WHAT WE NEED TO UNDERSTAND TO PREVENT FOOD RIOTS IN POOR COUNTRIES

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Context and Policy Problem

As urban populations have grown relative to rural populations, fewer people are growing the food they consume. So how will city-dwellers eat? This classic problem of political stability remains at the heart of most contemporary debates about food riots. When prices threaten urban consumers with the inability to purchase food, riots (often in urban marketplaces) become a real possibility. In 2007-2008, the price of food staples rose to near-record levels, leading to global protests. In 2011, the United Nations warned of a growing possibility of food riots in the Pacific Basin and beyond. Indeed, high and volatile prices for agricultural commodities have combined to make food riots an ever-present political and development issue for poor countries today.

To reduce the cost of food – and thus the risk of riots – governments of poor countries have been urged to adopt what might be described as an orthodox policy approach. At root, this orthodox approach focuses on making global markets even more efficient at producing and delivering food to urban consumers-at-risk. Yet this orthodox approach to alleviating the risk of food riots has created as many problems as it seeks to solve, actually increasing the risk of riots in some countries. Policies that have diverged from this orthodox model have fared no better. Heterodox attempts to subsidize agribusinesses and mandate production have done little to ameliorate the underlying tensions that contribute to food riots – and may have even exacerbated them. As such, this policy context brief outlines a different approach to resolving food-price

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crises: an *agrarian* approach based on the revival of small-scale farming oriented toward local and national markets.

The analysis presented in this paper is grounded in two countries – Guatemala and Bolivia – whose experiences are shared by many poorer nations in the Pacific Basin. Both Guatemala and Bolivia moved concertedly toward an orthodox model of agricultural policy during the 1990s and early 2000s – and both confronted the food price shocks of 2007-2012 with combinations of orthodox and more heterodox policies. Though anchored by these two countries, the policy lessons of this paper are general: neither orthodox nor heterodox policies are effectively reducing the risk of food riots. A new policy approach is desperately needed in the poor countries of the Pacific Basin.

Food Riots and Agriculture: The Orthodox Policy Prescription

Standard explanations of food riots stress the role of soaring commodity prices (both food staples and fuels). In this view, riots occur when individuals cannot afford the food they need to survive, due to some combination of increasing global demand, supply shortages, or prices of agricultural inputs. Consequently, orthodox policy recommendations focus on making global markets more efficient at producing and delivering food. When food is produced and delivered more efficiently, prices drop, and tensions among the hungry diminish.

Indeed, analysts over the past two decades have converged on a new conventional wisdom about preventing food riots. First and foremost, this orthodox approach maintains that "global food security depends on well-functioning global markets. Policymakers must ensure markets are not disrupted or distorted by trade restrictions." From this starting point, analysts have derived a standard set of policy prescriptions, including increasing transparency in global food markets, the development of "conditional, targeted safety nets," "research and development

around increasing yields," and "agricultural trade reforms (as envisaged in the Doha Agenda)." In short, these orthodox policy prescriptions understand food shortages and riots as primarily a problem of increasing global supply, of making global distribution more efficient, and of protecting the (presumably small) percentage of the global population who may still go hungry.

Central to this orthodox policy agenda have been the twin goals of agro-industrialization and trade liberalization. By pursuing these two goals, orthodox analysts argue, governments in poor countries can increase the efficiency of global agricultural markets, reduce the price of food for their citizens, and thus lesson the threat of food riots. Each of these two pillars of the orthodox approach merits brief explanation.

