

# Feed the Future Innovation Lab for Food Security Policy

## Policy Research Brief on Synthesis Report III

October 2019

### Rural and Agrifood Systems in Transforming Economies in Africa and Asia

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#### Introduction

A common set of drivers is generating broadly similar patterns of agrifood system transformation across the developing world and generating a rapidly changing mix of risks and rewards for farmers, entrepreneurs, consumers, and policy makers. There is much good news in these developments. Yet smallholder farmers and small- and medium enterprises need to learn new skills and behaviors if they are to prosper, consumers need new knowledge and understanding to make choices that result in safe and healthy diets, and policy makers need to decide how to deal with big new challenges even as old ones continue to demand their attention.

The Food Security Policy (FSP) Innovation Lab conducted two streams of research organized around transforming agrifood systems in Africa and Asia. The “upstream team” focused on issues of structural change and transformation at farm level, and moved downstream into selected assessments of the impacts of these changes on the trading sector and on employment opportunities beyond the farm. The “downstream team” started with a focus on diet change in Africa and Asia, moved upstream into implications for agribusiness small-medium-enterprise (SME) growth and behavior in the midstream, and considered also implications for nutrition. Though starting at different points, these two teams converged FSP on a highly complementary and largely consistent “story” about the promises and challenges facing smallholder farmers, small entrepreneurs, and consumers in this rapidly changing environment. This report tells that story, and lays out a policy and programmatic agenda, based on what we have learned.

#### Drivers of change

The changes unfolding with such rapid pace in agrifood systems - and the policies that can be effective in promoting the welfare of small farmers, entrepreneurs and consumers - need to be understood in the context of the structural and rural transformation of economies. Rural transformation is best thought of as the manifestation in rural areas of the

economy’s structural transformation. This structural (and rural) transformation starts with some combination of factors that raises productivity and incomes. These factors can vary over countries and time but always include conducive public policy and public investment that facilitates productive private investment. In the upstream, as farming has become more profitable in response to a period of high world food prices and policy reforms, more capital is flowing into farming, and input, output and land markets are developing. This has induced the growth of medium-scale farms, raised agricultural surplus production, and motivated stronger downstream response to these farm production gains. In the downstream as incomes rise, consumer demand moves away from food, in a relative sense, towards other goods and services. Within food expenditure, demand moves away from starchy staples towards perishable products and processed food.

This change in the structure of demand drives two changes in employment. First, labor follows demand off the farm and into a wide range of non-farm activities, many still linked to farming and based in rural space. This *sectoral shift* of labor allows rural areas to become more productive and diversified. As incomes rise and markets expand, more organized firms emerge that are capable of hiring people, putting them to work in combination with technology, and increasing productivity. The emergence of these more formal and larger firms drives the second kind of shift in labor – a *functional shift* from self-employment to wage employment. This *employment transformation* has historically been a fundamental characteristic of structural and rural transformation. In a conducive policy environment with strong public and private investment, all these dynamics contribute to continued rapid rises in productivity and incomes that further speed these transformations.

It is helpful to think of these transformations proceeding in stages, from a traditional stage through a transitional stage and finally to a modern stage, each showing particular structural and behavioral characteristics (Reardon et al. 2012). This transformation can be seen at one place over time, for example in a rural area near a major city in a poor



country as that country's income rises and the city grows and expands. It can also be seen at one time over different places, for example in a maize value chain serving a small rural town compared to one serving high income areas of the major city. This means that the predominant stage of transformation in a country coexists with other stages.

