

## MAINSTREAMING NUTRITION IN AGRICULTURE:

### IDEAS FOR RESEARCH, PROJECT DESIGN, IMPLEMENTATION AND POLICY

Adapted from Swaminathan, 2012, *Nutrition Sensitive Agriculture*, written for use during the ICN2 Expert Meeting on Nutrition-Sensitive Food and Agriculture Systems. Other sources cited in text.

Research	
Cropping System Research	Used to identify agricultural production systems which improve nutritional quality of available foods and/or soil integrity. For example a cereal-legume rotation provides both proteins to human beings and nitrogen to the soil.
Farming System Research	Used to promote integrated crop-livestock-fish production systems and increase availability of fruits, vegetables and/or animal source foods. Examples include fruit and vegetable horticulture on fish pond embankments, cultivation of short cycle fish species in seasonal ponds and ditches, integrated fish-duck, fish-chicken, or fish-pig farming, and rice-fish farming.
Coastal System Research	Used in coastal areas to identify nutrition sensitive options for both landward and seaward sides of the shore line. Can be on halophytes (plants which tolerate or require high levels of salinity) such as <i>Salicornia</i> , <i>Atriplex</i> or brown algae, which provide a good source of nutrition for both humans and animals. Can also be on wild and farmed fisheries and saline tolerant staples, namely rice.
Rural System Research	Takes a holistic view of rural livelihoods – both on-farm and off-farm. Goals are improving the productivity and profitability of small holdings in an environmentally sustainable manner, generating opportunities for agro-processing and value-addition to primary products, and creating awareness for productive employment in the service sector. Aims to improve economic access to food and provide some insulation against price volatility.
Biofortification	Used to integrate nutrition into crop improvement research. For example, CGIAR's Harvest Plus programme enriches staple crops with micronutrients such as iron, vitamin A, and zinc using plant breeding techniques. Nutrient-rich crop varieties can also be produced through genetic modification but until concerns about GMOs are adequately addressed, biofortified crops bred by traditional methods or by Molecular Marker-Assisted Selection have easier market uptake.

Project Design	
Needs assessment	Base agriculture policies, programmes and investments in the context and causes of malnutrition at local level <sup>1</sup> . Use surveys and other tools to identify which nutritional problems need attention, for example iron-deficiency anaemia, blindness arising from vitamin A, goitre resulting from iodine deficiency or health problems arising from the deficiency of essential amino acids like lysine.
Identify food based opportunities	Increase production and reduce post-harvest losses of nutrient-rich foods namely small-scale fish and livestock, legumes, horticultural products, and underutilized and biofortified crops <sup>1</sup> such as major and minor millets, biofortified quality protein maize, and moringa, which is native to areas of Africa and Asia and rich in protein, calcium, potassium and vitamins A, B, and C.
Monitoring & Evaluation	Measure progress through M&E of relevant indicators, including household dietary diversity and child growth <sup>1</sup> . Ideally, baseline data collected during the needs assessment can be used to demonstrate impact or lack thereof.

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<sup>1</sup> FAO, 2013. *Making Agriculture Work for Nutrition: Synthesis of Guiding Principles*. Rome: Food and Agriculture Organization of the United Nations.

<b>Building capacity for implementation</b>	
Farmers Councils for Nutrition Security	Promote the formation of Farmers' Councils for Nutrition Security to help households and communities incorporate a nutrition dimension into their production systems. Ideally each agro-ecological region would have its own Council, comprised of both men and women farmers and at least one trained nutritionist. The Council objective would be to increase nutrition literacy among farm families, namely via facilitating the adoption of cropping and farming systems which address local nutritional challenges. In addition to regionally-based Councils, a National Council of Farmers for Nutrition Security at the country level could be formed. Ultimately, with the help of FAO, WHO, UNICEF, IFAD, WFP and UNDP, a Global Council of Farmers for Nutrition Security could be established.
Community Hunger fighters	In addition to Farmers' Councils for Nutrition Security, provide training for male and female Community Hunger Fighters at village level. These types of initiatives build local capacity and create opportunities for women to become more involved in positively influencing nutrition outcomes. Women's empowerment has been identified as a key pathway through which agriculture can affect nutrition <sup>2</sup> .

<b>Sustainability and Scaling Up</b>	
Policy incentives	Making agriculture work for nutrition requires creating policy incentives for farmers and other stakeholders in the rural sector. To be sustainable, interventions must be compatible with economic incentives. For example, government grain subsidies which allow consumers to purchase nutritious cereals such as millet and fortified maize at below market rates may encourage increased cultivation of these crops over more conventional but less nutritious wheat and rice varieties, if price supports are also present.
Political momentum	2014 has been declared the "International Year of Family Farming" by the United Nations. This initiative creates the opportunity to launch a global programme about Nutrition Sensitive Agriculture. Use Farmers' Councils for Nutrition Security and Community Hunger Fighters to play a key role in spreading the message at country level.

<sup>2</sup> World Bank. 2007. *From Agriculture to Nutrition: Pathways, Synergies, and Outcomes*. Washington, DC: World Bank.