

C2A Notes

“First, do no harm”: Identifying the risks of agricultural interventions for nutrition to avoid or reduce them

Issue 20 - December 2014

1. Why study the negative impacts of agricultural development projects on nutrition?

Reinforcing investments and interventions in farming and animal husbandry is crucial to food and nutrition security. Nevertheless, through their impact on diet, health and healthcare practices, agricultural interventions have direct and indirect effects on individuals' nutritional status. These impacts are not always recognized or taken into account.

C2A note no. 15, “From Field to Fork”, reviewed how farming could contribute to improving nutrition.

Based on a literature review by the CIRAD's UMR MOISA research unit¹, the present note particularly focuses on one of the recommendations made, that the farming sector avoid/reduce agricultural projects' negative impacts on nutrition. It aims to formulate concrete recommendations for donors, governments or project managers on how to best reduce the negative impacts of agricultural interventions. ↻

2. Limiting the negative impacts of farming to maximize its positive contribution to nutrition

The causal diagram on malnutrition published by UNICEF in 1991, the 2008 and 2013 editions of the Lancet² and many publications by research institutions (IFPRI, CIRAD), UN agencies (FAO) as well as donors (DFID, EU, USAID) have in particular allowed for a gradual shift away from a conception of malnutrition which all too often equates it with insufficient and/or inadequate food intake. These studies have led to changes in the understanding and practices of certain agricultural project designers and managers seeking to maximize the nutritional impact of their interventions. However most of the research that has supported this trend has focused on the positive effects of farming on nutrition, with little attention paid to agricultural interventions' potentially negative effects on nutritional status³. Yet from a purely operational perspective, it is sometimes easier to identify potential negative impacts, so as to be able to

prevent them, than to foster positive impacts. Focusing on negative impacts does not require an overhaul of operational methods, but is informed by the ethical principle of “do no harm”. It must be considered as a “quick win” or a first step for actors – donors, NGOs or governments – wishing to ensure that their projects have no harmful impact on nutrition. While not all agricultural interventions are necessarily expected to improve the environment, they do endeavour to identify the environmental risks that they generate in order to avoid or reduce them. The same approach could be followed for nutrition.

The work carried out by the CIRAD identifies six ways in which farming activities influence populations' nutritional situation, whether negatively or positively. These are briefly presented below. ▶

¹ Dury, Alpha, Bichard, Effets des interventions agricoles sur la nutrition : Identifier et limiter les risques, CIRAD, 2014. MOISA working paper, 2014.

² Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? Maternal and Child Nutrition 3. The Lancet, June 2013, 16p.
<http://www.thelancet.com/series/maternal-and-child-nutrition>

³ Semer les grains d'une bonne nutrition, ACF, GRET, CIRAD, December 2013

a) Higher income does not systematically lead to better nutrition

Income increases linked to agricultural interventions may result in greater healthcare and food spending, both conducive to better nutrition. However, this is not an automatic correlation and the evolution of a household's non-farming income, food price volatility and the way in which the household chooses to use and control its income all come into play.

Income increases may have a negative effect on nutrition when:

- The income gained from the conversion from subsistence farming to a cash crops does not compensate for the loss of the diversity of products previously available to a household for self-consumption
- Specializing in cash crops increases the variability of a household's income by making it more vulnerable to an array of variables (e.g. climate, economic, health, etc.). This can result in lower food spending.
- The conversion from subsistence farming to cash crops sometimes results in women having less control over household income (generally leading to a loss of food diversity for the household).

As highlighted by a World Bank report, agricultural policies' orientations have an impact on nutrition⁴. The New Alliance for Food Security and Nutrition (NAFSN), which France joined in 2012, is presented by its promoters as an innovative initiative to efficiently fight hunger and malnutrition. However, the NAFSN endorses an agricultural model based on the promotion of cash crops, monoculture, mechanization, the excessive promotion of biotechnology, and very heavy dependence on inputs and long distribution channels. Over two years after its launch, of its 10 member states, only Benin has made the fight against malnutrition a key commitment and has pledged to achieve measurable results. Even more concerning is the fact that of the 211 investments recorded by the NAFSN, only 27 mention activities linked to nutrition. According to a study carried out in 2013 by the Institute of Development Studies (IDS)⁵, only 3% of the investments announced in the framework of the NAFSN mentioned products that were both favourable to nutrition and intended for the local market.

