

Issue

Brief

ISSUE NO. 699
MARCH 2024

Assessing the Impact of Climate Change on Public Health and Nutrition Security

**Shweta Khandelwal, Pooja Arora,
Snigdha Ranjan, and Shoba Suri**

Abstract

Climate change poses a significant risk to global food security. Rising temperatures, extreme weather events, and shifting precipitation patterns impact food production, disrupting food supply chains, increasing food prices, and diminishing food safety. These effects are particularly apparent in developing countries, where vulnerable populations struggle to access nutritious foods and small farmers face financial challenges. Tackling the impacts of climate change on food security is crucial to safeguard the future availability of food. This brief highlights the importance of nutrition security and its preparedness against climate change while documenting learnings from different geographies.

At the United Nations Climate Change Conference (COP28) in 2023, key players agreed to unlock crucial funding, particularly for the loss and damage fund, to accelerate climate action.^{1,2} High-quality evidence and projections presented at COP28 highlighted how catastrophic events can reverse the progress made towards development and push people back into extreme poverty. Indeed, changes in the climate pattern, warming temperatures, and increased precipitation could cause a loss of 150,000 lives per year, with the risk likely to double in the next 20 years.³ Data presented at COP27 in 2022 stressed that ignoring climate change could trigger a global humanitarian crisis, with 3.4 million annual deaths by the century's end and India bearing the brunt of one million heat-related fatalities in the next 67 years.⁴

The COP28 UAE Declaration on Climate and Health, endorsed by 123 countries, emphasised the need to build policies that put health at the forefront of climate change measures.⁵ It acknowledged the importance of public health in enhancing climate resilience and facilitating successful adjustments in diverse sectors such as food and agriculture, water and sanitation, housing, urban planning, healthcare, transport, and energy. The declaration urged countries to enhance the ability of health systems to anticipate and respond to climate-sensitive diseases and health risks. In addition, the health impact of reducing greenhouse gas (GHG) emissions must be recognised to develop sound strategies and national adaptation plans to curb such emissions. Notably, the declaration underlined the valuable insights gained from the COVID-19 pandemic and underscored the significance of constructing resilient communities and strengthening healthcare systems.

Climate change denotes unforeseen alterations in temperature and weather patterns. Human actions since the advent of the industrial age have largely precipitated the climate crisis. By interfering with nature, humankind has caused climate change, loss of biodiversity, and heightened air, soil, water, and ocean pollution. Consequently, such events impact the environment, causing suffering to human wellbeing worldwide. The 2011-2020 decade has been the hottest on record, and Earth is now around 1.1 degrees Celsius warmer than it was in the late eighteenth century.⁶ Climate hazards often occur simultaneously, creating a complex and devastating web of challenges. While developed nations may be to blame for the current situation, developing countries will bear the brunt of the consequences as they are already burdened with issues such as poverty, hunger, poor information systems, and weak health

infrastructure. This will further marginalise vulnerable populations, limiting their opportunities for success. Vulnerable populations include pregnant and lactating women, children, the elderly, impoverished and comorbid individuals, tribal populations, migrants, small-holder farmers, and those living in disaster-prone areas. Over a third of children worldwide face significant exposure to heatwaves and water scarcity, 600 million children face the risk of vector-borne diseases, and 300 million children are susceptible to riverine flooding.⁷ Climate change is expected to cause stunting in between 570,000 and over a million children under five by 2030.⁸ Soaring temperatures have also shown linkages to an increased risk of gestational hypertension, a dangerous rise in blood pressure during pregnancy, and preeclampsia (a life-threatening condition for the mother and the baby).⁹ The climate crisis has resulted in a child rights crisis, which is inclusive of water crisis, health crisis, education crisis, and participation crisis,^a thereby threatening humankind's very survival.¹⁰

