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Raise public awareness on the importance of mangroves

Marc Despinoy, Pierre Audisio, Franck Nivole, Iksandar Leite Costa, Lea Moyon

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AUDISIO PIERRE, COSTA IKSANDAR, DESPINOY MARC, MOYON LÉA, NIVOLE FRANCK

This collaborative project, co-funded by a number of partners, aims to set up a near-real-time monitoring platform of mangroves, a vital ecosystem both for coastal protection and for the populations who live with it on a daily basis. Using open-access satellite imaging technology, enables the monitoring of environmental changes resulting from human activities and meteorological phenomena that threaten the mangrove.



MANGROVES, A RICH ECOSYSTEM

In New Caledonia, the mangrove is a coastal ecosystem of salt marshes that develops in the intertidal zones along the coast of the "Grande Terre" and the Loyalty Islands. Covering a total area of **160 km²**, it's the second largest mangrove area in France's overseas territories. It's home to a **high level of biodiversity**, including endemic species, and provides important ecosystem services.

IMPLEMENTATION OF THE FRENCH PROJECT "SESAME" IN NEW-CALEDONIA

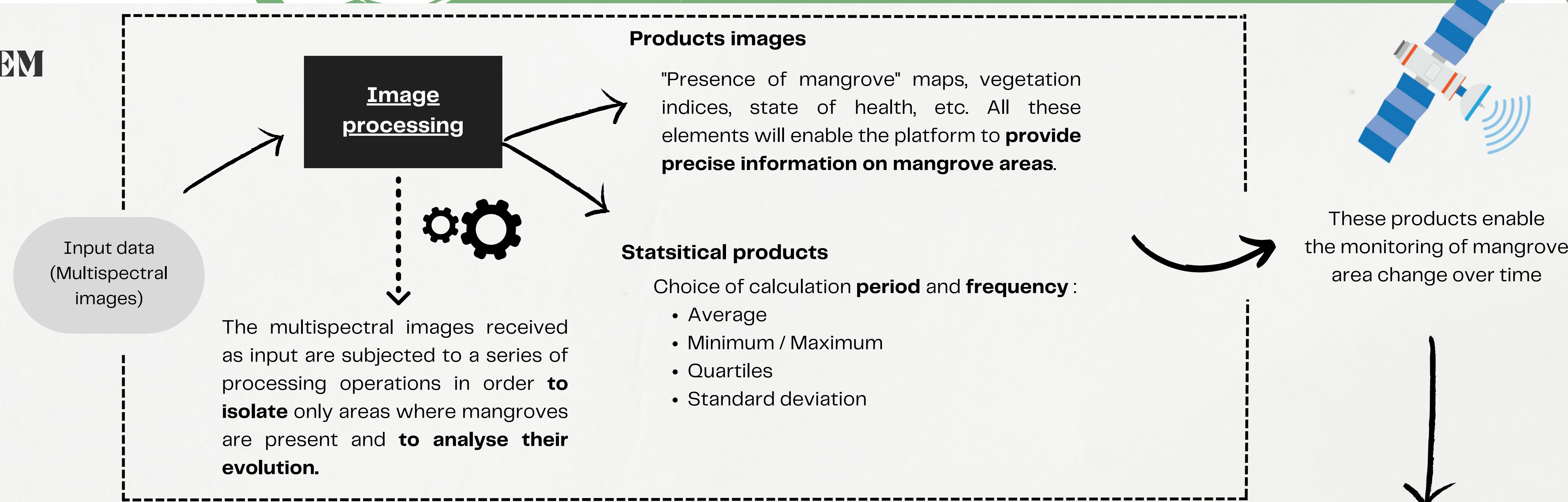
These actions are part of the project, "Monitoring the state of mangrove health in the Pacific", financed by the Pacific Fund, in French the SESAME project. SESAME stands for " **S**urveillance de l'**E**tat de Santé des **M**angroves dans le pacifique"

MONITORING A FRAGILE ECOSYSTEM

Dedicated to Earth observation, the Sentinel-2 satellite constellation acquires multi-spectral images of the entire territory every **5 days**. These data are **freely accessible**.



Satellite constellation composed of two satellites, Sentinel-2A and Sentinel 2-B, for **Earth observation**.



This monitoring work will serve as a mapping and a **reference** base. It could enable stakeholders to work together to develop various **conservation strategies** (identification of priority areas for protection).

A Mangrove map is produced using a **model based on raw channels** (visible, PIR and SWIR) as well as NDVI (Normalized Difference Vegetation Index) and NDWI2 (Normalized Difference Water Index 2) indices.

FOR WHOM?

