

Social Accounts

Compiles social accounts for ocean accounting: systematically recording indicators relating to the contributions of ocean resources to human wellbeing.

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DRAFT

1. Outcome

Upon completing this circular, readers will be equipped to:

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ABOUT THIS CIRCULAR

RECOMMENDED CITATION

Social Accounts and Governance Accounts are governed by the same principles and are treated in this guidance as complementary and interoperable parts of a single analytical structure. This circular focuses primarily on Social Accounts while introducing the two-component architecture of the social domain that subsequent guidance on Governance Accounts will build upon. Governance Accounts are addressed in detail in TG 3.7. It does so in recognition of a well-documented gap in how ocean systems are currently measured and governed.

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The economic and environmental accounting frameworks that national statistical systems compile capture much of what the ocean produces in monetary terms: the value of fish catch, the output of shipping and coastal tourism, ecosystem extent, and the condition of marine assets. What they do not capture in any systematic and interoperable way is the social dimension of human-ocean relationships: the contributions that go uncounted, the dependencies that go unrecognised, and the inequities that go unnamed. Women's fish processing, community stewardship of nearshore reefs, informal gleaning, subsistence fishing, and the intergenerational transmission of marine knowledge are among the forms of activity and knowledge that conventional accounts render invisible. The communities that depend most directly on the ocean are frequently those most vulnerable to its degradation, yet they often bear the highest environmental and social costs while the economic gains from ocean resource use flow elsewhere. Social Accounts are designed to make these dimensions visible within a framework that is coherent, replicable, and interoperable with national statistical systems, creating the conditions for evidence-based, equitable, and inclusive ocean governance.

Social Accounts and Governance Accounts together constitute the social domain of the Ocean Accounts Framework, complementing the economic accounts described in [TG-3.3 Economic Activity Relevant to the Ocean](#) by extending measurement beyond monetary values to encompass the broader contributions of the ocean to quality of life. The social domain as a whole supports policy analysis for SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities), and SDG 14 (Life Below Water), particularly target 14.7 which calls for increasing "the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources". The classification of ocean industries that underpins Social Accounts employment measurement is established in [TG-3.3 Economic Activity Relevant to the Ocean](#), which provides standardized industry definitions aligned with ISIC and CPC. This ensures consistency between the social accounts compiled under this Circular and the economic accounts compiled under TG-3.3.

1. Outcome

¶1 Upon completing this circular, readers will be equipped to:

- ¶2 Understand the structure of the social domain of the Ocean Accounts Framework, which comprises two components: (i) Social Accounts and (ii) Governance Accounts and articulate the distinct role of each within that domain.
- ¶3 Identify the key social dimensions of the human-ocean relationship that can be captured within a structured accounting framework, including dimensions that are typically invisible to conventional economic measures.
- ¶4 Differentiate between stocks and flows, understand the theoretical basis for organising social phenomena within this architecture, and recognise its implications for how social data is collected, interpreted, and used.
- ¶5 Understand how Social Accounts can be used to compile and interpret data on equity, inclusivity, and cultural values in ways that are interoperable with national accounts, the System of Environmental-Economic Accounting (SEEA), and other Ocean Accounts, thereby informing more credible, legitimate, and accurate policy decisions for a sustainable ocean.

¶6 The 2025 System of National Accounts recognizes that national accounts contribute to measuring wellbeing and sustainability beyond GDP, including through thematic and extended accounts for labour, human capital, and household distributional analysis. This Circular applies that broader perspective to ocean-specific contexts, through the social domain of Ocean Accounts. This circular establishes the conceptual framework for the Social domain of the Ocean Accounts Framework, referred to throughout as Social Accounts. This circular establishes the conceptual framework for the social domain of the Ocean Accounts Framework. The social domain comprises two components: Social Accounts, which capture the social, cultural, and equity dimensions of human-ocean relationships, and Governance Accounts, which capture the institutional structures, governance frameworks, and management arrangements through which ocean and coastal environments are governed. Both components are nested within the social domain and are treated in this guidance as complementary and interoperable parts of a single analytical structure. This circular focuses primarily on Social Accounts while introducing the two-component architecture of the social domain that subsequent guidance on Governance Accounts will build upon. Governance Accounts are addressed in detail in TG 3.7. It does so in recognition of a well-documented gap in how ocean systems are currently measured and governed.

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the broader contributions of the ocean to quality of life. The social domain as a whole supports policy analysis for SDG 1 (No Poverty), SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities), and SDG 14 (Life Below Water), particularly target 14.7 which calls for increasing “the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources”. The classification of ocean industries that underpins Social Accounts employment measurement is established in [TG-3.3 Economic Activity Relevant to the Ocean](#), which provides standardized industry definitions aligned with ISIC and CPC. This ensures consistency between the social accounts compiled under this Circular and the economic accounts compiled under TG-3.3.

2. Requirements

¶1 This circular builds on conceptual and statistical foundations that are essential reading before engaging with the social domain of Ocean Accounts and its two components (Social Accounts and Governance Accounts). Readers who are new to ocean accounting are strongly encouraged to begin with the GOAP foundational circulars listed below, which introduce the Ocean Accounts Framework and the international statistical standards that govern its application. Readers with existing familiarity with the System of National Accounts (SNA) or the System of Environmental-Economic Accounting (SEEA) will find that much of the theoretical reasoning in this circular depends on understanding what those frameworks do, what they do not do, and where the social domain extends or complements their scope. The prerequisites are not merely technical background. They are the conceptual context within which the argument of this circular makes sense. Engaging with them first will make it significantly easier to follow the theoretical reasoning about why social phenomena require distinct treatment within an accounting framework and what it means for Social Accounts and Governance Accounts to be interoperable with existing national and environmental-economic accounts.

¶2 The following provide the necessary foundation for this circular:

- ¶3 **System of National Accounts (SNA 2025)**. The international standard for compiling national accounts, maintained by the United Nations Statistics Division. The 2025 revision explicitly broadens the framework’s scope to encompass wellbeing and sustainability¹, providing the mandate and conceptual architecture within which Social Accounts sit. Available at: <https://unstats.un.org/unsd/nationalaccount/sna.asp>
(<https://unstats.un.org/unsd/nationalaccount/sna.asp>)
- ¶4 **System of Environmental-Economic Accounting – Central Framework (SEEA-CF) and Ecosystem Accounting (SEEA-EA)**. The international standards for integrating environmental data into economic accounts. The SEEA’s stocks-and-flows architecture and its treatment of physical and monetary asset accounts provide the direct structural analogue for Social Accounts. Available at: <https://seea.un.org> (<https://seea.un.org>)
- ¶5 **GOAP Foundational Concepts (Circular 0.1)**. Introduces the fundamental principles of Ocean Accounts, including their purpose, scope, and relationship to the SNA and SEEA. Available at: <https://www.oceanaccounts.org/technical-guidance>
(<https://www.oceanaccounts.org/technical-guidance>)
- ¶6 **Data and Statistical Standards (Circular 0.2)**. Covers basic data compilation, classification systems, and the importance of adhering to statistical standards in ocean accounting contexts. Available at: <https://www.oceanaccounts.org/technical-guidance>
(<https://www.oceanaccounts.org/technical-guidance>)

¶7 This circular does not provide step-by-step instruction in the mechanics of data collection or the compilation of SNA or SEEA accounts; those are addressed in the operational circulars that follow in this series. What it provides instead is the conceptual bridge connecting the social domain, comprising Social Accounts and Governance Accounts to the established accounting frameworks

described above. Understanding why the social domain is structured the way it is and what theoretical claims underpin that structure, depends on understanding the broader frameworks within which it is designed to operate. This document is the conceptual entry point. It maps the theoretical terrain on which all subsequent, more operational guidance stands, and equips readers to engage with that guidance with genuine understanding of its foundations rather than as a set of unexplained procedures. Readers who complete this circular and the operational guidance that follows will be positioned to design, compile, and advocate for the social domain within national statistical systems in ways that are theoretically coherent and practically defensible.

3. Guidance Material

¶1 ⓘ Scope

¶2 TG-3.5 owns the social account tables for the ocean domain: social assets and conditions, social activities, employment and its disaggregations, distributional and dependency measures, and the classifications those rest on. Social accounts sit outside the SEEA table set and are an Ocean Accounts extension, so this Circular is also where their boundary against the SNA household sector is drawn. It cross-refers to **TG-3.12** for household and beneficiary accounting, **TG-3.13** for gender and social inclusion, **TG-3.6** for traditional knowledge, **TG-2.3** for the indicators derived from these accounts, and **TG-4.2** for the household survey instruments that populate them.

3.1 Problem statement

¶1 The urgency of measuring societal progress beyond conventional economic metrics such as Gross Domestic Product (GDP) is now firmly established in international policy and statistical discourse [1, 2]. GDP captures the output of market-based economic activity and remains a critical measure for economic governance, but it does not represent the full dimensions of human well-being or the sustainability of the capital stocks on which communities depend. This recognition has driven the global beyond-GDP movement and has prompted the international statistical community to undertake a significant evolution of its core frameworks. The 2025 revision of the System of National Accounts (SNA 2025) explicitly broadens the scope of the national accounts to better inform on well-being and sustainability [3]. This is not a peripheral adjustment, it is a central feature of the new standard. It includes thematic and extended accounts for areas directly relevant to the social domain of Ocean Accounts, including unpaid household service work, health, and education, and it describes how well-being data can be organised using accounting approaches that extend beyond the integrated framework of national accounts [3]. This provides a clear and authoritative mandate for developing the social domain, comprising Social Accounts and Governance Accounts, as a legitimate core component of the Ocean Accounts Framework. The Ocean Accounts Framework integrates information across economic, environmental, and social domains to enable coherent measurement of progress toward sustainable ocean development [6]. It draws on both the System of Environmental-Economic Accounting (SEEA) and the SNA and is appropriately understood as a framework that integrates economic, environmental, and social dimensions, not as either alone [20, 21].

¶2 Despite the progress these frameworks represent, the social domain of ocean accounting has lagged significantly behind the economic and environmental domains, and this lag has consequences for communities whose lives and livelihoods depend most directly on the sea. Current frameworks do not capture in any systematic way the non-economic contributions of ocean ecosystems to human communities: livelihoods, nutritional security, social protection, disaster resilience, and the cultural connections that coastal peoples hold with the ocean. The challenge is not only the fragmentation of social data across disparate government ministries, research institutions, and non-governmental organisations, each using different definitions and methodologies [12, 13]. In many settings, particularly in low- and middle-income countries and remote coastal regions, there is simply no data to integrate: the systems for collecting, standardising, and maintaining social information about ocean-dependent communities have not been funded or built. This more fundamental

problem demands a framework that can accommodate partial data, support data development, and remain meaningful even where the information base is thin. The ocean economy, meaning the set of economic and social activities related to ocean resources and spaces, produces significant wealth, but the measurement of that wealth reflects only what the formal economy transacts. Women's fish processing, community stewardship of nearshore reefs, informal gleaning, subsistence fishing, and the intergenerational transmission of marine knowledge fall outside the production boundary of the SNA. Their absence from the accounts does not mean they are absent from human lives. It means they are invisible to governance.

¶3 The invisibility of these contributions is not evenly distributed. The environmental justice literature has established that environmental quality and environmental burden are socially distributed, with more marginalised communities experiencing greater exposure to environmental harm [10, 11]. In the context of the ocean, this inequity extends from the distribution of burdens to the distribution of benefits. The economic and social gains from ocean resources and coastal development frequently flow to stakeholders and regions far removed from the communities that bear the associated environmental and social costs [12, 13]. These distributional asymmetries are not merely geographic or economic: they are intersectional. Gender, age, ethnicity, indigeneity, and disability all shape who benefits, who bears costs, and whose labour and knowledge goes uncoun-
 counted. Women perform the majority of fish processing, gleaning, and unpaid provisioning labour in many ocean-dependent communities, yet this work is systematically excluded from national statistics [17]. Indigenous Peoples and Local Communities hold deep and constitutive relationships with ocean territories, yet their management contributions and knowledge systems remain largely unrecognised in formal accounting frameworks [24, 21]. Understanding the relationship between natural assets and social deprivation, and between ocean governance and distributional outcomes, is a precondition for policies that are equitable and legitimate. Social Accounts are designed to enable this analysis by making visible the dimensions of human-ocean relationships that conventional accounts render absent. Together with Governance Accounts, they form the social domain through which the Ocean Accounts Framework can track both the lived realities of ocean-dependent communities and the institutional conditions that shape those realities.

¶4 The case for Social Accounts is further strengthened by the accelerating effects of climate change on coastal communities and ocean systems. Environmental change does not affect all communities equally. Coastal communities, particularly those in Small Island Developing States and low-income coastal contexts, face compound risks: loss of marine protein sources, disruption of traditional livelihood systems, damage to cultural and sacred sites, and the loss of productive hours attributable to environmental degradation [17]. Vulnerability to these impacts is not simply a function of exposure: it is shaped by adaptive capacity, which is itself a social condition that Social Accounts must track. Communities with stronger social capital, secure access to resources, and functioning governance institutions are better placed to manage environmental shocks and recover from them. Social Accounts are therefore not only a tool for measuring current human-ocean relationships but a framework for tracking how those relationships change under pressure, and for identifying the communities whose adaptive capacity is most at risk. This temporal and distributional dimension is essential if the social domain is to support just transitions toward sustainable ocean use, ensuring that the human costs of governance transformations are documented, acknowledged, and addressed rather than absorbed invisibly by those least able to bear them. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services Nature's Contributions to People (NCP) framework provides a complementary theoretical lens, recognising that contributions from nature to people are inherently relational and culturally contingent, and that their value cannot be assessed independently of the communities that experience them [23].

3.2 What are Social Accounts?

¶1 The social domain of the Ocean Accounts Framework comprises two components: Social Accounts and Governance Accounts. Social Accounts are the component of the social domain that

focuses on the social, cultural, and equity dimensions of human-ocean relationships. Governance Accounts are the component that focuses on the institutional structures, governance arrangements, and management frameworks that shape how ocean and coastal environments are governed; they are addressed in detail in Circular 3.7. This section defines Social Accounts and their scope; the relationship between the two components is addressed in Section 3.3.1 under institutional capital.

¶2 Social Accounts are defined, within the Ocean Accounts Framework, as the structured compilation of social, cultural, and equity data on human-ocean relationships, organised within an integrated framework that is interoperable with the System of National Accounts (SNA), the System of Environmental-Economic Accounting (SEEA), and the broader Ocean Accounts Framework [12, 13, 14]. This definition marks an evolution from the long-standing practice of compiling social statistics, which are quantitative measures of societal conditions, behaviours, and trends produced across government agencies, research institutions, and non-governmental organisations. Social statistics are indispensable, but they have an inherent limitation: they exist as individual data points and collections of metrics, each scoped to the needs of the institution that produces them, using definitions and methodologies that may not be consistent across sectors or comparable over time. The move from social statistics to Social Accounts is not a critique of social statistics but a maturation of practice. Social Accounting is the systematic process of capturing, analysing, and reporting social information within an integrated accounting framework. The output of this process – the Social Account – connects individual statistics into a coherent whole that reveals relationships between different social dimensions and links them explicitly to the economic and environmental domains [13]. It moves beyond a dashboard of indicators to create a dynamic, integrated system capable of explaining change, tracking distributional outcomes, and informing adaptive governance.