Given its geophysical and climatic conditions, India confronts numerous hazards and is one of the world's most disaster-prone countries.¹¹ Since 2018, India has consistently ranked among the top 10 countries severely affected by disasters, according to the Global Climate Risk Index.¹² Additionally, over 97 million people in India face extreme flood exposure and about 68 percent of the country experiences varying degrees of drought susceptibility, making it the country with the most people affected by drought since 1900.¹³ Unexpected floods can also limit access to clean water, giving rise to vector- and rodent-borne diseases and other bacterial/viral illnesses such as diarrhoea, cholera, and salmonellosis.¹⁴

Climate change significantly influences human food as it is closely interconnected with food systems. Climate change and food systems are known to have a bidirectional relationship.¹⁵ Agricultural activities such as making and using fertilisers, cold chains, transportation, and cattle rearing are the second-largest contributors to GHG emissions.¹⁶ At the same time, climate change is reshaping weather patterns, resulting in emergencies such as floods, crop damage, droughts, and food price inflation.¹⁷ Given the rising frequency and severity of disasters, investing in enhanced emergency preparedness and response strategies is crucial for swift, predictable, and practical actions during emergencies.

a According to the UNICEF report, a participation crisis is: "Children's views are often not heard and acted on by decision makers who are setting policies that directly affect how severe future impacts will become. Because children often don't have the same legal and political standing as adults, they often do not have a platform to have their voices heard, or accountability mechanisms to ensure they are acted upon. They are reliant and dependent on adults, and suffer from power imbalances and a lack of knowledge, including on climate change."

Introduction

Collaboration is vital to address health challenges related to human, animal, environmental, and climate health, including preventing zoonotic diseases. The ‘One Health’ initiative advocated by the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the World Organization for Animal Health,¹⁸ is an interdisciplinary approach to solving global health and environmental challenges through a human-animal-plant-environment interface.¹⁹ The ‘One Health’ declaration was signed in September 2019 to combat health threats to humans and animals.²⁰ The Intergovernmental Panel on Climate Change has also recognised the potential for a ‘one health’ framework in its 2022 report, which aims to integrate numerous efforts in collaboration on policymaking, capacity building, knowledge exchange, and so on.²¹ Additionally, although the Sustainable Development Goals (SDGs) include two separate goals on climate action (SDG-13: take urgent action to combat climate change and its impacts) and global partnerships (SDG-17: strengthen the means of implementation and revitalise the global partnership for sustainable development), they are interdependent, as combating climate change necessitates collaboration with pertinent partners.

This issue brief captures such efforts across geographies to guide policymakers in discerning replicable practices within their specific agro-climatic zones while underlining the pivotal role of international collaboration in successfully implementing tailored interventions.

Understanding Food and Nutrition Security

Food security is “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and preferences for an active and healthy life”.²² Food security encompasses dimensions such as food availability, access, utilisation, long-term aspects (like resilience), nutritional adequacy, and access and sustainability (the ability to make decisions on what to eat and how and where to produce it while maintaining harmony with nature’s systems).²³

Despite decades of global efforts, hunger and food insecurity—the condition of not having access to sufficient food or food of adequate quality to meet basic needs—remain pervasive and alarmingly prevalent. In 2023, over 333 million people in 78 countries faced acute food insecurity.²⁴ Approximately 2.3 billion people suffer from some form of malnutrition,²⁵ and 650 million people are undernourished worldwide.²⁶ Studies suggest that about 140 million people globally will have zinc deficiencies, and nearly 150 million will experience protein deficiency by 2050.²⁷

According to the FAO, most agrifood systems have high hidden costs, with the majority (over 70 percent) of such costs stemming from unhealthy diets.²⁸ These diets, characterised by the high consumption of ultra-processed foods, fats, and sugars, contribute significantly to obesity, non-communicable diseases, and, ultimately, labour productivity losses. In 2023, hidden costs amounted to a staggering US\$10 trillion annually, representing nearly 10 percent of global GDP. India’s share of these hidden costs is approximately US\$1.1 trillion, the third highest behind China and the US.²⁹

