

## CUL-MAR-Skills Project: Development of Culinary Skills in Maritime

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### Abstract

*It seems that nutrition, which plays a major role not only in the health and physical well-being of seafarers but also in their contentment, happiness, and motivation, has not received the attention it has deserved so far. However, proper nutrition on board not only helps seafarers perform their jobs effectively but also supports them to be healthy, happy, and successful. From this point of view, the galley, where the staff have important duties in the preparation of appropriate and delicious meals, can be defined as the place where the heart of the ship beats. This study introduces an Erasmus VET Project, "CUL-MAR-Skills Project"\*, which aims to determine the needs of seafarers regarding food and to develop a module to train next-generation galley staff who are aware of the importance of balanced and nutritious food on board for healthy and motivated seafarers, waste management for blue seas, and sustainability for a green world. It emphasizes the importance for galley staff to consider environmental and sustainability issues while preparing healthy, balanced, and nutritious food to meet the needs of the crew. The project also aims to develop training programs for professional skills in ship logistics services and maritime food supply. All in all, the project aims to provide balanced and healthy eating habits that will appeal to all maritime sector employees, starting from ships, and to train environmentally friendly chefs who will serve to create a sustainable world. The project will also help establish a tasty bridge among neighboring countries in the region while exploring common maritime and cultural heritage.*

**Keywords:** Maritime, Nutrition, Seafarers, Galley, Sustainability

### 1. Introduction

Food has an important place in the lives of all living things since all of them need it to survive. However, for humans, although food is primarily a means of survival, it has meanings beyond this because a balanced diet not only satisfies their hunger but also provides them with the vitamins and minerals they need to live healthily. For this reason, they need to be more conscious about their food choices and have a diet to meet the requirements of their lifestyle, job, and age. Adequate and balanced nutrition is very important for individuals to live healthy and strong lives, increase their welfare level, and improve their quality of life (1).

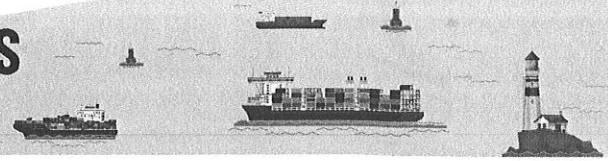
It is clear how much and what kind of nutrients people should take to lead a healthy life. These amounts and characteristics, which vary according to gender and age, also vary according to the calories spent by the person during the day's work, in other words, calorie needs. The calorie needs of people are proportional to the work they do. The calories needed by someone who works in an office and sits at a desk are different from the calories needed by someone who spends physical strength and is constantly on the move. The maritime profession also differs from other professions in terms of both the work done and the working environment. This situation requires that the number of calories that seafarers need to take to maintain their lives healthily should be different from desk workers. While a sailor should take 4750 calories, (2), which can be 6000 calories depending on the place he works at, [3] a desk worker should take a maximum of 2500 calories [4].

The maritime job differs from other professions not only in terms of the severity of working conditions but also in terms of the harshness of living conditions. Seafarers must be well-fed, in high spirits, and in good health to work successfully under these harsh conditions. However, seafarers work on ships where they do not have much room for movement, they stay away from land, their families, and friends for a long time, and they cannot do their favorite activities as they wish. Another problem caused by working on board is the limited access to fresh fruit, vegetables, and food. As such, there are several obstacles to their success and happiness. Fortunately, they are not impossible to overcome and can be solved with some measures. The most important of these measures is a healthy and balanced diet, which can be seen as the key for seafarers to maintain both their success and their health.

As can be seen, a healthy and balanced diet is extremely important firstly for the happiness, productivity, and efficiency of seafarers, and secondly for an effective performance onboard. This study will introduce the CUL-MAR-Skills project, which aims to address this important issue in detail.

### 2. Literature Review

The importance of good nutrition for seafarers has also been recognized by international organizations and some rules and regulations have been prepared in this regard. In 2006, the International Labor Organization International Labor Organization (ILO) provided comprehensive guidance on ensuring the health and medical care of seafarers. These guidelines cover a range of topics, including preventive measures to promote the health and well-being of seafarers, standards for medical facilities and personnel onboard ships, and protocols for responding to medical emergencies at sea. Additionally, the guidelines cover the rights and responsibilities of shipowners, employers, and maritime authorities in providing adequate health protection and medical care to seafarers, per international labor standards [5]. The Maritime Labor Convention has a regulation concerning the provision of food and catering services onboard ships. This regulation outlines the requirements for shipowners to ensure



that seafarers receive nutritious, well-balanced meals prepared and served in hygienic conditions, considering cultural and religious backgrounds, as well as the duration and nature of their work [6].

