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Improving the Nutritional Quality of Food Markets through the Informal Sector: Lessons from Case Studies in Other Sectors

Ewan Robinson and Noburu Yoshida

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IMPROVING THE NUTRITIONAL QUALITY OF FOOD MARKETS THROUGH THE INFORMAL SECTOR: LESSONS FROM CASE STUDIES IN OTHER SECTORS

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Abbreviations

CAPAC	Catchment Area Planning and Action Committee
GAIN	Global Alliance for Improved Nutrition
IDS	Institute of Development Studies
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
KSh	Kenyan shilling
OECD	Organisation for Economic Co-operation and Development
OFSP	orange-fleshed sweet potato
SSA	sub-Saharan Africa
TASPA	Tanzania Salt Producers Association
UNICEF	United Nations Children's Fund
US	United States
USAID	United States Agency for International Development
USI	Universal Salt Iodisation
WHA	World Health Assembly

Executive summary

Policymakers in a number of countries in sub-Saharan Africa (SSA) are seeking to work with food markets and food businesses as part of efforts to reduce undernutrition. These market-based approaches include national fortification programmes, public food distribution systems, new product development and the promotion of biofortified crops. Food markets have clear potential to improve diets, including those of many low-income populations. However, current market-based approaches generally fail to engage a large and critical portion of these markets: informal businesses – particularly food traders, processors and retailers. It is the informal sector that supplies much of the food purchased by the poor, delivering products to the locations where they live, typically at very low prices. However, food in informal markets is often not sufficiently nutrient-rich and can be unsafe. Many policymakers regard the informal sector as a barrier to development or believe that it will quickly disappear with the spread of supermarkets and centralised food value chains. However, available evidence suggests that most food in SSA countries will continue to be sold in informal markets for the next several decades, due to broader economic and institutional conditions that favour informality. Policy approaches aiming to suppress the informal sector are generally ineffective; in some cases, they can actually decrease the quality and safety of food. Similarly, food and nutrition policies that simply ignore the informal sector may fail to have effects for low-income populations. Finally, nutrition initiatives that include the informal sector may contribute to the success of parallel initiatives involving formal businesses, since formal businesses generally compete with informal businesses and respond to their behaviours. Developing new approaches that engage informal food businesses is therefore an important policy priority. Yet programmatic action in the informal sector has not been examined in a systematic way in the context of food and nutrition. This Evidence Report helps to address this gap by analysing several programmes in other sectors that have sought to improve performance in informal markets in SSA. The report groups these programmes into three case studies: food safety interventions, programmes targeting small medicine sellers, and efforts to promote salt iodisation.

The review finds that there are substantial benefits of adopting a facilitative approach towards informal businesses: in particular ‘light-touch’ interventions centred around training and behaviour change can yield significant improvements in the quality of products and services. At the same time, these approaches are not panaceas; the case studies emphasise that ‘light-touch’ interventions *do not* lead to technically perfect outcomes: post-intervention performance is patchy, and inappropriate products and practices remain. Yet, by triggering moderate improvements in informal markets, these programmes may have substantial benefits for the poor.

Beyond documenting impacts, the case studies also provide lessons on the factors motivating businesses’ behaviours and on how programmes can shape them. Several case studies found that indirect factors were as or more important motivations than short-term profit to informal businesses. Reputation and professional standing were also important. Furthermore, social and gender factors played a powerful role. For example, one programme in Nigeria found that women consistently performed better on food safety than their male peers. Interventions should specifically examine social and gender factors in baseline assessments and monitoring, and further research is needed to explore how programmes can incorporate these considerations into targeting and messaging. At the same time, among the factors motivating businesses, profit remains important, and businesses were not willing to take actions that undermined their value proposition to customers.

The reviewed case studies encompass two different models of intervention. Behaviour change interventions involved relatively simple actions and limited change to business

models. In contrast, ‘role change’ interventions sought to shift businesses’ basic value proposition. This second type of intervention required intensive and consistent contact with businesses, and depended ultimately on realigning business incentives. Interventions used various strategies to simplify or encourage role changes. One such approach was to introduce new products or value chain relationships that simplified the tasks required of businesses, such as medicines or inputs that were packaged in appropriate quantities. Leveraging existing consumer knowledge and practices also demonstrated potential, and consumer practices were shown to already be contributing to better health and nutrition outcomes.

In order to incentivise role changes in a context of low regulatory capacity, a number of programmes sought to work with community bodies, business associations or other business-related institutions. Some programmes reported success from working with well-established institutions (often cooperatives), while others sought to put in place new institutions. These models require further exploration, and research is needed to analyse how various types of institutions and incentive structures affect the ability of these intermediaries to promote and sustain improved practices. Programmes could specifically target organisations that already provide services to businesses and/or mediate access to resources (such as infrastructure or production sites), since these are more likely to have capacity to shape businesses’ behaviours than are newly created organisations.

Finally, while ‘light-touch’ interventions can contribute to improvements in the performance of businesses and markets in the short term, long-term sustainability will require more consistent policy framework for shaping market institutions. Pursuing this and coordinating action are roles best suited to capable and accountable public agencies. Business training and support programmes should look for opportunities to contribute to better governance, for example by improving dialogue between informal businesses and government agencies. At the same time, direct investments to build the capacity of public institutions are also necessary.

The reviewed programmes targeting the informal sector highlight the potential of these approaches to contribute to better products and better nutrition outcomes; they also underscore the substantial gaps in current knowledge about what works. Ultimately, investments need to be made to design, implement, evaluate and learn from interventions that target the informal food sector. In synthesising current experience, this report aims to inform the case for public investment in informal food markets, and to contribute to more effective policy and programmatic approaches.

1 Introduction

A growing number of African governments have declared nutrition to be a key priority in national development policies, while donor agencies are increasing funding and advocating for nutrition programmes. There is particular emphasis on the role of food markets in shaping nutrition, and a growing set of policies and programmes aim to influence how food markets function in order to improve access to various nutrient-rich foods[1] for undernourished populations. The market-based approaches that are being used in these efforts include a diverse range of policies, interventions and products,[2] ranging from national-scale mandatory fortification programmes to publicly funded food distribution, support for new product development and promotion of nutrient-rich crops (including biofortified crops) for the domestic market. As has been argued elsewhere, the rationale for these policy interventions is (a) that markets have the potential to deliver nutrient-rich foods to large numbers of people affected by undernutrition (Baer *et al*. 2013; McClafferty 2015), but that (b) markets tend to not function well in delivering nutrient-rich foods to low-income populations, particularly in developing countries (Humphrey and Robinson 2015a; Lybbert 2011; Peters *et al*. 2008). This relates to a set of very widespread market failures and constraints which effectively *disincentivise* food businesses from investing in nutrient-rich foods that would be accessible to low-income groups.[3] Businesses operate in a market environment of rules, regulations, suppliers and customers over which they have limited control.[4] There is therefore a clear case for policy interventions to improve the market environments in which businesses operate (Humphrey and Robinson 2015a; Koh, Hegde and Karamchandani 2014). Policies and interventions can help overcome some of the common market failures and can actively shape how markets function in order to realise their potential for nutrition. However, the market-based approaches to food and nutrition that are currently being developed funded by development agencies and public–private partnerships have a critical gap; they largely fail to engage informal businesses and the markets and institutional contexts in which they function (the definition of 'informality' is discussed in Section 1.1). This substantially reduces or negates these programmes' contributions to improving nutrition among low-income populations – the very groups that are most affected by undernutrition (see Box 1.1). Since most economic activity in African food systems is informal, and since the poor are particularly reliant on these informal systems (see Section 1.2, below), developing new approaches that engage informal food markets should be a key priority as part of nutrition policy efforts.

[1] This report adopts a very broad definition of nutrient-rich foods, to include any food item with substantial levels of key micronutrients or protein, including naturally nutrient-rich foods such as pulses, vegetables or animal foods, biofortified crops and processed foods with high levels of micronutrients resulting from nutrient-rich ingredients or from micronutrient fortification. We also include supplements that are intended to be added to existing foods, such as micronutrient powders. In order to contribute to good nutrition, any food needs to be part of a balanced diet and must be used in a way that maintains nutrient content and the body's ability to uptake nutrients (particularly important for infants). What should be defined as 'nutrient-rich' or 'nutritious' is a contested and controversial area. Because informal markets are a new area for nutrition policy, with very limited evidence, this report considers the potential for working with the informal sector across all types of foods.

[2] This policy trend is also occurring amidst calls to coordinate nutrition policy with other priorities, particularly increasing agricultural productivity, achieving domestic food self-sufficiency and fostering the development of domestic agri-business.

[3] Two overlapping sets of constraints make nutrition a particularly problematic area for markets: (1) 'bottom of the pyramid' challenges that increase the costs of building markets that serve low-income populations, and (2) problems specific to nutrition, particularly the 'invisibility' of micronutrients in food, which makes it difficult for consumers to make rational choices among different foods and products. These constraints make nutrient-rich foods for the poor a particularly risky proposition for businesses, and thus, although a range of formal sector food businesses produce foods in African countries, very few of these products are rich in micronutrients – and those that are (particularly fortified products, such as fortified cereals or margarine), are sold as premium products aimed at upper-income groups.

[4] These are described by Monitor Inclusive Markets as 'business ecosystem constraints' (Koh *et al.* 2014).

Box 1.1 Which economic groups should be targeted by food-based nutrition interventions?

The poorest populations suffer the highest rates of undernutrition, as well as its most severe consequences (Black *et al*. 2008). Yet undernutrition also affects very large numbers of people in the 'middle' wealth groups in most countries in sub-Saharan Africa (SSA). In Kenya, Nigeria and Tanzania, stunting rates are at or above 30 per cent for all groups except the wealthiest 20 per cent (see Table 1.1). There is therefore a need for various nutrition interventions that effectively target the majority of the population; but these must be adapted to the needs of different groups.

Table 1.1 Proportion of children under five years classified as stunted in the bottom wealth quintile, 'middle' three quintiles, and the top quintile in four SSA countries (%)

Wealth group	Ghana	Kenya	Nigeria	Tanzania
Bottom	35.1	44.4	52.1	48.4
Middle	27.9	34.2	41.5	42.9
Top	14.4	24.5	24.2	26.3

Note: The middle line is the mean of the second, third and fourth quintiles.
Sources: National Demographic Health surveys (Ghana Statistical Service, Ghana Health Service and ICF Macro 2009; Kenya National Bureau of Statistics and ICF Macro 2010; National Population Commission and ICF Macro 2009; National Bureau of Statistics and ICF Macro 2011).

Differentiating among target groups is particularly relevant for market-based interventions, since wealth groups have very different levels and types of engagement with markets. They need to be realistic about the proportion of the population that will primarily benefit from various types of market interventions. Different countries in SSA have varying rates of extreme and 'moderate' poverty (see Table 1.2).

For people earning less than US$1.25 per day (making up 26–67 per cent of the population of countries in SSA[5]) market-based approaches alone will not provide adequate nutrition, since households in this group face severe income constraints and are frequently unable to meet even calorie requirements. While market-based programmes can reduce the costs of healthy foods, no low-cost product will provide adequate nutrients, since assets and incomes are the key constraints. The provision of social protection and asset building are essential.

For people earning between US$1.25 and US$2 per day (15–28 per cent of the population) market-based approaches may be able to increase their access to a healthy diet. These wealth groups make regular or occasional food purchases. Their restricted spending power means that the majority of their food purchases are from informal markets (see below).

Table 1.2 Proportion of population living on less than US$1.25 per day ('one dollar poverty'); and proportion living on between US$1.25 and US$2 in four SSA countries (%)

Poverty level	Ghana	Kenya	Nigeria	Tanzania
1 dollar poverty	28.6	43.4	62.0	43.5
1 to 2 dollar poverty	23.3	23.8	20.2	29.5

Sources: World Bank (2015). Data from latest available year: Ghana 2005, Kenya 2005, Nigeria 2010, Tanzania 2012.

[5] Source: World Development Indicators, country averages 2004–13 (World Bank 2015).

1.1 What is the informal food sector?

The informal food sector refers to economic actors in agri-food value chains who operate to varying degrees outside centralised regulations, institutions and record-keeping. The concept of informality has been used in a large number of different ways. An encompassing definition was put forward by the International Conference of Labour Statisticians:

> The informal sector may be broadly characterised as consisting of units engaged in the production of goods or services… [that] typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale. Labour relations – where they exist – are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.
> (OECD 2002: 162)

The sector is large, and can account for the majority of employment and as much as 39 per cent of gross domestic product (GDP) in many countries (Porta and Schleifer 2014). Focusing on food production, processing and marketing, the informal food sector includes nearly all farmers, most traders in agri-commodity markets and many micro- and small-scale food processors and food retailers. In order to delineate a manageable scope for the review, this report focuses specifically on the 'downstream' portion of the informal food system: food processors, distributors and retailers.

What makes a particular food business or institution 'informal' varies from one context to another. In some countries and markets, authorities consider the lack of a particular technology/standard (e.g. milk traders without a cold chain) to make a business informal/illegal. In other cases, the location of a business away from official infrastructure (e.g. street vendors), a lack of systematic sanitary inspection or simply the failure to register with the appropriate authority constitutes informality. Whichever definition is used in a specific case, informal businesses generally use 'production processes [that] rely on high levels of working capital as against fixed capital. Formal contracts between employers and employees or between buyers and sellers are rare and the often-invisible activities involved usually fall below, or outside, the fiscal net' (Yasmeen 2001: 33). However, being informal does not mean a business has no contact with the 'formal sector'. Many small enterprises pay taxes, fees or bribes to local authorities. Similarly, many businesses are organised into trade associations or cooperatives (Shephard 2005; Simon 2007), and their behaviours may be regulated by various 'traditional' institutions and norms.