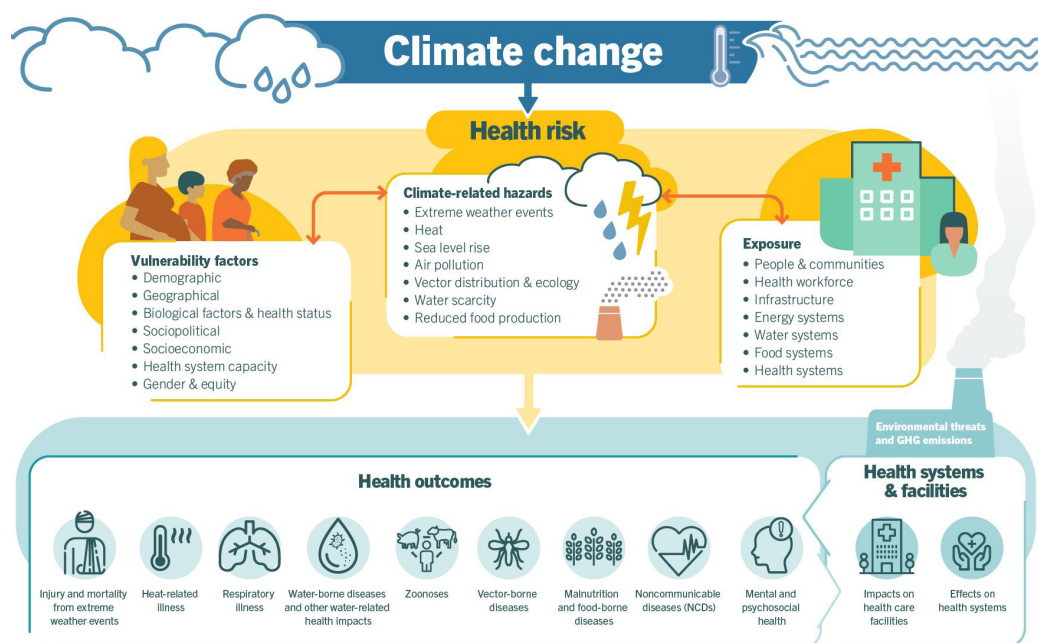
Additionally, as the nutritional quality of grains deteriorates due to climate impacts, ‘hidden hunger’ could become more prevalent.³⁰ This form of undernutrition occurs when people consume enough calories but lack essential nutrients like iron and zinc, leading to detrimental health and developmental consequences. Experts concur that combatting the nutritional impacts of climate change will require different strategies in the West and India.³¹

Climate change threatens food security by disrupting food systems, including crops, livestock, and fisheries, and causing disruptions in food distribution. These disruptions are driven by global warming, droughts, flooding, and extreme weather events, and disproportionately affect vulnerable populations already struggling with food insecurity due to lower incomes, limited access

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to nutritious food, and social inequalities.³² In 2020, nearly 3.1 billion people lacked the financial means to access a healthy diet.³³ Additionally, nutritious food becomes even costlier during climate crises.^{34,35} Research examining mortality rates, dietary patterns, food consumption, and GHG emissions suggests that adopting healthier, environmentally-conscious eating habits can reduce the risk of all-cause mortality.³⁶

Figure 1: Climate Change and Health Outcomes



Source: WHO³⁷

Climate change, malnutrition, and obesity are geographically and temporally intertwined, forming a global ‘syndemic’ (two or more epidemics occurring simultaneously).³⁸ Firstly, obesity, climate change, and malnutrition share common underlying societal drivers (such as food and agriculture, transportation, urban design, and land use) that create suboptimal environments that promote unhealthy diets, physical inactivity, and poor health outcomes. Secondly, poverty is understood to amplify the effects of the global syndemic, especially in low- and middle-income countries. Thirdly, climate change can

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be considered a pandemic because of its expansive impact on human health and natural resources, leading to a further amalgamation of health challenges posed by obesity and undernutrition.³⁹

Halving global GHG emissions by 2030 and achieving net zero by 2050 is crucial to avoid catastrophic consequences.⁴⁰ However, most countries are not on track to achieve these targets. By 2030, the annual social cost^b of diet-related GHG emissions will amount to US\$1.7 trillion.⁴¹ Implementing early adaptation strategies can significantly mitigate the severity of climate risks on food security. For instance, a shift towards sustainable, healthy diets can reduce healthcare and climate change costs by up to US\$1.3 trillion.⁴² Without successful adaptation measures, worldwide crop yields could plummet by up to 30 percent by 2050.⁴³ This outlook is particularly concerning for Asia, where rural communities rely heavily on agriculture. Between 2008 and 2018, floods and storms caused an estimated US\$11 billion in crop losses and US\$10 billion in livestock losses.⁴⁴ Future losses will be even more pronounced.