b) Crop specialization may lead to a loss of food diversity

Increased production specialization may lead to a loss of food diversity on the markets and thereby cause the price of certain food products to rise, making them less accessible and therefore less consumed. It can also lead to changes in natural ecosystems, the disappearance of wild plants or traditional crops (sometimes crucial to households' nutritional balance) and/or a reduction of resources (e.g. land, time) dedicated to subsistence farming. These changes sometimes result in a simplification of diets and micronutrient deficiency risks, and may thus lead to a rise in chronic malnutrition.

c) Price trends may be detrimental to nutrition

Interventions supporting agricultural productions or industries can lead to an increase in production, resulting in a price drop. Although this may help improve access to food, it can sometimes have harmful consequences on the quality of food diets. If certain productions increase, it follows that others decrease. The resulting rise in prices can lead to a drop in the poorest populations' food consumption. For example, specialization in the production of rice in India during the Green Revolution led to reduced availability of pulses (a major source of iron). This caused a rise in anaemia among women⁶.

d) The risk of women's workload increasing and their status deteriorating

Women play an important role in food production and purchase, in the diet of their family and in childcare. Certain agricultural interventions are likely to reduce their decision-making power or to increase their workload, thereby jeopardizing nutrition. For example, the development of cash crops, often controlled by men, can cause women to have less say in decisions concerning production and the use of household income. Certain agricultural interventions – although they are most often intended to improve the living conditions of women – can increase their workload, thereby reducing the amount of time they have available for childcare, breastfeeding and preparing meals (leading to a reduction in the number of meals, less elaborate dishes and less nutritious meals). ▶

⁴ From Agriculture to nutrition, pathways, synergies and outcomes, World Bank, 2007

⁵ How much is the New Alliance doing for food security and nutrition ?, IDS, 2013

⁶ See Dury et al.: "Calory consumption went from 2,050 to 2,250 kcal/person from 1970 to 1990 while the iron density of an average person's diet went from 6.2 to 5.75 mg/kcal and the prevalence of anaemia among women went from 57 to 73% over the same period"

e) Health and environmental degradation risks

Populations' state of health can suffer from changes in their environment and in food safety. Moreover, some interventions can raise risks of animal diseases being transmitted to humans, pesticide residue and mycotoxin or aflatoxin risks, and lead to the degradation of water and food safety (causing diarrhoea and the deterioration of nutritional status). Among the many risks identified, it is important to highlight the zoonosis risks associated with the development of animal husbandry. Half of diarrhoeal diseases (a factor contributing to undernutrition) are linked to animal pathogens or to food of animal origin. The risks linked to aflatoxins⁷, mainly within maize-groundnut intercropping systems, are very high. The CIRAD points out that aflatoxin contaminations affect 85 to 100% of children in the African countries of the Gulf of Guinea⁸. Apart from the carcinogenic and immunotoxic effects of aflatoxins, many studies draw a direct link

between the level of exposure to aflatoxins and the prevalence of chronic malnutrition in children. Finally, it is important to note that countries of the South, which only use 25% of the world's pesticides (4% for Africa), account for 99% of deaths from poisoning (75% for Africa)⁹.

f) The risk of exacerbating inequalities

Producers who are not directly involved in an intervention may lose all or part of their access to certain resources (e.g. land, employed labour) or suffer from inequalities in the targeting of the intervention. Establishing agricultural growth areas can reduce access to farmland for the poorest. In the framework of the NAFSN, for example, the government of Burkina Faso has committed to developing 12,712 ha of irrigated land in the Bagré growth area. However 78% of this surface – i.e. 9,922 ha – has been set aside for investors. 🔄

3- How to reduce or avoid these risks?

Reinforcing investments and interventions in farming and animal husbandry is crucial to food and nutrition security. Agricultural policies, particularly those designed to support small farmers, play a fundamental role in the fight against undernutrition. It is important that donors and States whose populations are strongly affected by undernutrition continue to further invest in supporting agriculture, especially small family farming, peasant farming and agroecology. However, it is also important to recognize that some agricultural interventions may have negative effects on poorer households' nutritional situation – even when food production increases.

The recommendations below are aimed at project designers, be they donors or project design managers. They can be applied to all scenarios, but must be specified and tailored to each context.

