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# High Food Prices

Latin American and the Caribbean Responses to a New Normal



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**The findings, interpretations, and conclusions expressed in this report do not necessarily reflect the views of the Executive Directors of The World Bank or the governments they represent.**



## Preface

**G**lobal markets are currently experiencing the second sharp spike in food prices in the last four years. While no one has a crystal ball to predict with confidence the future prices of food products, there are good reasons to believe that structural factors affecting both supply and demand, discussed in this report, have recently evolved in ways that will increase the average levels and volatility of prices above those of recent decades. Ensuring that the world's population, and particularly vulnerable groups, are adequately fed is one of the most important contributions of the World Bank to the global public good's agenda.

**This report describes how the current situation is affecting countries in the Latin America and Caribbean region – including the impact on different groups within countries – and proposes strategies to best assist our client countries in responding.**

**The problem has to be tackled in multiple dimensions, and over different time horizons.** As an urgent priority, poor consumers, who spend a disproportionate share of their incomes on food, must be cushioned from the most severe impacts. This will require careful monitoring as well as efficient, well targeted safety nets. By the same token, an effective response over the medium to long term must also include an increase in food production and the reduction of distribution costs.

**Many countries in the region are major food producers and for farmers the current market environment is a welcome respite from the depressed level of prices in the 1980s and 1990s.** This is a major opportunity to increase prosperity while at the same time helping to feed the world. Therefore, Latin America can be part of the solution to this global concern.

**Furthermore, beyond being a food supplier, the region has tremendous potential as a supplier of knowledge to countries in other regions.** Countries in Latin America have been at the forefront, designing safety net systems for poor consumers, and on the supply side in agricultural technology, policy reform, and commercial practices. The region has played a key role in disseminating this knowledge to other parts of the world.

**I hope that this report will contribute to a better understanding of the nature of the food crisis in Latin America and the Caribbean and provide useful information for appropriate governmental responses.** We stand ready to support our partners in designing and implementing those responses through the full range of lending, advisory and technical services the World Bank provides.

**Pamela Cox**

**Vice President.** Latin America and the Caribbean, The World Bank

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## Foreword

We are living today in a world of higher and more volatile food prices, and this trend is likely to stay. Within that context, this report discusses the impacts of this trend on the most vulnerable households and what urgent actions can countries take in the short run to mitigate potentially serious impacts on those most at risk. It also discusses Latin America & the Caribbean's potential for "doing well while doing good" – that is, how can the region take advantage of high prices for its exports, while helping avoid future global food crises—and what measures will be necessary to both realize this potential and reduce the impact of high prices on consumers within the region.

International food prices have jumped by more than 43 percent since June 2010, igniting concerns about a repeat of the 2008 food crisis and its consequences for the poor. While both the spike in prices and their volatility are not unprecedented and are expected to stabilize in the future, all indications suggest they are not likely to go away entirely and that the low food price levels of the 1980s and 1990s are a thing of the past.

### The main messages of this report are the following:

- **LAC is predominantly a net food exporting continent, and as such, it is an important part of the global solution to address recent trends in food prices.** Enhancing this potential will require improvements to transport and logistics systems everywhere. In many countries, there is also scope for gains in expanding agricultural production levels and/or productivity. Latin American and Caribbean (LAC) countries can also help other regions increase production through South-South knowledge transfer.
- **There is however considerable heterogeneity within the Region on the population which benefits from this opportunity.** Higher food prices represent, in principle, a great opportunity for the region. However, LAC is also a highly urbanized region, where most agricultural output comes from modern, rather than subsistence farming. This implies that most of the LAC population, though they live in net exporting countries, lives in net food-buying households. Although there may be general equilibrium gains to some of these people (from higher wages or employment, particularly in rural areas), many if not most will lose in net terms. In other words, the (aggregate) income gains from the positive terms of trade effect are likely to be fairly concentrated.
- **This implies the need to protect the most vulnerable, who are the poor everywhere, and particularly in urban areas.** LAC's social protection system provides today a much better base than in the past on which to safeguard the most vulnerable. But much building, adjusting, and monitoring is still required. It is also urgent to establish monitoring systems at the country level (both in net food importers and net food exporters) which can assess food price volatility, and measure the social and poverty impacts of these crises in real time.
- **Given its expertise and a history of fruitful partnership in the region, the Bank can help countries implement their policy responses, both on the supply side (agriculture and infrastructure) and on the demand side (poverty monitoring and social protection).** The strategy of the World Bank's LAC region aims to assist client countries in addressing immediate needs for coping with the effects of the current price spike, as well as the longer term issues of living in a world of higher and more volatile prices. In the very short term, strategic responses focus on ensuring that the current situation does not evolve into a catastrophe for the poor.