India has attained self-sufficiency in grain production, but chronic household food insecurity persists, affecting millions. Under the influence of adverse climate change events, food insecurity will likely be exacerbated in areas vulnerable to hunger and undernutrition. Over the past 30 years, India has experienced a rise in average temperatures and increased frequency of extreme rainfall. Between 2050 and 2080, India is projected to experience a decrease of less than 2.5 percent in rainfed rice yields and a 7 percent reduction in irrigated rice yields.⁴⁵ In addition, wheat yields are expected to decline by between 6 percent and 25 percent in 2100, while maize yields may see an 18-23 percent reduction.⁴⁶ These figures underscore the necessity for implementing mitigation strategies to ensure food and nutrition sustainability while preserving dietary diversity.

b Social cost refers to the total cost to society, which is the sum of private costs borne by the economic actor for the activity and the external costs imposed on others because of the activity.

Climate Change Impacts on Nutrition Security

Securing food and nutrition amid natural disasters and climate change necessitates adaptation strategies to reduce vulnerability and enhance resilience. An all-encompassing adaptation strategy must incorporate disaster preparedness, resilient infrastructure, and innovative agricultural technologies to address the challenges of disasters and climate change. For instance, evidence from a randomised control trial conducted in Pakistan between 2012 and 2017 shows that negative impacts of heat on the birth length of children were in part mitigated through maternal nutrition supplementation, with inferences on how such interventions have the potential to provide resilience against adverse effects of heat stress.⁴⁷ The Indian government has already initiated several programmes focused on food/nutrition security—such as the Pradhan Mantri Krishi Sinchayee Yojana,^c Rashtriya Krishi Vikas Yojana,^d Soil Health Card/Soil Health Management Schemes,^e Pradhan Mantri Fasal Bima Yojana,^f Annapurna Scheme,^g Mahatma Gandhi National Rural Employment Guarantee Act (2005),^h National Food Security Act (2013),ⁱ rice fortification programme,^j Poshan Abhiyaan,^k and the PM Poshan scheme.^l

Similarly, India has established the National Action Plan for Climate Change with 10 sub-missions to address climate change, including the National Mission of Sustainable Habitat, the National Mission on Strategic Knowledge for Climate Change, and the National Mission for Sustainable Agriculture.⁴⁸ However, to

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- c Launched in 2015, the scheme aims to ensure access to some means of protective irrigation to all agricultural farms in the country, to produce ‘per drop more crop’, to further rural prosperity.
 - d The scheme was introduced in 2007 to bolster agricultural sector growth and reorient agricultural development strategies to meet the needs of farmers by facilitating decentralised planning, ensuring the availability of appropriate technology and natural resources, and accommodating local needs based on agro-climatic conditions.
 - e The Soil Health Card scheme, under India’s Ministry of Agriculture and Farmers’ Welfare, was launched in 2014 to aid farmers in decision-making to optimally use their land for maximum yield and build their capacity in maintaining the soil health of their land holdings with the help of a soil health card. In recent years, a GIS-enabled mobile application has been introduced to enable testing of soil health.
 - f The scheme was launched in 2016 aims to support production in agriculture by providing affordable crop insurance to ensure comprehensive risk cover against all non-preventable natural hazards (from the pre-sowing to the post-harvest stage) on an ‘area approach basis’.
 - g Launched in 2000, the scheme provides 10 kg of foodgrains to senior citizens who, despite being eligible, may have not received benefits under the National Old Age Pension Scheme.
 - h It aims to enhance the livelihood security of people in rural areas by guaranteeing 100 days of wage-employment in a financial year to a rural household whose adult members volunteer to do unskilled manual work.
 - i Ensures the availability of subsidised foodgrains for up to 75 percent of the rural population and 50 percent of the urban population through the Targeted Public Distribution System.
 - j Launched in 2021, the programme involves adding fortified rice kernels (FRK), containing FSSAI-prescribed micronutrients (iron, folic acid, vitamin B12) to normal rice (custom milled rice) in the ratio of 1:100 (mixing 1 kg FRK with 100 kg normal rice).
 - k Also known as the National Nutrition Mission, the scheme was launched in 2018 to emphasise the nutritional status of adolescent girls, pregnant women, lactating mothers, and children (0-6 years).
 - l Previously known as the Mid-day Meal programme, it was started in 1995 to improve the nutritional status by providing hot cooked meals to the children studying in Government and Government – aided schools.

