

INFLUENCING CLIMATE CHANGE POLICY IN SRI LANKA

Nishadi Eriyagama¹

There is ample evidence to suggest that Sri Lanka's climate is changing. Annual mean temperatures show a significant warming trend while mean annual precipitation decreased by 144mm (seven per cent) during 1961-1990, compared to 1931-1960. In a country where agriculture contributes approximately 32 per cent of total employment and 12 per cent of GDP, rising temperatures and changes in the quantity and distribution of rainfall could have a significant impact on farming activities. For example, they could lead to an increase in irrigation water requirements for rice and a decline in coconut productivity, two key crops for Sri Lanka.

Although past trends are fairly clear, Sri Lanka's future climate appears more uncertain. Studies which look at future climate scenarios are rare but there is general consensus among these projections that Sri Lanka will become increasingly warm during the 21st century, although the projected magnitude of temperature increase by 2100 ranges from 0.9-4°C. Rainfall projections, however, are confusing and contradictory, with some studies projecting increased mean annual precipitation and others projecting a decrease. In the face of such uncertainty, how should Sri Lanka's agriculture sector adapt to climate change?



Rainfall projections for Sri Lanka are confusing and contradictory

A partnership between the International Water Management Institute (IWMI) and Government agencies began in 2009, when IWMI invited officials from several ministries and water and agriculture agencies to a national 'Water for Food' conference to raise the profile of their research. As part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), IWMI researchers had embarked on a major review, later titled *Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka*. Its lead author, Nishadi Eriyagama, presented some of the material the team was working on, focusing in particular on analysis of vulnerability to climate change.

Influencing Climate change policy

The study elaborated the high degree of uncertainty associated with Sri Lanka's future climate, and pointed out that the best course of action would be to embrace 'no regrets' adaptation interventions which simultaneously deliver climate resilience and

¹ Water Resources Engineer, International Water Management Institute

The study elaborated the high degree of uncertainty associated with Sri Lanka's future climate, and pointed out that the best course of action would be to embrace 'no regrets' adaptation interventions which simultaneously deliver climate resilience and address current development needs, rather than to wait for climate modelling to unravel the ambiguities and uncertainties.

The best example of such an intervention is the restoration of the ancient tank storage system, to provide irrigation water during droughts and store excess water during floods. Other identified 'no regrets' interventions include rainwater harvesting and storage during higher rainfall seasons, development of sustainable groundwater, promotion and adoption of micro-irrigation technologies and wastewater reuse.

The timing of the CCAFS study was propitious. The Ministry of Environment had begun to prepare the Sri Lanka National Climate Change Adaptation Strategy 2011-2016 and was also in the process of drafting the country's Second National Communication to the UN Framework Convention on Climate Change (UNFCCC). Eriyagama and her colleagues were subsequently invited to attend workshops organised by the



Rising temperatures and changes in rainfall could have a significant impact on farming activities

Ministry of Environment, and to provide information and comment on draft reports. The National Climate Change Adaptation Strategy 2011-2016 used IWMI's methodology for mapping vulnerability to climate change, while the Second National Communication presented information drawn from IWMI's research.



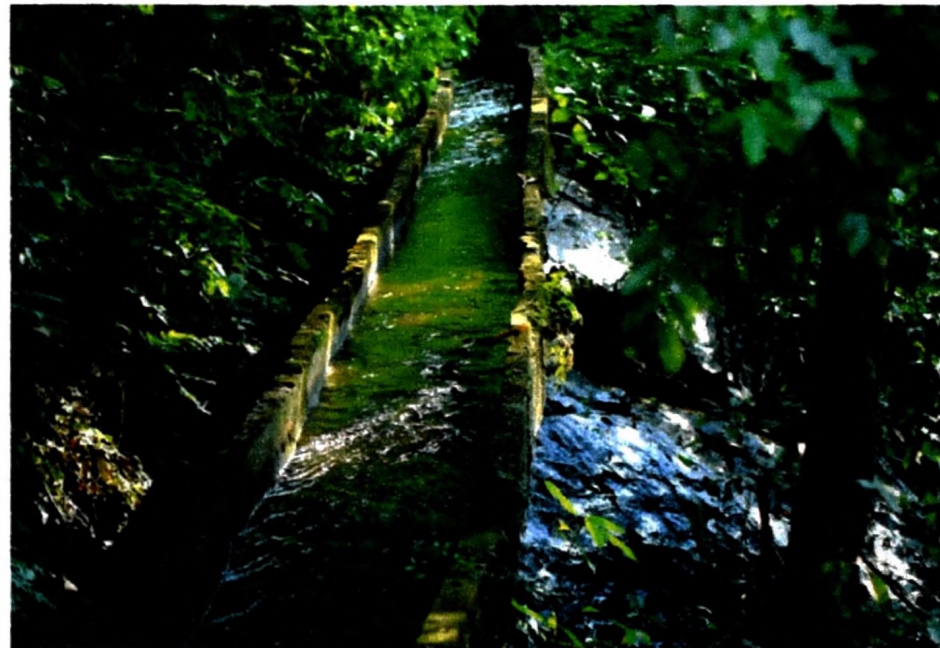
The CCAFS study identified agricultural vulnerability hotspots

