

Ensuring Resilient Food Production in the World's Rice Bowls

Vietnam is one of the most vulnerable countries to the effects of climate change in the World today, especially in the Mekong and Red River Deltas where 43 per cent of the population in the country live.

The potential impact of climate change in Vietnam, and particularly in those deltas, pose risks to food security in both Vietnam and its main export markets. Currently, 80-90 per cent of the population depends on agriculture as its main source of income, producing enough rice to feed Vietnam and secure the country's position as the second largest rice exporter in the world. Thus the well-being of the farmers and their agricultural systems in delta areas where most of the rice production is taking place are of importance not only to local populations, but are likewise critical to Vietnam as a nation and to a large part of the world that depends on their exports.

Climate-related risks that the provinces in the delta areas have to face are primarily related to floods during the monsoon season and drought in other parts of the year. These areas are particularly exposed to sea level rise which will accentuate problems with floods and trigger increased salinity of ground water. Thus, climate change is also intermittently linked to problems with water quality, both of ground- and surface water. The quality of surface water deteriorates during both floods and droughts, where inadequate sanitation is one of the root problems.

In general, climate change adaptation is hampered by a slow track record of providing the basic human rights to clean water and proper sanitation in this region. Very few projects are set in the area to improve resilience and the quality of farmers' liveli-

hoods, despite ambitious governmental plans to sustain the country's current economic growth rate of 7-8 per cent (McKinsey, 2012).

What is now needed is an overview of the capacity needs and local experiences to respond to climate change driven stress factors in this region. For example, farmers are eager to increase the productivity of their farming by planting different kinds of crops that are suited for production in increasingly saline water, as well as with wastewater. Climate change must be studied closer to determine the kind of crops they

should focus on in the future, and such information should be spread virally within the farming communities.

Also noticeable: women and children are most vulnerable in this segment of society. They often work in farms or stay at houses close to the water surface, and are exposed to waterborne diseases as they are responsible for cooking and cleaning. In case of devastating floods, they will not be able to escape, mostly because they cannot swim.

Poor water quality of surface water is a severe constraint in the district and improvement of this would increase the resilience of the province to hydro-climatic hazards. Investments in improved sanitation systems and water treatment plants would contribute to such resilience development.

Facing floods and droughts

In the Vietnam delta areas the risk for an increased number of floods and increased flood frequency is possibly the most prominent threat. The devastating floods that hit the Mekong Delta in 2000 and 2001 were some of the worst in living memory. More than 480 people were killed in 2000 and 393 in 2001, the majority children, and in total, 900,000 houses were damaged in 2000, and 350,000 in 2001. A similar number of people died in 2001, but lessons were learnt between the two floods and measures were implemented, which ensured that other impacts in 2001 were not as severe as those of the previous year, even though the two floods were very similar.

The policy slogan since then, 'living with the floods', reflects a realisation that ever higher dikes in the Mekong Delta are not the answer to seasonal floods, that fields and forests

must store flood water instead, and people must adapt to secure their livelihoods (UNDP Vietnam Human Development Report 2007).

The socio-economy of the province is heavily dependent on a functional rice production resilient to floods and droughts. This in turn is much dependent on a well-maintained canal/dike system and good governance. Investments in the canal system, such as concrete lining, and assessment and adjustment of its governance system would contribute to the resilience of the province. Improving current flood management systems would provide important services both during floods when they help drain excess water, and during drought when they help deliver much needed water to crops in the fields. In the Ha Nam province in the Red River delta, the construction of a canal system made it possible to move from one to two rice yields per year. Currently, the main trunks of the canal system are centrally governed while the smaller branches closer to the fields are governed by local farmers. However, there are reasons to look into the division of responsibilities since the incentive to ensure good governance of this infrastructure is highest with those that benefit most from their proper functioning – the farmers themselves.

In the south of the country, the Mekong Delta floods and droughts are increasing and a higher intensity of rains in the rainy season and intensified dry spells are expected in the future. Rice crops and farmers' livelihoods are vulnerable to these likely impacts. Many mitigation measures are already known and being tried at the farm level (e.g. changing seed varieties and crops, diversifying to non-farm techniques and seasonal migration), community level (e.g. enhancing, protecting common resources such as fish ponds, developing village funds and shared processing

facilities) and national level (e.g. infrastructure investments, research and development, strengthened information systems).

One area which needs further development is communication of climate information to farming communities, including warnings for floods and drought. There are no functional climate services and information available to farming communities on climate predictions and potential impacts on agriculture. Development of such a system would improve the resilience of the farming communities. This requires immediate action to improve the chain of information management from data gathering, analysis and communication. It also requires work to ensure that the climate information provided is tailor-made to the end users.

Connecting policy and practice

On the policy level, the government of Vietnam has taken several important steps towards increasing the country's preparedness and resilience to adverse impacts from climate change. The National Target Programme (NTP) to respond to climate change was launched in 2008 is a good example. It has the strategic objective "... to assess climate change impacts on sectors and regions in specific periods and to develop feasible action plans to effec-

tively respond to climate change in the short-term and long-term to ensure sustainable development of Vietnam..." The Prime Minister issued the Decision on December 5, 2011 an approval of the National Strategy on Climate Change (NSCC). This commendable initiative sprung out of the realisation that there is need for better knowledge on all levels regarding climate change impact and how to respond.

Already in 2007 the UNDP Human Development Report for Vietnam highlighted that there is little available knowl-

edge on the potential and economic implications of climate change on Vietnam. The report explains that the concept of climate change, its potential impacts and the need for adaptation are not yet well known in Vietnam beyond a small community of experts and development workers, and some concerned state management agencies. To improve on this requires strengthened communication, and comprehensive research on the possible impacts of climate change on the Vietnamese economy and key development goals, particularly poverty reduction.

A partnership between the Vietnam Association for Conservation of Natural and Environment (VACNE), and the Stockholm International Water Institute (SIWI) has been established to try to contribute in connecting the dots between policy and practice, and to search for innovative approaches to enhance access to information in communities to increase their resilience to climate change.

SIWI-VACNE will provide necessary information for targeting climate change adaptation and response in rural areas, especially in the nation's two major food producing regions – the "rice bowls" of Vietnam.

This project will provide a basis for further work to achieve a long-term goal: to improve the resilience of farmers in the Mekong and Red River deltas to sustain food production in a world subject to changes in environment and climate. The most important direct outcome of the project is to connect decision-makers and public officers at community and district levels with local people, business actors, national and international scientists, and in the process improve the sharing of knowledge on the impact of climate change on the environment and water resources. Ultimately it will highlight possible interventions to address these impacts and contribute to more resilient communities.

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