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The Influence of Agro-Food Policies and Programmes on the Availability, Affordability, Safety and Acceptability of Food

(English only)

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I. Introduction

1) The rise of nutrition up global political and development agendas has been dramatic. The persistence of undernutrition and growing recognition of the 'hidden hunger' associated with micronutrient deficiencies has certainly played part. Thus, FAO estimates suggest that in excess of 850 million people are hungry (FAO IFAD and WFP 2013), whilst micronutrient malnutrition is purported to affect up to a half of the world's population (Miller and Welch 2013). In addition, the recent escalation and volatility of global food prices and the spectre of feeding a population forecast to reach nine billion by 2050 pose, arguably, even greater problems. The undernutrition problem is now seen as both important and urgent.

2) The lack of progress in solving undernutrition, in all its guises, reflects in part the complexity of factors involved. The ability of the poor to access a varied diet comprised of nutritious foods is critical (Ecker *et al.* 2011: 6), but nutritional outcomes are also decisively affected by caring practices, health, sanitation, and empowerment of women, amongst other things. Within this broad range of determinants, food is part of the picture, and there is clearly a need for investments to boost agricultural productivity, prevent the escalation of food prices in the face of demand expansion due to population growth and rising incomes, and to boost farm incomes (Ruel *et al.*, 2013).

Nevertheless, whilst agricultural growth has been shown to reduce levels of hunger, (Hoddinott *et al.* 2013), reflecting the strong association with calorie intake, the link from agricultural growth to dietary diversity and intake of the micronutrients so essential for physical and mental development is considerably weaker (Headey 2011: 14-15). For this reason, it is widely recognised that efforts to boost agricultural productivity need to be accompanied not only with a wider focus on making food systems nutrition-sensitive but also with complementary initiatives specifically targeted at increasing consumption of nutritious foods (Ruel *et al.* 2013). Much of the emphasis on efforts to better integrate agriculture and nutrition have focused on farm households, which in the context of countries where a large proportion of the poor have agriculture as their main source of livelihood is clearly appropriate. Examples include the promotion of kitchen/home gardens (Girard *et al.* 2012; Le Cuziat and Mattinen 2011; Masset *et al.* 2012) and the production for on-farm consumption of bio-fortified crops (for example orange-fleshed sweet potato) (Bouis *et al.* 2011)

3) There is increasing interest, however, in the links between agriculture and nutrition outcomes for people and households that derive some or all of their food through markets (Henson *et al.* 2013). These might include individuals in producer households that are not self-sufficient in food for some or all of the year, rural non-farm and landless households, and urban households. Specifically in terms of the latter group, whilst overall rates of poverty and stunting are generally lower than in rural areas, they may be high for the poorest. In Bangladesh, for example, rates of stunting in slums are not only twice as high as in wealthier neighbourhoods but also 44 per cent higher than in rural areas as a whole (Ahmed *et al*. 2012: 34). Given that many households do rely on food purchases for all or part of their nutrient intake, attention is being given to the scope for developing and improving the functionality of agri-food value chains for better nutrition (see, for example, Hawkes 2009; Hawkes and Ruel 2011; Hawkes *et al.* 2012; Henson *et al.* 2013; Mazur *et al.* 2011). At the same time, it is being increasingly recognised that the private sector has a critical role to play, not only because they operate at scale and bring know-how, scale and financial and other resources, but also because of their existing involvement in markets for food.[1] It is on such initiatives and the role of policy therein, that this paper focuses.

II. Food-based approaches and the role of value chains

4) Food-based approaches to reducing undernutrition focus on the ability of people to gain access to a varied diet comprised of nutritious foods. Poor households tend to rely on low-cost sources of food calories, typically cereals and starchy tubers (Bouis *et al.* 2011), which lack micronutrient density. There is evidence that many nutrient-rich foods, including 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).

