





DELTAS LEARN FROM EACH OTHER

Rising sea levels

Delta regions all over the world are particularly vulnerable to the effects of climate change. Led by Alterra, part of Wageningen UR, a new knowledge network called the Delta Alliance is working on finding solutions to this. The key seems to lie in being less fearful of the water.

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The Mekong delta, an area of Vietnam as large as the Netherlands, lies at sea level. The delta is home to about 17 million people, most of whom work on the land or in fisheries. Fish farming has been a booming sector in recent years, due to the rising demand for farmed fish on the Western market. On the edge of the delta lies Ho Chi Minh City, with another ten million people.

Like all deltas, the Mekong delta is fertile, thanks to the silt deposited there. In this still largely rural area there are many farmers, but in several other parts of the world deltas have been urbanized, and are home to major harbours and trade hubs. And a few of these have grown into large conurbations such as the one around Rotterdam in the Netherlands, called Rijnmond (mouth of the Rhine), or the Mississippi delta at New Orleans. But deltas are vulnerable areas too, as rising sea levels threaten their fertile land while swelling rivers bring more water down from the hinterland. There can be massive peaks during heavy rains or just the opposite: severe fresh water shortages during extreme droughts. 'An additional problem in the Mekong delta is that much of the fish farming is not yet very sustainable. Polluted water is drained into the delta, making the water balance extra difficult', says Le Quang Minh, vice-president of the Vietnam University of Ho Chi Minh City. Le Quang Minh is a Wageningen alumnus who went back to his country after completing his MSc and PhD. He is the coordinator of the Vietnam wing of the new knowledge network Delta Alliance, a platform of

scientists and consultancy bureaus who are joining forces across the globe to make deltas such as the Mekong more sustainable and resistant to climate change.

SALTWATER SHRIMPS

For the Mekong delta this means purifying and recycling the water used on fish farms, collecting fresh water in ponds and alternating salt and fresh water, both in agriculture and fisheries. 'It could mean eventually that for a few months we only breed saltwater shrimps and no freshwater shrimps', Le Quang Minh explains. In land-based farming too, small steps are being taken in Vietnam to make agriculture more 'climate-proof'. Farmers are adapting their sowing schedules so as not to have to harvest during heavy rains when floods threaten. They are also experimenting with new rice varieties which are more tolerant of long-term salinization or which can adapt to the flooding of the plain. Dutch expertise has a contribution to make to these climate adaptations. Scientists from Wageningen UR are supplying knowledge about rural areas, soil quality, water, and the state of ecosystems, while Deltares knowledge institute in Delft and consultancy bureaus such as Haskoning are collaborating on developing and exchanging knowledge.

