



SUSTAINABLE MANAGEMENT OF MARINE RESOURCES



Indonesia chooses a French company CLS to set up its satellite-based oceanography centre for the sustainable management and development of its marine resources

Our Indonesian archipelago lies at the heart of the Coral Triangle and is one of the most important reservoirs of marine biodiversity on the planet. The region provides several billion dollars of annual revenue through fisheries, aquaculture and tourism, with fishing and aquaculture employing almost 50 million people. *These resources are now under threat as never before, ravaged each year by, illegal fishing that robs our government and our local fishermen of some 2 billion dollars. The region's natural resources are also threatened by global warming, pollution and coastal deforestation. To combat these risks and support our Blue Revolution, which aims to make Indonesia the world's leading producer of seafood, we have chosen CLS, a subsidiary of CNES, to create a major national centre to forecast changes to marine resources, protect them (especially against illegal fishing) and develop them.*

Our seas are a part of the Coral Triangle. The triangle is a major reservoir of the planet's biodiversity, containing some 30% of all coral reefs and the largest known nurseries of tuna. Since the 1970s, almost 40% of our coral reefs and mangroves have been lost. These changes could lead to an ecological disaster with rapid and dramatic consequences for the local economy.

But how to monitor such a big area? One solution is by satellite, backed up by CLS expertise in acquiring, processing, analysing and interpreting of satellite data, combined with 20 years' experience and expertise in space-based oceanography and the modelling of marine ecosystems.

We have chosen CLS and entrusted it with the creation of our national centre for the monitoring and sustainable management of marine resources. This national centre, commissioned at a cost of almost \$30M, will include a research and surveillance centre, a receiving station for the acquisition of high-resolution radar satellite imagery, models for forecasting the evolution of tuna populations and a training programme for scientists.

The data processed and stored will be acquired from observation and surveillance satellites covering the entire maritime region around Indonesia.

The centre will develop applications for:

- combating illegal fishing
- managing fish stocks (especially tuna)
- integrated management of coastal regions and Marine Protected Areas
- monitoring the condition of coral reefs and protecting them
- supporting shrimp producers and industrial aquaculture (recommending production sites)
- supporting the development of algae production (for the agrifood and cosmetics sectors)
- protecting the environment (detecting accidental oil spills)

CLS was already working in Indonesia via its subsidiary, PT CLS Indonesia, which has been helping the government fit out the largest fishing vessels with location beacons since 2004. CLS has already equipped almost 3000 vessels with beacons so that they can be tracked in fishing zones. The creation of this national space oceanography centre is the logical next step in the implementation of a sustainable-fishery policy.

Key figures:

- 50 million Indonesians depend on fishing and aquaculture
- 30% of the world's corals are found in the waters round Indonesia
- 40% of Indonesian coral reefs and mangroves have disappeared since the 1970s
- 25 years is the average time necessary for coral reefs to recover from damage by fishing with explosives