The job role holder will also conduct regular monitoring business processes to ensure it is aligned with evolving sustainability regulations, disclosure requirements and responsible banking standards.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: <ul style="list-style-type: none"> Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability metrics to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, scenario analysis) and risk mitigation measures into processes Regulatory compliance: ensure that banking processes are aligned with evolving sustainability regulations, disclosure requirements, and responsible banking standards 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

- Sustainability Reporting L3 L4 L5
- Sustainability Risk Management L3 L4 L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the FS sector moves towards achieving its sustainability agenda, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. The job role holder will need to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and / or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability-related analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs.

Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organise and manipulate sustainability data from internal systems and external sources according to specific data needs Direct, oversee and conduct data mining activities to identify and investigate leads, trends, patterns, correlations and regularities within large sustainability data sets Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainability data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and / or analytics findings 	●
Build data analysis mechanisms and processing systems (Only applicable to Head of Data Analytics)	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability insights into clear, predictive business-focused deliverables for senior stakeholders 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability-related analytical tools and / or develop existing tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability-related analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of designed sustainability data analytics solutions to stakeholders 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5
L3	L4	L5

● Data Engineer

Context of change and impact on job tasks

Corporate Banks are collecting more sustainability data to support the provision of products (e.g. continuous monitoring of sustainable financing provided, client acceptance for high sustainability risk sectors) and assess risks to their loan portfolios. Banks are also receiving more sustainability data as a result of offering sustainable financing (e.g. receiving sustainability data from monitoring green loans). The job role holder will need to understand available sustainability data sources to support the products and clean sustainability data to enable subsequent usage of data for analytics.

A familiarity with relevant taxonomies may be required when collecting data on the underlying activities of products offered in order to tag the financed activities as sustainable. An understanding of sustainability reporting formats and frameworks is required as a sizeable proportion of sustainability data on corporates can be found in published sustainability reports. The job role holder may also support the sustainability reporting process by collecting relevant sustainability metrics for reporting.

The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and understand the interconnectedness within large sustainability datasets through data mining. To enable monitoring of sustainable financing (e.g. green loans) which often contain predefined sustainability performance metrics, an understanding of sustainability indicators is needed. To ensure efficient storage, transfer or analysis of sustainability data, the job role holder needs to understand if current software and hardware implementations are sufficient and update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability agenda and strategy. Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time Implement data governance structures for sustainability data including data ownership, data lineage, hierarchy etc. to drive data literacy, ensure security and data quality 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting tools Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation. 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Taxonomy Application

L3	L4	L5
L3	L4	L5

Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the job role holder will need to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role would be responsible for conducting Proof of Concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technologies that has helped similar organisations scale successfully Draft, develop and endorse sustainability policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainability-related innovation ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability-related innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability-related improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability-related innovation and process improvement Ensure that processes are aligned with the organisation's sustainability agenda as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability-related innovation initiatives Endorse and drive selected sustainability initiatives and systems to improve processes and systems 	●

Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire / partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition / partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions / partnerships of disruptive sustainability-related technologies Lead and conduct deal negotiations for the acquisitions / partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions / partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Identify, implement and oversee the implementation of employees' innovative ideas in sustainability into existing business processes Research and assess the potential impacts on business processes caused by the implementation of innovative solutions in sustainability Develop a business case for innovation solution in sustainability and propose it to heads of business units and senior stakeholders Assist and design the implementation plans for sustainability innovation initiatives / solutions 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting
- Sustainability Reporting
- Sustainability Risk Management

L3	L4	L5
L3	L4	L5
L3	L4	L5

● Product Sales

Context of change and impact on job tasks

Corporate banks will continue to be a key lever in financing sustainability transition. The job role holder will need to adapt their sales strategies and sustainable finance products knowledge in order to provide financial advisory services which caters both to the client's sustainability agenda and requirements, whilst also considering the impact of sustainability risks on the product portfolio.

When providing product advisory services, the job role holder will require clear understanding of sustainable finance products offered by the bank, including new and repackaged or restructured products (e.g. green loan, sustainability-linked loans). As corporate clients may have unique requirements, they will be responsible for constructing tailored recommendations and explaining to clients on the features of the sustainable finance products and how they are aligned to client's sustainability agenda and financial goals. They also need to ensure that the advisory procedures and documentation adhere to business processes for sustainable finance products and sustainability requirements for managing the risks of financing large projects (e.g. Equator Principles).

Additionally, they need to develop appropriate sales strategies for different types of sustainable finance products .

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage organisation's products	<ul style="list-style-type: none"> Develop sales strategies for sustainable finance products through collaboration with the product marketing department Keep up-to-date with repackaged or restructured sustainable finance products Keep up-to-date with new sustainable finance products Monitor sales developments for different types of sustainable finance products and conduct periodic review of sales strategies 	●
Provide product advisory services	<ul style="list-style-type: none"> Provide financial advisory services on sustainable finance products to clients referred from client-facing teams Ensure advisory procedures and documentation adhere to business processes for sustainable finance products and sustainability requirements (e.g. Equator Principles) Communicate relevant and timely sustainable finance product information to customer and client networks 	●
Support product trading activities	<ul style="list-style-type: none"> Develop relationships with market counterparties with sustainable finance product offerings to obtain information 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Relationship Management - Commercial

Context of change and impact on job tasks

Some mature Small and Medium Enterprise (SME) and mid-sized corporate clients are expected to be starting on their sustainability journey and would in turn require Corporate Banks to offer tailored sustainable finance products and advisory services. Thus, the job role holder will need to include sustainability considerations throughout the client's end-to-end lifecycle.

This job role holder is expected to acquire a comprehensive level of understanding of sustainable finance products and sustainability trends in non-financial industries and their client's sustainability needs to be able to provide appropriate sustainability-related advisory services to clients, recommend suitable tailored sustainable finance products and ensure effective execution of those tailored products (e.g. credit memo preparation, sustainability-related document collection and management).

When acquiring clients and managing the credit portfolio of clients, RMs need to understand and incorporate sustainability data, metrics and other relevant indicators (e.g. carbon footprint, physical and transition risk, natural capital management) as well as sustainability-related developments in the non-financial industry landscape in order to assess sustainability-related performance, opportunities and risks for both the clients and the bank itself.

Additionally, RMs will need to support the process of monitoring credit risk to identify sustainability risks (e.g. physical risk, transition risk, greenwashing risk) that could lead to credit default.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide ongoing credit analysis and support	<ul style="list-style-type: none"> Include sustainability data, metrics and other relevant indicators (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, natural resource conservation, community development) within the credit memo for sustainable finance products Conduct assessments to ensure existing corporate borrowers' alignment with the sustainability terms within sustainable finance products 	●
Support client onboarding	<ul style="list-style-type: none"> Assist with client on-boarding and compliance checks in adherence to relevant sustainability regulations and standards Manage client relations and ensure proper collection of sustainability-related documentation (e.g. Global Reporting Initiative (GRI) Standards, B Corp Certification, Carbon Neutral Certification, Leadership in Energy and Environmental Design (LEED) certification, Forest Stewardship Council (FSC) Certification, Fair Trade Certification) when sustainability due diligence is being performed on the client by the Know Your Customer (KYC) team 	●
Support acquisition and management of clients	<ul style="list-style-type: none"> Assist in sustainability-related market intelligence information gathering (e.g. industry developments, regulations and standards, technological advancements) Understand the client's sustainability strategy, ambitions, agenda and plans in order to appropriately respond to client queries related to sustainability-related issues such as climate change and natural capital management as well as the features of sustainable finance products 	●
Acquire and manage clients	<ul style="list-style-type: none"> Develop market segmentation strategies to identify prospects interested in sustainable finance products Respond to client queries on credit, deposits, products, and operational issues for sustainable finance products 	●

● Relationship Management - Commercial

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Advise clients on recommended products, services and solutions	<ul style="list-style-type: none"> Demonstrate an understanding of the client's sustainability needs in order to achieve their sustainability agenda and provide tailored advice, ideas and solutions further facilitating the client's sustainability journey Keep abreast with trends and developments in the field of sustainability (e.g. climate change, natural capital management) as well as sustainability-related advancements in non-financial industries 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Lending Instruments and Structuring	L3	L4	L5

● Relationship Management - Corporate and Large Multi-National Companies (MNCs)

Context of change and impact on job tasks

As Corporate and Large Multi-National Companies (MNCs) continue implementing their sustainability strategies, Corporate Banks are expected to continue incorporating sustainability considerations into their operations and offering bespoke sustainability solutions and advisory services. Thus, the job role holder will be responsible for understanding the client's sustainability agenda and providing appropriate loan and investment recommendations.

This job role holder is expected to acquire a comprehensive level of understanding of sustainable finance products, sustainability trends in non-financial industries and their client's sustainability needs to be able to provide appropriate sustainability-related advisory services to clients, propose suitable bespoke sustainable finance products and ensure effective execution of those bespoke products (e.g. credit memo preparation).

When acquiring clients and managing the credit portfolio of clients, RMs need to understand and incorporate sustainability data, metrics and other relevant indicators (e.g. physical and transition risk, natural capital management) as well as sustainability-related developments in the non-financial industry landscape in order to assess sustainability performance, opportunities and risks for both the clients and the bank itself.

Additionally, RMs specifically serving MNCs would need to have an understanding of structuring of sustainable lending instruments in order to support the product teams during structuring and ensure their alignment to the client's sustainability needs.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Acquire and manage clients	<ul style="list-style-type: none"> Develop market segmentation strategies to identify prospects interested in sustainable finance products Keep abreast of relevant sustainability regulations and standards relevant to the due diligence process in order to effectively collaborate and execute due diligence with the Know Your Customer (KYC) teams during onboarding 	●
Support acquisition and management of clients	<ul style="list-style-type: none"> Assist in sustainability-related market intelligence information gathering (e.g. industry developments, regulations and standards, technological advancements) Understand the client's sustainability strategy, ambitions, agenda and plans in order to appropriately respond to client queries related to sustainability issues such as climate change and natural capital management as well as the features of sustainable finance products 	●
Support client onboarding	<ul style="list-style-type: none"> Assist with client on-boarding and compliance checks in adherence to relevant sustainability regulations and standards Manage client relations and ensure proper collection of sustainability documentation (e.g. Global Reporting Initiative (GRI) Standards, B Corp Certification, Carbon Neutral Certification, Leadership in Energy and Environmental Design (LEED) certification, Forest Stewardship Council (FSC) Certification, Fair Trade Certification) when sustainability due diligence is being performed on the client by the Know Your Customer (KYC) team 	●

● Relationship Management - Corporate and Large Multi-National Companies (MNC)

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Advise clients on recommended products, services and solutions	<ul style="list-style-type: none"> Demonstrate an understanding of the client's sustainability needs in order to achieve their sustainability agenda and provide tailored advice, ideas and solutions further facilitating the client's sustainability journey (e.g. corporate banks advising clients on loans for retrofitting of brown commercial buildings, transition to energy efficient technologies, asset heavy initiatives in agriculture such as vertical farming) Understand and oversee the product structuring process of sustainable financing instruments in order to ensure alignment with client sustainability needs 	●
Provide ongoing credit analysis and support	<ul style="list-style-type: none"> Include sustainability data, metrics and other relevant indicators (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, natural resource conservation, community development) within the credit memo for sustainable finance products Conduct assessments to ensure existing corporate borrowers' alignment with the sustainability terms within sustainable finance products 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Lending Instruments and Structuring	L3	L4	L5

● Relationship Management - Small and Medium Enterprises (SME)

Context of change and impact on job tasks

Some Small and Medium Enterprise (SME) clients are expected to be starting on their sustainability journey and would in turn require Corporate Banks to offer readily available sustainable finance products and sustainability-related advisory services. Thus, the job role holder will be expanded to include sustainability considerations throughout the client's end-to-end lifecycle.

This job role holder is expected to acquire a basic level of understanding of sustainable finance products and their client's sustainability needs to be able to provide sustainability-related advisory services to clients, recommend suitable sustainable finance products and ensure effective execution of those products (e.g. credit memo preparation, sustainability-related document collection and management).

When acquiring clients and managing the credit portfolio of clients, RMs need to understand and incorporate sustainability data, metrics and other relevant indicators (e.g. carbon footprint, physical and transition risk, natural capital management) as well as sustainability-related developments in the non-financial industry landscape in order to assess sustainability performance, opportunities and risks for both the clients and the bank itself.

Additionally, when onboarding new clients and managing existing clients, RMs will need to support the sustainability due diligence according to the process established by the bank. This includes acquiring and interpreting the necessary sustainability documentation.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

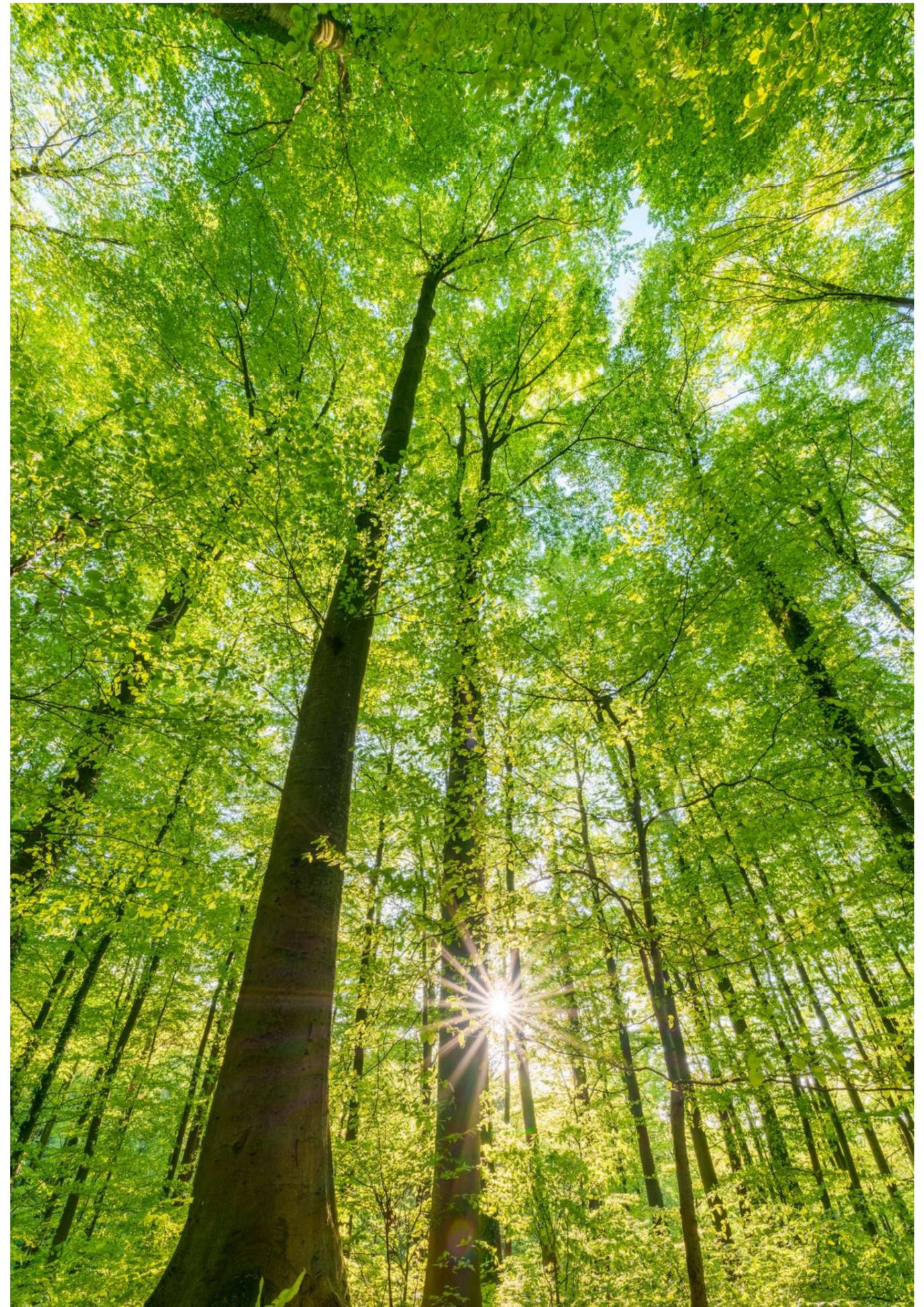
Critical work function	Additional key job task	Impact on job task
Provide ongoing support to clients	<ul style="list-style-type: none"> Include sustainability data, metrics and other relevant indicators (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, natural resource conservation, community development) within the credit memo for sustainable finance products Conduct assessments to ensure existing corporate borrowers' alignment with the sustainability terms within sustainable finance products 	●
Support / Facilitate client onboarding	<ul style="list-style-type: none"> Assist with client on-boarding and compliance checks in adherence to relevant sustainability regulations and standards Manage client relations and ensure proper collection of sustainability documentation (e.g. Global Reporting Initiative (GRI) Standards, B Corp Certification, Carbon Neutral Certification, Leadership in Energy and Environmental Design (LEED) certification, Forest Stewardship Council (FSC) Certification, Fair Trade Certification) when sustainability due diligence is being performed on the client by the Know Your Customer (KYC) team 	●
Support acquisition and management of clients	<ul style="list-style-type: none"> Assist in sustainability-related market intelligence information gathering (e.g. industry developments, regulations and standards, technological advancements) Understand the client's sustainability strategy, ambitions, agenda and plans in order to respond to client queries on credit, deposits, products and operational issues for sustainable finance products 	●
Perform mass sales acquisition	<ul style="list-style-type: none"> Cross-sell suitable sustainable finance products to SMEs as solutions meeting their sustainability needs Ensure that the managed client portfolios meet bank's sustainability agenda 	●

● Relationship Management - Small and Medium Enterprises (SME)

SF TSCs needed

- Climate Change Management
- Natural Capital Management
- Non-Financial Industry Sustainability Developments
- Sustainable Lending Instruments and Structuring

L3	L4	L5



Investment Banking



Risk Analytics / Compliance Analytics

Context of change and impact on job tasks

As a result of changes in industry regulations to integrate sustainability agenda into the organisation as well as emerging considerations of sustainability risks, the job role holder would be to support the organisation by developing and deploying sustainability quantitative data models and / or data analytics tools to support risk management and regulatory compliance management activities.

The job role holder would need to work with business unit stakeholders to define business requirements and parameters for sustainability data analysis. Subsequently, he / she would develop and propose suitable sustainability quantitative data models and / or tools based on identified sustainability insights. The job role holder would also be involved in the deployment of sustainability quantitative data models and / or tools to identify, monitor and mitigate sustainability risk and compliance risks.

Additionally, this job role holder would be responsible for the development of sustainability quantitative data models that facilitate the tracking of the organisation's and clients' decarbonisation initiatives to ensure that organisation's sustainability agenda are met.