5) In order to understand why the poor struggle to access a diet of adequate nutritional quality, attention must focus on the food markets that serve them. A useful starting point here

[1] There remains considerable mistrust of business within the nutrition community, largely as a result of tensions over the marketing of breast milk substitutes and also soft drinks and fast food in developing countries by transnational corporations (TNCs), but also wariness over asymmetries in power and resources between these corporations and governments (Gillespie *et al.* 2013). It is important to recognise, however, that the private sector does not just include TNCs, but includes firms from small to large across both the informal and formal sectors, and that can be national or international in the scope of their operations.

is the Making Markets Work for the Poor (M4P) approach (Department for International Development 2005; Tschumi and Hagen 2008) which highlights the need to understand how markets work in practice and how and why, in particular, they fail the poor disproportionately. The M4P approach identifies failures in the functioning of markets and proposes solutions (Elliott *et al.* 2008; Tschumi and Hagen 2008). One of the tools used in this approach is value chain analysis. The concept of a 'value chain' recognises interdependencies between the many activities involved in bringing a product or service from production through to consumption. What happens at one point in the chain may have non-trivial (i.e., important or relevant) consequences for other parts of the chain. The performance of the chain as a whole depends not only on the performance of each of the links, but also on the way in which activities are coordinated along the chain and chain requirements communicated to the different actors. Taking groundnut-based products as an example, ensuring that the end product is free of aflatoxins without resorting to expensive processes of inspection and sorting may be reliant on the use of good practices in production and harvesting that reduce the risk of contamination in groundnuts. For such practices to be adopted their need has to be communicated and their use rewarded. For this reason, in addition to physical products, a range of resources flow (multi-directionally) along value chains including payments, information, technical assistance, technologies, investments and credit (World Bank 2003).

6) Critical to an understanding of the functioning of agri-food value chains is their role in the creation and capture of 'value' and its distribution amongst the actors along the chain. The incentive for actors along the value chain to create this value – produce the food and maintain and/or enhance its nutrient content along the value chain – will depend on their ability to capture a sufficient part of this worth. Ultimately, this value depends on the propensity of consumers to purchase the product created and delivered by the value chain and the price they are willing to pay for it. In many ways, focusing on nutrition does not change this analysis. The value of a nutritious food will reflect the worth placed on its nutrient composition, alongside other characteristics such as taste, colour, cultural acceptability and ease of cooking, by the purchaser (which could be the person responsible for purchasing food for a household but could equally be the government, World Food Programme (WFP), UNICEF, etc.).[2]

7) Hawkes and Ruel (2011) outline four conditions that need to be met if nutritious foods are to be marketed successfully to the poor:

- **Availability:** the food must be present in a location that is frequented by poor purchasers and/or consumers, including where they live, work, shop for food, etc. Thus, such locations should be physically accessible, socially acceptable, etc. For example, the poor tend to make more use of informal markets than commercial outlets such as supermarkets.
- **Acceptability:** The food must be in a form that is acceptable to poor consumers given established tastes and consumption practices, social and cultural norms, etc. For example, attempts to introduce orange-fleshed sweet potato in some African countries

[2] Clearly this differs very much from how nutritionists value a food that is rich in particular micronutrients, for example; nutritionists assign an innate value to the nutrients in the food that reflects, at least in part, the degree to which target populations are deficient. In a value chain context, however, no value is created unless a person or an organisation actually purchases the food.

were initially hampered by the low dry-matter content of early varieties, which reduced their acceptability (see, for example, Tarini *et al.* 2006).

- **Affordability**: Households in which consumers have micronutrient deficiencies must be able to afford the food given their income and other expenditures. Cost can act as an absolute constraint, and at the same time the propensity of purchasers to accept a higher price will depend on their 'willingness to pay'. This is in part dependent on consumer awareness and the confidence purchasers have that the food purchased has the characteristics and the benefits claimed for it. This can be a very real challenge with consumers who have limited education and little or no comprehension of nutrition.
- **Nutritional quality**: The food must have an adequate nutrient profile given the nutrients in which consumers are deficient and the amounts they can reasonably be expected to and/or habitually consume. At the same time, the food must be safe to consume and free of anti-nutritionals. Further, the credence nature of food nutrients described above is clearly a salient issue here.

