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International Best Practice in Food Policy: Reflections on Food Policy Analysis[1]

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It has been more than 25 years since *Food Policy Analysis* (Timmer et al. 1983) was published, and more than 30 years since the initial outline for the book was circulated among the authors. It is fair to say that the volume has been very influential in the way food policy issues have been looked at, and it remains in use as a textbook for a number of university courses[2]. Its academic success is a bit surprising because the target audience was not primarily university faculty (for whom the book seemed too simplistic in methodology and too anecdotal in presentation). Instead, it was mainly aimed at practitioners, an ill-defined group of analysts in need of an understanding of how a complicated and interconnected food system actually works. Training these practitioners was the main mission of the book.

The early drafts of *Food Policy Analysis* (henceforth FPA) were stimulated by the attention to high food prices following the world food crisis in 1973-74, and the fears of a repeat in 1979-80. But by the fourth full draft, in 1982, it became apparent that surpluses were returning to world food markets. A volume predicated on a world running out of food would have been out of date before the ink was dry, and so a full-scale revamping of the analytical messages was needed. The new theme, which has stood the test of a quarter century of market fluctuations, was the need for flexibility to cope with market instability.

Such flexibility is not a natural feature of domestic policymaking in the food sector or elsewhere, and providing the analytical tools for understanding how to create flexible responses both to high- and low-price environments turned out to be a real challenge. But the approach remains relevant to this day, hence, the continued usefulness of an analytical guidebook that is a quarter century old.

THE BASIC MESSAGE

The primary goal of FPA was ambitious: rapid and sustained poverty reduction. At its drafting stage, there was not even an agreement in the development profession that such a goal was feasible. Paul Streeten, who published *First Things First: Meeting Basic Human Needs* in

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[1] An early draft of this paper was presented at the Sixth International Conference of the Asian Society of Agricultural Economists on the theme, "The Asian Economic Renaissance: What's in It for Agriculture," held in Manila, Philippines, 28-30 August 2008.

[2] Although long out of print, the volume remains available online at the following Stanford University website: http://www.stanford.edu/group/FRI/indonesia/documents/foodpolicy/fronttoc.fm.html.

1982, eloquently argued that rapid growth was not possible and that development strategy needed to focus on providing basic needs to the poor. FPA's focus on more rapid economic growth and the policies to enhance efficiency in order to bring it about was controversial for a volume that took poverty seriously.

But FPA argued that growth was not enough. It espoused four basic food policy objectives, all of which were important:

1. Faster economic growth (the "efficiency" objective)
2. More equal distribution of income from that growth (the "welfare" objective)
3. A guaranteed nutritional floor for the poor (the "safety net" objective)
4. Secure availability and stable prices in food markets (the "food security" objective)

Clearly, there can be trade-offs (and overlaps) among these objectives, and substantial analysis of a country's food system was necessary to understand, even just roughly, the magnitudes of the trade-offs. The central organizing theme of the analysis was the "food price dilemma," an explicit recognition that a single market-clearing food price could not simultaneously satisfy all four objectives. Additional policy instruments were needed, and all must operate compatibly with market prices. If readers came away with only one lesson from reading FPA, it was the centrality of food prices—and the signals they sent to farmers, traders, consumers, and finance ministers.

The behavior of these decision-making agents dictated market outcomes, but also responded to those market outcomes. The "macro" food system that food policy analysts needed to understand encompassed micro behavior on the farm and in the household; market-level behavior by traders, processors, and retailers; and macroeconomic responses by policymakers. FPA's essential message was that such understanding, in most circumstances, could not come from complicated models that tried to capture econometrically all the behavioral and market relationships. Instead, the understanding needed to come from a simpler "vision" of how the food system operated. This vision was partly created by the framework of and analytical discussion in FPA itself and, more importantly, from the data and simple analysis that practitioners were urged to generate.