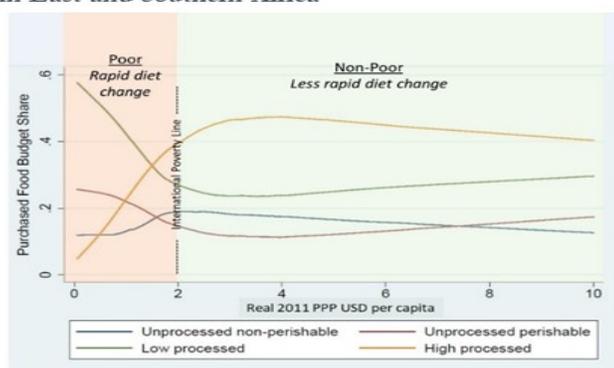
We place most of Sub-Saharan Africa, South Asia, and portions of Southeast Asia in the transitional stage, with traditional structures at farm- and post-farm levels having to adapt to great forces of change, and modern elements such as larger-scale farming and modern retail beginning to emerge. This is a boom time for off-farm employment in the agrifood system; employment on the farm, however, though declining in relative terms, continues to exceed that in post-farm segments of the agrifood system.

## Opportunities and challenges

### *Changing diets bring great benefits, and new and serious challenges:*

Income growth, facilitated by the drivers discussed above, is combining with urbanization and globalization to transform diets across the developing world in similar directions. Increased rural population density is also contributing, leading to increasingly urban characteristics in rural consumption. The change is unfolding broadly across and within countries, and is penetrating deeply into the income distribution, driving rapid change among households that are still below the international poverty line (Figure 1). This means that enormous pressure is being brought to bear on food systems to respond to these dynamics now, not at some point in the future.

*Figure 1. Diet change across the income distribution in East and Southern Africa*



Notes: Definition of each processing level as defined in Tschirley et al., 2015. Perishable and non-perishable categories of Low processed High processed categories were combined into Low and High processed. All shares sum to 100%. Total expenditure is 2011 real purchasing power parity USD per capita, per World Bank. Countries included are Malawi, Mozambique, Zambia, Tanzania, and Uganda.

Diets are changing in four ways. First, they are becoming more *purchased*. For example, Tschirley et al. (2015) found that 40% to 50% of the value of all food consumed by rural households in East and Southern Africa was purchased, not produced on their own farms. In rural Nigeria, this share is around 70%, and in Bangladesh it reaches 80%

(Reardon, et al, 2018). Second, diets are becoming more *perishable* with animal foods and fresh produce now making up over half of all consumption in Africa and Asia.

Third, diets are becoming more processed. In early transitional systems, this processing is simple, for example maize grain milled and sold loose as meal out of large bags in traditional markets. This is a change in how a traditional final product is acquired, not a change in diet *per se*. It saves time and hard labor for women. As transformation proceeds, however, processing comes to involve multiple food ingredients (e.g., basic packaged bread with no preservatives), food additives (that same bread with corn syrup, preservatives, and added vitamins), and often chemical processing to ensure homogenization or agglomeration for attractiveness to consumers. These foods are entirely distinct from traditional staples and have profound implications for diets and health. Fourth, foods are becoming more prepared and consumed away from home. This ranges from traditional food preparation in open-air markets to fast food outlets and high end sit-down restaurants.

This diet change brings two broad implications. One is dramatic growth in agribusiness opportunities (addressed in the next section). The second is a rapidly changing mix of nutritional challenges. The early stage of transformation bring improvements in nutrition. From 1976 to 2016, the prevalence of underweight children declined sharply in developing countries for both boys and girls (Kadiyala, et. al., 2018). However, these changes in diet are now driving rapid increases in overweight and obesity and associated non-communicable diseases, as changes in the food environment (heavy promotion of “junk” foods and sugar-sweetened beverages, increased ease of access to processed foods in general) promote unhealthy dietary behaviors. At the same time, micro-nutrient deficiencies persist. As a result, nearly all developing countries now face escalating levels of diet-related chronic conditions such as cardiovascular disease and diabetes even as they struggle to eliminate problems of undernutrition (Popkin 2017).