8) Thus, actors along the value chain must be both able to incentivise the production and distribution of nutritious foods in a manner that is available, acceptable and affordable to the poor. This requires that producers and processors can source the required inputs, produce and/or manufacture the food, store and distribute it in a manner that preserves its nutritional value along the value chain, etc. Furthermore, these operations must be undertaken in the context of value chains with which the poor engage, including actors that might be positioned in the formal or informal sectors, and in a manner that keeps costs low, maintains or enhances consumer acceptability, etc.

9) Experience suggests that these conditions are very challenging to meet. The problem lies in the combination of conditions. It is well-known that good food of high nutritional value is available for purchase in developing countries. In the case of complementary foods for infants, for example, products such as Nestlé's Cerelac can be purchased, but they are too expensive for most poor consumers. In fact, the cost of the product is increased by its marketing requirements. As Master and Sanogo (2002) observe, the product's price and packaging, and the retail outlets through which it is distributed, are partly designed to indicate to potential purchasers that it is a high-value product. Affordability is undermined by the need to convince consumers of its nutritional value. Conversely, where nutrient-enhanced products have been specifically designed to complement the diets of the poor, there have sometimes been difficulties in reaching these consumers and/or in providing a product at a price that is affordable to them.[3] Physical distance and poor infrastructure increase the costs of making food physically available to the poor and may also increase the challenges of maintaining the nutrient quality of certain nutritious foods.

10) The challenges of creating and capturing value in food value chains are made particularly complex by the characteristics of nutritional value itself. The nutrients contained in a product are very frequently 'credence characteristics'. That is, they are unobservable to

[3] Nutridelight, launched by Procter & Gamble in the Philippines would be an example of a product with nutritional potential that faced such market challenges (World Business Council for Sustainable Development 2004).

purchasers and consumers of food even after consumption (Anim-Somuah *et al.* 2013), and with the exception of foods used for the treatment of severe acute malnutrition, the positive effects of the foods are not evident in the short term or easily attributable to the food consumed. This creates a serious problem in markets for nutritious foods. There is clear scope for misselling; indeed, in many such contexts, there is a tendency for falsely differentiated products effectively to drive out genuine products (Akerloff 1970) unless a mechanism is put in place to communicate and verify their quality. This makes it difficult for providers of foods with superior nutritional qualities to obtain a premium price for them. The net result is that firms face strong incentives to reduce nutritional quality and to compete on the basis of low price (Dranove and Jin 2010).

11) Such uncertainty about nutritional quality also undermines consumer willingness to pay. Taking fortified wheat flour as an example, the purchasers have no way of assessing for themselves whether the flour has indeed been fortified, or if they are, instead, being misled by the seller. In these circumstances, consumers run the risk of both wasting scarce household income and mistakenly believing that household members are obtaining more adequate nourishment. Whilst some nutritious products do display physical differences that act as a visible cue – as is the case with orange-fleshed sweet potato that is rich in pro-vitamin A – these are the exceptions.

12) The problem of value capture is not itself insurmountable. For value chain actors to capture at least some of the value they create through the supply of nutritious food, value chain integrity and the ability to signal to buyers along the value chain is required. Integrity refers to the accuracy and reliability of claims about the nutritional quality of the product in each transaction along the value chain. Guaranteeing integrity at one point in the value chain (for example at the point of fortifying wheat flour), does not necessarily guarantee that the product retains its nutritional attributes along the value chain (for example, the nutrient content of fortified wheat flour may degrade, be diluted through the addition of non-fortified flour or even substituted altogether with non-fortified flour). Signalling refers to the way the nutritional attributes of the product are communicated to buyers along the value chain in a way that is reliable and trustworthy; not just the final purchasers and/or consumer, but also other buyers along the chain. This might be achieved through systems of certification, branding, labelling, distribution though distinct channels, etc. But, the problem remains of how to meet these requirements without increasing cost to a level at which the product is no longer affordable to poor consumers who have the most pressing need to purchase and consume nutritious foods.

