

Cuba and Norway – *two coastal states, one model*



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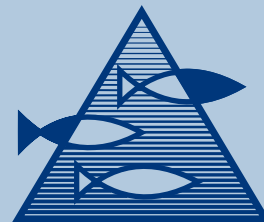
Although their coastal landscapes and climatic conditions are completely different, as coastal states Norway and Cuba have a lot in common. They are both facing a great deal of pressure on their coastlines and on the marine resources that can be found there. Both places the lobster is in particular need of action to reverse a steady decline in numbers.

The COLLABORATE project is designed to prepare Cuba for current extreme weather and future climate change.

Cuban and Norwegian scientists at the Collaborate meeting in Havana March 2013.

At the heart of the project lies the development of regional ocean models for Cuba's coastal waters. For many years, The Institute of Marine Research and the Norwegian Meteorological Institute have been working to develop models that can be used in a coastal landscape that is varied, and at times challenging. These kinds of models can help to optimise emergency planning for extreme weather events and oil spills, provide a basis for estimating the consequences of future climate change and be used to simulate the drift of eggs, larvae and juveniles for important marine species such as lobster and shrimp. One of the key topics in the project is access to data – both in terms of what Cuban data is available and what new data is needed.





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LOBSTERS AND SPINY LOBSTERS

Fishing is the third biggest export industry in Cuba. The tuna, shrimp and spiny lobster are the most important fishery resources. Both in Norway and Cuba, lobsters (the European lobster and the spiny lobster) are a sought-after delicacy. They are heavily targeted, and both countries are experiencing sharp declines in their catches. In Norway, official lobster landings have fallen dramatically since the golden age of the 1950s and 1960s. Since the start of the millennium, Cuban spiny lobster catches have almost halved; in recent years the catch has been around 4,500 tonnes.

MORE FREQUENT AND MORE INTENSE HURRICANES

The decline in the Cuban catches may be due to a number of factors: The lobster is exposed to heavy fishing pressure. However, the intensity and frequency of tropical cyclones has also greatly increased in recent decades, and they may have destroyed important breeding and nursing grounds. Damming rivers and other fresh water

sources has altered the flow of fresh water nutrient elements to the coast, and hence also the environmental conditions and food availability for the spiny lobster.

NEED GOOD MODELS

The Cuban lobster fishery has a limited season. Continuous assessments are made in order to determine when the season should start, and what the minimum and maximum sizes should be. Maximum sizes have been introduced in order to protect the biggest and oldest individuals as a guarantee of reproduction and future recruitment. Quotas and the size of the lobster fleet are also up for debate, but it is more difficult to restrict them, as the lobster fishery is one of the most profitable fisheries in Cuba. With good models for the drift of juveniles and larvae, scientists hope to learn more about which areas are particularly important to the spiny lobster. That will be an important tool for efforts to rebuild stocks.

COLLABORATE

- Three-year collaborative project between Norway and Cuba.
- NOK 6 million budget is funded by the Norwegian Ministry of Foreign Affairs.
- Involves The Institute of Marine Research and the Norwegian Meteorological Institute (met. no) in Norway, and the Cuban national institutes of meteorology, fisheries research and oceanology: INSMET, CIP and IdO.
- Runs in parallel with the XCUBE project, which has the Bjerknes Centre for Climate Research as Norwegian partner.
- COLLABORATE and XCUBE are part of an umbrella project that aims to establish a training and resource centre for emergency planning and disaster prevention. The centre will offer courses to planners and decision-makers in Cuba and other Caribbean countries. The umbrella project is being led by the Norwegian Directorate for Civil Protection and Emergency Planning and the Cuban government agency responsible for emergency planning.
- The national resource centre will also study extreme weather, vulnerability and climate change.



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