¶3 For the social domain to fulfil its potential within ocean accounting, both Social Accounts and Governance Accounts must be designed for replicability and sustained over time. One-off data collection efforts, while valuable for establishing baseline understanding, do not provide the consistent, comparable time-series data required for effective policy monitoring and adaptive management. Each component must therefore be embedded within ongoing national statistical programmes, owned by statistical agencies or equivalent institutions with the mandate and capacity for regular data production. This institutional anchoring ensures methodological consistency, quality assurance, and the long-term continuity necessary for tracking changes in human-ocean relationships across generations. The social domain should serve government agencies, research institutions, non-governmental organisations, and rightsholders, including Indigenous Peoples and other communities with rights-based relationships to ocean resources and territories, who have both a direct interest in the data and a legitimate claim over how it is produced and used. The ambition to encompass economic, environmental, and social domains in a coherent measurement framework [1] requires a social architecture that is as rigorous and as institutionally anchored as its economic and environmental counterparts.

¶4 Social Accounts depart from several earlier uses of the terms “social accounting” and “social accounts” that originate in different fields and serve different purposes. The following table (Table 2) sets out what falls within and outside the scope of this framework across ten dimensions: (i) position within the Ocean Accounts framework; (ii) scope and structure of data captured; (iii) relationship to economic value; (iv) level and spatial scale of analysis; (v) integration across domains; (vi) treatment of knowledge systems; (vii) temporal design; (viii) methods; (ix) populations covered; and (x) the basis on which legitimacy is claimed.

¶5 **Table 2:** What Social Accounts are and what they are not.

Dimension	Social Accounts are...	Social Accounts are not...
Framework position	One of two components of the social domain of the Ocean Accounts Framework – the other being Governance Accounts. Social Accounts are an extended account nested within the Ocean Accounts framework, built on the national accounting paradigm and linked to and interoperable with the SNA 2025 and SEEA. The SNA 2025 provides explicit mandate and authoritative basis for Social Accounts as a legitimate, standardised core account, particularly through its thematic extensions on unpaid household work, health, and education. Governance Accounts sit alongside Social Accounts as the second component of the social domain, both are subordinate to the social domain rather than parallel to it.	A standalone framework separate from Ocean Accounts or national accounting systems, or a competing parallel to SEEA Environmental-Economic Accounts. Social Accounts are also not the entirety of the social domain, that domain encompasses Governance Accounts as well.
Scope and structure	A framework that captures the social, cultural, and equity dimensions of the human-ocean relationship through two entry points: social assets and conditions (stocks representing the state of the social environment at a point in time) and social activities (flows that occur largely outside the SNA production boundary, including unpaid labour, community stewardship, and customary practices). Organised around the dual concepts of stocks and flows – directly analogous to SEEA architectural principles with Supply-Use Tables and Input-Output Tables providing the core mechanisms for capturing relationships between social, economic, and environmental domains. This stock-flow structure is what makes it possible to explain change over time rather than merely describe a snapshot.	Limited to what formal data systems already collect. Social Accounts are also not a list of standalone indicators or a database of social statistics, without a stock-flow structure, it is impossible to explain change over time rather than merely describe a snapshot. Nor are they a Social Accounting Matrix (SAM). SAMs deal only with economic transactions and socio-economic indicators, making them unable to capture the cultural, non-market, or equity dimensions that are central to Social Accounts.
Relation to economic value	Able to capture non-monetary social flows, including unpaid household labour, informal fish processing, community care, and customary practices, that are invisible in GDP and unrepresented in conventional economic accounts.	Focused on the monetisation or economic valuation of ecosystem services. Social Accounts deliberately diverge from that debate to avoid duplicating SEEA Environmental-Economic Accounts and to sidestep the value-concept disputes that have historically slowed progress in environmental accounting.
Accounting structure	Organised around the dual concepts of stocks (social assets and conditions at a point in time) and flows (social activities during an accounting period), directly analogous to SEEA architectural principles. Supply-Use Tables and Input-Output Tables provide the core mechanisms for capturing relationships between social, economic, and environmental domains.	A list of standalone indicators or a database of social statistics. The stock-flow accounting structure is what distinguishes Social Accounts from conventional social data compilation and makes it possible to explain change over time rather than merely describe a snapshot.

Dimension	Social Accounts are...	Social Accounts are not...
Level of analysis	Anchored in national statistical frameworks and designed for institutional ownership by national statistical agencies. While national-level totals are the baseline output, Social Accounts can be compiled at sub-national scales – district, regional, or community, where underlying data allow. The achievable scale is determined by data availability and spatial granularity, not fixed by design. In practice, different dimensions within the same account may operate at different scales.	Exclusively national or exclusively local. Sub-national analysis requires that underlying datasets can be reliably attributed to smaller geographic units. Scale is a function of data capacity. Social Accounts are also not corporate or critical accounting, they are not involved in CSR reporting, organisational auditing, or stakeholder transparency exercises, which address organisational-level accountability rather than national statistical systems.
Integration	An integrated system that reveals relationships between social dimensions and explicitly links them to economic and environmental domains through common accounting structures, supporting integrated analysis of trade-offs and synergies across all three domains. This is a step toward a “system of systems” that encompasses the environmental, societal, and economic domains in a coherent measurement framework.	A dashboard of social statistics. Social Accounts go beyond fragmented indicators residing across different ministries using inconsistent definitions, creating instead an internally consistent and cross-domain accounting framework.
Knowledge systems	Inclusive of Indigenous, traditional, and local knowledge as epistemically legitimate sources, not merely illustrative data points. The framework recognises that traditional knowledge systems may not separate people and nature as Western accounting frameworks do, and that qualitative narrative approaches are structurally essential for capturing cultural identity, spiritual connection, and relational values that cannot be reduced to numerical metrics alone.	Limited to formal statistical sources or purely quantitative methods. The weaving together of Indigenous and local knowledge with formal data systems, rather than subsuming one into the other, preserves the integrity of distinct knowledge systems. The language of weaving is deliberate, it signals a relationship of mutual respect, not absorption.
Spatial design	Spatially explicit, anchored to Basic Spatial Units (BSUs) differentiated into terrestrial, coastal, and marine zones. Social data are mapped to the same geographic framework used for economic and environmental accounts, enabling cross-domain analysis. Where social datasets carry geographic identifiers attributable to BSUs or overlying administrative units, accounts can be compiled at sub-national scale. In lower-data environments, a national account is built first and spatial disaggregation introduced iteratively as data capacity grows.	A non-spatial aggregation of national totals, nor a framework that requires fine-grained spatial data before it can begin. Spatial disaggregation is a core design principle, but the degree achievable depends on data resolution. The direction of travel is always toward greater spatial precision; the starting point is determined by what exists.
Temporal design	Designed for longitudinal, repeated measurement, embedded in ongoing national statistical programmes, enabling the comparable time-series data required for policy monitoring and adaptive management. Methodological consistency over time is a structural requirement, and Social Accounts must be owned by statistical agencies with the mandate and capacity for regular data production.	One-off data collection efforts or standalone reports. While baseline studies have value, Social Accounts require institutional anchoring within national statistical systems to track changes in human-ocean relationships across generations and to support adaptive governance over time.

Dimension	Social Accounts are...	Social Accounts are not...
Methods	Mixed-methods in design, combining quantitative indicators with structured qualitative narrative information. Both approaches are treated as equally legitimate, not as primary and supplementary. This is particularly important when working with Indigenous and local communities whose knowledge systems may not align with quantification frameworks, and for dimensions such as cultural identity, spiritual connection, and sense of place.	Purely quantitative. A framework that discards qualitative information produces an incomplete and potentially distorting picture of the human-ocean relationship. Narrative elements are not supplementary to the accounts but essential for ensuring they are salient and legitimate for the communities they are meant to serve.
Population covered	Attentive to the realities of people who are absent from conventional economic statistics, including women engaged in unpaid fish processing, subsistence fishers, informal workers, Indigenous communities, and others rendered invisible by the SNA production boundary. Social Accounts apply an intersectional lens, disaggregating data across gender, age, ethnicity, disability, and geography rather than treating communities as monolithic.	Concerned only with formally employed or economically active populations captured by existing labour force and industry surveys. Social Accounts exist precisely because those surveys systematically exclude the people most directly dependent on and most affected by ocean governance decisions.
Process legitimacy	Dependent on how they are built, not only on what they contain. Legitimacy requires co-design with the communities whose realities are being counted, genuine participation in decisions about what is measured and how, and accountability to those communities in how results are used. A credible, legitimate, and salient account is one communities can recognise and engage with.	Legitimate solely by virtue of technical rigour or alignment with international standards. A technically sound account that communities cannot recognise, engage with, or trust is not a good account. Legitimacy is earned through process and product together.

¶6 The integration of social, cultural, and equity data within the Ocean Accounts Framework is made possible through three structural mechanisms. First, a spatial data framework uses Basic Spatial Units (BSUs) as its foundation, enabling social data to be mapped to marine and coastal areas with depth layers that accommodate the three-dimensional nature of ocean systems. Second, the integrated stocks-and-flows accounting structure captures both social capital and conditions at a point in time (see 3.3.1) and the social activities that generate and draw upon those stocks during an accounting period (see 3.3.2). Third, a multi-dimensional framework captures 17 types of social data relevant to stocks and flows, as set out in Appendix 1. These 17 data types are not a separate taxonomy alongside the stocks-and-flows architecture: they are its empirical content. The human, relational, institutional, and cultural capital categories each encompass several of these data types, and the flow categories similarly draw on multiple data types to describe social activity. Key dimensions that Social Accounts must explicitly capture include food security and nutritional dependence on marine protein; cultural and spiritual well-being encompassing traditional practices, sense of place, and intergenerational transmission of marine culture; and experienced environmental quality as perceived by communities, which may diverge substantially from ecosystem condition as measured in environmental accounts alone [8].

¶7 Social Accounts can be applied at multiple spatial scales, from household and community level to district, national, and transboundary scales, and these scales are hierarchically related rather than mutually exclusive. Sub-national data is particularly important for capturing the distributional dimensions of human-ocean relationships, since national-level aggregates can mask profound variation in outcomes across communities, regions, and social groups. For compilation purposes, the coastal population encompasses all households and communities whose livelihoods, food security, cultural practices, or physical safety are directly linked to the ocean, coastal zone, or marine resources – whether through residence, occupation, or cultural and spiritual connection. This definition is intentionally broad in order to include communities that may be geographically removed

from the shoreline but remain substantively ocean-dependent, including through seafood trade, cultural heritage, and customary stewardship.

¶8 The application of a stocks-and-flows architecture to social phenomena requires epistemological justification, because the move is not self-evident. Physical and monetary accounts organise assets and flows in ways that align naturally with measurable quantities; social reality is more complex, being constituted by relationships, meanings, power, and experience, none of which can be fully captured in any single accounting structure. The theoretical basis draws on three complementary arguments. First, the architecture enables structural comparability across domains, making it possible to identify and analyse relationships between social conditions, economic activity, and ecosystem health in ways that are not possible when the domains are measured within incompatible frameworks. Second, the architecture captures change over time: stocks represent the state of social conditions at a point in time, and flows represent the activities and events that alter those states, enabling analysis of how communities respond to environmental shocks, governance transitions, and structural change. Third, the architecture makes visible what is otherwise invisible. The decision to record unpaid household labour, community stewardship, and cultural practice as flows within an accounting framework is a deliberate epistemological choice: it asserts that these activities produce social value and that their omission from conventional accounts is a distortion of reality, not a neutral measurement decision. The architecture cannot capture everything about social life, and any adequate theoretical foundation must acknowledge this honestly. Social Accounts should be understood as a necessary but not sufficient tool for understanding human-ocean relationships. They create conditions for evidence-based governance; they do not replace the judgement, negotiation, and political will that governance requires.

¶9 A theoretically coherent treatment of Social Accounts must address the status of Indigenous, Traditional, and Local Knowledge (ITK) within the framework. The risk of a framework that incorporates ITK without attending to the terms of its inclusion is not merely methodological: it is a risk of epistemic and political harm. Indigenous knowledge systems are constituted by distinct ontologies, values, and governance structures. They are not data to be extracted and integrated into existing frameworks on those frameworks' terms. The appropriate language for this relationship is weaving rather than integrating: two or more distinct knowledge systems brought into productive relationships while preserving the integrity of each. In practice, Indigenous, Traditional, and Local Knowledge enters Social Accounts on the terms set by knowledge holders, under protocols of Free, Prior, and Informed Consent (FPIC), and subject to community-controlled data sovereignty arrangements [24, 21]. Data sovereignty encompasses the right to determine what data about their communities is collected, by whom, in what format, under what conditions of use, and with what protections against misuse or misrepresentation. This is particularly important because social data about vulnerable communities can carry safety risks if made publicly available without adequate safeguards. The body of Traditional Ecological Knowledge held by a community is a social stock, part of its cultural capital; the act of sharing that knowledge across generations or with others is a social flow. This is a distinction that is both theoretically important and practically necessary for correct classification within the stocks-and-flows framework.

3.3 Core principles: stocks and flows

¶1 Figure 0.1.3 in **TG-0.1 General Introduction to Ocean Accounts** presents the key conceptual components of the Ocean Accounts Framework, situating the social domain within a structured architecture that captures the full breadth of human-ocean relationships. Within this architecture, Social Accounts operate through two principal entry points: social assets and conditions, which function as stocks, and social activities, which function as flows. Together, these entry points constitute the analytical core of Social Accounts and determine how social data is collected, organised, and interpreted. They describe a dynamic and interconnected system for representing social reality over time. Governance Accounts, the second component of the social domain, draw on the same stocks-and-flows architecture applied to the institutional capital dimension described in Section

3.3.1. This architecture is drawn from the System of Environmental-Economic Accounting (SEEA) framework and its two principal components: the SEEA Central Framework [15] and the SEEA Ecosystem Accounting (SEEA-EA) [16]. The established SEEA methodologies for compiling physical and monetary asset accounts and supply-use tables offer rigorously tested conceptual structures that can be adapted to organise social data within the same accounting logic. By following the SEEA's architectural principles, Social Accounts achieve conceptual rigour and interoperability with the SNA and with environmental accounts. Within this architecture, stocks represent the state of social assets and conditions at a specific point in time, and flows represent the actions, activities, and events that create, transform, or draw upon those stocks during an accounting period. The relationship between stocks and flows is dynamic and bidirectional: social activities can build social capital over time, as when community-based fisheries management strengthens institutional governance and relational trust, or they can draw upon it, as when extended environmental disruption depletes community health and adaptive capacity. This bidirectional dynamic is not simply a feature of the architecture: it is a theoretical claim about how social systems function. Where the text says that flows "generate or draw upon" stocks, the direction of causation matters and must be specified for each activity: some activities build the stock base, others deplete it, and some do both depending on context. The architecture cannot fully represent the experiential, relational, and spiritual dimensions of human-ocean relationships, which is addressed through the qualitative and knowledge-system dimensions of Social Accounts described in Section 3.4.

¶2 The stocks-and-flows framework is designed to be dynamic rather than static, and it should be applied with contextual adaptation and reflexivity rather than as a fixed taxonomy. Different communities, jurisdictions, and governance contexts will organise and prioritise social data differently, and the framework must accommodate this variation without sacrificing the interoperability and comparability that give Social Accounts their analytical value. The framework should be reviewed and updated as understanding of human-ocean relationships evolves, as new data sources become available, and as communities and governance contexts change. The transition from the stocks sub-section (3.3.1) to the flows sub-section (3.3.2) reflects the logical relationship between the two parts of the framework: the stocks section describes the social assets and conditions that exist at a point in time and that enable or constrain social activities; the flows section describes those activities and how they in turn maintain, build, or deplete the stock base. Neither section is complete without the other, and the two accounts are designed to be read together as an integrated picture of social conditions and social dynamics.