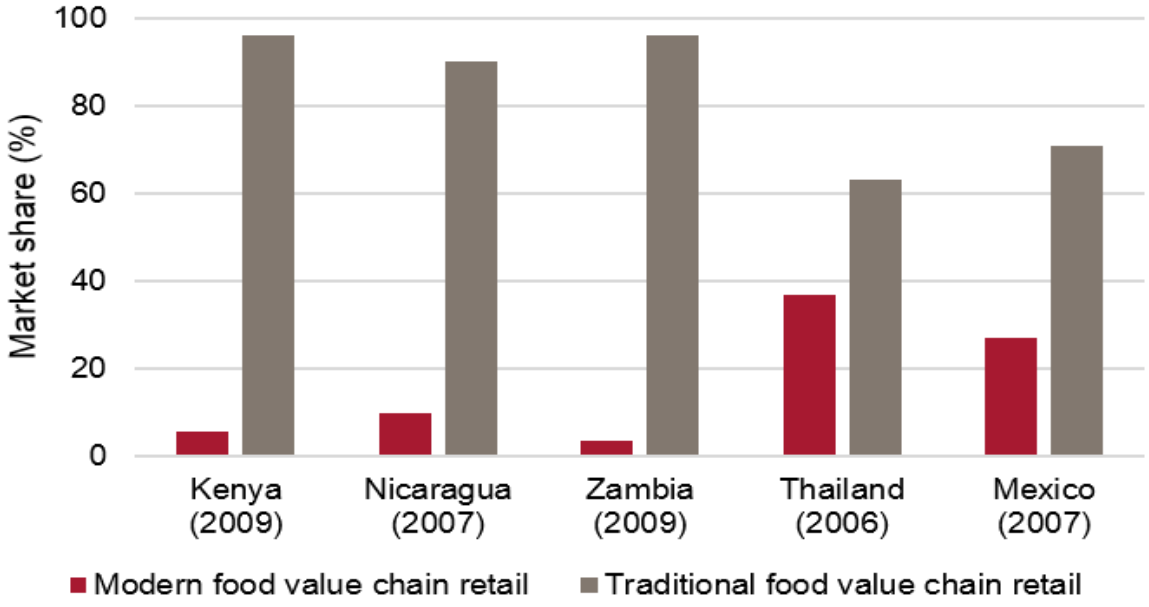
1.2 The informal sector dominates food provision to low- and middle-income groups

Since informal businesses are not covered by most official surveys or registration processes, data are scarce on the precise extent of the informal food economy. Some data exist for specific value chains, particularly fruits, vegetables and animal foods. Surveys have found 'in Kenya, Uganda, and Mali, raw milk produced by smallholders and sold by vendors or small-scale retailers, accounts for an estimated 80 per cent, 90 per cent, and 98 per cent of marketed milk in each country' (Grace *et al*. 2010), while 42 per cent of milk in Kenya is sold directly from farmers to consumers (Omore and Baker 2011: 17). A similar picture holds for fruits and vegetables, with value chains composed of small producers and traders representing the majority of domestic markets (see Figure 1.1).

Although data on the informal sector are scarce, available data on formal food markets in sub-Saharan African (SSA) countries indicate they have very limited coverage overall, and suggest that the remainder of demand is met through informal provision. For example, despite their recent entry and growth in urban markets, supermarkets continue to occupy a narrow niche within food retail in SSA countries, and their reach will continue to be marginal

for the next several decades (Humphrey 2007; Tschirley *et al*. 2009). In Kenya (the country with the second-greatest number of supermarkets in SSA), supermarkets make up only 11 per cent of urban food retail (and much less in rural areas) (Tschirley *et al*. 2009). Most consumers simply cannot afford to shop in supermarkets, and even those who can continue to prefer informal retailers for certain foods, particularly fresh fruits, vegetables and animal foods (Omore and Baker 2011). In Kenya, 78 per cent of supermarket shoppers purchase only dry foods, preferring to use small shops and open markets for fresh foods (Grace and Omore 2007).[6]

Figure 1.1 Market shares in the modern and traditional sectors for fresh fruit and vegetables



Source: Adapted from Gómez and Ricketts (2013).

Household consumption surveys[7] provide another source of data on the reach of the informal sector. These too, suggest that the majority of consumers in both low- and middle-income groups purchase informal products. The findings are striking since surveys cover precisely the bulk, dry goods where large manufacturers would be expected to have a comparative advantage. In Tanzania, only one-fifth of people in the bottom three wealth quintiles purchased centrally produced maize flour. The large majority used whole maize (whether they produced it themselves or purchased it) and brought it to small millers for processing (National Bureau of Statistics and ICF Macro 2011). Similarly, only 28 per cent of people in the bottom three wealth quintiles purchased cooking oil produced by large manufacturers; the remainder either did not use oil, made oil at home or sourced it from informal producers (*ibid*.). Similar patterns are seen in Ghana, where the poorest are most likely to use locally produced shea butter for cooking, while the 'middle' three wealth quintiles are most likely to use palm oil (some of which is made by formal businesses, and some of which is informal) (Ghana Statistical Service *et al*. 2009). Only among the wealthiest 20 per cent of Ghanaians did more than half use centrally produced and fortified vegetable oil (52 per cent of this group) (*ibid*.).[8]

[6] Supermarkets held only 2 per cent of the fresh food market in 2003 (Tschirley *et al.* 2009: 221).
[7] Nationwide surveys are available in only a handful of countries in SSA. These have been conducted as part of National Demographic Health Surveys, and have focused on products covered by national fortification programmes (especially vegetable oil and salt).
[8] 46 per cent of the poorest one-fifth of Ghanaians consume shea butter; 64 per cent of the middle three-fifths of the population consume palm oil. Of the poorest four-fifths of the population, only 18 per cent use fortified vegetable oil, and this is heavily concentrated in the second-wealthiest quintile (Ghana Statistical Service *et al.* 2009).

There are some exceptions to the dominance of the informal sector in SSA food markets. For some products and in some countries, poor people do purchase centrally produced foods. These products tend to be low-cost, imported staples such as wheat flour, or essential products that cannot be produced locally, such as salt. Yet when the poor purchase these products, they often do so in very small quantities. The poorest 20 per cent of Tanzanians consume on average only 3g of centrally produced wheat flour per day, compared to 18g per day consumed by the median household (Jorgensen 2011).

One reason that the informal sector is so strongly represented in African food systems is that it is better able to provide foods that meet sociocultural expectations and that are available in places convenient for poor consumers. Critically, informal enterprises can often offer products at dramatically cheaper prices than can formal businesses. For example, complementary foods produced by 'kitchen enterprises' in Ghana are available for as little as one-fifth the price of multinational brands, and half the price of products made by formal Ghanaian businesses (Anim-Somuah *et al.* 2013a).[9] In Nairobi, Kenya, informally traded milk costs less than 60 per cent of that of packaged milk (Grace 2014). Crucially, however, although these products are cheaper, their quality can vary widely; some may be adequate while others are potentially harmful.[10] Low prices in part reflect informal businesses' low fixed costs and their avoidance of business regulations and manufacturing standards. It can also reflect the fundamental quality and safety of products – but not necessarily. While policymakers tend to assume that informal foods are less safe and less nutritious compared to packaged, formal sector products, this is not always the case (see Box 1.2).

Box 1.2 Informal sector products are not necessarily of inferior quality

Policymakers and food safety planners often assume that all informal sector products are of inferior quality and pose a threat to public health. Detailed research, however, challenges these assumptions. A research programme on food safety led by the International Livestock Research Institute (ILRI) found that, although informal animal foods frequently contained pathogens that can cause food-borne disease, they did not necessarily increase risks to human health. First, packaged, formal sector products were not necessarily safer than informal ones: in the case of milk in Kenya, formal sector products actually had lower compliance than informal products (Grace and Omore 2007: 158). Second, consumers commonly had knowledge and practices that allowed them to avoid food safety risks (for example, by cooking/boiling products before eating) (Omore and Baker 2011). This highlights the importance of distinguishing between 'hazards' and 'risks' in food safety policy; some products may have a high level of hazards (pathogens), yet very low risks (instances of food-borne illness) because of consumers' practices.

This is not to say that informal sector products are wholly safe or nutritionally adequate; the majority are not. Products vary widely in quality. For example, testing of formal and informal packaged complementary foods in urban Ghana found that the nutritional quality of products varied dramatically; while some locally made products contained levels of micronutrients equivalent to international brands, others were deeply inadequate in micro- and macronutrient content (Masters, Kuwornu and Sarpong 2011). The lesson is that informal sector products *have the potential* to perform well on nutritional quality and food safety, and are not necessarily worse than formal sector products. Policymakers should not assume that informal products are inherently 'bad'. A more effective and realistic policy approach would seek to create incentives for informal sector businesses to improve the quality of their products.

[9] Complementary foods are a diverse set of foods 'that are readily consumed and digested by [a] young child and that provide addition nutrition to meet all the growing child's needs' (UNICEF n.d.). In order to grow and be healthy, children from 6 to 24 months old need adequate nutrients from complementary foods while continuing to receive breastmilk. To be nutritionally adequate, foods must not only contain the correct nutrients, but must be given to children in proper ways and amounts.

[10] In the case of complementary foods in Ghana, the cheapest informal product was simply roasted maize flour, which is totally inadequate for infant nutrition. Nonetheless, the cheapest products are the relevant point of comparison for income-constrained households.

That informal businesses predominate in African economies is no coincidence; economic and institutional conditions in many countries favour informality. One key factor is the very low institutional capacity of regulatory bodies – whether public or private. In general, central institutions have almost no ability to monitor the large numbers of small businesses, let alone to impose regulations or standards (Grace and Omore 2007). The lack of capacity is often extreme. For example, Tanzania's food regulator has only four zonal offices across the country, each of which must cover several regions. The office in Dodoma Region has two staff, who are expected to cover an area with between 1,000 and 2,000 small food processors (Abt Associates, Inc 2012). Low capacity is not limited to the food sector. In Kano State, Nigeria, one study found that the federal government was able to cover only 15 per cent of medicine sellers in its registration lists (Goodman *et al*. 2007) (the case of medicine sellers is examined in detail in Section 4). The lack of concentrated infrastructure and the diffuse nature of food production and consumption also make it difficult to regulate small businesses. This does not mean that there are no rules governing the behaviours of informal businesses; they often interact with business and market associations and comply with local norms. These types of institutions are not amenable to conventional top-down policy approaches (although, as discussed below, innovative approaches may be able to catalyse their potential). Clearly, there is a need to strengthen the capacity of national- and local-level regulatory bodies. Yet it is not realistic to expect that they will be able to enforce standards in the short term – whether for nutritional quality, food safety, etc.

Box 1.3 Market barriers inhibiting nutrient-rich foods

Although the informal sector plays an important role in providing low-cost foods to the poor, the catastrophic rates of undernutrition in many countries make it clear that it fails to provide adequate nutrition. This is not by chance: markets – both formal and informal – generally fail to supply adequate nutrients because of widespread market failures and other constraints. These problems generally affect *all* types of businesses. Principal among these are low levels of awareness of and demand for many nutrient-rich foods, and the 'invisibility' of micronutrient content in foods. 'Invisibility' – known in economics as a credence good problem[11] – is particularly a problem for processed and fortified foods, where the nutrient content cannot be distinguished by buyers, except by relying on label information. In most SSA countries, labels are either absent or may misrepresent true nutritional value.

These market constraints are compounded by the very low purchasing power of the poor. While it is possible to create products with high nutrient content, and to market them as premium brands in order to differentiate them from nutrient-poor products, both of these strategies increase the costs of products. Low-income consumers, faced with paying more for premium branded products, opt for cheaper nutrient-poor foods. Furthermore, since the branding strategy depends on the ability to exclude others from using one's brand, this option is generally not available to informal businesses. Thus, informal businesses are generally the purveyors of low-cost, low-nutrition foods that appeal to the poor, while medium and large formal businesses sell branded, fortified products to middle- and upper-income groups. The cases examined below describe policy approaches that can mitigate these constraints without relying on branding, and in ways that are adapted to the conditions faced by informal businesses.

Source: Humphrey and Robinson (2015b).

In sum, informal businesses and the markets in which they operate represent most economic activity in African food systems and are the major sources of food not only for the poorest groups, but for 60–80 per cent of the population in most countries. This situation is likely to persist for the coming decades, despite continued globalisation and growth of African economies (Tschirley *et al*. 2009). Food-based nutrition policies and programmes must therefore first recognise the contribution of informal food systems to current nutrition and

[11] This challenge also affects other products where there is a substantial information asymmetry between the producer and consumer of a product or service. Health-care services and pharmaceuticals are also very widely impacted by this problem.

health. But recognition alone is inadequate; there is a need for policies and programmes to enhance the performance of informal systems and upgrade the nutritional (and food safety) qualities of their products. This poses a major challenge for the current generation of food and nutrition initiatives.

1.3 The policy gap: neglect of the informal sector leads to missed opportunities for nutrition

Political support and funding for food-based nutrition among governments and donor agencies have focused on a handful of policy approaches, including national fortification programmes, promotion of biofortified crops and publicly funded distribution of supplements and therapeutic foods. Yet very few programmes have attempted to engage the informal food sector. Instead, the general orientation of food policy efforts is either to ignore the informal sector or to attempt to repress it (Grace and Omore 2007).[12] Evidence and experience indicate that both of these responses risk limiting the effectiveness and coverage of food-based approaches to nutrition, missing opportunities to reach larger numbers of people. In the worst cases, neglect of the informal sector can actually compromise programmes' success.

