Codes for Mapping Terms of Reference to ICES Science Plan 2025

Science plan	Task linked to code	Associated priority in science plan
1.1	Improve our understanding of the physical, chemical, and biological aspects of our seas and ocean and their interactions and trends.	Marine ecosystem science
1.2	Interpret findings and results in the context of ecosystem goods and services and the contribution of seas and ocean to people and society.	
1.3	Describe how species and their life histories, population and community structures, and interactions respond to environmental change.	Marine ecosystem science
1.4	Map and predict the distribution and status of benthic and pelagic habitats, their biota and biodiversity, and their sensitivity to environmental	Manne ecosystem science
	variation and change.	Marine ecosystem science
1.5	Describe connectivity and other spatial aspects within and between species and within and between ecosystems. Advance modelling capabilities to analyse ecosystems and predict responses to natural and anthropogenic drivers.	Marine ecosystem science
1.7	Investigate the ocean's role in carbon dynamics, including carbon sequestration and storage, and the impact of human activities such as fishing	
1.0	and mining on this.	Marine ecosystem science
1.8	investigate land—ocean interactions, e.g. land runoff of rainfail of contaminants, nutrients, sediments, freshwater, pathogens from agriculture, industry, and sewage.	Marine ecosystem science
2.1	Apply and further develop and test pressure, state, function, vulnerability and resilience indicators.	Impacts of human activities
2.2	Assess how human activity pressures act on the marine environment, independently and together, and on different spatial and temporal scales.	Impacts of human activities
2.3		
24	Apply and further develop approaches to forecast the effects of interacting human activity pressures on different spatial and temporal scales. Improve our understanding of the sensitivity and vulnerability of all ecosystem components to human activity pressures and, where possible.	Impacts of human activities
	provide spatially explicit, mapped, outputs.	Impacts of human activities
2.5	Model the transport of contaminants, pollutants, nutrients, and carbon in sediments, biota, and water from sources to areas of impact or sinks on different spatial and temporal scales.	Impacts of human activities
2.6	Develop an understanding of the potential spatial conflicts and opportunities for co-use, including management approaches supporting the	
27	sustainable use and protection of marine resources. Further explore and apply the concent of a sustainable and inclusive ocean economy, including specific definitions of blue economy and aspects	Impacts of human activities
2.7	of circularity.	Impacts of human activities
3.1	Develop and coordinate integrated, quality-assured, and cost- effective monitoring programmes, from coastal systems to open oceans and the deen sea.	Observation and evaluation of the same and same
3.2	Develop and coordinate mapping of habitats, including seabed mapping, from coastal systems to the open ocean and the deep sea.	Observation and exploration of the seas and ocean
3.3	Evaluate and optimize survey design, survey data handling, access, and analysis, with an emphasis on using multiple monitoring and observing	
3.4	systems together, e.g. those that are spatio-temporany consistent. Conduct analyses and testing of techniques, sensors, and the logistical and statistical aspects of survey design.	Observation and exploration of the seas and ocean
3.5	Develop environmental monitoring, including for existing and emerging contaminants and pathogens.	Observation and exploration of the seas and ocean
3.6	Develop more effective mechanisms to ensure monitoring and surveillance data (e.g. vessel monitoring system [VMS] and automatic	observation and exploration of the seas and ocean
	identification system [AIS]) can be reused or reprocessed.	Observation and exploration of the seas and ocean
3.7	observation, and exploration (citizen science).	Observation and exploration of the seas and ocean
3.8	Develop and apply ethical standards and animal welfare in biological sampling.	Observation and exploration of the seas and ocean
3.9	Develop appropriate data collection approaches for social and economic data.	Observation and exploration of the seas and ocean
4.1	Understand the opportunities and application of digitization, including digital twins.1 Develop poyel and more efficient ways of analysing, sharing, and presenting data from observation and monitoring using artificial intelligence.	Emerging techniques and technologies
4.2	and machine learning.	Emerging techniques and technologies
4.3	Develop, test, and evaluate new and emerging technologies for ocean observations.	Emerging techniques and technologies
4.4	Develop, test, and evaluate new and emerging biological and chemical techniques and technologies.	Emerging techniques and technologies
