

WWF Japan: Tohoku Disaster Recovery Project - Comprehensive Environmental Consideration and Biological Diversity after the Earthquake -

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Based on WWF's mission of conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption, the development of reconstruction support projects that can serve as models to show the world is being considered, with the aim of achieving a society that can develop sustainably.

1. Introduction

In the Great East Japan Earthquake, many lives were lost in the tsunami which followed the massive earthquake, and the coastal areas of Tohoku and Kanto, extending over 500 km, were severely damaged. Of the widespread damage caused by the earthquake, the accident at Fukushima Daiichi nuclear power plant, including a partial meltdown, was a particularly great shock to the world. Some people say that the accident may be worse than the Chernobyl nuclear disaster. The situation at the nuclear plant is still far from being resolved and a myth about the safety of nuclear technology has been exposed by the ferocity of nature.

It is no exaggeration to say that these harmful effects of the earthquake are important environmental issues which make us realize how deeply our lives are dependent on nature. When we consider the reconstruction pathway we should take, while it may be desirable to implement concrete measures as soon as possible, if hasty "restoration" obstructs the long-anticipated "development of a sustainable society in harmony with nature", it would also be harmful for the future of Japan.

In the past 40 years, WWF Japan has been working on global environmental conservation through activities within Japan. From the standpoint of applying the lessons of our recent experience, for the reconstruction, we must go back to the precautionary principle and set out measures to establish a comfortable and safe future, minimizing environmental impacts on a global scale. For that reason, based on the three missions of WWF: conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption, we are considering the development of reconstruction support projects from the following viewpoints:

2. **Comprehend the actual state of damage to the natural environment and biological diversity to form a basis for regional reconstruction, and formulate and implement a restoration plan which takes restoration of the natural environment and biological diversity into consideration**

The natural environment of coastal regions in the eastern part of Japan was severely disturbed by the tsunami and land subsidence triggered by the earthquake. Superb landscapes rich in biodiversity are found in these regions, including Rikuchu Kaigan National Park and a number of wetlands that are designated among Japan's 500 Important Wetlands.

Supported by such biodiversity, the rich waters off the coast of Sanriku are counted as among the world's three largest fisheries. Seven of the prefectures hit by the earthquake account for approximately one quarter of all production of domestic aquatic products. In order to rebuild these regional communities, appropriate management and support aimed at comprehending current conditions and regenerating the natural environment are essential.

Since the 1990s, WWF Japan has been carrying out support activities for conservation management of coastal regions and sustainable resource use in more than thirty locations within Japan. Based on our experiences, when promoting coastal conservation management, it is important to involve various stakeholders and to build consensus among them, in addition to gathering scientific knowledge. Activities to recover the natural environment will not only conserve and restore biodiversity, but will also be the key to rebuilding the regional economy. The following activities are considered necessary with the participation of various stakeholders:

1. To conduct scientific investigation on the present condition of the natural environment in the coastal regions hit by the earthquake, and to evaluate and comprehend the loss of natural environment and biodiversity as well as the state of damage to fisheries that are the foundation of the regional economy.
2. To share the result from the investigation among the local stakeholders and formulate appropriate recovery and restoration plans for the natural environment. Furthermore, to secure the required budget and human resources.
3. With respect to restoration and rebuilding of disaster prevention facilities, to give adequate consideration to their impact on the natural environment. Furthermore, to understand the natural disaster prevention/mitigation functions of ecosystems, such as coastal wetlands, and the roles they played in this earthquake, and determine measures necessary for restoring and maintaining such functions.
4. With respect to formulation and implementation of the restoration plan, bearing in mind that the natural environment is the foundation of regional industries such as fisheries and aquaculture, to discuss and promote ideal ways of sustainable aquatic resource use and fisheries restoration in consideration of the natural environment.

