Adaptation in action

WWF'S RESPONSES TO A CHANGING CLIMATE

Climate change is the biggest global challenge of our times. Even if international mitigation strategies prevent dangerous climate change, existing greenhouse gas emissions mean some further change in the climate is inevitable. Scientists predict we're already committed to an additional rise in average global temperatures of at least 0.5°C. This will have significant consequences for people and nature. Adapting to the changes is essential. And for many of the poorest and most vulnerable people and places it's an urgent need right now.

One planet, one future, one chance

The effects of climate change are acute and long term. They're expected to lead to more frequent severe flooding, hurricanes and droughts and changes in stream flows as glaciers and icepacks retreat. This will impact on wildlife, ecosystems and the natural services they provide. Each year climate change leaves over 300,000 people dead, 325 million people seriously affected, and triggers economic losses of US$125 billion. (Global Humanitarian Forum, 2009).

Business as usual is no longer an option

Governments, businesses and civil society must operate differently if we're to cope with the impacts of climate change. They need to become 'climate smart' by approaching adaptation in a way that reduces the vulnerabilities of both people and ecosystems to a changing climate. Ultimately, everyone depends on natural resources and ecosystem services, but it's the poorest who rely most directly on them for their livelihoods. If ecosystem integrity continues to be lost through existing pressures, and compounded by the impacts of climate change, the options for adaptation will be diminished. And the long-term vulnerability of people and ecological systems will increase.

Why adapt?

Social: To help people both reduce their vulnerability and increase their resilience to the impacts that a changing climate will have on their lives and livelihoods – such as changes in water supply, agricultural productivity and disease occurrence.
Ecological: To ensure ecosystems continue to function as they currently do, help wildlife and natural systems adjust, reduce risks and impacts from extreme weather events such as storms and droughts, and increase ecological resilience to future change.
Political: To ensure policies and programmes achieve their intended benefits and do not increase vulnerability to climate change.
Economic: To ensure industries consider future scenarios of the availability of natural resources, as well as conditions of social, ecological and economic sustainability.

INTEGRATED ADAPTATION ALONG THE MESO-AMERICAN REEF

The Meso-American Reef extends 1,000km along the Caribbean coasts of Mexico, Belize, Guatemala and Honduras.

It contains the second-longest barrier reef in the world. The reef sustains nearly two million people: a large proportion of them live along the coasts and on islands. The World Resources Institute (WRI) estimated that the reef and mangroves provide Belize with annual benefits of US$395-$559 million in fisheries, tourism and shoreline protection. It found that mangroves contributed around 44% of this total. Unsustainable fishing, pollution, poorly-managed tourism and mangrove clearance are among the main factors causing a decline in the health and integrity of this fragile ecosystem.

Climate change impacts

Coral reefs are the 'canaries of the sea'. They're highly sensitive to rising temperatures, ocean acidification and other pressures. The reef is suffering coral bleaching events, due primarily to increases in sea temperatures and violent storms. It has been considerably impacted by mass bleaching events in 1995, 1998, 2005, 2008, and 2009. The frequency of these events is projected to increase with climate change. Increased storm surges also threaten the region's coastal areas.

WWF adaptation actions

WWF's climate change project on the Meso-American Reef focuses on science-based monitoring of impacts on reefs, mangroves and coastal communities; site-level implementation of adaptation strategies and raising public awareness and pressing for action on adaptation.

We've trained local tour guides to monitor the reef and identify coral bleaching, and we're working extensively with marine experts in a 'coral reef monitoring group' to provide early warning alerts for bleaching events. Our work is identifying which reefs are most resilient to bleaching and testing the feasibility of 'coral nurseries' to help restore areas that have been damaged. We're collaborating with the WRI to assess the socio-economic value of reefs and mangroves for Belize. And we're engaging with communities to assess key vulnerabilities and provide tangible local solutions for adaptation. For example, a community in Belize has recently planted 17,000 red mangrove seedlings.

We're working with policy-makers in Belize to ensure they integrate adaptation measures into policies and development plans. For instance, we're recommending that Belize's National Adaptation Strategy recognises the role of healthy ecosystems in building resilience to climate change impacts. Our project is engaging with the Ministry of Tourism to integrate climate change adaptation into the National Sustainable Tourism Master Plan for Belize.