3.3.1 Social assets and conditions (stocks)

¶1 Social assets and conditions are conceptualised as stocks within this framework, representing the state or level of particular social assets or conditions at a point in time. This is analogous to the treatment of individual environmental assets in the SEEA Central Framework [15] and produced and financial assets in the SNA [3]. The distinction between an asset and a condition is important. An asset is a stock that has productive capacity: it can generate flows of social services and activities over time. A condition describes the state of a social dimension that matters for well-being, including equity, health, and vulnerability, but may not directly generate flows in the same way. In practice, the line between assets and conditions is not always sharp, and the framework accommodates both without requiring strict separation in every case. Social assets and conditions are organised into four categories: human capital, relational capital, institutional capital, and cultural capital. This four-part typology is designed to be read alongside, rather than in competition with, the Five Capitals framework widely used in sustainability assessment and livelihoods analysis, which encompasses natural, human, social, manufactured, and financial capital. Physical and financial capitals are addressed in the economic accounts of the Ocean Accounts Framework (TG-3.3); the social domain focuses on the human, relational, institutional, and cultural dimensions that those accounts do not capture. This division of labour supports integration across frameworks rather than duplication. Note: GEDSI encompassing gender equity, disability, social inclusion, and the recognition of distinct

social groups is not a separate category: it is a design principle embedded across the entire architecture. Every stock indicator must be designed to enable disaggregation by gender (or “sex” if most appropriate), age group, ethnicity, indigeneity, disability status, and geographic location so that the accounts reveal distributional differences rather than erasing them through aggregation.

¶2 Human capital encompasses the knowledge, skills, health, and capabilities embodied in individuals and communities that enable interaction with the ocean and with coastal governance systems. This includes educational attainment, occupational skills, physical and mental health status, the level of community engagement in ocean-related activities, and the capacity to adapt to change. Adaptive capacity, understood following the Intergovernmental Panel on Climate Change (IPCC) as the ability of a system or its component parts to adjust to potential damage, take advantage of opportunities, or respond to consequences [24], is a critical dimension of human capital in the context of Social Accounts. The IPCC identifies four intersecting dimensions of vulnerability relevant to ocean-dependent communities: climate vulnerability, economic vulnerability, social vulnerability, and ecological vulnerability. Social Accounts must be designed to capture vulnerability across all four dimensions, recognising that communities often face multiple simultaneous pressures and that their capacity to cope depends on the depth of their social capital base. Assessment of vulnerability should be transparent about the assumptions involved in combining multiple dimensions, given that no composite vulnerability index has yet achieved international statistical endorsement.

¶3 Relational capital encompasses the networks, relationships, trust, and collective resources that connect coastal and ocean-dependent individuals and communities. These are the social conditions that enable economic and social activities to take place, including coordination in fisheries management, information sharing across communities, and mobilisation of collective action in response to environmental change or governance threats. Relational capital is analytically distinct from institutional capital in that it refers to the informal, social, and relational dimensions of community life: trust between households, kinship networks, reciprocal exchange relationships, and the horizontal ties that build solidarity and resilience. In practice, the boundary between relational and institutional capital is particularly difficult to maintain for Indigenous communities, where governance relationships are constituted through kinship, ceremony, and relationship with territory rather than through formal institutional structures. The framework acknowledges this boundary is porous and should not be applied in ways that fracture or misrepresent social realities that are not organised along these categories. The body of Traditional Ecological Knowledge held by a community is a stock of relational and cultural capital: it accumulates through generations, is held collectively, and is inseparable from the relationships and governance systems within which it lives. The act of sharing that knowledge is a social flow, described in Section 3.3.2, and these two dimensions of knowledge must be kept analytically distinct to avoid double-counting and to accurately represent the dynamics of knowledge loss and renewal.

¶4 Institutional capital encompasses the formal and informal rules, governance structures, and organisational systems that regulate human interactions with ocean and coastal environments and shape marine resource management decisions. This includes marine spatial planning frameworks, fisheries management agreements, legally recognised treaties, customary governance systems, maritime law enforcement arrangements, and the co-management agreements through which communities and government agencies share decision-making authority. Governance resilience, described by the IPCC as one of four resilience dimensions alongside ecological, economic, and social resilience, is a particularly important theoretical anchor for institutional capital: it describes the capacity of governance institutions to adapt, learn, and reorganise in the face of change [24]. The distribution of access rights to ocean resources is a form of institutional capital whose structure is constitutive of social equity. Whether communities hold secure and enforceable rights to fish, gather, navigate, and steward their traditional territories shapes their economic vulnerability, their political voice, and their capacity to participate in governance. This guidance takes a clear position on the relationship between governance and social accounting: governance is a substantive dimension of social life, and both Social Accounts and Governance Accounts sit nested within the

broader social domain of the Ocean Accounts Framework. Governance Accounts are therefore treated here as a distinct but subordinate account type within that domain, rather than as a parallel structure sitting alongside it. The conceptual and methodological framework for Governance Accounts is developed in detail in Circular 3.7.

¶5 Cultural capital encompasses the cultural heritage, shared identity, place-based attachment, creative practices, and knowledge systems that connect communities to the ocean across generations. It is a distinct fourth stock category because cultural dimensions of human-ocean relationships are not adequately captured within human, relational, or institutional capital alone. Cultural capital includes: the body of Indigenous and Traditional Ecological Knowledge held by a community and the practices through which it is transmitted; sense of place and the emotional, spiritual, and cultural meanings associated with particular marine territories and seascapes; intergenerational cultural practices including traditional navigation, boat building, ceremony, storytelling, and food preparation from the sea; and language and cultural expression associated with the ocean. The case for cultural capital as a stock in its own right rests on both theoretical and empirical grounds. Theoretically, cultural and knowledge systems are generative: communities with rich cultural capital have more diverse and resilient ways of understanding and responding to environmental change. Empirically, the loss of cultural capital through displacement, environmental degradation, suppression of traditional practices, or failure to transmit knowledge is among the most significant and least reversible consequences of ocean governance failures for coastal communities [8, 21]. Cultural capital indicators must attend particularly to the gendered dimensions of cultural transmission and the differential exposure to cultural loss across age groups, recognising that elders and youth occupy distinct and irreplaceable positions in the reproduction of cultural knowledge.

¶6 Social equity is formalised as a core social condition across this framework, not simply as an aspiration or an indicator sub-category. Equity describes the distributional state of a society: who holds rights, who has access, who has voice, and who has the power to influence decisions that affect their lives and communities. As a social condition, equity must be assessed across all four capital categories and across the temporal dimension of Social Accounts, asking not only whether current distribution is equitable but whether current ocean use is building or eroding the conditions for equity in future generations. Intergenerational distribution is a dimension of equity that existing accounts consistently underweight. Social Accounts must track how current patterns of ocean use, resource governance, and environmental change affect the social assets and conditions available to future generations, connecting the measurement of present stocks to long-term sustainability. The geography of equity also matters: coastal communities in remote or economically marginalised regions frequently bear the highest environmental burdens from ocean-related activities while receiving the least benefit. The concept of a social floor, analogous to ecosystem condition baselines in SEEA-EA, describes a minimum threshold of social conditions below which communities face structural harm. While the definition and measurement of a social floor for any particular context requires careful engagement with communities and local evidence, the concept is theoretically important because it frames Social Accounts as a tool for identifying and monitoring social risk, not only for describing social states.

¶7 **Table 3:** Types of social assets and conditions, example indicators and units.

Capital type	Description	Example indicators	Example units
Human capital	Knowledge, skills, health, and capabilities embodied in individuals and communities. Includes adaptive capacity, which shapes how communities respond to environmental and governance change.	Educational attainment; proportion of ocean-dependent households in poorest income quintile; household consumption of fish and seafood; life satisfaction score; proportion reporting fair or good physical and mental health; adaptive capacity index	Proportion (%); score; kg per capita per year

Capital type	Description	Example indicators	Example units
Relational capital	Networks, relationships, trust, and collective resources connecting coastal and ocean-dependent communities. Enables economic and social activities. Distinct from formal governance institutions, which are captured under institutional capital.	Level of cooperation between ocean-dependent sectors (within and across sectors); number of active community-based resource management groups; number of cross-community resource-sharing arrangements; proportion of ocean management groups with representative membership by gender and social group	Count; proportion (%); categorical scale
Institutional capital	Formal and informal rules, governance structures, and organisational systems regulating human interactions with the ocean. Includes access rights, co-management arrangements, and governance resilience.	Coverage of marine spatial planning or ecosystem-based management approaches (% of marine waters); compliance rates with fishing regulations; number of active co-management agreements; records of traditional and legally recognised tenure arrangements; marine law enforcement capacity (patrol hours and coverage)	Proportion (%); count; hours
Cultural capital	Cultural heritage, place-based identity, marine knowledge systems, and intergenerational practices that connect communities to the ocean. The body of Traditional Ecological Knowledge is a cultural capital stock; the act of sharing TEK is a social flow (see 3.3.2).	Number of active traditional marine governance practices; proportion of community members reporting strong cultural connection to the ocean; number of active cultural transmission programmes related to the sea; proportion of community members with knowledge of traditional ecological practices	Count; proportion (%); categorical scale
Social equity and conditions	Distributional conditions across all capital types: rights, access, voice, power, and well-being by social group and geography. A core condition, not confined to any single capital category. Includes access to basic coastal services, social protection, and safety.	Gini coefficient for ocean-sector income; proportion of fishing permits held by women; proportion of coastal management decisions with documented community participation; proportion of households with secure access to marine resources; access to basic coastal services (sanitation, clean water, connectivity)	Proportion (%); index; count

3.3.2 Social activities (flows)

¶1 Social activities are conceptualised as flows within this framework, representing actions and events that create, maintain, transform, or draw upon social assets and conditions during an accounting period. Social activities encompass human interactions with the ocean and with coastal life that occur outside the traditional SNA production boundary, which is largely limited to market transactions and certain types of production for own final use. Extending the accounting framework to include non-market social flows is a primary objective of Social Accounts. The classification of social activities into discrete categories reflects theoretically important domains of social life that conventional accounting does not capture. Unpaid household labour encompasses activities that extend the market economy, enable ocean-related economic activity, and sustain the social reproduction of coastal communities. Social transfer activities capture the informal reciprocal exchange that builds and sustains relational capital at the margins of formal social protection. Volunteering and community activities document the collective effort communities invest in managing shared resources and maintaining coastal environments. Cultural and recreational activities capture the lived

practices that reproduce cultural capital across generations. Governance and public engagement activities record the effort communities invest in participating in decisions that shape their lives and territories. A sixth category, knowledge exchange and capacity-building for ocean stewardship, captures the educational and knowledge-transmission activities that build and circulate human and cultural capital within and between communities. This addition responds to the recognition that knowledge transmission is a distinct and important social flow that earlier framings have not adequately represented. Each category corresponds to a social function that would otherwise be invisible in the accounts, and their inclusion together constitutes a claim that the social value generated outside the market is real, consequential, and measurable.

¶2 Social activities require multiple measurement units appropriate to the phenomenon being captured. Time measured in hours captures activities where duration reflects engagement intensity. Physical quantities measure material resources mobilised in social activities. Counts track frequency, participation, and occurrence. Proportions enable distributional analysis. Indices and scales assess subjective dimensions and multi-dimensional concepts. The primary unit in Table 4 is hours, which enables comparability across activities and connection to the broader time-use statistical tradition. However, the choice of hours as a primary unit reflects practical considerations of data availability rather than a claim that time is the primary dimension of social activity value. Alignment between Social Accounts and the SNA occurs at the stage of monetary valuation, not at the stage of physical recording: in physical accounting, any appropriate unit may be used. There are also important limitations to the hours unit that must be acknowledged. Hours-based measurement may be culturally inappropriate or analytically misleading for collective or ceremonial activities in Indigenous contexts, where participation is not fungible across individuals and where the meaning of an activity cannot be separated from its specific cultural form. Activities such as the provision of boats or fishing equipment are better captured in physical quantities. The informal economy, including subsistence fishing, gleaning, barter, and communal gear maintenance, must be captured within the flow categories, but care is required to avoid double-counting activities that also fall within the SNA production boundary. Table 4 includes multiple units and notes on data sources.

¶3 Social activity categories have flexible boundaries, and the framework is designed to accommodate this rather than require strict either/or classification. Sea rituals, for example, may simultaneously function as cultural activities and as governance mechanisms through which communities assert customary tenure and transmit ecological knowledge. Where an activity spans categories, the recommended approach is to assign it to the category most relevant to the primary social function being assessed and to note the overlap in accompanying metadata. The more consequential classification challenge concerns activities near the SNA production boundary. Social Accounts should record social flows only for the non-economic dimensions of an activity, such as the time spent in traditional processing methods, the cultural knowledge embedded in the activity, and the social relationships sustained through it, rather than the economic output produced, which is properly recorded in economic accounts. The imperative is to avoid double-counting: an activity recorded as an economic flow in economic accounts should not also be recorded as a social flow, except to the extent that it generates a distinct social dimension not captured in the economic account. Practical classification rules and worked examples are developed in companion compilation guidance. A minimum starter indicator set for Social Accounts in low-capacity and limited-data settings is also developed in that guidance, recognising that comprehensive Social Accounts require sustained investment in data systems and that development must be iterative.

¶4 **Table 4:** Types of social activities, example indicators, measurement units and typical data sources.