Climate Change Impacts on Nutrition Security

attain the goals of a climate-resilient planet and long-term sustainable growth, India must ensure greater involvement at the regional, state, national, and international levels.

Learning from initiatives in other nations can help identify new pathways to mitigate climate change. Public health communication strategies are essential to address health challenges related to food insecurity and climate change. It can increase public awareness, engagement and support for policies and actions that promote sustainable food systems and mitigate the impacts of climate change on food security. By employing communication strategies backed by research—i.e., emphasising the health relevance of climate change, highlighting the benefits of sustainable food systems, and addressing the needs of vulnerable populations—public health workers and communicators can effectively convey the urgency of addressing food security in a fast-changing climate.⁴⁹ Some nations allocate resources to preparedness through early warning systems that monitor and assess the impact of disasters and climate change on agriculture, related production, and nutrition. Communities are increasingly aware of the importance of diversifying agriculture systems to help optimise production/yields. Researchers at the regional, national, and international levels are developing innovative technologies to monitor soil moisture and deliver real-time information, design new crop varieties, reduce food wastage, and find improved and effective agricultural practices to cope with climate change. Table 1 showcases a few initiatives worldwide that have successfully mitigated the food and nutrition crisis.

Additionally, the UN has implemented an ‘Early Warnings for All’ executive action plan (2023-2027)⁵⁰ to ensure global safety from hazardous weather conditions, floods, or other climatic events through life-saving early warning systems.⁵¹ The four key focus areas are disaster risk knowledge and management; detection, observation, monitoring, analysis, and forecasting; warning dissemination and communication; and preparedness and response capabilities.⁵² One-third of the global population, especially those in low- and middle-income countries, lack access to such early warning systems.⁵³ This paucity increases their risks of climate change impacts.

Table 1: Global Examples of Preparedness Programmes to Address Food Insecurity

Programme	Countries covered	Focus areas	Objective	Implementation
Initiatives and Grants				
Initiative on Climate Action and Nutrition (I-CAN) ⁵⁴	Global	<ul style="list-style-type: none"> • Agrifood systems • Health systems • Social protection systems • Water systems 	Address climate change and improve nutrition for all, especially children and vulnerable populations. It was launched in 2022 at COP27.	<ul style="list-style-type: none"> • Forge a strong alliance among nutrition and climate advocates. • Craft a unifying climate-nutrition narrative. • Build and share evidence for integrated solutions. • Reinforce existing efforts and take action to address gaps in climate-smart nutrition.
Global Facility for Disaster Reduction and Recovery (GFDRR) ^{55,56}	Low- and middle-income countries are included. South Asian countries covered include Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	<ul style="list-style-type: none"> • Disaster response • Risk management 	It was launched in 2006 to reduce the frequency of natural hazards caused by climate change in particularly vulnerable South Asian countries such as Bangladesh, Nepal, and Sri Lanka.	<p>Managed by the World Bank</p> <ul style="list-style-type: none"> • Offer technical support for upgrading hydromet systems. • Create urban disaster risk management plans. • Execute resilient reconstruction and recovery plans. • Introduce adaptive social protection solutions. • Adherence to the Sendai Framework.
Shock Mitigation Programmes and Preparedness Plans				
BAXNAANO: Shock Responsive Safety Net for Human Capital Project ⁵⁷	Somalia	<ul style="list-style-type: none"> • Cash transfers • Food security • Shock-response • Long-term nutrition services 	<ul style="list-style-type: none"> • Provide cash transfers to poor and vulnerable communities to protect against food insecurity and malnutrition. • Establish critical components for a national shock-responsive safety net system. • Prevent harmful coping mechanisms to meet the rapidly scaling needs during crisis due to recurrent shocks in the short term. • Encourage long-term human capital investment by connecting recipients with nutrition services. 	<p>Financer: World Bank</p> <p>Collaborators: Government ministries and UN agencies</p> <p>Target Beneficiaries: 200,000 households (approximately 1.2 million individuals) in Somalia</p> <p>Building Resilient and Sustainable Solutions:</p> <ul style="list-style-type: none"> • Provision of predictable and reliable cash transfers beyond the immediate crisis. • Assistance to enhance institutional resilience and establish fundamental delivery mechanisms for a national social safety net system.