Industrialization. Since World War II, global models of agriculture have changed and changed quickly, as farmers have sought to increase their yields to meet the needs of growing populations. By adopting basic industrial principles – most importantly, economy of scale and technological innovation – farmers can feed more people off the same acre of land, at least in the short run. Yet such principles are much more easily adopted by large agribusinesses than small farmers. Agribusinesses can create economies of scale by standardizing and mechanizing production over vast acreages and can better afford expensive technological advances (like mega-tractors and bioengineered seeds). Consequently and intentionally, this agro-industrial development strategy has favored a growing consolidation of food production in larger agribusinesses. Indeed, both the Bolivian and Guatemalan governments actively supported just such an agro-industrial strategy in 1990s and 2000s: Bolivia pushed hard to develop a soybean industry, while Guatemala focused on agro-industrial production of fruits and vegetables.⁵

<u>Liberalization</u>. The crux of this argument is that barriers to agricultural trade raise the price of food for consumers.⁶ When a country's agricultural markets are opened to the globe, the

argument goes, local consumers will be able to buy food that has been grown wherever in the world it is cheapest to produce. Why should local consumers pay more for corn grown in their own country, when they can pay significantly less for corn grown abroad? Why should the supply of vegetables to local consumers be limited to those grown locally? Such logic can be especially compelling in poor countries, where significant portions of the populations experience malnutrition and hunger. Following this logic, agricultural markets in Bolivia and Guatemala have both undergone substantial liberalization over the past two decades.⁷

According to orthodox analysts, this combination of trade liberalization and agro-industrialization should reduce food prices and diminish the likelihood of food riots in poor countries like Guatemala and Bolivia. Yet all has not gone according to plan. To understand why, it is critical to examine how this new policy context changed how – and for whom – farmers produced food.

Before the Food-Price Crisis: Effects of Orthodox Agricultural Policy on Food Production

The orthodox policy prescription of agro-industrial production for liberalized global markets has reshaped farming in much of the developing world. One of the most important consequences of this transformation has been an increasing focus on the *export of staple foods* – grains, produce, vegetable oil – from poor countries like Bolivia and Guatemala. Of course, particular crops (e.g., coffee and bananas) have long been produced for global markets in these countries. Yet the rise of export-oriented production of Bolivian and Guatemalan agricultural *staples* was closely associated with the shift toward orthodox policy recommendations.

First and foremost, this is because the liberalization of global food markets allowed farmers to reorient their production toward world demand. As agricultural trade became increasingly liberalized, the market price for staples came to be determined globally. Local

growers thus sought to maximize their profits by selling their crops wherever they could fetch the highest price – which was not necessarily in Bolivia or Guatemala. At the same time, agroindustrialization enabled local farmers to produce staples at lower cost and in larger quantities. As these new agribusinesses took off, moreover, they were often able to expand their operations beyond growing staples – and into storing, transporting, and marketing those foods. By producing massive quantities of staple foods cheaply and entirely in-house, Bolivian and Guatemalan agribusinesses became more viable players in the global market for staple foods.

Consequently, locally grown staples were shipped abroad over the course of the 2000s. In Guatemala, corn exports grew more than 200% between 2001 and 2011. Exports of soy (vegetable) oil from Bolivia and fresh vegetables from Guatemala each grew 350% over the same period. And exports of Bolivian grains – including the locally important quinoa – grew nearly 1700% over the first decade of this century. The production of staples for export markets represented a major shift in Bolivia and Guatemala alike, a shift with important consequences for the risk of food riots.

Perverse Consequences of The Rise of Staple Exports

Under the orthodox model, of course, the export of food staples is a potentially desirable outcome. Food should be grown where it can be produced most inexpensively, in order to reduce global food prices (and thus reduce risk of food riots). If it is cheapest to grow grain in Guatemala and Bolivia, orthodox analysts argue, then Guatemala and Bolivia should become breadbaskets of the world. As it turns out, however, the rise of export-oriented staple production in Bolivia and Guatemala has had at least five perverse consequences, each of which has served to *increase* the risk of food riots in these countries where staple foods are being grown.

First, as staple production became more globally oriented, the needs of local consumers in Guatemala and Bolivia have become less important to local growers. The rational and profitable agribusiness has no incentive to sell quinoa in La Paz (or vegetables in Guatemala City) if their crops command a much higher price in New York (or in Mexico City). If the price of industrially produced quinoa exceeds the capacity of the Bolivian poor to pay, that is, the Bolivian poor will simply not be able to buy quinoa produced by export-oriented growers. When global prices for staples are high, the poor may thus find themselves unable to afford any staples at all – not even those being grown in the region where they live. ¹¹ This is a direct consequence of the reorientation of staple production toward global, rather than local and national, markets.

