



STRENGTHENING FOOD SYSTEMS FOR NUTRITION





What are we trying to address?

After over a decade of decline, **the number of people suffering from hunger is on the rise again**. In 2017 it was estimated that global hunger affected 821 million people around the worldⁱ. Despite progress in recent years, 152 million children are still affected by chronic malnutrition (stunting), approximately 50 million children suffer from acute forms of malnutrition (wasting) and childhood overweight is rising dramatically – currently affecting 41 million childrenⁱⁱ.

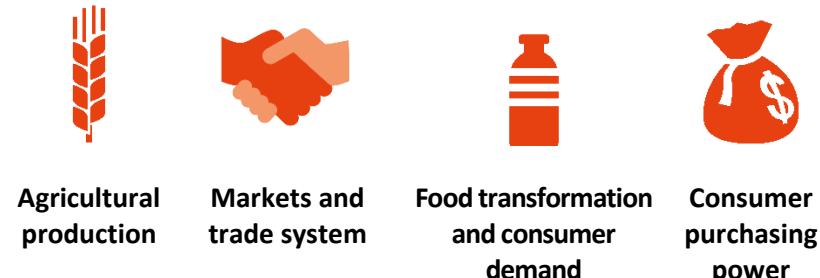


Countries where >20% of children under 5 years are stunted

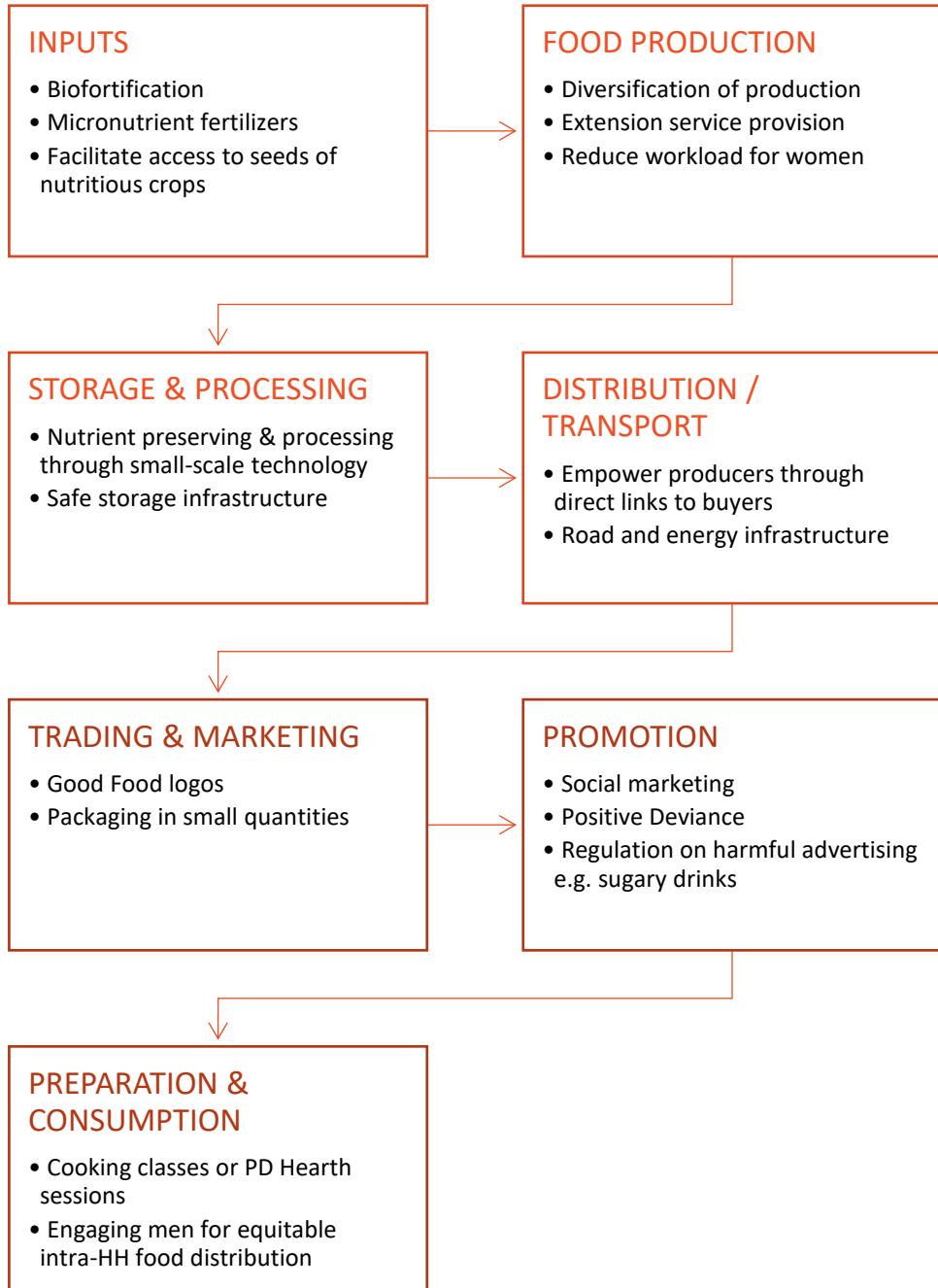
Working with Food Systems to Enhance Nutrition Outcomes

