

# Centre of Maritime Health and Society Strategic plan 2020-2024

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# Centre of Maritime Health and Society

## Strategic plan 2020-2024

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### Centre of Maritime Health and Society, CMSS

CMSS is a research unit providing research and documentation that can help optimize the working environment, health, safety and the shipping economics within industries, such as shipping companies, the fishing industry, ship yards, industry suppliers, off shore companies, wind power industry, as well as supporting maritime educational institutions and authorities.

CMSS is the result of a merger in 2011 between two maritime research units at SDU; the former Centre of Maritime Health and Safety (Health faculty), which was established in 1992, and the former Centre of Maritime Research and Innovation (Social Science faculty). This merger aimed to strengthen and promote the synergies between the two maritime research fields. CMSS is funded by the Danish state and received 4.0 million DKK in 2018. In addition, external funding is applied for.

The strategic plan for 2020-2024 is structured in stages, including the following elements: Mission, vision, and core areas. The strategic plan is revised annually, to the extent that is needed.

## 1 Mission and vision

### 1.1 Mission

The mission of CMSS is to establish relevant research-based knowledge contributing to:

- the establishment of healthy, safe and stimulating working conditions in maritime jobs in line with the development of the society and the needs of the maritime industries;
- ensuring the best possible conditions for the maritime industry related to environmental and business economics.

## 1.2 Vision

The vision of CMSS is to play a leading role nationally and internationally in its core areas:

- Conduction of research at the highest international level, contributing to an innovative and sustainable maritime industry with healthy and safe workplaces
- Offering advice and disseminating knowledge and methods to stakeholders, including governments, social partners, and maritime safety consultants, based on high quality research and in collaboration with Danish and international research institutions
- Training future researchers in the maritime field in the areas of health and safety
- Building strong work relations with acknowledged national and international partners with regard to research and education.

## 1.3 Objectives 2020-2024

CMSS has the following objectives:

- To identify, explore and address present and future health and safety challenges in the work environment of the maritime setting.
- To identify, explore and address present and future environmental and business economic challenges in the maritime industry
- To identify, explore and address present and future health and safety challenges in the Arctic
- To develop and contribute to education in the core areas of CMSS
- To develop skills and competencies of the staff to get academic qualifications that are in line with requirements of University of Southern Denmark
- To ensure that the research within CMSS contributes to the existing knowledge, and has impact on The Blue Denmark in matters of safety, health, environmental economics and business administration

# 2 Core areas

## 2.1 Research

CMSS aims at offering all types of research activities relevant to maritime health and safety. This includes the impact of interventions on employees' health and well-being, the development of work arrangements, the maritime labor market and environmental and business economics. In addition, CMSS intend to identify and describe occupational health indicators and risk factors, and furthermore, to plan, implement and evaluate interventions, policies and solutions related to risk management, analyses and

development of (best) practise so that they contribute to the promotion of healthy and safe maritime workplaces.

The core areas of research within CMSS are:

- Maritime Health and Safety
- Environmental and business economics

CMSS strives to enhance close collaboration with other SDU units and other faculties to guarantee multi-disciplinary, theory-based and methodologically high-level research, supervision and teaching. In addition, CMSS aims for close collaboration with leading national and international maritime and other relevant research institutes as well as the Blue Denmark to ensure innovative, relevant and sustainable research initiatives. Development of methods and application-oriented strategies is highly prioritized. In order to meet the research aims to the highest degree, CMSS also applies for external competitive research funding.

### **2.1.1 Maritime health**

The aim of the research activities within CMSS in relation to maritime health is to produce knowledge that contributes to healthy and health promoting maritime workplaces and to prevention of lifestyle-related diseases among workers in the Blue Denmark. The following fields will be targeted:

- Research on the psychosocial work environment and health, including creation of knowledge that contributes to healthy and attractive maritime workplaces where employees thrive and without risk of psychosocial and somatic illness, and where a high ability to work is retained.
- Research on the relationship between fatigue, stress and working conditions, social relationships and corporate culture aiming at preventing and reducing fatigue and stress.
- Research on the relation between work-related physical and mental exposures and the ability to work, including the relation to sick leave and job retention.
- Research on chemical hazards and related health risks including environmental and biological monitoring, risk assessment and monitoring of perceived risk in order to establish a knowledge base for effective risk management relating to chemical safety.
- Research on the maritime health care system including register studies on causes, outcomes and costs related to seafarer's contacts to Radio Medical Denmark.
- To establish a database consisting of seamen, fishermen and offshore workers. These register-based data will be linked to mortality,

hospitalization, cancer, sickness absence and other relevant information from different registers.

- To establish a maritime cohort for monitoring trends, effects of preventive measures and structural changes with regard to work and health.
- Research about lifestyle; such as diet, exercise and smoking among maritime employees, as well as motivational factors, policies and structural conditions on board to promote and facilitate healthy lifestyle and workplaces.
- Development of new and strengthening of the existing epidemiological and register-based research of CMSS.

### **2.1.2 Maritime safety**

The aim of the research activities within CMSS in relation to maritime safety is to produce knowledge and develop activities within:

- Trends in maritime accidents in regards to fishery, merchant marine and offshore.
- Prevention of accidents and improvement of safety in workplaces within the maritime industry.
- Associations between working conditions and occupational disorders.
- Other relevant research programs based on CMSS data on accidents and diseases.