Second, as export-oriented agribusinesses have entered into staple production, many small farmers have stopped producing staple foods for local markets. This is because small farmers cannot produce staples as cheaply as industrialized agribusinesses. When these agribusinesses are selling staples domestically, small farmers are unable to match their prices. Given the volatility of global prices, moreover, would-be small farmers may be loath to reinvest in commercial agriculture when prices are high. Such investments are hugely risky given the possibility that crashing global prices could lead agribusinesses to dump their cheaply produced surpluses at home. These dynamics have led Bolivians and Guatemalans to leave agriculture altogether. While some remained in subsistence farming, producing staple foods for the household alone, 12 many others simply ceased to be farmers. Consequently, fewer Bolivians and Guatemalans are currently able or ready to expand staple production in the face of local shortages.

Third (and related), export-oriented staple production has contributed to the growth of underemployed urban populations. Indeed, the unprofitability of small farming compared to

agribusiness is a much under-cited cause of the growth of the urban informal sector in the Pacific Basin during the late twentieth century. As small farming became less viable, more peasants moved to the cities, where it was more difficult for them to produce their own food. In other words, the increase in "riot-prone urban consumers" in countries like Bolivia and Guatemala is in part *due* to the shift toward agribusiness in the countryside. Indeed it is remarkable that the classic storyline of peasants leaving rural areas to seek a "better life" in the city¹³ continues to retain so much analytic purchase, given the abysmal prospects for urban employment in cities like La Paz and Guatemala City.¹⁴

Fourth, illicit rural economies – often tied to the international narcotics market – have become one of the most viable economic options for people who remain in rural areas after small farming has collapsed. In Bolivia, the illicit production of *coca*, the plant from which cocaine is derived, became widespread in the late twentieth century. In Guatemala, rural drug trafficking networks have reemerged, transforming the countryside from a site of production into a hub of narcotics transportation. As these economies emerge, the incentives to return to small farming decline further. Farming in the midst of a drug-based economy incurs the very real risks of violence by the state and drug traffickers, as well as taxation by local drug trafficking organizations.

Fifth and finally, export-oriented staple production increases the risk of destructive farming practices, which can make small farming even less viable in future seasons. Global price booms create clear incentives to produce as much food as possible, as quickly as possible. These incentives lead to the adoption of even more intensive agricultural practices by local agroindustries, which often have the capacity to increase production rapidly.¹⁵ Such intensive production takes clear tolls on the land, including growing erosion, spreading chemical use, and

the declining quality of land for future production. These tolls are paid forward to future growers and growing seasons, increasing the comparative advantages of large agribusinesses capable of affording and using the technologies needed to sidestep such problems until the land is exhausted.

In short, the orthodox attempt to make agricultural production and delivery more efficient has led to a greater dependence on export-oriented agriculture for local supply, a decline in locally oriented production, a growth in potentially sustenance-less urban populations, and the rise of illicit and destructive rural economies. Yet as long as the price for global staples remained low, the consequences of these trends for the ability of poor Bolivians and Guatemalans to eat remained latent.

The Food-Price Crisis (2007-2012): The Failures of Orthodoxy and Heterodoxy

The 1990s and early 2000s were a period characterized by relatively stable global food prices. During this period, the orthodox policy framework seemed to be bearing real fruit. Then, in 2007-2008 and again in 2011-2012, food prices spiked sharply, due both to production shortfalls and the rising price of petroleum-based agricultural inputs. In response to this emerging crisis, the Bolivian and Guatemalan governments tried to increase local supply – and thus reduce local prices – through a combination of both orthodox and more heterodox policies. By reducing the cost of food to local consumers, these governments sought to alleviate the price pressures that threatened food riots. Some policies attempted to increase local supply immediately, while others sought to increase it in the very near future.