Programme	Countries covered	Focus areas	Objective	Implementation
Monsoon Preparedness and Response: Nutrition Cluster Nepal ⁵⁸	Nepal	Emergency nutritional aid	Meet the immediate nutrition needs of the flood-affected individuals, with a special focus on vulnerable groups (i.e., children under five years of age and pregnant and lactating women) in 22 districts.	<p>Collaborators: Ministry of Health and Population and UNICEF</p> <p>Preparedness Plan:</p> <p>Prepared to address emergency nutrition situations by providing basic nutrition services in floods, droughts, and landslide-affected areas, endorsed by the Nutrition Cluster.</p>
World Food Programme (WFP) Bangladesh: Emergency Preparedness and Response ⁵⁹	Bangladesh	<ul style="list-style-type: none"> • Preparedness training • Emergency nutritional aid 	<ul style="list-style-type: none"> • Enhance the country's emergency response capacity • Save lives • Safeguard livelihoods • Assist in disaster recovery. 	<p>Collaborators: Ministry of Disaster Management and Relief and WFP</p> <p>Implementation at the National Level:</p> <ul style="list-style-type: none"> • Creation of Humanitarian Staging Area and district disaster management centres. • Simulation exercises (SimEx) for government and humanitarian agencies are conducted. • Universities will offer the Emergency Humanitarian Supply Chain Management course. • Orientation training on the revised Standing Order on Disasters is provided to enhance the knowledge and response capacities of local Disaster Management Committees. <p>Implementation at the Local Level:</p> <ul style="list-style-type: none"> • Activities include coordinating with retailers to maintain emergency stocks of food and non-food items for response. • Ensuring preparedness at e-voucher outlets in Cox's Bazar. <p>Achievements (2022):</p> <p>Preparedness for cyclone Sitrang, in coordination with the government and other sectors, provided emergency 12-day stocks at all e-voucher outlets in Cox's Bazar and propositioned fortified biscuits as a rapid response.</p>

