Assessing food value chain pathways, linkages and impacts for better nutrition of vulnerable groups

Mar Maestre, Nigel Poole, Spencer Henson

Business, Markets & the State Cluster, Institute of Development Studies (IDS), University of Sussex, Library Road, Brighton BN1 9RE, UK

Centre for Development, Environment and Policy, SOAS University of London, Thornhaugh Street, Russell Square, London WC1H 0XG, UK

Department of Food, Agricultural & Resource Economics, University of Guelph, J.D. MacLachlan Building, 50 Stone Road East, Guelph, Ontario N1G 2W1, Canada

ARTICLE INFO

Article history:
Received 3 November 2016
Received in revised form 20 December 2016
Accepted 28 December 2016

Keywords:
Agri-food
Value chains
Private sector
Undernutrition
Micronutrients
Vulnerable groups

ABSTRACT

This article offers insights into assessing the effectiveness of post farm-gate agri-food value chains at improving the nutrition intake of vulnerable groups. It develops a conceptual framework integrating the value chain concepts with agriculture and nutrition, and identifies key outcomes and requirements for value chains to be successful at delivering substantive and sustained consumption of nutrient-dense foods by poor households. Other frameworks linking value chains with nutrition have been published, but this article provides the analytical lens to assess post-farm-gate value chains.

To achieve improvements in the intake of nutritious foods by the target populations food must be: safe to eat on a sustained basis; nutrient dense at the point of consumption; and consumed in adequate amounts on a sustained basis. This shifts the focus to the role of public actions and policy in terms of shaping the functioning of food value chains.

By assessing the limits of what business can and cannot contribute in a given market context, policymakers and other relevant stakeholders will be more capable of creating an appropriate institutional environment that shapes how value chains operate for the benefit of vulnerable target groups, designing and implementing effective policies and strategies with respect to the role and use of market-based interventions.

1. Introduction: undernutrition and agri-food sector objectives

Malnutrition is a central and persistent challenge for global development. Lack of sufficient nutrition among children below two years of age and in pregnant women has irreversible generational health and developmental consequences for individuals and society. Therapeutic approaches to treating undernutrition are immensely important within humanitarian programmes. They involve interventions such as complementary and supplementary feeding, and distribution of fortified foods with micronutrients missing from diets, such as iodine (for example in salt), iron (for example in supplements for adolescent girls) and vitamin A (for example in cooking oil).

In addition to targeting health and other areas related to undernutrition, a key priority is also the transformation of the agriculture and food sector. While patterns of crop and livestock production are widely expected to affect nutrition and the health of vulnerable groups, the evidence base for a positive impact, albeit growing, is still limited and sometimes inconclusive. This article will focus on food-based approaches to delivering high quality foods to nutritionally vulnerable populations. There is a growing consensus that a key priority to address undernutrition is the transformation of the agriculture and food systems. Goal 2 from the Sustainable Development Goals (SDGs), zero hunger calls ‘to end hunger, achieve food security and improved nutrition and promote sustainable agriculture’. Agribusiness might be assumed also to be one means of implementation and revitalisation of Goal 17.

* Corresponding author.
E-mail address: m.maestremorales@ids.ac.uk (M. Maestre).

1 Malnutrition refers to undernutrition and overnutrition. Undernutrition encompasses acute malnutrition (that occurs after a sharp reduction of food, implying substantial weight loss or hunger); or chronic malnutrition, (long periods of inadequate intake of food or basic micronutrients), with irreversible effects and usually harder to identify (‘hidden hunger’). Overnutrition refers to a range of diseases stemming from over-consumption of calories and fats. All these forms of inflict severe damages on human health, wellbeing and economic productivity (UNICEF 2012). This article, however, focuses specifically on chronic micronutrient deficiencies (hereafter referred to simply as undernutrition).

2 While the other initiatives mentioned are also critical (access to health care, clean water and sanitation, and women’s empowerment) this article focuses on food-based approaches.
‘the global partnership for sustainable development’. By designing a framework to assess the effectiveness of post-farm gate value chains, we hope to shed light on an important question, to what extent can we expect the private sector to deliver on public sector nutritional objectives, and what are the public and private actions and pathways for impact on undernutrition.

2. Tackling undernutrition

The economic consequences of undernutrition in terms of costs to the global economy because of the human capital losses are estimated on USD3.5 trillion per year (Hoddinott, 2013). An estimated two billion people suffer micronutrient deficiencies and almost 800 million people are affected by hunger, most of whom live in low-income countries and are strongly affected by poverty (Allen et al., 2016). The human consequences are real but incalculable.

Eliminating global undernutrition by 2030 faces huge challenges (IFPRI, 2016). This reflects in part the complexity of factors involved besides food-insufficiency, such as poor quality water, sanitation and hygiene, inadequate caring practices, and disease (UNICEF, undated; Black et al., 2008). Initiatives targeting these aspects are critical, particularly access to health care, clean water and sanitation, and women’s empowerment.

