Unveiling the Frontline Impact: Journalists Uncover the Profound Effects of Climate Change on Farmers, Fishermen and Food Workers

By Renuka Kalpana

With global temperatures rising, Divya Nawale, an Indian climate change activist involved in climate policy initiatives for the United Nations under the UN Framework Convention on Climate Change (UNFCCC), states, “If we were to classify the stages of climate change on a scale from zero to five, the world has already surpassed stage 3.5."

“According to the Paris Climate Accords, our objective is to limit global temperature rise to below 2°C, with an aspirational target of 1.5°C. The reality is that we have already exceeded 1.2°C. Taking into account the current rate of emissions, it is plausible that we could bridge the remaining 0.3°C within the next decade,” Divya postulates.

The Sixth Assessment Report (AR6) by the Intergovernmental Panel on Climate Change (IPCC) underscores the need to address the far-reaching consequences of climate change on agriculture. With each passing year, the evidence grows stronger that rising temperatures, shifting precipitation patterns and extreme weather events are profoundly impacting the agricultural sector. The AR6 highlights the vulnerabilities of global food systems and emphasises the pressing need for adaptation and mitigation strategies to safeguard food production and ensure global food security in the face of a climate crisis.

Agriculture is integral to the socioeconomic fabric of south-east Asian countries, ensuring food security, promoting rural development, driving economic growth and contributing to environmental sustainability. Additionally, farming is also critical for the region's sustainable development amid challenges like climate change and population growth. For instance, in Malaysia, agriculture accounts for 12% of the country's Gross Domestic Product (GDP), largely driven by palm oil production, making it the world's second-largest producer and exporter after Indonesia. In Laos, agriculture represented 16.07% of the GDP in 2021 and is expected to grow at a rate of 2.5%, reaching 17.2% by 2023. Vietnam, particularly the vulnerable Mekong Delta, faces the brunt of climate change.

The Impact Media Fellowship 2023, organised by the Singapore International Foundation (SIF), brings together five journalists from diverse backgrounds to delve into the impact of climate change within their respective countries. Through extensive interviews with experts, interactions with farmers and conversations with fishermen, these journalists, namely Renuka Kalpana from India, Luqman Hakim from Malaysia, Valy Phommachak from Laos, Yogi Eka Sahputra from Indonesia and Fakhruradzi Ismail from Singapore, aim to comprehend the impact of the climate crisis on their respective nations.

Rising Temperatures and Agricultural Challenges

India and Laos, two countries with large agricultural communities and influence, are experiencing the adverse impacts of climate change. A recent study conducted by the University of Hyderabad (UoH), the Indian Institute of Technology (IIT) Madras and the India Meteorological Department (IMD) reveals that heatwaves have become more frequent in India, while winters have become milder. This trend has serious implications for the country's agricultural productivity, especially in states like Haryana and Punjab, which are known for their grain production.

Sandeep Khanda, a farmer from Khanda village in Haryana, has witnessed the shifting seasons first-hand. Typically, winters extend until April, allowing farmers to harvest their crops and celebrate Baisakhi, the harvest festival which usually falls in mid-April. However, this year, an early onset of summer in February, accompanied by extreme rainfall in April, disrupted the harvest and caused financial losses for farmers like Sandeep.

Similarly, in Laos, agricultural activities and deforestation contribute significantly to global warming. The practice of slash-and-burn agriculture, which involves clearing vegetation and shifting to new forestlands, has led to deforestation, loss of biodiversity, soil erosion and water contamination. Farmers, who often practise this method on their lands, face blame for these environmental consequences. However, larger corporations and firms that support and promote these practices also bear responsibility, underline experts. In Laos, the reliance on agricultural activities exacerbates global warming and its associated environmental challenges.

Meanwhile in Malaysia, rising temperatures impact palm oil production, causing reduced fruit production and financial losses for palm oil operators like Jasman Juraimi.

"When it gets too hot, there are no fruits for us to pick which causes the price to drop. Our profits can even decrease to about 40%. The suitable condition for these trees is a temperature that feels damp. It cannot be too hot because then, we won't be able to fertilise the trees," he mentions.

Fertiliser Dependency and Environmental Concerns

The issue of fertilisers is not restricted to any one country in south-east Asia. As the visible effects of climate change have become more pronounced in recent years, farmers like Sandeep Khanda have witnessed a decline in soil fertility. In response, farmers have resorted to using more toxic fertilisers to boost production and mitigate losses. Unfortunately, this has had negative consequences for both farmers and agricultural labourers, Khanda said.

Additionally, in Malaysia, the use of fertilisers on palm trees containing nitrogen compounds aggravates the effects of the already hot climate. While nitrogen is essential for plant growth and protein formation, excessive nitrogen can harm plants. Palm oil operator Jasman acknowledges the challenges faced by plants in very dry soils, as fertilisers may not be readily accessible to them. "Fertilisers are not accessible to plants in very dry soils. But without fertiliser, they produce fewer fruits which are difficult for us," said Jasman. To combat these challenges, he employs nature-based solutions such as planting ferns to provide shade and natural mitigation on his plantation.

Despite their geographical distance, the experiences of farmers in India and Malaysia reflect a common struggle in adapting to the changing climate and maintaining agricultural productivity. The reliance on fertilisers, both toxic and nitrogen-based, underscores the need for sustainable and climate-resilient farming practices in both countries.

Unpredictable Weather Patterns

Moreover, the impact of climate change connects the experiences of farmers and fishermen in different regions, highlighting the challenges they face due to changing weather patterns and extreme events. Climate change has led to erratic weather patterns, making it challenging for Indonesian fishermen to catch fish negatively impacting their livelihoods. As per the experiences of fishermen, Coastal seas and small islands also continue to experience the threat of climate disasters.

