

Adapting to Climate Change Can Reduce Disaster Risk Lessons from Asia

This Info Kit reports on recent experience Asian countries where national and local governments, together with local organizations, have worked together to reduce disaster risks by making some changes to adapt to different affects of climate change. Based on these examples and other countries' experience, there are four useful lessons for local Governments: i) good information is available, ii) adapting to climate change helps reduce disaster risk, iii) it needs strong leadership, and iv) it's everybody's business. Our main task is to use the tools and experience we already have in Asia and elsewhere to make changes that help to adapt to a changing climate.

Disaster risk reduction is part of climate change adaptation

- The scientists' message on climate change is now clear: climate change is likely to increase the **frequency** (how often) and **intensity** (how strong) of climate hazards such as floods, cyclones and droughts.
- It will also probably lead to other changes such as damage to the natural environment, reducing how much water and food is available, and changes to businesses and how we can work. This means our communities are more **vulnerable** to natural disasters; i.e. disasters can affect communities more easily and possible more often in future.
- Developing countries in Asia will be hardest hit by the increasing disaster risk. For this reason, an agreement between 168 countries called the "Hyogo Framework for Action (HFA): 2005-2015", was made to set up the main priorities for disaster risk reduction, how best to get organized in order to reduce losses from disasters (and our changing climate).

India, City of Pune

A local government in a flood- prone city that develops a climate change plan that includes many ideas and guidance on how to mange the impacts of disasters.

The city of Pune (population +/- 5 million) is adjacent to where three rivers join together. It has been affected by many severe floods in the past (the 1961 flood included a major dam failure). Knowing there may be an increase in the number of future floods as the climate changes, the city authorities have developed a comprehensive climate change adaptation and mitigation plan.

This plan to reduce flooding was implemented. The first step was to review the flood risks by analyzing hourly rainfall intensity, especially in low lying areas and places where natural drainage was blocked by construction of houses, roads without adequate bridges, solid waste locations etc. From this analysis, a detailed city drainage map was developed. .../cont.



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(India, City of Pune continued)

The climate change adaptation plan then described ideas, procedures and well-designed and well-constructed flood controls that would restore the natural drainage systems by widening streams and canals, extending bridges and using natural soil infiltration methods to help the ground to absorb rainwater.

Tree planting and building small earthen check dams were undertaken in the hilly areas of the city to help rebuild the natural systems of water conservation.

Property tax incentives were provided to households to help to recycle wastewater and to use 'rainwater harvesting' by storing rainwater from roofs for use in their homes. There were also improvements made in flood monitoring (tracking water levels etc.) and early warning systems (as a way to protect families in flood-prone areas).

The whole program is jointly managed by the elected Municipal Government, the Municipal Commissioner, active citizen groups and involved many different city departments. The project shows that local governments can prepare for climate change by reducing risks and managing the things that cause disasters.

Samoa, Pacific

A small island state prepares for disasters and climate change by bringing all key Government departments together to agree on how to collaborate and work together, and by linking national and village level actions under this basic agreement.

Samoa is regularly exposed to tropical cyclones and in future will face the effects of sea level rise as well as increased severity and intensity of weather conditions. The Government approved the Samoa Disaster Emergency Act of 2007 and the National Disaster Management Plan as the policies and guidance for implementing disaster management.

The Plan recommends that the Government coordinates and implements disaster risk reduction with the help of the private sector, Red Cross and other NGOs, financial institutions, religious-based organizations and local communities.

For example, in all 329 village communities, the government and private schools have completed, or are in the process of completing, their own disaster management plans. This has included a variety of risk reduction and climate change adaptation ideas for schools.

There is also nation-wide disaster management plan. Samoa has decided to look at disaster risk reduction and climate change adaptation together at the same time. After all, they are very closely related. The Government has completed its National Adaptation Programme of Action (NAPA), which identifies the important priorities for climate change adaptation work in Samoa. These priorities are shared with the National Disaster Management Plan. It has been easier to join these two things together because the responsibility for disaster risk reduction and for climate change adaptation is in the same Ministry of Environment and Natural Resources.



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Recently, an 8.3-richter scale earthquake off the coast of the island nation of Samoa claimed over 150 lives and sweeping away homes and businesses. On October 12, a USAID/OFDA field officer in Samoa stated that the tsunami had destroyed between 50 and 100 percent of fales, (traditional open-air shelters), in affected villages.

Now more than ever, the people of Samoa are aware of the importance of climate change, the need to adapt to these changing conditions, and to know more about how to reduces the risk of losses from disasters.

Viet Nam

The Government is building bridges between the country’s disaster risk reduction and climate change adaptation programmes. Viet Nam is a coastal country with a long monsoon-affected coastline and a number of major river deltas. Viet Nam is one of the most disaster-prone countries in Asia and will be highly affected by the impact of climate change.

From 1997 to 2006, disasters from weather-related hazards claimed around 7,500 lives. So in 2007, the Vietnamese Government prepared the “**National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020**”. The “**National Target Program to Climate Change Response**” followed this in 2008.