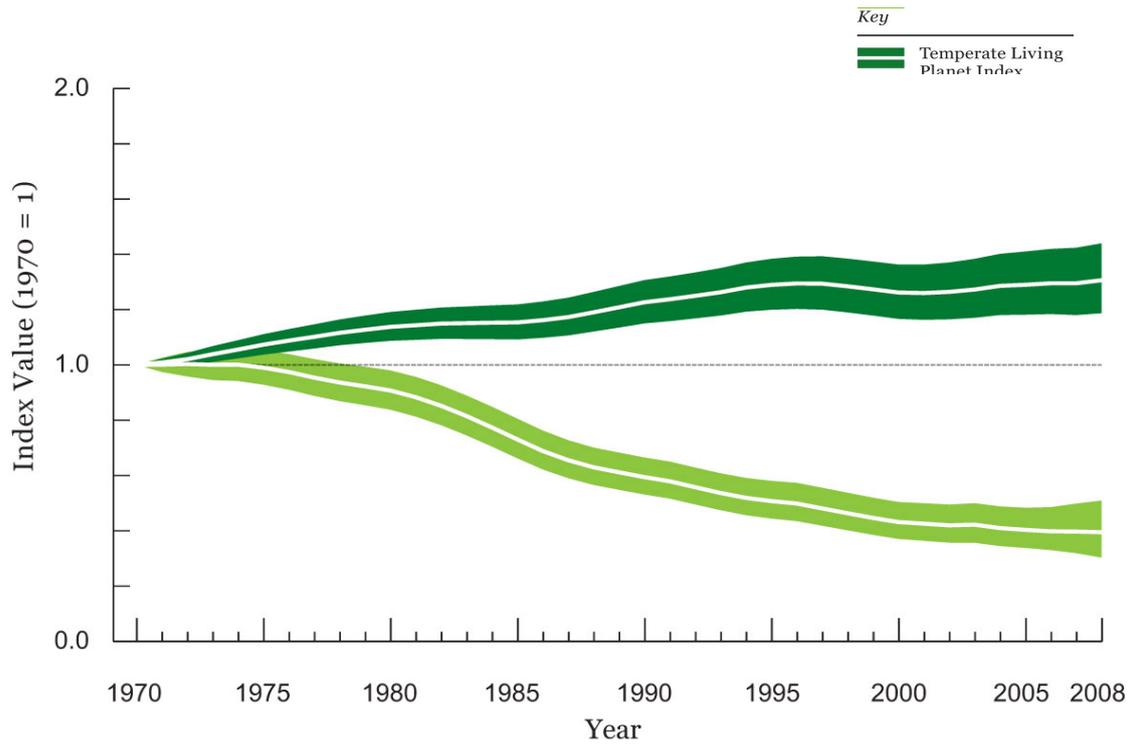
Although various reconstruction plans are being discussed and formulated by the national and regional governments to rebuild the regions hit by the earthquake, it is important to incorporate recovery and conservation of the various natural environments into such plans. WWF Japan focuses in particular on fisheries as the pivot for restoration, and will give support to regions where fisheries are the particular foundation of reconstruction and which have important wetlands that support rich biodiversity. We are aiming to create a model of sustainable reconstruction.

3. Based on the precautionary principle, give due consideration so that material procurement for reconstruction will not lead to environmental destruction both within and outside Japan.

For the disaster-stricken area extending over 500 km along the coast of Tohoku and Kanto, rebuilding of houses and transportation networks, which are fundamental to peoples' lives, as well as factories and ports that support Japanese industries, are the most urgent tasks (Figure 1). In order to proceed rapidly with restoration and improvement work on infrastructure and other areas, it is expected that the amount of the various materials used will increase. In addition, not only for the purposes of restoration and improvement work, but also for securing alternative materials, various types of materials may be procured from areas other than those that have been used before.