The IWMI study also identified the country's agricultural vulnerability hotspots using an index which measures exposure, sensitivity and adaptive capacity. The vulnerability maps, which have been reproduced in a sub-report of the Second National Communication, indicate that certain farming districts - such as Nuwara Eliya, Badulla, Moneragala, Ratnapura and

Anuradhapura - are particularly vulnerable to climate change due to their heavy reliance on primary agriculture, coupled with low ownership of infrastructural and socioeconomic assets.

In preparing the Sri Lanka Climate Change Adaptation Strategy, the Ministry of Environment modified and refined IWMI's climate change vulnerability index to identify the current status and key climate change related issues that need to be addressed in five major sectors: agriculture and fisheries, water, health, urban development and biodiversity and ecosystem services. At every stage, the Ministry of Environment engaged with different stakeholders, including IWMI, to formulate the Strategy.

Although faced with a high degree of uncertainty, the Sri Lankan Ministry of Environment has been able to identify plausible policy and technical solutions to adapt to climate change, based on available tools and information, rather than seeking definitive climate projections for the country. The Strategy, for example, contains some of the 'no regrets' adaptation options suggested by IWMI's study, including restoration of the country's ancient tank system and the promotion of rainwater harvesting, as priority measures for implementation.



The Strategy promotes rainwater harvesting

The National Climate Change Policy of Sri Lanka was approved in January 2012. In accordance with this policy and the Climate Change Adaptation Strategy, National Expert Committees on Climate Change Mitigation and Adaptation have been convened. The Ministry of Environment is preparing mitigation and adaptation action plans for each sector in consultation with the Expert Committees.



The IWMI study has helped to raise awareness about the implications of climate change for Sri Lanka

IWMI's vulnerability study and the National Adaptation Strategy have helped to raise awareness about the implications of climate change for the country. The media has certainly taken note: in 2011, the *Daily Mirror*, the country's leading English-language newspaper, commissioned IWMI scientists to write a series of five articles about the implications of climate change for Sri Lanka as a whole, and farmers in particular. Topics covered included groundwater use, flood prevention and urban agriculture. Eriyagama has also been invited by the Ministry of Environment to become a member of the National Expert Committee on Climate Change Adaptation, which held its first meeting in September 2012.

IWMI's findings are also being used by a number of new projects, including a 2012 GEF-funded UNDP initiative aimed at building climate resilient activities into national household food security improvement and rural infrastructure programmes.

References

Eriyagama N. and V. Smakhtin (2010) Observed and Projected Climatic Changes, Their Impacts and Adaptation Options for Sri Lanka: A Review. In: Evans A. and K. Jinapala (eds.) *Proceedings of the National Conference on Water, Food Security and Climate Change in Sri Lanka,*

Volume 2: Water Quality, Environment and Climate Change. Colombo, Sri Lanka: International Water Management Institute.

Eriyagama N., V. Smakhtin, L. Chandrapala and K. Fernando (2010) *Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka: A Review and Preliminary Vulnerability Mapping*, IWMI Research Report 135. Colombo, Sri Lanka: International Water Management Institute.

Eriyagama N. (2010) Impacts of Climate Change on Water Resources and Agriculture in Sri Lanka: Vulnerability Hotspots and Options for Adaptation. *Water Matters. News of IWMI Research in Sri Lanka*, Issue 5, April 2010. Colombo, Sri Lanka: International Water Management Institute.

Ministry of Environment, Sri Lanka (2010) *National Climate Change Adaptation Strategy for Sri Lanka 2011 to 2016*. Colombo, Sri Lanka: Ministry of Environment.

Ministry of Environment, Sri Lanka (2011) *Sri Lanka's Second National Communication on Climate Change*. Colombo, Sri Lanka: Ministry of Environment.



IWMI research has made a significant contribution to the development of Sri Lanka's climate change adaptation policies