With 25 years of hindsight, it is easy to see several themes that received little attention in FPA but which would require extensive treatment today. Gender played a minor role in the analysis, reflecting the dominance of the "unitary household" model of farm and household decision-making at the time (a model that still has considerable relevance, by the way). Further treatment of intra-household decision-making, especially with respect to nutrient intake and schooling decisions, is now possible. A "behavioral" perspective would add power to efforts to understand formation of expectations, attitudes toward risk, as well as participation of farmers and households in financial markets. Neither "environment" nor "sustainable" appears in the index, much less the problems looming from climate change. All would need to be incorporated into the analysis now.

The analysis virtually was focused on national policies and domestic markets. The international linkages to these markets were stressed and analyzed, but nearly all food policy interventions are designed and implemented by domestic actors. There are no international "food policymakers," unless you count individuals such as Bill Gates and Bob Zoellick, who have money and speeches to give, but not policy levers to pull. The food crisis of 2008 has seen a renewal of this domestic policy focus, despite the arguably larger role now played by global integration of factor and commodity markets.

THE CHANGING GLOBAL ENVIRONMENT

The international context for domestic food policy decision-making has certainly changed substantially since FPA was drafted in the early 1980s. Five basic trends stand out:

1. The last quarter century has seen surprisingly rapid economic growth, especially in Asia, with hundreds of millions of people pulled out of poverty. The strong connection between inclusive economic growth, especially in rural areas, and rapid reduction of poverty was simply not apparent in the empirical record in the early 1980s. The East Asian Miracle (World Bank 1993) did not appear for another decade. This rapid growth validated the central theme of FPA, which was the unsustainability of poverty reduction efforts without higher economic productivity of unskilled, especially rural, labor.
2. A communications revolution at both the household and international levels has radically reduced transactions costs and increased access to knowledge. Again, the centrality in FPA of markets and price formation to understanding food policy design and implementation received a boost as marketing margins narrowed under improved and more informed competition. Consumers and farmers both benefited from more competitive local food markets.
3. Global financial markets became interested in "emerging economies." Remember, the early 1980s was an era of fixed exchange rates, tight controls on the flow of foreign capital, and virtually no financial intermediation beyond state banks. At first, the influx of foreign capital was welcomed as a sign of confidence, but except for foreign direct investment in "real" assets such as factories and real estate, the global financial interest in emerging economies was a two-edged sword. A rapid influx could cause currency appreciation and a loss of competitiveness; its rapid exit when the economy started to decline caused a crisis in local financial markets. Global financial integration came with very poorly understood risks.
4. The rapid emergence in the 1990s of China and India as global growth engines meant a gradual shift in the drivers of demand for commodities and natural resources. Advanced economies have become more knowledge-driven and less dependent on energy, metals, and other basic commodities—including food commodities—to fuel their economic growth. The price depression for nearly all commodities in the 1980s reinforced the view that the future depended on value added from skills and knowledge, not from exploitation of natural resources. But industrialization, especially as practiced by China and India, is a very intensive user of natural resources. By the turn of the millennium, it was increasingly clear that the growth path of developing countries was the primary driver of commodity prices, starting with energy prices but quickly extending to food prices.
5. High energy prices have turned out to be a "game changer" for agriculture and the food economy. When oil prices became high enough to justify using sugar, maize, or vegetable oils to produce gasoline or diesel substitutes, agricultural commodity prices became directly linked to oil prices. The concern to reduce emissions of greenhouse gases provided ample motivation for the US and European legislatures to mandate the use of domestic food crops to produce liquid fuels. The combination of legislative mandates, which provide essential risk coverage to investors in biofuel facilities, and high oil prices, which provide market-based incentives, led to a new set of linkages between agriculture and the energy sector. There has long been a link on the supply side, as energy prices affected the costs of fertilizer and fuel for tractors and trucks as well as the economics of global supply chains. The

new link is through the demand side. Higher prices for energy translate directly into greater demand for food commodities to convert into liquid fuels.

WHAT SHOULD FOOD POLICY ANALYSTS DO NOW?