The Government is now actively working to assist local governments to implement these two plans together. There are still some differences in the ideas and approach of the two plans, but they are working together to find where the overlaps are between **disaster risk reduction and climate change adaptation**. They are also trying to find ways to finance projects jointly.

High-level political leadership has helped to overcome many barriers to making these ideas actually happen. While local governments and communities do much of the work, the leadership from high up in the Government is extremely important.

In Viet Nam, the Deputy Prime Minister has stressed the national interest and need for collaboration between ministries. He can make this happen. For example, Ministry of Natural Resources and the Environment is the lead agency for climate change coordination, while the Ministry of Agriculture and Rural Development maintains overall responsibility for rural development and disasters. The Minister is ensuring these agencies work closely together knowing this is the best way.

International aid organizations such as UNDP, the Australian Agency for International Development and UNISDR, also encourage and support this type of cooperation and working together. Viet Nam provides a good example of how high-level leadership can work effectively to improve the situation of local governments and communities.



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The benefits of disaster risk reduction – e.g. housing

In some **houses**, even relatively simple structural measures can have both short and long-term benefits to the effects of climate change. For example, bracing and securing roof beams to the walls using straps, clips or adhesives can work to reduce wind damage and keep the roof on.

Property-owners in the southern United States who implemented all the recommended hurricane **protection methods** suffered only one-eighth of the damages from Hurricane Katrina than those who did not implement the suggested ideas.

The result was that investment by a large number of property-owners of only \$2.5 million avoided damages of over \$500 million. This is a prime example of **cost-effective adaptation** (adapting to a changing climate).

Main lessons

Based on these examples and other countries' experience, four key lessons can be drawn:

1. Good examples are in Asia

There are good examples from the region and elsewhere that show how to reduce vulnerability and gradually reduce the risk of disasters from climate change impacts. This information is becoming increasingly accessible and available through web postings, new CCA networks, new projects, books etc.

2. Climate adaptation reduces disaster risk

We have now learned and have evidence that implementing disaster risk reduction policies and programmes can limit the impacts of climate-related hazards, help alleviate poverty and directly support adaptation to climate change.

3. This issue is political

Strong political leadership and commitment at the highest level is important to make sure something happen, especially for the working together of the climate change adaptation people and those working in the disaster risk reduction field.

4. We all have a role

Yes, it is everybody's business! Disasters and climate change affect all of society, and therefore disaster risk reduction and adaptation solutions must involve all key parts of government, businesses and the private sector.

A few definitions

disaster risk reduction The means reducing disaster risks by; i) knowing as much as possible about what causes disasters, ii) becoming less exposed to hazards, iii) lessened vulnerability of people and property, iv) wise management of land and the environment, and v) improved preparedness for adverse events.



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climate change adaptation Actions by individuals or organizations to avoid, withstand, or take control over current and future climate changes and impacts. Adaptation can help to make a community less vulnerable (less likely to suffer damage), and/or more resilient to climate change impacts (more able to cope with possible disasters).

hazard A dangerous phenomenon (such as storm, a substance like dangerous chemicals, possible dangerous human activity, or many other things) that may cause injury, loss of life, health impacts, property damage, business loss or environmental damage.

vulnerability to climate change The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change.

Links to climate change and disaster risk info¹

The **International Strategy for Disaster Reduction** brings together governments, NGOs, UN Agencies, universities and technical institutions, international financial institutions and the private sector to build capacities for reducing disaster risk and promote the implementation of the Hyogo Framework for Action. For more information on the ISDR system and disaster risk reduction, see:
www.unisdr.org and www.preventionweb.net and www.un.org/climatechange/

“Climate change and disaster risk reduction” 12pp.

<http://www.preventionweb.net/english/professional/publications/v.php?id=4146&pid:50>

This 12-page document outlines the nature and significance of climate change for disaster risk, as well as the main perspectives and approaches of disaster risk reduction and how they can support adaptation strategies. It is aimed at experts and practitioners as well as non-specialists such as teachers and students, journalists and the interested public (2008).

Philippines Disaster Risk Reduction Network 6pp.

<http://www.preventionweb.net/english/professional/publications/v.php?id=11448>

In this booklet DRRNetPhils is advocating for a policy shift from disaster response and preparedness to disaster risk reduction and management through the development and establishment of a national framework that will foster a national policy environment anchored on multi-stakeholder action (2009).

Local Government Climate Change Adaptation Toolkit 96pp.

www.climatechange.gov.au/impacts/publications/pubs/local-government.pdf

This toolkit is organised around steps for local governments to manage the process. It outlines how and when to use each of the included tools, which are templates to get information and how to use that information. Each tool is designed for specific needs, so individual LGUs will need to determine which of the tools are appropriate for their particular use. (2009).

¹ The information in this flyer, including the above definitions, has been gathered from many sources and the assistance of ISDR partners is greatly appreciated.



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