Limiting negative impacts in the definition of agricultural policies and programmes

- Agricultural policies must recognize international human rights agreements and endeavour to implement them¹⁰.
- Agricultural policies and programmes must take into account populations' nutritional situation in order to improve or – at the very least – not be detrimental to this situation.
- Agricultural policies and programmes must first of all serve the interests of small family and peasant farmers, who both feed the world and suffer from hunger the most. They must be gender-sensitive.
- They must be designed through dialogue, coordination and intersectoral collaboration covering agriculture, health, the condition of women and social affairs, and must involve all stakeholders. ▶

⁷ Aflatoxins are mycotoxins produced by a species of fungi which proliferate on grain stored in warm and humid conditions. They are highly carcinogenic and are thought to be an important factor of chronic malnutrition.

⁸ Khlangwiset P., Shepard G.S., Wu F. 2011. Aflatoxins and growth impairment: A review - Critical Reviews in Toxicology, Vol. 41, No 9: 740-7. <http://informahealthcare.com/doi/abs/10.3109/10408444.2011.575766> cited by CIRAD

⁹ Thiam A. & Sagna M.B. 2009. Monitoring Pesticides at Grassroots Community Level, Africa Regional Report, http://www.pan-afrique.org/fr/Rapports/Etudes/Regional_Rep_Af_CBM_UK.pdf

Kesavachandran C.N., Fareed M., Pathak M.K., Bihari V., Mathur N., Srivastava A.K. Adverse health effects of pesticides in agrarian populations of developing countries. *Rev Environ Contam Toxicol.* 200: 33-52. DOI: 10.1007/978-1-4419-0028-9_2. cited by CIRAD

¹⁰ The UN Guiding Principles on Business and Human Rights adopted in June 2011 by the United Nations Human Rights Council. The OECD (Organization for Economic Cooperation and Development) guiding principles for regulatory quality and performance, revised in 2011.

The voluntary guidelines to support the progressive realization of the right to adequate food in the context of national food security – FAO – 2003

The voluntary guidelines on the responsible governance of tenure – FAO – May 2012

- Agricultural policies and programmes geared towards the development of cash crops must be offset by measures to ensure the preservation of sufficient subsistence farming for farmers to be able to feed themselves and supply local markets. They must promote agroecological practices.

Considering negative impacts throughout the project cycle

- Diagnoses carried out prior to designing the project must endeavour to identify potential risks in order to avoid or alleviate them upstream.
- To achieve this, health officials and agricultural extension practitioners must be involved, with clearly attributed roles in the definition of preventive measures (e.g. good agricultural practices, information, home visits during pregnancy, anti-mosquito measures, etc.) and measures to tackle these risks (human and animal healthcare services).
- Tools and methodologies must be put in place to allow project managers to monitor the potential negative impacts of their projects and to target

them with adequate corrective measures. Many development actors already have similar tools at their disposal. In this case, they might for example include tools to track the price of essential foodstuffs (detecting the negative impacts of agricultural programmes on the availability of food resources and access thereto) or to monitor the schedule and workload of women.

- Existing project matrices must take into account negative impacts on nutrition. Most donors require the use of tools to monitor the environmental impact of agricultural projects. The integration of negative impacts on food and nutrition security could, for instance, allow for a link between environmental degradation and nutritional consequences to be established.
- Nutritional education should be included in interventions, particularly with the objective of allowing the resulting new agricultural resources or increased income to contribute to better nutrition. 🔄

As part of its mission to support the collective advocacy of its members, Coordination SUD has set up working committees. The Agriculture and Food Commission (C2A) brings together international solidarity NGOs working to realize the right to food and increase support for smallholder farming in policies that impact world food security: 4D, ACF, aGter, Artisans du Monde, AVSF, CARI, CCFD-Terre Solidaire, CFSI, CIDR, CRID, Gret, Inter Aide, Iram, Oxfam France, Peuples Solidaires in association with Actio-nAid France, Réseau Foi et Justice Europe, Secours Catholique, Secours Islamique, Union Nationale des Maisons Familiales Rurales, and one guest : Inter-réseaux.

The aim of the Commission is to coordinate the work conducted by its participants and to facilitate consultation among its members for their advocacy work with social actors and international policy makers. The members of the Commission reach agreements on who represents Coordination SUD in a range of arenas (Concord in Europe, FAO, WTO, UNCTAD) and share information on current international issues. The Commission is mandated by Coordination SUD to formulate the positions taken by the group during the major institutional meetings on the subject of agriculture and food.

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The C2A Notes are produced with support from the French Development Agency (AFD).
The information and views set out in this document do not necessarily reflect the official opinion of the AFD.