13) From a value chain perspective, beyond ascertaining which of these conditions are not met, the key questions are why and what can be done about them? Thus, the focus is on the capabilities of actors along the value chain, individually and as a collective, and their incentives to engage in markets for nutritious foods in a manner that brings benefits to the poor. Where capabilities need to be enhanced and/or incentives augmented, attention is given to how to bring about changes in the way the value chain operates on a sustainable basis.

III. Applying value chain interventions to markets for nutritious foods

14) Value chain analysis is now widely used in development policy and practice to identify ways to improve the position of poor producers. By enhancing the access of the poor to markets, linking producers with buyers and promoting the flow of knowledge and resources, value chain interventions aim to enable poor producers to benefit from market development (see, for example, Oxfam 2010). Relatively new, however, is the interest in leveraging value chains to improve nutrition, and in particular as a key component of efforts to integrate better agriculture and nutrition.

15) Food-based approaches to combatting undernutrition are themselves heterogeneous, reflecting both the different forms that undernutrition can take and the potential routes to dealing with these. Among the nutritional challenges and associated strategies are the following:

1. Lack of dietary diversity as a result of diets that are concentrated on staple foods. Increasing the availability of fresh and processed foods that are rich in micronutrients may address this problem.
2. Specific nutrient deficiencies, such as Vitamin A, iodine or zinc. Bio-fortified products, nutrient supplements and food fortification can supplement diets to address such deficiencies.
3. Adequate nutrition for infants as they make the all-important transition from breast milk to solid foods. Good quality, affordable complementary foods are required for this transition.
4. Severe acute and acute malnutrition that require concentrated and balanced sources of particular nutrients can be delivered through nutrient supplements.

16) The value chain solutions for these nutritional issues will vary considerably. This section considers the associated value chain challenges, with special attention being given to how they address the issues of availability, affordability, acceptability and nutritional value.

Increasing Dietary Diversity

17) One way in which value chain-based interventions can contribute to enhanced nutrition amongst the poor is by enhancing access to foods that are naturally rich in micronutrients. These would include fresh foods, such as fruits and vegetables, meat, fish, dairy products, as well as pulses. Fresh foods, in particular, are generally lacking in the diets of low-income households (Ruel *et al.* 2013).

18) Despite the fact that value chains are evolving in developing countries, with the emergence of industrial-scale food manufacturers and supermarkets, foods such as fruit and vegetables, milk and meat, that are important sources of micronutrients, continue to be accessed primarily through traditional value chains (Gomez and Ricketts 2013; Guarin 2013). For example, over 90 per cent of fruit and vegetables are purchased in traditional retail outlets in Kenya and Zambia (Tschirley *et al.* 2008), whilst even in countries where there is greater penetration of supermarkets such as Thailand and Mexico, the majority of fruit and vegetables are still sourced from traditional value chains (Humphrey 2007). Gomez and Ricketts (2013) argue that this persistence of traditional value chains relates to their ability to offer lower

prices, flexibility in product standards and the convenience to poor consumers provided by their location in poor neighbourhoods. In other words, they provide solutions to the affordability and availability challenges. To the extent that the nutritional qualities of these products are also evident in their fresh state, consumers would have confidence in the nutritional value of such products, although there may be issues with their safety.

19) The main challenges associated with such products lie in two areas. First, there are significant difficulties in communicating the benefits these foods provide to consumers and, in so doing, motivating 'willingness to pay'. Second, such chains are frequently characterised by weak infrastructure for transport and storage (for example lack of cold storage) and lack of integration between production and distribution. As a result, post-harvest losses and degradation of nutrient content along the value can be significant; arguably these are the areas where most efforts for improvement are required. Much of the focus of value chain-based interventions in this context is on enhancing production and reducing post-harvest losses so that the products become more available and affordable to the poor. Many value chain-based efforts for the enhancement of farm incomes have a similar focus (although a somewhat different objective), such that there may be scope for alignment.