A food system is defined as the production, marketing, transformation and purchase of food and the consumer practices, resources and institutions involved in these processesⁱⁱⁱ

Domains of a food system
(adapted from a technical paper of the Global Panel for Food Security & Nutrition)



In general, food systems are geared towards meeting demand and generating commercial returns, and not necessarily geared towards improving diets. The private sector naturally plays a huge role in the food system. However, in order for it to improve diets and Food & Nutrition Security, NGOs can facilitate for the private sector to support the stages of a value chain in a nutrition-sensitive manner. See below the ways we, together with private sector actors and governments, **can make value chains more nutrition-sensitive**.





Nutrition-Sensitive Principles for Agriculture and Livelihoods Programs

The agriculture and livelihoods sectors have key roles to play in reducing child undernutrition. However, **the link between improved agriculture yields or increased income and improved nutrition is not automatic**. Merely producing more food does not ensure food security nor improved nutrition^{iv} and agriculture interventions do not always contribute to positive nutritional outcomes^v. A research exercise, which analysed over 7,000 agricultural programmes, found that the overwhelming majority were unable to prove their impact on reducing undernutrition^{vi}. Taking a nutrition-sensitive approach to agriculture and livelihoods projects is therefore one of PIN's programming priorities. The following principles are based on a review of external literature, the DfID-funded MQSUN+ report^{vii}, A2015's research^{viii} as well as PIN's extensive programming experience.

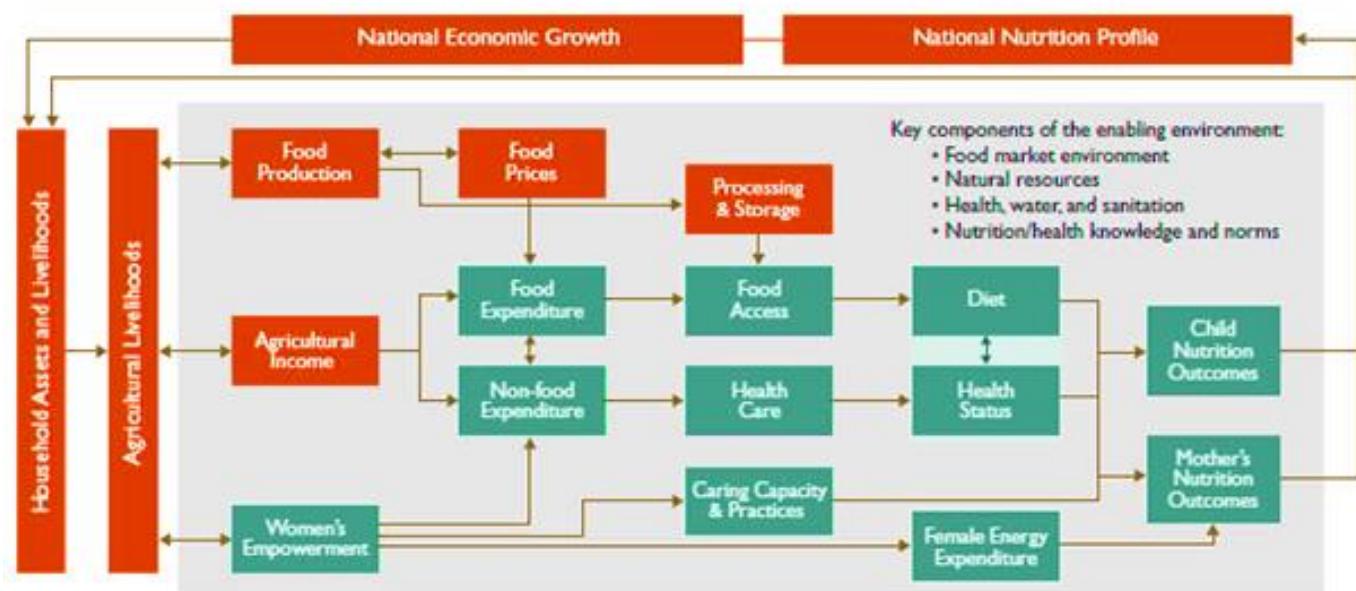
- 1. Understand the causes and explicitly target food & nutrition security outcomes:** We must understand the causes of food and nutrition insecurity (for example: are particular food groups missing from diets? Is there a significant lean season period where people don't have enough food?) in order to design effective interventions. Explicit nutrition goals and actions to improve food and nutrition security need to be incorporated from the project design phase, as being explicit about expected nutrition outcomes will push the inclusion of specific activities, generates additional resources and allows for careful monitoring of change in nutrition related outcomes. This does not necessarily always mean measuring malnutrition prevalence, but could be measuring key underlying factors e.g. changes in diets or changes in lean season duration, depending on the context.