Decision-makers

- To implement a policy of conservation, compensation and/or controlled exploitation.

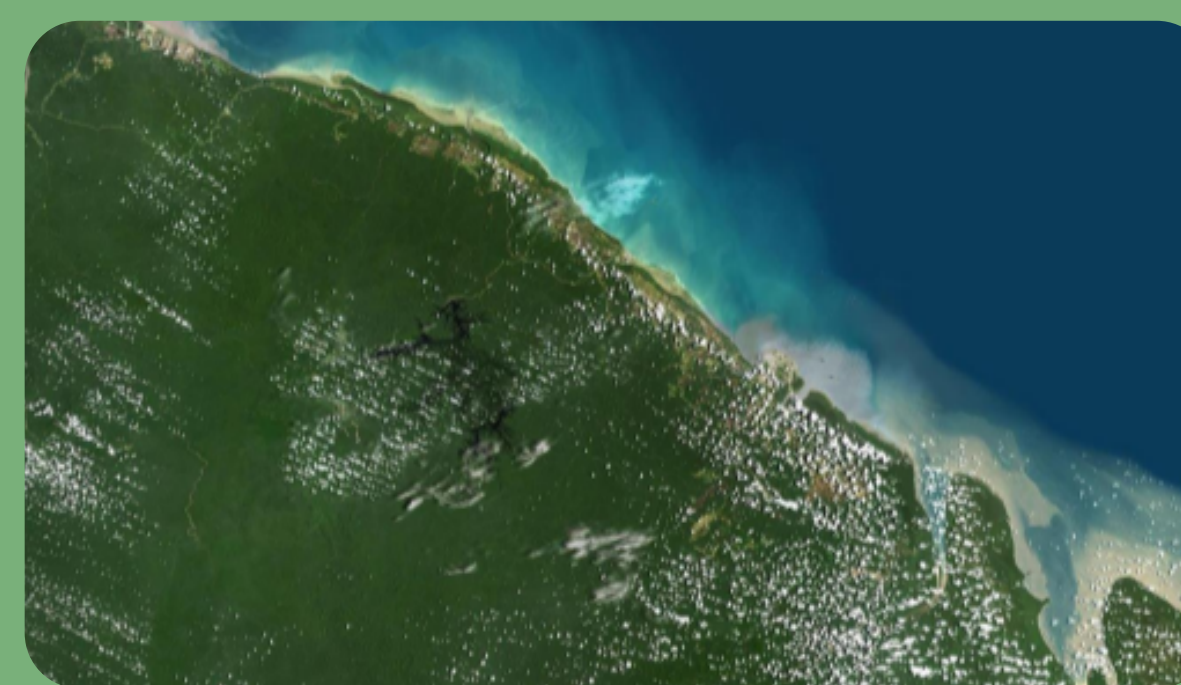
Associations

- To carry out restoration and monitoring campaigns.