### 2.1.3 Maritime environmental and business economics

The aim of the economic research activities within CMSS is to advance use and management of natural resources in the marine environment and promote an understanding of how the maritime sector interacts with society in multiple, overlapping dimensions.

With the research program within economics, CMSS aims to generate knowledge that promotes understanding of how the maritime sector interacts with society in multiple, overlapping dimensions. These dimensions focus primarily upon environmental quality, regulation, decision-making and management, industrial competitiveness, and innovation.

The research on economics is focused on the following themes:

- Methods for identifying key environmental values and other potential externalities (e.g., network path dependencies for fuel sourcing) affected by the maritime sector.
- Ways of incorporating key environmental values into decision-making in the maritime sector (internalization of externalities). Increased understanding of interlinked aspects of environmental quality (e.g. air, water, climate), local, national and international environmental legislation, and long run maritime onshore and vessel infrastructure investments in innovation and technological change. Examples include analysis of environmental or organizational regulatory policies that may shift tradeoffs amongst environmental benefits and costs, such as fuel-switching requirements where local and global net benefits may differ.
- Increased understanding of short- and long-run environmental and economic impacts of innovation and technological change in physical and human behavioral (management, knowledge and information sharing) components of the maritime sector. This includes, e.g. consideration of shipping and/or cruise vessel operations as intermediate goods connecting producers and consumers, where value and potential ability to grow profits through improved environmental quality of the intermediate goods depends on how consumers demand, acquire and react to information.
- Evaluating feedbacks between environmental and economic systems that feed into policy-making and providing an increased understanding of trade-offs for marine resource management as well as for public and private decision-making in the maritime sector.
- Advancing approaches that integrate ecological and economic models that can help improve the design and evaluation of marine resource management as well as identify regulatory needs, associated costs and socioeconomic implications.

- Methods for efficient allocation of scarce monetary, natural, human or other resources that factor into decision-making and management of marine resources. These include accurate assessment and accounting of external environmental and organizational impacts in the maritime sector, as it operates at sea (e.g. shipping), as resource harvesters (e.g. fishers) or consumers (e.g. marine-based tourism), or in port (as resource demanders for e.g. electricity, fuel, or as externality producers of e.g. air and water pollution).
- Identifying gaps in ocean governance and addressing key future environmental challenges in ways that accommodate the needs and interests of multiple stakeholders - from small-scale users of marine resources (e.g. fisheries management) to the shipping industry (e.g. adaptive management in the maritime sector). The changing Arctic Ocean provides excellent case study opportunities as areas previously needing little or no local, national or international governance become more accessible. In so doing, they provide substitute opportunities to other parts of the world, and require that existing governance gaps be addressed to avoid regional imbalances that potentially threaten a variety of social goods, including ecosystem health and economic development.

## 2.2 Research dissemination

CMSS aims at disseminating research-based knowledge for the benefit of the maritime world. The research results are published in the academic field, but CMSS additionally disseminates research results to central actors in the maritime sector, i.e. authorities, labour market stakeholders, advisors and other users of research-based knowledge. Therefore, awareness of the research within CMSS is expected to increase among actors in the maritime sector as well as among national and international partners. CMSS strives to:

- Disseminate systematically the centre's own research, i.e., information on scientific articles and reports as well as on new and ongoing research projects.
- Disseminate results and activities via CMSS newsletters as well as by the CMSS website.
- Participate and give presentations at national and international conferences, seminars etc.
- Offer presentations at maritime educational institutions, public conferences, and information meetings for stakeholders and partners.

## 2.3 Education

In collaboration with SDU and other universities, CMSS participates in the education and supervision of students and upcoming researchers, e.g. BA, MSc PhD students and postdocs with an emphasis in the maritime area at CMSS. This gives CMSS the

opportunity to communicate the Unit's research results. Additionally, the researchers at CMSS support the maritime education at respective academies and other training institutions. It is essential for the Blue Denmark that its current and future needs of knowledge on maritime health, work environment and safety, and environmental and business economics will be fulfilled. New talented and qualified researchers are therefore needed in these research areas. To ensure this, CMSS aims to:

- Supervise and censor bachelor, master and PhD students.
- Be available for education and training of students in relevant educational institutions, maritime schools, etc.
- Attract and train talented researchers to ensure the best possible recruitment base for future researchers, so that CMSS and other relevant maritime research environments can continue to provide health and safety research of high international quality.
- Participate in the development of courses within relevant programs. These may include:
  - BSc and MSc in relevant academic programs at SDU and partner institutions.
  - Development of seafarers' skills and competencies with Blue SDU
  - Program on risk and safety management
  - Development of competencies among maritime doctors, general practitioners, specialists in occupational health and other relevant disciplines according to Maritime Labour Convention 2006
  - Organization of short courses on maritime topics

### **3. Core areas – Impact**

The primary output of the core areas is new and applicable knowledge for the maritime field in terms of scientific publications, reports and popular scientific communication as well as teaching and supervision of students. The effects of these outputs are:

- Increased awareness among authorities, collaborators, and other maritime stakeholders of the research performed by CMSS as well as the general knowledge about maritime work environment, safety, health and environmental and business economics.

- Increased knowledge to facilitate maritime authorities and companies in the Blue Denmark to focus their efforts and policy development on health, safety and work environment as well as on environmental and business economics.
- Facilitating implementation of research results within the maritime industry to improve health, safety and work environment of employees of The Blue Denmark.
- Identification of future challenges within the maritime field concerning health, safety, work environment and business economics.
- Increased recruitment of new talented and qualified researchers in the field.