20) Whilst recognising the preponderance of traditional value chains in many developing countries, the emergence of 'modern' value chains for processed and packaged foods does present opportunities to enhance access by the poor to nutritious foods. Perhaps the greatest opportunities in this regard relate to value chains that link industrial food processors to traditional distribution and retail systems (Gomez and Ricketts 2013) or even to public distribution systems. Such foods and distribution systems present distinctly different challenges to those for fresh produce in local markets. With processed foods, there may be issues of affordability, availability, acceptability and signalling of nutrient quality. Once products are processed, the nutritional value may become much harder for purchasers to evaluate. The cost of processing foods may make them less affordable to the poor, and to the extent that food processing is concentrated in one or a few locations, then distribution challenges have to be resolved. In addition to this, the processing of food will change the characteristics of the product and issues of acceptability may arise. Such challenges are not insuperable. For example, in Kenya, efforts by large and medium-scale dairy processors to target markets for liquid milk amongst the poor have involved the packaging of milk in 200 millilitre plastic bags rather than one litre TetraPaks in order to make them more affordable (Henson *et al.* 2012). Processing and packaging may also make products more resistant to deterioration and bad handling, simplifying transport and storage requirements.

Nutritionally-enhanced products

21) The second context in which value chain-based interventions can be employed is in the production and distribution of nutritionally-enhanced foods into markets aimed at the general population. There are a wide range of examples (Chen *et al.* 2013) including bio-fortified crops (Hotz and McClafferty 2007) and fortified foods (see, for example, Sablah *et al.* 2011). Actors along the value chain for these products incur many of the same challenges as for nutritious foods more generally in making them available, accessible and acceptable to the poor. In so doing, ensuring affordability is often a significant consideration. A good example is Grameen Danone (Hussain *et al.* 2012; Ghalib *et al.* 2009; Rodrigues and Baker

2012), whose fortified yogurt aims to meet 30 per cent of the Vitamin A, iron and zinc requirements of children aged three to 15 years if consumed twice weekly. In order to try to make this product affordable to the poor, Grameen Danone has had to reduce the costs of procuring milk through contracts with local dairy producers, establish an efficient processing facility and minimise marketing costs through a proximity-based distribution model. In addition to this, it has extended marketing to non-poor groups via more conventional distribution channels in order to gain scale.

22) Overall, the challenges involved in developing nutritionally-enhanced nutritious food products that can be marketed successfully to the poor are considerable. First, there is the investment required to develop and test these products. In some cases, the costs can be very significant – for example those associated with plant breeding in the case of bio-fortification and product formulation and nutrition testing in the case of fortified foods and nutrient supplements. Second, new markets need to be developed for these products, with the associated challenges of establishing the positive benefits of the product with consumers, ensuring the product comes in an acceptable form and organising distribution systems. All of this adds costs, and therefore creates affordability challenges that suggest a rapid build-up to scale is needed to keep costs manageable. As the now widely applied 'bottom of the pyramid' (BOP) concept implies, marketing products to the poor requires a focus on low-margins and high-volumes (Prahalad and Hart 2004; Simanis 2011).

23) The intersection of high start-up costs and the risks associated with making these products available, accessible and acceptable to the poor can entail significant risks for business, especially where new business models are needed and the scale of consumer demand is uncertain. For example, Segrè *et al.* (2012) suggest that, given the number of poor consumers willing to pay the unsubsidised price for nutrient-dense spreads such as Nutributter in Ethiopia, the market remains too small to be viable for commercial companies. Tripp *et al.* (2011) come to similar conclusions in the case of nutrient powders in Nigeria.

24) It is not surprising therefore, that many nutritionally-enhanced food products have been developed through partnerships between the public and private sectors. Thus, technical support has been provided to firms in order to defray the costs of development and/or testing of these products, as seen with the partnership between Grameen, Danone and the Global Alliance for Improved Nutrition (GAIN) in testing the efficacy of its fortified yogurt (Sazawal *et al.* 2013). Similarly, links with public agencies can serve to create an early demand for products and facilitate the achievement of scale. In the case of the EthioPea initiative involving the Pepsico Foundation in Ethiopia, the World Food Programme (WFP) has made clear its intention to distribute the product to 40,000 malnourished children in Ethiopia (Fite 2013). It is unclear, however, whether such arrangements merely compensate for the lack of a commercial market for such products, or provide short-term support that enables the viability of a longer-term market-based model for production and distribution to be established.