To discuss all the above, this report is organized in four sections. The introduction reviews recent global market developments. Section II explains the diverse macro and micro impacts of rising food prices. Section III considers what we know about the effects on the population of high and volatile food prices and effective strategies to respond in the short and longer terms. It also discusses LAC's win-win potential related to food production and enhanced food distribution. Finally Section IV explains how the Bank can help countries implement these strategies.

### I. Introduction: Recent Global Market Developments

**International food prices are spiking again igniting concerns about a repeat of the 2008 food price crisis and its consequences for the poor.** The World Bank Food Price Index rose by 43 percent between June 2010 and January 2011, putting it 3 percent lower than its 2008 peak. In February 2011, the Food and Agriculture Organization's (FAO) Food Price Index reached its highest level since it was started in 1990. In historical perspective, the current prices are not unprecedented –in fact, they are considerably lower than prices prevailing in the 1970s and earlier and much lower than the spikes in the mid-1970s – but they represent a significant break from average levels of the 1990s and 2000s.

**International prices are not only higher; they have become more volatile in recent years.** International grain price variability (around its mean) doubled between 2005–2010 relative to the 1990–2005 period, sugar price variability tripled, and rice variability quadrupled. Again, this level of volatility is not unprecedented, as the world has experienced considerable commodity price volatility in other periods, such as the early 1970s, but seems high in comparison to “normal” fluctuations of the past two decades. While both the spike in prices and their volatility are expected to stabilize somewhat in the coming months, all indications suggest they are not likely to go away entirely in the future and that the low food price levels of the 1980s and 1990s are a thing of the past.

**The current global grain market situation is similar to the 2008 crisis in three respects.** First, higher oil prices have impacted agricultural commodity prices, with one major linkage being through the biofuels market. Second, in both years, depreciation of the dollar against most currencies contributed to higher international prices, and third, financial investment in agricultural commodities remains high.

**Yet the current situation differs from 2007–2008 in critical respects.** First, recent international price increases are more widespread across agricultural commodities than in 2008, when price spikes were led by few grains such as wheat and rice. Second, natural resources are affecting food production: land and water constraints are more binding than in the past and weather induced production shortfalls are more of a factor now than it was 2008. Climate change also adds to this uncertainty, particularly since a larger share of grain exports are being produced in areas more exposed to climate variability. Third, long term structural changes in the markets are more clearly a major factor this time, as demand for feed and income-elastic foods under sustained and widespread income growth in emerging countries is increasing steadily. Fourth, the global stocks/use ratio for major cereals – which used to hover in the range of 30–35 percent in the 1980s and 1990s – has been around 20 percent after 2003 due largely to long-term policy changes in high-income countries; and stocks of some critical players are now at all-time lows.