Despite these changes in the international context, three basic analytical messages from FPA remain intact: the need for "incentive" food prices to stimulate food production and the rural economy, the use of border prices to measure long-run opportunity costs of production and consumption, and the integration of macro and trade policy into the food policy debate.

1. The need for price incentives to stimulate production is one of the main themes in FPA, and its importance is reflected by the fact that the chapter on food consumption and nutrition comes before the production chapter. Why? This material laid out the analytical underpinnings for the targeted consumer subsidies that would be needed to cope with higher food prices. Because of the overriding concern for poverty reduction in FPA, it argues that policy analysts must design these subsidy programs and be ready to implement them *before* the move to higher prices for farmers was initiated. At the time, the higher prices were seen as a policy choice, one that overcame the historical discrimination against agriculture seen in most countries' rural-urban terms of trade, as compared with border prices.

   The long-run decline in world food prices from the early 1980s to the mid-2000s gradually called this strategy into question. On one hand, the decline was welcome because it raised the real purchasing power of the poor. Since much of the decline was stimulated by the Green Revolution and sharply reduced costs of production for rice and wheat, the decline seemed "sustainable," at least in narrow economic terms. The low prices also speeded up the structural transformation, with a rapid exit of small farmers from the agricultural sector. This too was "sustainable" in countries with rapidly growing and labor-intensive export industries, as the labor was absorbed while real wages rose. Of course, countries *without* dynamic macro economies had the benefit of low food prices, but real wages stagnated and poverty rose.

   The problem was that low food prices in world markets also sent investment signals to governments, donors, and research institutions, encouraging them to walk away from the agricultural sector as a crucial source of productivity growth, food security, and poverty reduction. Reduced investments in agriculture and rural infrastructure throughout the 1980s and 1990s resulted in falling rates of productivity growth. Eventually, as students of cobweb cycles understand, growth in food production fell behind growth in food consumption, scarcity re-emerged, and market prices spiraled higher. The world food crisis in the late 2007 and early 2008 had its roots directly in this earlier neglect of agricultural investments. Markets were sending the wrong signals to public decision-makers, while private decision-makers had no recourse except to heed them.

   The urgent need to find efficient and effective mechanisms to implement food subsidies for the poor, the main point of the chapter on food consumption and nutrition in FPA, has become relevant 25 years later. There are more sophisticated approaches now, using conditional cash transfers, improved information technology for screening, and the realization that broader social safety nets might be just as effective as narrower food subsidies. But the food price dilemma has not gone away.

2. Border prices for tradable commodities are the standard measure of opportunity costs for long-run decisions on production and consumption. Although this was beginning to be accepted in principle in the early 1980s, the prevalence of fixed exchange rates and relatively opaque government-to-government trade deals for important food commodities meant that much of the analysis was devoted to figuring out exactly what the long-run border price actually was.

   There were two problems: knowing what exchange rate to apply and knowing whether or not short-run price quotations in world markets reflected longer-run opportunity costs. Much of the project appraisal literature from the late 1970s and early 1980s was devoted to determining the "shadow exchange rate" to be used to calculate effective border prices. Much of *Getting Prices Right* (Timmer 1986), a "price policy" follow-on to FPA, was devoted to understanding the relevant long-run price trends to use for making public sector investments and for managing domestic price policy interventions.

   The first problem has largely been solved, as most countries have adopted reasonably flexible exchange rates that permit the market to indicate the opportunity cost of foreign exchange. The same cannot be said for finding the appropriate long-run price signal in the short-run fluctuations still seen in world commodity markets. The concern for doing so, clearly articulated in FPA, remains a challenge to today's food policy analysts.

3. Perhaps the most revolutionary argument in FPA is its insistence that food policy analysis needs to incorporate macroeconomic and trade policy. The argument is not that the policy environment needed for a healthy food system should dictate overall macro and trade policy (although there are certainly some poor agrarian countries where that is likely to be true). The argument is the need for an informed dialogue between food policy analysts and macro policy analysts, with each understanding the stakes on the other side of the table.