25) It is possible to avoid or sidestep some of these challenges, by intervening at other points in the value chain. Food fortification is one such strategy. Governments in an increasing number of countries have implemented national fortification programmes, and fortification has been identified as a highly cost-effective strategy through which to reach the

population at large (Horton *et al.* 2008).[4] Predominantly, these programmes lay down mandatory requirements for the fortification with key micronutrients of basic commodities, such as wheat flour and cooking oil,. For example, 12 countries in West Africa have implemented national fortification programmes, with an estimated potential to reach 70 per cent of the population (Sablah *et al.* 2011). It is important to recognise, however, that mandatory requirements for fortification can be difficult to enforce, especially where the processing and/or distribution of foods is dominated by micro and small enterprises (MSEs) within the informal sector. Furthermore, experiences in West Africa suggest that voluntary efforts to achieve fortification involving collaboration between the public and private sectors can be just as successful as mandatory requirements (Sablah *et al.* 2011). Likewise, in Mozambique the success of efforts to bring about the fortification of cooking oil and wheat flour is very much attributed to the National Committee for Food Fortification as a partnership between the public and private sectors (Gomez and Ricketts 2013).

26) Nevertheless, there are value chain challenges even for mandatory programmes. For example, firms may encounter difficulties in finding cost-effective ways to source good-quality fortificants. Searching for suppliers and establishing the quality of fortificants may be a significant cost factor. It is for this reason that GAIN developed a premix facility that aims to provide food processors with a supply of micronutrient additives whose quality GAIN has pre-certified.[5] In so-doing, the premix facility reduces the costs of sourcing and increases the reliability of supply of fortificants. A second challenge is ensuring that all the companies involved in the fortification process continue to meet the relevant standards for fortification. The more processing companies there are, the more difficult it is to maintain adequate oversight of product quality.

Complementary foods

27) Complementary foods for infants present difficult challenges for businesses and for consumers. The case of infant complementary foods (and specifically weanimix) in Ghana provides a good illustration (Anim-Somuah *et al.* 2013). At the top end of the market, Nestlé's Cerelac occupies a dominant position. The strength of this brand and the underlying systems that ensure value chain integrity together provide strong assurance to purchasers about the product's nutritional value and safety, but it is too expensive for poor people to purchase and use it in the quantities needed for infant health. One option for poor people is the purchase of lower-priced weaning-mixes provided by the informal sector. In the past, the government of Ghana has promoted informal sector production of such products as part of a strategy for employment generation for women. The quality of these products is highly variable (Masters *et al.* 2011), but it is impossible for consumers to distinguish between those that contain adequate amounts of nutrients and those that do not.

28) Masters *et al.* (2011) have explored the scope for incentivising improvements in the nutritional quality of these products, perhaps through some form of quality certification. As an alternative strategy, GAIN has been supporting a local company, Yedent Agro Industries,

[4] It is important to recognise that targeted fortification programmes tend to be more effective than those directed at the population as a whole and/or that are market-driven (Allen *et al.* 2006) because of the scope for greater levels of fortification that is customised to the needs of particular population sub-groups.

[5] See http://www.gainhealth.org/programs/gain-premix-facility.

to develop, produce and market a product that provides the right levels of nutrients with affordability and availability (GAIN n.d.). The aim is to deliver a nutritious and safe product and to market this to poor consumers at a much lower price than Cerelac. This project is still at an early stage, and it remains to be seen whether consumer awareness and acceptance of the product can be generated without incurring unsupportable costs in marketing.

29) Overall, the market for infant complementary foods is a difficult one for businesses. Beyond the problems of integrity and signalling, the ability of value chain actors to stimulate and exploit consumer demand for nutritionally-enhanced foods depends on their scope to market their products, including making claims about the associated nutritional benefits. The challenge for policy-makers here is to ensure that any claims that are made have scientific validity (Chen *et al.* 2013), and do not bring about adverse changes in diets or otherwise promote food practices that expose consumers to risks, but that also provide sufficient scope for product marketing. Getting the balance right is not easy. For example, Rao (2012) has argued that the way in which the International Code of Marketing of Breast Milk Substitutes has been interpreted in India has excluded the private sector from efforts to improve the nutrition of children aged six to 24 months. At the same time, the need for vigilance on the part of the public authorities is clear – there are on-going cases of some large manufacturers violating the code in India and elsewhere (Gillespie *et al.* 2013).