4.5	Develop, test, and evaluate new technologies to monitor emerging pressures on the marine environment.	Emerging techniques and technologies
4.0	impacts.	Emerging techniques and technologies
5.1	Advance the science and implementation of EBFM.	Food from the sea
5.2	Increase understanding of stock structures, migrations, life histories, natural mortality, climate change, and foodweb impacts on marine species and multispecies interactions.	Food from the sea
5.3	Improve methods to assess the status and development of marine living resources, including single-species, multispecies, mixed- fisheries stock	
E 4	assessment, and data limited and ensemble- modelled stocks. Develon and conduct management strategy evaluations of FBFM proposals, along with evaluation of potential trade-offs, including addressing	Food from the sea
5.4	uncertainty.	Food from the sea
5.5	Assess aquaculture production potential and carrying capacity for different systems and consider multi-use scenarios and the effects of climate change.	Food from the sea
5.6	Assess interactions between aquaculture and other ecosystem components, including pressures imposed and the associated risks aquaculture	lood nom the sea
	poses. Assess the broader role of ficheries and aquaculture in society, including resilience of and interactions between food systems, including the role.	Food from the sea
5.7	of trade.	Food from the sea
5.8	Assess the role of non-food production (i.e. other uses of human consumption biota e.g. for feed and pharmaceuticals) and its sustainability and effects on food production	For all forms the same
5.9	Assess the role and impact of the exploitation of non-food byproducts (e.g. feed and pharmaceuticals) on the sustainability of wild-capture	roou nom the sea
	fisheries.	Food from the sea
5.10	Assess food safety issues, including from pathogens and contaminants.	Food from the sea
5.11 6.1	ressess annual wenare in capture instances and aquacuture. Develop methods to support advice for implementing marine policies and commitments applying to ICES Member Countries, reconciling use and	Food from the sea
	conservation.	Conservation and restoration science
6.2	Develop methods to evaluate the suitability and effectiveness of management measures for biodiversity conservation and restoration.	Conservation and restoration science
6.3	Develop advice on management measures for conservation and restoration.	Conservation and restoration science
6.5	ressess one energy of spatial conservation measures, including MPAs and other effective area-based conservation measures (UECMS). Develop, assess, and report on marine ecosystem conservation status and trends, including human use and associated challenges and risks using	Conservation and restoration science
	integrated ecosystem assessments (IEAs).	Conservation and restoration science
6.6	Develop methods to analyse the impacts and benefits of biodiversity conservation and restoration activities, including social, cultural, and economic aspects.	Conservation and restoration science
6.7	Assess conservation and restoration measures in the context of changing environments, particularly from climate change.	Conservation and restoration science
6.8	Assess protection, including measures and their effectiveness for endangered, threatened, and protected species.	Conservation and restoration science
7.1	Further develop and apply ethical standards to carry out social science within ICES.	Sea and society
7.2	Assess the social, economic, cultural, and governance aspects of coastal and maritime communities and their dependence on the marine ecosystem and the services it provides.	Sea and society
7.3		
7.4	Develop and improve social and economic evaluation methods and indicators for welfare and well-being assessments and trade-off analysis.	Sea and society
7.4	pessive arternative rutures, management options and scenarios for marine SES, including analysing trade-offs, risks, and opportunities at different scales.	Sea and society
7.5	Assess the vulnerability and resilience of marine user groups, society, and communities to climate change-induced changes in the marine	
7.6	ecosystem.	Sea and society
	Propose, analyse, and evaluate mitigation and adaptation options that enable marine users to adjust to changing activities and ecosystems.	Sea and society
7.7	Develop ways to include, acknowledge, and consider Indigenous, traditional owners and experiential knowledge from marine users and communities in evaluations of SES.	Sea and society
7.8	Develop and foster transdisciplinary approaches, including participatory science and stakeholder engagement processes.	Sea and society
7.9	Assess the political and institutional context and its impact on SES.	Sea and society
7.10	Develop concepts of social justice and assess the role of social justice in human and human-ocean interactions.	Sea and society