



## Climate Change : Climate Solutions

### Adapting to Climate Change: Can We Do It Again?

**Dangerous climate change will not be prevented by reduced emissions. The damage is already done. For many vulnerable societies, the priority must be adaptation.**



#### Picture Gallery (click on the image to start)

See how we can adapt to a changing climate

About 15 million years ago, dense African forests began drying up to be replaced by open savannah. Tree-dwelling primates eventually descended and found that the new environment suited walking.

Humanity has been adapting more or less successfully to climate changes ever since. After the last ice age ended between 10,000 and 12,000 years ago, agriculture and urban settlements developed and humans gradually colonized all but the most hostile environments. But our transformation of the environment is now coming back to haunt us. Man-made climate change is rapidly increasing temperatures and sea levels, altering rainfall patterns, and producing more violent storms.

“People and species have always adapted to changing climates,” say Kit Vaughan, a WWF advisor on climate change adaptation. “What is different is the speed and the scale of the change we are facing.”

The areas most at risk are small islands, dry areas in Africa, large river deltas in Asia, and polar regions. The International Institute for Environment and Development (IIED) identified 100 countries most vulnerable to climate change. The vast majority are poor countries, many crowded with people living on vulnerable floodplains or drought-prone badlands. Whether an individual, an economy, or a society can deal with the impacts of climate change depends on its adaptive capacity.

“Take Holland, it has a very strong economy, but is very low lying,” says Vaughan. “So it has high risks, but a very high adaptive capacity. They can build dikes and pumps. Bangladesh has an equally high level of risk, but a very small adaptive capacity.”

Adaptive capacity involves a complex combination of knowledge,

institutions, technology, and money – ingredients that are scarce in poor countries. The IIED says these countries will need billions of dollars a year to adapt.

Without successful adaptation, however, the World Bank projects, the costs of climate change could be up to 100 billion dollars a year, pushing poor countries further into poverty. And the poorer they become, the less they can adapt. The IIED warns of “chronic famine or forced migration of tens of millions of people,” citing the example of Africa and Asia’s coastal areas and river deltas.



### **Climate Impact and Adaptation (click on the image to enlarge)**

See how climate change could affect our environment and how we can adapt (Animation: Allianz)

### **Historical adaptation**

History gives us a number of interesting lessons about how societies have adapted or collapsed in the face of a changing environment. Many oscillated between the two extremes.

The ancient Maya civilization in Central America initially compensated for a dry climate by digging canals and building underground water storage. This helped them replace the dense surrounding forests with intensive agriculture and build flourishing cities. When multi-year droughts struck, however, the deforested and eroded land of the Maya could not support their overcrowded cities, and the society disintegrated.

Drought also afflicted the southern Great Plains of the U.S. during the Dust Bowl of the 1930s. Intensively ploughed soils, unprotected by vegetation and lacking rain, were whipped away by the wind. Many farmers moved West to California. The government stepped in, encouraging tree-planting, expansion of irrigation and grasslands, and farming techniques that reduced erosion. These adaptations have sustained the region’s agriculture.

Human-induced climate change, however, is happening at an unprecedented speed and scale. Some experts, like Neil Adger at Britain’s Tyndall Centre for Climate Change Research, are unsure whether some modern societies are up to the challenge.

“After the 2003 heat wave in Europe killed thousands of elderly people, France, Italy, Spain, and the UK implemented early warning systems,” says Adger. “However, after the 2004 tsunami, there has been considerable redevelopment in Thailand and Sri Lanka on the same vulnerable beaches. As for post-Katrina New Orleans, there are no signs that the city is being adapted for future hurricanes.”

The tendency to rush to rebuild in a high-risk area is known as <sup>Post comment</sup> "maladaptation." In other words: many societies have short memories. The Dutch 'polder system', by contrast, anticipates future storms and floods and acts to prevent damage by rigorous maintenance of flood defenses. The system dates from medieval times when separate, even warring, societies agreed to co-operate. Proactive solutions, not reactive strategies are needed.

For low-lying communities, dams to control floodwaters, coastal barriers against storm surges, and early-warning systems are obvious solutions. In drought-prone areas, farmers can switch to drought-tolerant crops and more efficient farming methods, such as drip irrigation.

At a global level, climate insurance could be a key adaptive strategy. Compared to ad hoc humanitarian relief, it would be a more reliable source of emergency funds for poor countries enabling a quicker response to disasters.

### **Adaptation or migration**

According to Neil Adger, in order to build adaptive capacity the least developed countries require far more technology transfer and funding than what is currently provided through the Kyoto Protocol. After all, they are the least responsible for the climate change impacts that are affecting them the most. The IIED's 100 most vulnerable countries total CO2 emissions (excluding South Africa's) account for only 3.2 percent of the global total, compared to more than 23 percent for the United States, nearly 25 percent for the EU, and about 15 percent for China.

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If disadvantaged societies cannot get that technology and money, evacuation and retreat may be the only option. That means mass migration, the most desperate and disruptive adaptation to climate change. History is littered with societies that have seemingly vanished at times of climate upheaval. In the modern world, people do not vanish. They simply go somewhere else.

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