The Agriculture-Undernutrition Cycle

Growth in the agricultural sector has contributed strongly to economic growth in the Asia and Pacific region over the past several decades—yet improvements in nutrition have not kept pace. Increasing staple crop yields and investing in agricultural production has not resolved the high rates of underweight and stunted children, leaving them vulnerable to the chronic and often irreversible effects of poor nutrition. Globally, 165 million children under the age of 5 suffer from chronic malnutrition, or stunting, and more than half (85 million) of these children live in Asia. Increasing access to nutritious diets based on knowledge of appropriate nutrition and care, as well as adequate water and sanitation, should be essential elements of food security practice.

By investing in nutrition-sensitive policies and programmes, the agricultural sector can maximise its potential to impact the health and productivity of families in the Asia and Pacific region.

Optimal nutrition strengthens agricultural production and agro-based communities

From birth, optimal nutrition is essential. Poor nutrition during pregnancy and the first 24 months of life can cause irreversible damage to individuals, including diminished physical growth, fewer years spent in school, and diminished wages and productivity. Compounded across an entire nation, undernutrition can cost up to 8 percent of a nation’s GDP. Research shows that a healthy and well-nourished agricultural population is more productive, and has higher wage earning potential. According to studies, both height and weight affect productivity:

- For every 1 percent increase in height, adults can experience a 4 percent increase in agricultural wages.
- Underweight adults can have lower productivity compared to adults of average weight.
- Eliminating anaemia has been shown to increase adult productivity by 5 to 17 percent, with the higher increases found in agricultural work that requires heavy manual labour.
Nutrition-sensitive agriculture programmes maximise outcomes for both health and agriculture sectors

If not planned effectively, agricultural growth can still leave many children underweight and stunted. Evidence shows that by putting more focus on nutrition outcomes, i.e., by including nutrition objectives at the outset, agricultural interventions can improve the capacity, productivity, and future prospects of agricultural workers—and also contribute to reducing undernutrition.7

Agriculture can improve the quantity and quality of diets in households for subsistence farmers; reduce income poverty through produce sales and agricultural labour; empower women as income-earners, decision-makers, and primary childcare providers; decrease food price volatility; and increase government revenues that can be used to finance health care, education, and nutrition interventions.7

As agricultural production grows and diversifies, households experience increased food security and better nutrition—which in turn leads to increases in human capital and productivity:

- Agricultural growth has shown a large and significant effect in reducing underweight, and also leads to reductions in stunting in food-insecure settings.8

- Diversified agricultural production has the potential to improve access to more diverse and nutritious foods, a key component of meeting the “Minimum Acceptable Diet” for children.

Agricultural programmes that focus on production of energy-rich staple foods can also be more effectively designed to reduce undernutrition by promoting crops that reduce vulnerability to droughts and extreme climate, increase yields, or improve nutritional value. Likewise, programmes that promote sustained access to food through better storage conditions and improved transformation and preservation have the potential to improve household nutrition.

By ensuring stronger nutrition and health outcomes, the impact and cost-effectiveness of agricultural interventions will be further validated. These results will ultimately inform policies that contribute to agricultural growth and national development.

We know what works: Integrating nutrition into agriculture—and agricultural sub-sectors—maximises impact

A recent review of 23 evaluations of agricultural programmes that aimed to improve child nutrition status found promising results: increased production of promoted food items; uptake of the promoted diet changes; increased vitamin A intake; nutritional impact and consumer acceptance of foods bred for high-nutrient content; and improved nutritional impact on short-term indicators of hunger, like wasting and underweight.10 Agricultural sub-sectors also present effective links to nutrition:

- **Home gardening and homestead food production improve dietary intake** — Home gardening and homestead food production have consistently been found to improve dietary intake and micronutrient status, and decrease morbidity.11,12 When taken to scale, these interventions improve the availability and consumption of animal products, vegetables, and fruits, and reduce rates of anaemia among women and children.13,14
Aquaculture provides an available and high-quality nutrition source — Fish is the main source of animal protein in Asia. It is an inexpensive source of high-quality protein, fatty acids, vitamins, and minerals, and has the potential to improve the diets of even the poorest households. Fish is particularly nutritious and beneficial during pregnancy and early childhood, ensuring optimal growth and mental development.

Investing in rural livelihoods and smallholder farmers increases food and financial yields — In Asia, most smallholder farmers do not provide themselves with incomes and food that cover their families’ needs, or increase their agricultural production to keep up with market demand. Investing in smallholder agriculture can contribute to higher crop yields, increased efficiency in agricultural output and production, and improved economic opportunities for some of Asia’s poorest communities. Protecting staple food and other crop prices can also prevent drops in small farmer incomes, which can hinder access to foods.

Promoting and accelerating specific agricultural sub-sectors that produce the foods required (such as dairy, livestock, fish, vegetables, and fruits) is an effective poverty reduction strategy because it boosts rural farm livelihoods through diversification; at the same time, it can increase access to nutritious foods and address the dietary deficiencies of specific population groups.

Nutrition-sensitive agriculture is most successful when multiple sectors are engaged

Promoting gender equality — Programmes that integrate gender have been shown to generate improved agricultural productivity and better household nutritional status. When women have more control over household resources, families are healthier, better educated, and have more access to more nutritious foods.

Investing in social protection programmes — Social protection programmes can include investments in assets, agriculture input subsidies, and social pension programmes. They provide farmers, households, and communities with the opportunity to spend more and invest more, thereby stimulating local economies, boosting economic growth, and increasing food and nutrition security. This is particularly important during seasonal downturns.

Policy-makers can take action now to maximise impact by developing nutrition-sensitive agriculture interventions

Support efforts to diversify production of small farmers, such as vegetables, fruits, fish, and small animals, as well as efforts to reduce post-harvest losses through better storage and processing, which can potentially increase home consumption and income, and in turn, food security.

Increase equitable access to resources for women and marginalised groups. Advocate for land rights, water, and sustainable resource management.
Promote programmes that facilitate access to required resources, such as access to credit, productive assets, extension services, and markets.\textsuperscript{25}

\begin{itemize}
  \item Invest in agricultural research on food crops that focuses on smallholder farmers, including women, and that promotes better nutrition, takes into account climate change, improves resilience and productivity of local foods, and furthers ecological and sustainable farming practices.
  \item Include nutrition objectives and indicators, and implement impact assessments to develop an evidence-base for the positive impact of producing foods high in protein, essential fats, and micronutrients.
\end{itemize}

\section*{WE MUST ACT NOW}
Malnutrition has high costs on health, social, and economic outcomes for individuals and nations. Diverse and strategic agricultural production can improve nutrition—which will result in a more productive work force for the agricultural sector and beyond. Policy-makers and programme implementers must act today to create nutrition-sensitive agriculture interventions that will increase impact and improve health for generations to come.

This is one brief in a five-part series on the importance of multi-sectoral approaches to nutrition. To read the other briefs, visit www.unicef.org/eu/devaid_nutrition.html.

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