Programme	Countries covered	Focus areas	Objective	Implementation
WFP Pakistan ⁶⁰	Pakistan	<ul style="list-style-type: none"> Recovery and assistance Emergency food provisions Nutritional aid Shock preparedness Education Cash transfers 	<ul style="list-style-type: none"> In alignment with the government's 2025 Vision, WFP Pakistan aims to focus on malnutrition, reduce stunting, and support vulnerable communities affected by human and climatic events in disaster-prone areas. Build resilience in hazard-prone areas, address malnutrition, and empower women. 	<p>Collaborators: Government of Pakistan, Benazir Income Support Group, and Department of Education.</p> <p>Approaches used:</p> <ul style="list-style-type: none"> Provide humanitarian and recovery assistance during and after disasters. In areas affected by the crisis, provide monetary aid and food provisions to help construct community assets. Governance, fortification, and innovative interventions are all crucial for enhancing nutrition. Strengthen disaster preparedness and response at various levels. Participatory school attendance and a diminished gender disparity can be achieved by financially aiding education through cash transfers. In schools, dietary diversity and healthy diets can be promoted through behaviour change communication.
Child-Centred Risk-Informed Preparedness for a Resilient India - UNICEF India ^{61,62}	India	<ul style="list-style-type: none"> Education Public health strengthening Water security Child-friendly spaces School safety and supply chain management 	<ul style="list-style-type: none"> To enable children to understand and address risks and build resilience. To enhance emergency preparedness, provide life-saving assistance and invest in resilience Strengthening state disaster risk management and governance capacities. 	<ul style="list-style-type: none"> Encourage children as agents of change to use their knowledge about risks. Carry out risk analysis to inform the government and counterparts. Concentrate on programmatic responses to child resilience with a focus on risk.
Government scheme for food insecurity				
Pradhan Mantri Garib Kalyan Ann Yojana ⁶³	India	<ul style="list-style-type: none"> Food provision Subsidised food 	<p>The goal is to distribute complimentary foodgrains to beneficiaries of the Antodaya Ann Yojna (AAY) and Primary Household (PHH) categories as per the National Food Security Act, 2013 (NFSA).</p>	<ul style="list-style-type: none"> Ensures uniform provision of free foodgrains under NFSA to PHH and AAY beneficiaries. Strengthens NFSA provisions for accessibility, affordability, and availability of foodgrains. Subsumes existing subsidy schemes for streamlined implementation. <p>Target Beneficiaries: Over 80,000,000 economically weak individuals.</p> <p>Steps Taken:</p> <ul style="list-style-type: none"> Issued notifications for zero pricing for AAY and PHH beneficiaries. Addressed technical issues at Fair Price Shops. Provided advisories to fair-price shop dealers with zero pricing on receipts.

Programme	Countries covered	Focus areas	Objective	Implementation
Digital monitoring and risk forecasting models				
Famine Early Warning Systems Network (FEWS NET) ⁶⁴	African and Central Asian Countries	Digital models for risk assessment	Provide early warning and analysis on global acute food insecurity.	Uses scenario development methodology for the “most likely” food security future outcome through rigorous analysis by creating “if-then” scenarios. Targeted to aid: Governments, relief agencies, NGOs, researchers, journalists.
FAM: Famine Action Mechanism ⁶⁵	Global	<ul style="list-style-type: none"> • Food security crisis risk analytics • anticipatory and early action financing • Anticipatory and Early Action Programming 	<p>Launched in 2018 to scale up anticipatory and early action to prevent emerging food security crises and protect lives and livelihoods globally.</p> <p>Partners: The World Bank, donors (Canada, Denmark, EU, France, Germany, Italy, Netherlands, Norway, Sweden, Switzerland, UAE, UK, US), UN agencies (FAO, IFAD, OCHA, UNDP, UNICEF, WFP, WHO), ICRC and IFRC, (I)NGOs (Action Against Hunger, Concern, Mercy Corps, Oxfam, Save the Children, START) and data institutions (CILSS, FEWS NET, IPC, UN Centre for Humanitarian Data).</p>	<ul style="list-style-type: none"> • Enhancing food security crisis risk analytics by leveraging existing systems such as FEWSNET and Integrated Food Security Phase Classification (IPC). • Exploring market-based instruments for crisis risk coverage and informing the IDA19 Crisis Response Window Early Response Financing (CRW ERF) under Anticipatory and Early Action Financing. • Conducting country-level consultations in Afghanistan, Chad, Somalia, South Sudan, and Yemen to identify challenges and support anticipatory and early action programming under Anticipatory and Early Action Programming.