Ready-to-use Therapeutic Foods for severe acute malnutrition

30) The case of Ready-to-Use Therapeutic Foods (RUTFs) shows how some value chain challenges can be sidestepped through production and distribution system choices. The analysis of Lybbert (2011) examines how organisations such as the WFP and UNICEF, in conjunction with national governments and supply companies, are able to avoid many of the problems just highlighted by developing tightly-controlled product specifications, manufacturing and distribution systems. As important, the use of public distribution system in a situation where the product is provided free and in emergency situations means that the issues of availability, affordability and acceptability are no longer in the hands of the final consumer. People suffering severe acute malnutrition need little convincing that RUTFs have nutritional benefits, partly because of the speed with which the benefits make themselves apparent and partly because they receive the product without payment in a largely medicalised environment. The lack of choice also largely eliminates the issue of acceptability.[6]

31) This model rules out many of the value chain challenges facing food companies looking to market nutritionally-enhanced products, including establishing the nutritional value of the product in the mind of the consumers, establishing new distribution channel, establishing a finance models, certifying the quality of the product, and eliminating or controlling opportunistic claims by low-cost imitators. Lybbert (2011) suggests that it is the way in which these products are delivered to consumers rather than the characteristics of the products themselves that account for these differences. He contrasts RUTF use with the likely challenges faced by companies intending to sell lipid-based nutrient supplements (LNS) and

[6] As Lybbert (2011: 34) wryly observes, when one group of recipient mothers complained about the taste of a particular RUTF, the supplying agency removed the brand labels from the products so that recipients could not distinguish between them.

micronutrient powders through retail markets. First, there is no agency to coordinate and guarantee production and quality (and to eliminate counterfeit products and false claims). Second, consumers have to be convinced of the value of the product, partly because the effects are less immediate and visible. Third, the issue of affordability issue is critical. These challenges have to be met without undermining the sustainability of the business model – solving one problem must not create another problem in its place.

IV. Policy implications

32) The foregoing discussions suggest a key role for the public sector, including developing country governments, bilateral and multilateral donors and non-governmental organisations (NGOs) in supporting value chain-based initiatives aimed at bringing dietary and nutritional improvements amongst the poor in developing countries. These include:

- Offsetting the costs and/or defraying the risks associated with the adoption of new business models by value chains actors for nutritious foods in general, and the development and commercialisation of nutritionally-enhanced foods. Arguably, a case could be made for subsidies to be applied to certain nutritionally-enhanced foods (for example infant complementary foods and fortified foods) in view of analyses demonstrating their cost-effectiveness (see, for example, Horton *et al.* 2008; Bhutta *et al.* 2013), especially during initial stages of commercialisation when market demand is limited. However, there are a raft of other mechanisms that can also be employed including advanced market commitments (that can variously be explicit or implicit in nature), provision of technical assistance around product development, formulation and efficacy testing, of new products,
- Promoting consumer demand for nutritious food, and in particular foods that are naturally rich in micronutrients, such that there are significant public good aspects of nutrition education and promotion campaigns. The benefit of public support for such activities is that they will likely be under-resourced if left to private value chain actors due to the positive spill-over effects across suppliers of these foods overall, and there can be significant synergies from collective action.
- Developing and/or supporting mechanisms through which the integrity and signalling failings of value chains, most notably for nutritionally-enhanced food products, can be alleviated. Examples include certification schemes, franchising arrangements, labelling, etc. The benefits of these mechanisms will be seen not only though greater private sector development and commercialisation of nutritionally-enhanced food products, but also through reduced incidence of false product differentiation on the basis of nutritional quality.
- Laying down governance arrangements that permit and facilitate the marketing of nutritious foods on the basis of their potential nutritional benefits, whilst at the same time minimising the risk of false claims and that the adoption of particular products by poor consumers will bring about adverse impacts on the diet as a whole, and otherwise expose consumers to enhanced risks. This is a difficult balancing act, as is seen with the International Code of Marketing of Breast Milk Substitutes discussion above.
- Provide support for and/or put in place mechanisms through which nutritious foods can be made available, affordable and acceptable to the poor. Public distribution systems are one example; these are most frequently employed most frequently in the

