PAKISTAN CLIMATE – NUTRITION INTEGRATION ASSESSMENT

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KEY INSIGHTS

- Pakistan faces a dual crisis of climate change and malnutrition, each exacerbating the other. Climate shocks like floods and droughts are undermining food security and contributing to some of the world's highest levels of child stunting (over 40%) and wasting (around 18%).
- Climate and nutrition policies in Pakistan currently operate in silos. A baseline review found that most national and provincial strategies acknowledge the climate-nutrition link in principle but lack concrete, integrated actions (usually rated low to moderate on an integration scale).
- Stark regional hotspots (notably Sindh and Balochistan) face the greatest climate-nutrition vulnerabilities. These provinces suffer extreme climate hazards alongside widespread undernutrition, demanding urgent, targeted interventions.
- "Win-win" solutions exist. Integrating nutrition into climate adaptation - and vice versa - can yield co-benefits. For example, introducing climate-resilient, nutrient-rich crops (like zinc-enriched wheat) has improved both climate resilience and public health.
- Immediate action and high-level commitment are needed. Policymakers, donors, and civil society must collaborate to mainstream nutrition in climate agendas and ensure climate resilience measures reach those most at risk. The time to act is now, before climate impacts further set back progress on ending malnutrition.

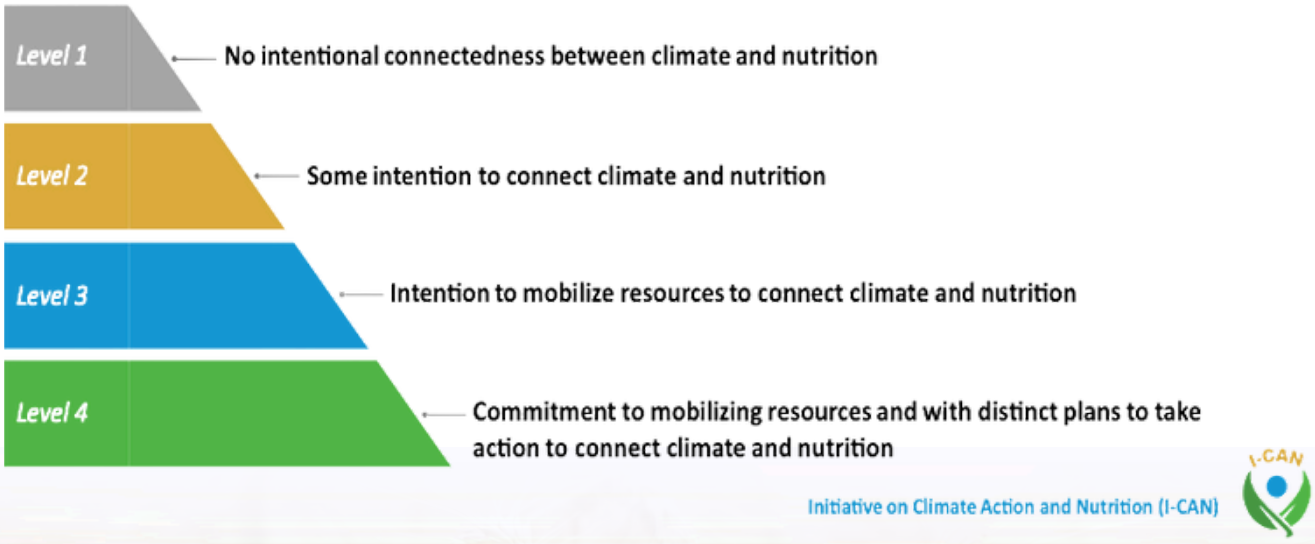
INTRODUCTION: CONVERGING CLIMATE AND NUTRITION CHALLENGES

Pakistan is grappling with two interlinked crises: the accelerating impacts of climate change and persistently high levels of malnutrition. These challenges amplify each other - intensifying floods, heatwaves, and droughts destroy crops and reduce dietary diversity, worsening hunger and undernutrition. In turn, malnutrition undermines community resilience, leaving vulnerable populations less able to cope with climate shocks. Climate change is already affecting food production; for instance, wheat yields could decline by an estimated 19% by the 2060s under high-emission scenarios, threatening staple food supplies. At the same time, nearly 40% of Pakistani children are stunted and 18% are wasted due to chronic undernutrition, figures that climate stresses only exacerbate[1]. Despite these obvious linkages, Pakistan's climate and nutrition policy agendas have historically run on parallel tracks with minimal coordination. Internationally, the norm is similar - only about 2% of countries' climate plans (Nationally Determined Contributions, or NDCs) explicitly address nutrition, and only 16% of National Adaptation Plans include nutrition goals. Pakistan has been no exception to this gap. Bridging the climate-nutrition divide is not just a technical necessity but a development imperative: without integrated action, climate change will continue to erode hard-won gains in food security, health, and human development.