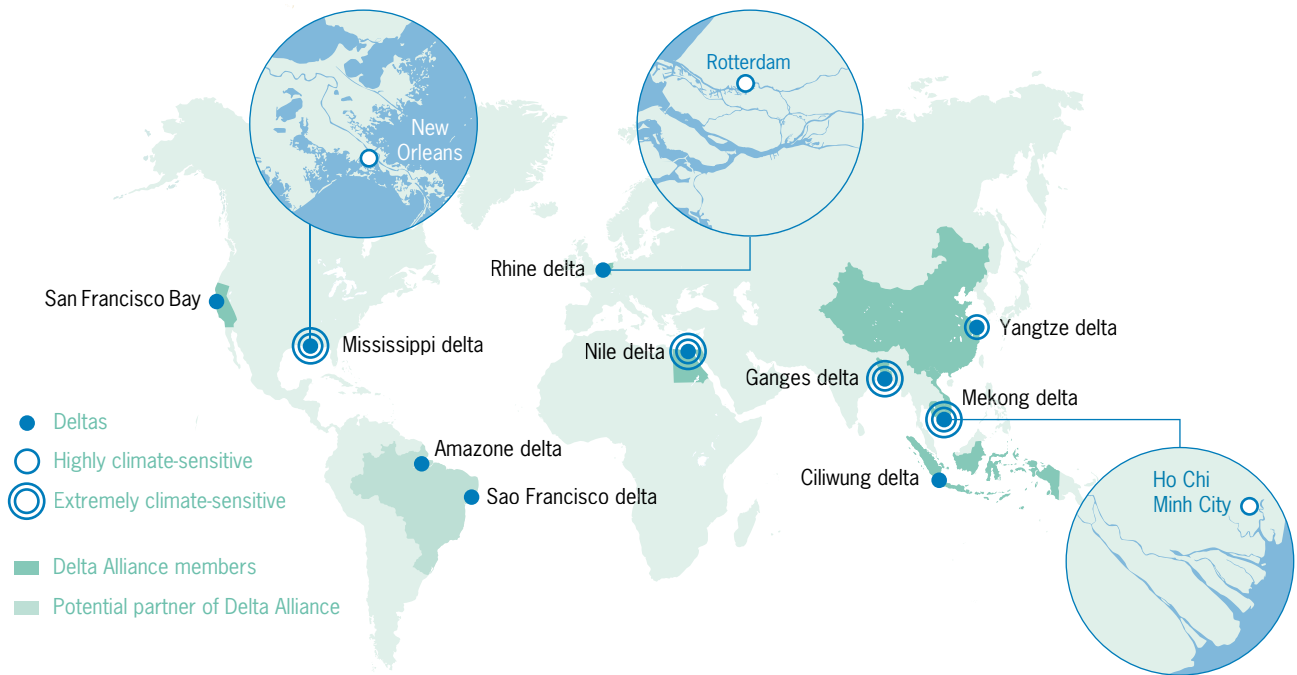
SAMPHIRE AND SEA LAVENDER

According to Wim van Driel, project leader of the Delta Alliance, the situation in Vietnam is a striking example of the way the new collaborative network intends to work. 'Not by laying down from the Netherlands how things should be done, but by sharing expertise with international counterparts. Our aim is to link up experiences in the delta in Vietnam with comparable experiences in, say, Bangladesh. But Dutch farmers in Zeeland, who grow saltwater crops such as samphire and sea lavender, can learn from the developments in Vietnam too', says Van Driel, who works at Alterra, part of Wageningen UR. The important thing, Van Driel thinks, is to approach the sea with an open mind, and he believes this view is gaining ground elsewhere in the world too. He talked to *Wageningen World* just before setting off for New Orleans to draw the Mississippi delta into the programme. This area has been blighted first by hurricane Katrina and then by the BP oil disaster. 'What is really remarkable is that people in this American delta have made the switch in a very short time span from a traditional defence system of dykes to a less fearful relationship with the water, for instance by creating water storage facilities right in New Orleans itself', says Van Driel. 'They still have to get the general public and the Army Corps of Engineers (a kind of water management board in the US) on board, though.'

LINKING UP WITH THE DELTA ALLIANCE

The Delta Alliance came out of the paragraph on the international context in the Knowledge for Climate programme (2007). In this document the last Dutch government set out plans for working on making the vulnerable climate 'hotspots' in the Netherlands climate-proof. Funds amounting to fifty million euros were released for research and projects, two million euros of it for international work. Part of the programme is knowledge exchange between comparable hotspots abroad. In the Delta Alliance, the focus is on collaboration between delta countries. The platform started with the Netherlands, Vietnam, Indonesia and California. At the official launch in Rotterdam at the end of September, Bangladesh, Egypt and China joined the alliance too. Brazil is at the door. 'Our ambition is to grow to between 10 and 20 members. In Europe, other potential members are Italy, with the Po valley, Portugal, with the mouth of the Tagus, and Romania, with the Danube delta. Nor has Russia yet joined, with its deltas such as that of the Volga', says Wim van Driel, project leader of the alliance. If this succeeds, the remaining budget of one million euros will not be enough and supplementary funding by the EU and regional development banks will be needed. Besides Wageningen UR, other active partners in the Delta Alliance are the Dutch Deltares institute, UNESCO-IHE and consultancy bureaus such as Royal Haskoning and Arcadis. *Info: wim.vandriel@wur.nl*

DELTA ALLIANCE AND CLIMATE CHANGE



‘Zeeland farmers can learn from Vietnam too’

An important theme in the Delta Alliance is a delta’s resilience. The more a delta can adapt, the more resilient the region becomes. In a comparative study by the alliance, the current situation and the land use in the deltas will first be described, threats will be identified and their impact analysed, says Cees van de Guchte from Deltares in Delft, who is the coordinator of the Dutch wing of the Delta Alliance. ‘The aim here is to develop a score card for resilience and to keep track of this score over time.’ Changes in the scores provide insight into the effectiveness of policies. The study will also address issues of knowledge and possible answers to the problems. It looks as though a multidimensional strategy is going to be crucial to this. Rice farming alongside fish farming – as can be seen in Vietnam. Arable farming and saltwater farming in the Netherlands, as well as agriculture and recreation combined with water storage.

BENEFITTING FROM FLOODS

Deltares researched the situation in several deltas including the Mekong delta in Vietnam, in collaboration with Alterra, the Worldwide Fund for Nature and experts in the countries concerned. The resilience of a delta is not just a factor of its physical parameters, but also of the resilience of the local people. Both Van Driel and Van de Guchte are full of praise for the flex-

ibility of the inhabitants of the Mekong delta. ‘The Vietnamese are not afraid of the water. That may be because traditional rice cultivation has always benefitted from a certain degree of flooding by the river’, is Van Guchte’s analysis. Yet the Vietnamese are going to have to adapt further. ‘Increasing flooding from the sea may mean that farmers can achieve two rice harvests per year, not three. If the sea flooding period becomes longer, the land could even eventually become unfit for traditional agriculture.’ Aquaculture with alternating saltwater and freshwater products, with shrimps for example, could provide a way of compensating for this kind of loss of income. ‘We are still in the phase of trails and pilot projects. A few pioneers are opening up new territory, but most of the farmers still have a wait-and-see attitude’, says Van de Guchte. ‘But they do realize that developing in the direction of a more mixed farm helps to spread the risks. Running several farming activities in tandem, or farming alongside fisheries, provides a better guarantee of an income in the long run.’ ■