Overall, this job role holder will see significant changes in job tasks and will be expected to expand their knowledge specific to sustainability risks and compliance risks.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
10%	12%	12%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and manage data models for risk and compliance	<ul style="list-style-type: none"> Engage actively with business unit stakeholders to determine and ensure solutions are aligned with sustainability business requirements Oversee the build, test and quality assurance phases of the developed quantitative models Conduct quality assurance, stress testing and periodic reviews on approved sustainability data models and algorithms for output accuracy and proof-of-concept (PoC) Oversee and perform validation and user acceptance testing (UAT) on sustainability risk and compliance models and / or analytics solutions Direct, implement and monitor sustainability model and risk management activities in accordance with defined procedures Develop and maintain user requirements, parameters and configurations for sustainability risk and compliance quantitative models 	●
Manage the documentation and reporting of risk and compliance data analytics	<ul style="list-style-type: none"> Oversee, execute and support risk and compliance solutions based on identified sustainability analytics requirements Compile, interpret and challenge the results of sustainability data modelling, monitoring and analysis activities in standardised reporting structures based on reporting requirements Develop summary sustainability reports to communicate data analysis findings, trends analysis, baseline benchmarking and modelling outputs to stakeholders Analyse, document and report on sustainability regulatory compliance and / or baselines of client behaviour Develop sustainability reporting dashboard to present risk and compliance data analytics findings suitable for senior management and decision-making 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Analytics / Compliance Analytics

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Supervise risk and / or compliance data analytics and model usage	<ul style="list-style-type: none"> Set direction for the identification of rules, parameters and criteria for sustainability data analysis Develop and deploy techniques and methodologies, identify required data sets and conduct data mining and data collection activities for sustainability data analysis Prepare preliminary interpretations of sustainability data analysis for non-technical reports and communicate findings to stakeholders Highlight risks and weaknesses of the sustainability model which may impact data analysis findings Identify and articulate business and use cases for sustainability solutions on risk issues and influence senior management to adopt models and / or analytics solutions for the organisation Identify and evaluate appropriate methods to automate manual sustainability data analysis and monitoring systems and seek approval from senior management 	●
Support the implementation and use of risk and compliance models and/or data analytics	<ul style="list-style-type: none"> Build and validate data sets to facilitate sustainability data analysis for risk and compliance teams Oversee the implementation and deployment of sustainability models and / or analytics solutions into the organisation's systems infrastructure Maintain, update and ensure that documentation and references are in place to support the deployment and integration of sustainability models and / or analytics solutions Establish, develop and conduct training initiatives to upskill employees on the use of sustainability quantitative analytic approaches and data analytic tools in risk and compliance Manage internal stakeholders throughout the lifecycle of sustainability quantitative solutions implementation 	●

SF TSCs needed

● Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
● Climate Change Management	L3	L4	L5
● Impact Indicators, Measurement and Reporting	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

Risk Strategy

Context of change and impact on job tasks

As sustainability becomes increasingly integrated into Investment Banking business practices, the job role holder will need to include considerations of sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices, governance risks such as board effectiveness and anti-corruption measures) and how they will impact the valuations and investors for underwritten securities and Mergers and Acquisitions (M&A) deals when developing as well as implementing Enterprise Risk Management (ERM) policies and frameworks.

A deep understanding of sustainability risks is needed to identify key risk indicators (KRIs) and develop risk modelling and measurement techniques to enable effective analysis of sustainability risks for clients and M&A targets. Similarly, the organisation's and client's risk tolerance and risk appetite should be updated to include sustainability factors and specifications on exclusion lists for activities and sectors that contradict with organisation's and client's sustainability agenda.

The job role holder will need to work closely with all risks disciplines in the organisation to communicate sustainability risks and ensure that sustainability risks are embedded within all risks types (e.g. market and liquidity risks, credit risks, operational risks) and decision making processes.

In addition to current activities in monitoring the external market conditions, the job role holder will need to keep track of evolving guidelines and industry standards which are related to sustainability risks to identify possible impact on its clients and the organisation.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
11%	14%	14%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain Enterprise Risk Management (ERM) Framework	<ul style="list-style-type: none"> Aggregate key risk indicators (KRIs) for sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures) and integrate them into ERM framework Incorporate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation and across different business portfolios within the organisation Define acceptable risk tolerance and risk appetite levels for organisation-wide risks, including considerations for sustainability risks and exclusion list that specifies activities and sectors for investments that contradict with bank's sustainability agenda 	●
Identify and implement controls for enterprise / organisation tasks	<ul style="list-style-type: none"> Keep abreast of sustainability regulatory changes which are relevant to the organisation and assess how changes in regulations impact its ERM framework and communicate required actions to manage risks Work with various risk disciplines in the organisation, including sustainability risks disciplines (if relevant), to align enterprise risk controls with different disciplines and to establish appropriate strategies to control identified priority areas of risks 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Strategy

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Implement ERM and consequence management activities	<ul style="list-style-type: none"> Determine business impact and implications of sustainability disruptive events on organisation (e.g. natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, and exacerbating liquidity stresses in banks) and develop clear incident response plan which are aligned to organisation's sustainability agenda Recommend mechanisms to address gaps in sustainability risk controls and consequence management activities Include sustainability risks disciplines (if relevant) when developing cross-functional risk management initiatives and projects 	●
Monitor risk exposure	<ul style="list-style-type: none"> Identify sustainability risk categories and implement sustainability risk identification procedures and methodology Conduct and collate stress testing results using different sustainability risks and climate scenarios, review findings and develop summary reports 	●

SF TSCs needed

● Climate Change Management	L3	L4	L5
● Natural Capital Management	L3	L4	L5
● Non-Financial Industry Sustainability Developments	L3	L4	L5
● Sustainability Risk Management	L3	L4	L5

● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainability focused products, this job role holder will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability compliance is likely to be a key focus for this job role holder. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and standards. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

The compliance advisory job role holder will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and frameworks are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulation and standards impacts the organisation's existing policies Recommend sustainability regulations and standards and ensure organisation central compliance frameworks are relevant to emerging sustainability market trends 	●
Promote compliance literacy and culture of compliance awareness	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability KPIs 	●
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and standards and oversee response activities to cater to these changes 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new/updated sustainability regulations and standards 	●

SF TSCs needed

- Sustainability Reporting** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

● Credit Risk

Context of change and impact on job tasks

Investment banks are beginning to integrate sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures, physical risks, transition risks, natural capital risks, supply chain risk) within credit risk assessments and management processes while underwriting debt instruments (e.g. corporate bonds) to account for sustainability risks that could lead to credit default.

The credit risk job role holder will be responsible for incorporating sustainability considerations within credit risk policies and frameworks. The job role holder will thus be required to understand the bank's sustainability agenda, sustainability risk-related metrics, sustainability risk measurement and modelling techniques as well as relevant regulatory guidelines and standards in order to effectively measure and monitor clients' sustainability risks and their effect on credit ratings or worthiness.

Overall, the focus of this job role holder will still remain largely unchanged on identifying and managing the credit risks during underwriting to prevent potential losses and reputational damage that could result from inaccurately representing the credit worthiness of an underwritten debt instrument from an sustainability standpoint.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and maintain credit risk policies	<ul style="list-style-type: none"> Incorporate sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures, physical risks, transition risks, natural capital risks, supply chain risk) associated with borrowers, projects, or companies seeking credit or funding when defining and executing organisational risk policies Ensure strategic credit risk positions are aligned with bank's sustainability agenda 	●
Conduct credit risk assessments and management activities	<ul style="list-style-type: none"> Utilise organisation's credit risk models and measurement techniques to identify the financing's expected profitability, sustainability risks associated and client's credit history trends from an sustainability standpoint Assess the level of sustainability credit risk exposure derived through sustainability risk modelling findings and use sustainability risk management strategies to mitigate credit risk arising from sustainability issues 	●
Manage credit risk portfolios within credit risk appetite and limits	<ul style="list-style-type: none"> Incorporate sustainability data to evaluate client's credit worthiness Keep track of evolving guidelines and industry standards relating to sustainability risks, both in the financial and non-financial industries, and determine appropriate credit risk appetite and target market allocations 	●
Review and rate counterparty risk applications	<ul style="list-style-type: none"> Incorporate assessment of sustainability factors within credit risk assessments and sustainability due diligence checks and reviews and make decisions from the findings using pre-defined sustainability risk policies and guidelines Collect and review sustainability data within credit ratings to identify sustainability rating triggers and break clauses to terminate credit agreements 	●
Monitor and report on credit risk portfolio	<ul style="list-style-type: none"> Identify and report credit risks arising from sustainability related issues based on early warning indicators such as predicted occurrence rates of natural disasters Sustainability risk considerations within the defined credit limits to ensure that the document review process complies with sustainability risk thresholds in the ERM framework from a credit standpoint 	●

Credit Risk

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Data mining and modelling	<ul style="list-style-type: none"> Identify and report credit risks arising from sustainability related issues based on early warning indicators such as predicted occurrence rates of natural disasters Incorporate sustainability risk considerations within the defined credit limits to ensure that the document review process complies with sustainability risk thresholds in the ERM framework from a credit standpoint 	●

SF TSCs needed^a

• Climate Change Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

^a In FIs where the Credit Risk job role holder is needed to analyse clients' decarbonisation strategies and transition risks, Level 4 proficiency of additional SF TSCs may be needed and would make the job role high priority for interventions.

Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainable finance, the job role holder will need to include identification of non-compliant activities being performed by organisations and stakeholders. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainability investigative frameworks.

The FCC job role holder should be well-versed with sustainability crime developments, trends and regulations within the industry and identify sectors and industries with high risk for sustainability non-compliant activities (e.g. logging, mining, waste trafficking, forestry). They should understand the link between sustainability or climate change initiatives to financial crime and how it could be manifested in client's organisation activities and transactions. These sustainability factors should be incorporated into existing financial crime risk assessment procedures to enable effective detection of sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Develop strategies, frameworks and policies for dealing with sustainability non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: Environmental: Clients with different accounts held in multiple countries who transact via payment schemes or clients who constantly make use of cash might indicate illegal trade in ozone depleting substances and unreported fishing; whether sustainable loans are funding deforestation; whether the set-up of carbon sequestration scheme involve a bribe to government officials Social: Clients making fictitious donations, transfer cash in small amounts or structure funds below thresholds may indicate connection to human trafficking or migrant smuggling activities Governance: whether clients have strong board composition and structure to prevent corruption, bribery, embezzlement and influence peddling Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability activities which could be linked to financial crime risks 	●
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability offences that are predicate offences (e.g. Prevention of Human Trafficking Act 2014, Wildlife Act 1965) Determine the downstream impact of emerging sustainability non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability non-compliant activities 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainability investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability FCC violations 	●
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management **L3** L4 L5

● Legal Counsel

Context of change and impact on job tasks

Sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting investment banks and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

The job role holder of the legal counsel is likely to evolve to manage risks emerging from regulations imposed on the FS sector, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand the contractual terms pertaining to new / structured products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with classification frameworks.

Overall, the job role holder will need to develop an understanding of how sustainable finance is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability regulations and standards in the FS sector and understand the implications of public policy related changes in this space on the organisation's legal strategy Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainable finance, imposed on the FS sector, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for structured products and handle legal dispute pertaining to green washing for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the FS sector on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability regulations and standards, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Sustainability Risk Management **L3** **L4** L5
- Taxonomy Application **L3** **L4** L5

● Market and Liquidity Risk

Context of change and impact on job tasks

Sustainability events may influence investment bank's market and liquidity positions. Investment banks hold large trading portfolios comprising various financial instruments and are involved in trading, underwriting, and capital raising activities. A sudden surge in deposit withdrawals caused by extreme weather or sustainability events may impact the bank's liquidity. Additionally, investors who are increasingly environmentally-conscious, may also cut back on investments that finance activities with a negative impact on the environment. Therefore, investment banks may be exposed to a decline in valuation and increased volatility in their trading, underwriting, and capital raising activities due to sustainability events.

Hence, when performing trading, underwriting, and capital raising activities, job role holder should incorporate sustainability considerations into its valuation modelling and analysis of liquidity risks. Investment banks should also conduct scenario analysis and stress testing to understand the potential impact of environmental-related financial risks on liquidity buffers and develop methodologies to manage such risks. The market and liquidity risk management policies and frameworks will need to be updated with sustainability considerations and aligned to the organisation's Enterprise Risk Management (ERM) framework.

Time horizon of impact: Between three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain market and liquidity risk management policies and frameworks	<ul style="list-style-type: none"> Incorporate sustainability considerations into market risk and liquidity risk policies and frameworks, for example: Market risk: Impact on financial asset valuations from physical risk over longer time horizons, risk premiums on carbon-intensive investments, impact of potential carbon taxes or climate-triggered supply chain disruptions on global commodity prices Liquidity risk: Natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in funds withdrawal and demand for emergency loans, exacerbating liquidity stresses in banks. Both assets and collateral assets impacted by weather events may also be difficult to liquidate Work with Risk Strategy team to ensure alignment between market and liquidity risk management policies, frameworks and activities with organisation's ERM framework which incorporates sustainability risks 	●
Manage risk appetite and risk controls	<ul style="list-style-type: none"> Incorporate sustainability considerations to valuation modelling and analysis of liquidity risks (e.g. whether environmental-related financial risks assessed as material over relevant time horizons could have a significant impact to net cash outflows or depletion of liquidity buffers) Incorporate sustainability considerations when establishing liquidity risk limits in terms of proportion of organisation's financial products, portfolios and services which are sustainability-focused 	●
Monitor and identify market and financial risks	<ul style="list-style-type: none"> Identify plausible extreme sustainability events as potential scenarios that may impact market and liquidity risks Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on market risk exposure and liquidity buffers 	●
Develop risk mitigation and consequence management activities	<ul style="list-style-type: none"> Incorporate sustainability considerations into risk positions of products 	●

SF TSCs needed

- Sustainability Risk Management **L3** **L4** L5

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulation develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and standards and build compliance control measures (e.g. sustainability portfolio performance testing) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability activities (e.g. misalignment of investment decisions with sustainability agenda). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in job tasks but will be expected to expand their knowledge specific to sustainability regulations and standards, internal sustainability policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and/or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations and standards are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and / or market trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability parameters in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations and standards 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations and standards, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Develop and drive compliance testing checks related to sustainability activities to determine regulatory compliance in the organisation's daily operation Identify and evaluate gaps in compliance controls in relation to sustainability activities and recommend corrective steps to central compliance management teams Address issues, and challenges in closing compliance gaps and implement corrective actions for compliance violations related to sustainability activities 	●

● Monitoring, Surveillance and Testing

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability activities (e.g. misalignment of investment decisions with sustainability agenda) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability activities 	●
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> Liaise, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities Understand sustainability regulations and standards and act as a subject matter expert to engage / advise business stakeholders on compliance monitoring and surveillance activities Develop regular monitoring, surveillance and compliance testing reports for management and regulators in relation to sustainability regulatory standards and requirements 	●

SF TSCs needed

- Sustainability Risk Management** L3 L4 L5
- Taxonomy Application** L3 L4 L5

● Operational Risk

Context of change and impact on job tasks

With the growing recognition of sustainability as a risk factor for financial institutions, the job role holder will need to consider sustainability regulations and standards and sustainability events which may impact the organisation's operational risk.

As regulators set out sustainability regulations and standards, guidance, and recommendations to mandate the integration of sustainability in the FS sector, the job role holder will need to monitor changing regulations, review and update its Operational Risk Management (ORM) policies and framework accordingly. This is critical in ensuring that the organisation remains compliant to regulations and avoid legal and reputational risks.

Additionally, the job role holder will need to identify sustainability business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff. This may also include physical and transition risks of the organisation. Therefore, the job role holder would need to integrate relevant sustainability considerations to ORM and Business Continuity Management (BCM) policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> Conduct investigations on and provide recommendations to improve operational risk mitigation actions aimed at addressing issues related to compliance to sustainability risk regulations and internal frameworks Lead the identification of key sustainability indicators relevant to operational risks (e.g. number of workplace incidents) and embed them into identification procedures 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> Conduct periodic assessments of business continuity plans to test for adequacy against the risk of non compliance to sustainability risk regulations and internal frameworks Develop and maintain BCM policies and frameworks based on identified sustainability business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff 	●
Manage Operational Risk Management (ORM)	<ul style="list-style-type: none"> Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability factors Update ORM frameworks to account for changing regulations, emerging global trends and industry best practices related to sustainability risk 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> Monitor operational risk management activities to track their effectiveness in addressing sustainability operational risks as well as internal frameworks and guidelines Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

SF TSCs needed

- Climate Change Management** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

● Economist

Context of change and impact on job tasks

Investment Banks would need to consider clients' sustainability needs when recommending investment products. The job role holder will need to support and facilitate the investment process by validating investment trend findings and providing qualitative recommendations to clients.

The job role holder would be responsible for conducting and validating secondary research on sustainability policies, industries and companies to discover sustainability insights that could be beneficial to clients when making investment decisions. Hence, the job role holder will require an understanding of the complex interlinkages between climate change, natural capital and social factors, including how they impact economic stability and macroeconomic indicators to inform organisation policies.

Additionally, the job role holder would be tasked to compile qualitative recommendations for sustainability investments based on macro and micro-research and investment analysis.

Overall, this job role holder will not see significant changes in job tasks but will be expected to have a broad-based understanding of sustainability to better perform their responsibilities.

Time horizon of impact: Between three to five years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct research, gather report findings and recommendations	<ul style="list-style-type: none"> Conduct validate and ensure comprehensiveness of secondary research on sustainability policies, industries and companies by assessing public information Study review and endorse the socioeconomic impact of new public policies related to sustainability in the FS sector for circulation to stakeholders 	●
Provide strategic inputs for organisation's policy formation	<ul style="list-style-type: none"> Develop strategic inputs based on sustainability developments (related to climate change, natural capital and social factors) and their impact on the organisation for potential organisational policy amendments 	●
Facilitate investment processes	<ul style="list-style-type: none"> Draft, compile and communicate qualitative recommendations, including recommendations for sustainability investment, based on macro and micro-research to relevant business units on potential investment opportunities Conduct and validate sustainability investment trend analysis findings to steer business development activities 	●

SF TSCs needed

- Climate Change Management **L3** L4 L5
- Natural Capital Management **L3** L4 L5

● Product Development

Context of change and impact on job tasks

Investment banks are supporting their clients by facilitating debt and equity capital raising for business activities that may be deemed sustainable in nature. The job role holder will need to account for the investment's sustainability performance and potential sustainability synergies or negative impacts. The job role holder is also required to account for their client's sustainability needs when developing the product.

As sustainable finance product offerings continue to evolve, there is a need to keep abreast of market trends and conditions in order to effectively ideate new sustainability Investment Banking products. This requires an understanding of emerging sustainability trends ranging from climate risks and opportunities, natural capital and biodiversity issues as well as developments across the non-financial industry.

When developing new sustainable finance products, the job role holder will need to balance external market demands for sustainable finance products with internal capabilities and needs. The job role holder will also need to ensure the product fulfils the Bank's sustainability agenda as well as ensure alignment with internal sustainability frameworks and regulatory taxonomies. The job role holder will need to determine acceptable impact indicators for KPIs to embed into sustainable finance products .

The job role holder should understand market dynamics and incorporate sustainability considerations into pricing models and strategies in order to effectively price sustainable finance products and ensure successful product adoption. There is also a need to craft value propositions that resonate with corporate clients and individual investors and conduct market testing to assess product and market fit.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategy for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainability financial products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Develop sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

● Product Development

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Management

Context of change and impact on job tasks

Investment Banking products are supporting their clients on their sustainability journey and providing sustainable financing. The job role holder will need to incorporate sustainability considerations across the product management lifecycle of sustainable finance products, from assessment of suitability to channel management decisions.

The job role holder should ensure that the bank's sustainable finance product mix is suitable to address the sustainable finance product demand from investment banking clients as well as analyse the different sustainability preferences and needs of different investment banking client sectors or market segments.

Management of channels for different sustainable finance products would also be required (e.g. selection of marketing and customer acquisition channels for different sustainable finance products). The job role holder should also monitor key sustainability performance metrics during the analysis of product performance.

A familiarity with sustainability considerations is required to appropriately adjust pricing for sustainable finance products. The sustainability risks and financial risks due to offering the sustainable finance product would also need to be managed by the job role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and suitability	<ul style="list-style-type: none"> Evaluate overall product portfolio against suitability to business sustainability strategies Ensure that products are in compliance with sustainability regulatory and international trade guidelines Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and/or client channels and strategies	<ul style="list-style-type: none"> Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and sustainability agenda are met Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainability financial products Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Research and Analysis

Context of change and impact on job tasks

The job role holder of Research and Analysis who are supporting capital raising and corporate finance transactions, such as mergers and acquisitions (M&A), initial public offerings (IPOs), and debt offerings should incorporate research on sustainability factors that may impact performance of investments.

The job role holder should keep abreast of sustainability developments and events which may impact the performance of companies and funds. They may need to work with relevant business units to complete valuations of companies and funds, taking into account relevant sustainability KPIs which reflect material sustainability financial risks.