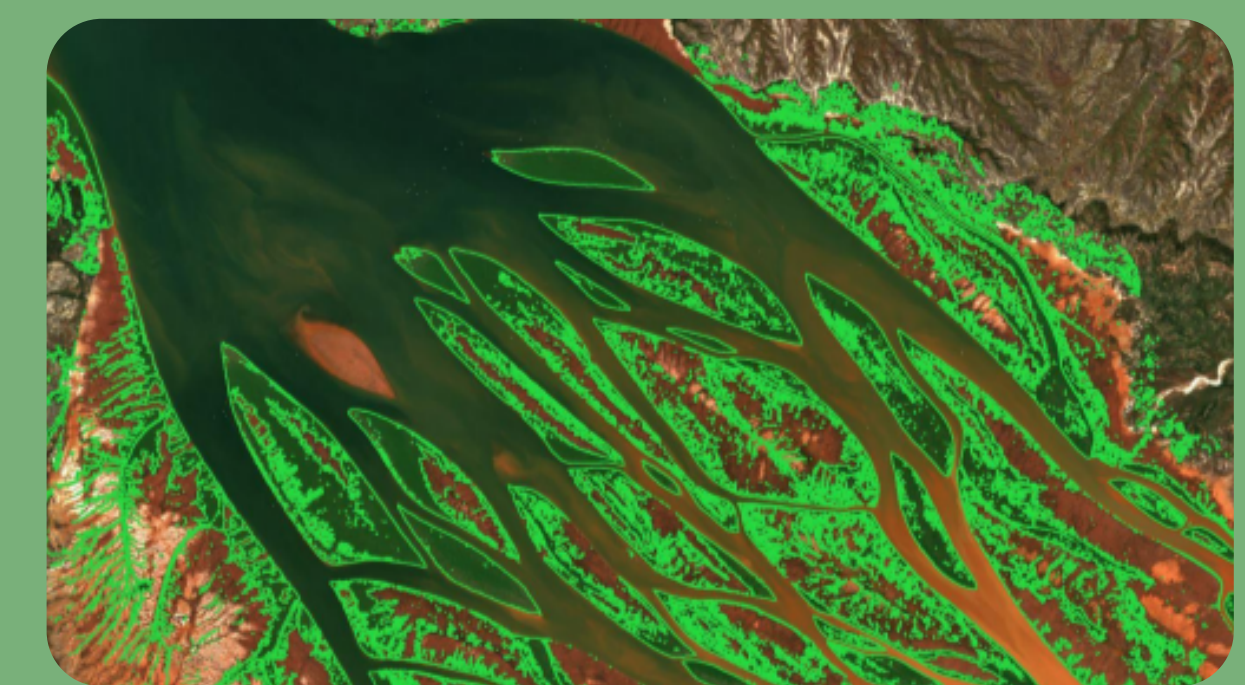
Scientists

- To provide tools and expertise on environment.

PLATFORM PRODUCTS



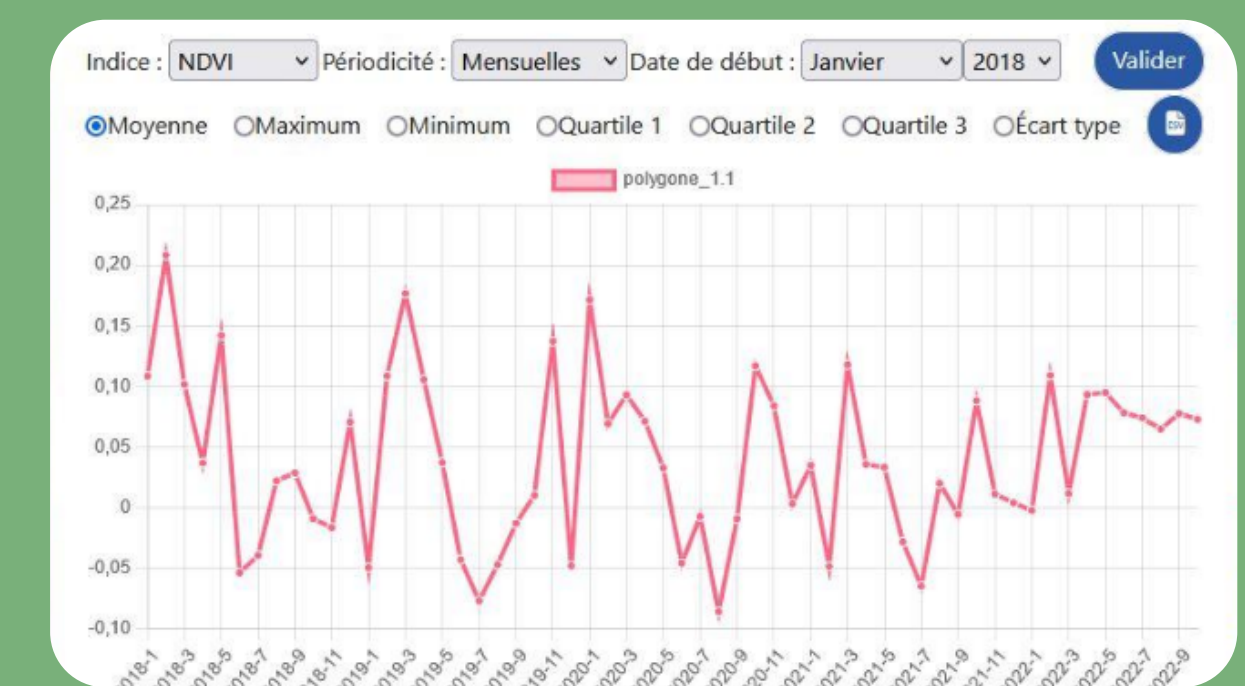
Original picture



"Mangrove" product, showing the extent of mangrove in the area under consideration

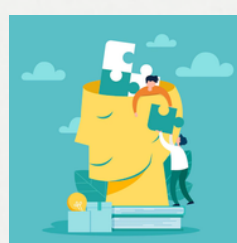
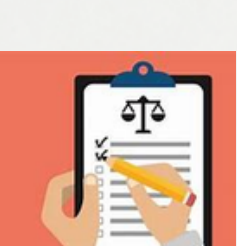
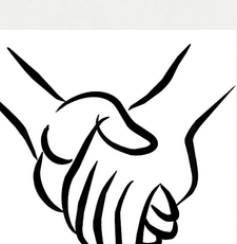


