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## **Extreme weather: Are we prepared?**

By Malaka Rodrigo

With floods affecting several areas in Sri Lanka, and weather vagaries becoming more frequent, Malaka Rodrigo looks at why the recently unveiled National Climate Change Adaptation Strategy needs to be given priority ‘Body count ticks on as flood fury continues’, ‘Five die of cold in Vakarai/Batticaloa town’, ‘Floods second only to tsunami’ – these are a few of the scary headlines published this week. The devastating floods in Batticaloa are a result of the condition of La Nina, says Deputy Director of the Department of Meteorology S.R. Jayasekara. La Niña is a phenomenon that occurs due to cooler sea-surface temperatures in the central and eastern tropical Pacific ocean which brings rains in Asian regions too. Mr. Jayasekara says the recent floods in Australia too are a result of La Nina and not a result of climate change. However, experts point out that the intensity of the rains coming down due to the La Nina effect could be increased by climate change.

Climate Change is a result of global warming due to increased emissions of Green House Gases (GHG) like carbon dioxide. It is predicted the change of atmospheric temperature will cause more extreme weather events and also create ecological imbalance. So the world is trying to mitigate GHG emissions and has also begun implementing Climate Change Adaptation Strategies.

The recently unveiled National Climate Change Adaptation Strategy for Sri Lanka (NCCAS) is a valuable first step towards preparing for impending disasters.



A scene from Batticaloa

the natural disaster impacts on communities over the medium to long term,” says team leader Nayana Mawilmada.

The NCCAS suggests activities like developing detailed local level hazard maps (indicating areas that are prone to landslides, floods, etc), and promoting land use planning and monitoring for both rural and urban areas. It also recommends promoting improved climate resilient construction methods (which have already been developed). “Measures such as these, if consistently implemented, will help us to minimize

Sri Lanka's National Climate Adaptation Strategy is a result of a project carried out by the Climate Change Secretariat with Asian Development Bank assistance. The report unveiled in November lays out a prioritized framework for action and investment for the 2011-2016 period aimed at systematically moving Sri Lanka and its people towards a climate change resilient future. The NCCAS proposed climate adaptation measures that can help safeguard our food security, public health, and key economic sectors.

The latest data released by the Meteorology Department for the NCCAS points out that there is an increase in the frequency of extreme rainfall events also anticipated, which would lead to more floods. The trend for the increase of one-day heavy rainfall occurrences is also recorded, though there is no notable variation of rainfall for a season.

The highest ever rainfall recorded during January in Batticaloa was 1365mm which was in 1913. So far during the first 13 days of this month, Batticaloa received 1148 mm which will surely break the rainfall record after 98 years.

Such changing rainfall patterns also demand better drainage facilities. But the "rainfall intensity curves" used by engineers for designing drainage in all kinds of infrastructure, was last updated in 1984 – suggesting that our roads and towns have drainage systems that are grossly under-designed for current rainfall levels. The NCCAS recommends that guidelines and standards for infrastructure design and development should be updated urgently to include climate change considerations – NCCAS also recommends a systematic upgrading of drainage systems in key settlements to avoid floods.

The effect of the recent floods in Batticaloa is believed to have been made worse by inadequate drainage. Local activists point that the highways like A4 and A15 being elevated slowed down the flow of the run-off rain water. Batticaloa is a stretch of land with the sea on one side and the lagoon on other. The sand dunes mostly prevent the run-off of additional water to the sea, so the flow is mostly to the lagoon where there is inadequate drainage points such as culverts. Unplanned developments have also blocked drainage.

Visible disasters like floods, droughts are only the tip of an iceberg. Changing climate will also cause severe shortage of foods, health issues and become a hindrance to the country's development, mostly affecting the poorest communities. The NCCAS suggests measures such as ensuring easy access to seed stock alternatives to counter rainfall variability, improving maintenance of existing tanks and reservoirs, and promoting risk transfer methods such as crop insurance for farmers to ensure food security.

The report contains a series of Climate Change Adaptation recommendations for the next six-year period which will cost a whopping Rs 47.7 billion of additional funding. But if we are unprepared, the cost could be several times more. In the current floods, the Disaster Management Centre has so far spent Rs.138 million for relief efforts and the damaged infrastructure will cause a fortune to rebuild.

Not everyone is convinced though.

Executive Director of the Centre for Environment and Development Uchita de Zoysa says a strategic plan for climate change adaptation is a welcome move, but questions whether it has made adequate assessment of our vulnerabilities and mitigation potentials to avoid climate change conditions. He is critical of the current global climate discussions and promoting Climate Sustainability, and says he does not see such a holistic approach in the current draft of the National Adaptations Strategy and will not be surprised if it becomes another document for the archives.

Communications & Education Specialist of the NCCAS project Nalaka Gunawardene stresses that climate change is now a multi-disciplinary phenomenon, and we cannot turn to meteorologists alone for expert guidance. Climate change experts can be oceanographers, atmospheric physicists, geologists, biologists, hydrographers, and other specialists. We need to move away from this simplistic notion that climate change is something that only meteorologists can interpret, study or explain.

“We can’t afford to wait until 100% conclusive evidence that human-induced climate change is causing these major changes. The bizarre weather patterns are real enough, and we have to cope with them whatever the cause.”

“Climate Adaptation is not a choice, but an imperative for countries like ours. Leave mitigation for the big emitters; we have to protect ourselves. It’s as basic and selfish as that!” stresses Nalaka. “ We cannot shield ourselves completely and we are going to be impacted in some ways, but preparedness and preventive measures NOW can make such impacts more manageable and less destructive.”

### **What next?**

What worries some experts is that the flood-affected areas are vulnerable to more natural disasters.

“My worry is a cyclone equal to or worse than 1978. The frequency that our neighbouring countries are hit by strong cyclones is being increased, so it could just be a matter of time we have another,” Dr. Buddhi Weerasinghe, an expert on disaster risk reduction warns.

Dr. Weerasinghe also points out that there is no preparedness to face a cyclone disaster. “We have no cyclone shelters to evacuate a coastal population. Houses are not retrofitted for cyclones and all the tsunami houses built recently would go up in the wind. It would simply be worse than the current flood,” he warns emphasizing the need to take Adaptation Actions earlier.

Unlike the floods, which we can do little about, the Metereology Department can predict an incoming cyclone 48 hours prior and also accurately warn 10 hours before exactly where it is going to hit, so people can be evacuated. But there should be a proper plan so that it is done before the last minute.