2. Ensure these improvements are seen by those most at risk of undernutrition: even if agricultural yields and income levels are improving, we often find that social norms and cultural taboos can prevent good feeding practices during the critical “1000 day” period. Therefore we need to be explicitly targeting and measuring the impact on diets of children under 2 years and pregnant and lactating women. A DfID-funded review of existing evidence^{ix} demonstrated that, aside from large multinational corporations, **it was beyond the capacity of private sector actors to be “motivating consumers to generally value benefits derived from better nutrition”**. It stated that the public sector should, in collaboration with the private sector, support poor populations in their food choices and address social norms to enable healthy eating. PIN has used approaches such as Positive Deviance Hearth to effectively empower parents to improve feeding practices with locally available food.

3. Promote gender equity: women’s decision-making power and control over resources (income, time/workload) is linked to improved nutrition of all household members¹. The diagram below shows the pathways between women’s empowerment and improved child and mother nutrition^x. Conducting a gender analysis during the project’s design phase and having a gender-sensitive M&E framework are essential steps.

4. Social inclusion and targeting the poorest households with relevant market systems so that we are improving socio-economic equity in our target areas: the poorest households are often the most food insecure and have the worst nutrition statistics, so if we want to see improved malnutrition statistics, we have to be reaching the poorest, most vulnerable households. **Investing in reaching the poorest of the poor is also a major barrier for private sector actors^{xi}** and the public sector/NGOs have a significant role to play. A first step, during the project design phase is to understand:

- who exactly are the vulnerable groups (gender, age, ethnic group),
- geographical location,
- what economic activities and market systems do they rely on,
- why are they vulnerable (e.g. debt, size of land or other external factors).



¹ UNICEF (2011) Gender Influences on Child Survival, Health and Nutrition: A Narrative Review
https://www.unicef.org/Gender_Influences_on_Child_Survival_a_Narrative_review.pdf

PIN's Experience



Photo © PIN archive

Biofortification & Nutrition Behaviour Change in Ethiopia

In Ethiopia, PIN partners with the International Potato Centre and Emory University to address vitamin A deficiency (VAD) and improve food security. VAD increases the risk of disease and death from infections as well as causing blindness^{xii}. VAD is serious national health problem in Ethiopia (37.7% prevalence among children 6 to 71 months old)^{xiii}.

Ready in just 3-4 months, OFSP can be a critical food source during the hunger period when grain crops are still maturing. Just 125 grams of OFSP meets the daily vitamin A needs of a young child. It has been shown to be a relatively **cost-efficient and scalable intervention** in Uganda and Mozambique^{xiv}, costing about \$15-20 per disability life-year (DALY) saved, places it in the “highly cost-effective” category according to the World Health Organization. Among strategies for addressing VAD, **biofortification is particularly suited for meeting the needs of poor, remote, and vulnerable populations** that may not be able to afford fortified oils or flours on the market and whose health facilities may fail to have consistent capsule supplies.