case of sever acute or acute malnutrition where nutritionally-enhanced foods are effectively distributed under medical conditions. However, public distribution systems are also observed as part of social protection mechanisms, for example in the countries of South Asia, and could conceivably incorporate more foods rich in micronutrients as well as their more traditional focus on staples. Other options include school milk and feeding programmes, distribution through clinics and hospitals, etc.

33) The difficulty for policy-makers is that many value chain-based interventions remain unproven in terms of their dietary and nutritional impacts on the poor. Thus, there are few (if any) examples of rigorous assessments of value chain-based programmes and policies (Ruel *et al.* 2013), let alone whether they are cost-effective. This makes life difficult for policy-makers charged with making the best strategic decisions within available resources in order to address micronutrient malnutrition (Chen *et al.* 2013). These assessments need to relate to not only nutrition effectiveness and the extent to which the products reach and are consumed by the populations whose nutritional deficiencies need to be addressed, but also to the costs and benefits of different value chain strategies. It is clear from the examples cited above that value chain challenges increase as the length and complexity of value chains increase. Strategies for simplifying value chains and reducing the costs of developing new linkages are urgently needed.

34) There is a clear need, therefore, for investment in the assessment of value chain-based interventions, and in particular the role of the public sector in promoting and/or facilitating these. There need for such research extends well beyond policy-makers in the public sector, however. There is great uncertainty within the private sector as to where they have a role to play in engaging with the nutrition of the poor, and as to which business models work in particular context. At best this makes businesses 'tread slowly'; at worst it means they keep out altogether for the fear of getting their 'hands burnt'.

V. Final reflections

35) There is clearly a significant role for value chain-based interventions aimed at enhancing the availability, affordability and acceptability of nutritious foods to the poor, whether foods that are naturally rich in micronutrients or that are nutritionally-enhanced. By implication, this implies an appreciable role for the private sector in efforts to tackle micronutrient malnutrition in developing countries. That being said, the efficacy and cost-effectiveness of these interventions at bringing dietary and nutritional improvements amongst the poor remains largely untested, both in terms of their immediate impacts and more so at achieving impacts that are sustainable and at scale. Further, value chain-based interventions are not a panacea; they are likely to work better and they are more suitable for some target groups and foods than others. They should be implemented with and alongside efforts at making the entire food-health complex more nutrition sensitive.

36) Much of the nutrition community remains nervous about engaging with the private sector. This is perhaps not surprising given the actions of a number of large firms with respect to the marketing of infant formula and the role of big business in the emerging crisis of overnutrition in developing countries. Furthermore, many in the nutrition field in the context

of developing countries have little or no experience of engaging with businesses; these two communities really know little about one another. This situation is exacerbated by the fact that, whilst there is claimed to be a significant role for value chain-based interventions as part of efforts to bring dietary and nutritional improvements amongst the poor, many of these have yet to be proven. Certainly, there is a growing portfolio of engagements between the public and private sectors directed at improving the nutritional performance of agri-food value chain. But what is needed is 'hard evidence' and 'tried and tested' examples of value chain interventions that bring real and sustained benefits to the poor at scale.

37) Putting aside the evidence gap for a moment, *a priori* there appears to be a significant and varied role for public policy and programmes in enhancing the dietary and nutritional outcomes of value chains. The role of policy in this context should arguably be driven by two key principles. First, leveraging the private resources of actors along agri-food value chains by addressing directly the constraints that impede engagement in markets for nutritious foods directed at the poor and that have a demonstrable dietary and nutritional impact on those that are undernourished. Second, ensuring that policies and programmes result in changes at systemic change in the functioning of value chains and food markets, such that dietary and nutritional improvements occur sustainably and at scale.

VI. References

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