Category	Description	Example indicators	Measurement unit	Typical data sources
Unpaid household labour	Productive activities by household members for their own benefit that in principle could be delegated to a third party (third-party criterion). Includes activities that enable ocean-related economic activity and sustain community social reproduction.	Hours of community care for children of ocean workers; hours spent on food preparation from ocean resources; hours spent on household support while fishers are at sea; hours spent on maintenance and repair of fishing equipment; hours spent processing and preserving marine catch; hours of elder care in fishing communities; hours of labour undertaken by children at sea	Hours; physical quantities (kg)	Time-use surveys; household surveys; participatory research
Social transfer activities	Direct non-market provision of support between households, including informal care, equipment sharing, and mutual aid. Distinct from formal government social protection and from volunteering for organisations.	Hours spent providing fishing equipment to other families; hours of informal mutual aid during fishing seasons; hours of inter-household sharing of marine resources; hours of shelter or accommodation provision during displacement from coastal areas; number of households participating in mutual support networks during environmental disruption	Hours; count	Household surveys; community interviews; participatory research
Volunteering and community activities	Unpaid, non-compulsory activities performed for the benefit of others outside the household, including informal community assistance. Where activities are conducted through non-profit organisations, they fall within the SNA production boundary and should not be double-counted here.	Hours of individual beach cleanup; hours of personal marine conservation effort; hours of community-based coastal monitoring; hours of informal marine safety education; hours helping neighbours with fishing; hours of community stewardship of nearshore areas outside formal programmes	Hours; count	Time-use surveys; community records; participatory research

Category	Description	Example indicators	Measurement unit	Typical data sources
Cultural and recreational activities	Participation in ocean activities that contribute to individual and community well-being, cultural identity, and social cohesion. Includes cultural heritage, ceremonies, creative practices, sport, and recreation. Activities that cannot be undertaken on behalf of the individual, including ceremonial activities that simultaneously function as governance mechanisms, are included here; double-classification should be noted in metadata.	Hours of traditional ceremonies related to the sea; hours of cultural storytelling about marine environments; hours of spiritual practice connected to the ocean; hours of traditional boat building and maintenance; hours of ocean-based recreation (surfing, diving, traditional navigation, canoe practice); number of active ceremony cycles related to marine seasons	Hours; count	Cultural surveys; community records; participatory oral history; time-use surveys
Governance and public engagement	Activities related to participation in decision-making processes, access to justice, and the functioning of community-level governance for the ocean.	Hours of participation in community fisheries management; hours of involvement in marine protected area planning; hours of engagement in traditional governance systems; hours of customary marine tenure activities; hours of contribution to conflict resolution over marine resources; number of community meetings on ocean management participated in	Hours; count	Governance records; community surveys; participatory research
Knowledge exchange and capacity-building	Educational and knowledge-transmission activities that build and circulate human and cultural capital related to ocean stewardship. Includes formal and informal learning, intergenerational mentorship, and cross-community exchange.	Hours of ocean-related education and skills training; hours of intergenerational mentorship in traditional ecological knowledge; hours of community-to-community exchange on ocean stewardship; number of participants in ocean literacy programmes; number of traditional knowledge-sharing events held	Hours; count; number of participants	Education records; training records; community surveys; participatory research

3.3.3 Reading stocks and flows together: the framework in practice

¶1 The two entry points are designed to be read together, not in isolation. A stock indicator describes the condition of a social asset at a point in time; a flow indicator describes the activities that maintain, build, or deplete that condition over an accounting period. The stock-flow relationship is dynamic and bidirectional: social activities can accumulate social capital over time, as when community-based fisheries governance builds institutional resilience and relational trust or they can draw it down, as when prolonged environmental disruption depletes adaptive capacity and erodes the informal safety nets on which vulnerable communities depend. It is this dynamic relationship, made visible through repeated measurement across accounting periods, that allows Social Accounts to explain change over time rather than merely describe a snapshot. That figure therefore represents more than a structural diagram: it encodes a theoretical claim that understanding the social dimensions of ocean governance requires both a record of what exists: (i) the stocks of human, relational, institutional, and cultural capital that communities hold at any given moment and (ii) a record of what communities do, the flows of unpaid, informal, cultural, and civic activity that sustain, build, and sometimes deplete those stocks. Neither entry point is sufficient alone. Together, they constitute an integrated, interoperable framework capable of making visible precisely those dimensions of human-ocean relationships that conventional economic and environmental accounts have historically rendered absent.

Example: Relational capital

¶2 This example illustrates the stock-flow relationship in a different register. In many small-scale fishing communities, informal networks of reciprocal support (e.g. gear sharing, mutual aid during poor seasons, inter-household provision of food and care) constitute a critical form of social protection that operates entirely outside formal systems. These networks are a stock of relational capital. They represent accumulated trust, established relationships, and shared norms of reciprocity that have built up over time and that enable communities to absorb economic and environmental shocks.

¶3 Measuring this stock might involve counting the number of active community-based resource management groups, the number of cross-community resource-sharing arrangements, and assessing the level of cooperation between ocean-dependent households and sectors. Through disaggregation, these indicators could reveal asymmetries that aggregate figures conceal. For example, women may be central nodes in reciprocal support networks while remaining entirely absent from formal governance bodies, a distributional pattern that average participation rates would obscure. The corresponding flows are the social transfer activities and volunteering activities that sustain and draw upon these networks. For example, hours of informal mutual aid during fishing seasons, hours of inter-household sharing of marine resources, hours of shelter or accommodation provision during displacement from coastal areas. During a period of environmental disruption (e.g. a destructive cyclone, a prolonged harmful algal bloom, a sudden fisheries closure), these flows typically intensify as households draw heavily on relational capital to survive. If the disruption is severe or prolonged enough, the flows may eventually deplete the stock. The relationships of reciprocity erode under sustained pressure, trust breaks down, and the informal safety net that once absorbed shocks disappears.

¶4 Tracking both stock and flow indicators across accounting periods makes this dynamic visible in a way that a single cross-sectional survey cannot. A community that has experienced repeated environmental shocks may show declining relational capital stocks even as it reports high levels of mutual aid activity in the most recent period (i.e. a pattern that signals a system under stress rather than a resilient one). The policy implication is different in each case, and the account must be capable of distinguishing between them. The quantitative record is necessary but not sufficient. The number of households participating in mutual support networks during environmental disruption does not capture the quality of those relationships, the degree to which they are experienced as reliable and reciprocal, or the community's own sense of whether the social fabric is holding. Participatory assessments and community narratives, recorded systematically alongside the

quantitative indicators, provide the interpretive layer that gives the numbers their meaning and that ensures the account remains salient and recognisable to the communities it is meant to serve.

3.4 Legitimacy, knowledge systems and co-design

¶1 A theoretical account of Social Accounts cannot rest on quantitative data alone. This is not a concession to methodological pragmatism, it is an epistemological position about what knowledge is required to understand human-ocean relationships. Quantitative indicators, including hours, proportions, and counts, provide the structural backbone of Social Accounts and enable temporal comparison, spatial analysis, and cross-domain integration. However, many of the most important dimensions of human-ocean relationships, including cultural identity, spiritual connection, relational values, perceived well-being, and the experience of living well within a particular territory and seascape, cannot be reduced to numerical metrics without fundamental loss of meaning. This is not a limitation that can be solved by better measurement technology: it reflects the nature of the phenomena themselves. The epistemological argument for qualitative data within Social Accounts draws on the recognition that knowledge about social life takes multiple legitimate forms, of which numerical measurement is one. Qualitative approaches provide what quantitative data cannot: the interpretive context within which numbers become meaningful; the diversity of values, meanings, and lived experiences that aggregate statistics inevitably erase; the voices of individuals and communities who must be active participants in knowledge production rather than passive subjects of data collection; and the temporal and relational dynamics of social change that longitudinal indicators can track but cannot explain [17]. These four dimensions, context, meaning, voice, and dynamics, constitute the theoretical case for treating qualitative information not as supplementary to Social Accounts but as epistemically necessary for them.

¶2 Subjective well-being, meaning the perceived or lived experience of well-being rather than its objective indicators, is a legitimate and necessary dimension of Social Accounts that quantitative metrics alone cannot capture. Life satisfaction, sense of security, cultural belonging, and the experience of agency are dimensions of well-being that communities are best placed to assess and articulate. The SEEA-EA and the SNA 2025 both recognise the value of experiential and perceptual dimensions of the relationship between people and ecosystems. In the context of Social Accounts, subjective well-being assessments provide the interpretive frame that helps explain patterns in objective indicators, and they reveal dimensions of well-being that objective indicators systematically miss. The inclusion of qualitative and subjective data within Social Accounts requires more than documentation alongside quantitative data. It requires formal mechanisms through which qualitative findings are recorded, systematically reviewed, and used in decision-making. Qualitative evidence, including community narratives, focus group findings, oral histories, and participatory assessments, could be integrated into account tables through structured narrative columns, as has been demonstrated in experimental Indigenous ecosystem accounts in Australia [24]. In that context, the Yawuru concept of *mabu liyan*, a state of well-being derived from living well on Country, was recorded alongside quantitative data through a “benefits” column in ecosystem service tables [22]. This approach demonstrates that cultural specificity and quantitative rigour are not in tension: they are complementary dimensions of a more complete and legitimate account. Guidance on formats for qualitative recording within account structures is developed in subsequent compilation guidance.

¶3 The relationship between Social Accounts and Indigenous, Traditional, and Local Knowledge requires particular care, because the appropriate relationship is weaving rather than integration. Integration implies assimilation, a dominant system absorbs elements from another on the dominant system’s terms. Weaving implies genuine dialogue between distinct and autonomous knowledge systems: each contributes its own threads to a shared fabric without losing its own integrity or becoming subordinate to the other. This distinction matters because Indigenous knowledge systems embody distinct epistemologies, ontologies, and ethical frameworks that cannot be mapped onto the categories of formal accounting without distortion. The goal is Social Accounts that are

genuinely enriched by Indigenous and Traditional Knowledge, designed in ways that preserve the sovereignty of knowledge holders over their own knowledge. In practice, this means that the decision whether, how, and to what extent Indigenous or Traditional Knowledge enters formal Social Accounts rests with knowledge holders and with the governance systems through which communities exercise collective authority. Free, Prior, and Informed Consent (FPIC) is the minimum standard, but genuine co-design requires more: that communities have meaningful influence over the categories, methods, and governance structures of Social Accounts from the outset, not simply the right to refuse data collection after it has been designed without them. The groups most systematically underrepresented in existing accounts, including Indigenous Peoples, women, small-scale fishers, youth, and elders, should be explicitly named and included in co-design processes. Social Accounts must also address the safety risks of publishing social data about vulnerable communities: the decision to make data publicly available should be a community-controlled governance decision, not an institutional one [24].

¶4 The legitimacy of Social Accounts depends not only on their technical coherence but on the processes through which they are designed, governed, and used. Community co-design is not a procedural courtesy: it is a condition of the framework's validity. Social Accounts designed without the active participation of the communities are meant to describe risk producing accounts that are technically complete but socially illegitimate, reflecting the priorities of institutions rather than the realities of lives. Participation in co-design is not performative consultation, where community input is sought after key decisions have already been made: it is a structural condition for the legitimacy and accuracy of the resulting accounts. This means that communities must have genuine decision-making authority over what is counted, how results are communicated, and how the accounts are used in policy and resource allocation. The principle of legitimacy through process applies directly to the Social Accounts theoretical framework itself. The revision of this guidance has been undertaken in response to the feedback of the Social Accounts Working Group, which includes practitioners and researchers from the communities and governance contexts where Social Accounts are being developed. Their feedback is the primary reference for what must change, and the act of responding to it substantively is itself a demonstration of the principle this section articulates.

¶5 The same principle extends to the governance of the framework itself. The categories, indicators, and units presented in this circular are not fixed instruments. They represent the best available conceptual guidance at the time of publication, developed through the Social Accounts Working Group process and grounded in pilot experience from Costa Rica, Belize, Mozambique, and the Maldives. As Social Accounts moves from conceptual foundation to operational practice, the framework requires mechanisms for structured review and revision that are as transparent and accountable as the framework itself claims to be.

¶6 The current capital categories and flow types will be subject to formal review following the completion of the first round of pilot programmes. Reviews will be coordinated through the GOAP Secretariat, with substantive input from the Social Accounts Working Group, national statistical partners, and the communities in whose contexts the accounts are being applied. Decisions about category changes or additions require documented justification, transparent consultation, and explicit consideration of how revisions affect comparability with data compiled under earlier versions of the framework. No category should be added, removed, or redefined without that process. The standard indicator sets developed in companion compilation guidance are subject to the same governance logic, with the additional requirement that communities who have contributed data under existing indicator definitions are informed of proposed changes and given meaningful opportunity to respond before those changes are adopted.

3.5 Decision Use-Cases for Social Accounts

¶1 Social accounts for oceans serve three primary decision contexts that require integrated documentation of human-ocean relationships. Understanding these use-cases helps clarify why social accounts are compiled and what analytical requirements they must satisfy.

3.5.1 Equity and distributional assessments

¶1 Ocean resources generate substantial economic value, but benefits and burdens are not evenly distributed across population groups. Social accounts enable systematic assessment of who gains and who bears costs from ocean use patterns, supporting decisions about resource allocation, access rights, and benefit-sharing mechanisms.

¶2 Equity assessments inform decisions including:

- ¶3 Allocation of fishing quotas between industrial and small-scale sectors
- ¶4 Distribution of marine protected area costs and benefits across coastal communities
- ¶5 Design of compensation mechanisms for communities displaced by coastal development
- ¶6 Targeting of ocean-related social protection programs

¶7 The distributional data compiled in social accounts relate to the governance rules documented in **TG-3.7 Governance Accounts**. Governance accounts record the institutional arrangements that determine access to ocean resources; social accounts document the distributional outcomes that result from those governance decisions. Section 3.3.1 of TG-3.7 specifically notes that “the governance rules documented here shape the distributional outcomes recorded in social accounts.” Compilers should coordinate social and governance accounting to ensure that institutional rules can be linked to observed distributional patterns.

3.5.2 Community dependency and vulnerability analysis

¶1 Coastal and ocean-dependent communities face particular vulnerabilities to environmental change, economic shocks, and governance failures. Social accounts document dependency patterns and adaptive capacity, supporting decisions about resilience-building investments, livelihood diversification programs, and climate adaptation planning.

¶2 Dependency analysis informs decisions including:

- ¶3 Prioritization of coastal communities for climate adaptation finance
- ¶4 Design of fisheries transition programs for workers displaced by stock collapse
- ¶5 Siting decisions for marine spatial planning that affect community access
- ¶6 Targeting of social services and infrastructure investments in coastal areas

¶7 These vulnerability assessments draw on ecosystem condition data from **TG-3.1 Asset Accounts** Sections 3.5.1–3.5.2, which document the biophysical changes that threaten community wellbeing. The social accounts compiled under this Circular provide the socioeconomic profile data needed to assess which communities are most exposed and least able to cope with environmental degradation documented through condition and ecosystem accounts.

3.5.3 Just transition planning

¶1 As economies transition toward sustainable ocean use, workers and communities dependent on unsustainable practices face potential displacement. Social accounts support just transition planning by documenting the characteristics of affected workers, the adequacy of social protection coverage, and the availability of alternative livelihood options.

¶2 Just transition planning informs decisions including:

- ¶3 Design of retraining programs for fishers displaced by quota reductions
- ¶4 Social protection extensions for informal workers in ocean sectors
- ¶5 Community development programs for areas affected by marine conservation measures
- ¶6 Gender-responsive transition policies recognizing differential impacts on women and men

¶7 The employment and working conditions data compiled in social accounts (Sections 3.6.2 and 3.6.3 below) provide the empirical basis for assessing transition needs. These data connect to the economic structure documented in **TG-3.3 Economic Activity Relevant to the Ocean**, which provides the industry-level context for understanding which sectors are most affected by sustainability transitions and what economic alternatives may be available.

3.6 Wellbeing Indicators

¶1 Wellbeing encompasses the multidimensional aspects of human welfare that extend beyond income and consumption to include health, security, social connections, and subjective life satisfaction. The ocean contributes to human wellbeing through multiple pathways, both material and non-material.

¶2 The wellbeing framework presented here aligns with the 2025 SNA Chapters 34 (Measuring Well-being) and 35 (Measuring the Sustainability of Well-being), which provide the conceptual foundation for extending national accounts to encompass broader dimensions of human welfare. As methodological guidance in this area continues to develop at the international level, compilers should monitor updates to these chapters and adjust their compilations accordingly.

3.6.1 Framework for ocean-related wellbeing

¶1 The 2025 SNA establishes that “a unique feature of the 2025 SNA is the broadening of the national accounts framework to better account for elements affecting wellbeing and sustainability to inform various policy goals”². Chapter 34 (Measuring Well-being) and Chapter 35 (Measuring the Sustainability of Well-being) provide the conceptual foundation.