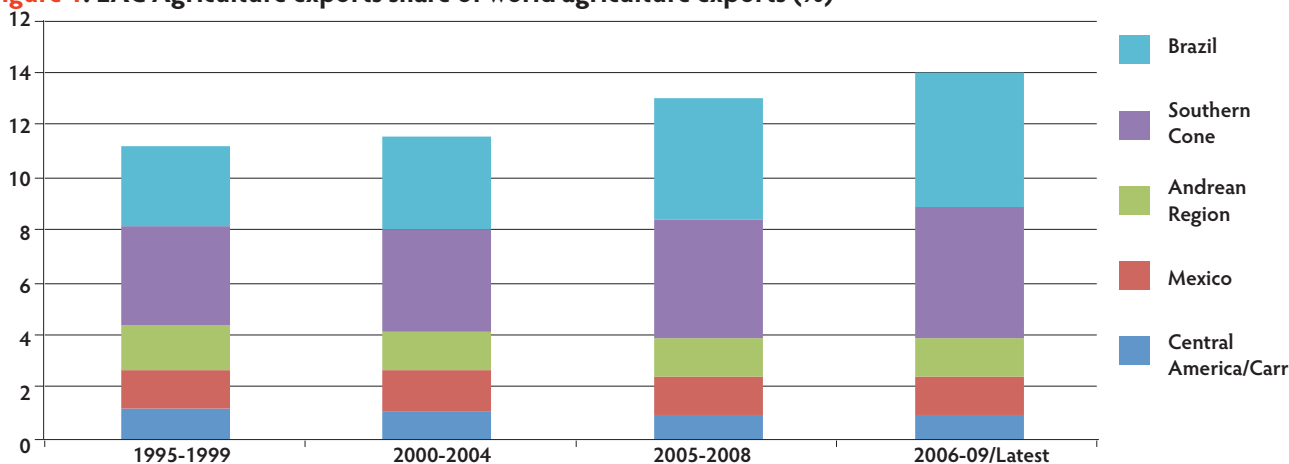
## II. The Big Picture in LAC: Macro and Micro Effects

### A. Macro impacts

**Around 93 percent of LAC's population and 97 percent of its economic activity is in countries which are net exporters of commodities, so the region as a whole has benefited from recent high levels of commodity prices, including food.** Efficient food producers in LAC responded strongly to the recent high food prices by rapidly ramping up production and increasing their global market share. LAC is on balance a food exporter, with a share in gross world agricultural exports larger than its share in production (about 10 percent of global agricultural GDP).