   Experience over the past quarter century has shown the real benefits of this policy dialogue. First, the need for rapid growth in agricultural productivity, with substantial participation by small farmers where they are a significant part of the production structure, is increasingly recognized by macro policymakers as a key element in the overall development strategy. Finance ministers with their hands on fiscal policy and public investment allocations, central bankers with their hands on exchange rates and money supplies, and heads of planning agencies with their hands on strategic approaches and sectoral resource allocations understand now their own stakes in a healthy rural economy.

   In return, food and agricultural planners have increasingly understood that real wages in rural areas depend fundamentally on real wages in the urban economy. Real food prices for farmers and consumers are conditioned by the rate of inflation and by exchange rates. Investments in rural infrastructure require budget allocations. Trade policy has direct and indirect effects on rural incentives. The need for a "macro food policy" has never been clearer.

WHAT INTERNATIONAL REGIME WILL BE IN PLAY?

The components of this macro food policy will be conditioned, as never before, by the international context in which it is formulated. It is both exciting, and troubling, that this international context—the "global food price regime"—is in a greater state of flux, with more uncertainties, than at any time since FPA was drafted. Which regime will drive policy formation in the coming

quarter century? Will it be the historical path of structural transformation with falling food prices, leading to a "world without agriculture" (Timmer 2008)? Or will it be a new and uncertain path of rising real costs for food with a reversal of structural transformation (Timmer and Akkus 2008)? Management of food policy, and the outlook for sustained poverty reduction, will be radically different depending on which of these global price regimes plays out.

The historical pathway of structural transformation with falling food prices

Structural transformation involves four main features:

1. a falling share of agriculture in economic output and employment
2. a rising share of urban economic activity in industry and modern services
3. migration of rural workers to urban settings
4. a demographic transition in birth and death rates that always leads to a spurt in population growth before a new equilibrium is reached

These four dimensions of the historical pathway of structural transformation are experienced by all successful developing economies; diversity appears in the various approaches governments have tried to cope with the political pressures generated along that pathway. Finding efficient policy mechanisms that will keep the poor from falling off the pathway altogether has occupied the development profession for decades. Three key lessons can be gleaned:

First, structural transformation has been the main pathway out of poverty for all societies, and it depends on rising productivity in both the agricultural and non-agricultural sectors (and the two are connected).

Second, in the early stages, the process of structural transformation widens the gap between labor productivity in the agricultural and non-agricultural sector. This widening puts enormous pressure on rural societies to adjust and modernize. These pressures are then translated into visible and significant policy responses that alter agricultural prices. The agricultural surpluses generated in rich countries because of artificially high prices then cause artificially low prices in world markets and a consequent undervaluation of agriculture in poor countries. This undervaluation over the past several decades is a significant factor explaining the world food crisis in 2007-08.

Third, despite the decline in the relative importance of the agricultural sector, leading to a "world without agriculture" in rich societies, the process of economic growth and structural transformation requires major investments in the agricultural sector itself. This seeming paradox has complicated (and obfuscated) planning in developing countries as well as donor agencies seeking to speed economic growth and connect the poor to it.

The historical process of structural transformation might seem like a distant hope for the world's poor, who are mostly caught up in eking out a living day by day. On the other hand, governments can do many things to give them more immediate hope, such as keeping staple foods cheap and accessible, helping connect rural laborers to urban jobs, and augmenting educational and health services in rural areas. But for poverty-reducing initiatives to be feasible over long periods of time—to be "sustainable" as current development jargon would have it—the indispensable necessity is a growing economy that successfully integrates the rural with urban sectors, and stimulates higher productivity in both. That is, *the long-run success of poverty reduction hinges directly on a successful structural transformation*. The historical record is very clear on this path.