¶2 For ocean accounting, wellbeing indicators can be organized across several domains:

¶3 **Material wellbeing:** Income, consumption, and wealth derived from ocean resources, including:

***Definitional box: Ocean-dependent household** For the purposes of Social Accounts, an ocean-dependent household is defined as one that derives more than 50% of total household income from ocean industries or subsistence fishing (including imputed value of subsistence harvests). This threshold is an analytical convention – not a statutory or regulatory classification – adopted to enable consistent identification of ocean-dependent populations across data sources. It is consistent with livelihood dependency definitions used in FAO Small-Scale Fisheries Guidelines. Compilers are encouraged to test the sensitivity of results using thresholds of 30% and 70% to assess the robustness of dependency classifications to the choice of cut-off. The threshold and any sensitivity tests applied must be documented in the compilation metadata. Cross-reference: the 50% threshold is applied in the worked example in Section 4.5.2.*

- ¶4 Household income from fishing, aquaculture, and other ocean industries
- ¶5 Value of subsistence harvests from marine resources
- ¶6 Household consumption of seafood and marine products
- ¶7 Wealth held in fishing vessels, aquaculture assets, and coastal property

¶8 Where subsistence harvests are a significant livelihood component, physical quantity (kg per capita per year of marine catch) is the primary indicator. Where monetary valuation is required, apply local market price imputation using prices for equivalent species from the nearest market. For detailed guidance on physical quantity measurement of subsistence production, see SEEA AFF Chapter 5; for valuation approaches adaptable to subsistence contexts, see **TG-2.4 Ecosystem Goods and Services**.

¶9 These material dimensions connect directly to economic accounts. For guidance on measuring economic contributions of ocean industries, see **TG-3.3 Economic Activity Relevant to**

the Ocean.

¶10 **Employment and livelihoods:** Work-related dimensions of wellbeing associated with ocean sectors, including:

- ¶11 Employment in ocean industries (fishing, aquaculture, tourism, shipping, offshore energy)
- ¶12 Job quality indicators (wages, working conditions, job security)
- ¶13 Livelihood diversification and dependence on marine resources
- ¶14 Skills and training opportunities in ocean sectors

¶15 The classification of ocean industries follows the framework established in **TG-3.3 Economic Activity Relevant to the Ocean**, which provides standardized definitions aligned with ISIC and CPC.

¶16 **Health outcomes:** Physical and mental health effects related to ocean environments, including:

- ¶17 Nutritional contributions from seafood consumption
- ¶18 Health risks from ocean-related occupations
- ¶19 Mental health and stress reduction from coastal access
- ¶20 Water quality impacts on coastal community health

¶21 **Food security:** Access to adequate and nutritious food derived from marine sources, including:

- ¶22 Household-level fish consumption and dietary diversity
- ¶23 Contribution of marine protein to national food supply
- ¶24 Vulnerability of food systems to marine resource depletion
- ¶25 Access to subsistence fishing and gleaning for food-insecure populations

¶26 Food security is closely linked to both material wellbeing and health outcomes, and serves as a key channel through which ocean ecosystem condition affects human welfare. SDG 2 (Zero Hunger) and its targets on food security and nutrition are directly relevant where coastal and island populations depend on marine protein as a primary food source.

¶27 **Cultural and spiritual wellbeing:** Non-material dimensions of human-ocean relationships, including:

- ¶28 Access to culturally significant marine sites
- ¶29 Maintenance of traditional practices and knowledge
- ¶30 Sense of place and identity connected to coastal environments
- ¶31 Intergenerational transmission of marine-related culture

¶32 For guidance on documenting traditional marine knowledge and customary practices, see **TG-3.6 Traditional Knowledge Accounts**.

¶33 **Recreation and leisure:** Benefits from using ocean environments for non-work activities, including:

- ¶34 Participation in marine recreation (swimming, diving, fishing)
- ¶35 Access to coastal amenities
- ¶36 Tourism experiences in marine environments

¶37 The SEEA Ecosystem Accounting framework identifies cultural services as “experiential and intangible services related to the perceived or actual qualities of ecosystems whose existence and functioning contribute to a range of cultural benefits”³. These include recreation-related services, visual amenity services, education and research services, and spiritual, artistic and symbolic services. For ocean accounting, these cultural ecosystem services represent important contributions to wellbeing. See **TG-2.4 Ecosystem Goods and Services** for guidance on measuring ecosystem services in monetary and physical terms.

¶38 **Environmental quality:** The condition of the local marine and coastal environment as experienced by communities, including:

- ¶39 Water quality for recreation, fishing, and domestic use
- ¶40 Air quality in coastal and port areas
- ¶41 Noise and visual amenity from marine activities
- ¶42 Exposure to marine pollution and litter

¶43 Environmental quality operates as a mediating factor between ecosystem condition (documented in **TG-2.1 Biophysical Indicators**) and perceived wellbeing, and may be assessed through both objective measurements and resident perception surveys.

3.6.2 Measuring ocean sector employment

¶1 Employment in ocean sectors is a primary pathway through which oceans contribute to material wellbeing. The Statistical Framework for Measuring the Sustainability of Tourism (SF-MST) provides relevant measurement approaches that can be adapted for ocean accounting.

¶2 The SF-MST defines employment as “all those of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit”⁴. For ocean accounts, employment should be compiled for industries directly dependent on marine resources or operating in marine spaces. To ensure consistency with economic accounts, employment measurement in social accounts should use the same industry classifications as those established in **TG-3.3 Economic Activity Relevant to the Ocean**, including the ISIC-based ocean economy concordance provided in that Circular.

¶3 Key ocean sectors for employment measurement include:

¶4 **Fisheries and aquaculture:** SDG Target 2.3 calls for doubling “the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers”⁵. Employment accounts should distinguish between:

- ¶5 Commercial fishing (industrial and semi-industrial)
- ¶6 Small-scale and artisanal fishing
- ¶7 Aquaculture (marine and brackish water)
- ¶8 Fish processing and marketing

¶9 The SEEA for Agriculture, Forestry and Fisheries (SEEA AFF) provides an integrated framework for describing how “biophysical and management information relevant to agriculture, forestry and fisheries production can be integrated into the statistical framework”⁶. For comprehensive guidance on fisheries measurement, see **TG-1.5 Fisheries Management**.

¶10 **Marine tourism:** SDG Target 8.9 calls for implementing “policies to promote sustainable tourism that creates jobs”⁷. Employment in marine tourism includes:

- ¶11 Accommodation services in coastal areas
- ¶12 Tour operators and guides for marine activities
- ¶13 Water-based transport for tourism purposes
- ¶14 Recreational fishing services

¶15 **Maritime transport and ports:** Employment in shipping, port operations, and related logistics

¶16 **Offshore energy:** Employment in oil and gas extraction, offshore wind, and other marine energy

¶17 **Other ocean industries:** Shipbuilding, marine biotechnology, coastal construction

¶18 The classification of ocean industries follows the framework established in **TG-3.3 Economic Activity Relevant to the Ocean...**

¶19 Table 1a provides a summary concordance between key ocean industry categories and 2-digit ISIC Rev. 4 codes. For full definitions and sub-category codes, see TG-3.3.

¶20 *Table 1a: Summary concordance – ocean industry categories and ISIC Rev. 4*

Ocean industry category	ISIC Rev. 4 division(s)	Notes
Marine capture fisheries	03 (Fishing and aquaculture)	Partially ocean: exclude freshwater fishing using vessel registry or catch data
Aquaculture (marine/brackish)	03	Partially ocean: exclude freshwater operations
Fish processing and marketing	10 (Food manufacturing)	Partially ocean: exclude freshwater species where distinguishable
Water transport (maritime)	50 (Water transport)	Partially ocean: ISIC 50 includes inland waterway transport – attribute share to ocean using vessel registry or port throughput statistics
Coastal and marine tourism	55 (Accommodation), 56 (Food/beverage), 79 (Travel agencies), 93 (Sport)	Partially ocean: apply coastal tourism satellite account methodology or geographic filter
Offshore energy extraction	06 (Oil and gas extraction)	Partially ocean: offshore operations only
Shipbuilding and repair	30.1 (Building of ships and boats)	Fully ocean-related
Port operations and services	52 (Warehousing and transport support)	Partially ocean: exclude inland terminals

¶21 For ISIC groups that are only partially attributable to ocean industries (e.g., ISIC 50 Water transport), compilers should apply a proportional allocation using vessel registry data, port throughput statistics, or national ocean economy satellite account ratios where available. The allocation method and ratio applied must be documented.

¶22 The SF-MST recommends that employment data be compiled with characteristics relevant to social sustainability, including⁸:

- ¶23 Sex (male/female)
- ¶24 Age groups
- ¶25 Employment status (employee, self-employed, contributing family worker)
- ¶26 Full-time/part-time status
- ¶27 Contract type (permanent, temporary, seasonal)
- ¶28 Formal/informal employment status
- ¶29 Geographic location

¶30 SDG Target 14.7 commits countries to increasing the economic benefits that small island developing States and least developed countries derive from the sustainable use of marine resources⁹; its indicator 14.7.1 measures “Sustainable fisheries as a proportion of GDP in small island developing States, least developed countries and all countries”¹⁰. Employment accounts provide complementary information on the livelihood dimensions of sustainable fisheries.

3.6.3 Decent work dimensions

¶1 The ILO Decent Work Measurement Framework encompasses ten substantive elements: employment opportunities; adequate earnings and productive work; decent working time; combining work, family and personal life; work that should be abolished; stability and security of work; equal opportunity and treatment in employment; safe work environment; social security; and social dialogue¹¹.

¶2 For ocean sectors, several decent work challenges deserve particular attention:

¶3 **Occupational safety:** Fishing is among the most hazardous occupations globally, with elevated rates of fatal and non-fatal injuries. SDG indicator 8.8.1 measures “Frequency rates of fatal and non-

fatal occupational injuries, by sex and migrant status”¹².

¶4 **Informal employment:** Many ocean-sector workers, particularly in small-scale fisheries, operate in the informal economy. SDG indicator 8.3.1 measures the “Proportion of informal employment in non-agriculture employment”¹³. Ocean accounts should document the proportion of informal employment in ocean industries. The 2025 SNA Chapter 39 on the informal economy provides updated guidance aligned with recent ICLS resolutions.

¶5 **Seasonal employment:** Tourism and fishing often involve seasonal work patterns that affect income stability. The SF-MST notes that “employment in tourism industries is known for the fact that it often consists of a small core of permanent staff complemented with staff with a temporary contract and on-call workers”¹⁴.

¶6 **Migrant workers:** Ocean industries, particularly fishing and maritime transport, often rely significantly on migrant labour. SDG Target 8.8 calls for protecting “labour rights and promote safe and secure working environments for all workers, including migrant workers”¹⁵.

¶7 Table 1 summarizes the recommended employment indicators for ocean social accounts, with suggested disaggregations to support distributional analysis.

¶8 *Table 1: Recommended employment indicators for ocean social accounts*

Indicator	Recommended Disaggregation	Data Source
Employment rate in ocean industries	Sex, age group, coastal/inland	Labour force surveys
Average wages in ocean industries	Sex, industry, compared to national average	Establishment surveys, administrative records
Share of part-time employment	Sex, industry, seasonal/non-seasonal	Labour force surveys
Proportion of informal employment	Sex, industry, urban/rural	Labour force surveys, ICLS definitions
Work-related injury and illness rates	Sex, industry, migrant status	Administrative records, occupational health data
Share of self-employed workers	Sex, industry, own-account/employer	Labour force surveys
Seasonal employment share	Industry, contract type	Labour force surveys, tourism statistics

¶9 These indicators align with both the ILO Decent Work Measurement Framework and the SF-MST recommendations on employment data characteristics¹⁶.

3.6.4 Subjective wellbeing measures

¶1 Beyond objective indicators, subjective wellbeing measures capture how people evaluate and experience their lives. The OECD Guidelines on Measuring Subjective Well-being provide methodological standards for measuring life satisfaction, affect, and eudaemonic wellbeing¹⁷.

¶2 For ocean accounting, subjective measures can assess:

¶3 **Life satisfaction:** Overall life satisfaction of coastal and ocean-dependent populations compared to national averages

¶4 **Domain satisfaction:** Satisfaction with specific life domains affected by ocean conditions (e.g., work satisfaction among fishers, satisfaction with local environment among coastal residents)

¶5 **Perceptions of wellbeing impacts:** Community perceptions of whether ocean-related activities (tourism, fishing, aquaculture) positively or negatively affect local wellbeing

¶6 The SF-MST recommends that measurement of tourism impacts on host communities include “perceptions on the negative and positive contribution of tourism to overall wellbeing”¹⁸. Similar approaches apply to other ocean-related activities affecting coastal community wellbeing.

3.7 Equity and Distribution

¶1 Equity concerns how the benefits and burdens of ocean use are distributed across population groups. Ocean accounting should document distributional patterns to support policy analysis for SDG 10 (Reduce inequality within and among countries). The governance frameworks that shape access to ocean resources and determine the distribution of benefits are documented in **TG-3.7 Governance Accounts**; social accounts record the distributional outcomes that result from those governance arrangements. Compilers should ensure that social accounts and governance accounts are compiled in a coordinated manner, so that the institutional rules documented in TG-3.7 can be linked to the distributional patterns recorded here.

3.7.1 Distributional dimensions

¶1 The 2025 SNA recommends standard breakdowns for household sector accounts by income decile and wealth quintile, as well as alternative breakdowns by main source of income, household type, housing status, and age of reference person¹⁹. Ocean accounts should adopt these breakdowns where relevant data exist, with particular attention to:

¶2 **Geographic distribution:** Benefits and burdens distributed across coastal and inland regions, urban and rural areas, and different coastal zones. Coastal communities may bear disproportionate environmental burdens (pollution, erosion, storm damage) while access to marine resources may benefit geographically concentrated populations.

¶3 **Income distribution:** How ocean-derived income is distributed across income groups. Small-scale fisheries often provide crucial livelihoods for lower-income households, while benefits from tourism and offshore industries may accrue disproportionately to higher-income groups or external investors.

¶4 **Gender distribution:** Women play significant but often under-recognized roles in ocean economies, particularly in fish processing, aquaculture, and gleaning. The UNWTO Global Report on Women in Tourism identifies “an urgent need for regular collection and reporting on employment data disaggregated by sex in tourism, also including formal and informal tourism employment, pay gaps”²⁰.

¶5 **Intergenerational distribution:** How current patterns of ocean use affect opportunities for future generations, connecting to sustainability accounting approaches in 2025 SNA Chapter 35 (Measuring the Sustainability of Well-being).

¶6 **Distribution among Indigenous Peoples and Local Communities:** Ocean resources often have particular significance for Indigenous Peoples and coastal communities with traditional marine tenure systems. The TNFD notes that “Indigenous Peoples and Local Communities manage or have tenure over at least 38% of remaining intact forest areas and 36% of areas that are key to biodiversity”²¹, with analogous relationships existing for traditional marine areas. See **TG-3.6 Traditional Knowledge Accounts** for guidance on documenting these relationships.

¶7 *Table 2: Ocean social indicator framework*

Wellbeing Domain	Indicator	Data Source	Disaggregation
Material living	Household income from ocean	Household surveys	Coastal/inland, gender
Employment	Ocean jobs, quality	Labour surveys	Sector, formal/informal
Health	Fish consumption, protein	Dietary surveys	Income group, region
Cultural identity	Traditional practices	Qualitative surveys	Community, age
Recreation access	Marine recreation participation	Time-use surveys	Income, proximity

3.7.2 Access to ocean resources

¶1 UNCLOS establishes a framework for resource access in which coastal States have sovereign rights over resources in their EEZ while maintaining freedoms of access to the high seas. Within national waters, domestic governance frameworks determine how access rights are allocated. For documentation of these governance frameworks, see **TG-3.7 Governance Accounts**.

¶2 SDG Target 14.b calls for providing “access for small-scale artisanal fishers to marine resources and markets”²². Indicator 14.b.1 measures “Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries”²³.