WWF has been publishing its Living Planet Report once every two years since 1998 and has been monitoring the global environmental load. Based on the latest data, degradation of global biodiversity is particularly remarkable in the tropics (Figure 2) and unsustainable consumption by humans is considered to be the underlying reason. The Ecological Footprint of humans exceeded the biocapacity of one planet in the mid-1970s and is still continuing to increase (Figure 3). We are over-consuming the planet's natural resources that are supposed to be renewable, and although we are observing a recovery trend in biodiversity in the temperate zones, biodiversity in the tropical zones where many developing countries are located is being destroyed (Figure 2).

Japan imports large quantities of resources from overseas (Figure 4) and the imports of raw materials from areas such as Southeast Asia in particular are known to be linked to environmental load on-site. With regard to material procurement from areas where the export to Japan is causing the destruction of nature, WWF Japan has been working on understanding current conditions and approaching related parties. From such experiences, we are concerned that a rapid increase in material procurement for reconstruction may cause a negative impact not only on the natural environment within Japan but also on the global environment. In order not to spread the damage from the earthquake to the global natural environment, it is necessary to procure raw materials with due consideration for biodiversity and local communities.



Decline 61 % since 1970 (2008)

Source: Living Planet Report 2012. Data: Zoological Society of London **Living Planet Index (LPI)**
 LPI is calculated based on trends in around 9000 populations of 2,688 vertebrate species in the whole world.

Figure 1: The Temperate Living Planet Index and the Tropical Living Planet Index

Consuming 1.5 planet (2008)

Source: Living Planet Report 2012. Data: Global Footprint Network

Ecological Footprint

Our Ecological Footprint is calculated as the sum total of the area of land or sea required for cultivation, rearing of livestock, forestry, and fisheries which make up a large proportion of human consumption (differing among countries), and includes the area of built-up land and forest area required to uptake emitted carbon dioxide.

Figure 2: Changes in Global Ecological Footprint (consumption activity of humans)

4. Gradually phase out nuclear power plants and switch from a lifestyle dependent on fossil fuels to a society where lives can be supported 100% by renewable energy

This earthquake and the accident at the Fukushima nuclear power plant made clearer than ever the fact that the current energy infrastructure is vulnerable and there are inherent risks with nuclear power. It is now high time to aim at achieving “100% renewable energy” future in Japan that is sustainable and contributes to the prevention of global warming with no risk from radioactive substances and without impairing convenience.

WWF International published its *Energy Report* on February 3, 2011 and showed that it is possible to meet all global energy needs with renewable natural energy such as wind, solar power and heat, biomass, and geothermal energy, by 2050. When the Basic Energy Plan being is revised in light of the aftermath of the earthquake in Japan, it is necessary to discuss the concept of a safe future energy society which can be achieved by the following three principles:

1. Meet all energy demand with renewable energy such as wind, solar, biomass, and geothermal energy.
2. Through intensive energy-saving (include electricity-saving), greatly reduce energy consumption (demand) itself without impairing convenience.
3. Do not establish any new nuclear power plants and close down ones located in the areas with great risks based on the lessons learnt from the Fukushima accident. With regard to other existing nuclear power plants currently in operation, decommission them once they reach their expected life span of 30 years.

A future society which achieves these three principles will also contribute to solving global warming issues at the same time. As there is a concern about difficulty to fill in the gap of electricity demand-supply since the earthquake and the Fukushima accident, there is a trend in thinking that it is unavoidable that Japan weakens its policies for global warming. If climate policies get weakened, however, Japan would be turning its back on the warm support received from all over the world after the earthquake. In order to fulfill Japan’s responsibility to the world, Japan cannot weaken its commitment to reduce greenhouse gas emissions significantly. WWF Japan has launched an energy scenario in cooperation with experts, which shows 100% renewable future is possible in Japan and such future also achieves ambitious emission reduction of GHGs.

The whole world is paying attention to how Japan will recreate its society anew. WWF Japan suggests that as a country, Japan presents a model to the world, aiming to create a society that can develop sustainably without being obsessed only with reconstruction and the growth of its economy.