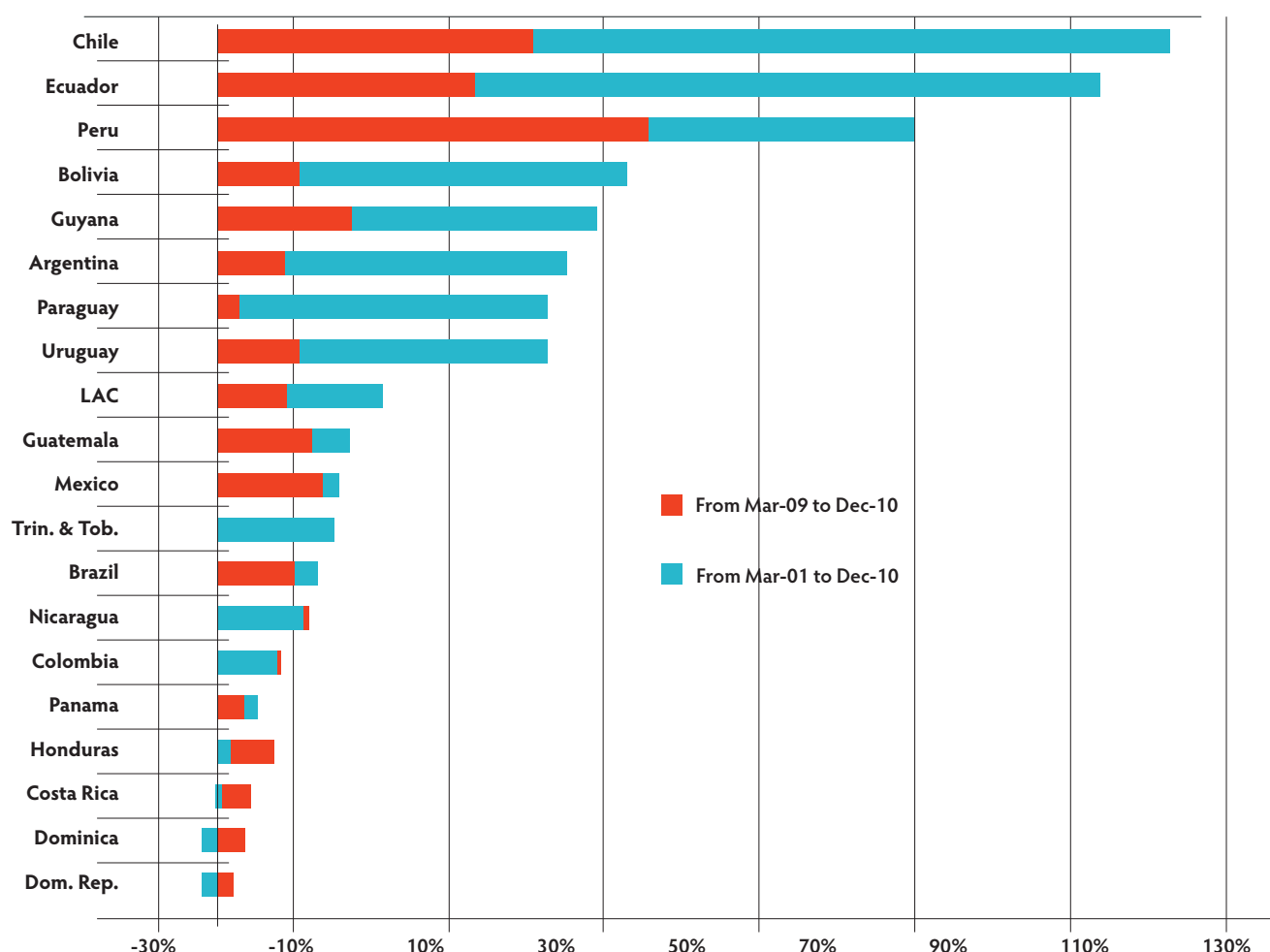
**In 2006-2009, LAC's share of world agricultural exports reached 14 percent, up from 11 percent in 1995-1999.** LAC accounts for almost one third of world corn exports, with about 14 percent of world production. It is responsible for 52 percent of soybeans exports, 7 percent of both wheat and rice exports, 44 percent of beef exports, 42 percent of poultry exports and 17 percent of pig meat exports. LAC is also responsible for about 70 percent of world exports of bananas, 45 percent of sugar and 45 percent of coffee. More than  $\frac{3}{4}$  of LAC's gross agricultural exports are from 5 countries: Brazil (34 percent), Argentina (23 percent), Mexico (11 percent), Chile (8 percent), and Colombia (4 percent). LAC has been successful in increasing its global market share, primarily due to an expansion of the shares of Brazil and the Southern Cone (Fig. 1).

**Figure 1. LAC Agriculture exports share of world agriculture exports (%)**



**The effects of food price movements have different expressions at the macroeconomic level.** As a net exporting region, LAC as a whole benefits from the inflows of foreign exchange brought about by the higher prices of food products. LAC is also a net exporter of many other commodities, particularly hydrocarbons and minerals, the prices of which have also reached historically high levels. Thus, whether considering the changes in Terms of Trade over the last decade or over the more recent period (figure 2), most LAC countries have experienced an improvement in Terms of Trade, albeit to very different degrees. The exceptions – countries which have experienced Terms of Trade losses – are most of the countries of the Caribbean and some in Central America, which are net importers of both food and fuels, and have therefore been adversely affected by the upward movements in prices of both. Depending to some extent on whether the improvement

**Figure 2. Cumulative Change in Terms of Trade**



in terms of trade is driven by food or other commodities, it may or may not translate directly into increased government revenue. Whereas governments are generally direct beneficiaries of high oil or mineral prices – because they either own the production companies or levy high taxes on production or exports – in most countries the government is not directly involved in food production or exports, nor does it tax them. To the extent that higher prices enhance profits of farms and stimulate economic activity in rural areas, the government may capture some of this by a VAT or income tax.