The majority of food-based nutrition programmes simply do not take account of the informal sector in their design and implementation. Examining the record of national fortification programmes provides an indication of how ignoring the informal sector can hamper achievement of nutrition objectives. While mandatory fortification programmes have achieved successes in a number of products by covering centrally produced and imported products (such as wheat flour), they have been ineffective in fortifying products for which there is significant informal sector presence – including both the products of small businesses and those of large manufacturers who compete with small businesses (Robinson *et al*. 2014a; Robinson *et al*. 2014b).[13] There are two ways in which this reduces the impact of these programmes among low- and middle-income groups: first, as discussed above, low-income households, particularly those in rural areas, simply do not consume the centrally produced products targeted for fortification. Second, even when low-income groups do consume these products, the universal coverage of fortification means that the doses of micronutrients delivered are not sufficient.[14]

Neglecting the informal sector can also endanger nutrition objectives in programmes that promote voluntary fortification. Whenever formal sector businesses compete with smaller, informal ones, market pressures will direct the formal businesses to differentiate their products and market them as premium goods targeted to wealthier populations. As a result, the price gap between formal and informal products remains wide, and access for lower-income consumers is low. This outcome was observed in Nigeria after donors supported a successful mid-sized business to develop a fortified cereal product (Nwuneli *et al*. 2014).[15] Finally, failing to account for informality can actually lead to unanticipated negative impacts from business-oriented programmes. In Ghana, for example, a donor-funded programme

[12] There are exceptions: for instance, development of locally sourced cereal-legume complementary food products in West Africa specifically targeted small-scale entrepreneurs and women's groups. Among biofortification programmes, the Reaching End Users project in Mozambique worked with small market traders to incorporate biofortified orange-fleshed sweet potato into existing local/regional marketing systems for vegetables and tubers. Nonetheless, these do not characterise the majority of food-based nutrition programmes, and were small-scale projects.

[13] For example, in Tanzania, the one large manufacturer that had produced maize flour recently stopped producing this product due to competition from small-scale processors.

[14] This is because fortification levels must be set in order to ensure no toxic effects for those people who eat *the most* of a fortified product, while there are very large disparities in consumption levels between rich and poor households. In Tanzania the wealthiest consume 125g of wheat flour per day, seven times the median consumption level of 18g per day (Jorgensen 2011). As a result, fortification cannot deliver substantial doses of nutrients to low-income consumers.

[15] Similarly, in Tanzania, only one large manufacturer produced maize flour due to intense competition from small millers, and this manufacturer recently withdrew this product.

developed several aflatoxin-free groundnut products[16] with the aim of reducing public health risks. However, this had the unanticipated effect of *exacerbating* health risks for the urban poor, since contaminated supplies rejected by formal businesses were channelled into informal markets and sold at lower prices (Anim-Somuah *et al*. 2013a).

While nutrition programmes tend to simply ignore the informal sector, broader food policy in SSA tends to actively repress it.[17] This tends to take the form of regulatory 'crackdowns' in which agents confiscate equipment, extract fines and bribes and forcibly remove businesses from their premises (which are often not zoned for business use). However, research has shown that crackdowns are generally ineffective, and can even be counterproductive in achieving public health objectives. First, evidence from a number of countries shows that these enforcement efforts generally do not succeed in driving informal businesses out of the market (Simon 2007). They do, however, drive them 'deeper' into informality, making them more difficult for government and civil society actors to engage. Second, crackdowns can lead to *decreases* in the quality of food products, since pressure from regulators disincentivises businesses from investing in equipment or upgrades. Research in Brazil found that when regulators imposed stricter rules on small butcheries, food safety problems worsened (Azevedo and Bankuti 2003). Meanwhile, in Uganda, milk producers who had had no contact with regulatory agencies tended to use *better* safety practices than those who had experienced regulatory pressure (Grace *et al*. 2010). Although no studies have examined how crackdowns affect the *nutritional* quality of products, a similar negative effect is plausible.

In sum, there is a need to develop alternative policy and programmatic approaches; neither ignoring nor repressing the informal food sector is an effective basis for food-based nutrition policies and programmes. The objectives of these new policies are to shape the behaviours of informal businesses in ways that lead to products that are safer and contain higher nutritional value, greater consumer awareness and ultimately healthier diets and practices for key populations. If programmes can create incentives for informal businesses to change their behaviours on a sustainable basis, they have the potential to achieve large-scale impacts in the short and medium term and to reach groups suffering from high levels of undernutrition. Yet whether this potential can be achieved – and how – has not been examined in a systematic way. Building an evidence base in this area should therefore be a priority for food and nutrition policymaking.

The lack of evidence on nutrition in informal markets and how it can be improved relates to the absence of policies and interventions in this area (for exceptions see Box 1.4). Yet, unlike nutrition, other sectors have built substantial bodies of experience and evidence on how to shape informal markets. This presents a substantial opportunity for food and nutrition policy to learn from these other sectors, including understanding the menu of policy and programmatic options, what factors contribute to successful interventions and what kinds (and magnitudes of) results can be expected. This report aims to provide precisely these lessons by reviewing documented research and experience in several sectoral case studies of interventions targeting the informal sector. The report is based on a review of a range of programmes and policies in food, agriculture and manufacturing sectors, which led to the identification of three case studies. Each of these cases has significant commonalities with the problem of strengthening nutrition (how these cases were selected is discussed in Section 2). In synthesising available evidence and experience from these sectors, this report aims to contribute to the development of a new generation of food-based nutrition

[16] Aflatoxin is a harmful compound produced by strains of mould that grow on grains. Aflatoxin ingestion is associated with liver disease, cancer and immune system suppression and may contribute to undernutrition in infants and young children.
[17] In fact, policy objectives in many SSA countries are conflicting, with policies focused on food safety (as well as transport, infrastructure and investment) often oriented towards repressing informal activity, while employment and small and medium-sized enterprise policies encourage small-scale enterprises. The results are often inconsistent and erratic policy environments, with periods of tolerance punctuated by periodic crackdowns, particularly in urban areas (Grace and Omore 2007; Simon 2007).

programmes that take account of the dynamics of informal markets. Ultimately, in order to rigorously assess informal markets' potential for nutrition, new nutrition interventions need to be designed, implemented and evaluated. This will obviously require support from key policy actors and adequate funding. In synthesising lessons from other sectors, this report aims to inform the case for investment in informal food markets, and to contribute to programme design.

Box 1.4 Experience of working with informal markets in nutrition programmes

Introducing more nutritious complementary foods in Ghana

In the 1980s, the United Nations Children's Fund (UNICEF) and the Ghana Health Service introduced an improved complementary food known as weanimix, which combined locally available ingredients. Originally promoted for small-scale processing, the product became popular and small enterprises began producing the product in urban areas. This has been a partial success, as only a minority of weanimix products are nutritionally adequate. Nonetheless, the intervention successfully tapped into the strengths of the informal food sector, leading to rapid diffusion of a nutrition-sensitive technology and reaching large numbers of poor consumers. This success appears to result from the focus on a popular traditional food, use of simple technology and the provision of training and business skills to women entrepreneurs. *Sources*: Agble (1996) and Anim-Somuah *et al*. (2013b).

Working towards fortification at small and medium scale in Tanzania

Two donor-funded initiatives in Tanzania are aiming to increase fortification by small and medium enterprises involved in processing maize flour and vegetable oils: these are the United States Agency for International Development (USAID) Tuboreshe Chakula project and the Rural Food Fortification programme, which is coordinated by the Ministry of Health and Social Welfare. Tuboreshe Chakula, which has operated for several years longer than the Rural Food Fortification programme, has provided training and business support services to 733 businesses. Many businesses have improved their management and hygiene practices, with 60 per cent of participating businesses reporting greater profitability. However, progress on fortification has been slow, particularly after national regulatory agencies insisted that all businesses be formally registered before beginning fortification. A handful of participating businesses reported interest in fortification because it would contribute to national development, and strengthen their reputation. *Source*: Pittore and Robinson (2015).

Promoting biofortified foods through rural traders and food sellers

A sequence of projects in Mozambique and Uganda have sought to encourage private sector actors in informal food systems to deal in vitamin A-rich orange-fleshed sweet potato (OFSP). Projects supported the breeding of new varieties, disseminated planting material and ran social marketing campaigns. They also worked with market traders and food retailers, linking them to farmers producing OFSP and asking them to promote OFSP with their customers as part of the social marketing campaigns. The distinctive orange colour was used as the basis for the marketing campaign, and served to distinguish OFSP from other sweet potato varieties. The low price and low status of sweet potato limited demand from wealthier consumers, contributing to its affordability in the poor districts that were targeted. However, increasing the seasonal availability of OFSP and incorporating it into value-added products such as bread was difficult, in part because bakers require a regular supply and are not willing to pay more for OFSP than they would for more conventional wheat flour. *Sources*: Coote *et al*. (2011) and Westby, Coote and Tomlins (2011).

Piloting informal retail of micronutrient powders in Kenya

There have also been attempts to use the informal sector's distribution capacity to market centrally produced products. A number of programmes, including trials in Kenya and Ghana, are experimenting with distribution of micronutrient powders (or 'sprinkles') to poor populations. This includes working with village-based entrepreneurs who sell the powders (which are often imported) alongside their normal products. This approach gets around microenterprises' limited capacity to formulate micronutrient-enhanced products by instead making them retailers of a centrally produced product. *Sources*: Nakao, Responsibility and Co (2014) and Suchdev *et al*. (2012).

2 Methods

The research was carried out through a desk-based review of scholarly literature and project documents. The documents reviewed included a range of different study types, including econometric analyses of the drivers of behaviour of informal actors, evaluations of the impacts of interventions (using various study designs) and documentation of a particular project's activities and processes of change. The review took place in two stages: first, a wide-ranging search of online databases (Google Scholar) led to the identification of five case studies/bodies of research, each of which was sufficiently documented. These case studies referred to various sectors and value chain stages, namely: food processing and retail, health care and medicine provision, agricultural production, small-scale manufacturing and retail of fast-moving consumer goods. Second, three of these case studies were selected for detailed analysis and inclusion in the report. Two selection criteria were used: (a) the relevance of the case/sector/market to the problem of improving nutrition in informal markets and (b) having an adequate level of detail on intervention activities and outcomes. The articles reviewed and the selection criteria are listed in the Annex.

For each of the three case studies selected for inclusion, new online searches were conducted (Google and Google Scholar) and citations were 'snowballed' in order to assemble all relevant documents that could be feasibly collected. The three case studies are:

1. interventions to improve food safety in the informal sector;
2. interventions to improve performance of informal medicine sellers;
3. interventions to promote iodisation by informal salt producers.

Only cases relevant to the manufacturing/processing, distribution and retail stages of the value chain were selected. There were two reasons for this selection: the first was to delineate a coherent and meaningful focus for the review. The actors, incentives and behaviours involved in the 'downstream' stages of the value chain are distinct to those at the stage of agricultural production.[18] It was thus determined the review would be more coherent if it focused on only one end of the value chain. Second, the 'downstream' stages were selected because they tend to have a more direct impact on nutrition, since they ultimately determine what kinds of foods are available in consumer markets and also interact directly with consumers (Humphrey and Robinson 2015b). It is important to acknowledge that behaviours in the 'upstream' end of informal value chains can have direct implications for food-based nutrition interventions, most prominently including biofortification,[19] preventing aflatoxin contamination (Anim-Somuah *et al*. 2013b) or reducing post-harvest losses. Yet, even in these cases, better understanding of the downstream end of informal value chains is also important. For example, achieving widespread consumption of biofortified crops requires that they are available in consumer markets, which requires the involvement of traders, processors and retailers – the majority of whom are informal (Waized *et al*. 2015).

In sum, this review focuses on analysing case studies of action to shape informal businesses involved in processing, distributing and retailing products to low-income populations in order to provide lessons for how nutrition programmes can effectively target informal actors in the food system. Sections 3, 4 and 5 of this report describe each of the three case studies; the conclusion aims to synthesise lessons across the case studies and relate them to the nutrition challenge.

[18] One case study relating to agricultural production was reviewed: integrated pest management.
[19] 'Biofortification is the process by which the nutritional quality of food crops is improved through agronomic practices, conventional plant breeding, or modern biotechnology. Biofortification differs from conventional fortification in that biofortification aims to increase nutrient levels in crops during plant growth rather than through manual means during processing' (World Health Organization 2015).

3 Case study: Using facilitative approaches to improve food safety

3.1 Background

There are a number of important commonalities between the goals of improving food safety and improving food-based nutrition. Achieving both objectives involves influencing the behaviour of private sector actors in the food system in a way that improves the performance of the foods and value chains used by the low-income majority. In SSA countries, food safety and nutrition programmes intervene in food systems dominated by the informal sector. Food safety offers useful lessons for nutrition because of a handful of experimental programmes and linked research studies that have tested ways to increase food safety among small and informal food processors and retailers. Research has compared the outcomes of these experimental approaches to conventional policy models based on command-and-control regulation. This section of the report describes two related experimental programmes led by the International Livestock Research Institute (ILRI) in Kenya and Nigeria (Grace *et al*. 2012a; Omore and Baker 2011). These have been part of a broader body of work in several African and South Asian countries (Grace and Omore 2007; Grace 2014; Grace *et al*. 2010).