To increase local supply *immediately*, policies were adopted that sought to bring more of the food that had already been produced to local market. Following orthodox recommendations, both Bolivia and Guatemala lifted import tariffs on key staples, allowing foreign-produced food

to be sold more cheaply at home. In addition, Bolivia adopted the more heterodox policy of export limits, temporarily forcing export-oriented agribusinesses in Bolivia to sell their "surplus" production to Bolivian consumers. Predictably, both these policies did help to keep the local price of staples down when the risk of food riots was highest. Local markets were flooded with cheaper agro-industrial imports – both foreign- and domestic-produced – lowering prices to local consumers. In this sense, they were successful policies.¹⁷

Yet import liberalization and export limits also had a more pernicious effect: they made it more difficult for local small farmers to restart their own production for local markets during a time when high prices were making such an endeavor as plausible as it had been in years. As long as agribusinesses were exporting high-priced staples for consumption abroad (and foreign-produced staples remained subject to some tariffs), the price boom offered a potential new opportunity for small farmers to grow food for local markets. By inundating local markets with a flood of agro-industrial staples, however, state policy undermined potential boom-time returns to would-be small farmers, reducing their incentives to reenter the market. These policies thus served to hold back the potential growth in small farming that might have attended the price boom, effectively reinforcing the dominant position of agribusiness in future local food production in both countries – and deepening the attendant problems discussed above.

With a second set of even more heterodox policies, both the Bolivian and Guatemalan governments adopted policies that tried to increase local supply *in the near future* by increasing the quantity of staple food under production. For example, both countries seriously considered subsidizing or even mandating increased staple production for local markets by local farm businesses. ¹⁸ Both also subsidized agricultural inputs for farmers: the Guatemalan government

distributed fertilizer vouchers, ¹⁹ while the Bolivian government subsidized fuel, loans, and equipment for small farmers.

Although these policies all diverged from orthodoxy, they arguably both helped consolidate the position of existing agro-industrial firms and broadened the scope of agro-industrialization in both countries. For example, many of the Bolivian growers in a position to receive subsidies for growing more staples were either already or on the way to becoming industrialized. A similar conclusion might be drawn about the effects of the Guatemalan fertilizer policy: given its voucher structure, the program seemed to provide the largest benefits to those integrated agribusinesses that sold fertilizer. Even those heterodox policies intended to support small farmers – most notably, the Bolivian Agrarian Reform of 2011 – did so by providing them with loans for technological advances (i.e., chemical fertilizers and gas-powered farm equipment)²⁰ that would move them closer to an industrial model of agricultural production.

In short, most policy responses to the price crisis – orthodox and heterodox alike – tended to support the position of agro-industry in Guatemala and Bolivia, reinforcing a key component of the orthodox model that had contributed to the crisis in the first place. Directly and indirectly, both orthodox and heterodox policies have thus continued to undermine the potential for locally oriented production by small famers, done little to address the problems faced by sustenance-less urbanites, allowed illicit economies to remain robust, and depleted the land. In other words, policies adopted to alleviate the pressure of food prices in the short run have only deepened future problems – and the future risk of food riots – in both countries. After decades of an orthodox approach to agricultural policy – and half a decade of experimentation with more heterodox approaches – the risk of food riots remains disturbingly high. Other policy responses must be found.

Policy Options

Beyond Orthodoxy and Heterodoxy:

An Agrarian Approach to Reducing the Risk of Future Food Riots

The root of the food-price crisis, this paper has argued, can be found in the rise of export-oriented agribusiness at the expense of locally oriented famers – a development that has enjoyed significant support from the state in many nations. Contrary to orthodox predictions, this development has increased the risk of food riots in food-producing poor countries. Preventing future food riots and price shocks requires not only reversing this trend but also rolling back its perverse consequences.