CLIMATE-NUTRITION INTEGRATION STATUS: GAPS IN POLICIES AND PROGRAMS

A recent assessment evaluated how well Pakistan's policies, plans, and initiatives integrate climate change and nutrition objectives. Using a four-tier scale of integration (**fig.1**), most frameworks were found to be at low to mid-levels (Levels 1-3). In other words, climate-nutrition linkages are often recognized in theory but not operationalized in practice. **Table 1** provides an overview of integration levels across key national and provincial policies.

Figure 1: Four levels of integration climate-nutrition integration used in I-CAN framework



[1]National Nutrition Survey 2018

Table 1: Overview of integration levels across key national and provincial policies

Policy/Plan	Integration Level (1-4)	Notes
National Climate Policies	Level 2-4	NAP 2023 = Level 4 (nutrition integrated); Pakistan Updated NDC 2021 = Level 2 (mentions food insecurity, no targets); National Climate Change Policy 2021 & NDMP 2025 = Level 2 (acknowledge malnutrition, no actions).
Provincial Climate Plans	Level 2-3	Sindh 2022 = L3 (links climate to malnutrition, no targets); Punjab 2024 = L2 (aims to end malnutrition, lacks funding/indicators); Balochistan 2024 = L3 (notes threats to diets, no measures); Khyber Pakhtunkhwa 2022 = L3 (acknowledges climate impacts, omits nutrition programs).
Nutrition/Food Security Policies	Level 1-3	Pakistan Multi-sectoral Nutrition Strategy 2018-25 = L2 (mentions resilience, no climate actions); Pakistan Dietary Guidelines for Better Nutrition 2019 = L1 (no climate mention); Pakistan National Food Security Policy 2018 = L3 (calls for climate-smart agriculture, not implemented in nutrition targets).
Programs & Initiatives	Level 1-2	GCF projects = L1-2 (most have no nutrition component); other major initiatives - none at Level 4 (few link nutrition outcomes with climate adaptation).

Overall, Pakistan's national frameworks acknowledge that climate change can worsen food insecurity and malnutrition, but concrete cross sector targets, funding and coordination mechanisms are largely missing. For example, until recently, nutrition was absent from climate strategies like the NDC and climate risks were not addressed in nutrition plans. The notable exception is the National Adaptation Plan (NAP) 2023, which explicitly identifies malnutrition as a climate impact and calls for actions like climate resilient crops and nutrition sensitive social protection, making it a model of integration. At the provincial level, policies show awareness of the climate-nutrition nexus but still lack operational plans (e.g., Sindh's policy highlights climate impacts on malnutrition but doesn't fund nutrition interventions). Likewise, in development programs, there is a lack of "double-duty" projects that tackle both climate adaptation and nutrition outcomes together. Strengthening integration across these policies and programs is crucial for efficient use of resources and effective responses.

REGIONAL VULNERABILITIES: CLIMATE NUTRITION HOTSPOTS

The impacts of climate change and malnutrition are not uniform across Pakistan - certain regions emerge as extreme hotspots of combined vulnerability. Sindh stands out as the most climate-nutrition vulnerable provinces, where high exposure to climate hazards overlaps with poor nutrition indicators. This southern province faces both intense droughts (especially in arid areas like Tharparkar) and destructive floods (such as the 2022 flooding). These climate shocks hit a population already suffering from high malnutrition - in some districts of Sindh over half of the households are food-insecure, and child stunting and wasting rates are among the highest nationally. Reliance on rain-fed agriculture and livestock means livelihoods are extremely climate sensitive. When rains fail or heatwaves strike (temperatures in Jacobabad have exceeded 50°C), crop failures and water scarcity lead to spikes in acute malnutrition and disease outbreaks. Coastal Sindh also contends with rising sea levels and salinity that harm agriculture and fisheries, further undermining diets. Weak infrastructure and health services in rural areas compound the risk. Sindh exemplifies a climate-nutrition "perfect storm," requiring urgent, targeted resilience measures (drought-tolerant crops, disaster-ready nutrition programs, safe water and sanitation improvements, etc.).