The Way Forward: The ‘S-W-I-P-E’ Approach

Climate change is affecting health through more frequent extreme weather events (heatwaves, storms, and floods), the disruption of food systems, a rise in zoonoses and diseases related to food, water and vectors, and an exacerbation of mental health issues, resulting in deaths and illnesses. It erodes vital social determinants of good health, including livelihoods, equality, and access to healthcare and social support structures. The most vulnerable and disadvantaged bear disproportionate health risks to climate sensitivity. Focusing on the following ‘S-W-I-P-E’ measures can help manage the negative impacts of climate change on food and nutrition security:


- **Strengthening early warning and preparedness systems** to ensure nutrition security even during adverse times can help identify potential famine and food insecurity occurrences in advance. This can be achieved through monitoring weather patterns and climate change impacts. National governments should prioritise enhancing disaster preparedness and response action. These contingency plans can be developed in cooperation with non-governmental and various international organisations.
- **Work to foster regional collaborations and financial cooperation** in South Asian countries to take collective action to ensure food security during humanitarian crises. India embarked on a journey towards energy conservation and carbon emissions reductions in 2001 through the Energy Conservation Act.⁶⁶ It has also sought to address the climate crisis since 2008 with the National Action Plan on Climate Change. A 2023 report on India’s emergency preparedness and response programmes highlights opportunities to foster greater consultation and participation among leaders in formulating such programmes and policies.⁶⁷ It emphasised the necessity of orienting service providers toward the critical aspects of food security and nutrition. It underscores the imperative for capacity-building initiatives, the adoption of state-of-the-art data-sharing systems, and enhanced and frequent coordination among various government bodies dedicated to climate action.
- **Information technology for swifter, cost-effective, and wide-reaching action:** Digital technological innovations can help adaptive and mitigation techniques scale up during emergencies.

The Way Forward: The ‘S-W-I-P-E’ Approach

- **Promoting sustainable techniques and integration strategies** to prioritise public health nutrition—promoting sustainable farming techniques and diverse crop varieties that will also aid in diet diversification; adopting crop varieties that are suited to the changing climate; and recognising the link between climate change, food security, agriculture practices, and gender distribution. Government programmes should involve this united lens to safeguard public health nutrition.
- **Adopting an equity lens to improve the resilience of vulnerable groups:** Women, children, and marginalised communities need targeted interventions as these groups are the most vulnerable during times of famine and food insecurity. Local capacity-building measures and collecting and popularising (after adapting, as needed) successful community stories that may have worked during crises are viable options to improve their resilience.

“Climate change is affecting health through more frequent extreme weather events (heatwaves, storms, and floods), the disruption of food systems, a rise in zoonoses and diseases related to food, water and vectors, and an exacerbation of mental health issues, resulting in deaths and illnesses.”

Conclusion

Climate change disrupts weather patterns, imperilling food production and global nutrition security. As climate-related events escalate, food systems become increasingly unstable, compromising food security and diet quality, particularly for vulnerable populations grappling with various forms of malnutrition. Urgent action is needed to shield food and nutrition security from mounting climate shocks, necessitating aligned leadership at the global and national levels. Preparedness, including contingency planning to support vulnerable populations, is critical. This involves two main approaches: building resilience through initiatives such as promoting drought-resistant crops and enhancing agricultural practices, and improving nutritional choices by raising awareness and through behaviour change communication. Maintaining uninterrupted access to quality food is crucial, especially for vulnerable groups. The adverse effects of climate change on food and nutrition security can be mitigated by bolstering agricultural resilience, raising awareness of climate-related nutrition impacts, and promoting sound nutritional practices. Moreover, concerted efforts towards adaptation, resilience-building, and policy interventions are imperative to address these multifaceted challenges and promote sustainable development in a changing climate. 

Shweta Khandelwal is a Senior Public Health Nutrition Expert at the Centre for Chronic Disease Control, New Delhi.

Pooja Arora is a doctoral student at the International Institute for Population Sciences (IIPS), Mumbai.

Snigdha Ranjan holds a M.Sc. in Food & Nutrition from the Institute of Home Economics, University of Delhi.

Shoba Suri is a Senior Fellow with ORF's Health Initiative.

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20, Rouse Avenue Institutional Area,
New Delhi - 110 002, INDIA

Ph. : +91-11-35332000. Fax : +91-11-35332005

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