To this end, governments of poor countries would do well to re-orient state policy toward a new goal: supporting and encouraging production by nationally and locally oriented small farmers.²² By shifting public investment away from agro-industry, the state can help create the conditions under which small farmers can be reasonably expected to re-enter the market in ways that will reduce the risk of future food shortages and riots. Let us call this an *agrarian* approach to differentiate it from the orthodox and heterodox policies described above.²³

An agrarian approach would decrease dependence on export-oriented agriculture for local supply. It would help to establish a local food reserve for times of high prices. It would increase production for local consumers. It would encourage farming practices that would consolidate food security in the long run. It would help relieve sustenance-less and "riot-prone" urban population. It could help undermine illicit and destructive rural economies. And, of course, it would decrease the likelihood of food riots in food-producing countries. Two specific policies are critical to initiating this shift toward an agrarian framework.

First, governments should set up public programs that would help responsible small farmers weather the price booms and busts associated with staple agriculture. When market prices are set as much by global as local events – an intrinsic component of the orthodox model – it becomes extremely difficult for the locally oriented small famer to calculate the potential profits his crops may bring in local markets at the time of planting. This uncertainty is much of what makes small-scale commercial farming so difficult in countries that have adopted an orthodox approach to agriculture – and part of what makes it so difficult for small farmers to compete against industrialized agribusiness.

Yet the state can help small farmers overcome this obstacle. To do so, governments ought first to set national price floors for staple commodities²⁴ produced by locally oriented growers. Should local market prices fall below those floors, the state – perhaps through a government-supported NGO – would agree to *loan* the locally oriented farmer enough money to store his crop until prices recover, with the farmer's stored crop itself as collateral. ²⁵ Such a policy would allow a locally oriented farmer to calculate a minimal level of profitability for his crop at the time of planting, thus decreasing his risk of destitution should crop prices collapse at the point of harvest. It would also present a relatively small fiscal burden for the state, as discussed below. ²⁶ Yet this policy should only be extended to farmers who pursue locally appropriate food production for local markets. Farmers that adopted techniques and strategies associated with an orthodox approach – fencerow-to-fencerow mono-cropping or a reorientation of production toward export markets, for example – would not be eligible for participation in the program. ²⁷ A policy that adhered to these basic principles would both increase the supply and decrease the price volatility of responsibly and locally produced staple foods for local markets.

In doing so, it would help ameliorate many of the orthodox problems that are contributing to the current risk of food riots.

Second, governments ought to encourage city dwellers and subsistence farmers alike to complement their existing economic activities with locally oriented small-scale farming.

By itself, a carefully promoted agrarian policy designed to reduce price uncertainty for small farmers – along the lines discussed above – could propel many individuals to produce for local markets. Given chronic underemployment, many may well jump at the opportunity to improve their economic situation in this way, were the government to act assiduously to encourage small farming. An increase in the number of locally oriented small farmers would not only help to increase local food supply but also remove some of the price pressures on staple foods created by large sustenance-less urban populations.

Such a shift is much more plausible than often realized. To begin, hundreds of thousands of rural smallholdings already exist in Bolivia and Guatemala, many of which could become more economically productive with the kind of policy support discussed above. In addition, many residents of major cities could fairly easily be turned to small-scale farming. Because urban migration remains a generationally recent phenomenon in both countries, many poor urbanites retain family and property ties in the countryside. As cities have expanded, moreover, rural and urban space has become increasingly merged, blurring the distinction between who is rural and who is urban among city residents. And thousands of Bolivians and Guatemalans "urbanites" remain cyclical or circulatory migrants who move seasonally between rural and urban areas. Encouraging these individuals to take up – or return to – locally oriented small-scale farming is critical to moving from an orthodox to an agrarian approach to preventing food riots. 1

The question remains of how to pay for these policies. Of course, the possibility of taxing agribusiness – which has enjoyed remarkable subsidization from the state in recent years – should be actively pursued. Though such taxes are often dismissed as politically unviable, a one percent on tax on agribusiness was recently enacted in Guatemala in order to finance post-war development. Moreover, countries like Bolivia that enjoy natural-resource endowments could use their currently high export revenues to pay for one-time policies to encourage the expansion of small farming.