When drafting communication and equity research reports, the job role holder should incorporate relevant sustainability performance and risk metrics and articulate how they contribute to investment recommendations.

Additionally, they need to work with management to incorporate relevant sustainability considerations into investment research policies and processes

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct research, gather report findings and recommendations	<ul style="list-style-type: none"> Conduct research on sustainability factors (e.g. sustainability agenda, corporate governance, transition risks affecting commodity price / exchange rate volatility, location of operations prone to weather events) which may impact performance of M&A, IPO and debt offerings Incorporate relevant sustainability performance and risk metrics (e.g. sustainability risk rating) in communication reports and recommendations 	●
Provide strategic inputs for organisation's policy formation	<ul style="list-style-type: none"> Keep up-to-date with sustainability developments and events which may impact the performance of company or funds Support management with identifying material sustainability issues and sustainability considerations that should be integrated into investment policies and processes 	●
Facilitate investment processes	<ul style="list-style-type: none"> Work with other business units to complete valuations of companies and funds, taking into account relevant sustainability KPIs which reflect relevant sustainability financial risks for a given company and sector 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Business Process Improvement

Context of change and impact on job tasks

With the rise in the need for facilitating capital raising for sustainable business activities and for facilitating mergers and acquisitions of sustainable business activities, there will increasingly be the integration of sustainability tasks, controls, process governance and management information into existing core processes Investment Banks. The job role holder will need to be responsible for driving efficiency and transparency throughout the organisation, ensuring that the organisation's investment processes align with regulatory requirements, best practices and governance frameworks.

The job role holder should liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand investment process gaps between current and future states. They will need to identify process improvement changes for new sustainable finance products being offered to drive better user experience.

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. This helps to ensure that relevant sustainability factors are taken into considerations to support sound investment decisions. The job role holder will also conduct regular monitoring processes to ensure it is aligned with evolving sustainability regulations and standards, disclosure requirements and sustainable investing standards.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability KPIs to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, sustainability scenario analysis) into investment identification processes Regulatory compliance: ensure that investment processes are aligned with evolving sustainability regulations and standards, disclosure requirements, and responsible banking standards 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the FS sector moves towards achieving its sustainability agenda, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. The job role holder would be to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and / or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs. Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organize and manipulate sustainability data from internal systems and external sources according to specific data needs Direct, oversee and conduct data mining activities to identify and investigate leads, trends, patterns, correlations and regularities within large sustainability data sets Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainability data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and / or analytics findings 	●
Build data analysis mechanisms and processing systems (Only applicable to Head of Data Analytics)	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability insights into clear, predictive business-focused deliverables for senior stakeholders 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability analytical tools and / or develop sustainability analytical tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify, trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of designed sustainability data analytics solutions to stakeholders 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Data Engineer

Context of change and impact on job tasks

Investment Banks are utilising sustainability data to price and structure lending instruments (e.g. green bonds) as well as utilising sustainability data to inform decision making during mergers and acquisitions transactions (e.g. sustainability due diligence). The job role holder will need to understand available sustainability data sources to support the products and clean sustainability data to enable subsequent usage of data for analytics.

A familiarity with regulatory taxonomies may be required when collecting data on the underlying activities of the transaction in order to tag the transaction as sustainable. An understanding of sustainability reporting formats and frameworks is required as a sizeable proportion of sustainability data on corporates can be found in published sustainability reports. The job role may also support the sustainability reporting process by collecting relevant sustainability metrics for reporting.

The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and understand the interconnectedness within large sustainability datasets through data mining. To enable monitoring of sustainable financing (e.g. green bonds) which often contain predefined sustainability performance metrics, an understanding of relevant sustainability indicators is needed. To ensure efficient storage, transfer or analysis of sustainability data, the job role needs to understand if current software and hardware implementations are sufficient and update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability agenda and strategy. Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting data Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation to outline them 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting **L3** L4 L5
- Taxonomy Application **L3** L4 L5

● Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the job role holder of an innovation executive would be to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role holder would be responsible for conducting proof of concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technology that has helped similar organisations scale successfully Draft, develop and endorse sustainability policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainability innovative ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability innovation and process improvement Ensure that processes are aligned with the organisation's sustainability priorities and benchmarks as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability innovation initiatives Endorse and drive selected sustainability initiatives and systems to improve processes and systems 	●

● Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire / partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition/partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions / partnerships of disruptive sustainability technologies Lead and conduct deal negotiations for the acquisitions / partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions / partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Identify, implement and oversee the implementation of employees' innovative ideas in sustainability into existing business processes Research and assess the potential impacts on business processes caused by the implementation of innovative solutions in sustainability Develop a business case for innovation solution in sustainability and propose it to heads of business units and senior stakeholders Assist and design the implementation plans for innovation initiatives/solution in sustainability 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Business Management

Context of change and impact on job tasks

Investment Banks are expected to integrate sustainability into their product offerings (e.g. green bonds) to cater to clients' sustainability needs and agenda. As a result, the job role holder will need to include the management of sustainable finance products.

The job role holder would be expected to identify potential business opportunities and lead the strategic development of business plans relating to the sales of sustainable finance products. Additionally, this job role holder is expected to set and track sustainability Key Performance Indicators and recommend improvement initiatives for sustainable finance. As such, the job role holder would need to have a good understanding of key sustainability concepts and frameworks (e.g. climate change, natural capital and non-financial industry sustainability developments, taxonomy) and their relevance to business and product development. This understanding of sustainability solutions ensures that they are able to develop business strategies for the sales and delivery of sustainable finance products.

Overall, this job role holder will see significant changes in job tasks, specifically the need to expand their knowledge of key sustainability concepts and be aware of new / updated sustainable finance products that are offered.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee front office performance	<ul style="list-style-type: none"> Formulate, execute and evaluate business plans and sustainability Key Performance Indicators for front office teams in alignment with the organisation's sustainability agenda Identify business opportunities and develop business strategies for the sales of sustainable finance products Gather relevant feedback from front office, lead change, develop and implement new sales initiatives and programs related to sustainability to capture key demographics 	●
Connect business units to support delivery to clients	<ul style="list-style-type: none"> Assist and liaise with key partners on resource management and allocation to deliver timely rollout of sustainability initiatives and projects across the business Work and collaborate with business unit heads to identify improvement opportunities, lead change initiatives and drive the implementation of strategic plans related to sustainability across the organisation 	●
Manage operational issues	<ul style="list-style-type: none"> As an independent party from the business, ensure that compliance issues and client complaints related to sustainability are resolved Drive and implement the development of work processes, procedures and controls to ensure compliance with sustainability regulations and standards both internally and externally Track adherence to compliance with sustainability regulations and standards across products, processes and services Assist relevant parties with client sustainability due diligence and onboarding procedures 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Origination and Structuring

Context of change and impact on job tasks

As clients and investors become increasingly aware of their sustainability needs, investment banks would be expected to account for sustainability considerations in their business practices.

This job role holder would need a comprehensive understanding of sustainable lending instruments to be able to source and support origination activities. This includes being able to effectively create and execute sustainable finance product solutions based on clients' and investors' sustainability needs and agenda, performing evaluations and proposing recommendations to improve sustainable finance product performance.

When raising capital for clients, this job role holder would be expected to have a strong understanding of taxonomy to showcase the relevant sustainability activities undertaken by clients to investors so that a beneficial arrangement is established.

This job role holder would also need to collaborate with the internal legal and compliance team to develop sustainability regulatory guidelines to ensure regulatory compliance throughout the origination and structuring process of sustainable finance products.

Overall, this job role holder will see significant changes in job tasks due to the need to design and execute sustainable finance product solutions. This job role holder would also be expected to expand their knowledge specific to sustainable lending instruments, taxonomy application, sustainability regulations and standards, internal sustainability policies and frameworks.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Construct structured products for clients	<ul style="list-style-type: none"> Prepare financial models and economic models in the structuring of sustainability transactions, including the selection of sustainability Key Performance Indicators and preparation of sustainability impact / results frameworks, and materials required for structuring and underwriting processes of sustainable finance product solutions Compile reports, liaise and communicate all stakeholders' needs and product recommendations related to sustainable finance product solutions Oversee the design transactions and appropriate structures for sustainable finance product solutions based on client needs 	●
Evaluate structured product performance	<ul style="list-style-type: none"> Monitor and review the performance of sustainable finance product solutions regularly and communicate the performance to clients Propose and implement adaptations to existing sustainable finance product solutions based on client feedback and product performance Evaluate sustainable finance product solution improvements implemented against the original implementation 	●
Manage risk and regulatory matters	<ul style="list-style-type: none"> Compile, monitor changes and evaluate information on developments in relevant laws and sustainability regulations and standards on business functions Guide and perform due diligence and risk management processes on sustainability investment opportunities including market research, risk-based modelling and third-party report analysis Partner and work with legal teams to develop sustainability regulatory guidelines to ensure regulatory compliance throughout the origination and structuring process of sustainable finance product solutions 	●

● Product Origination and Structuring

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Source origination opportunities	<ul style="list-style-type: none"> Pursue new origination opportunities related to sustainable finance product solutions through leveraging on networks and existing or developing client relationships Maintain close and regular interactions with clients to understand their changing needs including sustainability needs and agenda Keep abreast of relevant assets or sustainable finance product solutions that are offered in the industry to structure products to meet clients' needs Lead client negotiations for origination with regard to sustainable finance product solutions and discuss fundraising options, structures and credit support with clients 	●
Support origination process	<ul style="list-style-type: none"> Conduct market analysis, prospect clients' needs and communicate sustainability trends to all key stakeholders Prepare pitch books and marketing presentations to include sustainability initiatives undertaken by the client and review origination materials for accuracy and alignment to organisation procedures and policies Gather and review market intelligence from various channels and sources on new issues, competitors' deals, volume information and valuation benchmarks and incorporate them into the origination processes of sustainable finance product solutions Conduct research on global sustainability transactions, deal structure and technological issues involved in measuring and monitoring of sustainability impact 	●

SF TSCs needed

● Sustainability Risk Management	L3	L4	L5
● Sustainable Lending Instruments Structuring	L3	L4	L5
● Taxonomy Application	L3	L4	L5

● Product Sales

Context of change and impact on job tasks

Investment banks will continue to facilitate capital raising for sustainable business activities as well as the mergers and acquisitions of sustainable businesses and assets. The job role holder will need to adapt their sales strategies and sustainable finance product knowledge in order to provide financial advisory services which caters both to the client's sustainability agenda and requirements, while also understanding the impact of sustainability on the product portfolio.

In order to provide product advisory services, the job role holder will require clear understanding of sustainability financial products under the investment bank's remit. They also need to be familiar with the standards and business codes governing sustainability financial products (e.g. Green Bond Principles, Social Bond Principles) in order to manage bank's sustainability risks. Additionally, sustainable finance products offered to clients are expected to be governed by the bank's sustainability frameworks which are aligned to regulatory taxonomies. Hence, the job role holder need to understand whether the financing needs of their clients are within the eligible categories under the frameworks.

To ensure robust product advisory, the job role holder would also require understanding of appropriate metrics that determine the key features of each financing product (e.g. KPIs required for coupon rate step-down / step-up for green bonds).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage organisation's products	<ul style="list-style-type: none"> Develop sales strategies for sustainability financial products through collaboration with the product marketing department Keep up-to-date with repackaged or restructured sustainability financial products Keep up-to-date with new sustainability financial products Monitor sales developments for different types of sustainability financial products and conduct periodic review of sales strategies 	●
Provide product advisory services	<ul style="list-style-type: none"> Provide financial advisory services on sustainable finance products (e.g. green bonds, sustainability bonds) to clients referred from client-facing teams Ensure advisory procedures and documentation adhere to business processes for sustainable finance products and sustainability regulatory requirements (e.g. Green Bond Principles, Social Bond Principles) Communicate relevant and timely sustainable finance product-related information to customer and client networks 	●
Support product trading activities	<ul style="list-style-type: none"> Develop relationships with market counterparts with sustainable finance product offerings to obtain information 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Sustainable Lending Instruments Structuring	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Trading

Context of change and impact on job tasks

The development of carbon markets, driven by increasing global commitment to emissions reduction and sustainability agenda, has created an opportunity for the FS sector to support the trading of carbon credits. This includes the development of transition carbon credits from the early retirement of coal-fired power plants, serving as a prime example of these opportunities. This will require some individuals in trading to begin focussing specifically on carbon credits as an asset class

The job role holder will need to be responsible for the development of carbon credit trading strategies for the organisation with the intention of enhancing the organisation's financial gains. The job role holder is expected to lead research on carbon markets / exchanges and develop trading strategies that are in compliance with emerging carbon trading regulations. Additionally, the job role holder is expected to conduct carbon trading activities within the trading limits of the organisation. The job role holder will also need to learn new exchange/platform where carbon trading can be performed.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage trades from inception to execution	<ul style="list-style-type: none"> Oversee the development of carbon trading strategies to maximise financial gains and minimise risks for the organisation and clients and ensure alignment with organisation's overall sustainability strategy Review trade analyses pertaining to carbon trading and provide feedback and recommendations to improve the trading process Execute trades and financial transactions on carbon credits using the organisation's own capital Develop trading strategies for carbon credits using quantitative methods that enhance the organisation's financial gain Monitor the market for news, potential disruptions and opportunities in the carbon markets 	●
Establish compliance with regulation and execution policies	<ul style="list-style-type: none"> Ensure that carbon trading complies with the organisation's execution policies and applicable to trading regulations Develop and utilise hedging strategies to manage risk and ensure governance pertaining to carbon trading is conducted within trading limits Learn and stay up-to-date with trading regulations and best execution policies from various carbon exchanges pertaining to carbon trading 	●

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

Asset Management



Risk Analytics / Compliance Analytics

Context of change and impact on job tasks

As a result of changes in industry regulations to integrate sustainability targets into the organisation as well as emerging considerations of sustainability risks, the job role holder will need to support the organisation by developing and deploying sustainability quantitative data models and/or data analytics tools to support risk management and regulatory compliance management activities.

The job role holder will need to work with business unit stakeholders to define business requirements and parameters for sustainability data analysis. Subsequently, he/she would develop and propose suitable sustainability quantitative data models and/or tools based on identified sustainability insights. The job role holder would also be involved in the deployment of sustainability quantitative data models and/or tools to identify, monitor and mitigate sustainability risk and compliance risks.

Additionally, this job role holder would be responsible for the development of sustainability quantitative data models that facilitate the tracking of the organisation's and clients' decarbonisation initiatives to ensure that organisation's sustainability commitments are met.

Overall, this job role holder will see significant changes in job tasks and will be expected to expand their knowledge specific to sustainability risks and compliance risks.

Time horizon of impact: Immediate

Projected % increase in FTE (by year)^a

2025	2027	2032
10%	12%	12%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop and manage data models for risk compliance	<ul style="list-style-type: none"> Engage actively with business unit stakeholders to determine and ensure quantitative solutions are aligned with sustainability business requirements Oversee the build, test and quality assurance phases of the developed quantitative models Conduct quality assurance, stress testing and periodic reviews on approved sustainability data models and algorithms for output accuracy and proof-of-concept (PoC) Oversee and perform validation and user acceptance testing (UAT) on sustainability risk and compliance models and/or analytics solutions Direct, implement and monitor sustainability model and risk management activities in accordance with defined procedures Develop and maintain user requirements, parameters and configurations for sustainability risk and compliance quantitative models 	●
Manage the documentation and reporting of risk and compliance data analytics	<ul style="list-style-type: none"> Oversee, execute and support risk and compliance solutions based on identified sustainability analytics requirements Compile interpret and challenge the results of sustainability data modelling, monitoring and analysis activities in standardised reporting structures based on reporting requirements Develop summary sustainability reports to communicate data analysis findings, trends analysis, baseline benchmarking and modelling outputs to stakeholders Analyse, document and report on sustainability regulatory compliance and/or baselines of client behaviour Develop sustainability reporting dashboard to present risk and compliance data analytics findings suitable for senior management and decision-making 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Analytics / Compliance Analytics

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Supervise risk and/or compliance data analytics and model usage	<ul style="list-style-type: none"> Set direction for the identification of rules, parameters and criteria for sustainability data analysis Develop and deploy techniques and methodologies, identify required data sets and conduct data mining and data collection activities for sustainability data analysis Prepare preliminary interpretations of sustainability data analysis for non-technical reports and communicate findings to stakeholders Highlight risks and weaknesses of the sustainability model which may impact data analysis findings Identify and articulate business and use cases for sustainability solutions on risk issues and influence senior management to adopt models and/or analytics solutions for the organisation Identify and evaluate appropriate methods to automate manual sustainability data analysis and monitoring systems and seek approval from senior management 	●
Support the implementation and use of risk and compliance models and/or data analytics	<ul style="list-style-type: none"> Build and validate data sets to facilitate sustainability data analysis for risk and compliance teams Oversee the implementation and deployment of sustainability models and/or analytics solutions into the organisation's systems infrastructure Maintain, update and ensure that documentation and references are in place to support the deployment and integration of sustainability models and/or analytics solutions Establish, develop and conduct training initiatives to upskill employees on the use of sustainability quantitative analytic approaches and data analytic tools in risk and compliance Manage internal stakeholders throughout the lifecycle of sustainability quantitative solutions implementation 	●

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

Risk Strategy

Context of change and impact on job tasks

As investors and regulators prioritise sustainability and responsible investment practices, Asset Management firms will have to integrate sustainability considerations into the firm's risk management framework. A Risk Strategy job role holder will be required to develop and implement Enterprise Risk Management (ERM) policies and frameworks, integrating considerations of sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices, governance risks such as board effectiveness and anti-corruption measures) and how it will impact the investment decision making and investment fund labelling.

A deep understanding of sustainability risks is needed to identify key risk indicators (KRIs) and develop risk modelling and measurement techniques to enable effective analysis of sustainability risks for investments and investment funds. Similarly, the organisation's risk tolerance and risk appetite should be updated to include sustainability factors and specifications on exclusion lists for activities and sectors that contradict with organisation's sustainability agenda and sustainability targets.

The job role holder will need to work closely with all risks disciplines in the organisation to communicate sustainability risks and ensure that sustainability risks are embedded within all risks types (e.g. market and liquidity risks, credit risks, operational risks) and decision making processes.

In addition to current activities in monitoring the external market conditions, the job role holder will need to keep track of evolving guidelines and industry standards which are related to sustainability risks to identify possible impact the organisation.

Time horizon of impact: Within the next three years

Projected % increase in FTE (by year)^a

2025	2027	2032
11%	14%	14%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain Enterprise Risk Management (ERM) Framework	<ul style="list-style-type: none"> Aggregate key risk indicators (KRIs) for sustainability risks (e.g. environmental risks such as climate change and pollution, social risks such as labour practices and customer privacy, governance risks such as board effectiveness and anti-corruption measures) and integrate them into ERM framework Incorporate risk modelling and measurement techniques to enable effective analysis of sustainability risks for the organisation and across different business portfolios within the organisation Define acceptable risk tolerance and risk appetite levels for organisation-wide risks, including considerations for sustainability risks and exclusion list that specifies activities and sectors for investments that contradict with the organisation's sustainability agenda and sustainability targets 	●
Identify and implement controls for enterprise/organisation risks	<ul style="list-style-type: none"> Keep abreast of sustainability regulatory changes which are relevant to the organisation and assess how changes in regulations impact its ERM framework and communicate required actions to manage risks Work with various risk disciplines in the organisation, including sustainability risks disciplines (if relevant), to align enterprise risk controls with different disciplines and to establish appropriate strategies to control identified priority areas of risks 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

Risk Strategy

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Implement ERM and consequence management activities	<ul style="list-style-type: none"> Determine business impact and implications of sustainability disruptive events on investments and product offerings to develop clear incident response plan which are aligned to organisation's sustainability agenda. Recommend mechanisms to address gaps in sustainability risk controls and consequence management activities Included sustainability risks disciplines (if relevant) when developing cross-functional risk management initiatives and projects 	●
Monitor risk exposure	<ul style="list-style-type: none"> Identify sustainability risk categories and implement sustainability risk identification procedures and methodology Conduct and collate stress testing results using different sustainability risks and climate scenarios, review findings and develop summary reports 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainability focussed products, this job role holder will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability compliance is likely to be a key focus for this job role holder. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and frameworks. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

The compliance advisory will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and standards are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulations and frameworks impacts the organisation's existing policies Recommend sustainability regulations and ensure organisation central compliance frameworks are relevant to emerging sustainability industry trends 	●
Promote compliance literacy and culture of compliance	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability KPIs 	●
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and standards and oversee response activities to cater to these changes 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new/updated sustainability regulations and standards 	●

SF TSCs needed

- Sustainability Risk Management
- Sustainability Reporting

L3	L4	L5
L3	L4	L5

● Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainable finance, the job role holder will be expanded to include identification of sustainability non-compliant activities in performed by investee companies. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainable investigative frameworks.

