

## ICN2 Second International Conference on Nutrition

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Food and Agriculture  
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# PREPARATORY TECHNICAL MEETING FOR THE INTERNATIONAL CONFERENCE ON NUTRITION (ICN2)

Rome, 13-15 November 2013

## Session 3

*What is meant by nutrition-enhancing agriculture and food systems and what is involved: the linkages between agriculture, food systems and nutrition*

## Nutrition-enhancing Food and Agricultural Systems

### Summary

Pinstrup-Andersen, P

### I. Key Issues

1. Projections by both FAO and IFPRI agree that in order to feed the world, food supplies will need to increase by 55-60 percent over the next 37 years (to 2050). This corresponds to an annual compounded rate of increase of 1.3 percent, which is likely to be achieved and possibly exceeded<sup>1</sup>. As such, the long term trends in food supply look good.
2. While agriculture's great success in expanding food supplies is to be applauded, governments and the private sector should pursue the policies and investments needed to continue such expansion in a manner that aims to reduce the global prevalence of malnutrition. This paper attempts to contribute to the debate about how to do that, i.e. how to develop "nutrition-enhancing food and agricultural systems".

### *What are the potential gains from increasing nutrition enhancement of food and agriculture systems?*

3. Common sense suggests that food and agricultural systems are essential for human nutrition. However, the cost efficacy of food and agriculture-based nutrition-enhancing interventions has not been rigorously evaluated in the same manner as that for health-based

<sup>1</sup> See Pinstrup-Andersen (2013b and c) for a discussion of the factors likely to assure such an increase.

direct nutrition interventions. The problem is that evaluation methods based on randomized controlled trials (RCTs) – considered the most reliable way to demonstrate results in the health sector – are generally impossible to apply to the food system except for small-scale projects. This is the case for two reasons: First, the pathways from agriculture to nutrition are very long and as such come under the influence of a large number of variables, not least of which is uncontrollable behavior by food system agents. Second, large-scale policy interventions in food systems (e.g. priorities in agricultural research, improvements in output markets for smallholder farmers, major changes in the focus of food processing) do not lend themselves to control groups and randomization. Yet, some of the most promising opportunities for nutrition improvements that can be made at national and regional scale are undoubtedly found in such policies and not in home gardens and other smaller projects where RCTs can be used<sup>2</sup>.

4. The current debate regarding strength of evidence invalidates existing data and sends a message to decision-makers not to pursue nutrition-sensitive policies for food and agricultural systems. It also demotivates analysts from undertaking further evaluations which are urgently needed to guide action by governments and the private sector.

***Why are nutrition goals not explicitly considered in policy-making for food and agricultural systems?***

5. Food and agriculture systems are primarily profit-driven. To be successful, nutrition-enhancing policies should thus aim to change either economic demand or production possibilities or both. This is because nutrition-enhancing food system initiatives will succeed only if their outcomes are compatible with market signals reflecting the behavior of consumers, producers, processors, and traders. As such, more innovation and advocacy is needed to identify “win-wins” which provide nutrition enhancing incentives to food system actors compatible with economic incentives. At a fundamental (though politically relevant) level, the relationship between nutrition and economic growth should be seen as a win-win. A malnourished labor force results in low productivity; while improving nutrition outcomes increases productivity and economic growth. Other win-wins include labor saving technological change, agricultural research and other production-related productivity improvements, and crop diversification.

6. The “win win” concept informs the section on policy recommendations. Most may be classified as aiming to change behavior of agents in food and agriculture systems (e. g. consumers deciding to change their diet, governments lifting trade restrictions), or as aiming to change the socio-economic boundaries within which these agents operate, (e.g. investment in rural infrastructure confronting smallholder farmers). In all cases, an implicit consideration is acknowledgement and attempted mitigation of tradeoffs between nutrition and market-based incentives.

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<sup>2</sup> It is important to note that home/kitchen gardens can contribute to dietary diversity, see p. 6 of full paper.

## II. Policy Recommendations

### A. *Increase the availability of a nutrition-enhancing basket of foods*

7. This category includes policies affecting both domestic food production and foreign trade. An oft-cited example of the latter is trade liberalization which increases the availability of imported food, including highly processed foods of minimal nutritional value. Examples of the former include:

- Investment in rural infrastructure, market information and other public goods to facilitate market access by smallholders and private sector investments in domestic input and output markets
- Government support to national and sub-national food fortification and biofortification schemes
- Regulation of land tenure to avoid increasing food insecurity and malnutrition caused by smallholder farm families being evicted from their land
- Promotion of indigenous, nutrient-dense “neglected” crops (e.g. quinoa), kitchen gardens and small livestock/aquaculture to increase dietary diversity among rural consumers dependent upon local production
- Prioritization of government supported agricultural research on productivity increases of a diverse portfolio of food commodities emphasizing 1) smallholders, 2) reduced unit-costs of production and marketing and 3) expanding availability of horticulture and other nutrient-dense products
- Government support to educational and promotional programmes to alter consumer demand
- Government and private sector support for strengthening food supply chains to reduce waste and losses caused by deficits in storage, transportation and other food system activities.