¶3 Access equity concerns include:

- ¶4 Allocation of fishing quotas and licenses across commercial and small-scale sectors
- ¶5 Rights of traditional fishers in the context of expanding commercial and tourism uses
- ¶6 Access to coastal land and beaches for fishing communities
- ¶7 Distribution of marine protected area benefits and restrictions

¶8 Marine spatial planning processes allocate marine space among competing uses, with significant equity implications. See **TG-1.2 Marine Spatial Planning** for related guidance on how spatial allocation decisions can be documented.

¶9 Social accounts should document the types and distribution of access rights using administrative data sources where available. Fishing licence registries, quota allocation records, marine protected area permits, and coastal land tenure records all provide information on who holds access rights and under what conditions. For guidance on accessing and using such administrative data sources, see **TG-4.3 Administrative Data**. Compilers should record the number of licences or permits by type, the demographic characteristics of holders (where available), and changes in allocation over time.

3.7.3 Benefit sharing

¶1 UNCLOS establishes principles of equitable benefit sharing, particularly for resources in the Area (seabed beyond national jurisdiction) and for continental shelf resources beyond 200 nautical miles. Article 140 states that “activities in the Area shall...be carried out for the benefit of mankind as a whole...taking into particular consideration the interests and needs of developing States”²⁴. The Kunming-Montreal Global Biodiversity Framework and the BBNJ Agreement extend benefit sharing provisions to marine genetic resources.

¶2 Social accounts should document benefit-sharing information at the level of feasibility, using the following stratification:

¶3 **(a) Required:** Revenue from fishing access fees and marine protected area user charges, sourced from government fiscal accounts or ministry of fisheries administrative records. Compile total revenue received and, where available, its distribution by destination (e.g., national consolidated fund, coastal community development fund, protected area management agency).

¶4 **(b) Recommended:** Distribution of conservation finance by stakeholder category (government agencies, local communities, NGOs, private sector). Where conservation finance data are available from TG-1.7, compile flows by recipient type.

¶5 **(c) Aspirational / long-term:** Sharing of benefits from marine genetic resources, including royalties under national access and benefit-sharing legislation implementing the Nagoya Protocol and the BBNJ Agreement. This category is flagged as out of scope for most current compilations: most NSOs do not have access to commercial genetic resource contracts, and no internationally endorsed methodology for attributing value exists. Compilers should note the gap and monitor evolving guidance from the IPBES and CBD processes.

¶6 For guidance on documenting financial flows related to ocean conservation and management, see **TG-1.7 Multilateral Finance** and **TG-1.8 Project Finance**. For genetic resource benefit flows,

note that this is the subject of ongoing IPBES/CBD technical work.

¶7 SDG Target 15.6 (applicable also to marine contexts) calls for promoting “fair and equitable sharing of the benefits arising from the utilization of genetic resources”²⁵.

3.8 Vulnerability and Resilience

¶1 Coastal and ocean-dependent communities face particular vulnerabilities to environmental change, economic shocks, and governance failures. Social accounts should document vulnerability indicators and adaptive capacity to inform resilience-building policies.

3.8.1 Understanding vulnerability

¶1 The IPCC defines vulnerability as “the propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements, including sensitivity or susceptibility to harm and lack of capacity to cope and adapt”²⁶.

¶2 Ocean-related vulnerabilities include:

¶3 **Climate vulnerability:** Exposure to sea level rise, coastal erosion, ocean warming, acidification, and changing storm patterns. SDG Target 1.5 calls for building “the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events”²⁷. SDG Target 14.2 calls for managing marine ecosystems “including by strengthening their resilience”²⁸.

¶4 For guidance on documenting ecosystem condition changes that affect community vulnerability, see **TG-2.1 Biophysical Indicators** and **TG-3.1 Asset Accounts** Section 3.5.2.

¶5 **Economic vulnerability:** Dependence on volatile marine commodity markets, seasonal income fluctuations, and exposure to external economic shocks. The SF-MST notes that “the measurement of water use by tourism industries relative to water availability will provide insights into the dependence of tourism activity on a given water supply and the associated potential vulnerability of tourism activity to the effects of drought”²⁹. Similar vulnerability assessments apply to fisheries dependent on stocks affected by environmental variability.

¶6 **Social vulnerability:** Factors that affect capacity to cope with and recover from shocks, including poverty, limited education, social marginalization, and weak social protection coverage.

¶7 **Ecological vulnerability:** Dependence on ecosystem services from marine ecosystems that may be degraded or at risk. The TNFD notes that “the prosperity and resilience of our societies and economies depend on the health and resilience of nature and its biodiversity”³⁰. For guidance on documenting ecosystem condition and degradation, see **TG-3.1 Asset Accounts**.

¶8 Vulnerability assessment for coastal communities remains an active area of methodological development. While composite vulnerability indices have been proposed in the academic literature, no single standardized index has yet achieved international statistical endorsement. Compilers are encouraged to compile the component indicators listed in section 3.8.2 and to document the specific methods and weights used in any composite measures they produce, to support transparency and comparability as international guidance evolves.

3.8.2 Vulnerability indicators

¶1 Social accounts should compile indicators across multiple vulnerability dimensions:

¶2 **Exposure indicators:**

- ¶3 Proportion of population in coastal flood zones
- ¶4 Share of economic activity dependent on marine resources
- ¶5 Proportion of households dependent on fish for protein
- ¶6 Share of employment in climate-sensitive ocean sectors

¶7 **Sensitivity indicators:**

- ¶8 Poverty rates in coastal communities
- ¶9 Proportion of informal workers in ocean sectors
- ¶10 Age structure of fishing workforce
- ¶11 Nutritional dependence on marine protein

¶12 **Adaptive capacity indicators:**

- ¶13 Social protection coverage for ocean-sector workers
- ¶14 Access to financial services and insurance
- ¶15 Educational attainment in coastal communities
- ¶16 Livelihood diversification options
- ¶17 Strength of social networks and community organizations

¶18 SDG indicator 1.3.1 measures the “Proportion of population covered by social protection floors/systems”³¹. For ocean accounts, this indicator should be compiled specifically for coastal and ocean-dependent populations to assess protective capacity against shocks.

3.8.3 Resilience assessment

¶1 Resilience refers to “the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation”³².

¶2 The TNFD recommends that organizations “describe the resilience of the organisation’s strategy to nature-related risks and opportunities, taking into consideration different scenarios”³³. For community-level resilience in ocean contexts, analogous assessments should consider:

¶3 **Ecological resilience:** The capacity of marine ecosystems to maintain functions and services under changing conditions. This connects to ecosystem condition accounts documented in **TG-3.1 Asset Accounts** Section 3.5.2.

¶4 **Economic resilience:** The capacity of ocean-dependent economies to maintain income and employment under changing conditions, including through diversification and adaptation.

¶5 **Social resilience:** The capacity of communities to maintain social cohesion, cultural practices, and collective action capacity under changing conditions.

¶6 **Governance resilience:** The capacity of institutions to adapt management approaches in response to changing conditions. See **TG-3.7 Governance Accounts** for documentation of adaptive governance capacity.

3.9 Qualitative Approaches

¶1 Many dimensions of ocean-society relationships are not readily captured through quantitative indicators. Qualitative approaches complement statistical measurement by documenting narratives, perceptions, and complex social dynamics.

3.9.1 Value of qualitative data

¶1 The SEEA Ecosystem Accounting framework acknowledges that some ecosystem contributions to wellbeing extend beyond what can be captured in supply and use tables. Cultural services in particular involve “experiential and intangible” dimensions³⁴ that require interpretive approaches.

¶2 Qualitative data provides:

- ¶3 **Context:** Understanding the local circumstances that shape quantitative indicators
- ¶4 **Meaning:** Interpreting what statistical patterns signify for affected communities
- ¶5 **Voice:** Ensuring that community perspectives inform accounting and policy

- ¶6 **Dynamics:** Capturing processes of change that snapshot indicators may miss

3.9.2 Participatory approaches

¶1 Engagement with Indigenous Peoples, Local Communities, and affected stakeholders is essential for social accounts that accurately represent human-ocean relationships.

¶2 The TNFD provides guidance on engagement processes that should³⁵:

- ¶3 Identify relevant stakeholders including Indigenous Peoples and Local Communities
- ¶4 Respect the rights of Indigenous Peoples as reflected in the UN Declaration on the Rights of Indigenous Peoples
- ¶5 Document concerns and priorities expressed through engagement
- ¶6 Ensure equitable access and benefit sharing, particularly for Indigenous Peoples and Local Communities
- ¶7 Report on how engagement results are incorporated into decision-making

¶8 For ocean accounting, participatory processes can inform:

- ¶9 Identification of culturally significant marine areas and species
- ¶10 Assessment of wellbeing impacts from ocean management decisions
- ¶11 Documentation of traditional knowledge relevant to marine resource management
- ¶12 Evaluation of equity in resource access and benefit distribution

¶13 **TG-3.6 Traditional Knowledge Accounts** provides detailed guidance on documenting traditional ecological knowledge and customary governance systems through culturally appropriate methods. Compilers preparing social accounts should coordinate closely with the TG-3.6 guidance to ensure that participatory methods are consistent and that qualitative findings from both accounts can be cross-referenced. In particular, the protocols for free, prior and informed consent (FPIC) and community validation described in TG-3.6 apply equally to social accounts that involve engagement with Indigenous Peoples and Local Communities.

3.9.3 Community wellbeing assessment

¶1 The SF-MST framework for measuring tourism impacts on host communities provides an adaptable model for assessing ocean-related impacts on community wellbeing. Key elements include³⁶:

¶2 **Resident perceptions:** Surveys and consultations that document how community members perceive the impacts of ocean-related activities (fishing, tourism, aquaculture, offshore development) on their wellbeing, cultural identity, and living environment.

¶3 **Social context impacts:** Assessment of effects on “cultural identity, living environment and wellbeing...including, for example, impacts on the quality of life, employment and income, cultural heritage, prevailing beliefs, and the access to services such as health care, education, transport and infrastructure, and housing”³⁷.

¶4 **Comparison across locations:** Analysis comparing conditions in communities with different levels of ocean-related activity to identify attributable impacts.

¶5 **Time-series monitoring:** Repeated assessment to track changes in community wellbeing over time in relation to changing ocean conditions and management approaches.

3.9.4 Narrative accounts

¶1 Beyond structured surveys and assessments, social accounts can incorporate narrative documentation:

¶2 **Case studies:** Detailed documentation of specific communities, sectors, or policy interventions that illustrate how ocean-society relationships function in particular contexts

¶3 **Oral histories:** Documentation of how ocean-society relationships have changed over time, particularly valuable for capturing traditional knowledge and intergenerational perspectives

¶4 **Stakeholder testimonies:** First-person accounts from fishers, coastal residents, tourism workers, and others directly affected by ocean conditions and management decisions

¶5 These narrative elements provide qualitative richness that complements quantitative indicators and supports communication of accounting results to diverse audiences.

¶6 **Archival and citation standards for qualitative materials:** Oral histories, stakeholder testimonies, and community consultation records collected for Social Accounts are subject to the following minimum archival standard:

- ¶7 **Storage:** Raw recordings and transcripts must not be published. They are to be retained under secure storage by the compiling agency for a minimum of seven years from the date of the account to which they relate, after which they may be disposed of in accordance with national data retention policy.
- ¶8 **Metadata:** Each qualitative source must be described by anonymised metadata recording: community type (e.g., fishing village, urban coastal suburb), geographic zone (coastal sub-region or district), date of collection (month and year), and thematic coverage (wellbeing domain as per Section 3.6.1). Personally identifying information must not appear in the metadata record.
- ¶9 **Citation format:** Published Social Accounts should cite qualitative sources using the format: "Community consultation, [community type], [coastal sub-region], [month/year]." Individual names must not be used unless the person has given explicit, documented consent to named citation.
- ¶10 **Consent:** Community consent to archive, cite, and use materials in published accounts must be obtained before collection begins, following the FPIC protocols described in **TG-3.6 Traditional Knowledge Accounts**. The consent scope (what materials may be archived, under what conditions) must be documented alongside the metadata record.

4. Compilation Procedure

4.1 Step-by-step compilation process

¶1 Compiling social accounts for ocean contexts follows a structured sequence that ensures consistent coverage and integration with other account components. The procedure below outlines the typical workflow; compilers should adapt it to national circumstances and data availability.

4.1.1 Define accounting boundaries

¶1 **Step 11: Delineate ocean-dependent populations** Identify the geographic areas and population groups whose wellbeing is materially affected by ocean conditions or management decisions. Use the following tiered delineation protocol:

¶2 **(a) Preferred:** Use administrative units (districts, municipalities, census enumeration areas) that overlap with the coastal zone as defined in national spatial data or the national coastal management framework. This ensures alignment with existing statistical geography and enables integration with census and survey microdata.

¶3 **(b) Fallback:** Where no official coastal zone definition exists, use the lowest-level administrative unit whose centroid or any part intersects within 50 km of the shoreline. Document the administrative unit level and the intersection rule applied.

¶4 Workers employed in ocean industries but residing outside the delineated coastal buffer should be assigned to the coastal buffer zone for employment compilation purposes; this assignment should be documented in the compilation metadata. The spatial delineation should align with the ecosystem accounting areas defined in **TG-3.1 Asset Accounts** and the spatial units used in **TG-1.2**

Marine Spatial Planning to facilitate cross-account linkages. See also **TG-4.2 Survey Methods** for stratification implications when designing survey samples for coastal subpopulations.

¶5 **Step 1.2: Identify ocean industries** Adopt the ocean industry classification from **TG-3.3 Economic Activity** to ensure consistency between social and economic accounts. Document the ISIC codes that correspond to each ocean industry category used in the account.

4.1.2 Compile employment accounts

¶1 **Step 2.1: Extract ocean employment from labour force surveys** Use labour force survey microdata to tabulate employment in ocean industries as classified in Step 1.2. Disaggregate by:

- ¶2 Sex (male/female)
- ¶3 Age group (15-24, 25-44, 45-64, 65+)
- ¶4 Employment status (employee, self-employed, contributing family worker)
- ¶5 Full-time/part-time status
- ¶6 Formal/informal status: apply the 17th International Conference of Labour Statisticians (ICLS) concept of informal employment (employment in informal jobs, regardless of the type of enterprise). Where labour force survey ISIC coding is too aggregated to isolate ocean industries, assign informal status using the following proxy hierarchy: (i) establishment size below five workers; (ii) absence of written employment contract; (iii) absence of social security contribution. Apply the first available proxy in this order and document which proxy was used. Where available sample in ocean industry cells falls below the national minimum for reliable estimation (typically $n < 50$ unweighted observations; follow the national statistical office's own reliability standard), suppress the informal/formal disaggregation and document the gap.
- ¶7 Contract type (permanent, temporary, seasonal)
- ¶8 Geographic location (coastal/inland, urban/rural)

¶9 See Section 3.6.2 for detailed indicator definitions.

¶10 **Step 2.2: Supplement with administrative data** Where labour force surveys do not provide adequate coverage of ocean sectors (particularly small-scale fisheries), supplement with administrative data from:

- ¶11 Fishing licence registries (see **TG-4.3 Administrative Data**)
- ¶12 Social security records
- ¶13 Establishment surveys in ocean industries
- ¶14 Port authority employment records

¶15 Ensure that supplements do not double-count individuals covered by surveys.

¶16 **Step 2.3: Compile wage and earnings data** Extract average wages by ocean industry and worker characteristics from establishment surveys or administrative payroll records. Calculate ratios to national averages to assess relative compensation levels.