The FCC job role holder should be well-versed with sustainability crime developments, trends and regulations as well as common non-compliant activities within the industry and identify sectors and industries with high risk for sustainability non-compliant activities (e.g. logging, mining, waste trafficking, forestry). They should understand the link between sustainability or climate change initiatives to financial crime and how it could be manifested in client's activities and transactions. These sustainability factors should be incorporated into existing financial crime risk assessment procedures to enable effective detection of sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Develop strategies, frameworks and policies for dealing with sustainability non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: <ul style="list-style-type: none"> Environmental: clients with different accounts held in multiple countries who transact via payment schemes or constantly make use of cash might indicate illegal trade in ozone depleting substances and unreported fishing; whether the set-up of carbon sequestration scheme involve a bribe to government officials Social: clients making fictitious donations, transfer cash in small amounts or structure funds below thresholds may indicate connection to human trafficking or migrant smuggling activities Governance: whether clients have strong board composition and structure to prevent corruption, bribery, embezzlement and influence peddling Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability activities which could be linked to financial crime risks 	●
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability offences that are predicate offences (e.g. Prevention of Human Trafficking Act 2014, Wildlife Act 1965) Determine the downstream impact of emerging sustainability non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability non-compliant activities 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainable investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability FCC violations 	●
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management **L3** L4 L5

● Legal Counsel

Context of change and impact on job tasks

Sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting asset management firms and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

The job role holder of the legal counsel is likely to evolve to manage risks emerging from regulations imposed on FS, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand and incorporate the contractual terms pertaining to new products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with emerging guidelines and regulations.

Overall, the job role holder will need to develop an understanding of how sustainable finance is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability regulations and standards in FS industries and understand the implications of public policy related changes in this space on the organisation's legal strategy Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainable finance, imposed on FS, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for structured products and handle legal disputes pertaining to green washing for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the FS on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability regulations, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Taxonomy Application **L3** **L4** **L5**
- Sustainability Risk Management **L3** **L4** **L5**

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulation develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and standards and build compliance control measures (e.g. sustainability due diligence testing) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is job tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability activities (e.g. misalignment of investment decisions with sustainability commitments). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in job tasks but will be expected to expand their knowledge specific to sustainability regulations and standards, internal sustainability policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and/or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations and standards are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and/or industry trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability parameters in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations and standards 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations and standards, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Develop and drive compliance testing checks related to sustainability activities to determine regulatory compliance in the organisation's daily operations Identify and evaluate gaps in compliance controls in relation to sustainability activities and recommend corrective steps to central compliance management teams Address issues, and challenges in closing compliance gaps and implement corrective actions for compliance violations related to sustainability activities 	●

● Monitoring, Surveillance and Testing

● Highly augmented ● Moderately augmented ● Lowly augmented

Critical work function	Additional key job task	Impact on job task
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability activities (e.g. misalignment of investment decisions with sustainability commitments) Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability activities 	●
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> Liaise, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities Understand sustainability regulations and act as a subject matter expert to engage/advise business stakeholders on compliance monitoring and surveillance activities Develop regular monitoring, surveillance and compliance testing reports for management and regulators in relation to sustainability regulatory standards and requirements 	●

SF TSCs needed

- Taxonomy Application** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

Operational Risk

Context of change and impact on job tasks

With the growing recognition of sustainability as a risk factor for financial institutions, the job role holder of Operational Risk will be expanded to consider sustainability regulations and standards and sustainability events which may impact the organisation's operational risk.

As regulators set out sustainability regulations, guidance, and recommendations to mandate the integration of sustainability in the FS sector, the job role holder will need to monitor changing regulations, review and update its Operational Risk Management (ORM) policies and framework accordingly. This is critical in ensuring that the organisation remains compliant to regulations and avoid legal and reputational risks.

Additionally, the job role holder will need to identify sustainability business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff. This may also include physical and transition risks of the organisation. Therefore, the job role holder would need to integrate relevant sustainability considerations to ORM and Business Continuity Management (BCM) policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> Conduct investigations on and provide recommendations to improve operational risk mitigation actions aimed at addressing issues related to compliance to sustainability risk regulations and internal frameworks Lead the identification of key sustainability indicators relevant to operational risks (e.g. number of workplace incidents) and embed them into identification procedures 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> Ensure compliance with sustainability risk regulatory terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> Conduct periodic assessments of business continuity plans to test for adequacy against the risk of non compliance to sustainability risk regulations and internal frameworks Develop and maintain BCM policies and frameworks based on identified sustainability business disruptions and crisis scenarios which can impact the organisation's infrastructure, systems, processes and staff 	●
Manage Operational Risk Management (ORM) Framework	<ul style="list-style-type: none"> Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability related factors Update ORM frameworks to account for changing regulations, emerging global trends and industry best practices related to sustainability risk 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> Monitor operational risk management activities to track their effectiveness in addressing sustainability operational risks as well as internal frameworks and guidelines Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

SF TSCs needed

- Climate Change Management **L3** L4 L5
- Sustainability Risk Management **L3** L4 L5

Portfolio / Investment / Fund Management

Context of change and impact on job tasks

Asset management firms are increasingly creating sustainability-screened or -aligned investment funds and alternative sustainable investment opportunities (e.g. projects generating carbon credits) as sustainability gain prominence in the investment industry. The job role holder will need to adapt to changing investor preferences and regulatory landscapes, and the increasing importance of sustainability factors in investment decision-making

This job role holder will need to incorporate sustainability factors into investment decision-making processes. In order to do so, they will need to define material sustainability targets, metrics and outcomes for the green and sustainability-related investment portfolio. During investor meetings to determine sustainability strategies, this job role holder should uphold sustainability stewardship, apply knowledge on taxonomy alignment and sustainable investment objectives, as well as considerations for key sustainability trends and social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments. They also need to understand and articulate relevant impact measurements and metrics (e.g. taxonomy alignment, sustainability risk rating, MSCI rating) when sharing research findings on financial forecasting and valuation.

Additionally, they need to keep abreast of new sustainable investment guidelines and ensure that investment portfolios are aligned to sustainability related guidelines and labels (e.g. Ecolabel, SFDR article 8,9, Paris Aligned Benchmarks). They should also work with compliance team to update sustainability policies accordingly.

Time horizon of impact: Within the next three years

Projected % increase in FTE (by year)^a

2025	2027	2032
6%	10%	10%

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Execute strategic decisions and evaluate performance	<ul style="list-style-type: none"> Define organisations investment strategies for sustainability alignment, integration and impact investments Define material sustainability targets, metrics and outcomes for the green and sustainability-related investment portfolio Incorporate financially material sustainability factors into organisation's criteria for portfolio strategies to manage financial and/or operational performance Incorporate sustainability KPIs (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) into evaluation criteria to measure performance with reference to internationally recognised frameworks and standards (e.g. TCFD, ISSB) Provide recommendations to enhance the sustainability performance of the portfolio, incorporating understanding on whether investment target's business activities contributed sufficiently to the fund's investment objective and sustainability agenda 	●

^a The projected increase in FTEs are aggregated numbers for the same job role across the different FS sub-sectors.

● Portfolio / Investment / Fund Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Gather and present information to relevant stakeholders	<ul style="list-style-type: none"> When determining sustainability strategies with investors, uphold sustainability stewardship, apply knowledge on taxonomy alignment and sustainable investment objectives (e.g. impact investing, sustainable investing, thematic investing, impact first investing, sustainability alignment, sustainability integration), as well as considerations for key sustainability trends and social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments Incorporate information on sustainability performance and risk metrics (e.g. taxonomy alignment, sustainability risk rating, SFDR, TCFD, ISSB, MSCI) when preparing and presenting information to relevant stakeholders Learn and stay up-to-date with trading regulations and best execution policies from various carbon exchanges pertaining to carbon trading 	●
Ensure compliance with investment management agreements	<ul style="list-style-type: none"> Ensure investment portfolios are aligned to sustainability related guidelines and labels (e.g. Ecolabel, SFDR article 8,9, Paris Aligned Benchmarks) Keep abreast of new sustainable investment guidelines and ensure that strategies and investment processes are compliant with international standards and best practices Work with compliance team to update sustainability policies according to new sustainable investment guidelines 	●

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Stewardship Development	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Client Portfolio Management

Context of change and impact on job tasks

Asset management firms are increasing sustainability-screened or -aligned investment funds and alternative sustainable investment opportunities as sustainability gain prominence in the investment industry. The job role holder will be expanded to support clients in navigating the complex landscape of sustainable finance and investing.

When discussing investment strategies with clients, the job role holder will need to consider client's investment objectives and sustainability preferences. They will also need to share relevant sustainable investment strategies (e.g. impact investing, sustainable investing, thematic investing, sustainability alignment, sustainability integration), key sustainability trends, social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments and be skilled at explaining how these factors can impact investment returns. While doing so, they should uphold sustainability stewardship to organisation's investment objectives and sustainability agenda can be achieved.

When presenting investment performance information to client, the job role holder will need to incorporate information on sustainability performance and risk metrics (e.g. taxonomy alignment, sustainability risk rating) according to internationally recognised frameworks and standards (e.g. TCFD, ISSB, SFDR, MSCI).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage client relationships	<ul style="list-style-type: none"> Respond to client enquiries and request regarding different sustainable investment approaches and its application to the organisation's portfolio strategies Present sustainable investment strategies to sales and marketing teams Incorporate information on sustainability performance and risk metrics (e.g. taxonomy alignment, sustainability risk rating, SFDR, TCFD, ISSB, MSCI) in investor communications 	●
Present information to relevant stakeholders	<ul style="list-style-type: none"> Define and execute organisation's guidelines for client reporting requirements with reference to internationally recognised frameworks and standards (e.g. TCFD, ISSB, SFDR) Incorporate relevant sustainability metrics and taxonomy classification (portion of revenues, capital expenditures and operational expenditures where relevant) in product factsheets Where relevant to client's investment objectives and sustainability preferences, incorporate considerations for sustainability stewardship and sustainable investment strategies (e.g. impact investing, sustainable investing, thematic investing, sustainability alignment, sustainability integration), key sustainability trends, social/environmental risks, carbon markets, climate change impact, and non-financial industry sustainability developments in client presentations 	●
Manage investment strategies	<ul style="list-style-type: none"> Ensure investment strategies align with client's investment objectives and sustainability preferences Conduct portfolio reviews to ensure that appropriate sustainability factors have been considered based on client's investment objectives and sustainability preferences 	●

● Client Portfolio Management

SF TSCs needed

• Carbon Markets and Decarbonisation Strategies Management	L3	L4	L5
• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Stewardship Development	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Development

Context of change and impact on job tasks

Asset Managers are offering new sustainability funds that incorporate sustainability considerations in the investment process. The job role holder will be expanded to incorporate sustainability considerations across all stages of product development for new sustainability funds.

As market offerings of sustainability funds (e.g. responsible investing funds, impact investing funds) continue to evolve, there is a need to keep abreast of market trends and regulations (e.g. Sustainability taxonomy and regulations, both globally and in Singapore) in order to effectively ideate new sustainability funds. This requires an understanding of emerging sustainability trends ranging from climate risks and opportunities, natural capital and biodiversity issues as well as developments across the non-financial industry. When developing new sustainable finance products, the job role holder will need to balance external market demands for sustainable finance products with internal capabilities and needs. The job role holder will also need to ensure the new funds fulfil the asset manager's sustainability agenda as well as ensure alignment with internal sustainability frameworks and regulatory taxonomies.

The job role holder should understand market dynamics and incorporate sustainability considerations into pricing models and strategies in order to effectively price sustainable finance products and ensure successful product adoption. There is also a need to craft value propositions that resonate with clients across different segments including corporate clients and individual investors and conduct market testing to assess product and market fit.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategies for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainable finance products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Define sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Product Management

Context of change and impact on job tasks

Asset Managers are creating a range of innovative investment products for investors that want exposure to the investment opportunities being created in the transition and decarbonisation of the real economy sectors to more sustainable business practices. The job role holder will be expanded to manage funds with a sustainability focus and will need to adapt product management processes from suitability assessments to channel management decisions by incorporating sustainability considerations.

The job role holder should ensure that the product mix of sustainability related funds is suitable to address the sustainable finance product demand from investors as well as recognise and analyse the different sustainability preferences and needs of investors in various market segments.

Management of channels for different sustainable finance products would also be required (e.g. selection of marketing and customer acquisition channels for different sustainability thematic funds). The job role holder should also be able to consider sustainability performance metrics during the analysis of product performance.

A familiarity with sustainability considerations is required to appropriately adjust pricing or expense ratios for sustainability focused funds. The sustainability risks and financial risks due to offering the sustainability focused fund would also need to be managed by the job role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and stability	<ul style="list-style-type: none"> Evaluate overall product portfolio against suitability to business sustainability strategies Ensure that products are in compliance with sustainability regulatory and international trade guidelines Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and/or client channels and strategies	<ul style="list-style-type: none"> Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and strategic sustainability agenda are met Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainable finance products Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

SF TSCs needed

• Sustainable Investment Management	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Research and Analysis

Context of change and impact on job tasks

Asset managers are increasingly creating a range of innovative investment products for investors interested in sustainable investing. When performing research, the job role holder of Research and Analysis will be expanded to incorporate research on sustainability issues and risks for its given sector and company to ensure that each investment aligns with the investment strategy.

The Research and Analysis job role holder should monitor the financial markets and keep abreast of sustainability related developments and events which may impact the performance of company and its specific sector (e.g. real estate, automotive, transport, utilities, chemicals). They may need to work with relevant business units to complete valuations of companies, taking into account relevant sustainability metrics which reflect material sustainability financial risks and/or opportunities.

Subsequently, when drafting communication and research reports, the job role holder should incorporate the above relevant sustainability performance and risk metrics and articulate how they contribute to investment decision-making and stewardship activities.

Additionally, they may need to work with management to incorporate relevant sustainability considerations into investment research policies and processes.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Conduct research, gather report findings and recommendations	<ul style="list-style-type: none"> Conduct research on sustainability factors (e.g. sustainability agenda, corporate governance, transition risks affecting commodity price/exchange rate volatility, location of operations prone to weather events) which may impact performance Incorporate relevant sustainability performance and risk metrics (e.g. Sustainability risk rating) in communication reports and recommendations 	●
Provide strategic inputs for organisation's policy formation	<ul style="list-style-type: none"> Keep up-to-date with sustainability industry and regulatory developments and events which may impact the performance of company or each specific sector (e.g. Real estate, automotive, transport, utilities, chemicals) Support management with identifying material sustainability issues and sustainability considerations that should be integrated into investment and portfolio construction policies and processes 	●
Facilitate investment processes	<ul style="list-style-type: none"> Work with other business units to complete valuations of companies and investments, taking into account relevant sustainability metrics which reflect relevant sustainable financial risks for a given company and sector Facilitate integration of sustainability factors into investment decision-making and relevant stewardship activities 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainability Stewardship Development	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Business Process Improvement

Context of change and impact on job tasks

With the rise in sustainable and responsible investing (SRI), there will increasingly be the integration of sustainability job tasks, controls, process governance and management information into existing core processes of Asset Managers. The job role holder would be responsible for driving efficiency and transparency throughout the organisation, ensuring that the organisation's investment processes align with regulatory requirements, best practices and governance frameworks.

The job role holder should liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand investment process gaps between current and future states. They will need to identify process improvement changes for new sustainability-screened or -aligned investment funds being offered to drive better user experience.

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. This helps to ensure that relevant sustainability factors are taken into considerations to support sound investment decisions. The job role holder will also conduct regular monitoring processes to ensure it is aligned with evolving sustainability regulations, disclosure requirements and sustainable investing standards.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability metrics to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, sustainability scenario analysis) into investment identification processes Regulatory compliance: ensure that investment processes are aligned with evolving sustainability regulations, disclosure requirements, and responsible banking standards 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

- Sustainability Reporting** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the FS sector moves towards achieving its sustainability commitments, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. The job role holder would need to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and/or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be job tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs. Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organise and manipulate sustainability data from internal systems and external sources according to specific data needs Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainable data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and/or analytics findings 	●
Build data analysis mechanisms and processing systems (Only applicable to Head of Data Analytics)	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability insights into clear, predictive business-focused deliverables for senior stakeholders 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability analytical tools and/or develop sustainability analytical tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of design sustainability data analytics to stakeholders 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Data Engineer

Context of change and impact on job tasks

Asset Management are using more sustainability data to develop sustainability themed funds and monitor investee companies' compliance with net zero commitments, as well as to assess risks to portfolio return. The Asset Management Data Engineer will need to understand available sustainability data sources to support the funds and clean sustainability data to enable subsequent usage of data for analytics

A familiarity with relevant taxonomies may be required when collecting data on the activities of investee companies in order to fulfil sustainable investment labelling criteria. An understanding of sustainability reporting formats and frameworks is required as a sizeable proportion of sustainability data on investee companies can be found in published sustainability reports. The job role holder may also support the sustainability reporting process by collecting relevant sustainability metrics for reporting.

The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and understand the interconnectedness within large sustainability datasets through data mining. For Asset Managers that offer impact investment funds, the job role holder needs to monitor sustainability impact indicators and performance metrics of investees. To ensure efficient storage, transfer or analysis of sustainability data, the job role holder needs to understand if current software and hardware implementations are sufficient and update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability agenda and strategy Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time Implement data governance structures for sustainability data including data ownership, data lineage, hierarchy etc. to drive data literacy, ensure security and data quality 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting tools Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation to outline them. 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Taxonomy Application	L3	L4	L5

Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the job role holder would need to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be job tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role holder would be responsible for conducting Proof of Concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technology that has helped similar organisations scale successfully Draft, develop and endorse sustainability policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainable innovative ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability innovation and process improvement Ensure that processes are aligned with the organisation's sustainability priorities and benchmarks as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability innovation initiatives Endorse and drive selected sustainability initiatives and systems to improve processes and systems 	●

Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire/partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition/partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions/partnerships of disruptive sustainability technologies Lead and conduct deal negotiations for the acquisitions/partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions/partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Identify, implement and oversee the implementation of employees' innovative ideas in sustainability into existing business processes Research and assess the potential impacts on business processes caused by the implementation of innovative solutions in sustainability Develop a business case for innovation solution in sustainability and propose it to heads of business units and senior stakeholders Assist and design the implementation plans for innovation initiatives/solutions in sustainability 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting** L3 L4 L5
- Sustainability Reporting** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

● Business Management

Context of change and impact on job tasks

Asset Management firms will be required to take into account sustainability considerations in their business practices as investors grow more conscious of their sustainability preferences.

The job role holder would need to identify potential business opportunities and lead the strategic development of business plans relating to the sales of sustainable finance products (e.g. sustainability-screened investment funds). The job role holder is also expected to set and track sustainability Key Performance Indicators and recommend improvement initiatives to improve the performance of sustainable finance products. As such, the job role holder would be expected to have a good understanding of key sustainability concepts and frameworks (e.g. climate change, natural capital and non-financial industry sustainability developments, taxonomy) and their relevance to business and product development. This understanding of sustainability solutions ensures that they are able to develop business strategies for the sales and delivery of sustainable finance products.