It is important to address nutritional concerns within the maritime industry and advocate for interventions to improve dietary provisions and health outcomes for crew members onboard merchant ships. Clark, Coggon, and Cruddas (2019) studied this and questioned whether nutritional issues are underestimated in merchant ships. The research investigated the prevalence and nature of nutritional challenges faced by crew members working on merchant vessels. It also discussed factors such as access to adequate and varied food options, the impact of long voyages on dietary habits, and the potential consequences of poor nutrition on the health and well-being of seafarers [7].

Some researchers pointed out the importance of learning about dietary patterns of seafarers. They discussed the importance of exploring factors such as dietary habits, access to fresh and nutritious food onboard ships, the prevalence of malnutrition or deficiencies, and potential health implications. They claimed that it was possible to raise awareness to improve the nutritional well-being of seafarers and contribute to the broader discourse on maritime health and welfare if dietary patterns of seafarers are known [8]. An important starting point of the research related to food onboard is to investigate the nutritional status of seafarers. A study on this issue found that eating habits and dietary intakes in maritime settings are unhealthy. Seafarers consumed high amounts of meat, processed meat and eggs, frozen and canned food, sugary drinks, alcohol, and fatty and salty foods, but low amounts of fruits, vegetables, dairy products, and cereals. aboard typical ocean-going cargo ships [9].

Some studies have focused on investigating the relationship between the nutrition of certain diseases. A study that investigated the relationship between the nutrition of seafarers and metabolic syndrome and cardiovascular diseases found that malnutrition triggers these two diseases and increases stress [10]. This study also concluded that seafarers' adoption of conscious eating habits can lead to an increase in both individual and sectoral productivity, sustainability, quality of life, and improved health and well-being. In a study conducted to determine the dietary habits of Turkish seafarers on board ship, in which 60 seafarers participated, it was found that Turkish seafarers generally eat a healthy diet and pay attention to their food and drinks. According to the findings obtained from the data, it was seen that they avoided or tried to avoid the foods and beverages that they thought could be harmful to themselves as much as possible [11].

### 3. Methodology

The method to be used to determine the curricula of the courses to be prepared within the scope of the project will be the application of questionnaires. The stakeholders to be

consulted on the subject are divided into three groups and three separate questionnaires are prepared to be applied to these groups. The first questionnaire is aimed at students and seafarers who are or have been on board. It intends to determine their current situation, problems, and expectations. The second questionnaire is prepared to understand the perspectives of the staff working in the ship's kitchen and the third one is prepared to learn the views of the employers.

Besides the questionnaires various observations and interviews were conducted during and after the preparation of the project proposal to clarify the details of the needs and to elaborate the programs exactly in line with the needs. In view of these, it is concluded that training ship cooks requires a comprehensive approach that covers various aspects of culinary skills, safety procedures, and operational knowledge specific to maritime environments. The following can be regarded as the basic considerations for developing an education and training program for marine cookery.

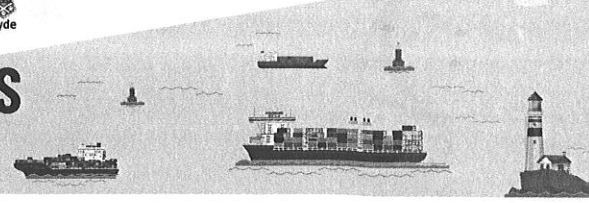
*1. Basic Culinary Skills:* Starting with foundational culinary skills such as knife handling, food preparation techniques, cooking methods (e.g., grilling, baking, frying), and food presentation. Ensure that ship cooks are proficient in preparing a wide range of dishes to meet the diverse tastes and dietary needs of crew members.

*2. Food Safety and Sanitation:* Emphasizing the importance of food safety protocols, hygiene practices, and sanitation standards in accordance with maritime regulations and international guidelines (e.g., Hazard Analysis and Critical Control Points - HACCP). Train ship cooks to handle food safely, prevent cross-contamination, maintain proper storage conditions, and follow hygiene protocols in the galley also consider waste management (not only for the limited stores at sea conditions but also in view of extra expenses for delivering the waste in port or high penalties for marine environment pollution if discharged improperly overboard at sea).

*3. Menu Planning and Nutrition:* Teaching ship cooks how to plan balanced menus that provide adequate nutrition for crew members working in physically demanding conditions. Incorporate principles of nutrition, portion control, and dietary requirements into menu planning, considering factors such as cultural preferences, food allergies, and special diets.