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BUILDING RESILIENCE FOR THE YANGTZE RIVER

China's 6,300km-long Yangtze River drains a 1.8 million sq km basin – an area that's home to around 400 million people.

Livelihoods here depend on agriculture and aquaculture. Over the last 50 years, 757 lakes have been converted to fish farms and disconnected from the river. This has reduced the region's flood retention capacity by 75%.

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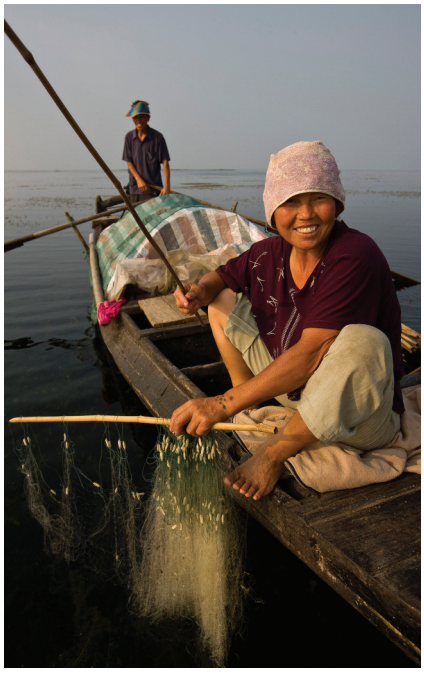

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Climate change impacts

Climate change will compound the impacts of water management and land-use change. Projected changes in rainfall intensity are expected to cause more extreme flooding events and extended periods of drought in the floodplains. Between 1991 and 1998, major floods have resulted in thousands of deaths and caused billions of dollars' worth of damage.

WWF's adaptation actions

We're improving the resilience of the Yangtze's people and ecosystems to climate change.

We're working with government agencies to develop river basin management solutions that will be sustainable in the face of a changing climate.

In 2002, we started work on reconnecting lakes in China's Hubei Province to the Yangtze. The reopened wetlands can now store up to 285 million cubic metres of floodwater. This has reduced the central Yangtze's vulnerability to future flooding.

Within six months of our reconnecting Zhangdu Lake to the river, the fish catch here increased by 17%, and nine fish species returned. The development of certified eco-fish farming in Baidang Lake has increased the income of 412 households by an average of 20-30%. The restored lakes now support 45,000 wintering migratory birds, 20,000 breeding birds and the endangered Oriental white stork. And the population of the endangered Yangtze finless porpoise has increased from 24 to 40 in Tian'e zhou Lake.

Hubei's provincial government has now adopted a wetlands conservation master plan and allocated resources to protect an area of 4,500 sq km. The Wetland Centre and China's State Forestry Administration have extended our wetland conservation approach along the entire river.

WWF ADAPTATION IN ACTION

We work around the world in partnership with resource users, communities, business and industry, the development community and decision-makers on climate adaptation. We have conducted vulnerability assessments at community, river basin, ecosystem and landscape levels. And we're developing a body of expertise on integrated adaptation – adaptation that considers the needs of both people and ecosystems – in reef and mangrove systems, rivers and deltas, mountainous regions, productive forest, seas, and agricultural landscapes.

We engage in adaptation policy activities at local, national, regional and global scales – such as mainstreaming adaptation into development or land-use planning, supporting the development of climate resilient low-carbon economies, and engaging with the UNFCCC to ensure a fair, ambitious and legally binding global agreement on climate change. We're committed to building awareness of the urgent need for climate adaptation and to developing tools and approaches for practical action.

WWF's principles for good adaptation

These core principles have been informed by our adaptation actions. They now guide all of our adaptation work. Adaptation actions should:

1. Be grounded in the best available knowledge on climate variability and change
2. Recognise that people are part of and rely on nature
3. Be undertaken in partnership with others
4. Integrate monitoring and learning to address uncertainty
5. Work at the appropriate scale to address the problem
6. Apply appropriate and robust approaches
7. Influence policies and institutions
8. Communicate to empower communities, governments and businesses to take action

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The Meso-American Reef project is funded by UKaid from the Department for International Development.