### *Change in structure and behavior in the midstream and downstream generate benefits while creating new concerns:*

Supply chain configurations change in three ways during transformation. First, they lengthen spatially and temporally, allowing food to be sourced from more distant areas, and stored longer. Second, rural-rural supply chains emerge and become more dense and longer, due to rising reliance on markets in rural areas. Third, urban-rural chains emerge to distribute locally produced and imported foods to rural towns and villages.

Consumers see three main benefits from these changes. First, seasonality of food supply declines, as food is sourced from broader geographic areas including imports. Second, consumers see lower real prices as average scale of operation of firms at various levels in the system is rising and driving own unit costs. Third, the diversity and convenience of foods increase greatly, as firms experiment with products to meet consumer demand and generate a profit. Entrepreneurs benefit from rapid growth in demand for value added products, driving a huge increase in the number of micro-, small-, and medium-size enterprise in logistics, processing, and packaging and distribution. Farmers benefit from a general improvement in market access due to improved public infrastructure and private investment in input supply and in output trading at scale that reduces costs to farmers.

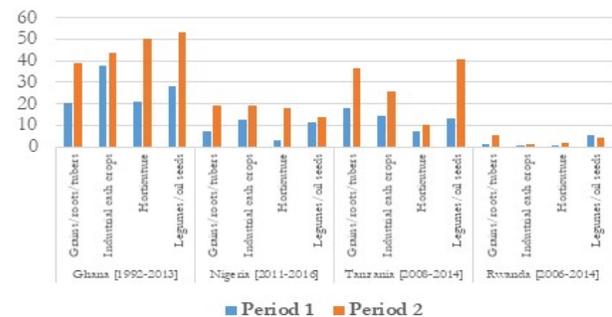
These changes also bring new challenges beyond the already-discussed nutritional concerns. First, food safety becomes a much greater concern. On the supply-side, the lengthening of supply chains typically precedes by a long time meaningful improvements in water and sanitation in public marketing infrastructure, or in regulatory capacity to deal with these new challenges. On the demand-side, consumers have more income and education and are thus more likely to focus on food safety than when both were much lower. A second concern relates to the rate of consolidation at different levels of the system, since larger firms employ much less labor per unit output. Thus, a too-rapid rate of consolidation will decrease the employment contribution by the agrifood system.

*Farm structure change poses big challenges for smallholder farmers but also fuels technical change and productivity growth:* Policy change, urbanization, growing incomes, and continuing effects of the commodity price surge of 2007/08, have made farming more commercially attractive in Africa. At the same time, the record on investor-owned large farms in Africa is poor. The result has been a dramatic surge of locally-owned medium-scale farms, defined as farms of 5-100 ha. Nearly all these farmers are local, most are urban-based, and together their investments far exceed those by more publicized foreign investors. This investment appears to be most common in countries with abundant land, and most evidence suggests grains and oilseeds are the major focuses for these farmers (Figure 2).

Policy reform, including the rise of land markets, has facilitated the emergence of this group of farmers. Key reforms in the 1990s were the removal of restrictions on private movement of food across district borders and the related demise of government grain marketing parastatals. The effects of these reforms exploded after world food prices skyrocketed, enabling thousands of small, medium and large private farms to respond to profitable incentives.

We identify three channels through which these farms are likely to bring new sources of capital and know-how to African agriculture. First, this sector helps attract increased large-scale investment in grain wholesaling, which can greatly reduce marketing costs in the system. Second, this same investment may improve input- and output market access for surrounding smallholder farmers. Third, to the extent that these farmers spend in the local economy, they stimulate off-farm employment for rural people formerly dependent on subsistence farming.

*Figure 2. Medium-scale farms share of national value marketed crop output*



## Policy responses

Our policy discussion focuses on transitional stage agrifood systems and emphasizes four overarching points. First, no policy or program will fundamentally alter the transformations taking place, but they can nudge the changes in more inclusive and healthy directions. This amounts to a socially informed business approach that “goes with the flow” while maximizing positive effects and managing negative ones. Second, SMEs and smallholder farmers are natural partners. Though each will decline over time, a gradual rather than abrupt transition is in the interests of both and is the only approach conducive to inclusive transformation. Third, the foundations of any effective approach are policy and infrastructure. Getting these right is the only way to ensure a payoff to other, more targeted investments. Finally, helping those on the margin who *might* be able to prosper to actually do so, and protecting those who are unable to prosper, requires targeting different elements from a portfolio of approaches to different kinds of people.