Coping with the distributional consequences of rapid transformation has turned out to be a

major challenge for policymakers over the past half century and the historical record illuminates what works and what does not. Trying to stop the structural transformation simply does not work: it certainly does not work for the poor. Investing in the capacity of the poor to benefit from change, however, does seem to work. Investments in human resources—especially investments in education and health—are the most promising pathways here. Such investment strategies can only be successful if the rest of the economy is doing well, and they typically require significant public sector resources and policy support to enhance rural productivity. These rural investment strategies depend on political processes that are themselves conditioned by the pressures generated by the structural transformation.

A "world without agriculture" would actually make life much easier for development agencies and for politicians in rich countries. "Getting agriculture moving" in poor countries is a complicated, long-run process that requires close, but changing, relationships between the public and private sectors. Donor agencies are not good at this. More problematic, the process of agricultural development requires good economic governance in the countries themselves if it is to work rapidly and efficiently. Aid donors cannot hope to contribute good governance themselves—and may well impede it.

The strong historical tendency toward a widening of income differences between rural and urban economies during the initial stages of the structural transformation is now extending much further into the development process. Consequently, with little prospect of reaching quickly the turning point, where farm and non-farm productivity and incomes begin to converge, many poor countries are turning to agricultural protection and farm subsidies sooner rather than later in their development process. The tendency of these actions to hurt the poor is then compounded, because there are so many more rural poor in these early stages.

Biofuels, rising food prices, and the potential to reverse the structural transformation

It is too soon to say whether or not the reversal of long-run downward trends in real prices of agricultural commodities—a reversal driven by demand for biofuels and possibly by the impact of climate change on agricultural productivity—will also reverse the steady movement of the turning point in the structural transformation to higher income levels. If so, the short-run impact on the poor is almost certain to be negative; but the higher real returns promised to commodity producers, without agricultural protection, could stimulate the broad array of rural investments needed to generate productivity increases in rural areas, raise real wages, and be the long-run pathway out of rural poverty.

Biofuels are not new. Although coal was known in China in pre-historic times and was traded in England as early as the 13th century, it was not used widely for industrial purposes until the 17th century. Until then, biofuels were virtually the only source of energy for human economic activities, and for many poor people they remain so today. But the widespread use of fossil fuels since the Industrial Revolution has provided a huge subsidy to these economic activities (because coal and later petroleum were so cheap), a subsidy that seems to be nearing an end.

What will be the role of biofuels going forward, and what will be the impact on agriculture? In the extreme, the demand for biofuels in rich countries to power their automobiles has the potential to raise the price of basic agricultural commodities to such a level that the entire structural transformation could be reversed. If so, the growing use of biofuels has two alternative futures: it could spell impoverishment for much of the world's population because of the resulting high food prices, or it could spell dynamism for rural economies and the eventual end of rural poverty. Which future turns out

to be the case depends fundamentally on the technology, economics, and politics of biofuel production.

The potential devastating effects of biofuels are easy to conceptualize. The income elasticity of demand for starchy staples (cereals and root crops for direct human consumption) is less than 0.2 on average, and falling with higher incomes—it is already negative in much of Asia. Adding in the indirect demand from grain-fed livestock products brings the average income elasticity to about 0.5, and this is holding steady in the face of rapid economic growth in India and China. The potential supply growth seems capable of managing this growth in demand.

But the demand for biofuels is almost insatiable in relation to the base of production of staple foods. The income elasticity of demand for liquid fuels for automobile and truck fleets, not to mention power generation, is greater than 1 in developing countries. The average for the world is rising as middle class consumers in China, India, and beyond seek to graduate from bicycles to motorbikes to automobiles. One simple calculation shows the dimension of the problem: if all the corn produced in the United States were used for ethanol to fuel automobiles, it would replace just 15 percent of current gasoline consumption in the US. Something has to give.

If this were a market-driven process, it is easy to see what will give. High grain prices will make ethanol production uneconomic, driving down the demand (and returns on investments in ethanol processing plants). Greater profitability of grain production will stimulate a supply response, although this may take several years if improved technologies are needed. Grain prices will reach a new equilibrium, with demand from the biofuel industry having only a modest impact.