Overall, this job role holder will see significant changes in job task, specifically the need to expand their knowledge of key sustainability concepts and be aware of new/updated sustainable finance products that are offered.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee front office performance	<ul style="list-style-type: none"> Formulate, execute and evaluate business plans and sustainability Key Performance Indicators for front office teams in alignment with the organisation's sustainability agenda Identify business opportunities and develop business strategies for the sales of sustainable finance products Gather relevant feedback from front office, lead change, develop and implement new sales initiatives and programs related to sustainability to capture key demographics 	●
Connect business units to support delivery to clients	<ul style="list-style-type: none"> Assist and liaise with key partners on resource management and allocation to deliver timely rollout of sustainability initiatives and projects across the business Work and collaborate with business unit heads to identify improvement opportunities, lead change initiatives and drive the implementation of strategic plans related to sustainability across the organisation 	●
Manage operational issues	<ul style="list-style-type: none"> As an independent party from the business, ensure that compliance issues and client complaints related to sustainability are resolved Drive and implement the development work processes, procedures and controls to ensure compliance with sustainability regulations both internally and externally Track adherence to compliance with sustainability regulations across products, processes and services Assist relevant parties with client sustainability due diligence and onboarding procedures 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Natural Capital Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Client Investment Performance and Reporting

Context of change and impact on job tasks

As demand for sustainable and responsible investing grows, the job role holder will need to include sustainability outcomes (e.g. Sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) of investment funds and portfolios managed by the firm.

When analysing investment performance, the job role holder will need to consider client's investment objectives and sustainability preferences (e.g. focus on either environmental, social or governance, sustainability-neutral, responsible investing, sustainable investing, thematic investing, impact first investing and philanthropy) and incorporate appropriate outcome indicators. Additionally, sustainability factors may need to be integrated into traditional valuation models to evaluate the financial implications of sustainability considerations on investment decisions. In order to do so, this job role holder may need to work more closely with sustainability specialists and experts to identify and integrate sustainability data effectively into investment performance analysis.

As the market develops with sustainability uniformity, portfolio analysis metrics may increasingly be required for both contribution and attribution reporting. Classification structures will need to be created based on sustainability reference data for both the portfolio and benchmarks. This will create greater dependencies on both operational data management teams and external sustainability benchmark providers.

This job role holder will require understanding of relevant frameworks, regulatory disclosure and reporting guidelines when developing reports such as investment reports, annual reports and fund prospectuses. These reports should include relevant metrics that reflect financial risks for a given portfolio or sector, and articulate the ways in which sustainability issues may impact long-term returns.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Gather data for portfolio performance analysis	<ul style="list-style-type: none"> Gather appropriate sustainability data, impact metrics and benchmarks to assess investment performance in terms of both financial returns and sustainable outcomes (e.g. sustainability ratings, carbon footprint, sustainability integration score, avoided emissions, resource conservation, community development) Gather and analyse non-financial data related to sustainability metrics, social impact and governance practices 	●
Analyse portfolio performance	<ul style="list-style-type: none"> Analyse appropriate sustainability KPIs, and targets into the calculation of portfolio performance and reporting, with reference to taxonomy classification, sustainability benchmarks, guidelines (e.g. EU Paris-Aligned Benchmark, MAS EnRM Guidelines, SFDR Article 8 & 9) Verify that portfolio performances and risk figures align to classification framework, sustainability benchmarks and guidelines (e.g. PAB, SFDR Article 8 & 9) and customer's sustainability agenda (e.g. responsible impact investing, sustainable impact investing, thematic impact investing), where relevant 	●
Report portfolios' performance	<ul style="list-style-type: none"> Incorporate sustainability KPIs and targets, sustainability scores and impact measurements (e.g. data related to sustainability KPIs, carbon footprints, social impact and governance practices) with respect to portfolio performance to presentations and reports 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Taxonomy Application	L3	L4	L5

● Trading

Context of change and impact on job tasks

The development of carbon markets, driven by increasing global commitment to emissions reduction and sustainability agenda, has created an opportunity for FS to support the trading of carbon credits. This includes the development of transition carbon credits from the early retirement of coal-fired power plants, serving as a prime example of these opportunities. This will require some individuals in trading to begin focusing specifically on carbon credits as an asset class.

The job role holder will need to be responsible for the development of carbon credit trading strategies for the organisation with the intention of enhancing the organisation's financial gains. The job role holder is expected to lead research on carbon markets/exchanges and develop trading strategies that are in compliance with emerging carbon trading regulations. Additionally, the job role holder is expected to conduct carbon trading activities within the trading limits of the organisation. The job role holder will also need to learn new exchange/platform where carbon trading can be performed.

Time horizon of impact: Within the next three years

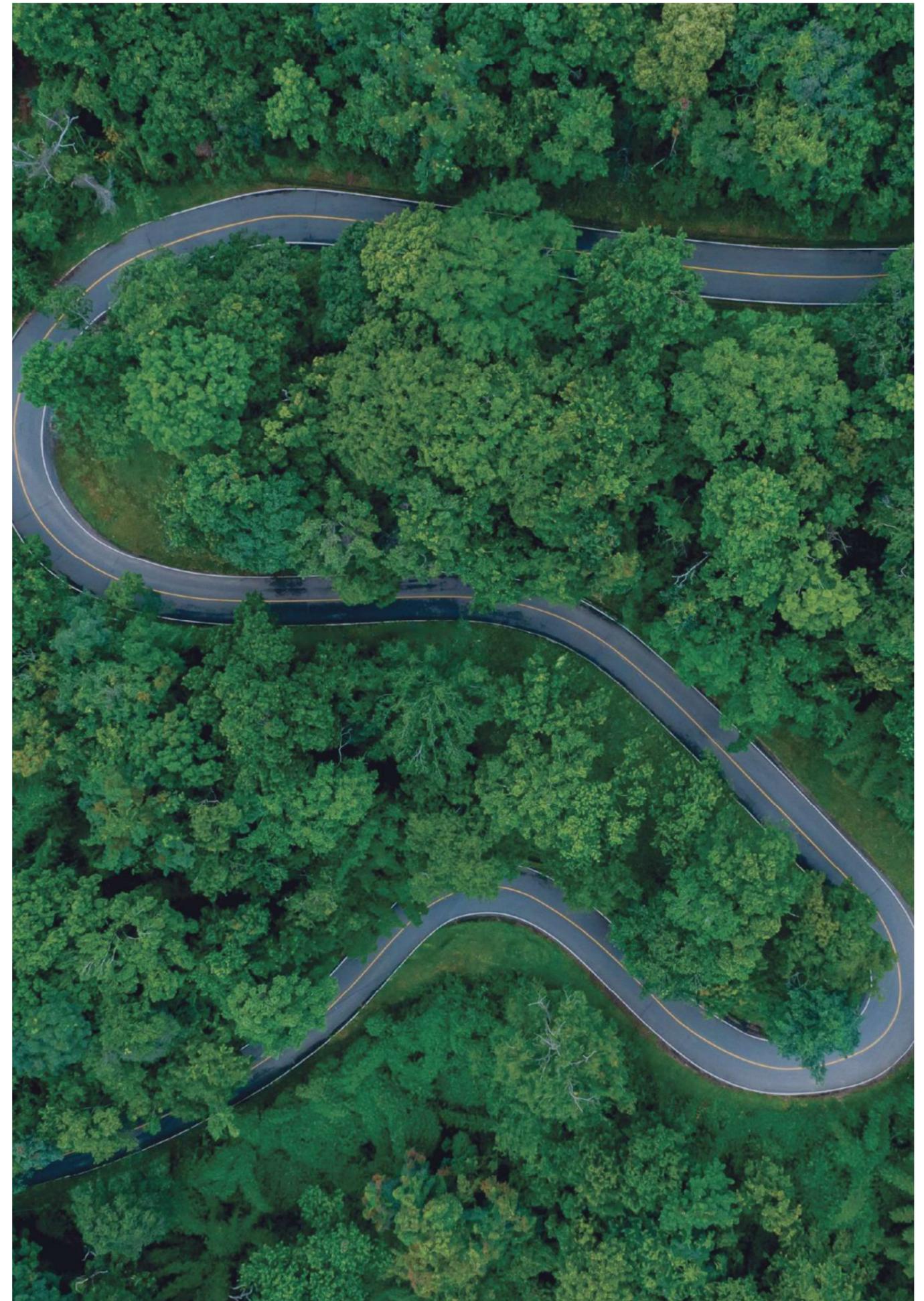
Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage trades from inception to execution	<ul style="list-style-type: none"> Oversee the development of carbon trading strategies to maximise financial gains and minimise risks for the organisation and clients and ensure alignment with organisation's overall sustainability strategy Review trade analyses pertaining to carbon trading and provide feedback and recommendations to improve the trading process Execute trades and financial transactions on carbon credits using the organisation's own capital Develop trading strategies for carbon credits using quantitative methods that enhance the organisation's financial gain Monitor the market for news, potential disruptions and opportunities in the carbon markets 	●
Establish compliance with regulations and execution policies	<ul style="list-style-type: none"> Ensure that carbon trading complies with the organisation's execution policies and applicable trading regulations Develop and utilise hedging strategies to manage risk and ensure governance pertaining to carbon trading is conducted within trading limits Learn and stay up-to-date with trading regulations and best execution policies from various carbon exchanges pertaining to carbon trading 	●

SF TSCs needed

- **Carbon Markets and Decarbonisation Strategies Management** L3 L4 L5
- **Sustainability Risk Management** L3 L4 L5
- **Taxonomy Application** L3 L4 L5



Insurance



● Compliance Advisory

Context of change and impact on job tasks

As industry regulations, internal frameworks and policies evolve to manage sustainability risks, sustainability reporting and new sustainability focused products, this job role holder will be responsible for helping their organisation ensure compliance for the same.

Adapting central compliance frameworks for sustainability compliance is likely to be a key focus for this job role holder. With changes in regulations, the compliance advisory executive is responsible for ensuring the organisation's policies regarding any compliance breaches, including non-financial breaches, are updated based on emerging sustainability regulations and frameworks. They will also need to keep abreast with changes in regulations to ensure that the organisations policies are up to date.

The job role holder will also need to support in interpreting regulatory guidelines and communicating the same to the organisation. This job role holder will also be responsible for ensuring all business units work in alignment with the updated policies and propose recommendations for improved compliance operations.

In order to carry out these responsibilities, this job role holder will need to expand their knowledge to understand and interpret how new sustainability regulations and frameworks are applicable to the organisation and provide internal advisory and support on the same.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain central compliance frameworks	<ul style="list-style-type: none"> Identify and keep abreast with changes in regulations, and analyse how the integration of sustainability compliance regulations and frameworks impacts the organisation's existing policies Recommend sustainability regulations and ensure organisation central compliance frameworks are relevant to emerging sustainability industry trends 	●
Promote compliance literacy and culture of compliance awareness	<ul style="list-style-type: none"> Document appropriate resources required for sustainability compliance controls and develop relevant materials highlighting changes in organisational compliance as a result of sustainability compliance, such as adherence to frameworks, and internal reporting of sustainability metrics 	●
Guide the implementation of compliance controls and remediation activities	<ul style="list-style-type: none"> Understand changes in compliance metrics and controls as a result of sustainability regulations and oversee response activities to cater to these changes 	●
Provide internal advisory and regulatory reporting support	<ul style="list-style-type: none"> Stay up-to-date with industry regulatory reporting criteria to reflect emerging sustainability policies, procedures, frameworks and regulations within the organisation to ensure relevant actions are taken for compliance controls, activities and breaches Support and communicate changes internally to ensure all business units work according to new/updated sustainability regulations and frameworks 	●

SF TSCs needed

- Sustainability Risk Management** L3 L4 L5
- Sustainability Reporting** L3 L4 L5

● Financial Crime Compliance

Context of change and impact on job tasks

With the rise in sustainability-liability products, the job role holder will need to include identification of sustainability non-compliant activities being performed by potential clients and stakeholders. The job role holder will be responsible for incorporating sustainability factors into FCC frameworks, policies and providing relevant advisory and training for internal teams. This would also include policies and procedures relating to sustainable investigative frameworks

The FCC job role holder should be well-versed with sustainability developments, trends and regulations as well as common non-compliant activities within the industry (e.g. greenwashing of sustainable initiatives) and identify sectors and industries with high risk for sustainability non-compliant activities (e.g. logging, mining, waste trafficking, forestry). These sustainability factors should be incorporated into existing financial crime risk assessment procedures to enable effective detection of sustainability violations that can either disclose an offence itself, or proceeds of crime from sustainability offences that are predicate offences. In order to do so, the job role holder might have to work with monitoring and surveillance teams and other stakeholders to define sustainability parameters for detection of violations according to organisation's sustainability risk appetite.

Moreover, it is important for the job role holder to guide compliance to sustainability considerations in FCC regulations within the organisation through delivering training and raising awareness of sustainability non-compliance of potential clients and stakeholders.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage financial crime-related risk governance frameworks	<ul style="list-style-type: none"> Develop strategies, frameworks and policies for dealing with sustainability non-compliance and sanctions Ensure policies are translated into systems and processes in accordance with enterprise risk governance framework 	●
Guide compliance with financial crime legislations, rules and regulations	<ul style="list-style-type: none"> Incorporate sustainability considerations to financial crime risk assessment procedures, for example: <ul style="list-style-type: none"> Environmental: organisations which greenwash of sustainable initiatives, organisations participating in illegal trade of ozone depleting substances Social: organisations making fictitious donations, organisations involved in human trafficking activities Governance: organisations with weak board composition and structure to prevent corruption, bribery, embezzlement and influence peddling Develop and deliver training and compliance literacy programmes which highlight common red flags of sustainability activities which could be linked to financial crime risks 	●
Identify and track financial crime risks	<ul style="list-style-type: none"> Identify sectors, industries and sustainability-liability products with high risk for sustainability non-compliant activities (e.g. logging, mining, waste trafficking, forestry) Determine downstream the impact of emerging sustainability non-compliant activities on FCC regulations and organisation's risk exposure Collaborate with monitoring and surveillance teams to define parameters and financial crime models for detection of red flags pertaining to sustainability non-compliant activities 	●

● Financial Crime Compliance

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee financial crime incident investigations and incident management	<ul style="list-style-type: none"> Review and draft policies and procedures aligned to the organisation's and regulator's sustainable investigative frameworks Collaborate with regulators and industry stakeholders on external sustainability non-compliance incident reviews, due diligence and investigations Evaluate loss recovery potential for sustainability non-compliant activities Provide oversight and advisory for the implementation of corrective actions for sustainability FCC violations 	●
Oversee the production of regulatory submission material	<ul style="list-style-type: none"> Incorporate sustainability non-compliant activities in compliance reporting 	●

SF TSCs needed

- Sustainability Risk Management **L3** L4 L5

● Legal Counsel

Context of change and impact on job tasks

Sustainability regulations and compliance requirements, specifically classification frameworks and required disclosures, are impacting insurance firms and will require the organisation to ensure they have considered potential risks resulting from the same. From a legal standpoint, this will include ensuring regulatory and legal risks stemming from classification and related disclosures are managed.

The job role holder is likely to evolve to manage risks emerging from regulations imposed on FS, including increased litigation risks due to false claims and related regulatory enforcement.

They will also need to understand and incorporate the contractual terms pertaining to new products and manage potential cases arising from conflicts. Legal strategic direction for the organisation will need to include reputational risk considerations due to potential misalignment with emerging guidelines and regulations.

Overall, the job role holder will need to develop an understanding of how sustainable finance is impacting the industry and stay updated with the key regulatory changes that could increase legal risks for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Oversee legal strategic direction	<ul style="list-style-type: none"> Collaborate with senior management to drive responsive actions pertaining to legal issues with respect to sustainability related regulations in FS industries and understand the implications of public policy related changes in this space on the organisation's legal strategy Understand the nuances needed for contracting / agreements pertaining to new / structured products and impact of same 	●
Assess and manage legal risks	<ul style="list-style-type: none"> Identify how risks emerging from regulations pertaining to sustainable finance, imposed on FS, impacts legal risk and identify & drive mitigation strategies Identify applicable regulatory and compliance frameworks and mitigate potential for increased litigation risk due to false claims, regulatory enforcement, and stakeholder actions 	●
Manage and facilitate legal transactions	<ul style="list-style-type: none"> Review contracts and commercial agreements for insurance products and handle legal disputes pertaining to any related issues for the organisation Develop align legal strategies for cases pertaining to emerging regulations in the FS on sustainability classification, disclosures etc. 	●
Manage litigation and legal investigations	<ul style="list-style-type: none"> Ensure reputational risk management strategies and activities include reputational risk considerations due to misalignment with sustainability regulations, greenwashing or risks due to new / structured products 	●

SF TSCs needed

- Taxonomy Application **L3** **L4** L5
- Sustainability Risk Management **L3** **L4** L5

● Market and Liquidity Risk

Context of change and impact on job tasks

Insurers may be exposed to a decline in valuation and increased volatility in their investments (particularly in carbon-intensive sectors and companies that have contributed to significant environmental degradation) as a result of shifts in investor preferences. Moreover, insurers may experience liquidity risks when sustainability events cause a sudden surge in pay-outs. It may also be difficult to liquidate assets impacted by weather events, or stranded in the transition towards an environmentally sustainable economy. Investors, who are increasingly environmentally-conscious, may also cut back on sources of funding for insurers that underwrite activities with a negative impact on the environment. Hence, the job role holder will be required to understand how sustainability risks impact its insurer's market and liquidity risks.

However, in some insurance companies, monitoring market and liquidity risks may be the responsibilities of Chief Investment Officer and the Investment Committee. Larger insurer may also have Asset Liability Matching (ALM) committee to match assets and liability which includes sustainability risks and considerations.

When engaging in underwriting and investment activities, insurers should incorporate sustainability considerations into its valuation modelling and analysis of liquidity risks. Insurers should also conduct scenario analysis and stress testing to understand the potential impact of environmental-related financial risks on liquidity buffers and develop methodologies to manage such risks.

The market and liquidity risk management policies and frameworks will need to be updated with sustainability risks considerations and aligned to the organisation's Enterprise Risk Management (ERM) framework.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Maintain market and liquidity risk management policies and frameworks	<ul style="list-style-type: none"> Incorporate sustainability considerations into market risk and liquidity risk policies and frameworks, for example: Market risk: Impact on financial asset valuations from physical risk over longer time horizons, risk premiums on carbon-intensive investments, impact of potential carbon taxes or climate-triggered supply chain disruptions on global commodity prices Liquidity risk: Natural disasters can cause widespread damage on physical property and incur significant costs, leading to a surge in insurance claims, exacerbating liquidity stresses in insurers Work with Risk Strategy team to ensure alignment between market and liquidity risk management policies, frameworks and activities with organisation's ERM framework which incorporates sustainability risks 	●
Manage risk appetite and risk controls	<ul style="list-style-type: none"> Incorporate sustainability considerations to valuation modelling and analysis of liquidity risks (e.g. whether environmental-related financial risks assessed as material over relevant time horizons could have a significant impact to net cash outflows or depletion of liquidity buffers) Incorporate sustainability considerations when establishing liquidity risk limits in terms of proportion of organisation's insurance products, portfolios and services which are sustainability focused 	●
Monitor and identify market and financial risks	<ul style="list-style-type: none"> Identify plausible extreme sustainability events as potential scenarios that may impact market and liquidity risks Conduct scenario analysis and stress testing on potential impact of extreme environmental-related financial risks on market risk exposure and liquidity buffers Assess implication of market risk on the solvency of the insurer 	●

● Market and Liquidity Risk

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop risk mitigation and consequence management activities	<ul style="list-style-type: none"> Incorporate sustainability considerations into risk positions of products 	●

SF TSCs needed

- Sustainability Risk Management** L3 L4 L5

● Monitoring, Surveillance and Testing

Context of change and impact on job tasks

As sustainability regulation develops, internal sustainability risk management policies and frameworks will be updated. This job role holder will need to stay abreast with evolving sustainability regulations and build compliance control measures (e.g. underwriting sustainability risk assessment) to ensure operational processes comply with the regulations.