Loss (red), no change (grey) and gain (green) of mangroves in the area of interest under consideration

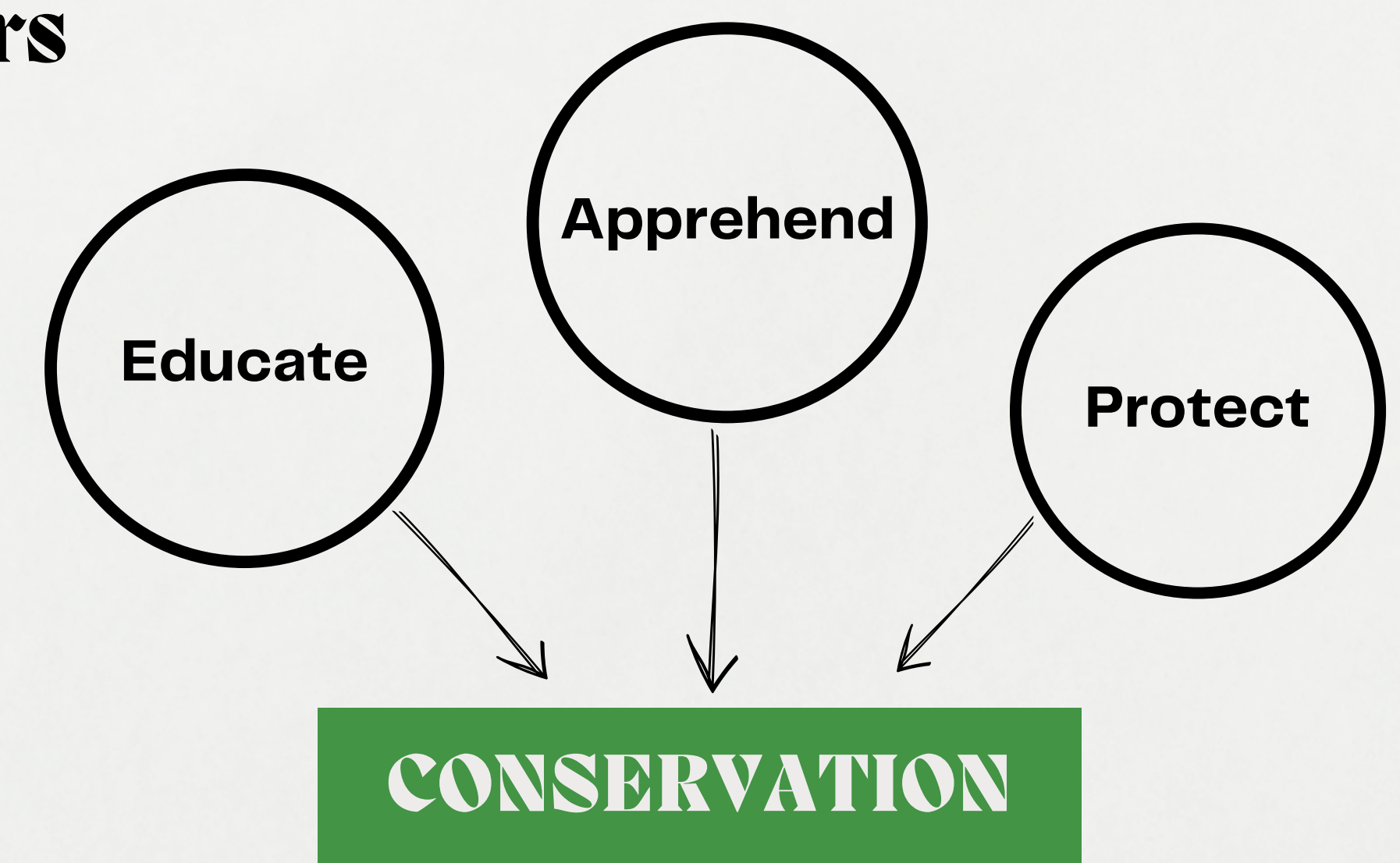


NDVI Monthly averaged time series (Normalized Difference Vegetation Index)

POSSIBLE CONSERVATION MEASURES

- Raise public awareness on the importance of mangroves. 
- Implement conservation strategies to ensure sustainable protection. 
- Promote sustainable practices that depend on the mangroves. 
- Identify the needs of mangrove stakeholders and guide them towards these needs.

3 Conservations Pillars



Mangrove conservation is a major **environmental protection issue** (e.g. combating coastal erosion, protecting coral reefs, etc.). It is therefore crucial that the various stakeholders **become agents of change**.