## B. Micro impacts

**Notwithstanding the net positive regional impacts of commodity price movements at the macro level describe above, a large majority of LAC's population –including in net exporting countries-- are consumers who lose from the direct effects of price spikes.** LAC's population is concentrated in urban areas and it is precisely here, where the majority of the negative impacts occur, affecting primarily the urban poor who spend a very large share of their incomes on food. Even in rural areas many are net consumers whose purchasing power is eroded by higher prices of food products. In these areas however, the negative impacts from the higher cost of the consumption basket may be attenuated by general equilibrium effects on wages or employment levels. In general, primary commodities are only a small part of the final price consumers pay, so even relatively large movements in their prices will typically cause a much smaller percentage change in consumer prices. Effects on consumers will also depend on the degree to which world price movements are transmitted to domestic prices, and there is evidence from some LAC countries that this transmission is relatively low in the short term. The implications of the rise in food prices at the household level, and the identification of the most vulnerable population, is described in more detail in section III below.

### III. Responding to the “New Normal”

#### A. Who is most at risk with higher and more volatile food prices?

**Rising food prices disproportionately affect the poor, given the higher share of food in their overall expenditures.** Food costs range in the region from a high of 83 percent of total expenditures for the bottom quintile in Honduras, to a low of 32 percent in Brazil, compared to 25 percent and 7 percent for households in the top quintile of these two countries, respectively (Table 1). The Poor Person's Price Index (PPPI) provides a measure of how much rising food prices impact poor compared to the overall Consumer Price Index or CPI (which measures the consumption basket of the top quintile). The increase in the PPPI between 2006 and 2008 was almost 8 percent (a full percentage point above the CPI), while during the last two years, the PPPI rose by only 4 percent, just slightly more than the CPI (see Annex Figure 1).

**Table 1. Food as a share of total consumption, poorest (first) and richest (tenth) Decile <sup>1</sup>**

Country	Year	Food	
		1st Decile	10th Decile
Honduras	2004	83.3%	24.7%
Bolivia	2002	60.3%	17.0%
Argentina	1996	56.5%	17.5%
Guatemala	2000	55.8%	15.1%
Jamaica	2007	54.3%	26.6%
Paraguay	2000	50.9%	23.7%
Colombia	2003	45.8%	17.5%
Mexico	2004	41.0%	10.8%
Brazil	2002	32.1%	7.2%

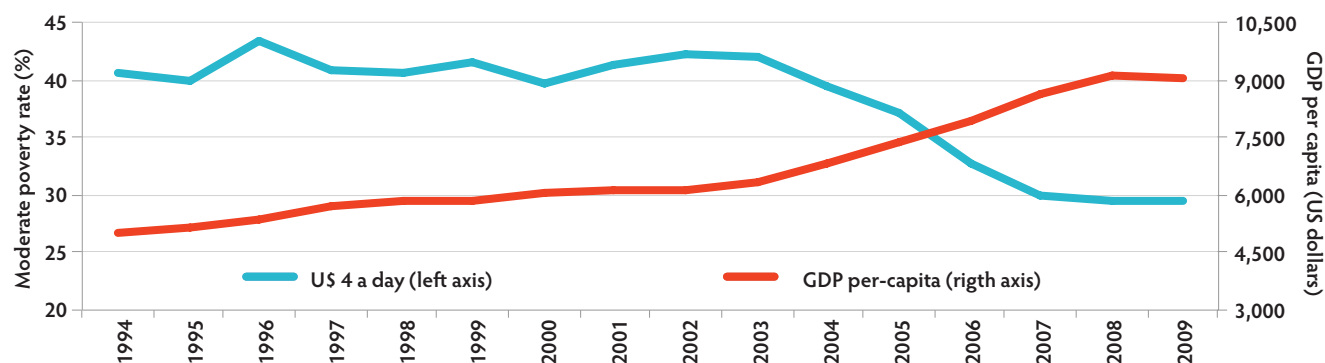
**Based on the experience of the 2008 and 2009 crises and the more moderate increase in prices that most countries are experiencing, the latest acceleration of food prices may not lead to a dramatic increase in poverty levels in Latin America.** However, certain vulnerable groups and countries are expected to experience rising poverty and negative welfare shocks<sup>2</sup>. The food and fuel crisis of 2007–2008 and the financial crisis of 2008–2009 arrested a 5-year decline in poverty reduction in Latin America (2002–2007) bringing poverty reduction at the regional level to a halt for the last two years (Figure 3), but did not lead to a spike in poverty numbers.<sup>3</sup>