PIN and partners work on the **production, processing, marketing and consumption** of vitamin A-enriched Orange Flesh Sweet Potato. The approach engages both the government **agriculture extension** system as well as **local private sector entrepreneurs** based in rural and urban centres. PIN provides capacity building support and supervision for the health extension system to run Healthy Living Clubs, aimed at improving maternal and child feeding practices. The impact on vitamin A deficiency and food security will be measured through a rigorous control trial, led by Emory University. The project directly supports 15,000 rural households (15,000 mothers and 10,000 fathers of young children) to improve their infant feeding practices and production of orange-flesh sweet potato. Over 61,000 urban consumers will have access to orange flesh sweet potato products.

Facilitating market linkages in Cambodia's livestock sector

In rural Cambodia, productivity and incomes are low among smallholder livestock farmers due to limited access to veterinary services and advice on livestock raising practices. This results in high levels of animal mortality. PIN's CLIMAD project focused on improving poor farmers' access to veterinary services by improving linkages between national veterinary companies, village-based veterinarians and smallholder farmers (the customers of vets).

The project first conducted formative research to identify weaknesses in the provision of services being provided to farmers, and the services being provided to vets by the veterinary companies they purchase products from (the reports from which can be accessed [here](#)). One key assessment finding was that vets had limited access to business and marketing skills (with many previous projects only supporting vets' technical skills), which prevented their business growth. At the same time, national companies selling veterinary products (e.g. vaccinations, medicines for treatments) were interested in scaling up their operations and business relations with village vets who bought their products.

The project supported linkages between vets and companies by providing the companies with training-of-trainer support to improve their vet training modules (and to focus more on business topics), which also helped improve their business relations with the vets. Improved linkages between vets and livestock farmers were supported through promotional events at the village level, and through a user-pays approach to training, where farmers paid a small fee (approx. 15-50 US cents each) to join technical trainings provided by the vets. This helped establish an ongoing market relationship between vets



Photo: © PIN archive

and farmers and improved the quality of training outcomes, compared to trainings fully subsidised by the project.

The market linkages resulted in improvements in the quality and quantity of veterinary services provided. Companies began providing vets with more advisory services on how to run and grow their businesses. The outreach of fee-for-service animal health services also increased and reached poorer farmers, leading to improved livestock productivity. The endline survey showed:

- a **31 percent increase in farmers accessing veterinary services** (from 52 to 83 percent)
- Nearly a **tripling in quarterly income generated from chicken raising** (60 USD to 169 USD)
- **Reduction in the percentage of households experiencing food shortages in the past year** from 22% to 3%

A video showcasing the project's approach can be found [here](#).

Resilient Agriculture for Improved Nutrition in South Sudan

The project's objective was to improve resilience, nutrition and food security in 5,580 rural households through interventions that strengthened multiple levels of the value chain:

- **Production:** Supported the production of nutrient-rich vegetables and access to livestock inputs.
- **Storage and processing:** Demonstrations and trainings on methods for conserving milk, fruits and vegetables to encourage proper processing of the produce and elongate the storage time so that it could be eaten during the lean season and/or sold at a higher value.
- **Trading & marketing:** PIN supported local agriculture entrepreneurs and suppliers and improved the linkage between traders and target communities through voucher distributions and village promotion campaigns.
- **Promotion:** PIN's formative research aimed at identifying key "determinants" behind certain people's behaviours related to hygiene and nutrition. The subsequent health and hygiene campaign, consisted of a number of nutrition- and WASH-related sessions aiming to address these determinants and promote behavioural change among the target groups.
- **Food Preparation & Consumption:** PIN organised cooking classes for parents to demonstrate good feeding practices, especially for infants.

The impact of the project was measuring through a controlled before and after study with household surveys and a MUAC screening to measure malnutrition prevalence. In our project's target areas acute malnutrition reduced from 6.4% to 2%. Whereas in places where we didn't do the project malnutrition actually increased from 8.6% to 21.3%.