This job role holder will continue being responsible for conducting routine compliance checks and is job tasked to investigate and assess all forms of compliance breach incidents, including incidents relating to sustainability activities (e.g. failure to account for sustainability risks in underwriting decisions). This job role holder will also be expected to execute incident management actions and take appropriate corrective measures in accordance with sustainability regulatory requirements.

Additionally, this job role holder will need to prepare reports related to the compliance of monitoring, surveillance and testing activities for internal stakeholders to highlight sustainability regulatory changes, emerging trends and threats relating to compliance monitoring.

Overall, this job role holder will not see significant changes in job tasks but will be expected to expand their knowledge specific to sustainability regulations, internal sustainability policies and frameworks.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure effectiveness of monitoring, testing and/or surveillance mechanisms	<ul style="list-style-type: none"> Define, articulate and ensure business requirements relating to sustainability regulations are incorporated into the system used for monitoring, testing and surveillance Keep abreast of the latest sustainability regulatory developments, changes and emerging sustainability regulatory and/or industry trends relating to compliance and update monitoring and surveillance policies and frameworks Determine and implement sustainability parameters in monitoring and surveillance tools Understand and perform benchmarking against sustainability regulations 	●
Perform compliance monitoring and surveillance	<ul style="list-style-type: none"> Conduct regular checks on organisational compliance with sustainability regulations, policies, procedures and compliance control infrastructure Execute defined monitoring and surveillance policies and procedures related to sustainability activities and ensure monitoring and surveillance activities are conducted regularly and in accordance with procedures Identify, analyse and escalate irregular incidents related to sustainability activities for compliance investigations 	●
Perform internal compliance testing activities	<ul style="list-style-type: none"> Develop and drive compliance testing checks related to sustainability activities to determine regulatory compliance in the organisation's daily operations Identify and evaluate gaps in compliance controls in relation to sustainability activities and recommend corrective steps to central compliance management teams Address issues, and challenges in closing compliance gaps and implement corrective actions for compliance violations related to sustainability activities 	●
Conduct compliance investigations and analyses	<ul style="list-style-type: none"> Highlight potential compliance breach incidents in relation to sustainability activities Assess and investigate all forms of compliance breach incidents, including incidents relating to sustainability activities and conduct preliminary analyses as part of compliance investigations and analysis Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability activities 	●

● Monitoring, Surveillance and Testing

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Report on monitoring and surveillance findings	<ul style="list-style-type: none"> Liaise, prepare and submit sustainability regulatory reports for regulatory bodies and industry partners when responding to queries and making submissions for monitoring, surveillance and testing activities Understand sustainability regulations and act as a subject matter expert to engage/advise business stakeholders on compliance monitoring and surveillance activities Identify, report and propose corrective measures to mitigate the impact of compliance violations in relation to sustainability activities 	●

SF TSCs needed

- **Sustainability Risk Management** **L3** L4 L5
- **Taxonomy Application** **L3** L4 L5

● Operational Risk

Context of change and impact on job tasks

It is expected that Insurers would underwrite new products, update existing products and offer Investment Based Insurance Products (IBIP) that cater to the emerging sustainability preferences of their clients. Such products come with their own set of operational sustainability risks as they can be offered to clients and industries with high sustainability risks (e.g. transport, energy generation). The job role holder is expected to develop operational risk policies to manage the risks of providing services to high sustainability risk clients as well as navigate the evolving sustainability regulatory landscape.

As sustainability involves recognising the importance of a wider group of stakeholders, the job role holder would also be required to oversee and review Operations Risk Management (ORM) and Business Continuity Management (BCM) frameworks to guide mitigation processes for the impact of disruptive events on environmental, social or governance factors to internal as well as external stakeholders (e.g. cyber attacks can lead to loss of personal data affecting workers, customers and across the insurance supply chain). These policies ensure that operations fall within the Insurer’s sustainability provisions in the risk appetite and ensure minimal interruption for insurance operations after a disruptive event. Additionally, this job role holder would be required keep abreast of sustainability regulations and adapt ORM and BCM frameworks to meet new requirements as well as lead the development of other risk management frameworks relevant to operations.

Overall, this job role holder will continue to oversee and manage the insurer’s operational risks to prevent losses that could result from inadequate or failed internal processes, improper business practices, systems failures or from external events.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Monitor and report operational risk exposure	<ul style="list-style-type: none"> Conduct investigations on and provide recommendations to improve operational risk mitigation actions aimed at addressing sustainability disruptions (e.g. floods, data breaches) and internal frameworks Lead the identification of key sustainability indicators relevant to operational risks (e.g. number of workplace incidents) and embed them into identification procedures 	●
Establish a culture of risk awareness and risk management	<ul style="list-style-type: none"> Ensure compliance with sustainability provisions and terms within the operational risk frameworks Develop and coordinate training programs to create awareness and educate the operations teams on identifying, monitoring and mitigating sustainability risks relevant to operational processes 	●
Manage Business Continuity Management (BCM) Framework	<ul style="list-style-type: none"> Conduct periodic assessments of business continuity plans to test for adequacy against sustainability risks and internal frameworks Develop and maintain BCM policies and frameworks based on identified business disruption scenarios to account for potential sustainability impacts across internal and external stakeholder groups 	●
Manage Operational Risk Management (ORM) Framework	<ul style="list-style-type: none"> Conduct operational risk analysis incorporating sustainability data to identify causes of losses that arise due to sustainability factors Account for enterprise level sustainability risk strategies in the ORM policies and frameworks 	●
Implement controls and risk management activities	<ul style="list-style-type: none"> Monitor operational risk management activities to track their effectiveness in addressing sustainability operational risks as well as internal frameworks and guidelines Develop and implement mitigation actions and controls to address operational risks related to sustainability (e.g. regulatory compliance, data privacy) and internal frameworks 	●

● Operational Risk

SF TSCs needed

- **Climate Change Management** **L3** L4 L5
- **Sustainability Risk Management** **L3** L4 L5

● Pricing Actuary

Context of change and impact on job tasks

Insurance firms are increasingly focusing on providing sustainability-liability products and services as a result of insurers becoming more aware of physical risks from climate related disasters as well as transition risks associated with sustainable developments within the market. The Pricing Actuarial will need to adapt to changing customer preferences, regulatory landscape and the increasing importance of sustainability-liability within organisation product offerings in order to conduct analysis and pricing for the same.

This job role holder will need to have a significant understanding of different types of sustainability risks and their impact on existing/emerging sustainability-liability products, in order to work closely with underwriters to alter and enhance product coverage and ensure this meets market demand. The pricing actuarial will also be responsible for understanding the risks associated with sustainability-liabilities and the severity of the same – to ensure they are able to develop and determine relevant risk metrics for products and reporting.

Additionally, this job role holder will need to work with reinsurers and communicate changes in new/updated sustainability-liability products to reflect in reinsurance arrangements, as well as develop actuarial training content with reserving actuaries pertaining to sustainability-liabilities for internal teams.

This job role holder will also need to keep abreast with sustainability regulations and be able to evaluate how sustainability-liability can improve product/services experiences for customers, and prepare pricing plans and premiums accordingly.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage business activities and strategies	<ul style="list-style-type: none"> Understand how products and customer demand has changed as a result of sustainability-liability to help improve organisation offerings, reinsurance arrangements and existing strategies Keep abreast with regulations regarding sustainability risks and products and price products in line with these regulations Support development for content for training on sustainability-liability and actuarial matters 	●
Manage risks	<ul style="list-style-type: none"> Understand risks associated with sustainability-liability to develop risk metrics and employ relevant statistical modelling tools Understand severity of sustainability risks to determine mortality and surrenders risks to minimise losses 	●
Manage product and business development	<ul style="list-style-type: none"> Evaluate how sustainability-liability can be incorporated to improve existing/emerging products and assist with liability and pricing accordingly Assess changing needs in customer environments and prepare pricing and reinsurance plans accordingly 	●
Prepare reports in collaboration with other stakeholders	<ul style="list-style-type: none"> Have an understanding of sustainability-liability products and reporting requirements and work with underwriting and insurance teams to alter product coverage and for more relevant offerings 	●

SF TSCs needed

- Sustainable Insurance and Re-Insurance Solutions and Applications** L3 L4 L5
- Sustainability Risk Management** L3 L4 L5

● Product Development

Context of change and impact on job tasks

Insurers are offering new products that address the gap in insurance products that help to manage sustainability risks of clients (e.g. providing coverage of flood risk) and Insurance Based Investment Products (IBIPs) with sustainable investments. The job role holder will need to incorporate sustainability considerations in product development for new sustainability insurance products

As market offerings of sustainability insurance products evolve, there is a need to keep abreast of market trends and conditions in order to ideate new sustainability insurance products. This requires an understanding of emerging sustainability trends faced by corporate policy-holders ranging from climate risks and opportunities, natural capital issues as well as developments across the non-financial industry. These trends also present new sustainability risks to be accounted for in sustainable finance product coverage considerations, the job role holder would need to collaborate closely with the actuarial team to determine the financial risks to the insurer.

The job role holder will also need to ensure the new insurance product fulfils the Insurer's sustainability agenda as well as ensure alignment with internal sustainability frameworks and regulatory taxonomies.

The job role holder should understand market dynamics and incorporate sustainability considerations into pricing models and strategies in order to effectively price sustainability products and ensure successful product adoption. There is also a need to craft value propositions that resonate with corporate policy-holders and conduct market testing to assess product and market fit.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Generate ideas for new products	<ul style="list-style-type: none"> Identify trends of market needs and internal demand for new sustainable finance products Brainstorm for new sustainable finance products and ensure product ideas are aligned with business and financial strategies Analyse various sustainable finance product idea sources including client demand, internal sales forces or third parties Keep abreast of market trends and regulations (e.g. sustainability taxonomy and regulations, both globally and in Singapore) 	●
Oversee pricing strategies and policies	<ul style="list-style-type: none"> Evaluate the impact of market conditions on pricing strategies for sustainable finance products and marketing mix of sustainable finance products and services Evaluate pricing scenarios of identified price points on the financial feasibility and profitability of sustainable finance products Conduct price modelling for the financial feasibility and profitability of sustainable finance products to set effective price points 	●
Perform market testing and launches to gather market feedback	<ul style="list-style-type: none"> Develop sustainable finance product prototypes for market testing Provide technical explanations or briefings about new sustainable finance products to internal and external stakeholders Propose specific improvements on sustainable finance product features based on testing feedback 	●

● Product Development

SF TSCs needed

- **Climate Change Management**
- **Natural Capital Management**
- **Non-Financial Industry Sustainability Developments**
- **Sustainable Insurance and Re-Insurance Solutions and Applications**
- **Sustainable Investment Management**
- **Sustainability Risk Management**
- **Taxonomy Application**

L3	L4	L5

● Product Management

Context of change and impact on job tasks

With sustainability-liability insurance products as well as Insurance Based Investment Products (IBIPs) being offered by Insurers, the job role holder will need to manage such products; from assessment of suitability to channel management decisions.

The job role holder should ensure that the product mix of sustainability-liability insurance products or IBIPs are suitable to address the sustainable finance product demand from insurance buyers as well as recognise and analyse the different sustainability preferences and needs of insurance buyers in various market segments.

Management of channels suitable for different sustainability insurance products would also be required (e.g. selection of different marketing and customer acquisition channels). The job role holder needs to consider sustainability performance metrics during the analysis of insurance product performance.

A familiarity with sustainability considerations is required to appropriately adjust pricing for sustainability focused insurance products. With sustainability-liability insurance products, additional sustainability risks needs to be considered and the financial risks affected by sustainability factors also need to be managed by the job role holder.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Ensure product relevance and suitability	<ul style="list-style-type: none"> • Evaluate overall product portfolio against suitability to business sustainability strategies • Ensure that products are in compliance with sustainability regulatory and international trade guidelines • Analyse product performance data of sustainable finance products to identify trends, highlights and patterns for reporting to senior stakeholders 	●
Oversee product and/or client channels and strategies	<ul style="list-style-type: none"> • Collaborate with relevant teams to formulate pricing strategies and marketing mix of sustainable finance products and services • Develop channel ideas based on market trends and analyses of sustainable finance products to ensure business needs and strategic sustainability agenda are met • Propose channel prioritisation strategies that are appropriate for sustainable finance products 	●
Manage product financials and risks	<ul style="list-style-type: none"> • Incorporate sustainability considerations when reviewing business assumptions, parameters and thresholds in product financial risk assessments to ensure relevance and compliance with organisational sustainability procedures and policies • Conduct training for new client-facing employees on sustainable finance product knowledge to avoid misrepresentation of sustainable finance products • Collaborate with relevant teams to determine level of financial risks involved when offering sustainable finance products and methods to mitigate these risks 	●

SF TSCs needed

- **Sustainable Insurance and Re-Insurance Solutions and Applications**
- **Sustainable Investment Management**
- **Sustainability Risk Management**
- **Taxonomy Application**

L3	L4	L5

Reserving Actuary

Context of change and impact on job tasks

Insurance firms are increasingly focusing on providing sustainability-liability products and services as a result of insurers becoming more aware of physical risks of climate related disasters as well as transition risks associated with sustainable developments within the market. The Reserving Actuarial job role holder will need to adapt to changing customer preferences and regulatory landscapes, and the increasing importance of sustainability-liability within organisation product offerings in order to conduct analysis and reserving processes.

This job role holder will need to have a significant understanding of different types of sustainability risks in the reserving process, as well as cater for new/emerging future liabilities. This job role holder will also need to keep abreast with sustainability regulations, and work with finance teams to ensure compliance. Furthermore, they will need to understand the risks associated with sustainability-liabilities and the severity of the same.

This job role holder will also need to be able to evaluate different types of sustainability-liability and support monitoring and improvement of reserving and claims provisions. They will also work with pricing actuaries to develop actuarial training content pertaining to sustainability-liabilities for internal teams.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage business activities and strategies	<ul style="list-style-type: none"> Have knowledge of the impacts of different types of sustainability-liabilities, and support improvement and monitoring of reserving and claims provisions Keep abreast with sustainability regulations, such as the MAS Environmental Risk Guidelines and ISSB to ensure reserves processes cater for sustainability liabilities Support development of content for training on sustainability liability and actuarial matters 	●
Manage risks	<ul style="list-style-type: none"> Incorporate sustainability liabilities into reserving parameters Have a significant technical understanding of sustainability liabilities to assess risks in reserving processes 	●
Prepare reports in collaboration with other stakeholders	<ul style="list-style-type: none"> Have an understanding of sustainability liability products and reporting requirements and work with finance teams to ensure compliance 	●

SF TSCs needed

- Sustainable Insurance and Re-Insurance Solutions and Applications L3 L4 L5
- Sustainability Risk Management L3 L4 L5

Business Process Improvement

Context of change and impact on job tasks

With the rise in sustainability-liability products or IBIPs, there will increasingly be the integration of sustainability job tasks, controls, process governance and management information into existing core processes of insurance and reinsurance organisations. The job role holder would be responsible for driving efficiency and transparency throughout the organisation, ensuring that the organisation's processes align with regulatory requirements, best practices and governance frameworks.

The job role holder will liaise with relevant stakeholders, especially in the areas of data collection and reporting, sustainability performance assessment, user experience, risk management and regulatory compliance, to understand process gaps between current and future states. They will need to identify process improvement changes for new sustainability-liability products being offered to drive better user experience

In order to ensure effective sustainability integration and develop process improvement initiatives, they would require understanding of key sustainability reporting and accounting frameworks, standards and regulations, as well as sustainability risks identification processes and guidelines. The job role holder will also conduct regular monitoring processes to ensure it is aligned with evolving sustainability regulations, disclosure requirements and sustainable investing standards.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Liaise with relevant stakeholders to incorporate sustainability considerations in organisation's end-to-end processes, including: Data collection and reporting: drive process to improve sustainability data collection and reporting Sustainability performance assessment: update process maps to incorporate sustainability metrics to ensure relevant metrics are considered at every stage of the process, from onboarding to transaction approval Risk management: integrate sustainability risk assessment (e.g. climate risk, social risk, governance risk, sustainability scenario analysis) Regulatory compliance: ensure that processes are aligned with evolving sustainability regulations, disclosure requirements 	●
Implement innovation and business process improvement initiatives	<ul style="list-style-type: none"> Collate relevant documents underlying sustainability integration best practices and governance frameworks (e.g. EnRM) Develop recommendations for future processes which drives efficiency, transparency and alignment to relevant sustainability regulatory requirements Implement process improvements initiatives to integrate sustainability considerations 	●
Monitor process improvement and innovation implementation outcomes	<ul style="list-style-type: none"> Draft report and analyse sustainability integration outcomes with reference to factors of cost, quality and time in comparison to current processes 	●

SF TSCs needed

- Sustainability Reporting L3 L4 L5
- Sustainability Risk Management L3 L4 L5

● Data Analysis / Data Scientist

Context of change and impact on job tasks

As the FS sector moves towards achieving its sustainability commitments, a significant hurdle lies in obtaining clean, credible and comparable sustainability data. The job role holder would be to define business and sustainability information needs (e.g. clients' sustainability preference in products, consolidating sustainability data for sustainability reporting and/or understanding physical and transition risk for risk management) and translate business problems into sustainability data projects.

The job role holder would be job tasked to obtain, convert and organise large sustainability datasets to identify and investigate leads, trends, patterns, correlations and regularities and support all job families on activities related to decision-making, advisory, compliance and disclosure.

This job role holder would also be involved in identifying, recommending and testing available sustainability analytical tools based on the organisation's needs and developing logical sustainability data models and data outputs. Additionally, the job role holder would also be responsible for designing sustainability data reports and visualisations to communicate key sustainability insights to stakeholders and senior management.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Build data analysis and processing systems	<ul style="list-style-type: none"> Gather, organise and manipulate sustainability data from internal systems and external sources according to specific data needs Direct, oversee and conduct data mining activities to identify and investigate leads, trends, patterns, correlations and regularities within large sustainability data sets Develop automated and logical sustainability data models and sustainability data output methods Maintain and ensure the reliability of sustainability data sources and data integrity when handling sustainability data Clean databases to remove duplicate, outdated or irrelevant sustainability information, coordinate data quality reviews and report on their outcomes Develop presentations, and design sustainability data reports and visualisations to facilitate understanding of research and/or analytics findings 	●
Build data analysis mechanisms and processing systems (Only applicable to Head of Data Analytics)	<ul style="list-style-type: none"> Contribute towards ideation of intelligent algorithms to operate on large sustainability data sets Propose and seek approval from senior management for the implementation of new sustainability data analytics mechanisms and processing systems Translate data-driven sustainability insights into clear, predictive business-focused deliverables for senior stakeholders 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Develop and grow employee capabilities in machine learning, deep learning, sustainability statistical modelling and other computational techniques by providing access to resources and learning opportunities Identify, test and recommend available sustainability analytical tools and/or develop sustainability analytical tools based on functionality, suitability, ease of use and convenience to address potential issues faced by business units Prepare standard procedure documentation to outline and record all sustainability data sources, models and algorithms used and developed in past projects into knowledge management systems Lead development of a repository of best practices, tools and methodologies for sustainability data handling and data management 	●

● Data Analysis / Data Scientist

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Identify, recommend and test available sustainability analytical tools based on the organisation's needs Provide thought leadership to stakeholders in determining sustainability data solutions that will enable the organisation to achieve defined business goals Identify trends, patterns and regularities in sustainability data through the use of data models and the latest tools Work and partner with stakeholders to define business and sustainability information needs to translate business problems into sustainability data projects Assist and conceptualise the scope, direction and approach of sustainability data analytics projects Lead delivery of designed sustainability data analytics solutions to stakeholders 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Data Engineer

Context of change and impact on job tasks

Insurers are utilising more sustainability data to price and develop sustainability-liability insurance products (e.g. flood coverage) and offerings of Insurance Based Investment Products (IBIPs) that are linked to sustainable investments are also contributing to use of sustainability data. The Insurance Data Engineer will need to understand available sustainability data sources to support the insurance products and clean sustainability data to enable subsequent usage of data for analytics.