*4. Galley Operations:* Familiarizing ship cooks with the layout and equipment of the galley, including cooking appliances, refrigeration units, storage areas, and safety features. Train them to efficiently organize workflow, manage inventory, minimize waste, and maintain cleanliness in the galley while adhering to space constraints and safety regulations.

*5. Emergency Preparedness:* Providing training on emergency procedures and crisis management specific to maritime environments, such as fire safety drills, evacuation protocols, and first aid training. Ensure that ship cooks are prepared to respond effectively to onboard emergencies and assist with emergency duties as needed.



6. *Cross-Training and Multi-Skilling:* Encourage cross-training and multi-skilling among ship cooks to broaden their culinary repertoire and enhance their versatility in the galley. Offer opportunities for learning new cuisines, experimenting with different cooking techniques, and developing specialized skills (e.g., pastry making, seafood preparation) to expand their culinary expertise.

7. *Cultural Sensitivity and Communication:* Foster a culture of respect, diversity, and inclusivity in the galley by promoting cultural sensitivity and effective communication among ship cooks from diverse backgrounds. Encourage open communication, teamwork, and collaboration to create a positive working environment and ensure smooth operations in the galley. Introducing students to diverse culinary traditions, cuisines, ingredients, and cooking styles fosters an appreciation for cultural diversity and enriches their culinary knowledge. This context encourages exploration, creativity, and respect for different culinary practices.

8. *Continuous Learning and Professional Development:* Support ongoing learning and professional development opportunities for ship cooks to stay updated on industry trends, culinary innovations, and best practices. Provide access to training resources, workshops, seminars, and certifications to help ship cooks advance their culinary careers and enhance their skills onboard. Equipping students with essential professional skills, such as time management, teamwork, communication, and leadership, prepares them for success in a fast-paced culinary environment. This context ensures that students are not only skilled in the kitchen but also possess the soft skills necessary to thrive in their careers.

9. *Industry Standards and Trends:* Understanding the current landscape of the culinary industry, including emerging trends, evolving consumer preferences, and industry standards, is crucial. This context ensures that the curriculum remains relevant and prepares students for real-world challenges.

10. *Creativity and Innovation:* Encouraging culinary creativity and innovation within the curriculum empowers students to experiment, develop their unique culinary style, and push the boundaries of traditional cooking techniques. This context fosters a spirit of creativity and entrepreneurship among aspiring chefs.

11. *Ethical and Sustainable Practices:* Incorporating lessons on ingredient sourcing, sustainability, ethical considerations, and environmental stewardship instills a sense of responsibility and awareness in students. This context emphasizes the importance of ethical and sustainable practices in the culinary industry and encourages students to make informed choices.

12. *Experiential Learning:* Providing hands-on learning experiences, such as cooking labs, kitchen simulations, culinary competitions, and internships, allows students to apply theoretical knowledge in practical settings. This context enhances learning outcomes, builds confidence, and prepares students for real-world culinary challenges.

#### 4. The Aim of the Project

CUL-MAR-Skills Project aims to create a new, innovative, and joint curriculum to provide the participants with a sound education and training based on three pillars.

- The first of them is to promote healthy nutrition on board, which will give the participants an outline of the framework for proper nutrition on board and menu planning in addition to raising awareness of seafarers on proper nutrition.
- The second pillar consists of basic education for the victualling services and food logistics on board the ships, which will provide the participants with knowledge on supply chain management for the galley, how to prevent food waste on board, and how to be environmentally friendly in the galley, in addition to providing them with entrepreneurship and management skills with an emphasis in victualling services. It focuses on equipping students with the necessary tools and competencies needed to come up with creative and innovative ideas to be both entrepreneurs and intrapreneurs in the maritime sector.
- The third pillar focuses on culinary arts, which covers the activities to give students cooking skills with an emphasis on marine cuisine. To realize this, creative maritime culinary recipes reflecting the rich cultural heritage of the region will be used as a medium while teaching students the basics of culinary art. They will also research and find forgotten ship cuisine-specific recipes so that culinary practices can be based on these recipes. Despite its rich cultural background, traditional ship cuisine has been neglected.

Another aim of this project is to revitalize this cuisine and to compile a booklet of maritime cuisine recipes specific to the geographical area where the partner countries are located to preserve the cultural heritage of the maritime cuisine specific to the area. Enhancing the creativity of the participants, providing them with entrepreneurial and managerial skills, boosting friendship among nations, and sharing cultural heritage is only possible through the cooperation and interaction of the youth. Since they will work together in the galleys, there will be an emphasis on teamwork as well as cultural interaction, which naturally, increases creativity.