Photo © Jan Novák

Nutrition-Sensitive Value Chains in Zambia

The project facilitates improved agricultural production, marketing and nutrition behavior change with the aim of improving the nutrition, health and resilience of vulnerable populations with a particular focus on women and the first 1000 days of children. Vulnerable households are supported to produce a variety of nutrient-rich crops both for home consumption as well as for strengthening nutrition-sensitive value-chains and marketing in partnership with local entrepreneurs. The project focuses on commodities rich in proteins, vitamins and minerals: pulses, vegetables and poultry.

PIN puts a strong emphasis on behavioural change and community-based participatory approaches. Formative research is used to uncover key drivers and motivators for behavioural change. This enables PIN to develop an effective behavioural change strategy and build up a solid information base to tailor its interventions to the community needs and provide evidence for future programme development. An example of this is the Positive Deviance approach that empowers communities to recognize existing good practices and locally available food that can create nutrient-rich recipes. See [here](#) for results of participatory formative research (the Positive Deviance Inquiry) and [here](#) for a case study documenting its impact.

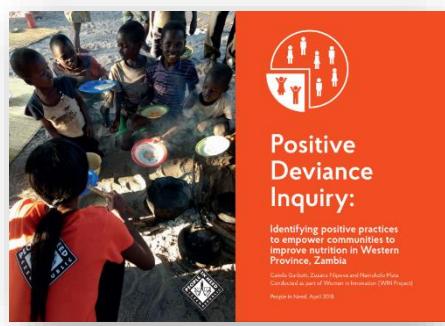


Photo © PIN archive

-
- ⁱ FAO, IFAD, UNICEF, WFP and WHO, 2017. The State of Food Security and Nutrition in the World 2018. Building resilience for peace and food security. Available at: <http://www.fao.org/state-of-food-security-nutrition/en/>
- ⁱⁱ UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates, 2018, Levels and Trends in Child Malnutrition, available at: <https://data.unicef.org/wp-content/uploads/2018/05/JME-2018-brochure-web.pdf>
- ⁱⁱⁱ GPAFSN, 2014. How can agriculture and food system policies improve nutrition? Technical brief, London, UK: Global Panel on Agriculture and Food Systems for Nutrition.
- ^{iv} Herforth, A., Jones, A. & Pinstrup-Andersen, P., 2012. Prioritizing nutrition in agriculture and rural development; guiding principles for operational investments. Health, nutrition and population family discussion paper, Washington DC: World Bank
- ^v FAO, 012. Making agriculture work for nutrition: synthesis of guiding principles, Rome: FAO
- ^{vi} Webb, P. and Kennedy, E. (2014) Impacts Of Agriculture On Nutrition, Food and Nutrition Bulletin, vol. 35, no. 1
- ^{vii} MQSUN+ (2018). Where Business and Nutrition Meet: Review of approaches and evidence on private sector engagement in nutrition
- ^{viii} Alliance2015 (2018), The Role of the Private Sector in Food and Nutrition Security: Global lessons learned and an overview of approaches of Alliance2015 partners. Available at: http://alliance2015.org/fileadmin/pdf_docs/DEF_report_private_A4_1.pdf
- ^{ix} MQSUN+ (2018). Where Business and Nutrition Meet: Review of approaches and evidence on private sector engagement in nutrition
- ^x Herforth, A. and Jody, H. (2014). Understanding and Applying Primary Pathways and Principles. Brief #1. Improving Nutrition through Agriculture Technical Brief Series. Arlington, VA: USAID/Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project
- ^{xi} MQSUN+, (2018). Where Business and Nutrition Meet: Review of approaches and evidence on private sector engagement in nutrition
- ^{xii} Sommer, A. and West, K. P. (1996) Vitamin A deficiency: health, survival and vision, New York, Oxford University Press
- ^{xiii} Demissie T., Ali A., Mekonen Y, Haider J., Umeta M. (2010) Magnitude and distribution of vitamin A deficiency in Ethiopia. Ethiopian Health and Nutrition Research Initiative, Addis Ababa, Food Nutrition Bulletin 31(2):234-241
- ^{xiv} de Brauw, A., Eozenou, P., Gilligan, D., Hotz, C., Kumar, M., Meenakshi, J.V. (2015) Biofortification, Crop Adoption, and Health Information: Impact Pathways in Mozambique and Uganda. HarvestPlus Working Paper No. 21, Washington D.C., 27 p.