A familiarity with regulatory taxonomies may be required when collecting data on the sustainable investments used in IBIPs. The job role holder may also support the sustainability reporting process by collecting relevant sustainability metrics for reporting.

The job role holder needs to define relationships between different sustainability data indicators through modelling techniques and understand the interconnectedness within large sustainability datasets through data mining. To ensure efficient storage, transfer or analysis of sustainability data, the job role holder needs to understand if current software and hardware implementations are sufficient and update software and hardware configurations (e.g. codes, scripts).

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Provide data analytics services to internal stakeholders	<ul style="list-style-type: none"> Conduct research on hardware and software needs to support selected sustainable finance products and solutions Analyse latest technologies, strategies, and products in database and data processing software according to relevance to organisation sustainability agenda and strategy Work with stakeholders to understand needs for sustainability data structure, availability and accessibility 	●
Build data analysis and maintain processing systems	<ul style="list-style-type: none"> Develop prototypes and Proof of Concepts (PoCs) for selected sustainable finance products and solutions Support identification of internal and external sustainability data sources and organise and manipulate sustainability data from various sources Develop code, scripts and data pipelines to process structured and unstructured sustainability data near real-time Implement data governance structures for sustainability data including data ownership, data lineage, hierarchy etc. to drive data literacy, ensure security and data quality 	●
Develop data solution optimisation approaches	<ul style="list-style-type: none"> Automate sustainability data collection and analysis processes, and sustainability data releasing and reporting tools Facilitate data cleansing, enrichment and data quality improvements for sustainability data Record sustainability data sources, models and algorithms used and developed in past projects and prepare standard procedure documentation to outline them. 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5
- Taxonomy Application L3 L4 L5

● Innovation Management

Context of change and impact on job tasks

As the requirements for clean, reliable and comparable sustainability data continue to grow, the job role holder will need to support job families to increase productivity and decrease operational inefficiencies (e.g. assessing sustainability performance, processing sustainability data for sustainability reports and identification of relevant sustainability risks) through the exploration of innovative sustainability-related technologies (e.g. blockchain and Generative AI, etc).

The job role holder would be job tasked with identifying feasible innovative ideas from employees internally and sourcing for innovative sustainability-related technologies externally. The job role holder would engage in deal negotiations and conduct necessary due diligence and documentation processes to acquire or collaborate with organisations possessing relevant sustainability-related technologies.

Additionally, the job role holder would be responsible for conducting Proof of Concept testing on selected sustainability-related technologies, evaluating the impact on the organisation and driving the implementation of these technologies across the businesses.

Overall, this job role holder will see significant changes in job tasks and will require specific sustainability knowledge to perform their responsibilities.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Develop organisation's innovation competency	<ul style="list-style-type: none"> Collect data on sustainability-related technology that has helped similar organisations scale successfully Draft, develop and endorse sustainability policies and frameworks to promote an innovative mindset and culture within the organisation Allocate resources for the design, building and maintenance of innovative ideas in sustainability that are within acceptable risk levels Oversee, deliver and assist internal training programmes on implementing sustainability innovative ideas, solutions and ways of working within the organisation 	●
Identify and drive business process improvement and innovation solutions	<ul style="list-style-type: none"> Draft sustainability innovation initiatives and shortlist potential innovative solutions based on the business unit's strategies, pain points, existing processes and workflow Evaluate the effects of sustainability improvement and innovation initiatives on the organisation's business outcomes Assist and collaborate with cross-functional teams and business managers to conduct Proof of Concept testing and gather required data and design methods on sustainability innovation and process improvement Ensure that processes are aligned with the organisation's sustainability priorities and benchmarks as well as evolving sustainability regulations, disclosure requirements, and responsible banking standards Develop robust business cases by assessing the feasibility and financial impact of proposed processes and initiatives related to sustainability innovation initiatives Endorse and drive selected sustainability initiatives and systems to improve processes and systems 	●

● Innovation Management

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Identify disruptive technologies and acquire/partner suitable organisations	<ul style="list-style-type: none"> Conduct research projects and provide recommendations on disruptive sustainability-related technologies with the potential for acquisition/partnerships Assist and manage legal, operational, intellectual property, information technology, human resources due diligence and documentation processes on potential and actual acquisitions/partnerships of disruptive sustainability technologies Lead and conduct deal negotiations for the acquisitions/partnerships of disruptive sustainability-related technologies Identify and evaluate potential consequences and changes in operational processes arising from the acquisitions/partnerships of disruptive sustainability-related technologies Formulate and rollout implementation restructuring plans to integrate disruptive sustainability-related technologies 	●
Implement innovation and business process improvement activities	<ul style="list-style-type: none"> Identify, implement and oversee the implementation of employees' innovative ideas in sustainability into existing business processes Research and assess the potential impacts on business processes caused by the implementation of innovative solutions in sustainability Develop a business case for innovation solution in sustainability and propose it to heads of business units and senior stakeholders Assist and design the implementation plans for innovation initiatives/solutions in sustainability 	●

SF TSCs needed

- **Impact Indicators, Measurement and Reporting** L3 L4 L5
- **Sustainability Reporting** L3 L4 L5
- **Sustainability Risk Management** L3 L4 L5

● Business Management - Brokers

Context of change and impact on job tasks

With changes in insurance products as a result of increased sustainability-liability product demand, stemming from sustainability-risks such as increased frequency in climate disasters, this job role holder, as an intermediary, will need to adapt their sales strategies and go-to-market approach to grow customer base and product portfolios.

To provide sustainability-liability coverage, this job role holder will need to be aware of changes in the insurance industry, and determine new channels for sales growth for these products. Furthermore, understanding of sustainability- liability products will be key in assisting in driving and formulating business growth and sales strategies and remain competitive in the insurance market.

This job role holder will also need to be able to use their knowledge of sustainability-liability products to collaborate with underwriters to meet customer demand, expand partnership networks and manage a diverse portfolio range of accounts.

This job role holder will need to keep up-to-date with changes in updated/new sustainability-liability insurance products, and understand market demand in order to identify relevant business opportunities for the organisation.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Define business strategies	<ul style="list-style-type: none"> Have an understanding of sustainability-liability products and services offerings in the market and how to make organisation offerings more competitive Understand and develop strategies to approach and conduct sales for sustainability-liability opportunities and products Collaborate with underwriters to support and drive sales strategies for sustainability-liability products 	●
Identify business opportunities	<ul style="list-style-type: none"> Understand customers' sustainability-liability needs and sustainability-liability product offerings to adequately target and match customer profiles and needs Analyse changes as a result of demand for sustainability-liability products, and provide recommendations on business growth and sales strategies accordingly 	●
Grow client base and maintain relationships	<ul style="list-style-type: none"> Maintain detailed knowledge of current market condition's and competitors' products due to increased demand for sustainability-liability products and services to remain competitive and accessible in the insurance market Manage a diverse portfolio range of accounts, including sustainability-liability portfolios as demand for these products increases Understand sustainability-liability products in order to collaborate with underwriters for increased sustainability-liability product demand 	●

SF TSCs needed

- **Climate Change Management** L3 L4 L5
- **Non-Financial Industry Sustainability Developments** L3 L4 L5
- **Sustainable Insurance and Re-Insurance Solutions and Applications** L3 L4 L5
- **Sustainability Risk Management** L3 L4 L5

● Client Support / Account Management

Context of change and impact on job tasks

With an increased focus on physical risks as a result of climate disasters, and transition risks linked to sustainable developments, insurers will need to account for these sustainability-risks in terms of understanding changes in new/updated sustainability-liability products.

As a result, the Client Support/Account Management job role holder will be responsible for evaluating the changing needs in customer environments as a result of sustainability developments, such as increased frequency of climate disasters, and subsequently provide guidance on how insurance renewal solutions need to be tailored to these needs.

This job role holder will need to have an understanding of the organisation's sustainability agenda in relation to client and business acceptance criteria, and will be directly responsible for communicating emerging sustainability-liabilities in new/updated products based on the client's profile and needs, specifically for sustainability-focused investment products. Furthermore, they will need to be able to see the types of risk and opportunities emerging from climate change in the market. This will enable the job role holder to develop strategies for and tailor renewal policies.

The overall changes to this job role holder will heavily focus on expanding knowledge of new/updated sustainability-liability products, and their terms and conditions, to ensure customer's policy needs are being sufficiently met and updated

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage customer renewal process	<ul style="list-style-type: none"> Evaluate changing needs in customer's environment to ensure new/updated sustainability-liability renewal solutions are customised accurately Understand and provide guidance for new/updated sustainability-liability products for different policy renewal options Understand organisation's sustainability agenda pertaining to client acceptance and business strategy 	●
Source for business opportunities	<ul style="list-style-type: none"> Develop and design proposals with incorporation of sustainability-liability products to remain competitive in the insurance market Ensure sales and marketing initiatives spotlight new/updated sustainability-liability products, and align with organisation's overall business strategy Communicate changes in existing and emerging sustainability-liability policies that could be beneficial to the client Understand changes, risks and opportunities emerging from climate change for insurance products 	●

SF TSCs needed

• Climate Change Management	L3	L4	L5
• Non-Financial Industry Sustainability Developments	L3	L4	L5
• Sustainable Insurance and Re-Insurance Solutions and Applications	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Underwriting

Context of change and impact on job tasks

As sustainability risks impact multiple industries, it is expected that insurers will need to account for these risks while evaluating the clients they choose to provide insurance to and create enhanced sustainability risk screening for clients in high-risk sectors.

To analyse these risks, the underwriting executive will need to perform an initial sustainability assessment and gather data, information, metrics to qualify the sustainability risks underlying the assets they are underwriting. They may also work with sustainability specialists to identify risks affecting the assets for complex cases.

The underwriting process will also need to be adapted as per the organisations risk management policy / guidelines and policy coverage and terms for existing products will also need to be revised to account for changes in risk appetite.

As new sustainability liability insurance products are expected to emerge as well, underwriting executives will need to provide recommendations on special deals and plans based on underwriting outcomes for these products.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Devise underwriting strategies and perform underwriting	<ul style="list-style-type: none"> Evaluate client sustainability risks and the capacity of the client to manage these risks by conducting analysis and collaborating with sustainability experts to help evaluate potential risks and opportunities associated with investments and policies Identify emerging / new risks in sustainability-liability products and incorporate them into underwriting strategies, and help devise appropriate pricing for the new / updated insurance products 	●
Oversee insurance products development and improvement	<ul style="list-style-type: none"> Perform analyses and modelling with expanded risk considerations for reinsurance, including sustainability factors, to understand the potential exposure and vulnerabilities of existing and new products Generate product development ideas based on sustainability risk coverage and exposure 	●
Oversee policies and processes	<ul style="list-style-type: none"> Re-design underwriting processes to align with organisation's sustainability risk management guidelines Integrate sustainability risk in policy coverage revision and underwriting processes based on the organisation's risk management policy 	●

SF TSCs needed

• Sustainable Insurance and Re-Insurance Solutions and Applications	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5



Support Functions

● Business Valuation

Context of change and impact on job tasks

With increased importance of sustainability and sustainable finance across Financial Institutions, Business Valuation function is expected to incorporate sustainability considerations into their existing valuation practices such as sustainability materiality assessment and cash flow analysis, to derive at a more accurate valuation of the organisation.

This job role holder will now need to integrate sustainability factors into their valuation processes through different approaches such as Market Approach where they reference comparable public companies or precedent transaction to determine the value relative to other actual valuation transactions. The Income Approach can also be employed by this function where they are required to integrate sustainability considerations into their cash flow analysis by quantifying sustainability impact and incorporate them into cash flow adjustments.

The Business Valuation function will now need to be able to identify and measure the materiality of sustainability factors that could potentially impact the organisation's valuation. These job role holders will have to evaluate relevant sustainability factors on a case-by-case basis on a company or industry-specific level in order to show explicit sustainability adjustments associated with the individual value drivers. The Business Valuation function should be able to apply the adjustments in cash flows in varying degrees under different scenarios wherein each scenario would reflect the impact of a particular material sustainability factor on the business.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job task	Impact on job task
Manage the valuation	<ul style="list-style-type: none"> Integrate sustainability factors into their valuation processes through different approaches such as the Market Approach and Income Approach Incorporate sustainability considerations into their cash flow analysis by quantifying sustainability impact and incorporate them into cash flow adjustments. Identify and measure the materiality of sustainability factors that could potentially impact the organisation's valuation Evaluate relevant sustainability factors on a case-by-case basis on a company or industry-specific level in order to show explicit sustainability adjustments associated with the individual value drivers Apply the adjustments in cash flows in varying degrees under different scenarios wherein each scenario would reflect the impact of a particular material sustainability factor on the business 	●

SF TSCs needed

- Impact Indicators, Measurement and Reporting L3 L4 L5

● Financial Accounting

Context of change and impact on job tasks

The job role holder will be responsible for the preparation of sustainability disclosures where they are required to understand relevant reporting frameworks to ensure effective and standardised communication with key stakeholders. In the process of this preparation, this function is also required to collaborate with various functions to determine the methodologies and metrics used in these disclosure to provide the most relevant and accurate data.

The job role holder plays an important role in support the strategic planning and sustainability agenda setting of the organisation. On this front, this job role holder will need to provide support on establishing robust processes and systems for capturing and reporting non-financial data and demonstrating the financial implications of decisions and various actions. They also need to incorporate sustainability matters into the strategic metrics that drive value creation over time and use it to monitor the performance of the organisation.

Furthermore, the financial accounting job role holder will be required to understand the different sustainability risks types and their linkages to traditional financial risks such as credit risk. This job role holder will be responsible for the development of relevant policies to effectively manage these risks and incorporate them into the organisation's overall risk management framework.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job tasks	Impact on job tasks
Financial accounting and corporate reporting	<ul style="list-style-type: none"> Understand sustainability factors' impact on valuation process and incorporate them into existing valuation models Understand and apply sustainability regulations and standards and internationally recognised frameworks (e.g. TNFD, ISSB, etc.) to establish standardised and effective reporting practices Monitor sustainability trends and analyse their implications on financial and financial-reporting process of the organisation 	●
Strategic planning	<ul style="list-style-type: none"> Incorporate sustainability market trends into the organisation's valuation models and translate them into financial terms to assess and forecast sustainability impact on the organisation's performance 	●
Support internal and external activities	<ul style="list-style-type: none"> Support internal and external activities by providing and explaining sustainability market trends and the methodologies behind them when required 	●
Support the organisation as a partner	<ul style="list-style-type: none"> Incorporate sustainability KPIs in impact measurement to gain insights on the sustainability impact of the investment decision Develop strategic performance measurement systems, performance measures, and KPIs to support managerial decision making 	●
Manage governance infrastructure and risk management	<ul style="list-style-type: none"> Ensure the organisation's sustainability agenda and practices are compliant with local / international regulators 	●
Manage change in the finance function	<ul style="list-style-type: none"> Utilise tools and techniques such as climate scenario analysis to assess the impact of sustainability factors on the organisation's future performance 	●
Lead communication	<ul style="list-style-type: none"> Communicate with key stakeholders on sustainability risks and sustainability's impact on internal controls and compliance 	●

● Financial Accounting

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

● Internal Audit

Context of change and impact on job tasks

The growing importance of sustainability and sustainable finance has created an increase in the demand for that expertise, to ensure that organisations are able to effectively execute their sustainable finance / sustainability agenda. The Internal Audit job role holder plays an essential role in ensuring accurate and unbiased audit and assurance practices related to sustainability.

As the third line of defence, the job role holder plays a crucial part in aligning an organisation with its sustainability strategy by complying to internationally recognised internal audit sustainability regulation and standards sets out by the Institute of Internal Auditors (IIA) and ensuring the robustness of the risks management frameworks of respective organisations. They will need to understand the standards and incorporate them into the existing practice while working with relevant functions to maximise the effectiveness and efficiency of the governance structure and frameworks.

Throughout the internal assurance process for their sustainability disclosures, the job role holder needs to develop an audit and assurance framework based on the International Audit and Assurance Standards Board (IAASB) and take a unbiased stand to ensure the accuracy of the disclosure and work with various functions to understand the methodology behind it.

Furthermore, the job role holder plays an important role in building an sustainability control environment across the organisation by recommending frameworks to manage sustainability risks as they are familiar with the building blocks of effective control environment. They can also recommend reporting metrics and sustainability governance structures by providing insights through their holistic understanding of the risk management and reporting needs within the organisation.

Time horizon of impact: Immediate

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job tasks	Impact on job tasks
Conform with professional standards	<ul style="list-style-type: none"> Ensure the accounting standards are aligned with existing/firm-wide sustainable accounting standards and frameworks Ensure internal audit engagements are executed in accordance with the internationally recognised sustainability accounting regulations and standards Incorporate additional steps to the processes to ensure the professional standards are aligned with international standards' social aspects 	●
Provide independent and objective assurance	<ul style="list-style-type: none"> Assess risks associated with governance practices and frameworks with sustainability considerations Include sustainability elements into audit engagement objectives and scope while incorporating sustainability risk management into existing risk assessment processes and frameworks Understand, recommend and adopt internationally recognised sustainability regulations and standards for internal control and business processes to ensure the integrity and accuracy of the disclosure 	●
Enhance and protect organisation's value by providing advice and insights	<ul style="list-style-type: none"> Engage stakeholders to communicate identified areas of opportunities and high risks, and changes required to realign to organisation's strategic and sustainability agenda Incorporate sustainability factors in deciding areas of risks and value-adding opportunities, as well existing governance frameworks 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

Mergers and Acquisition

Context of change and impact on job tasks

Sustainability factors are redefining value and risks in businesses and are influencing an increasing number of M&A transactions. The M&A function are finding the integration of these sustainability considerations increasingly important to an accurate valuation of projects. This role will need to develop the necessary sustainability knowledge and skills in order to stay relevant and up-to-date in the market.

The M&A function needs to identify and gather information on potential sustainability risks and evaluation it based on the organisation risk evaluation methods. The M&A function should also have a good understanding of the relevant sustainability guidelines to better assess the target company's current state in terms of sustainability. The M&A function should incorporate sustainability considerations into the existing due diligence process and explain technical findings and their implications to key stakeholders.

At the start of the M&A process, the M&A function should be able to originate deals by conducting detailed market analysis on sectors that are considered to have higher sustainability risks and the potential impacts. The M&A function should consolidate market insights and provide a growth strategy proposal incorporating the potential impact of sustainability on target company's financial statement and the strategic fit of the acquisition or sale.

Furthermore, the M&A function should also assist with the post-deal integration through integration planning where acquirers need to carefully plan how to integrate sustainability-related practices and culture into the target company, ensuring a smooth transition and effectively implementation of sustainability strategies.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job tasks	Impact on job tasks
Evaluate project financial feasibility	<ul style="list-style-type: none"> Include sustainability considerations in the organisation's overall risk framework such as risk identification, financial modelling, and risk allocation and management 	●
Perform due diligence	<ul style="list-style-type: none"> Identify and understand relevant sustainability guidelines such as in reporting (e.g. TNFD, ISSB, etc.), risk management to perform detailed due diligence analysis Incorporate and articulate sustainability elements in the due diligence process to effectively communicate material sustainability topics and their implication to key stakeholders 	●
Originate deals	<ul style="list-style-type: none"> Identify sectors that are considered to have high sustainability sensitivity and understand the opportunities and risks and their potential implications to the organisation Adopt considerations of sustainability impact on the financial statements such as cashflow and capex as well as remediation cost and strategic fit 	●
Manage the post-deal integration	<ul style="list-style-type: none"> Understand the current state of sustainability from all parties to device and implement an integration plan to ensure the sustainability agenda from all parties are met 	●

SF TSCs needed

• Taxonomy Application	L3	L4	L5
• Impact, Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5

Treasury

Context of change and impact on job tasks

The Treasury job role holder is uniquely positioned to contribute significantly to their organisation's net-zero goals by ensuring profitability goals align with the sustainability strategy. This job role holder is expected to lead and support sustainability initiatives and integrate sustainability factors into risk management processes to align with the sustainable investment strategy of the organisation.