As mentioned in the introduction, the policy context for food safety in SSA countries tends to be contradictory: most governments' policies aim to restrict or eliminate informal food businesses, yet government agencies severely lack capacity to do so. As a result, policy implementation tends to be highly inconsistent and can actually exacerbate food safety problems (Azevedo and Bankuti 2003). ILRI developed an approach that aimed to help address these problems through participatory risk and hazard analysis. Working with government agencies and informal sector actors, research teams from ILRI studied particular food value chains and sought to locate the points where risks occurred, and identified feasible actions that businesses could use to address the risks (Grace *et al.* 2008). Pilot projects were implemented to provide training and low-cost technologies to groups of informal food processors (Grace 2011). Two of these projects are described below. While the first – focusing on raw milk value chains in Kenya – found that consumer practices were already effective in reducing food safety risks, the second – focusing on butchers in Nigeria – found evidence of widespread health problems. The projects also intervened in markets with different degrees of organisation; in the Nigeria case, producer associations exerted powerful influence over businesses' behaviours, while in Kenya milk traders were not organised. The two cases provide lessons on how food and nutrition programmes can adapt their approaches to different market contexts.

3.2 The smallholder dairy project in Kenya

In Kenya, 80 per cent of the milk sold is in the form of unpasteurised 'raw milk', which is produced and distributed by informal actors. Consumers prefer raw milk to centrally produced packaged milk (Grace *et al*. 2010). While policymakers in Kenya have tended to assume that raw milk is a public health risk, ILRI research found that the level of risk was actually low. Although the milk contained pathogens, Kenyan consumers habitually boiled it before drinking, effectively preventing food-borne illness. Yet dairy policy continued to focus on sanctioning unregistered milk producers and milk traders, despite the fact that agencies were unable to effectively enforce these measures.

In response to these problems, the Smallholder Dairy Project[20] sought to introduce evidence-based alternative policies for improving the quality of milk – particularly raw milk (Hooton and Omore 2007; Omore and Baker 2011). Active between 1997 and 2005, the project studied milk value chains, and found that the majority of milk contamination took place at the stage of distribution and retailing. Consumers commonly boiled milk before drinking it, which killed the pathogens. However, outlets known as 'milk bars' posed a potential health risk, because they did not boil milk. These findings led the project to work with informal milk traders and retailers to identify feasible ways that these actors could prevent contamination.

The project worked with a total of 80 small traders who distributed milk on bicycles in three districts. Project implementers used a participatory strategy to engage with traders, build trust and design practices and technologies appropriate to their situation. Based on this process, the project provided training to traders on how to identify milk contamination, how to use simple test kits and how to prevent contamination throughout their handling of milk. Prior to the intervention, most traders carried milk in simple plastic buckets, which could increase the risk of contamination. In response, the project developed an improved metal canister designed to be carried on a bicycle, and sold it to traders at a subsidised price. Both before and after the intervention, the project assessed traders' practices and tested contamination levels of the milk they carried.

The intervention appeared to reduce levels of milk contamination; the proportion of milk with high levels of contamination fell from 71 to 55 per cent among traders using plastic containers, and from 48 to 42 per cent among those using metal containers.[21] Use of metal containers appeared to be associated with lower risks, but there was also significant improvement among traders who received training but did not use metal containers. Traders reported that customers preferred milk delivered in metal canisters, and that this technology also reduced spillage during transport. However, they were reluctant to buy the canisters because their equipment was frequently confiscated by officials. They thus preferred the cheaper plastic containers, which could easily be replaced.

The intervention occurred at the same time as a highly politicised public debate about the safety of milk in Kenya. Seeking to expand their market share, large manufacturers of packaged ultra-high temperature (UHT) milk funded a public relations campaign aiming to convince government and consumers that raw milk was unsafe and frequently adulterated by milk traders. In response, a coalition of civil society groups and research organisations countered these claims and advocated for government to support small milk traders. They referred to evidence from the ILRI studies to argue that small traders were no more likely to adulterate their products than large manufacturers. They also argued that a food safety 'scare' would endanger public nutrition by reducing milk consumption (milk is a key source of protein for many people in Kenya). These advocacy efforts contributed to a policy reform that promoted a more 'facilitative' approach to informal milk traders.

3.3 Improving food safety in Nigerian butcheries through business associations

Bodija market is an important centre for processing and retailing animal products in south-western Nigeria. According to research by ILRI, meat in the market posed considerable health risks to both producers and consumers. Ninety-eight per cent of meat contained bacterial pathogens, while 67 per cent contained zoonotic pathogens and 46 per cent contained environmental contaminants (Grace *et al.* 2012a; Grace *et al.* 2012b).

[20] The project was implemented by the Ministry of Livestock and Fisheries Development, ILRI and the Kenya Agricultural Research Institute, and funded by the United Kingdom's Department for International Development.
[21] The study methodology does not allow this change to be attributed to the intervention. The study also does not describe what proportion of improvements were associated with using the new milk canisters, compared to simply receiving training.

Butchers working in the market often fell ill from gastrointestinal disease, with those who used bad hygiene practices being most likely to be affected. Although the municipal government oversaw the market, it had not been able to adequately regulate food safety.[22] In response, ILRI implemented a training programme in 2009.

Bodija market included at least 22 self-organised butchers' associations, whose members were meat processors, as well as retailers and cattle owners. The associations provided training, credit and social support; they also mediated conflicts among members and interacted with officials. The members of an association all tended to have similar hygiene practices. The researchers concluded that this tendency could indicate either that the associations helped regulate their members' behaviours or that butchers with similar practices simply tended to group together.

The ILRI project chose to work with butchers' associations to improve butchers' hygiene practices. The research team presented their findings at specially organised workshops, trained butchers about which behaviours created the greatest risks, and listened as butchers discussed their own experiences. This led to the development of a set of feasible best practices for butchers. Participants in the workshops received certificates to post for their customers. ILRI conducted surveys of butchers' practices before and after the workshop, and compared participants and non-participants in order to assess whether butchers' associations had disseminated the best practices to non-participants.

The ILRI studies produced two key findings: first, gender had a major influence on food safety outcomes. Women butchers were far more likely to use good hygienic practices, and butchers' groups with more women members had lower levels of contamination. The groups with the best overall hygiene had on average 40 per cent female membership, while other groups had on average only 15 per cent. These effects were statistically significant.

The second finding was that training appeared to improve certain hygiene practices. For example, 85 per cent of butchers reported using disinfectant after the training, compared to 48 per cent beforehand.[23] Furthermore, the butchers' associations seemed to have diffused these behaviours among their members; training attendees and non-attendees were equally likely to report using many key hygiene practices.[24] Qualitative evidence supported this conclusion, with leaders of the associations being supportive of the project, and reporting that they were pressuring members who had not been trained to learn from those who had participated in the ILRI training.

3.4 Lessons from food safety interventions

Experimental food safety interventions provide important lessons for nutrition programming. Beyond their direct contribution to better nutrition[25] these efforts offer lessons for how nutrition-focused projects might use similar approaches to improve the nutrient content of products in informal markets. First, the ILRI research indicates that policies seeking merely to exclude the informal sector are unlikely to improve food safety or nutritional quality – and

[22] The Bodija meat processing facility is managed by the municipality. Officers regularly interact with butchers to collect taxes and fees. Although environmental sanitary officers are responsible for maintaining hygiene standards, in practice they are unable to effectively regulate most of the activities.
[23] The authors acknowledge that the before/after methodology cannot attribute the change to the training. However, other qualitative information collected suggests that the training contributed to these changes.
[24] There were exceptions: attendees had on average significantly cleaner slaughter and sale areas, and were significantly more likely to use disinfectant.
[25] Frequent gastrointestinal illness is a primary driver of malnutrition, particularly in children. Thus lower rates of contamination and risks of disease can directly contribute to undernutrition reduction. Other types of food safety interventions can also have nutritional impacts; for example, efforts to reduce aflatoxin in maize and groundnuts could contribute to reducing stunting, since eating aflatoxin-contaminated foods contributes to stunting in young children (Gong *et al.* 2002).

may actually be counterproductive, leading to lower quality.[26] Although informal markets can contain major hazards – and inadequate nutrient levels – some perform very favourably compared to formal sector alternatives. Available experience suggests that this variability also applies to nutritional quality: some informal businesses produce foods of high nutritional quality, including even foods that must achieve high nutrient densities such as complementary foods for infants.[27] The lesson is that interventions should assess market performance on a case-by-case basis, and should target the specific problems faced.

Second, food safety and nutrition programmes should also help to reform anti-informal sector policies.[28] Merely reducing inappropriate regulatory pressure on small businesses has potential to increase small businesses' capacities and create incentives for them to improve product quality. However, the positive effects of such reforms have not been rigorously tested. Anecdotal evidence comes from cases where complex registration requirements have prevented businesses from adopting nutrition-relevant upgrades such as fortification (Robinson *et al*. 2014b) (see the case of fortification in Tanzania in Box 1.4, above). Further, regulatory pressure creates distrust and makes it more difficult for public and civil society programmes to engage small businesses in order to facilitate better performance. In short, food safety research suggests that food-based nutrition programmes would also benefit from a 'facilitative' approach to informal businesses.

Third, the ILRI projects demonstrate that 'light-touch' interventions centred around training can deliver substantial improvements in product quality, even in the absence of technological or infrastructure upgrades. In both the Kenya and Nigeria cases, there were measurable and statistically significant improvements in bacteriological contamination following intervention. Yet the food safety projects also suggest that there are limits to what can be achieved through training alone, and that policymakers and donors need to be realistic about the improvements that can be expected in the short term. After the training sessions in Kenya and Nigeria, nearly half of all samples continued to have unacceptably high levels of contamination. Yet the fact that 'light-touch' interventions do not wholly resolve the underlying problem should not prevent donors and public agencies from supporting this approach; this point is discussed further in the conclusion of this report. Finally, there is a need for more research, particularly on how social factors – notably gender – shape the outcomes of intervention, and about the potential of working with and through existing market institutions and business organisations. After considering lessons from two other types of intervention, these points are discussed in the conclusion.

Finally, it is important to note that, thus far, food safety interventions targeting the informal sector have remained limited to small-scale pilots. These efforts help to demonstrate the potential of this approach, but larger-scale programmes accompanied by rigorous assessments are needed in order to be able to address issues of cost-effectiveness and standardisation. With this limitation in mind, the next section examines a policy area where informal sector interventions have been subjected to relatively large-scale, systematic assessments.

[26] No studies were identified examining whether crackdowns on informal businesses impact the nutritional quality of foods. The evidence on food safety, however, suggests that such an effect is possible. Testing this through new research is a priority. This evidence could help to encourage evidence-based reform of food and nutrition policies and a more facilitative approach to informal businesses.

[27] A survey of infant complementary foods in Ghana found that the nutrient content of products produced by small enterprises varied widely. While some contained inadequate levels of key micronutrients, others met or exceeded international standards (Masters *et al.* 2011).

[28] Such reforms could include streamlining business registration requirements, reducing registration fees or simplifying minimum technical standards for small businesses.

4 Case study: Improving health care through informal medicine sellers

4.1 Background

Since the 1990s, more than 20 health projects and interventions in several African countries have sought to influence how informal businesses sell medicines, with the objective of improving the health outcomes of treatment. Many of these programmes target antimalarial drugs, aiming to ensure that medicine sellers sell legitimate and effective drugs, and that drugs are used appropriately and in the correct dosages. As with food safety programmes, these health-care programmes aim to affect the behaviours of large numbers of small businesses in the markets that serve the poor. They offer important lessons for food and nutrition because they have received substantial funding and have been the subject of impact assessments, which have formed the basis of several systematic reviews (Brieger *et al*. 2004; Goodman *et al*. 2007; Smith *et al*. 2009; Wafula and Goodman 2010).[29]

Informal health-care businesses provide a large portion of the medications and treatments used by poor people. In sub-Saharan African countries, between 15 and 80 per cent of the population uses private medicine sellers as their first choice for treating child illness, with a median around 50 per cent (Brieger *et al*. 2004; Greer, Akinpelumi and Madueke 2004). People use informal medicine sellers because they tend to be located closer to where they live (compared to both public health facilities and registered private pharmacies) and because they are perceived to be more friendly and accessible. Informal sellers also provide drugs at a lower cost, since they do not charge fees for access or diagnostic tests (as health facilities commonly do), and since they often sell cheaper, lower-quality drugs or sell drugs in small doses. Medicine sellers also often provide credit to customers, which enables low-income households to access medical care during periods of need.

Box 4.1 Similarities in markets for health and for nutrient-rich foods

Improving the poor's access to health care and to nutrient-rich foods entails a common set of challenges for market-based approaches. First, many of the market problems described above affect food and medicines in similar ways. In particular, information asymmetries are strong in both cases: people buying medicines do not know precisely what condition they have, the effectiveness of various treatments or the quality of the various drugs available. Similarly, those buying nutrient-rich foods often do not know their nutrient content or how to prepare them. In both cases, it is not simply a matter of creating low-cost products, but also of ensuring that they are used in a relatively precise way (in nutrition, this is particularly the case for infant feeding). If anything, the market problems are more severe in health care than in nutrient-rich foods: while correctly prescribing drugs and treatments requires specialist knowledge, when it comes to food (particularly unprocessed food), consumers often can use 'proxy characteristics' to distinguish good quality from bad (Pelto and Armar-Klemesu 2011).