**Infrastructure:** First, prioritize secondary cities and towns. These hold large shares (around 60%) of the urban population, and are more accessible to rural residents than large metropolises. They have little infrastructure and so provide an opportunity to “get it right” from the beginning. Second, improve urban marketing infrastructure, in particular wholesale markets, paired with new ownership and management models, to facilitate more efficient and equitable urban access by farmers.

**Transparent and predictable policy:** The fundamental need is for transparent and predictable policies, and greater commitment to more open regional trade. Streamline procedures for registering businesses and accessing public permits and services. Land law needs to be transparent while paying attention to smallholders needs. Public standards for food safety and quality need to be clear and transparently enforced. Regulation on agricultural inputs need to be based science-based and uniformly enforced. Across the board, regulatory approaches need to recognize the continuing informality of much economic activity and facilitate improved performance in informal systems, not punitive regulations. One potentially productive approach is to establish softer minimum standards while putting in place incentives and support to meet higher standards.

**Targeted assistance at farm level:** The policy issue is how to move from input subsidy programs being the cornerstone of agricultural development to a program of broad sustainable productivity growth. This will include raising investment in agronomic research and extension to so farmers can use fertilizer more efficiently; reconsidering targeting guidelines to achieve more equitable development impacts; and greater political will for ensuring that the subsidies go to the intended beneficiaries.

Targeting programmatic assistance at farm level involves a spatial dimension combined with an ability to infer capacity at household level. Data tools are increasingly available to do this. Because classification is never perfect, it will often be useful to structure programmatic assistance to require some level of financial or in-kind buy-in from farmers as a condition of participation. Farmers viewed as commercialized need two kinds of assistance: (1) to strengthen their ability to engage with private markets; and (2) to expand productivity and scale of operation through intensification or extensification, to drive down costs of operation. Smallholders with potential to commercialize need the same thing, perhaps more intensively and with a modest and time-limited subsidy. Smallholders trapped in unsustainable and low productivity farming, with minimal off-farm engagement, require safety nets to ensure their food security and second-generation escape from farming.

**Targeted assistance for SMEs:** Little is known about the effectiveness of programs for direct provision of micro-

and small-scale credit and of business development services to MSMEs. The risk of unproductive public investment is thus high, leading to two recommendations. First, access to credit by SMEs can be improved by collateral registries and secured-transaction laws that enable banks to lend to small entrepreneurs using movable assets as collateral. Tanzania is currently considering such legislation. Second, targeting is as important for SMEs as it is for smallholder farmers. It can use the same spatial filters recommended for farmers, combined with simple measures of size and capacity for growth.

**Policy focused on consumers:** For consumers, stunting and underweight are reduced by inclusive economic growth, and by programmatic approaches that are broadly understood. The challenge is to maintain economic growth together with programmatic commitment to drive these problems out of existence. Much less is known about how to stem rising overweight and obesity. This issue needs increasing applied research, with an emphasis on adequately describing rapidly changing food environments, linking them to consumer food behavior, and testing approaches to modifying that behavior.

*This Brief is based on the Innovational Lab for Food Security **Policy Synthesis Report III** by the same authors titled "Rural and Agrifood Systems in Transforming Economies in Africa and Asia."*

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*This research is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the Feed the Future initiative. The contents are the responsibility of authors and do not necessarily reflect the views of USAID or the U.S. Government*

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Published by the Department of Agricultural, Food, and Resource Economics, Michigan State University, Justin S. Morrill Hall of Agriculture, 446 West Circle Dr., Room 202, East Lansing, Michigan 48824