The University of Wageningen (IMARES) has participated in research voyages to the Saba Bank in 2011, 2013 and 2015. Monitoring of coral reefs has mostly been done by surveying video transects and looking at coral recruitment.

Coral cover on the Saba Bank varies significantly from area to areas with the lowest recorded stoney coral cover at "Tertre de Fleur" (2.6%) and the highest recorded stoney coral cover on the southern edge of the Saba Bank at "Gorgonian Delight" (15.5%).

The Saba Bank is comprised of many different benthic ecosystems all of which are likely to be functionally linked and important to the health of the area as a whole. The benthic communities include coral dominated reefs, fields of calcareous algae, sargassum beds, algal beds and sand plains.

A number of events over the past twenty years have combined to dramatically reduce coral cover on the Saba Bank. These include Hurricane Lenny in 1999 and the bleaching events in 1998 and 2005.

Due to its remote location the Saba Bank experiences high rates of water exchange and is not directly impacted by land based pollution or terrestrial run off. The reefs have consistently shown few signs of disease and whilst fish population numbers are highly variable, the number of apex predators on the Saba Bank seems to be consistently high.

But, the Saba Bank is by no means immune to the impacts of global climate change. Bleaching events are believed to have already taken their toll on coral reef communities. Of concern too is the very real possibility of more, and more intense, weather events such as bleachings and hurricanes as well as the impacts of ocean acidification.

Successive expeditions have noted the virtual absence of grazing urchins on the Saba Bank. Invasive lionfish are now present and evidence from other parts of the Caribbean indicates that lionfish are capable of decimating reef fish populations, and have caused a 78% decrease in juvenile fish. The Saba Bank is an important fisheries resource for the island of Saba and there is a thriving fishery for lobster and red fish as well as red hind.

At this time it is unclear how the reef communities on the Saba Bank will fare and what impact, if any, fishing activity is having on the reefs. It is therefore essential that actions are taken to raise the resilience of the Saba Bank as much as possible to cope with the effects of climate change.

Sampling sites included (from south to east to north)
* Dutch Plains
* Scottish Hills
* Gorgonian Delight
* Coral Gardens
* Pauls Cathedral
* Tertre de Fleur
* Erik’s Point
* Twelve Monkeys
* La colline aux gorgones
* Devils Corner
* Rebecca’s Garden

This news item is based on a presentation given by Erik Meesters (WUR) https://www.wur.nl/en/download/Erik-Meesters-State-of-the-reefs-3-expeditions-to-Saba-Bank.htm
Reef status:
Compared to the 1990s, coral cover on Saba Bank is currently much lower. In 2011, 2013 and 2015 quantitative surveys were carried out on the Saba Bank on 10 locations. At each site 3 transects of 50 m were photographed (150m2). In 2011, living coral cover was only 8%, which is much lower than the coverages of 40-60% reported in 1996. The proximate causes for this dramatic decline remain uncertain but we suggest that bleaching and climate change are largely responsible for the lower cover of living corals on the bank. Climate change leads to warmer sea water and this causes periods when the sea water temperature is too high for corals leading to so called bleaching events, which often cause high coral mortality. In particular, the 2005 Caribbean bleaching event which decimated coral cover all over the north eastern Caribbean is important in this respect. On a positive note, between 2011 and 2015, there is no indication that coral cover has further declined. Encouraging indications for reef resilience were that there are many small young coral colonies and there are very little signs of coral disease. Furthermore, Saba Bank is not a 'sponge reef' and sponges are not becoming dominant over corals, as is the case in several disturbed eutrophic reefs in the Caribbean. These findings seem to indicate that the Bank is relatively less disturbed. Under the best circumstances, we have to add that restoration of coral reefs is a very slow process and might take several decades. Saba Bank will, however, not stay the same in the coming years, as it will continue to change due to climate change and this change must be considered in management plans.

During the 2016 research expedition of NIOZ many new coral areas were discovered, as well as other habitats. At this moment knowledge is insufficient to set up a biologically sound benthic monitoring plan or management plan for the whole Bank – more basic knowledge of the bank is required.

Due to its high species and unique genetic diversity, the upstream position with respect to the wider western Atlantic, its large area of deeper reef, and relatively limited anthropogenic disturbance, Saba Bank serves as an important source population to the wider Caribbean. However, further research is necessary to establish to what extent and how it serves as a source and or sink for key species groups.

Fish communities:
From surveys between 2011-2013 a reduction in snappers, groupers, and grunts has been observed, while there were noticeably more sharks. The visual surveys (UVC) in 2011, 2013 and 2015 demonstrated repeatedly that the biomass of key herbivorous fish families and key commercial fish families was low, indicating possibly a poor status of these fish families. Lionfish are present on the Bank, but their densities are lower compared to the neighbouring islands and no significant increase was seen between years 2011-2015 at 20-30m depth.

What have we learned from the past 5 years:

Wageningen University & Research
(Becking & Meesters, 2017)