Yet it must be emphasized that the key agrarian policy identified by this brief – the extension of loans to small farmers to enable them to store their crops in times of low prices – should actually cost very little. Given the volatility of prices, these are generally low risk loans. Farmers who cannot sell at a profit in the short run can almost always sell at a profit in the longer run, as demonstrated clearly by United States and European Union experiences with similar programs. Should farmers default, moreover, the state would retain control of their stored commodities as collateral. Consequently, a low-cost, low-risk program like this is less likely to run afoul of poor countries' external creditors – including the International Monetary Fund. *Conclusions*

By prioritizing global markets and export-oriented agribusiness at the expense of locally oriented small farmers, the orthodox policy framework has both failed to generate sufficient food for local consumption in poor countries – and created a legion of new problems. The recent food-price crises have underscored these failures. At root, the problem is the ascendancy of export-oriented and industrialized staple agriculture, the dynamics it creates in local markets, and the destruction it inflicts on rural life. For generations, locally oriented small farmers acted as the backbone of national food economies. Instead of continuing to flirt with heterodox responses to

price crises, countries like Bolivia and Guatemala should be working to secure the return of these small farmers into economic activity. Preventing future food riots depends on it.

The analysis and policy recommendations of this brief are by no means limited to Bolivia and Guatemala. Since 2007, concerns about the possibility of food riots have grown throughout much of the poorer Pacific Basin, including the Philippines, Indonesia, and Mexico. Across the region and for more than two decades, small farmers have been buffeted by the twin strictures of orthodox agricultural policy: trade liberalization and agro-industrialization. By adopting the agrarian policies outlined here, poor countries in the Pacific Basin can begin to escape the cycles of fear and violence that have sadly and ironically accompanied the attempt to end hunger in the late-twentieth and early twenty-first century.

Notes

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¹ International Monetary Fund. "IMF Commodity Prices: Monthly Data." http://www.imf.org/external/np/res/commod/index.aspx. For a recent analysis, see Ray Bush, "Food Riots: Poverty, Power, and Protest," *Journal of Agrarian Change* 10:1 (January 2010), pp.119-129.

² Nicholas Larkin. "Food Riots Threaten Latin America on Surging Commodities in UN Assessment." http://www.bloomberg.com/news/2011-02-16/latin-america-africa-most-at-risk-from-riots-as-food-prices-rise-un-says.html

says.html

3 Moreover, both countries were recently at risk of food riots (ibid.); both have a substantial rural population (forty to fifty per cent); both have significant agricultural economies (measured by per cent labor force); both have a substantial population of subsistence farmers, a population that is largely indigenous in both places; and both had a left-of-center government in power when the recent price shock occurred..

⁴ Shimsele Ali and Vera Eidelman. "The Surge in Food Prices: What's Different This Time?" *International Economic Bulletin* (21 April 2011). A publication of the Carnegie Endowment for International Peace. Available at http://carnegieendowment.org/2011/04/21/surge-in-food-prices-what-s-different-this-time/44w

⁵ On Bolivian agricultural policy, for example, see the discussion in Economist Intelligence Unit's *Country Report: Bolivia* (February 2007).

⁶ See, e.g., Robert Wolfe's Farm Wars: The Political Economy of Agriculture and the International Trade Regime (New York: St. Martin's Press, 1998).

⁷ Though both maintained import tariffs on some crops grown locally, including staples like maize and potatoes.

⁸ Such expansions reduced the reliance of agribusinesses on local production chains (local harvesters, storage facilities, and food markets), further allowing them to reorient their staple production toward global markets.

⁹ Especially as trade liberalization moved forward and they produced food staples in increasing quantities.

¹⁰ All data is based on World Trade Organization/International Trade Centre figures. The value of Guatemalan corn exports were the most modest of the group, never quite reaching ten million dollars. Exports of Bolivian soy oil in 2011 topped out at more than 261 million US dollars. Exports of Guatemalan vegetables exceeded 186 million US dollars that same year. Data available at http://www.intracen.org/.

