



Photo Credit: Studio Times Ltd.

Minimize Climate Change Impacts on Food Security

Ensuring food security is a key objective of Sri Lanka's national development agenda, which aims for major increases in productivity from agriculture and fisheries, and corresponding decreases in malnutrition. Food security is achieved when there is enough food for everyone, and everyone has access to it without having to fear hunger or starvation.

Higher crop yields and fish harvests alone don't improve nutrition levels, which are also linked to social, economic and cultural factors. Despite recent progress, malnutrition remains a problem especially among the poor: latest figures suggest that one in five Sri Lankans is still undernourished. The percentage is a bit higher among children under five years.

Now, climate change impacts threaten both the food production and food security in Sri Lanka. The erratic rainfall patterns directly affect the livelihoods and nutrition of large numbers of subsistence farmers who rely on rain-fed farming. Changes in rainfall and water flows can also affect inland fishery products that provide protein to many people, especially in rural areas.

**Strengthening Capacity for Climate Change
Adaptation in Sri Lanka**

**National Climate Change Adaptation Strategy:
Strategic Thrust Area #3**

Climate change impacts

Climate change impacts include the following:

- Changes in rainfall pattern and intensity lead to frequent droughts and floods, which in turn affect the availability of water for both households and agriculture.
- Extreme rainfall events increase soil erosion. This reduces soil fertility and the run-off sediments fill up the storage capacity in irrigation tanks (reservoirs).
- Rising temperatures affect crop harvests and livestock yields. They can also encourage the rapid spread of invasive species and pests.
- Sea level rise can bring salt water into coastal lands, degrading the soil and making such areas unsuitable for most crops.

An integrated approach is needed to minimize the climate change impacts on food security. This needs to take into account irrigation, agriculture, fisheries, nutrition (health) and environment factors.

Farming on a Warming Island

Sri Lanka's land area of 65,610 sq km harbours much variety and diversity in ecosystems and micro climates.

Scientists have divided the island into 46 agro-ecological regions based on factors such as soil type, annual rainfall, temperature and altitude.

Over the centuries, farmers have evolved farming systems to best suit each zone's local environmental conditions. This has also created a rich agro-biodiversity: crops include rice, other cereals, pulses, vegetables, root and tubers, spices and fruits. More than 2 million hectares are currently under some form of agriculture -- much of it in the Dry Zone, where productivity depends critically on timely rainfall.

Changes in climate can affect this in different ways. The demarcation of agro-ecological regions would move, reducing the productivity of crops and livestock that are accustomed to the prevailing conditions.

On the other hand, climate adaptation measures can benefit from the high agro-biodiversity that has evolved because of many agro-ecological regions. Varied climatic conditions in farming systems have given rise to a wide range of crop species that are suitable for various types of soils, rainfall patterns, altitudes, diseases and pests.



Thematic Areas

The key issues and adaptation measures related to land and water resources as well as food security were identified during stakeholder consultations to prepare the National Climate Change Adaptation Strategy. These may be grouped into the following thematic areas.

Ensure ability to meet food production and nutrition demand

There is growing fear that some extreme climatic events can disrupt crop farming. In such events, farmers will need short term relief as well as new seed stocks to resume their cultivation. More research is needed on crop varieties that are resilient to changing temperatures, increased pest attacks, higher levels of salinity and water shortages. Some of this can come from traditional varieties in the country. Researchers also need to understand potential impacts on livestock and fisheries so that best adaptation measures can be identified.

Ensure adequate water is available for agriculture

Although Sri Lanka is not water-stressed by global standards, and has abundant water supplies for now, climate change will soon affect both the quantity and quality of water. At the big picture level, the country needs to follow Integrated Water Resource Management (IWRM) approaches to sustain water supply in the face of climate impacts. On the demand side, all water users -- including farmers -- need to be more thrifty and efficient in getting the most out of limited (and sometimes dwindling) volumes of water.

Mitigate food security-related socio-economic impacts

When climate change increases the number and ferocity of disasters, they will directly hit crop farming, livestock rearing and fishing. That, in turn, would affect the incomes and jobs of large numbers of people involved in these sectors – many of them from poor, rural backgrounds. We need to study the likely scenarios and be prepared to deal with the major socio-economic problems that can arise as a result.

Increase awareness and mobilize communities for climate change adaptation

Awareness is the first step towards preparedness. Vulnerable communities need to understand the risks they face, and know how best to adapt themselves to the changing realities. The information needs will vary with area, livelihood and other factors. Determining and responding to these needs will involve working with a large number of stakeholders.



Photo Credit: Studio Times Ltd.



Photo Credit: Studio Times Ltd.



Photo Credit: Studio Times Ltd.

Living and coping with uncertain impacts of climate change is no longer a choice; it is an imperative. Sri Lanka needs to address climate change adaptation to ensure that its economic development can continue without disruption or setbacks, and investments in poverty reduction, food and water security and public health will not be undone.

This brochure has been produced based on the work carried out under the Asian Development Bank (ADB) Technical Assistance Project ADB TA 7326 SRI: Strengthening Capacity for Climate Change Adaptation in Sri Lanka.

ADB is working with the Ministry of Environment, Sri Lanka, in formulating a national strategy for climate change adaptation to increase Sri Lanka's resilience to climate change impacts whilst pursuing sustainable economic development. When adopted, the strategy would stimulate improved effectiveness of environmental management and better organization of stakeholders to address climate change adaptation.

For more information, contact:

Climate Change Secretariat, Ministry of Environment

First Floor, 980/4 A, Wickramasinghe Place, Etul Kotte, Kotte, Sri Lanka.

Phone: +94 11 2883 481 and + 94 11 2883 368

Web: <http://www.climatechange.lk/adaptation/>