

RESEARCH PROJECT ON MULTIPURPOSE SEA

Safely combining wind turbines and seaweed farms

How can the production of food and energy at sea be safely integrated, the British Lloyd's Register Foundation would like to know. University Fund Wageningen saw to it that a research project was set up.

TEXT YVONNE DE HILSTER PHOTO SHUTTERSTOCK



Gone are the days when humans only used the seas and oceans for cargo and passenger transport, fisheries and drilling platforms. More and more players are discovering the scope for using the sea to farm fish, seaweed or energy, or for tourism, waste disposal or mining. The potential for innovation and 'blue growth' out at sea is not lost on the European Union either.

But how can the production of food such as fish, mussels or seaweed be safely combined with, for instance, an offshore wind farm? In collaboration with the British charity Lloyd's Register Foundation (LRF), Wageningen University & Research and TNO will carry out a study in the project SOMOS (Safe production Of Marine plants and use of Ocean Space), focussing on seaweed production in amongst wind turbines. LRF has granted 500,000 pounds



PHOTO GUY ACKERMANS

FANNY CASTEL
Relationship Manager
University Fund Wageningen

sterling to the SOMOS project. This charity is linked to the Lloyd's Register Group Ltd, a global engineering, technical and business

services organisation operating in the fields of marine, oil and gas, low carbon power and assurance services. 'We support engineering-related research, training and education which improve the safety of the critical infrastructure that is crucial to our society,' explains Ruth Boumphrey, Director of Research at the foundation. 'Food production is part of that critical infrastructure. Wageningen is a top institution in the field of sustainable and safe food production. With the results of SOMOS we shall be contributing to the safe production of both food and energy.' LRF had never worked with Wageningen before. The collaboration was initiated through an alumnus with connections with a daughter concern of Lloyd's Register, and University Fund Wageningen organized the drawing up of the research proposal and the formation of the research team.



An alternative will have to be found to the antifouling paint applied to the pillars of the turbines to prevent mussels and dirt from sticking to them. And there is a need for guidelines for safe working conditions and emergency response plans for workers at sea.

In view of this diverse range of safety issues, a multidisciplinary team has been formed for SOMOS which includes food safety, governance, offshore, seaweed and marine experts. 'We shall start by making an inventory of the risks involved', says Wageningen researcher Marian Stuijver, who is responsible for knowledge sharing in the project. 'Next, we will analyse the cumulative effects and governance aspects of multiple use of the sea.' As far as possible, this will be done by analysing existing knowledge and tools, supplemented by a case study at a later stage. The ultimate aim is to come up with a practical framework of standards and skills as well as a set of recommended practices. The research process is as important as its outcomes, explains Stuijver. From the start, a community of stakeholders will be involved in the project, including licensing authorities, agencies that certify ships and platforms, and operators working on the site, so as to enhance skills and knowledge all down the line.

FUNDRAISING

UFW's Relationship Manager Fanny Castel supported the development of the project proposal. SOMOS project leader Luc van Hoof at Wageningen Marine Research sees a key fundraising role for UFW. 'I can find my way well enough in the world of EU funding but getting support from philanthropic foundations is a different ballgame altogether,' says Van Hoof. 'There are a lot of foundations around the world which address the same themes as Wageningen, but they all operate in their own way. University Fund Wageningen has the expertise to do the initial screening of foundations, listen to their priorities and keep track of them as the project is being set up.' ■

Info: marian.stuijver@wur.nl,
fanny.castel@wur.nl

The research will start by focusing on seaweed cultivation, which has expanded tremendously in the last 50 years in response to rising demand. China and Indonesia are the world's main seaweed producers. Seaweed is generally grown on lines hung in the sea in coastal areas. It is a labour intensive production process for which the scope for expansion is mainly offshore, with the lines attached to wind turbines. But this kind of seaweed farm requires extensive mechanization, and it entails new risks. Storms may wash away the seaweed farms, workers may fall overboard, and oil slicks could cause problems. This autumn, for example, a group of 13,000 Indonesian seaweed farmers launched a 200 million dollar class action against the Australian oil company PTTEP Australia for the damage caused by the 2009 Montara oil tanker disaster in the

Timor Sea. Besides the immediate loss of income at the time, these farmers are still suffering from the impact of the oil pollution on production levels.

PREVENTING COLLISIONS

The seaweed farming would mean significant changes for the wind farms. Currently wind farms are closed to shipping and fisheries so as to avoid damage from collisions, or from anchors cutting through electricity cables when they are hauled in. 'So one of the issues to discuss is the specifications for the seaweed vessels in terms of size, construction, navigation methods and maximum speed,' says Lex Vredevelde of TNO. This Dutch institute brings in its expertise on the mechanics and construction of, for example, offshore drilling platforms, wind turbines and ships. Another important issue is food safety.