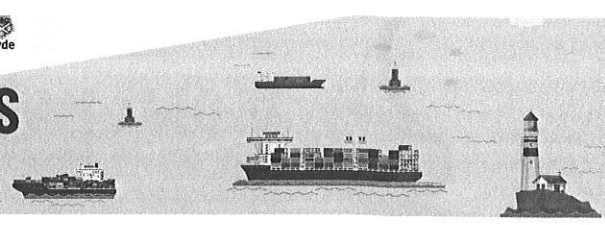
Over and above this, eventually, the Project will contribute to the motivation of the seafarers positively. Seafarers work under very unique conditions, that's why it is necessary to relax and boost their mood with something they like - good nutrition and delicious food is something that not only keeps them healthy and strong but also boosts their morale and makes them feel good.

CUL-MAR-Skills Project aims to achieve the following objectives and produce the following concrete results. The overall objective of the project is to provide the students/people with education and training on basic nutrition and culinary skills with an emphasis on maritime cuisine, as well as to give them

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basic knowledge on the logistics of supply to meet the supply-demand of the galley while gaining skills for entrepreneurship and increasing their awareness for environment protection & fighting against marine pollution. These skills are those that can help them to be employed easily and give them a chance to have a job anywhere in the maritime sector.

This objective will be realized in three steps.

The first step is to create a curriculum for a common maritime healthy nutrition course. The partner in charge of this objective will work together with the other partners to decide on the topics to take place in this course. It will be accompanied by video tutorials where necessary.

The second step will be to provide the students with education and training upon which they can build competence by taking the necessary steps to be experts in victualling, to have an entrepreneurial mindset, and to train students to be conscious about environmental protection and waste management, thus contributing to the protection of clean and blue seas. These three topics will be given in three different courses. These pieces of training given in the module are the first steps to be taken by a person who aims to work in the galley onboard a ship.

Apart from the courses, the project also aims to produce a booklet that will give a healthy compilation of the popular recipes used onboard ships throughout history; thus, helping the cultural heritage to live longer. The booklet will contain a unique combination of recipes peculiar to the maritime sector. With this feature, the project will undertake an important task for the protection of cultural heritage and help increase the creativity of the students in cooking, which is an art.

On the other hand, there is a lack of qualified employees in the maritime sector, esp. when it comes to cooks working onboard. The project will meet labor market needs and provide students with the skills to work in the ship's galley and help to close the shortage of employees in the maritime sector while reducing unemployment among young people. The project will also increase the flexibility of opportunities in vocational education and training since the participants with basic culinary education can find jobs in all sectors. All in all, the concrete results we would like to produce are 5 courses to train and educate the students and a cookbook for sustaining maritime culinary heritage while the long-term objective is to give the students another job alternative onboard and the unemployed a chance to have a job.

## 5. Innovative Aspects of the CUL-MAR-Skills Project

The project will combine both cooking skills with an emphasis on maritime cuisine including healthy nutrition and food supply chain management on board for proficient victualling with core entrepreneurship and management skills to be efficient staff on board. It aims to prepare a training program consisting of five courses. It will focus on a larger spectrum such as health nutrition, the logistics of supply for planning

the course menus that is for the galley in general, victualling services, and culinary arts for merchant ships, the Navy, and Cruise lines. The course will be a blend of the basic courses to be a proficient cook with an emphasis on marine cuisine and the courses that are the first steps to being an employee in the maritime sector, esp. seafarers with basic knowledge on entrepreneurship, supply chain management, and management in general. It also aims to prepare a maritime cookbook to contain recipes that reflect the culture of the participating countries. In this way, it will prevent their maritime culinary culture from fading away. Beyond all this, the most powerful feature that distinguishes the project from its peers may be to provide the participants with a virtue, an entrepreneurial mindset, which is one of the indispensable features of the 21st century, perhaps the most important one.

The most innovative aspect of the project is that it provides basic knowledge in areas that have not been covered much in the maritime sector and aims to provide participants with skills in key areas such as cooking, supply chain, management, and entrepreneurship and make them sought-after employees who will work in a limited space such as a ship.

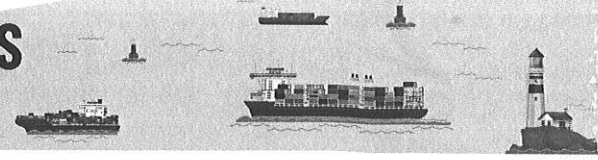
Another innovative feature of the project will be the creation of a booklet that will contain maritime cultural heritage for culinary.