4.1.3 Document distributional patterns

¶1 **Step 3.1: Household survey integration** Use household income and expenditure surveys to compile household income from ocean sources using the following three-step attribution method:

¶2 **(i) LFS-HIES linkage:** Where the labour force survey (LFS) and household income and expenditure survey (HIES) share a common household identifier or can be linked via synthetic matching (geographic stratum, household size, and head-of-household characteristics), match LFS respondents employed in ocean industries to HIES respondents and assign the corresponding wage and self-employment income components as ocean-derived.

¶3 **(ii) Income component assignment:** For matched households, attribute the proportion of self-employment income consistent with shares reported in establishment surveys for the relevant ocean industry.

¶4 **(iii) Imputation fallback:** Where linkage is not possible, impute ocean-derived income using average ocean sector earnings from the most recent establishment survey for the same ISIC group, applied to the number of ocean-employed household members identified from the LFS.

¶5 The 50% ocean-dependence threshold used to classify households as ocean-dependent is an analytical convention defined in Section 3.6.1. Compile also:

- ¶6 Household consumption of marine products by income group
- ¶7 Geographic distribution of ocean-derived income (coastal vs inland)

¶8 The household survey data should be processed following **TG-4.2 Survey Methods** to ensure proper weighting and variance estimation for coastal subpopulations.

¶9 **Step 3.2: Access rights inventory** Compile data on the distribution of formal access rights from administrative sources using the following tiered approach:

¶10 **(a) Primary:** Where legal authority for record linkage exists under national statistical confidentiality legislation, link fishing licence registries to civil registration or social security databases to obtain demographic characteristics (sex, Indigenous status, age) of rights holders. Compilers must review national confidentiality legislation and obtain any required approvals before initiating linkage.

¶11 **(b) Secondary:** Where administrative linkage is not legally permissible or technically feasible, conduct a sample survey of licence holders to collect demographic characteristics.

¶12 **(c) Minimum:** Where neither linkage nor survey is feasible, publish an unlinked count of licences by type and document the demographic data gap explicitly in the compilation metadata.

¶13 Regardless of tier applied, compile:

- ¶14 Number and type of fishing licences or permits
- ¶15 Quota allocation by vessel size class and ownership type
- ¶16 Marine protected area permits by user category
- ¶17 Coastal land tenure by community type

¶18 This access rights inventory provides the empirical link to the governance arrangements documented in **TG-3.7 Governance Accounts**, Section 3.3.1.

¶19 **Step 3.3: Gender-disaggregated indicators** Ensure all compiled indicators are disaggregated by sex to support gender equity analysis. Where sample sizes permit, further disaggregate by age group and geographic location to identify intersectional patterns.

4.1.4 Assess vulnerability and resilience

¶1 **Step 4.1: Compile exposure indicators** Using spatial data and census information, calculate:

- ¶2 Proportion of coastal population in flood zones, compiled using the following data-availability pathway:
 - ¶3 **(a) Primary:** Use national coastal flood hazard mapping produced by the national disaster management or meteorological agency where available and accessible under a data-sharing agreement.
 - ¶4 **(b) Secondary:** Use the proportion of population within a 10 m elevation band derived from CoastalDEM or the Copernicus Digital Elevation Model (both openly available). Apply standard GIS intersection methods against the latest census population grid.
 - ¶5 **(c) Minimum:** Use the proportion of population residing in coastal administrative units (lowest available administrative level intersecting within 10 km of the shoreline) as a proxy exposure indicator. Document the proxy used. Compilers are encouraged to establish formal data-sharing agreements with national disaster risk reduction agencies to access primary hazard data for future compilation cycles.
- ¶6 Share of local employment in ocean industries by community

- ¶7 Proportion of households dependent on fish for protein (from dietary surveys)

¶8 **Step 4.2: Compile sensitivity indicators** From household surveys and census data, tabulate for coastal communities:

- ¶9 Poverty rates (proportion below national poverty line)
- ¶10 Informal employment share in ocean sectors
- ¶11 Educational attainment distribution
- ¶12 Dependency ratios (population under 15 and over 64 relative to working age)

¶13 **Step 4.3: Compile adaptive capacity indicators** From administrative data and surveys, assess:

- ¶14 Social protection coverage for ocean-sector workers (from social security registries)
- ¶15 Access to financial services (bank account ownership, credit access from household surveys)
- ¶16 Livelihood diversification (proportion of households with multiple income sources)

¶17 These vulnerability and resilience indicators connect to the ecosystem condition trends documented in **TG-3.1 Asset Accounts** Section 3.5.2, allowing assessment of which communities are most at risk from environmental degradation.

¶18 **Minimum publication requirement for vulnerability outputs:** Compilers must produce a standardised communities-by-indicators matrix presenting all compiled exposure, sensitivity, and adaptive capacity indicators for each community unit. Compilers are not required to produce a composite vulnerability score. If a composite is produced, z-score normalization with equal weighting across component indicators is the default method; alternative weighting approaches may be used only if supported by documented empirical or expert-judgement justification. Any composite must be clearly labelled “experimental” in all publications and released alongside the full component indicator matrix to allow independent verification. For established composite methodologies that may be adapted, see the IPCC Climate Livelihood Index (CLI) methodology.

4.1.5 Integrate qualitative data

¶1 **Step 5.1: Design participatory assessments** Following the protocols described in Section 3.9.2 and consistent with **TG-3.6 Traditional Knowledge Accounts**, design community engagement processes to:

- ¶2 Validate quantitative findings
- ¶3 Identify culturally significant ocean values not captured in surveys
- ¶4 Document resident perceptions of wellbeing impacts from ocean management
- ¶5 Record narrative accounts from affected stakeholders

¶6 **Step 5.2: Conduct community consultations** Implement participatory assessments in selected coastal communities, ensuring adequate representation of:

- ¶7 Indigenous Peoples and traditional marine tenure holders
- ¶8 Women (often under-represented in formal consultation processes)
- ¶9 Small-scale fishers and informal sector workers
- ¶10 Youth and elders (for intergenerational perspectives)

¶11 **Step 5.3: Synthesize qualitative findings** Analyze qualitative data using a recognised thematic analysis framework, such as Braun and Clarke (2006) reflexive thematic analysis or an equivalent peer-reviewed framework. The framework used must be documented. A minimum of two independent coders must code the same dataset; intercoder reliability must be assessed (using Cohen’s kappa or equivalent) and the reliability statistic reported alongside findings. Organize themes according to the wellbeing domains in Section 3.6.1 to facilitate integration with quantitative indicators. Publish qualitative findings as structured narrative annexes keyed to quantitative table identifiers (e.g., “Narrative Annex A: Community perceptions of food security – supplement to Table

4.5"). Where NSO capacity for qualitative analysis is insufficient, contracted specialist input (ethnographer, qualitative researcher) may be used; all contracted analytical work must be documented in the quality report and attributed in the publication.

4.1.6 Validate and publish accounts

¶1 **Step 6.1: Cross-validation with other accounts** Check consistency of social account indicators with:

- ¶2 Employment figures from **TG-3.3 Economic Activity**: Discrepancies between LFS-based and establishment survey-based ocean industry employment totals should be evaluated using the country-specific materiality thresholds set in the national statistical office's own quality standard, documented as set out in **TG-0.7 Quality Assurance**. Discrepancies that exceed the country's established materiality level require a documented reconciliation note in the Step 6.2 technical documentation, explaining the probable source of the divergence and the compiler's assessment of which estimate is more reliable. In developing-economy contexts, LFS-establishment survey discrepancies of 10–20% are common, particularly for informal-sector employment, and do not necessarily indicate error – the reconciliation note should explain the likely cause.
- ¶3 Spatial distributions relative to ecosystem accounting areas in **TG-3.1 Asset Accounts**: Where no common spatial reference frame exists, qualitative directional alignment (i.e., confirming that social account coverage areas broadly correspond to ecosystem accounting zones) is sufficient.
- ¶4 Access rights data with governance frameworks in **TG-3.7 Governance Accounts**

¶5 **Step 6.2: Document data sources and methods** Prepare technical documentation describing:

- ¶6 Data sources used and their coverage
- ¶7 Estimation methods for filling data gaps
- ¶8 Quality assessment following **TG-0.7 Quality Assurance**
- ¶9 Known limitations and areas requiring methodological development

¶10 **Step 6.3: Disseminate accounts** Publish social accounts with supporting narrative that:

- ¶11 Explains key findings for each wellbeing domain
- ¶12 Highlights distributional patterns relevant to equity analysis
- ¶13 Identifies vulnerable populations requiring policy attention
- ¶14 Links findings to relevant SDG targets and indicators

4.2 Data sources

¶1 Social accounts draw on diverse data sources including:

¶2 **Household surveys**: Labour force surveys, living standards surveys, and specialized coastal community surveys provide individual and household-level data on income, employment, consumption, and subjective wellbeing. See **TG-4.2 Survey Methods** for guidance on ocean-specific survey modules and weighting procedures for coastal populations.

¶3 **Administrative records**: Social protection records, fishing licenses, maritime worker registrations, and educational records provide population-level administrative data. See **TG-4.3 Administrative Data** for guidance on accessing and using administrative data.

¶4 **Community consultations**: Participatory assessments and stakeholder engagement processes generate qualitative data and validate quantitative findings.

¶5 **Census data**: Population and housing censuses provide baseline demographic data for coastal communities.

¶6 **Enterprise surveys**: Establishment surveys in ocean sectors provide employment and working condition data from the employer perspective.

¶7 **Subjective wellbeing surveys:** Where a national wellbeing or living conditions survey exists, compilers should request inclusion of a coastal supplement module. The module should include at minimum the three OECD core subjective wellbeing questions (life evaluation using a Cantril ladder, positive affect, and negative affect) and one ocean-specific domain satisfaction item (e.g., “How satisfied are you with the state of the ocean and marine resources in your area?”). A reference sample module of 5–8 items suitable for coastal contexts is available from GOAP. Where no national survey is available, compilers may commission a standalone coastal supplement survey; sample size for each coastal subregion should be determined using Cochran’s formula ($n_0 = Z^2 \cdot p \cdot (1-p) / e^2$), with precision level (e), confidence level (Z), and expected prevalence (p) set in accordance with national statistical standards. No universal minimum sample size is prescribed, as adequate size depends on expected prevalence, margin of error, confidence level, and population size; compilers should document all parameters used. For guidance on domain-level sample sizing, see *Household Sample Surveys in Developing and Transition Countries*, Chapter II (UNSD, 2005). See also OECD Guidelines on Measuring Subjective Well-being (2025 Update).

¶8 Data quality considerations are particularly important for social accounts, given the diversity of sources and the frequent reliance on survey data that may have limited sample sizes in coastal communities. Compilers should assess the following quality dimensions for each data source: coverage (whether the source adequately represents ocean-dependent populations), timeliness (whether the data reflect current conditions), coherence (whether data from different sources can be reconciled), and accuracy (whether measurements are subject to known biases, such as under-reporting of informal employment or subsistence activities). The quality assurance procedures described in **TG-0.7 Quality Assurance** apply to social accounts and should be adapted to address these source-specific considerations.

4.3 Integration with other accounts

¶1 Social accounts connect to multiple other components of ocean accounting:

- ¶2 **Economic accounts (TG-3.3 Economic Activity):** Employment and income indicators in social accounts complement value-added and output measures in economic accounts. Compilers should ensure consistent use of industry classifications across both account types.
- ¶3 **Ecosystem services accounts (TG-2.4 Ecosystem Goods and Services):** Cultural services documented in ecosystem accounts relate to non-material wellbeing in social accounts
- ¶4 **Governance accounts (TG-3.7 Governance Accounts):** Governance frameworks shape access, equity, and adaptive capacity documented in social accounts. Governance accounts document the rules; social accounts document the outcomes.
- ¶5 **Traditional knowledge accounts (TG-3.6 Traditional Knowledge Accounts):** Qualitative approaches in social accounts connect to documentation of traditional knowledge systems
- ¶6 **Condition accounts (TG-2.1 Biophysical Indicators, TG-3.1 Asset Accounts Section 3.5.2):** Ecosystem condition affects both vulnerability and the capacity of ecosystems to support wellbeing
- ¶7 **Ecosystem accounts (TG-3.1 Asset Accounts):** Ecosystem degradation patterns relate to social vulnerability

4.4 Challenges and limitations

¶1 Social accounting for ocean contexts faces several methodological challenges:

¶2 **Attribution:** Isolating the specific contribution of ocean factors to wellbeing outcomes that are influenced by many determinants

¶3 **Data availability:** Limited availability of ocean-specific social data, particularly for small-scale sectors and informal activities

- ¶4 **Spatial matching:** Aligning social data (often collected for administrative units) with marine spatial units used in environmental accounts
- ¶5 **Comparability:** Ensuring comparability across contexts when social conditions vary substantially between countries and communities
- ¶6 **Subjectivity:** Incorporating qualitative and subjective dimensions while maintaining analytical rigour
- ¶7 Compilers should document data sources, methods, and limitations transparently to support appropriate interpretation and use of social account information.

4.5 Worked Example: Community Dependency and Distributional Analysis

¶1 This section extends the employment account from v3 (Section 4.4) with a distributional analysis for a hypothetical coastal community, demonstrating how social accounts support the decision use-cases outlined in Section 3.5. All figures are illustrative and designed to demonstrate the analytical structure; actual compilations would draw on household surveys, administrative records, and participatory assessments as described in Section 4.1 and 4.2.

4.5.1 Scenario: Coastal fishing community distributional profile

¶1 **Setting:** A hypothetical coastal community of 25,000 persons (6,250 households) in a Pacific Island State. The community is classified as “high ocean dependency” based on the dependency assessment described below.

4.5.2 Dependency assessment

¶1 The first analytical step assesses the community’s dependence on ocean resources across multiple dimensions:

¶2 *Table 4.1: Ocean dependency indicators for hypothetical coastal community*

Dependency dimension	Community value	National average	Ratio
Employment in ocean industries (% of labour force)	38%	12%	3.2
Household income from ocean (% of total)	42%	15%	2.8
Fish consumption (kg/capita/year)	65	28	2.3
Households with fishing access rights (%)	45%	8%	5.6

¶3 The community shows substantially higher ocean dependency than the national average across all four dimensions. This multi-dimensional dependency profile indicates elevated vulnerability to ocean environmental and governance changes. Employment dependency of 38% places this community in the upper decile nationally, suggesting that shocks to ocean industries would have severe local economic impacts.

4.5.3 Income distribution by ocean dependency

¶1 The second analytical step disaggregates household income by ocean dependency status and income quintile, revealing distributional patterns:

¶2 *Table 4.2: Household income by ocean dependency and income quintile (local currency units)*

Income quintile	Ocean-dependent households (n=2,813)	Non-ocean households (n=3,437)	Ratio
Q1 (lowest 20%)	8,500	12,000	0.71
Q2	15,000	18,000	0.83
Q3	22,000	24,000	0.92
Q4	32,000	35,000	0.91

Income quintile	Ocean-dependent households (n=2,813)	Non-ocean households (n=3,437)	Ratio
Q5 (highest 20%)	55,000	62,000	0.89
Mean	26,500	30,200	0.88

¶3 Ocean-dependent households (defined as those deriving >50% of income from ocean industries or subsistence fishing) have lower incomes than non-ocean households across all quintiles. The gap is most pronounced for the lowest quintile (ocean-dependent households earn only 71% of non-ocean household income), indicating that ocean dependence is associated with poverty risk.

¶4 *Table 4.3: Poverty rates by ocean dependency status*

Category	Households below poverty line	Poverty rate
Ocean-dependent households	785	27.9%
Non-ocean households	515	15.0%
Total community	1,300	20.8%

¶5 The poverty rate among ocean-dependent households (27.9%) is nearly double that of non-ocean households (15.0%). This distributional pattern has direct implications for just transition planning (Section 3.5.3): policies that reduce access to ocean resources without providing alternative livelihoods will disproportionately harm already-poor households.

