Water and Sustainable Agriculture in Sri Lanka

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The Sustainable Developmental Goals were set by the United Nations to be achieved by 2030 and now, we are less than a decade away from the target date to a better future. Water and sustainable agriculture are linked to all 17 goals either directly or indirectly. In the long term, inadequate water, both in the form of droughts and inundation of water in the form of floods, pose a detrimental impact, not only on environmental security, but on community security, health security, economic security, political security and overall national security of a country. Currently, there's only about 3 percent of the Earth that can be considered sustainable enough to grow food on, but every inch of land is crawling with those who need food to survive.

Sri Lanka, with two annual monsoon seasons, is privileged to possess sufficient water for daily chores. Even during the pandemic, Sri Lanka did not face drastic issues with regards to Water, Sanitation and Hygiene (WASH) resources, unlike other South Asian countries. It is a fact that the demand for both water and agriculture will increase every day. It is necessary to analyse how sustainable agriculture can be flourished while preserving the available water resources.

Sri Lanka is self-sufficient in production of rice, tea and coconut, and the land is highly arable. 400,000 hectares of land has been cultivated additionally during the pandemi. Rice occupies 34 percent of the total cultivated land in Sri Lanka. Every year, more than 20000-23000 kg of arsenic, 40,000-50,000 kg of chromium and 20,000-

30,000 kg of lead are added to the soil. Sri Lanka ranks 26th place in fertiliser usage in the world**.** It is unfortunate that only less than 20 percent of the fertilisers are absorbed by plants. More fertiliser is not an indication of greater harvest, but increased presence nitrogen, arsenic, phosphate in soil, water and ultimately in human bodies. This suggests that nearly 80 percent of fertilisers end up in the soil and the highest portion ends up in lakes, rivers and ultimately, in the sea. Adding to this, the ocean acts as the largest carbon sink in the world. Once large amounts of energy is absorbed by the ocean and evaporated back to the atmosphere, this could create sea spring, tornadoes and cyclones, which could affect the nearby agricultural lands. This is a vicious cycle, and can have drastic impacts on agricultural land.

Water plays a very crucial role in the amelioration of agricultural products. Water scarcity, with extreme weather conditions, increases water constrains. Droughts have become an annual phenomenon in Sri Lanka and this limits agricultural practices during the dry season. In the same manner, overabundance of water in the form of natural disasters damage the crops and from 6-11 August 2020, 107 families and 434 people in the Central provinces of Sri Lanka were affected. Fluctuation of water supply is not only an essential need of life but also for the livelihoods of many. “Women across the Eastern Province of Sri Lanka venture on a 90-minute walk through brush and unlit roads to collect drinking water for their families”. In the long term, water creates an impact not only on the economy, but also on politics, as depressed and deprived farmers could even turn over governments and ultimately these depressive systems could trigger water wars like in the Middle East. Therefore, a drop of water is never to be underestimated and water governance should forever remain a priority. It is necessary that countries improve resilience to water risk management with the utilisation of climate adaptive and water smart technology.

Initiation of sustainable agricultural practices consumes time, effort

and social responsibility. It is the social responsibility of both the manufacturer and the consumer that sustainability is maintained until the product is consumed and well-disposed off. More than 40 percent of production in Sri Lanka goes to waste, due to issues of transportation, packaging, storing capacity and backward means of preservation. When the food wastage is high, wastage of virtual water is high, especially when 15 percent of children between 6-59 months are under chronic malnutrition. When determining the policies like debt for nature swap, forest-bathing and organic farming. In Seychelles, the US conservation group The Nature Conservancy (TNC) bought debt "in exchange for a promise to create 13 new marine protected areas (MPAs)". In Japan, forest bathing is practiced, where people spend time in naturally healing environments, which leads to lower levels of the stress hormone 'cortisol', blood pressure and improved concentration and memory. These plans of action compel people to engross in sustainable living with less effort.

One major solution is organic farming. Bodies like National Organic Control Unit should be responsible to implement rules for organic farming with certain standards, provide incentives for farmers and create opportunities for both local and external export market. In the long run, it is necessary to make these organic products affordable to local consumers, especially considering they use limited water for farming, and are the healthier option. This should not be limited to the private sector, but the public sector involvement needs to be high. Organic farming could lend a helping hand in lessening chemical fertilisers in water bodies and therefore, minimising the number of kidney patients and issues related to discolouration of one's teeth. Monitoring and guiding debate in the agricultural sector could ensure health security of many.

The population is expected to grow and another 2 billion people are to be fed by 2050. The Food and Agriculture Organisation (FAO) of the United Nations has been working with the government on a national

agricultural strategy for 10 years and there seems to be a long delay. Existing water policies should be coherent with the upcoming national agricultural strategy and completion and implementation such a strategy could lead us towards achieving sustainable agricultural targets. But the question is, If our agriculture isn't sustainable, how are we to face the further complications on health, face water scarcity and even water wars?

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