



## **SAFI**

### **Support to Aquaculture and the Fishery Industry**

Grant Agreement No. 607155

#### **D12.1 – SAFI Service Operations Report**

#### **Executive Summary**

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	<p style="text-align: center;"><b>SAFI – Support to Aquaculture and Fishery Industry</b> <b>D12.1 – Service Operations Report</b></p>	<p>Version v1.0 Date: 21/10/2016 Grant Agreement No : 607155</p>
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### REVISION RECORDS

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21/10/2016	Antoine Mangin, SAFI Coordinator, ACRI-ST	

**Period covered by the project:** 01/10/2013 – 30/09/2016 (36 months)

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## PUBLISHABLE SUMMARY OF THE DOCUMENT

### 1.1 PROJECT SUMMARY

The objective of SAFI project (SAFI standing for “Support to Aquaculture and Fishery Industry”) is to exploit Earth Observation (EO) resources to support fishery and aquaculture industries in marine coastal regions.

The service, based on additive value brought by a network of SMEs, is adapted to each category of targeted users.

By making the best use of emerging EO products, the project aims at developing services to assist aquaculture deployment (optimization of cages location with respect to environmental and ecological context) and environmental monitoring during operations as well as supporting fishery by providing indicators of recruitments, abundances, and shell/fish locations (and its variability due to climate change). In this perspective, SAFI fosters the use of the latest generation of satellite sensors and in particular those on-board the future ESA Sentinel missions (Sentinel 2 and 3).

The capacity of exportation and acceptance of the developed services will be then evaluated on several pilot sites in Europe (Spain, Portugal, Ireland, France) and demonstrated in Morocco.

Finally, SAFI also allows the set-up of a network of SMEs at different levels of expertise (and EO awareness) required by the service in order to build a consistent and marketable offer.

The project finally leads to the development, deployment and evaluation of an integrated decision-support tool based on a web-GIS, broadcasting SAFI indicators to the various user concerned (industrials, public administrations in charge of fishery or aquaculture planning, EO service providers, great public) that will be fed by a service of EO high level data processing.

### 1.2 DELIVERABLE SUMMARY

Demonstration of the transferability of SAFI’s products, their underpinning science and algorithms, and aspects of the developed service, was considered fundamental to the SAFI team. This transferability had to be demonstrated in terms of novel sites, originally envisioned to be outside Europe. Such demonstrations formed the core of Work Package 12, which aimed to operate the whole of the SAFI service processing and visualisation chain for an external location (or number of areas) outside the European Union Area. This external location was originally envisioned to be Morocco. However, as the team describes here, in the case of SAFI, the external demonstration locations extended far beyond what was originally envisioned.

In terms of the science explored under the FP7-funded remit, and which underpins the SAFI indicator products, the demonstrations showed how algorithms can be exported from the Case Study sites in which they were developed, and deployed on new regions around the globe (with adjustment required in some cases). They also showed how new species suitability maps could be derived, using the SAFI set of advanced processing tools. This tested the potential capabilities of the SAFI Services’ link to the Coastal Thematic Exploitation Platform ([coastal-tep.eo.esa.int](http://coastal-tep.eo.esa.int)), being developed with European Space Agency funding. In doing so, it was shown that the algorithms developed through SAFI can be deployed directly by users on high volumes of data, ensuring that those using the system are ready to harness the full potential of Big Data accessibility, being enabled through the Copernicus Programme and associated data access initiatives.

In terms of capacity building, and advancing the capabilities of the Aquaculture and Fisheries sectors, the training undertaken by SAFI, supported by the demonstrations, highlighted the potential utility of the products, services, and expertise to provide the next generation of aquaculture and fisheries experts and operators with the capabilities to harness the potential of Earth Observation data. Meanwhile, the deployment of demonstrations in



Tunisia and Madagascar showed the potential for the SAFI service options to be deployed on a range of global locations, from those near-Europe to further afield. The Madagascar study also showed that the Service deployment can adapt to the need to acquire different datasets than those developed for European test sites, and support regional development of relatively young aquaculture industries worldwide.

Overall, the demonstrations undertaken within the framework of Work Package 12 highlight the potential utility of the SAFI products, services, and expertise that have developed under FP7 funding. This has been demonstrated in terms of:

- The potential to equip European and non-European Aquaculture and fisheries strategy implementers;
- The potential to provide regional- and national-scale environmental quality information to monitors and responsible agencies;
- The potential to provide decision support to developers and industry, streamlining applications and ensuring the sites are better located, and placed in the most effective area;
- The potential to provide both the current, and the next generation of aquaculture and fisheries experts and operators, with the capabilities to harness the potential of Earth Observation data

In looking beyond the FP7-funded phase of SAFI service development, it is important to remember that these success stories form a core component of the SAFI story. They serve to highlight not only the rigorous science undertaken to develop the SAFI products, but also the wide range of applications which the service can have, and the global potential for Service deployment. These demonstrations, their development and deployment have enabled the SAFI team to respond to the SAFI community's requests, exemplifying the SAFI commitment to User-led development for real-world deployment.