4.5.4 Employment characteristics by gender and formality

¶1 The third analytical step examines employment characteristics in the community's main ocean sector (small-scale fishing):

¶2 *Table 4.4: Small-scale fishing employment characteristics (earnings in local currency units)*

Characteristic	Male	Female	Total
Total fishing employment	1,850	450	2,300
Formal employment	370 (20%)	45 (10%)	415 (18%)
Informal employment	1,480 (80%)	405 (90%)	1,885 (82%)
Mean annual earnings (formal)	28,000	22,000	27,000
Mean annual earnings (informal)	16,500	11,000	15,200
Social protection coverage	22%	8%	19%

¶3 *Note: Total column earnings figures are rounded to the nearest 100. Exact weighted means are 27,350 (formal) and 15,320 (informal).*

¶4 The employment profile reveals three distributional concerns:

- ¶5 **High informality:** 82% of fishing employment is informal, meaning workers lack social protection, occupational safety coverage, and income stability. This is substantially higher than the national informal employment rate of 40%.
- ¶6 **Gender gaps:** Women constitute only 20% of fishing employment but 90% of female fishing workers are informal, compared to 80% of male workers. Women's earnings in both formal and informal fishing are 21-33% lower than men's.
- ¶7 **Low social protection:** Only 19% of fishing workers have social protection coverage, compared to 64% nationally. This leaves the community highly vulnerable to income shocks.

4.5.5 Food security and nutrition

¶1 The fourth analytical step assesses the community's dependence on marine protein for food security:

¶2 *Table 4.5: Dietary composition and food security indicators*

Indicator	Community value	National average
Fish consumption (kg/capita/year)	65	28
Share of protein from fish (%)	72%	38%
Dietary diversity score (0-9 scale)	4.8	5.9
Households food-secure year-round (%)	68%	82%
Households experiencing seasonal food shortage (%)	32%	18%

¶3 The community derives 72% of protein from fish, more than double the national average and indicative of high nutritional dependence on marine resources. However, dietary diversity is lower than the national average (4.8 vs 5.9), and 32% of households experience seasonal food shortages (compared to 18% nationally). This pattern suggests that while fish provides critical protein, the community is vulnerable to disruptions in fisheries access or marine resource availability.

¶4 Disaggregating by income quintile reveals that food insecurity is concentrated among lower-income ocean-dependent households:

¶5 *Table 4.6: Food security by income quintile and ocean dependency*

Income quintile	Ocean-dependent HH food insecure	Non-ocean HH food insecure	Total food insecure
Q1 (lowest 20%)	58%	42%	52%
Q2	35%	22%	28%
Q3	18%	12%	15%
Q4	8%	5%	6%
Q5 (highest 20%)	3%	2%	2%

¶6 More than half (58%) of ocean-dependent households in the lowest income quintile experience food insecurity, compared to 42% of non-ocean households in the same quintile. This indicates that ocean dependence compounds poverty-related food insecurity, likely because fishing income is volatile and subsistence catches are subject to seasonal and environmental variability.

4.5.6 Access rights distribution

¶1 The fifth analytical step documents how formal fishing access rights are distributed:

¶2 *Table 4.7: Distribution of fishing access rights*

Licence type	Number of licences	Held by women	Held by Indigenous community members
Commercial fishing (offshore)	45	2 (4%)	8 (18%)
Commercial fishing (inshore)	180	18 (10%)	95 (53%)
Small-scale fishing	1,850	280 (15%)	1,200 (65%)
Subsistence fishing	2,800	1,120 (40%)	2,450 (88%)
Total	4,875	1,420 (29%)	3,753 (77%)

¶3 Access rights are highly stratified: commercial offshore licences (which provide access to higher-value fish stocks) are held almost exclusively by men (96%) and disproportionately by non-Indigenous community members (82%), while subsistence licences (which provide access only to low-value nearshore areas) are held predominantly by Indigenous community members (88%) and have much higher women's representation (40%).

¶4 This distributional pattern reflects the governance arrangements documented in **TG-3.7 Governance Accounts** Section 3.3.1. The social account documents the outcome – that commercial fishing opportunities are concentrated among a small, predominantly male, non-Indigenous group – while the governance account would document the licensing rules and allocation criteria that produce this outcome.

4.5.7 Analytical synthesis for decision support

¶1 The distributional profile compiled above supports the three decision use-cases identified in Section 3.5:

¶2 **Equity assessment (Section 3.5.1):**

- ¶3 Current fishing licence allocation concentrates commercial access among non-Indigenous men, while Indigenous community members and women hold predominantly lower-value subsistence licences
- ¶4 Reform options: Introduce preferential licensing for Indigenous fishers, gender quotas for commercial licences, or community-based allocation that reserves commercial access for local residents

¶5 **Vulnerability analysis (Section 3.5.2):**

- ¶6 High ocean dependency (38% employment, 42% income) combined with high informality (82%), low social protection (19%), and nutritional dependence on fish (72% of protein) indicates extreme vulnerability to marine resource decline or governance changes
- ¶7 Priority interventions: Extend social protection to informal fishing workers, establish emergency food reserves, invest in livelihood diversification programs

¶8 **Just transition planning (Section 3.5.3):**

- ¶9 If fisheries management requires catch reductions (e.g., due to stock decline), impacts will fall heavily on already-poor ocean-dependent households (27.9% poverty rate)
- ¶10 Transition support should include: income support during adjustment period, retraining for alternative livelihoods, preferential access to emerging ocean sectors (e.g., marine tourism, aquaculture), and strengthened food assistance for households losing subsistence fishing access

¶11 This worked example demonstrates how social accounts compiled following the procedures in Section 4.1 can generate the integrated wellbeing, equity, and vulnerability data needed to inform ocean management decisions.

5. Uncertainties and Risks

¶1 Social Accounts, as conceptualised in this circular, represent a genuinely new domain within national accounting frameworks. The theoretical foundations developed in the preceding sections draw on established international statistical standards, but the application of a stocks-and-flows architecture to social phenomena in ocean contexts has not yet been standardised at the international level, and no single composite methodology or index for measuring social conditions in ocean accounting has yet achieved international statistical endorsement. The indicators, categories, and methods presented here reflect the best available conceptual guidance at the time of publication, grounded in pilot experience from Costa Rica, Belize, Mozambique, and the Maldives [17]. This provisional character is not a weakness to be concealed but an honest acknowledgement of where the field stands, and it carries a structural implication: Social Accounts must be designed from the outset as learning systems, not fixed instruments. The definition offered in this circular is accordingly a living definition, one that accommodates evolving evidence, advancing methodologies, and insights that can only be generated through practice [12]. Practitioners should build in mechanisms for reflexive review, including regular re-evaluation of category boundaries and indicator sets against community realities. The methodological guidance in subsequent circulars will specify

phased implementation approaches for contexts where data availability, institutional capacity, or funding constraints require a staged rather than comprehensive approach to Social Accounts compilation.

¶2 Beyond methodological limitations, Social Accounts carry inherent political and structural risks that are not reducible to data problems and that must be named directly in any theoretically honest account of the framework's limitations. The most significant of these is the risk of co-option: the possibility that accounting frameworks designed to make inequities visible are instead deployed to justify existing resource allocations, characterise ocean governance as more equitable than it is, or satisfy international reporting requirements without changing any of the underlying power relationships that produce inequality. Visibility without redistribution of power changes nothing. A community whose dependence on subsistence fishing is carefully documented in a Social Account but whose access to fishing grounds is subsequently curtailed by a marine protected area established without their meaningful participation in the decision has not been served by the accounting exercise. A related risk concerns the selection of categories and indicators: those who design accounting frameworks exercise significant power over what is counted and what is not, and the finalisation of standard categories therefore requires transparent governance, explicit mechanisms for community review, and clear accountability for how and by whom those decisions are made [17]. Social Accounts Working Group processes, such as those that contributed to the development of this circular, represent one mechanism for distributing decision-making authority across a broader constituency of expertise and lived experience, but they do not substitute for direct community authority over account design in the localities where accounts will be applied.

¶3 A risk that is closely related to the political economy of accounting but operates at the methodological level concerns the aggregation of social data across heterogeneous populations. Aggregate indicators can mask precisely the inequalities that Social Accounts are designed to document. When data on ocean-dependent employment, food security, or participation in governance are reported as community-level averages, they produce a picture in which the median household stands in for all households, rendering women's unpaid contributions, young people's precarious livelihoods, persons with disabilities' systematic exclusion from data collection processes, and Indigenous peoples' distinctive relationships to marine resources simultaneously invisible within the very framework intended to make them visible [26]. This is not a technical error but a design choice, and it must be recognised as such. The structural response is disaggregation. Social Accounts must be designed to report stock and flow indicators by gender (or sex), age group, indigeneity, ethnicity, disability status, and geographic territory wherever is appropriate and permitted by data. Where disaggregated data do not yet exist, that absence is itself a finding of the accounting process. It should be named explicitly and used to inform targeted data collection, rather than being absorbed into an aggregate that implies false completeness. The GEDSI analysis from the Costa Rica Social Accounts pilot demonstrates the depth of structural inequality that exists within ostensibly homogeneous coastal community categories, and provides an instructive reference for practitioners developing disaggregation plans [26].

¶4 One of the most serious risks associated with Social Accounts concerns the governance of data about communities rather than data produced by institutions. When Social Accounts document livelihood dependence, resource access, land tenure, cultural practices, or the composition of community governance structures, they generate information that can expose vulnerable populations to harm if published without appropriate safeguards. For communities that face political marginalisation, land dispossession, or persecution, the visibility that Social Accounts offer is not inherently protective, and may in some contexts be actively dangerous. The CARE Principles for Indigenous data governance, which affirm Collective Benefit, Authority to Control, Responsibility, and Ethics [25], provide a framework for thinking through these risks in a principled way, and should be embedded in Social Accounts governance arrangements from the outset. Social Accounts that document Indigenous, Traditional, and Local Knowledge must be governed in accordance with Free, Prior, and Informed Consent: communities must determine whether their knowledge enters the ac-

counts, on what terms, at what level of detail, and with what restrictions on access and use [17]. Community data sovereignty, the right of communities to own, control, and govern data about themselves, is not an optional feature of responsible Social Accounts practice but a condition of the framework's ethical and political legitimacy. Data governance protocols, including decisions about who can access what data and under what conditions, should be established before compilation begins.

¶5 Two limitations inherent to the theoretical architecture of Social Accounts warrant particular attention as epistemological rather than merely technical problems. The first is the attribution challenge: isolating the specific contribution of ocean factors to wellbeing outcomes that are simultaneously shaped by many determinants. A coastal household may experience food insecurity because of a decline in fish stocks, because of reduced household income from non-ocean sources, because of domestic care responsibilities that constrain participation in fishing, or because of changes in food prices unrelated to marine conditions. Social Accounts can document each of these dimensions, but the accounting architecture cannot determine the relative weight of the ocean's contribution to wellbeing with the same precision that economic accounts can attribute value-added to a specific sector. This reflects the genuine complexity of social causation, and it should temper claims about what Social Accounts can conclusively establish. The second epistemological limitation concerns spatial matching. Social data are typically collected for administrative units including census districts, municipalities, and health zones, whose boundaries do not correspond to the marine spatial units used in environmental and economic ocean accounts. Social lives are not organised around marine spatial boundaries, and any method for aligning social data to ocean spatial frameworks will involve approximation and boundary decisions that affect who and what is captured. These decisions should be documented transparently alongside the accounts to which they give rise.

¶6 Several methodological risks require careful management at the compilation stage. Double counting is a recurrent concern in integrated accounting frameworks: the boundary between Social Accounts and economic accounts requires consistent definition to prevent the same activity from appearing in both, particularly for activities that sit at or near the SNA production boundary, including subsistence fishing, informal gleaning, and community food preparation. Practitioners should document these boundary decisions explicitly and cross-reference against existing economic account categories before finalising social flow indicators [12]. A related boundary problem concerns geographic scope: how the coastal zone is defined determines who is included in Social Accounts coverage, and different definitions can produce systematically different pictures of ocean dependence, vulnerability, and benefit distribution. Where multiple definitions are in use within a country, the Social Account should document the definition applied and its implications for coverage. A further risk concerns indicator design: when specific metrics are over-emphasised relative to the social phenomena they are intended to represent, the process of measurement can produce misleading conclusions or perverse incentives. Measuring participation rates in governance processes may register apparent increases in engagement that do not correspond to any increase in actual influence over decisions. Indicator selection should therefore be guided by explicit consideration of what each indicator can and cannot capture, with particular care given to avoiding over-reliance on metrics whose convenience of collection may be inversely related to their theoretical adequacy.

¶7 Social Accounts that are compiled across multiple time periods to track trends in social conditions, asset stocks, and community wellbeing depend on institutional arrangements that protect long-term data continuity against political volatility. Governments change, policy priorities shift, and the social dimensions of ocean governance are frequently contested. Without institutional safeguards, time-series data that document inequality, community dependence, or governance failures may be discontinued, selectively released, or re-categorised in ways that disrupt comparability and undermine accountability. The principle of institutional independence for statistical production, which underpins the credibility of national accounts more broadly, applies with particular force to Social Accounts, given that the communities they document are frequently those with the least in-

stitutional power to advocate for their continued visibility. Anchoring Social Accounts within national statistical systems, as recommended in the preceding sections, provides the most durable protection against political disruption, while also maintaining the interoperability with the System of National Accounts and the System of Environmental-Economic Accounting that gives Social Accounts their analytical value. Where national statistical capacity is limited, regional or international partnerships can provide additional institutional stability for the development and maintenance of Social Accounts over time.

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FOOTNOTES

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2. ¶2 System of National Accounts 2025, Preface, Section A (Introduction).
3. ¶3 SEEA Ecosystem Accounting, para. 6.51.
4. ¶4 SF-MST, Glossary, definition of "Employment".
5. ¶5 United Nations, 2030 Agenda for Sustainable Development, SDG Target 2.3.
6. ¶6 SEEA for Agriculture, Forestry and Fisheries, para. 2.
7. ¶7 United Nations, 2030 Agenda for Sustainable Development, SDG Target 8.9.
8. ¶8 SF-MST, Table 5.3.
9. ¶9 United Nations, Transforming our world: the 2030 Agenda for Sustainable Development, SDG Target 14.7.
0. ¶10 United Nations, Global indicator framework for SDGs, Indicator 14.7.1.
1. ¶11 SF-MST, para. 5.66.
2. ¶12 United Nations, Global indicator framework for SDGs, Indicator 8.8.1.
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5. ¶15 United Nations, 2030 Agenda for Sustainable Development, SDG Target 8.8.
6. ¶16 Adapted from SF-MST, para. 5.69, and ILO Decent Work Indicators: Concepts and Definitions.
7. ¶17 OECD, Guidelines on Measuring Subjective Well-being, 2013.
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0. ¶30 TNFD Recommendations, Executive Summary.
1. ¶31 United Nations, Global indicator framework for SDGs, Indicator 1.3.1.
2. ¶32 IPCC, 2022, Annex II: Glossary, definition of "Resilience".
3. ¶33 TNFD Recommendations, Strategy C.
4. ¶34 SEEA Ecosystem Accounting, para. 6.51.
5. ¶35 TNFD Recommendations, Governance C.
6. ¶36 SF-MST, Chapter 5.4.
7. ¶37 SF-MST, para. 5.46.

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