¹¹ Recognizing this potential problem, orthodox analysts often call for safety nets (see Ali and Eidelman, op.cit.). But the problem is much broader than a safety-net approach implies, as demonstrated by the scale of food shortages in recent years.

¹² See the very nice discussion of Bolivian agricultural development in Mauricio Giovanni Valencia Amaya, "Trade Liberalization and Food Security: The Case of Bolivia after the Structural Reforms of 1985" (Master's Thesis, Department of Economic History, Stockholm University, August 2009).

¹³ That is, higher paying employment.

¹⁴ One of the ironies of late twentieth-century liberalization (in Bolivia especially) is that the decline of industrial manufacturing in cities has coincided with the rise of agro-industry in the countryside. As a further irony, industrial manufacturing was relatively more labor-intensive than agro-industrial production. Liberalization thus resulted not so much in "de-industrialization" but rather in a shift in industrial production from urban to rural areas and a reduction in the labor-intensity of industrial production.

¹⁵ And at times also by peasants seeking to enter the booming market. In response to price volatility, for example, some Guatemalan subsistence-based (often indigenous) farmers have reportedly turned to slash-and-burn agriculture.

¹⁶ Hafez Ghanem. "How to Stop the Rise in Price Volatility." *International Economic Bulletin* (13 January 2011). A publication of the Carnegie Endowment for International Peace. Available at http://carnegieendowment.org/2011/01/13/how-to-stop-rise-in-food-price-volatility/r3b

¹⁷ Orthodox policy analysts critiqued export limits, claiming that they would alter production plans of agribusiness, reducing supply (and thus increasing the risk of food riots) in future years

¹⁸ Such a policy was adopted in Bolivia, but defeated in Guatemala.

¹⁹ Indeed, it only flirted with heterodoxy given the voucher structure of program

To be fair, orthodox critiques of these policies were more mixed. While the state was clearly supporting "inefficient" local agriculture, such policies were plausibly intended support a transition toward more sophisticated local agricultural production.

²¹ That said, the Bolivian Agrarian Reform of 2011 did take some concerns of small locally oriented farmers seriously. For example, it sought to help create storage facilities for local producers and consciously directed loans and subsidies to smaller famers.

22 Let us provisionally define small farms as rural households owning between 1 and 100 acres.

²³ The most important contemporary agrarian thinker is Wendell Berry. See his *The Unsettling of America: Culture* & Agriculture (Sierra Club Books, 1996) and What Matters? Economics for a New Commonwealth (Counterpoint Press, 2010).

²⁴ Beans, corn, potatoes, and other storable produce

²⁵ Such a policy was part of Franklin Roosevelt's New Deal, and more recently adopted in the European Union. For a nice discussion, see Chapter 2 (esp. pp.48-56) of Michael Pollan's The Omnivore's Dilemma: A Natural History of Four Meals (Penguin, 2007).

²⁶ Bolivia has announced its intention to pursue some sort of food storage ("pirwa") program as part of its 2011 agrarian reform. Yet the details of how this will work are not yet entirely clear.

²⁷ While enforcement costs are clearly an issue here, community-based enforcement mechanisms may be quite effective. For example, rural indigenous communities in the Bolivian highlands have historically done well

punishing shirkers.

28 In Bolivia, there are already about 200,000 farms with holdings between 1 and 100 acres, representing two-thirds of all farm units. In Guatemala, farms with holdings between 1 and 64 acres represent 44% of all farm units. See, respectively, Mark Weisbrot and Luis Sandoval, "The Distribution of Bolivia's Most Important Natural Resources and the Autonomy Conflicts," Issue Brief (Washington, DC: Center for Economic and Policy Research, 2008) and Eduardo Baumeister, Tierra, Empleo, e Ingreso de la Población Rural en Guatemala (Guatemala City: United Nations Development Program, 2003).

²⁹ Especially in Guatemala.

³⁰ Indeed, the very category of "riot-prone urbanites" is problematic in poor and recently urbanized countries like Bolivia and Guatemala.

³¹ A concerted effort at land reform, of course, could increase these numbers considerably.

³² See Pollan, op. cit.