In Indonesia, fishermen and coastal communities, such as those in the Riau Islands, are experiencing the impact of climate change first-hand. Erratic weather patterns make fishing unpredictable and reduce catch sizes, affecting the livelihoods of fishermen like Abu Hurairah.

After going out to the sea for years, many like Abu had developed an instinct for predicting weather patterns. However, the situation has changed completely in recent times. "We could anticipate when it was going to rain. Our predictions about storms used to be accurate most of the time," Abu says, adding that the unpredictable weather has reduced the amount of catch in each trip.

He has become increasingly concerned about the risks since he also supports his family. "The north-wind season used to last until March, but now the time is uncertain," Abu says. Although a weather forecasting application is available, it does not fully help fishermen, he adds.

The changing climate also brings the risk of floods, which can cause significant losses for palm oil farmers in Malaysia. Floods not only destroy saplings and damage grown trees but also disrupt the production cycle, requiring at least two years for the trees to recover and resume fruit production. "Of course, the saplings will be destroyed when they are flooded and the grown trees will be damaged. This hurts our operational cost," Jasman, the palm oil operator, said.

In India, Lakshmibai Jangu Atram, a member of the Kolam tribal community from Sonapur village in Maharashtra, had high hopes for resin production this year. However, sudden stormy rainfall in late December washed away her expectations, damaging not only the resin production but also the pigeon pea crops cultivated by her neighbour Sitabai Sudam Atram. This trend of decreasing agricultural production has been observed by tribal communities over the past six years, exacerbating the already limited yields from dryland farms.

The consequences of climate change on agriculture and fishing are evident in these regions. Farmers and fishermen bear the brunt of unpredictable weather, decreased productivity, increased production expenses, and reduced profits. Addressing climate change impacts and supporting these communities will require not only improved infrastructure and forecasting systems but also sustainable farming practices and adaptation measures to build resilience in the face of changing climatic conditions, assert experts.

Policy Measures to Address Climate Challenges

Farmers and fishermen, as keen observers of their surroundings, have devised certain solutions to counter the increasing challenges, but in the face of climate change, these efforts seem inadequate. In India, farmers have traditionally relied on homemade fertilisers, but these are no longer effective due to climate change. The government needs to intervene by providing planning tools and funding

to scale up sustainable agricultural practices that can withstand the changing climate, experts emphasise.

Moh Abdi Suhufan, the national coordinator of Destructive Fishing Watch (DFW) Indonesia, points out the importance of local governments taking action to protect small fishermen from the effects of climate change. This includes providing them with data and information on the specific vulnerabilities they will face and conducting comprehensive awareness campaigns to help them anticipate and adapt to these changes, he adds.

Additionally, regional climate change adaptation and mitigation plans should incorporate targeted actions that address the environmental, social, and economic concerns of fishermen, experts opine, adding that at the central level, there should be a consolidation of planning and budgets from various sources to prioritise and synergistically support vulnerable areas and the livelihoods of fishermen.

DFW's analysis in Kolono Bay, South Konawe, and Southeast Sulawesi reveals that climate change has led to coastal erosion, posing a threat to the settlements of fishermen. Similar reports have emerged from Kendari City, where rising seawater levels have started to infiltrate fishermen's houses along the coast. These examples highlight the urgent need for proactive measures to protect coastal communities and ensure their resilience in the face of climate change.

Greenhouse agriculture in Vietnam offers a viable solution to combat climate change. By implementing green agriculture practices, which involve the efficient utilisation of resources and the application of advanced technologies, Vietnam aims to increase agricultural productivity while minimising input usage and greenhouse gas emissions. According to Dao The Anh, deputy director of the Vietnam Academy of Agricultural Sciences, green agriculture optimises resource allocation to produce higher-quality food with fewer inputs.

The awareness of climate change's impact on farming has also grown among farmers like Khuat Huu Duong from Xuan Nha commune in Son La province. Previously unaware of the environmental consequences of burning fields, fertilisation and herbicide use, Duong now understands the importance of proper fertilisation techniques and preserving vegetation.

Farmers in provinces like Hai Duong adapt their practices to cope with intense heat, planting crops at night or in the early morning. By adjusting transplanting schedules, maintaining the deep-water supply and handling seedlings carefully, farmers can mitigate the adverse effects of hot weather on their crops. Through greenhouse agriculture, Vietnam demonstrates its commitment to sustainable practices that protect the environment, improve farmers' livelihoods, and contribute to climate change mitigation.

Singapore has introduced an innovative solution to enhance its food security through the cultivation of climate-resistant Temasek Rice. In a pilot project, the resilient rice variety was harvested at a vertical high-tech farm in a residential area. Although currently reserved for research and development at the Temasek Life Sciences Laboratory, the successful cultivation demonstrates the potential for growing crops in urban farm settings.

The country’s minister for social and family development, Masagos Zulkifli, emphasises the importance of community involvement, with Tampines residents actively contributing food waste for

composting to support vegetable growth at the facility. While these initiatives are commendable, Singapore recognises the need for further advancements.

The nation's heavy dependence on food imports necessitates a shift towards more sustainable practices and localised production. By raising awareness, implementing eco-friendly approaches, and incentivizing local food production and distribution, Singapore aims to bolster its food system's resilience and secure its future food security.

In conclusion, the development and implementation of national adaptation plans in south-east Asian countries are crucial steps towards addressing the challenges posed by climate change. These plans encompass a range of strategies, including sustainable agriculture, resilient infrastructure, ecosystem conservation and community engagement.

By prioritising adaptation measures and integrating climate resilience into policies and programs, south-east Asian nations can better protect their populations, economies, and ecosystems from the impacts of climate change. Collaborative efforts, knowledge sharing, and international support are essential in ensuring the success of these adaptation plans and building a more resilient future for the region.

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