SAFI Press Release (DOMMRS draft 10/10/2014)

"SAFI: Supporting and engaging with aquaculture and fisheries industries on applications for Satellite data"

Having begun a little over a year ago, and with two years to go, the European Commission Framework 7 funded project *SAFI* (Support to Aquaculture and Fishery Industry) is now well underway with its technical work applying satellite data to real-world issues, as well as with its engagement of the fisheries and aquaculture industries across Europe. With the goal of creating new and useful tools for the aquaculture and fisheries industries (as well as their ancillary services and regulatory bodies), SAFI hopes to provide tangible assistance to these industries and give significant socio-economic benefits; both in terms of improved efficiencies in current operations, as well as simplifying the process around exploring new areas of opportunity.

SAFI is using Earth Observation data (EO data, from satellites) of the sea, together with local environmental sampling data, historical patterns and the real-life experience and knowledge of potential users in our userboards, to plan and develop tools at the cutting edge EO technology. Coordinated by *ACRI-ST*, an independent, French SME which serves technical needs of EO data users, the Daithi O'Murchu Marine Research Station's main role is working with representative users across Europe and North Africa through its project partners in Ireland, France, Spain, Portugal and Morocco. This industry consultation process is helping to tailor these new and exciting products to simplify the work of these industries using satellite information. Crucially, this user consultation process ensures that the final products and technology from the project will actually be of use to people in their day-to-day work.

If you feel that you have something to offer the project, or you are just interested in learning more about it, please visit http://www.safiservices.eu/en/GetInvolved for the various ways of engaging with the project. Why not sign up for our newsletter or put yourself forward for one of our userboard meetings?

Further Information

The use of satellite data for marine resources applications began 40 years ago, linking fishing grounds to thermal fronts using sea surface temperature (SST) and National Oceanic and Atmospheric Administration Advanced Very High Resolution Radiometer (NOAA-AVHRR) imagery as input data; this approach established an important link between physical oceanography and fisheries' biology. The combination of SST and ocean colour satellite data for fisheries science was initially focused on the identification of potential fishing grounds of pelagic species such as mackerel, herring, and tuna. The parallel development of fisheries remote sensing and fisheries oceanography has taught us about the impact of various oceanographic parameters and processes on the behaviour (e.g. feeding and reproduction) of commercial fishing species. The evidence to date shows clearly that, at least in the case of some large migratory species like tuna, oceanographic conditions around the fishing locations (such as surface chlorophyll-a concentration, SST, primary production (PP), eddy kinetic energy (EKE) and geostrophic currents) show clear correlations with fish behaviour. These correlations allow prediction of the behaviour of such species.

The prediction of marine ecosystem structures and functions depends on a thorough understanding of the physical and biological processes that govern the abundance, distribution and productivity of the organisms on a wide range of time and space scales. Phytoplankton and temperature are

considered important variables controlling fish populations, with water surface wind considered a third variable for fish population distributions. The remote sensing community has contributed to the understanding of marine ecosystems, in a fisheries ecosystem-based management context, in a number of ways, particularly:

> 1) The development of remote sensing indicators for the analysis of marine pelagic ecosystems;

> 2) Time series analysis of environmental parameters to derive patterns and trends;

> 3) The identification of phytoplankton functional groups and oceanic food-web analysis; and

> 4) Mapping habitat preference identification for commercial fisheries species.

The use of satellite imagery for marine aquaculture applications began with the use of resolution optical imagery and radar imagery for planning of the inner coastal zone, with the penultimate generation of satellite data and GIS technology currently being used for site selection in Japan.

Despite the increasing amount of scientific literature on marine ecosystems based on remote sensed data the number of operational tools and products derived from this knowledge is currently quite limited; therefore, to address this gap, the SAFI project goal is to contribute with targeted new operational products from Earth Observation for fisheries and aquaculture applications that will be distributed through a service line linking and relying on the expertise of a number of SMEs brought together in the consortium.

OBJECTIVES

- To develop a service to assist aquaculture deployment (optimisation of cages location with respect to environmental and ecological context) and environmental monitoring during operations;
- To develop a service to support fishery by providing indicators of recruitments, abundances and shell/fish locations;
- To set up a network of SMEs at different levels of expertise (and earth observation (EO) awareness) required by the service – and to build a consistent and marketable offer;
- To evaluate the capacity of exportation, acceptance and sustainability of this service;
- To foster the use of sentinel 2 and sentinel 3 satellite data.

If you feel that you have something to offer the project, or you are just interested in getting involved, please visit http://www.safiservices.eu/en/GetInvolved for the various ways of engaging with the project and shaping its ongoing work for the benefit of industry and science.

Information for Editors

Overview

SAFI is a 3 year, Framework 7 project funded by the European Commission. Starting on October 1st 2013, it will run until September 30th 2016 and has a total budget of €2,509,843 shared between its 7 partners.

Project Website

http://www.safiservices.eu/

Partners in the SAFI Project

1. ACRI-ST (coordinator): a leading SME in French, EU & ESA GMES services (www.acri-st.fr).
2. University College Cork: Irish university providing undergraduate and postgraduate studies to over 17,000 students, and attracting the highest peer-reviewed research income per head in Ireland (cmrc.ucc.ie/).
3. COFREPECHE Ltd.: A French company with more than 30 years of experience, integrated technical, economic and financial expertise specialised in the sectors of fisheries, aquaculture and integrated management of coastal areas (www.cofrepeche.fr).
4. Instituto Português do Mar e da Atmosfera (IPMA): IPMA is a public research institution devoted to ocean and atmospheric science and technology, providing technical and scientific support to national policy (www.ipma.pt).
5. Instituto de Investigación y Formación Agraria y Pesquera (IFAPA): IFAPA is a public research institute from the Andalusian regional government dedicated to agriculture, fisheries and aquaculture research for sustainable development (www.juntadeandalucia.es/agriculturaypesca/ifapa).
6. Daithi O' Murchu Marine Research Station (DOMMRS): An independent research SME, the station's focus is on aquaculture husbandry, Integrated Multi-Trophic Aquaculture, fisheries research, waste minimisation and valorisation, environmental monitoring, macro- and micro-algae research, mitigation against harmful algal bloom effects, and the application of EO data to industry (www.dommrc.com).
7. Université Hassan II (UH2C): THE UH2C is a public institution under the Moroccan Ministry of Higher education, based in Casablanca, Morocco. Its role in SAFI is through its Department of Management and Valuation of Marine Resources.