This is not the scenario most analysts see. Instead, political mandates to expand biofuel production in many countries will continue to drive investments in processing facilities, and the need to keep these profitable in the face of high raw material prices will require large public subsidies. Rich countries will be able to afford these more easily than poor countries, so a combination of inelastic demand for fuel and a willingness to pay large subsidies will keep grain prices very high.

If this scenario plays out, what are the consequences to economic growth and poverty reductions in developing countries? Not surprisingly, the answer depends on the role of agriculture in individual countries, the pattern of commodity production, and the distribution of rural assets, especially land. It is certainly possible to see circumstances where small farmers respond to higher grain prices by increasing output and reaping higher incomes. These incomes might be spent in the local, rural non-farm economy, stimulating investments and raising wages for non-farm workers. In such environments, higher grain prices could stimulate an upward spiral of prosperity.

An alternative scenario seems more likely however, partly because small farmers have been under so much pressure in the past several decades. If only large farmers are able to reap the benefits of higher grain prices, and their profits do not stimulate a dynamic rural economy, a downward spiral can start for the poor. High food prices cut the poor's food intake, their children are sent to work instead of school, and an intergenerational poverty trap develops. If the poor are numerous enough, the entire economy is threatened, and the structural transformation comes to a halt. The share of agriculture in both employment and GDP starts to rise, and this reversal condemns future generations to lower living standards. There will be much more "structural" poverty, and countries determined to cope with it will find themselves supporting expensive and long-term safety nets for the poor.

A reversal of the structural transformation as the regular path to economic development and reduced poverty will be a historical event, countering the patterns generated by market forces

over the past several centuries. Such an event is likely to have stark political consequences, as populations do not face the sustained prospect of lower living standards with equanimity. It is possible, of course, that new technologies will come on-stream and lower energy costs across the board, thus allowing the biofuel dilemma to disappear quietly. But it looks like a rocky couple of decades before that happens.

REFLECTIONS ON INTERNATIONAL BEST PRACTICE IN FOOD POLICY FROM A BROADER PERSPECTIVE

As we step back from the details of how to do food policy analysis, several other questions arise: *who* will do the analysis and *where* will they be trained; *what* is the appropriate institutional base for food policy analysts; and *why* do this difficult analysis if "politics is in command"?

The human capital investment needed to train skilled food policy analysts is substantial and the educational institutions capable of providing the training are hard to find. A successful food policy analyst needs an unusual blend of technical skills, mostly economic, and a broad vision of how food systems interact and evolve over time. University Ph.D. programs have basically stopped doing this kind of training. Economics programs, for example, increasingly focus on microeconomic decision-making that needs to be understood through careful experimental design of the data needed for analysis. Some extraordinarily smart students have come out of these programs with field experience in rural settings, and their journal articles are technical gems. But it is rare for these students to be trained in the macroeconomics of growth and development, much less economic history. They have little intuition about how complex food systems function and change. Undergraduates seeking graduate programs to train them as food policy analysts have nowhere to go.

The failure of academic programs to provide coherent training in food policy analysis is partly due to the lack of clear career tracks for such analysts. Just where are the jobs? What institutional base provides the best opportunities for food policy analysts to do good work and be effective advocates of sound policies and programs? The historical record is quite fuzzy, as successful food policy units have functioned in planning agencies, food logistics agencies, trade and commerce ministries, ministries of health, even ministries of agriculture. But there is no clear set of lessons on which institutional base provides the best incentives for high-quality analysis that is effectively plugged into the policy process. Perhaps serendipity and leadership are the key variables in such success.

Finally, there is a set of questions that revolves around the political economy of food policy. When "politics is in command," which seems to be the normal state of affairs for most developing countries, how do efficiency issues stay on the agenda?

When "markets are in command," which seems to be the main policy advice from the donor community to poor countries, how do distributional and welfare issues stay on the agenda?

More broadly, how do we educate *policymakers* as well as analysts? In democratic societies it would seem to require educating citizens so that they could be informed voters.

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