The project will create synergy among different fields of education, training, and youth. Firstly, the special curricula for maritime victualling and culinary skills supported by 21st-century skills such as entrepreneurship and supply-chain or waste management will be designed to be used in the first module of the training to be given in the maritime schools in the partner countries. An important feature of this course is that it will include online materials. Therefore, anyone who wants to take the first steps to be a proficient worker in the maritime sector but cannot attend a school to realize this aim will be able to be familiar with the prerequisite of the job and can get further education and training in the related institutions easily. It can even be taken by staff working onboard.

The second step will be to design courses to give basic education in key maritime-related fields that can pave the way for the participants to get further education to work onboard ships.

The third step will be to prepare an entrepreneurship course to give the participants basic knowledge on how to prepare a business plan. A competition will be held among them to give basic concepts of commercialization of an idea, get ready to take risks, and prepare them for future challenges. The training will be transferable to other fields, so will be adaptable to other training activities a part of which requires soft skills enhancement.

Additionally, in the frame of the curriculum creation studies, the collection of recipes, especially those belonging to traditional maritime cuisine, will be compiled. This activity will also help the cultural heritage of maritime cuisine to be kept alive. In



this way, skills development and competencies that reinforce creativity will be enhanced. The creative potential of the people will be triggered.

The project will also reinforce the cultural awareness of all citizens since cuisine is a part of national culture, and it will facilitate social inclusion through culinary arts, and foster intercultural dialogue.

Finally, the project will help women find a job onboard so it will contribute to the promotion of gender equality. All in all, the project aims to furnish the students with skills and competencies to find a job esp. as kitchen staff in the maritime sector, which is full of job opportunities for cooks and there is a huge need for books containing nutritious recipes for seafarers. Since the project will combine culinary and maritime education with an emphasis on entrepreneurship, it is expected to have a strong impact on maritime culinary education and training.

On the other hand, it has the potential to create synergies between different fields of education, training, and youth since it will both help raise awareness of the youth about working as a galley staff on board and collaboration of instructors in various fields to train and educate able maritime staff. The staff will plan to combine their unique efforts with the jointly chosen aim of educating and training staff, esp. for the galley but generally to work on board.

## 6. Added values that the project can provide

A competitive, resilient, and socially fair blue economy needs highly qualified and skilled professionals. Many blue economy sectors have difficulties finding the right people, which hampers their growth. The European Commission is supporting actions to solve this mismatch that aim to:

- reduce the skills gap between education offers and labor market needs
- improve communication and cooperation between education and industry
- improve the attractiveness and awareness of career opportunities in the blue economy
- improve the ocean literacy culture at the basis of it all.

A career development model for the blue economy, which should contribute to faster and more efficient blue growth by incorporating high professionalism, innovative skills, and capacity requires innovative approaches, cooperation in all related fields, and professional guidance, for building a model for personal development through any career in the blue sector. It is of great importance to develop a brotherhood among people, to ensure intercultural approach and cooperation, and to solve possible problems. People from different nationalities and cultures, speaking different languages and having different eating habits, need to get to know each other, to make friends, and to benefit from the world's blessings jointly. This leads to another aim of the project which is to develop international cooperation and to create common modules based on seafaring cuisine supply-chain management, procurement for victualling,

and entrepreneurship. The point that should be noted here is the purpose of the project is not to teach how to cook seafood, but to create a common culinary module based on the characteristics of the maritime cuisines of different countries in addition to providing participants with 21st-century skills for better employment opportunities, especially on board. What is more, intercultural interaction will be provided with the unifying feature of food, which is the common need of every living thing.

## 7. Result and Discussion

Nutrition has an important role not only in protecting the health of seafarers but also in improving their performance, keeping them fit, and keeping their morale high. It is known that malnutrition can lead to fatigue, low morale, diabetes, and various diseases. When malnutrition occurs on board a ship, the harmful effects will be multiplied due to the harsh living conditions there. The fact that the nutrition of seafarers is so important has increased the importance of the ship's cooks and galley staff who will ensure proper nutrition and created the need to train and educate galley personnel who are aware of the importance of good and balanced nutrition, who know the food groups that seafarers need, how often they should be consumed, and who can cook meals that can be enjoyed by all seafarers living together from different cultures. Today, the expectations from kitchen staff are not limited to simply cooking good food. They are now expected to be aware of sustainability, pay attention to hygiene, be knowledgeable about food storage, and follow developments in nutrition and health.

The main aims of the CUL-MAR-Skills Project are to raise awareness among participants on healthy nutrition at sea, provide them with the necessary supply chain knowledge for a ship's galley, and equip them with entrepreneurship, management, and basic cooking skills, as well as provide cultural interaction and prevent the loss of cultural prosperity. The project will certainly train and educate ship cooks who can effectively speak the common language spoken by all seafarers, the language of food, and who have a green mindset that will ensure that the blue seas will remain blue forever.

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