Despite the advantages that allow informal sellers to serve low-income groups, the quality of the drugs and medical care they provide can be deficient. A study by Iqbal *et al*. in Bangladesh found that only 18 per cent of drug prescriptions by village doctors in one location were appropriate to the condition to which treatment was sought (Iqbal *et al*. 2013: 36). This can happen because medicine sellers are ill-informed, or simply sell customers the

[29] Given the large number of interventions and studies, a complete review is beyond the scope of this report. Instead, it endeavours to highlight the key findings from these interventions and the implications they might have for projects targeting nutrition.

drugs or treatments they request, whether or not they are appropriate for the patient or condition. It is also the result of using fake or poorly manufactured drugs. A study in Kenya found that only 4 per cent of chloroquine (an antimalarial) was given to children in appropriate doses, while a survey in Cameroon found that 38 per cent of chloroquine and 74 per cent of quinine sold in shops either did not contain enough of the active ingredient or contained incorrect ingredients (Goodman *et al*. 2007). Yet despite these major quality problems, the fact that informal medicine sellers are the first choice for an important portion of the poor, and that even formal health-care providers often fail to meet quality standards (Sudhinaraset *et al*. 2013), means that governments and public health authorities cannot afford to ignore them. The challenge is that regulatory authorities in African countries do not have sufficient staff or resources to identify the majority of medicine sellers, let alone to enforce regulatory requirements. Several systematic reviews have therefore highlighted the need for alternative approaches for motivating medicine sellers to improve their performance (Wafula, Miriti and Goodman 2012).

4.1.1 Types of intervention

Interventions targeting informal medicine sellers have combined different approaches, which can be categorised as: (1) training and capacity building for medicine sellers, (2) demand generation among consumers, (3) quality assurance and monitoring, and (4) creating an enabling environment through policies and political support (Brieger *et al*. 2004). Training has been the dominant strategy of many interventions, which ranged in intensiveness and duration. At the 'light-touch' end, a programme in Nigeria trained private wholesale agents, who were expected to pass on this information to their clients – who are medicine sellers – during sales visits. Other training processes were much more involved: a project in a rural district of Uganda used a participatory approach to adapt training messages and secure buy-in from medicine sellers. It presented sellers with evidence about their current (inadequate) practices and, through a process of negotiation, agreed on a set of improved practices tailored to sellers' needs and constraints (Greer *et al*. 2004).

These interventions were delivered through different intermediaries, and this had important implications for their credibility and cost, as well as the sustainability of behaviour changes. The most common approaches interfaced with medicine sellers through project staff and local health workers, but some interventions also employed private sector actors themselves to advocate among their peers and customers. Finally, some interventions used community institutions as intermediaries between the project and medicine sellers in order to make use of local knowledge and social networks.

Distinct from these training projects, a handful of more intensive interventions centred on building franchise networks of drug sellers and pharmacies. Building a franchise network entails large start-up costs for developing a drug procurement and distribution system, for encouraging individual medicine sellers to convert their businesses into franchises and for monitoring and ensuring that franchisee businesses comply with standards. Because of its cost, the high degree of behaviour change required and the fact that it is led by a central private sector organisation, franchising is substantially different to other interventions targeting the informal sector. It is discussed in more detail below.

4.1.2 Outcomes of interventions

Systematic reviews of medicine seller interventions have found that they have consistently contributed to better knowledge and prescribing practices among informal medicine sellers – at least in the short term (Brieger *et al*. 2004; Goodman *et al*. 2007; Smith *et al*. 2009; Wafula and Goodman 2010).[30] As one review reported for interventions targeting malaria treatment:

[30] Most evaluations have been based on pre-/post- measures. Few evaluations have used robust methodologies that can *attribute* outcomes to specific intervention activities (by ruling out confounding factors).

> All interventions reported improvements in medicine seller performance. For example, in Bungoma, Kenya, the proportion of sellers stocking recommended antimalarial drugs was 62% in outlets that had received job aids compared with 23% in controls… The proportion giving appropriate drugs for uncomplicated malaria increased from 2% to 73% after negotiation sessions in Luwero, Uganda. The proportion of sellers recommending or giving a correct anti-malarial drug dose also showed substantial improvements, increasing from 9% to 53% after training and introduction of pre-packed antimalarial drugs in Abia, Nigeria, and from 0% to 50% after negotiation sessions in Uganda.
> (Goodman *et al*. 2007: 210)

However, assessment and evaluation designs were not sufficient for researchers to determine the effectiveness or additionality of the individual project activities: for example, whether training would be effective in the absence of free distribution of pre-packaged drugs. Evaluations came to different conclusions on the effects of training when improved practices contravened sellers' commercial interests; for example, whether sellers could be convinced not to sell inappropriate (but in-demand) drugs. Some studies found that training was ineffective in these cases, while others found that businesses modified their behaviour even when this led to lower sales (Wafula and Goodman 2010). Compared to effectiveness, evidence on sustainability was even scarcer; very few studies measured business knowledge or behaviours over time periods longer than six months following project activities.[31] Nonetheless, several reviews concluded that sustainability would require that training and support are provided by public agencies on an ongoing basis (Brieger *et al*. 2004; Smith *et al*. 2009).[32] Beyond the aggregate results, looking at the implementation of individual programmes offers useful lessons about different approaches to informal sector engagement, and the types of market and institutional conditions under which they are likely to be effective.

4.2 Improving malaria treatment by drug sellers in Abba, Nigeria

The USAID-funded BASICS II project funded an intervention to improve the practices of small medicine sellers (referred to as 'patent medicine vendors') in order to improve the handling of malaria in two local government areas in Abia state. It was estimated that about 1,000 small medicine shops operated in the project area, and that public agencies have difficulty regulating or even identifying them (Greer *et al*. 2004). The intervention relied on community organisations known as Catchment Area Planning and Action Committees (CAPACs), which acted as intermediaries. The CAPACs were made up of 20–30 community leaders, including health personnel and medicine sellers, and were responsible for carrying out inventories of all medicine sellers in their area, selecting particular sellers to act as peer trainers, organising training sessions and conducting follow-up visits to sellers. However, the committees did not have a formal role in the health system or in the enforcement of regulations.

With support from the project, CAPACs organised one-day training workshops for medicine sellers in their areas, with 'champion' sellers acting as peer instructors to deliver the key messages. The use of peer trainers improved credibility and communication, and was reported to be more cost-effective. The core messages provided in training sessions were: (1) treating children under five with fever using an appropriate (preferably pre-packaged) dose of government-recommended antimalarial drug, (2) referring children with signs of

[31] In one review, only five of the 21 studies measured seller behaviour one year after the intervention. The majority (12 studies) measured changes after only three months, which is inadequate for assessing sustainability (Smith *et al.* 2009).
[32] One study provided indicative evidence: after four years during which the project provided annual refresher training sessions for sellers, the vast majority continued to follow the recommended treatment guidelines (Marsh *et al.* 1999).

severe illness to a health facility, and (3) counselling customers to use insecticide-treated bednets. The project was eventually able to train 832 medicine sellers. This was coordinated with other activities, including public awareness campaigns and the introduction of antimalarial drugs packaged in the correct doses for specific age groups. This both increased access to high-quality drugs for medicine sellers and simplified the task of prescription. The project also provided businesses that participated in training with certificates to display in their shops. Through radio ads, the project marketed the certificates as indicators of quality health care.

The project evaluation found that it had a large positive influence on medicine sellers' practices. The proportion of sellers recommending the correct dose of antimalarial drugs increased from 9 per cent pre-intervention to 53 per cent post-intervention. The project points out that this represents the combined effects of the training, public awareness campaigns and the new pre-packaged drugs. Other practices did not improve, including informing customers about the signs of severe illness, referring severe cases to a health facility or recommending insecticide-treated bednets.

The CAPACs played a key role in the project; through local social networks they were able to identify informal medicine sellers that were 'invisible' to public authorities. Community leaders' high social standing also meant they could pressure sellers to attend training and comply with recommendations. Support from government agencies was also important. Medicine sellers were initially reluctant to attend training, concerned that authorities would use this as an opportunity to levy taxes. It was necessary for managers from the state health services to reassure medicine sellers. Other political support was also necessary; the project had to assure doctors and nurses that the programme was not a blanket endorsement of untrained drug sellers.

The Nigeria project targeting medicine sellers and antimalarial drugs offers key lessons for other informal sector interventions: first, it highlights the potential of working with appropriate community-level institutions. Where local institutions exist and are influential and well-connected, they can enable projects to rapidly identify and reach a large number of informal businesses in a target area. Second, the combination of training, increasing access to good-quality products and running public awareness campaigns contributed to better performance among informal businesses, at least for some key behaviours. Other behaviours remain more difficult to change. Finally, the case highlights the importance of securing political support from power brokers (not only government) and of allaying informal businesses' fears about engaging with authorities.

4.3 Developing drug shop franchises in Ghana and Kenya

As mentioned above, franchise programmes function differently to the other medicine seller interventions discussed. A franchise model entails a central business (the franchise owner) licensing other businesses (the franchisees) to use its brand and access its services on the condition that they comply with specific standards. This model must create incentives for both parties: the owner takes a portion of revenues from franchisees, while the franchisees benefit from better sales or lower costs. These conditions are slightly different in a social franchise, where the owner (often a non-governmental organisation or social enterprise) forgoes profits in order to achieve social goals (e.g. extending coverage of good-quality medical treatment). A successful franchise provides products of consistent quality while achieving efficiencies of scale through large numbers of franchisees. It differentiates its products through a brand that is recognised by consumers. In health markets in sub-Saharan Africa, franchising has several potential advantages:

- It can shape the behaviour of small medicine sellers (through training, monitoring and enforcement) while covering costs. This requires generating sufficient revenues.
- It can create both positive and negative incentives for medicine sellers to use good products and practices, combining better sales, lower costs and the threat of being sanctioned if they fail to comply.
- Through branding, it can increase the visibility and desirability of participation for businesses, while differentiating the product among consumers.

There are a handful of franchising networks covering medicine sellers in African countries (Brieger *et al*. 2004), and these networks employ different models. In Ghana, the CareShop franchise grew by 'converting' existing, semi-formal drug sellers, while in Kenya the CFWshops franchise helped willing entrepreneurs (often women who had worked as nurses) to establish new businesses. Both franchises were initiated by non-profit organisations, and have continued to rely on grants from development agencies and individual donors (Rangan and Lee 2014; Segrè and Tran 2008). In 2008, the CareShop franchise included 276 shops across Ghana. CFWshops operated 83 clinics in Kenya in 2009, and served more than 500,000 people. Franchise shops appeared to provide slightly better treatment than other medicine sellers; in Ghana 18 per cent of CareShops prescribed malaria drugs correctly, compared to 10 per cent of non-franchise shops.

Despite their coverage, neither the Ghanaian nor Kenyan franchises have become viable on a purely commercial basis. In both cases, franchise owners struggled to incentivise franchisees to comply with practices key to the franchise's overall success. For example, franchisees were supposed to stock only approved drugs and brands, and to source drugs only through the franchise's own procurement system. However, in practice they continued to stock non-approved drugs and to purchase from other wholesalers. One reason for this was consumer preferences; in Ghana, consumers strongly prefer familiar brands of drugs, and thus franchisee businesses insisted on stocking many more brands and products than the franchise system could handle efficiently. Meanwhile, in both Ghana and Kenya, franchise managers had to cut back on monitoring because it was too expensive to send agents to remote rural shops. Even more fundamentally, in both cases, franchise owners were unable to collect royalty fees or loan repayments from franchisees. Although the franchise owners should have delicensed franchisees who did not pay, in practice they were reluctant to do so, because this would compromise their social objectives. Managers faced a trade-off between making the franchises profitable (by selling at higher prices and targeting urban areas) and reaching poor people in rural areas. In the end, the inability to collect fees led to the collapse of the Ghana CareShop franchise after five years. Meanwhile, in Kenya, CFWshops has shifted its focus to full-service clinics rather than drug shops, since clinics can legally offer a wider range of drugs. It is also considering focusing on urban areas, which might allow the franchise to function on a purely commercial basis.

While these cases suggest the potential of franchising for delivering better-quality products by converting networks of informal businesses, they also highlight the major challenges to the viability of franchising under prevailing market conditions. While in theory franchises provide profit incentives to franchisees, in practice, businesses' main motivations for joining the franchises were not increased profits, but rather social status and access to training. Similarly, while franchise owners had a commercial incentive to monitor retailers' performance, in practice the costs of doing so were too great, and could not be recovered through fees. There may be ways to reduce the costs of monitoring, for example by limiting franchises to a small number of centrally produced, ready-to-sell products, or focusing on narrower geographic areas. Overall, franchising schemes appear to be useful market-based approaches for influencing the informal sector, but their reach appears limited to urban areas and to middle-income groups. Under current conditions in most SSA countries, franchises continue to rely on grant funding and social subsidies. Whether they can be viable on a purely commercial basis is unclear.

4.4 Lessons from medicine seller interventions

The case of informal medicine sellers and the interventions to improve their performance underscores the importance of including the informal sector in market-based programmes. It is well documented that informal businesses increase access to health care for low-income populations (Sudhinaraset *et al*. 2013; Wafula *et al*. 2012). While this health care is often of poor and unreliable quality, were it not for small medicine sellers, health outcomes would be worse than at present (Goodman *et al*. 2007; Wafula *et al*. 2012).[33] This parallels the situation in the food sector, where the informal sector already contributes to nutrition, but faces substantial quality problems. Research on improving health-care performance is useful because it suggests how food-based policies and programmes could be designed to improve the nutritional performance of informal businesses.