Spotlight: Zinc-Enriched Wheat - A "Win-Win" Innovation

An example of successful integration comes from Pakistan's Zinc-Biofortified Wheat Prmatenutrition framework, achieved **Level 4 integration** - it explicitly combined climate resilience and nutrition outcomes. By 2022, the program reached

1.4 million households (7 million people) with high-zinc wheat varieties, improving diets and farm resilience. It leveraged biofortification (to combat widespread zinc deficiency affecting ~60 million Pakistanis) alongside climate-smart agriculture, using drought-tolerant seeds and modern breeding techniques. Policy support was strong: Punjab's seed corporation included zinc wheat in its plans, and the government set mandatory zinc standards for new wheat seeds. This case illustrates that integrated approaches are feasible - delivering co-benefits for nutrition and climate adaptation - and could be replicated in other programs.

KEY POLICY RECOMMENDATIONS: ADVANCING CLIMATE-NUTRITION INTEGRATION IN PAKISTAN

Pakistan's climate and nutrition policies remain largely siloed, limiting the country's ability to build climate-resilient, nutrition-secure communities. Findings from the national and provincial policy review show that most frameworks fall between Level 2-3 of the I-CAN integration scale—acknowledging linkages but lacking measurable targets, budgets, and coordination mechanisms. To move toward Level 4 (institutionalized integration), the following strategic actions are recommended:

1. Embed Climate-Nutrition Goals in Policy Frameworks

Integrate explicit, measurable nutrition objectives into Pakistan's NDCs, NAPs, and provincial climate and food-security strategies. Include SMART indicators (e.g., stunting, dietary diversity) and promote nutrient-dense, climate-resilient crops such as millets, moringa, and zinc-fortified wheat.

Impact: Ensures policies translate climate commitments into measurable nutrition outcomes.

2. Establish a National Climate-Nutrition Task Force

Create a formal coordination platform linking the Ministries of Climate Change, Health, Food Security, and Planning to co-design and monitor joint programs. Provincial disaster management committees should integrate nutrition preparedness within climate-shock responses.

Impact: Breaks institutional silos and enables joint resource planning.

3. Develop Integrated Monitoring and Data Systems

Combine climate and nutrition indicators within a single monitoring framework and map nutrition hotspots against climate-risk zones. Incorporate child nutrition metrics into Early Warning Systems (EWS).

Impact: Enables risk-informed, evidence-based policymaking.

4. Build a Unified Climate-Nutrition Information Platform

Link or upgrade existing dashboards (Nutrition Dashboard, CCIT, Food Systems Dashboard) into an interoperable national portal that provides integrated analytics, disaggregated visualization, and open-access data.

Impact: Strengthens decision-support capacity for policy and planning.

5. Strengthen Institutional Capacity and Financing

Train government officials on climate-smart nutrition programming and joint data analysis. Mobilize cross-ministerial financing for initiatives delivering co-benefits - such as food storage infrastructure, community gardens, and resilient local food systems.

Impact: Builds operational capacity and ensures sustainable resource flow for integrated action.

Call to Action

Climate change and malnutrition together pose an existential threat to Pakistan's development, but integrated action offers a path to resilience. It is imperative that policymakers, donors, and civil society leaders move beyond business-as-usual and champion a coordinated response. The time to act is now: every delay means more lives at risk from climate-induced hunger and disease. By urgently implementing the recommendations outlined above - aligning policies, pooling resources, targeting hotspot regions, and scaling up proven solutions - Pakistan can protect its people's health and food security in the face of climate adversity. This brief calls on government ministries and their partners to formally recognize nutrition as a key goal of climate adaptation (and vice versa), and to back this recognition with the funding, institutions, and political will is required. With upcoming global forums (such as the Nutrition for Growth Summit and COP climate conferences) on the horizon, Pakistan has an opportunity to lead by example. Bridging climate change and nutrition in policy and practice will save lives, strengthen communities, and ensure sustainable development. The future of Pakistan's food security and the well-being of millions depend on bold action now to unite these agenda.