The job role holder should be able to identify new emerging sustainability opportunities and participate in the investment management process including target-setting, portfolio construction, and performance monitoring of the investment portfolio. The job role holder should also be familiar with GHG measurement, accounting and reporting approaches to ensure the portfolio's emission profile align with the organisation's sustainability agenda.

The job role holder also plays an important role in supporting the strategic planning and of the organisation. On this front, this job role holder will need to provide support on establishing robust processes and systems for capturing and reporting non-financial data and demonstrating the financial implications of decisions. They also need to incorporate sustainability matters into the strategic metrics that drive value creation over time and use it to monitor the performance of the organisation. This job role holder will provide support on the internal and external activities such as auditing.

Time horizon of impact: Within the next three years

Impact on key job tasks

● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job tasks	Impact on job tasks
Support strategic planning initiatives	<ul style="list-style-type: none"> Provide support on the incorporation of sustainability market trends into the organisation's valuation models and translate them into financial terms to assess and forecast sustainability impact on the organisation's performance 	●
Manage treasury strategy	<ul style="list-style-type: none"> Incorporate appropriate sustainability factors into financial models and costs and benefit analysis during the decision-making process to identify and quantify costs and benefits, risks and opportunities related to current and future sustainability strategies Identify emerging sustainability opportunities and make sustainable investment recommendations that align with the organisation's sustainability agenda Support the investment management process by conducting research, recommend metrics and targets, and monitoring the sustainability performance of the investment portfolio Apply GHG accounting and reporting methodologies to account the organisation's emission (Scope 1, 2 and 3) 	●
Support internal and external audit activities	<ul style="list-style-type: none"> Support internal and external auditors by providing and explaining sustainability market trends and the methodologies behind them when required 	●

SF TSCs needed

• Impact Indicators, Measurement and Reporting	L3	L4	L5
• Sustainability Risk Management	L3	L4	L5
• Sustainable Investment Management	L3	L4	L5

● Data Centre Operations

Context of change and impact on job tasks

With the growing importance of sustainability in digitalisation in the Financial Institutions sector, data centres (DCs) play a central role in financial institutions' daily operations and account for significant portions of financial institutions' Scope 3 GHG emission. DC Operations role now needs to integrate sustainability components into DCs' physical architectural design and system technological upgrades into their daily operations.

The job role holder will need to facilitate the physical architectural design of the DC by providing insights and advise on the operational and sustainability requirements to relevant experts, to integrate sustainability components to ensure the maximum energy efficiency of the facility's cooling systems and energy consumption while complying with local/international best practices.

This job role holder need to understand and apply IT system optimisation approach to ensure system resilience as well as reduction of the energy footprint. The job role holder needs to gather data and assess the facility's bandwidth, capacity requirements and system inter-dependencies to identify and integrate the most suitable technology that can effectively perform daily tasks and reduce its carbon emission simultaneously.

Time horizon of impact: Within the next three years

Impact on key job tasks

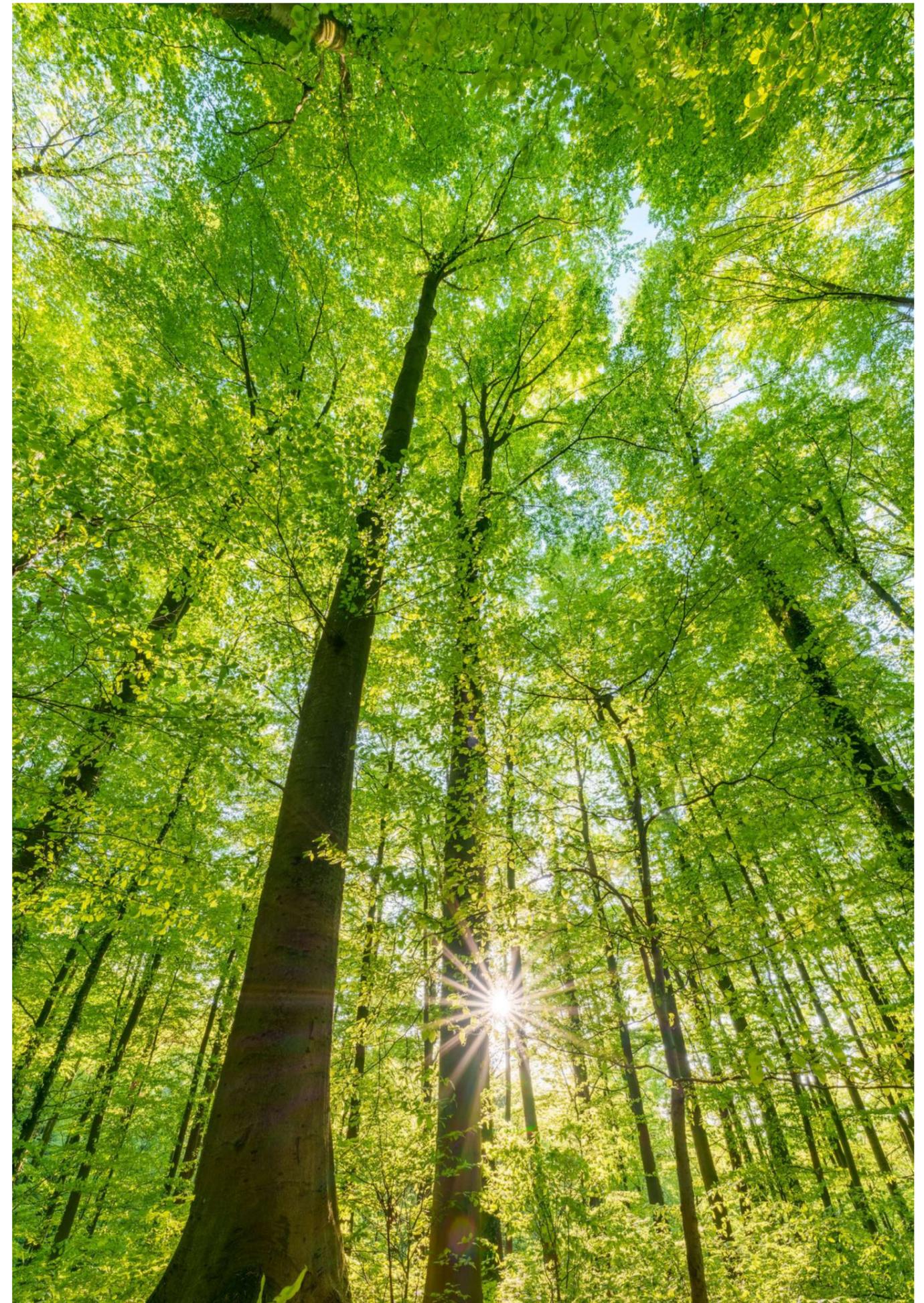
● High augmentation ● Moderate augmentation ● Low augmentation

Critical work function	Additional key job tasks	Impact on job tasks
Manage the set-up of the data centre	<ul style="list-style-type: none"> Determine the operational and sustainability requirements and their sustainability impact (i.e. emission reduction) on existing architecture, work process and systems Explore and recommend new sustainable technological improvements on data centre facilities and equipment to maximise the energy efficiency of the data centre to ensure alignment with organisation's emission target 	●
Manage and optimise IT operations and support performance	<ul style="list-style-type: none"> Gather data and assess the facility's bandwidth, capacity requirements and system inter-dependencies to identify and implement the most suitable technology to reduce carbon footprint Ensure the systems and technologies integrated in the data centre perform effectively and meet the organisation's carbon reduction targets Identify and adopt best sustainability-related practices in data centre operations 	●

SF TSCs needed

- N/A^a

^a The job role holder is likely to have moderate augmentation to existing job tasks as they manage the FI's Scope 3 GHG emission. However, the job role holder will not need SF TSCs as the existing skills of Data Centre Facility Management and IT Asset Management, along with foundational understanding of sustainability, will enable the job role holder to perform required job tasks. As the analysis methodology considers impact to both job task and skills augmentation, the significant addition to their job tasks results in moderate augmentation to the job role.



Appendix B

Variations of Sustainability Strategy



Appendix B: Variations of Sustainability Strategy

The Sustainability Strategy is emerging as a critical job role in FIs that is becoming central to defining the sustainability strategy. As sustainability trends have evolved, the key responsibilities for this job role have also shifted and are expected to continue evolving over the next 10 years. There are likely to be a few key variations of the job role's focus and team composition as various FIs, with different models and business strategies, progress through the journey (refer to Exhibit B.1).

Internal Impact Focused

For FIs with minimal integration of sustainability in their business strategy, the primary focus of FS professionals in this job role is on internal corporate social responsibility initiatives and communications to foster a sense of corporate citizenship. For most FIs, this is the key focus area for this job role before regulatory and business considerations of sustainability emerged. The team composition under this leadership role is largely very lean and limited to project management, basic reporting and communications support.

Defining Sustainability Strategy

The evolution of Sustainability Strategy will take a significant leap as a regulatory steer, emerging global trends and business opportunities in sustainability develop. This hands more responsibilities over to Sustainability Strategy as the job role holder's focus is shifted towards defining the institution's sustainability strategy and developing broader strategic frameworks and sustainability strategies encompassing sustainability considerations as well as integrating institution's sustainability strategies with corporate vision. The team composition is likely to remain lean with a greater focus on strategic planning.

Driving and Operationalising Sustainability Strategy

After establishing a clear direction through strategic framework and planning, the responsibilities of the Sustainability Strategy's job role are anticipated to broaden, focusing on driving and operationalising these strategies. The job role holder becomes instrumental to driving the successful implementation of sustainability strategies across all operational tiers of the organisation. The job role holder is also expected to begin embedding capabilities across various functions and capture emerging business opportunities while adhering to stringent risk and regulatory guidelines. The focus of this FS professional is on the strategic integration of sustainability into the FI's core operational models over the next three to five years, rather than treating it as an isolated initiative. The team composition under this job role is expected to involve a larger team with various specialist job roles across career tracks that report to sustainability leadership job roles.

Guiding and Overseeing Sustainability Strategy

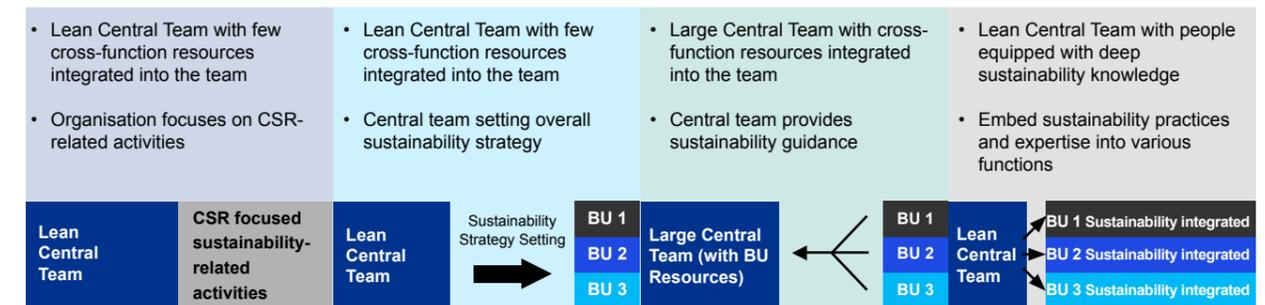
Once sustainable finance capabilities are embedded into the various functions, the FS professionals in Sustainability Strategy will focus on spearheading sustainability-related innovations and integration processes within the organisation while serving as subject matter experts who oversee and evaluate the effectiveness of sustainability initiatives and monitor KPI achievements. The team composition is expected to become leaner at this stage, with fewer subject matter experts and leadership. However, this is varied across FIs. Some may retain a centralised model, while some may progress to an embedded model over the next three to five years.

Appendix B.1: Trends pertaining to the evolution of the Sustainability Strategy job role

Trends pertaining to the evolution of the Sustainability Strategy job role



The organisational design may also vary at different stages of the sustainability integration process (illustrative)



The progression through the various stages may not be linear and does not reflect the maturity of FI's sustainability journey.

Glossary

Term	Definition
ACRA	Accounting and Corporate Regulatory Authority
AI	Artificial Intelligence
API	Application Programming Interfaces
ASEAN	Association of Southeast Asian Nations
BCA	Building and Construction Authority
CAGR	Compounded Annual Growth Rate
CCP	Career Conversion Programme
CCUS	Carbon Capture, Utilisation and Storage
CDD	Customer Due Dilligence
CEO	Chief Executive Officer
CSO	Chief Sustainability Officer
CTP	Capability Transfer Programme
DC	Data Centres
ENRM	Guidelines on Environmental Risk Management
ERM	Enterprise Risk Management
EU	European Union
FiNZ	Finance for Net Zero
FIs	Financial Institutions
FS	Financial Services
FTEs	Full Time Equivalents
GHG	Greenhouse Gas
GSS+	Green, Social, Sustainable and Other Labelled Bonds
GVA	Gross Value Add
HR	Human Resource
IBF	Institute of Banking and Finance
IBIP	Insurance Based Investment Products
ICMA	International Capital Market Association
IEA NZE	International Energy Agency's Net Zero Emissions
IHLs	Institutes of Higher Learnings

Term	Definition
IoT	Internet of Things
iPOST	International Postings Programme
ISSB	International Sustainability Standards Board
JRR	Job Redesign Reskilling
JTM	Jobs Transformation Map
KPI	Key Performance Indicators
KYC	Know Your Customer
LEED	Leadership in Energy and Environmental Design
LNG	Liquidified Natural Gas
MAS	Monetary Authority of Singapore
MNC	Multi-National Companies
NGFS	Network for Greening the Finance System
NLP	Natural Language Processing
PAB	Paris-aligned benchmarks
SAF	Sustainable Aviation Fuels
SASB	Sustainability Accounting Standards Board
SBT	Science Based Targets
SDG	Sustainable Development Goals
SF TSCs	Sustainable Finance Technical Skills and Competencies
SFDR	Sustainable Finance Disclosure Regulation
SGX	Singapore Exchange
SGX RegCo	Singapore Exchange Regulation
SMEs	Small and Medium Enterprises
SPVs	Special Purpose Vehicles
SSP	Singapore Stewardship Principles for Responsible Investors
TCFD	Task Force on Climate-Related Financial Disclosures
TNFD	Taskforce on Nature-related Financial Disclosures
TPG	Guidelines on Transition Planning
WSG	Workforce Singapore

Acknowledgement

Steering Committee

1. Gillian Tan, Chief Sustainability Officer and Assistant Managing Director, MAS
2. Pamela Lee, Deputy Chief Sustainability Officer, MAS
3. Carolyn Neo, Chief Executive Officer, IBF
4. Ng Nam Sin, Former Chief Executive Officer, IBF
5. David Katz, Managing Director of Public Affairs, Asia Pacific, KKR
6. Helge Muenkel, Group Chief Sustainability Officer, DBS
7. Herry Cho, Managing Director, Head of Sustainability and Sustainable Finance, SGX Group
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10. Kelvin Tan, Head of Sustainable Finance & Investments, ASEAN, HSBC
11. Lim Shu Hui, Sustainable Investing Advisory, UBS AG
12. Melissa Moi, Head of Sustainable Business, UOB
13. Sabrina Gan, Head of Southeast Asia and Country Head of Singapore, Fidelity International
14. Sheela Parakkal, Group Head of Leadership, People Development and Experience, and Chief Human Resource Officer, Strategic Business Group, Prudential
15. Winnie Tan, Senior Vice President of Sustainability, Great Eastern
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Contacts

Lee Sze Yeng

Managing Partner
KPMG in Singapore
szeyenglee@kpmg.com.sg

Gary Chia

Head of Consulting
KPMG in Singapore
garydanielchia@kpmg.com.sg

Anton Ruddenklau

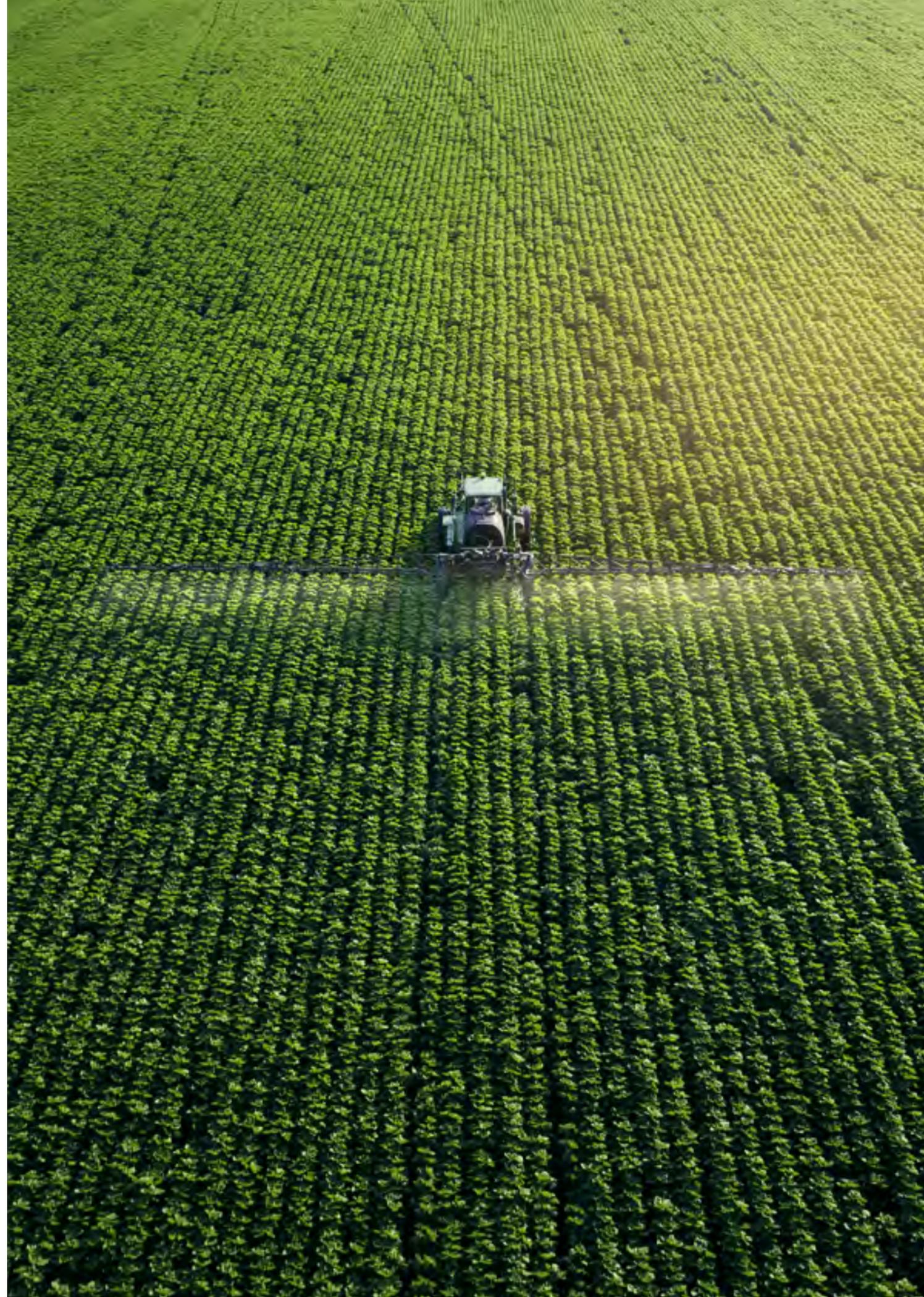
Head of Financial Services Advisory
KPMG in Singapore
antonyruddenklau@kpmg.com.sg

Patrick Atlee

Partner, Financial Services Advisory
KPMG in Singapore
patrickatlee@kpmg.com.sg

Gopi Rengasamy

Director, Global Strategy Group
KPMG in Singapore
gopirengasamy@kpmg.com.sg



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KPMG in Singapore
12 Marina View, #15-00 Asia Square Tower 2
Singapore 018961

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