### B. *Increase household incomes to improve nutrition*

8. Increasing household income influences household food acquisition behavior and the extent to which access is converted to acquisition. It is also likely to influence the allocation of food among household members. Strengthening of household budget control by women in most cases increases the portion of household income dedicated to food and nutrition, particularly in regards to child feeding. As anti-poverty policies and campaigns are designed, it is important to remember that reducing poverty is important but insufficient to eliminate nutritional deficiencies, and that increased purchasing power may contribute to obesity. As such, rural development and other income generation schemes can increase their nutrition enhancement by using explicit nutrition targeting criteria (namely to women and children under two). Implementation of poverty reduction initiatives in conjunction with cash or in-kind transfers and subsidies for non-food essentials such as school, water fees, and personal transportation may further strengthen the purchasing power of low-income people and increase the chances of access being converted to acquisition.

**C. *Promote nutrition-enhancing food prices***

9. A refinement of WTO rules against unjustified and abrupt changes in food exports resulting in large changes in international food prices and consideration of new rules may reduce the temptation faced by exporting countries to alter trade policies at the expense of the rest of the world. A new set of rules of behavior for speculators in futures markets could reduce the severity of future price volatility. Public and privately funded research to develop new food crop varieties tolerant to drought, floods, strong winds, and new biotic risks associated with climate change would be useful to reduce production fluctuations associated with price volatility.

10. At household level, food price fluctuations may contribute to transitory food insecurity and malnutrition. Policies to strengthen timely price information and projections might reduce such negative nutrition effects for both farmers and consumers. Incentives and regulations in the supply chain to facilitate sound competition and avoid hoarding in the food supply chain may be needed along with social safety nets to protect the nutritional status of people on low-incomes.

11. Unit-cost reducing technological change in food production, processing and marketing as well as commodity-specific taxes and subsidies and trade restrictions are examples of policy interventions that may change relative prices and affect household access to food. Before such commodity-specific policies are designed, it is important to specify the nutrition problem to be solved: is it dietary energy deficiencies, micronutrient deficiencies or obesity-related chronic diseases? Can changing relative prices reduce the importance of one problem without contributing to another? Most developing countries experience all three of these problems, i.e. the triple burden of malnutrition. This makes the choice of price-related policies difficult. For example, a tax on beef or vegetable oil may reduce the risks of chronic disease but increase deficiency of iron or essential fatty acids.

**D. *Nutrition-enhancing policies to influence women's time demands and allocation***

12. Opportunities in food and agricultural systems for improving - or harming - the nutritional status of pregnant and lactating women and children during the first two years of life (the first 1000 days following conception) are closely related to how the food system affects women's time allocation. This is a point frequently ignored in often heard arguments that food and agricultural systems have little to offer to improve nutrition during the first 1000 days. In addition to the above mentioned changes in gender-specific household income and budget control, agriculture-based interventions to reduce the time pressures facing a large majority of low-income women may be very effective in achieving nutrition goals for women, fetuses and children below 2 years of age.

13. Introduction of labor-saving and productivity-enhancing technologies for the work traditionally done by women, such as herbicides to replace weeding, improved equipment for food processing, better access to water and fuel as well as credit, and rural infrastructure to improve food marketing and the time needed to bring food to the market as well as child care facilities appropriate for the particular situation, are examples of actions that could be considered and supported by governments.

***E. Nutrition-enhancing behavioral changes***

14. Improved knowledge regarding nutrition and its relations to the food system is needed for consumers, farmers, traders and policy-makers. Nutrition education and dissemination of information through labeling and social marketing for consumers has been commonly used to improve nutrition but with limited success. As might be expected, free-standing nutrition education programmes will only be successful where lack of knowledge is the most limiting factor for good nutrition. Labeling, in turn, will only be useful to consumers if they have the necessary knowledge to interpret the label. In view of the public health and economic implications of the increasing prevalence of obesity, diabetes and other chronic diseases and the widespread micronutrient deficiencies, governments may wish to intervene through regulation, incentives and knowledge campaigns.