<sup>1</sup> Dupriez, Olivier (2007) Building a household consumption database for the calculation of poverty PPPs. Technical Note. World Bank: Washington, DC (mimeo)

<sup>2</sup> In a recent publication (PREMPR - Food Price Watch (February, 2011), the World Bank announced that the poverty impact of this recent increase in the food prices is projected at 44 million people. This number is based on an estimate of the impact of food price increases on a sample of 28 countries, 5 of which are from LCR (Table 2). This global estimate represents 40 percent of the population in low and middle income countries (the selected LCR countries represent 12 percent of the region's population). The population weighted average impact based on the 28 countries was subsequently scaled up by the total global population (5.6 billion). Only a global estimate was provided. Link to Food Price Watch:

<sup>3</sup> See “Did Latin America Learn to Shield the Poor from Economic Shocks” (LAC-PREM Poverty Reduction and Gender Department, October 2010) for more detail on the poverty impact of the economic crisis. It is important to note that both the extreme and moderate poverty lines are adjusted by the overall CPI and not the food CPI, which may also be a reason why poverty levels are less sensitive to food price increases. A few countries in the LCR region adjust their extreme poverty line by the Food CPI (i.e. Chile and Costa Rica).

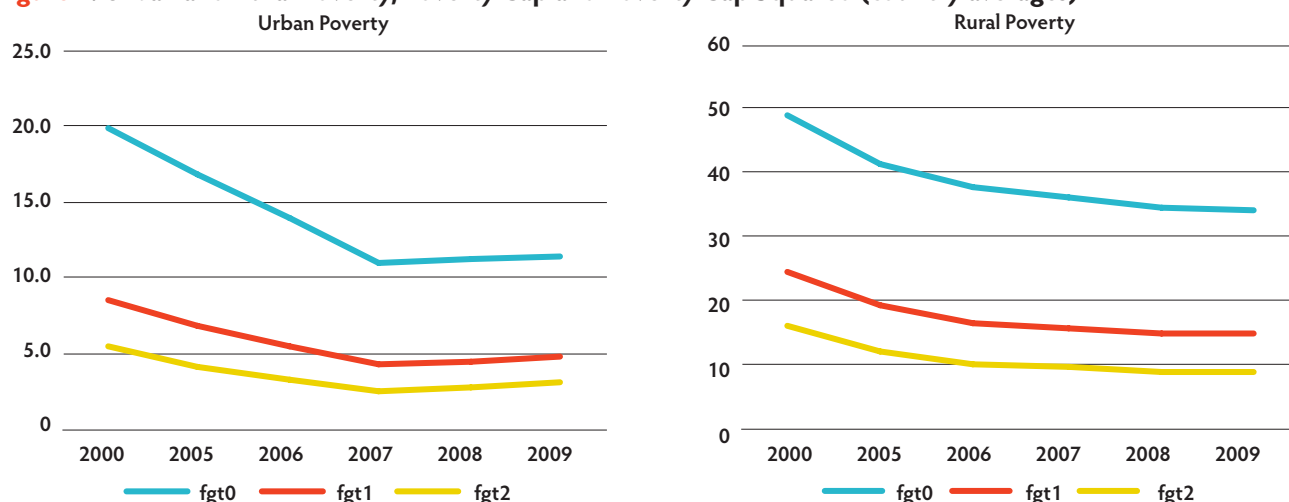
**Figure 3. Poverty Reduction in LAC Stagnated during the 2007-09 Food and Financial Crises<sup>4</sup>**