First, medicine seller interventions demonstrate that there are alternative means of influencing business behaviour beyond command-and-control-style regulation. Medicine seller interventions tended to use a combination of approaches: providing training and follow-up, mobilising community and professional institutions, and introducing new products. The first of these, training, was a major activity in all of the projects reviewed. The research shows that training can improve business behaviours, even in the absence of other interventions or incentives (Wafula and Goodman 2010). However, consistent follow-up and retraining – provided by projects, health-care workers or community bodies – appear necessary for these improvements to be sustained. Although only a handful of the interventions sustained activities beyond a few months, the evidence these programmes generated suggests that training with follow-up can be successful *even in the absence* of formal monitoring and enforcement (*ibid*.). If this trend holds in the case of food and nutrition, it is a powerful endorsement for training-based interventions, since the enforcement of nutrition standards has proven to be extremely difficult across countries and markets in SSA (Robinson *et al*. 2014a; Robinson *et al*. 2014b).

Second, in addition to training, the case of medicine sellers suggests ways to leverage businesses' reputations to sustain behaviour changes. Two aspects of business reputation were important: customers' perceptions of a business and its standing with key institutions and professional bodies. Interventions sought to mobilise the first of these, customer perceptions, through awareness campaigns that encouraged consumers to demand good practices from medicine sellers. Interventions such as the Nigeria malaria project also created 'light-touch' certification programmes in order to help participating businesses to attract customers. In the Nigeria case, the combination of public awareness with this certification appeared to encourage businesses to seek out training; the project hoped it would also encourage them to comply with good practices in the longer term.[34] What is surprising is that this reputational motivation did not necessarily depend on sales: in several cases, businesses chose to participate in programmes not because this increased their sales but because it enhanced their reputations and improved their relationships with authorities (Greer *et al*. 2004; Segrè and Tran 2008). This is perhaps somewhat unique to health care, since professional associations and qualifications are especially crucial in this sector.[35]

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[33] The problem is better known than the solutions; there are many more studies documenting the importance of informal medicine sellers in providing access to health care and the problems with this health care than there are studies examining effective solutions in this sector (Wafula *et al.* 2012).

[34] None of the studies had a design that allowed outcomes to be associated with particular activities (Goodman *et al.* 2007; Wafula and Goodman 2010). It is not possible to know whether, for example, light-touch certification or the provision of pre-packaged medicines led to additional improvements in medicine seller performance. Project reports provide a plausible logic for how these elements may contribute to motivating business participation, but cannot demonstrate whether this effect occurred consistently.

[35] In health care, business member bodies (such as drug vendors' associations) and professional associations (such as doctors' associations) can shape businesses' access to drug supplies and their relationships with regulators. In contrast, professional motivations may be less powerful in the food sector, since it is less professionalised and less regulated and since food businesses do not require access to specialised drug supplies. Consumer preferences for cost, convenience or taste are likely more important drivers of the behaviours of small food businesses.

Informal social pressure also appeared important. In Nigeria, training and follow-up were organised by the committee of community leaders, and this appeared to increase contact with medicine sellers (Brieger *et al*. 2004).[36] More robust evidence is needed to establish models through which professional reputation or community standing could drive the more difficult behaviour changes and encourage sustainability.

Third, interventions can *facilitate* the behaviour changes promoted through training by introducing products that simplify the required changes. Several medicine seller interventions introduced drugs packaged in age-specific doses that discouraged under-dosing and simplified the task of measuring correct doses. Indeed, a similar approach has already been used in nutrition interventions, where single-serving micronutrient powders are distributed to households with children of 6–24 months old. Another potential avenue for simplifying behaviour changes would be providing small food businesses with appropriate technology to reduce nutrient losses during processing. However, delivering new products and technologies to informal businesses requires viable supply chains, and – as was discovered by the franchise networks – it is very difficult to motivate retailers to use a single product or supply chain – they are likely to combine multiple chains wherever this is advantageous. This is likely to be particularly problematic in the case of food retailers, since food value chains are much more decentralised than medicine value chains.[37] Further research is needed to assess the circumstances under which the introduction of new products is a viable and effective means to encourage behaviour change.

Finally, while the medicine seller interventions highlight the potential for 'quick wins' in improving informal businesses' performance, they also suggest the need to work with durable institutions that can provide ongoing oversight. This is likely to require support from and sustained funding for well-equipped government institutions. Project evaluations show that a combination of training, social marketing and new products can produce significant short-term results, but also that sustaining behaviour changes requires follow-up and reputational pressures. Thus, achieving significant change at large scale and on a sustainable basis will require substantial investment in permanent organisations that can manage these programmes. How this capacity could be built is discussed in the conclusion.

[36] However, reviews also identified exceptions, in which training and public awareness interventions actually led consumers to seek care from public facilities and avoid informal sellers.
[37] See note 23 on associating outcomes with particular project activities.

5 Case study: Salt iodisation and small producers

5.1 Background

Unlike the two case studies analysed above, salt iodisation is a directly nutrition-focused programme. It aims to address iodine deficiency disorders – particularly in children – which result from inadequate consumption of iodine and cause lifelong harm. Universal Salt Iodisation (USI) – the requirement that all salt produced or imported to a country contain a certain level of iodine – had been legislated in 55 developing countries by 2008 (UNICEF 2008: 20). Salt is a good vehicle for iodine because, unlike other staple foods, it is consumed consistently and in roughly similar amounts by different populations, reducing the risk of over- or under-dosing. While USI programmes have dramatically reduced iodine deficiencies in a number of countries in the past two decades (WHA 2012), in some countries a significant portion of the population still does not have access to iodised salt. There is agreement that this gap is the result of iodisation programmes failing to reach small-scale salt producers (International Council for the Control of Iodine Deficiency Disorders 2013; Jooste and Andersson 2014). Small-scale salt production occurs in a number of countries in SSA, but its geographic scope is limited to areas near natural features such as saline lakes or lagoons. Where it does occur, however, there tends to be a thriving and poorly regulated market for domestically produced salt, which is lower cost than centrally produced salt. This locally produced salt is generally not iodised (see Box 5.1). The divide between centrally and locally produced salt can be stark: in Tanzania, 90 per cent of households use iodised salt in some interior regions, but less than 50 per cent do in the coastal regions where salt is produced (Assey 2009: 4). Furthermore, low-income and rural populations are particularly likely to source salt from the informal sector. This can threaten the success of USI; even large manufacturers may not comply with iodisation when they face competition from informal producers.[38] This gap is increasingly recognised by USI programmes; while early efforts focused on large manufacturers, a growing number have targeted small-scale producers.

Box 5.1 Small-scale producers in salt-producing countries

Ghana: 40 per cent of domestic salt production by 5,000–10,000 small producers

Senegal: 38 per cent of domestic salt production by more than 10,000 small producers

Tanzania: More than 6,500 producers (no data on production levels)

Sources: Kupka *et al.* (2012); Spoher and Garrett (2013).

5.2 Three models for working with small producers

Salt iodisation programmes targeting small producers have employed several different models and approaches. The first of these involves the introduction of simple technology and training. In Tanzania, the USI programme has promoted iodisation among both small- and medium-sized salt producers. The government, with support from donor agencies, has provided training and developed simple, hand-held spray pumps that enable small-scale producers to iodise their products at low cost. This technology has led to thousands of

[38] This is reported to be the case even though iodisation represents only a small fraction of the costs of salt production (Mannar and Yusufali 2013).

producers beginning to iodise their salt. This success comes despite regulatory agencies' very limited ability to stop production by those who do not iodise. However, many producers still cannot afford equipment, and there are indications that it is not being used in a way that is sufficiently precise, with one survey finding that 24–69 per cent of salt was either under- or over-iodised.

Table 5.1 Coverage of iodised salt in four salt-producing countries in SSA

Country	Percentage of households with (%):		
	***Some* iodine in salt**	***Adequately* iodised salt**	**Some iodine in the worst-performing region**
Ethiopia	23 (overall) 13 (rural)	N/A†	6 (Dire Dawa and Harari Regions)
Ghana	27 (urban) 41 (rural)	35 (overall) 23 (rural)	15 (Northern Region)
Senegal	56 (overall)* 47 (rural)*	48 (overall)* 39 (rural)*	N/A
Tanzania	13 (urban) 27 (rural)	81 (overall) 51 (rural)	6 (Lindi Region)

Notes: † Data for Ethiopia do not specify whether iodised salt is adequately iodised; *Senegal National Demographic Health Survey does not provide data on salt iodisation; figures shown are from Kupka *et al*. (2012).
Sources: National Demographic Health surveys (Central Statistical Agency [Ethiopia] and ICF International 2012; Ghana Statistical Service, Ghana Health Service and ICF Macro 2009; National Bureau of Statistics and ICF Macro 2011).

The second major approach has been to organise salt producers or to work with existing organisations. In Senegal and Ghana, the primary salt-producing countries in West Africa, thousands of small-scale producers manufacture roughly 40 per cent of domestic supplies, and most of these producers do not iodise salt adequately (Kupka *et al*. 2012; Spoher and Garrett 2013). In Ghana, the Global Alliance for Improved Nutrition (GAIN) and UNICEF sought to introduce iodisation among producers in Nyanyano, a municipality near Accra. The project created a Salt Bank Cooperative involving 43 members and governed by an elected board. The cooperative purchased salt from its members, and processed, iodised, packaged and sold this salt (Spoher and Garrett 2013). GAIN provided starting capital, training and expertise on iodisation. However, after two years, GAIN ended its support and concluded that the sales margins the cooperative earned were not enough to cover its costs. Reports suggest that the cooperative ceased to function after GAIN withdrew its support. Meanwhile, in Senegal salt producers were already organised into cooperatives[39] even before USI legislation. The cooperatives regulated access to salt production sites and also contributed to processing and bulking supplies and negotiating prices with traders. Recently, a donor-funded project led by Micronutrient Initiative provided a number of cooperatives with iodisation equipment and training. The cooperatives charged members a fee for iodisation, which they aimed to recover through higher prices. The project reported considerable success with small-scale iodisation through this model, and the cooperatives produced more than 120,000 metric tonnes of iodised salt between 2007 and 2012. However, the proportion of this production that was iodised remained just under 50 per cent (Kupka *et al*. 2012).

Programmes have thus experienced mixed results in working with salt producers' organisations. This has been the case not only for small-scale, informal production, but also for associations of larger, formalised salt businesses. In 1994, Tanzania's government sponsored the establishment of Tanzania Salt Producers Association (TASPA), which represented medium- and large-scale manufacturers (it does not include the small-scale,

[39] Known domestically as 'Groupement d'Interet Economique' (GIE).

artisanal producers). In 1999, the Association created a revolving fund to ensure that members would have a regular supply of potassium iodate. However, it has struggled to ensure that businesses pay in to the fund. The fund eventually collapsed when the global price of potassium iodate more than doubled in early 2011. It was kept in operation only because the government donated additional supplies.

A third and distinct approach to salt iodisation is being pursued in Ethiopia. There, the government is seeking to create a centralised value chain for salt processing, and is requiring all salt producers to sell to large processing facilities. These facilities will perform processing, iodisation and packaging. In 2012, one such facility was built near Lake Afdera, one of the main salt-producing zones. Small-scale production will not be eliminated, but the government hopes that the industry will become more centralised with time.[40] The Afdera facility is jointly owned by government and private investors, with additional support from the Micronutrient Initiative, GAIN and UNICEF (Adish *et al*. 2013). It is too soon to know whether this programme will be able to successfully induce small harvesters to sell into these centralised facilities and whether this approach will eliminate side-selling in informal markets, which remains a common practice at present.

5.3 Lessons from salt iodisation

The case of salt iodisation provides useful insights for nutrition programmes not only because it is directly concerned with micronutrient deficiencies, but also because it represents an ideal case for assessing the potential of food fortification. As mentioned above, salt is well-suited as a fortification vehicle:[41] it is almost universally consumed, has no direct substitute and various social groups consume roughly similar quantities. It is also conducive to centralised production: the product is homogenous, relatively cheap to transport and store and there are relatively few places where it can be produced locally. Yet the fact that informal markets for salt continue to exist in many countries in SSA indicates the presence of underlying conditions that favour informality. Given that informal salt markets persist seemingly wherever saline lakes or lagoons make production possible, we might expect a similar or greater degree of informality to persist in markets for other fortification vehicles for which there are local substitutes (particularly flour and cooking oil). Second, traits that make salt a good fortification vehicle (particularly the limited geographic scope of production and the relatively simple technology required for iodisation) also suggest there could be significant potential in working with the informal sector. Yet the examples cited above highlight that achieving iodisation in informal salt markets remains challenging, despite progress in some countries. In addition to developing and disseminating appropriate technology, iodisation programmes have sought to incentivise iodisation through various business organisations, while addressing value chain problems that have prevented small businesses from accessing supplies of fortificants.

The programmes reviewed in this section employed different models for engaging and influencing small salt producers, with some working with existing cooperatives, while others sought to create new organisations. In Ghana and Senegal, some success was reported with cooperatives which owned and operated iodisation and packaging facilities. Senegal was particularly successful; it was estimated that about 47 per cent of salt produced in the informal sector was being at least partially iodised (Kupka *et al*. 2012). In Ghana, a small cooperative established by GAIN appeared to cease functioning after outside support ended. In Tanzania, even the large producers' association struggled to induce members to contribute to the central purchasing facility. In all three of these cases, external subsidies were needed to motivate business organisations to undertake iodisation. At the same time, the Senegal experience suggests that the model may be more viable when working with

[40] The government also exhibits a high degree of control over marketing, including price controls and production quotas.
[41] The exception is that iodine added to salt can be lost during storage, especially with prolonged exposure to heat or sunlight.

existing business organisations that already provide services to members and are embedded in the institutional context (Miloff 2008).