Nearly half of the undernourished population of the world live in South Asia. Food insecurity remains high, with around 23% of the population not having access to adequate calorie intake. Yet agriculture is the main source of livelihoods, employing 60% of the total workforce. The phenomenon of rapid rates of national economic growth and persistent poverty and hunger in countries such as India, where agriculture – essentially food production – is a major economic sector, is a glaring illustration of the complexity of the relationship between agriculture, economic development and well-being. Agricultural growth has been shown to reduce levels of hunger (Hoddinott et al., 2013), reflecting the strong association with calorie intake: institutional developments such as contract farming have been found to reduce food insecurity among participating households, either through income effects or through productive spillovers from commercial to subsistence crops (Bellemare and Novak, 2016); but evidence for the link from agricultural growth to increasing dietary diversity and intake of micronutrients is considerably weaker, especially in South Asia (Headley, 2012: 14–15). With respect to South Asia, but as a caveat which is likely to apply more widely, Pandey et al. (2016: 39) conclude that:

“linkages between agriculture and nutrition are complex and require multi-sectoral and multi-dimensional approaches to tackle the malnutrition problem in this region.”

For this reason, it is widely recognised that efforts to reduce nutrition by boosting agricultural productivity should be accompanied by a wider focus on making food systems nutrition-sensitive, and also with complementary initiatives specifically targeting increased consumption of nutritious foods (Ruel et al., 2013).

There is a consensus that food-based approaches can also engage on agri-food value chains and markets post-farm gate to increase animal-source foods (Leroy and Frongillo, 2007; Rawlins et al., 2014; Hoddinott et al., 2015; Jodłowski et al., 2016).

There is no assurance that nutritious home produce will be consumed by vulnerable women and children, or in sufficient quantities to effect improvements in nutrition and health. A number of recent reviews have found that diverse agricultural interventions have increased food production, but did not necessarily improve nutrition. Moreover, impact pathways were not always through direct effects on diets but often indirectly through sales and income effects (Berti et al., 2004; Leroy and Frongillo, 2007; Girard et al., 2012b; Masset et al., 2012a). Agricultural produce of higher nutritional quality may be sold and substituted in the diet by poorer foodstuffs bought with cash. Increased incomes may also be diverted towards non-food consumption. In Afghanistan, Levitt et al. (2010) argued that the actual linkages from agriculture to nutrition are weak, and may fail to leverage the potential for agriculture through its diverse direct and indirect impact pathways to improve nutrition and health of vulnerable groups.

Such research increasingly points beyond agricultural production to the role of markets in linking agriculture and nutrition as a source of nutritious foods, even among rural people (Hoddinott et al., 2015; Flores-Martinez et al., 2015). For example, the share of purchased food in total food consumption currently constitutes around 70–80% of the food consumed in middle income countries such as Indonesia or Vietnam (Reardon, 2015). Moreover, poor households tend to consume low-cost sources of food calories, typically cereals and starchy tubers (Bouis et al., 2011), which lack micronutrient density, as often foods that are rich in micronutrients (fruit and vegetables, dairy products, meat, poultry and fish) are inaccessible to the poor due to lack of physical availability and/or high prices (Miller and Welch, 2013). Even as poor people in developing countries become less poor, the phenomenon of ‘nutrition transition’ means that diets change but do not necessarily improve in nutritional quality (Drewnowski and Popkin, 1997; Popkin, 2001).

Reviews of the different pathways for agri-food value chain interventions in Bangladesh, India and Pakistan show the challenges faced in distributing their products to undernourished consumers. The success of such interventions relies heavily on well-functioning markets and distribution systems, and on consumer awareness of the value of nutrition, which is often lacking (Humphrey and Zuberi, 2015; Zuberi et al., 2016; Parasar and Bhavani, 2016; Islam et al., forthcoming).

A number of authors have offered frameworks to enable policymakers to understand the market pathways linking agriculture with nutrition, and the conditions for these to work effectively from supply and demand perspectives (Hawkes et al., 2012a; Trail et al., 2014; Gelli et al., 2015; Kanter et al., 2015; Allen et al., 2016). This has led to an increase emphasis by development agencies, governments and others on the benefits of involving the private sector in strategies to increase food production and consumption and tackle undernutrition. It is therefore crucial to consider food markets as a key determinant of access to and availability of food, and understand what realistically can be expected of private enterprise in delivering public nutrition objectives.

This article explores ways to assess the potential and effectiveness of the private sector to bring about substantive and sustained consumption of nutrient-rich foods1 by nutritionally vulnerable target groups. Unlike other frameworks, it focuses on the actors engaged on agri-food value chains and markets post-farm gate in

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1 Nutrient-rich foods are those high in micronutrients that, if consumed in adequate quantities (notwithstanding health, WASH and other conditions) are likely to improve the nutritional status of individuals who are undernourished in respect of micronutrients.
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