Source: Poverty and Labor Brief (October, 2010)

However, while overall levels of poverty did not move significantly during the 2008 and 2009 crises, the urban poor (moderate and especially the extreme) were more affected than the rural poor, as were households in Mexico and parts of Central America and the Caribbean. By 2009, there were signs that the urban population in Latin America was relatively harder hit, as both the incidence and the severity of poverty rose in urban areas in 2007-2009, while these indicators continued to improve in rural areas (Figure 4)<sup>5, 6</sup>. In addition, Mexico and many of the countries of Central America (Honduras, El Salvador, Costa Rica) saw rising poverty in 2008 and 2009, while overall poverty levels fell in the Southern cone (especially Brazil and Argentina) and remained constant in the Andean region (Figure 5).

**Figure 4. Urban and Rural Poverty, Poverty Gap and Poverty Gap Squared (country averages)<sup>7</sup>**



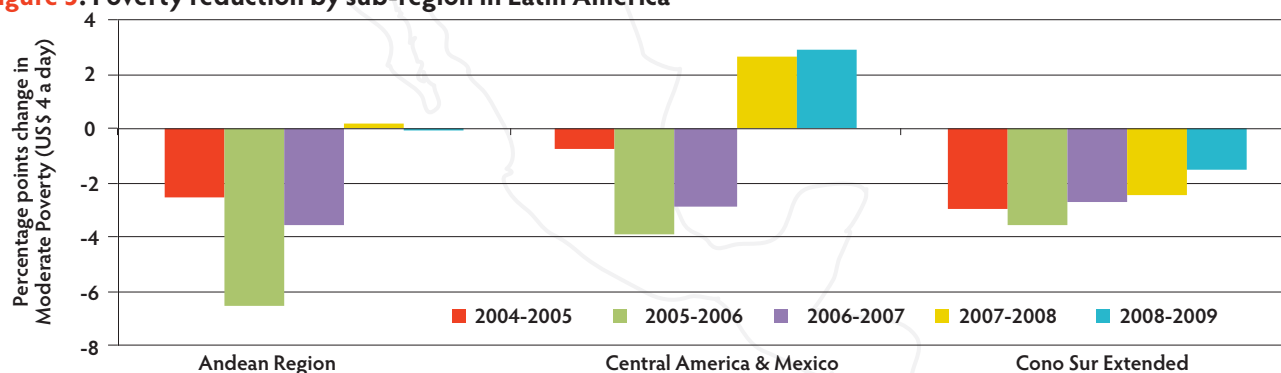
<sup>4</sup> Same as above.

<sup>5</sup> The population weighted average for the region show urban extreme poverty (including the poverty gap) staying flat in 2009, while in rural areas poverty continues to fall, although the poverty gap flattens.

<sup>6</sup> The results may have more to do with the 2008-09 financial crisis, yet evidence for 2010 suggests that for some countries the food crisis has had a negative effect on urban poverty – see for example the results of the urban Labor Income Poverty Index (LIPI) for Mexico below.

<sup>7</sup> LAC-PREM Poverty and Gender Unit's "Implications of the Rise in Food Prices for Poverty in Latin America" using SEDLAC harmonized datasets (CEDLAS and the World Bank). The countries used in this analysis were: Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Paraguay, and Peru. The criterion for selecting these countries was the availability of microdata in at least five of the six years covered in this analysis.