One area where external support appears to be particularly important is in establishing supplies of fortification inputs (potassium iodate) to domestic producers. Supplies are a problem for small producers in particular, since they tend to lack storage facilities and to purchase small quantities due to cash flow constraints. Because these producers also tend to be located in remote areas, distributing to them is costly, and yet these producers are not able to pass on added costs to their customers, whose spending power is extremely low. Aggregating demand across producers and enabling bulk purchasing can go some way to resolving the supply problem. The projects reviewed here attempted to do this through government-sponsored artisanal unions in Senegal and through private business associations in Ghana and Tanzania. Yet, even with such systems in place, small (and even medium) businesses remain vulnerable to price swings in the global market (such as when the price of potassium iodate doubled between January and June 2011). Programmes should therefore anticipate the need for periodic public intervention in order to ensure a consistent supply (Garrett and Prczewlofsky 2013).

In sum, experience from salt iodisation suggests the potential to successfully motivate (some) informal businesses to participate in mandatory fortification programmes through the use of simple technologies. The characteristics of salt markets mean these programmes may offer the best case of what can be achieved through fortification; other commodities are likely to be more problematic. Salt iodisation programmes have worked through cooperatives and business organisations that facilitate interaction with producers and provide some efficiencies (although they remain small-scale). At the same time, efforts to get these organisations to undertake salt iodisation on a sustainable basis without public support have not been successful – even in the case of the larger, formal business association in Tanzania. Underlying market conditions, particularly the very low incomes and low awareness of iodised salt, continue to impose constraints. Fluctuations in the price of imported inputs further complicate the problem. The case studies thus suggest that achieving fortification in informal markets will require ongoing subsidies, monitoring and intervention by governments and/or donor organisations. More successful models appear to be hybrid public–private ventures involving public agencies and producers' organisations, with each playing well-defined roles: the public sector provided training and technical support, regulated supplies of key inputs and strengthened monitoring and enforcement over time; private organisations aggregated demand and provided efficiencies in processing, while also providing services to members and regulating access to resources for small producers. These hybrid models need to be further explored through more rigorous research and assessment to understand the implications of different organisational structures. There is also a need for comparative market studies of other commodities targeted by fortification to assess whether the models used for salt are viable for other products, particularly those that are produced by larger numbers of small-scale businesses.

6 Conclusion

6.1 Lessons for improving nutrition in the informal sector

The cases examined above highlight both the potential and the limitations of interventions targeting informal sector businesses in SSA. This concluding section highlights the principle implications for food and nutrition programmes, and identifies the important evidence gaps that remain. It is worth keeping in mind why the case study interventions were deemed relevant to markets for nutrient-rich foods: they aimed to influence the behaviours of large numbers of small businesses and sought to upgrade the quality of their products to the benefit of low-income populations. In each case, the interventions explicitly targeted actors and markets that *already* served the poor, rather than building entirely new ones. The potential of these intervention approaches depends upon the extent to which they capitalise on existing market and institutional dynamics and lead to impacts among key populations in the short term.

6.1.1 Benefits of a facilitative policy orientation

The case studies consistently point to the substantial benefits that can result from shifting from an exclusionary to a facilitative approach towards informal businesses – including in food and nutrition policies. Across the sectors reviewed, policies that aimed to eliminate informal businesses were ineffective. This resulted first and foremost from regulatory bodies' inability to ensure coverage and compliance among the vast majority of businesses. In some cases, regulatory crackdowns were actually counterproductive and led to, for example, worse food safety outcomes. Meanwhile, not all informal sector products are of bad quality; for example, some informal microenterprises in Ghana produced infant complementary foods that achieved adequate levels of macro- and micronutrients. These findings support the case for reforming policies to adopt a more *facilitative* approach to informal food businesses as a part of a nutrition and food safety agenda. It has been argued that even just legalising small businesses – in the absence of any form of support – creates incentives that can lead businesses to upgrade their products. These effects have not been rigorously tested. Experience in the nutrition sector shows, however, that complex regulatory requirements on small businesses can prevent them from adopting nutrition-relevant upgrades such as fortification (Pittore and Robinson 2015). Furthermore, a facilitative policy approach might also improve trust between businesses and public authorities, make it easier for interventions to reach businesses, and facilitate future efforts to improve governance of food markets (Grace and Omore 2007).

6.1.2 Light-touch interventions can be effective

Second, evidence from the case studies indicates that 'light-touch' interventions – in the absence of top-down control – can improve the performance of businesses and lead to better-quality products. The case study interventions were all 'light-touch' in that they did not involve formal mechanisms for controlling businesses' behaviours; instead, they relied on behaviour-change techniques, training and participatory approaches, accompanied by reputational incentives and goodwill among businesses. Yet the impacts were not insignificant; in the food safety cases, post-training evaluations found approximately 20 per cent fewer cases of contaminated milk in Kenya and 77 per cent more butchers in Nigeria using hygienic practices, while the medicine seller interventions saw good drug prescribing practices increase from less than 10 per cent before intervention to as much as 50–70 per cent afterwards. Among 'light-touch' interventions, some approaches may work better than others. A review of medicine seller interventions concluded that participatory approaches which involved businesses in designing activities and selecting feasible behaviour changes appeared to lead to greater impacts than pre-designed training

programmes (Smith *et al*. 2009). These approaches are readily applicable to nutrition interventions. Indeed, the Tuboreshe Chakula project in Tanzania is an example of a nutrition-related project that aims to be responsive to the circumstances and needs of small businesses. Interventions can also draw on the existing knowledge of small food businesses (for example, intimate knowledge of consumers' preferences for foods) to design products, behaviours and business models that are more feasible and more readily adopted by informal food businesses.

While the case studies indicated that light-touch approaches can be effective, methodological limitations inhibited a more precise assessment of how. Because most of the studies were pre-/post- evaluations, confounding factors cannot be ruled out, and observed changes cannot be directly attributed to intervention activities. Furthermore, the studies do not allow us to determine which activities were effective (e.g. training vs introduction of new products), nor whether activities need to be implemented in tandem or are effective on their own. A complete assessment of the methodological limitations of the various studies is beyond the scope of this report. Yet this review highlights the need for rigorous study and intervention designs that allow measurement of the contributions of different approaches and activities. Furthermore, there is a need to assess the cost-effectiveness of various approaches in a rigorous way. In the case studies, only a small number of studies reported cost-effectiveness, and – given their short-term and experimental nature – it is unclear whether these results are meaningful for estimating cost-effectiveness at larger scale. For the moment, what can be said is that 'light-touch' interventions overall appeared to be able to reach substantial numbers of the businesses operating in a given market, and that they improved performance over a short time period and using modest investments of donor funds.

At the same time, the case studies also suggest the degree of change that 'light-touch' interventions can be expected to deliver. After the training of food vendors in Kenya and Nigeria, nearly half of all samples continued to have unacceptably high levels of contamination, while medicine sellers in Nigeria were more likely to prescribe correct doses, but no more likely to refer patients to health centres or recommend bednets. It is important to recognise the fact that moderate or imperfect improvements can still have substantial positive health and social impacts; a moderate improvement across a large number of businesses can contribute to significant improvements in nutrition, particularly if these businesses serve low-income populations. Ultimately, choosing among food-based interventions requires comparing the degree of change they achieve, the populations they reach and their cost-effectiveness. At present, the evidence is not adequate to allow such comparisons between informal sector approaches and more conventional food-based approaches.[42]

6.1.3 Reputational motivations for business participation

Equally important as demonstrating that light-touch interventions can be effective, the case studies provided suggestive findings about *how* public agencies, project implementers and social enterprises can work with informal businesses to improve their performance. One surprising finding was that indirect factors were consistently as or more important than short-term changes in revenues and costs in motivating behaviour change. This finding can be explained by considering the context in which informal businesses operate, generally characterised as 'between' formal public and private institutions (e.g. regulators, private standards) and 'traditional' institutions such as chiefs and notables, religious leaders and market associations. The semi-legal status of most small food businesses means that their right to access services and use public infrastructure (e.g. roadsides or markets), or indeed their very existence can be challenged. In this context, participation in project activities, the

[42] Common conventional food-based interventions include large-scale fortification, distribution of micronutrient supplements and so-called 'home garden' promotion.

holding of a training certificate or membership in business associations can improve businesses' relationships with authorities and help them to access needed services. These reputational factors can also improve trust among businesses' customers. Projects and franchise schemes can leverage this motivation by securing support from key political actors and by helping participating informal businesses to bolster their legitimacy. Yet this does not mean that profit does not matter; informal enterprises are ultimately businesses and must generate a commercial return if they are to persist. Many projects recognise the dual importance of reputation and profitability; one project reported that businesses were eager to participate in training because – in addition to information about fortification – it allowed them to improve their financial management and manufacturing processes, leading to greater efficiency (Pittore and Robinson 2015).

More surprising than the importance of reputational factors was the powerful role that social identity – in particular, gender – played in shaping businesses' behaviour and performance. In the food safety programme in Nigeria, women butchers consistently performed better on food safety compared to their male peers, and even men performed better when they were part of groups with more women members. These findings indicate that social factors, which are often ignored by policies and interventions, can affect performance of informal markets and could mediate the impacts of interventions. It is not unreasonable to expect that there may be similar social influences on variables of relevance to nutrition outcomes, such as propensity to substitute out nutrient-rich ingredients or provision of nutrition information to customers. Yet the reviewed studies did not examine the mechanisms through which social factors including gender affected outcomes. There is therefore a need for more research to identify when and how social identity significantly impacts outcomes in food markets. In the meantime, available findings suggest that projects should invest in baseline social assessments, analyse how social factors including gender affect businesses' and consumers' behaviours, and explore opportunities to leverage these factors to strengthen impacts.

6.1.4 Intensity of intervention: behaviour change versus role change

The case studies highlight that intervention strategies need to be designed appropriately to the scope and scale of change they aim to achieve. In the case of medicine sellers, Brieger *et al*. (2004) distinguish between interventions seeking 'behaviour change' and those aiming for 'role change'. Behaviour change is the less intensive approach, seeking small improvements in the practices of informal businesses *without substantially* modifying their relationships with customers or other value chain players. For example, 'behaviour change' interventions targeting medicine sellers discouraged them from selling counterfeit or ineffective drugs and encouraged them to provide correct dosages. In contrast, role change interventions require more intensive work with businesses, aiming to alter their basic value proposition. In the case of medicine sellers, role changes involved seeking to convince drug sellers to shift from simply selling customers the drugs they demand to providing basic diagnosis services: asking customers about their symptoms and offering drugs only when they were appropriate. Role change might also involve businesses selling new types of products unfamiliar to consumers (such as packaged micronutrient supplements) or shifting from selling a diversity of products to stocking a single brand, such as in franchising schemes. Regardless, the case studies showed that role changes required intensive training and support to businesses. In the nutrition sector, some programmes have indeed included role change elements, such as encouraging vegetable sellers to recommend biofortified vegetables to their customers and emphasising their benefits for child health (Low *et al*. 2007). Nonetheless, these examples remain the exception at present.

One way to reduce the complexity of changing behaviour is to introduce new products or to modify value chains in ways that simplify what is expected from businesses. For example, the Nigeria medicine seller project introduced antimalarial drugs that were packaged in age-specific doses, which made it easier for sellers to prescribe correctly. In the nutrition sector,

the same logic supports the development of 'pre-blends' of micronutrients for fortification, which are packaged appropriately for use by small-scale millers (Pittore and Robinson 2015). Yet, even when new products are introduced, the distinction between behaviour changes and role changes remains important, and projects should be realistic about what can be achieved through product introduction alone. New products or processes are more likely to be taken up if they reinforce existing practices and existing demands (as in the case of prescribing antimalarial drugs) than if they represent something entirely new (as in the case of fortification by small millers). Precisely what interventions can reasonably expect to change among informal businesses – and the conditions that can facilitate these changes – are priorities for policy-relevant evidence on nutrition and the informal sector, as discussed next.

6.2 Priorities for research and learning

Despite findings from the case studies, a major evidence gap remains on the dynamics of informal markets and how policies and programmes can influence them in the pursuit of development goals. As this report has emphasised, this gap is particularly large in the case of food and nutrition. There is therefore a need for rigorous research on this topic, and for research linked to project design and implementation. This section of the report identifies several topics that are particular priorities for this agenda.

6.2.1 How can interventions work with existing institutions?

The case studies highlighted that choosing the right intermediaries contributes to the success of policies and programmes targeting the informal sector. The intermediaries employed by projects included health workers, salespeople, community leaders and locally hired staff. This raises the question of whether *existing* institutions that have relationships with informal businesses – such as community leaders or market associations – could amplify the reach of interventions and contribute to sustainability. Several of the reviewed interventions reported that working with existing institutions was key to winning businesses' trust. Existing institutions may also have potential to reach larger numbers of businesses at lower cost. Yet the challenge is that many of these institutions are themselves informal, and thus including them as project 'partners' requires working in a different way.[43] Nonetheless, the case studies provide suggestive examples of success. In Nigeria, the butchers' associations helped to diffuse knowledge and skills beyond the individuals directly trained by the project. Meanwhile, health committees in Nigeria made up of community leaders helped identify medicine sellers and organised training and follow-up visits. Yet the gaps in case studies also suggest where these existing institutions may face limitations. No examples were identified of an existing institution monitoring or enforcing compliance with *outcomes* (i.e. product quality). From within the nutrition field, the involvement of the Tanzania Salt Producers Association in salt iodisation indicates that even relatively well-organised business associations may lack the capacity to enforce compliance among their members.

Exploratory interventions and research can improve our understanding of where working with existing institutions would provide the greatest benefit to market-based food and nutrition programmes. Research comparing the different kinds of institutions (including business member organisations, market governance bodies, traditional authorities and civil society organisations) and analysing their incentive structures would inform the identification of which markets and which organisations should be prioritised. In addition, there is a need to explore how agencies and interventions could support local institutions to more effectively govern business activity. If successful, these institutions could help reduce the gap in the capacity of central regulatory bodies. Finally, local institutions may provide avenues for

[43] Although development initiatives have done extensive work with business member organisations, they have tended to think of these organisations as formalised, registered bodies. Evidence from a number of countries in SSA indicates that it is not formal associations, but a range of informal institutions that play predominant roles in governing market activity and production (Fafchamps 2004).

linking food safety and nutritional quality to commercial incentives. For example, social marketing campaigns could provide coordinated messaging emphasising the value of nutrient-rich products and promoting particular business associations that perform well (a variant of this approach was used when certificates were issued to trained medicine sellers in Nigeria). Social marketing could, for example, increase visibility to street food vendors who fortify their products or to traders' associations who market a biofortified crop.

It is important to note that various market segments have different degrees of organisation[44] and that in many cases there may be no existing institution that interacts with small businesses. As a starting point, interventions should focus on the businesses, markets and geographic locales where a degree of self-organisation already exists, as these are likely to represent low-hanging fruit (this is discussed further in Section 6.3, below). At the same time, it is clear that – under the right circumstances – training can be successful even in the absence of coordinating institutions (as was the case with Kenyan milk vendors). Research should explore the conditions under which efforts should target existing institutions, and where they can work effectively with 'unaffiliated' businesses.

6.2.2 How can consumer knowledge be strengthened and leveraged?

The case studies emphasise that health outcomes in informal markets depend on more than just the performance of businesses; consumer behaviour is a critical element. Indeed, there are examples where appropriate action by consumers – in the absence of any business upgrading – led to better health outcomes. This was the case with consumers' practice of boiling milk in Kenya. The implications for nutrition are that there may be opportunities to leverage consumers' existing knowledge and practices in order to strengthen interventions.

At the very least, interventions should seek not to erode or supplant existing consumer knowledge and practices that contribute to nutrition. For example, one study in urban Ghana found that mothers knew about the health characteristics of complementary foods, and regularly assessed various products based on infants' responses to them.[45] This meant that mothers had accurate knowledge of 'proxy factors' that stood in for nutritional quality (Pelto and Armar-Klemesu 2011). There may be opportunities to incorporate such proxy factors into social marketing campaigns, as an alternative to introducing technical standards (such as formal certification systems based on product testing). Whether and how this kind of consumer knowledge could be linked to businesses' incentives should be explored. At the most basic level, nutrition interventions might target the foods that consumers already know to be 'healthy' and seek to make them more accessible, affordable or consistent. They could also encourage consumers to ask specific questions of retailers (e.g. 'What are the components of this infant weaning mix?'). Exploratory efforts could experiment with public 'scorecards' that allow consumers to rate businesses or business associations based on the quality of their products and transparent business practices. Research is needed to compare such models and to assess their cost-effectiveness. Much could be learned from the large existing literature on behaviour change communications covering health products and practices (see, for example, Fabrizio *et al*. 2014; J-PAL 2011; Kremer and Miguel 2007).

6.2.3 Potential of franchising

Franchising represents a special case of interventions targeting the informal sector. The case studies of drugstore franchise networks in African countries provide initial lessons about the potential and challenges of this approach, but more work is needed to understand how it might be applied to nutrient-rich foods. The advantage of franchises is that they create a vested interest for owners to ensure that franchisee businesses use good practices and

[44] Strong market institutions tend to emerge when businesses are concentrated around common infrastructure and activities, and where there are incentives to manage collective action problems.
[45] Proxy factors used included how readily infants ate the food, their alertness and behaviour after feeding and their growth over time (Pelto and Armar-Klemesu 2011).

good-quality products. These schemes also shift responsibility for improving businesses' capacity and monitoring performance and the sanctioning of non-compliance from public or civil society institutions to the private franchise owner. Yet to be commercially viable, a franchise needs to be able to motivate franchisees to act in ways that ensure commercial returns for the franchise owner. For example, they must motivate franchise retailers to sell only products provided by the franchise owner and not to use generic wholesales. Franchising is thus a particularly intensive type of market intervention; it requires substantial up-front investment and, even under the best circumstances, takes years to become commercially viable. The drugstore franchises reviewed in this report faced a fundamental challenge: generating enough revenues to cover the costs of monitoring and enforcement. In these cases, this was unachievable in rural areas. Yet, in contrast to drugstores, franchising of food products might be a simpler task. For example, a potential franchise system could target retailers of complementary food, and introduce fortified products by training them and supplying them with pre-packaged micronutrient 'sprinkles' (see Anim-Somuah *et al*. 2013a). Case-specific evaluations would be needed to assess the viability of these models. What is clear is that franchises are better suited to supplying urban areas, and appropriate for serving middle-income groups rather than the poor, since they depend on creating a premium brand and recovering additional costs through higher prices.

6.2.4 Building governance capacity in food systems

Training schemes, awareness campaigns and simplified technologies can go some way to improving market performance; yet there are limits to what can be achieved when these are provided through short-term interventions. Achieving sustainability ultimately will require more effective and consistent market governance. Reviews of medicine seller interventions highlighted that – at a minimum – ongoing follow-up is needed to sustain behaviour changes (Smith *et al*. 2009). This requires the presence of a network of institutions that collectively provide the policy framework, ongoing services to businesses and monitoring at national and local levels. Given the public good nature of nutrition, the role of coordinating these actions is best suited to public agencies with an appropriate mandate. In the health sector, researchers have called for informal sector interventions to be led by a government agency and implemented (and evaluated) at a large scale (Goodman *et al*. 2007). As discussed, pursuing a facilitative – rather than exclusionary – policy approach and working with existing institutions could expand the influence of current policies. Yet given the enormous capacity gap faced by agencies, building capacity for governance in informal markets will be a long-term process requiring sustained investment and institutional reforms.

Ultimately, deeper and more comprehensive market governance depends on structural changes in economies that create an environment conducive to formalisation among businesses (Porta and Schleifer 2014). As emphasised in the introduction (Section 1), the barriers to formalisation are formidable, and formalisation is proceeding very slowly – if at all – in the food sectors in SSA. Yet greater formalisation ultimately increases governments' ability to monitor and govern business activity and offers businesses access to services, finance and infrastructure. Even though these changes will not occur in the short term, interventions targeting informal businesses can actually complement strategic policies aiming to promote formalisation. Training programmes, for example, can provide a platform for improving dialogue between small businesses and government agencies; this was one of the roles played by actors supporting informal milk traders in Kenya. Meanwhile, support to existing business institutions can strengthen their capacities to govern their members' behaviours and strengthen their ability to engage with policy processes. Conversely, progress on food safety and nutrition outcomes could help address governments' scepticism regarding interactions with informal businesses, itself a barrier to formalisation (Grace and Omore 2007). Interventions targeting informal businesses could thus strategically aim to provide modest improvements in outcomes in the short term, while helping to strengthen the conditions for market governance in the longer term. This means that the design of policies and programmes focused on nutrition must also harmonise with a longer-term vision for

improving market governance, which is ultimately the responsibility of national and local government. Clearly, substantial questions remain on the modalities of potential policy and programmes targeting nutrition in the informal sector. Yet even as exploratory interventions and research address the evidence gaps, policy actors can take action in the short term that will improve nutrition in the informal sector. These policy recommendations are summarised in the next and final section of the report.

6.3 Policy messages

This report has emphasised that there has been relatively little experience of working with the informal food sector in order to improve nutrition. The report has drawn key lessons from other areas of policy where there is a larger body of experience with the informal sector. This concluding section identifies important priorities and recommends actions for policy actors, including government agencies, elected officials, donor agencies, civil society organisations and social impact-oriented businesses.

1. **Ignoring the informal sector will inhibit nutrition policy.** The informal sector is the major source of food for the majority of middle- and low-income people in developing countries, and this situation will persist for the next several decades. It provides a key channel for reaching the populations most affected by undernutrition. Furthermore, formal and informal businesses operate in the same markets, and the performance of each is linked. Ignoring the informal sector can undermine programme outcomes and inhibit action by formal sector companies.
2. **A more facilitative approach to the informal sector can yield nutritional benefits.** Simply reducing punitive crackdowns on informal businesses and simplifying business registration requirements may contribute to better nutritional performance, by encouraging small businesses to ‘come out of the shadows’, giving them better access to services and incentivising them to improve product quality. A more facilitative regulatory environment will also make it easier for training programmes and other efforts promoting nutrition-sensitive actions by small business. Creating this environment will require demonstrating to policymakers the social value of informal businesses in order to overcome policy biases against the informal sector. Since many of the relevant policies are outside the food and nutrition sector, this requires buy-in and coordination across multiple sectoral agencies.
3. **Use ‘light-touch’ interventions to disseminate good practices.** Projects found that programmes that identified simple technologies and provided training to small businesses could improve performance (lower contamination levels, better drug prescriptions) at low cost. Nutrition-relevant information is more likely to be of interest when accompanied by general business management skills to improve businesses’ efficiency and public standing. Participatory approaches that involve businesses directly can be an efficient way to identify the key constraints and solutions, and can build trust and motivate behaviour change. While ‘light-touch’ interventions are not suitable for achieving technically ‘perfect’ solutions, they should not be dismissed, since they have potential to generate moderate improvements across large numbers of businesses and consumers.
4. **Identify ‘low-hanging fruit’ opportunities.** Identify contexts (specific products, locations and/or organisations) where interventions will be simplest to carry out and most likely to yield substantial impacts. The criteria for identifying these opportunities could include: the existence of functioning informal market institutions such as professional associations, existing consumer knowledge about the healthfulness of a particular food, easy-to-identify traits distinguishing a food from less-nutritious alternatives, and the existence of functioning informal value chains for the product.

5. **Analyse social drivers of business behaviour.** Factors not directly related to short-term profit can be important motivations for businesses to adopt new behaviours, including professional reputation, social contribution and gender-related factors. Baseline studies should investigate these drivers and monitor changes over the course of an intervention.
6. **Work with community institutions and informal business organisations.** This can reduce the transaction costs of reaching small businesses. These institutions can extend the reach of programme activities and may be able to encourage or pressure businesses to adopt new behaviours. Affiliation with development programmes may help these institutions to enhance their legitimacy. However, informal institutions have limited capacity; they are unlikely to be able to play the role of monitoring and enforcement.
7. **Maintain investments over several years to embed changes.** Although training can generate rapid changes in behaviour, it takes several years for new practices and structures to become embedded in the ways businesses operate. Follow-up can help to embed new behaviours, even in the absence of formal monitoring or compliance checks.
8. **Build capacity of national, regional and local public agencies.** Ultimately, short-term projects cannot ensure sustainable impacts. There is a need for ongoing training and monitoring, which should be led by national or local public agencies, working with appropriate private sector and civil society organisations. Enabling the public sector to play an appropriate role – and ultimately contribute to wider processes of business upgrading and formalisation – requires substantial investments to build institutional capacity and encourage a 'facilitative approach' towards the informal sector.

Policy actors can play an important role in creating a context where informal food markets and businesses contribute to better nutrition. They can also pursue policies and programmes in a way that strengthens evidence and learning about which approaches are most effective. In the short term, informal markets will remain a challenging environment for policymaking and programming. By definition, there are few data on activities, there is a strong bias in policymaking and informal businesses are wary of contact with authorities. Food and nutrition policies and programmes can respond by strengthening the evidence base, both regarding how interventions can influence business behaviour in informal markets and simply by systematically documenting where households source nutritious foods. There remains a great deal to learn about effective policies to improve nutritional quality in informal markets. Yet developing these policies is centrally important to improving the nutrition-sensitivity of food systems; examples from other sectors show that taking a facilitative approach can deliver significant improvements. Nutrition policy actors should therefore invest in programmes and research in this area.

Annex Selection criteria for case studies

The following criteria were used to select the case studies to be included in this report:

1. **Aiming to work with and alter the behaviours of informal businesses:** Interventions were excluded if they sought only to remove informal businesses from the market or to convert them into distributors of centrally produced products without aiming to substantially influence their behaviours in ways that improve development outcomes.
2. **Adequate documentation of project activities and actors:** Case studies needed to include sufficient evidence about what activities were undertaken and by whom in order to assess *how* any documented impacts were achieved.
3. **Evidence of project impacts:** Case studies needed to include some description or measurement of impacts in terms of businesses' behaviours, product quality and/or development outcomes. This criterion focused on the detail of information provided (whether qualitative or quantitative) rather than the specific methodology used. Intervention/evaluation design (experimental, pre-/post-, etc) were not the basis for inclusion or exclusion.
4. **Information on context and supportive conditions:** The case study needed to provide sufficient information about the context of the intervention (market conditions, private sector actors, institutions and governance) to provide an indication of how conditions beyond immediate project activities supported or inhibited the observed outcomes. The majority of studies provided rather limited accounts of context and contributing conditions.

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Institute of Development Studies

Brighton BN1 9RE

T +44 (0)1273 606261
F +44 (0)1273 621202
E ids@ids.ac.uk
www.ids.ac.uk

UKaid
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