**Figure 5. Poverty reduction by sub-region in Latin America<sup>8</sup>**



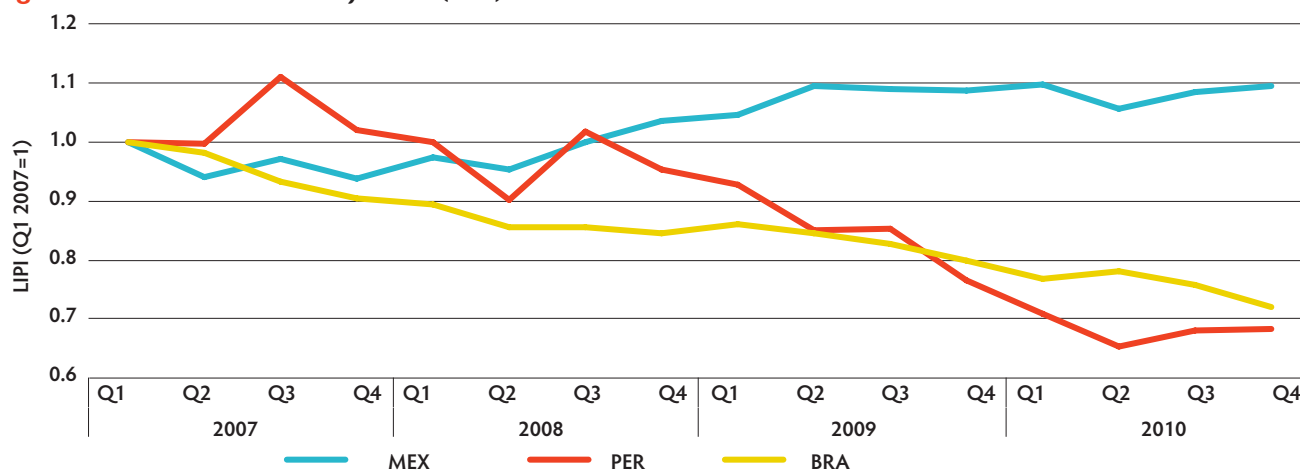
Based on the previous crises, the negative impacts of the rise in food prices are most likely to be experienced by the urban poor, as well as vulnerable households in Mexico, and parts of Central America and the Caribbean. Already high frequency labor market data from Mexico are revealing deterioration in household welfare in recent months, particularly in urban areas, in contrast to Brazil where it is difficult to discern an impact of this latest price rise. The Labor Income Poverty Index (LIPI) measures trends in the share of individuals that cannot obtain the basic food basket with their labor income. The LIPI in Mexico was sharply affected by the 2008 crisis, and did not recover in 2009 and since the second quarter of 2010 has been increasing, particularly in urban areas (Figures 6 and 7). In Peru, the LIPI did experience a sharp rise in 2008, but since then has been suggestive of continuous increases in household welfare until the second quarter of 2010, when it started to increase again. In contrast, the LIPI in Brazil stagnated in 2008, but has declined quite steadily since 2009.

An additional concern is whether after four years of recurrent stress, vulnerable households face more constrained coping mechanisms, and may be even more likely than during previous crises to engage in coping behaviors that could lead to lower levels of human capital accumulation. While poor and non-poor households may be experiencing similar increases in the cost of their consumption basket, the ability of the poor to cope with this increase is clearly more limited. In particular, there are concerns over whether some of the past and/or current coping mechanisms could have long-term negative effects on school enrollment and attendance and malnourishment, thereby negatively affecting human capital accumulation and reinforcing poverty traps. A number of authors including Cuttler et al (2002), Skoufias et al (2006), Firpo and Souza (2010) and Arceo-Gomez (2010)<sup>9</sup> have shown the permanent effects from previous transitory shocks in the region.

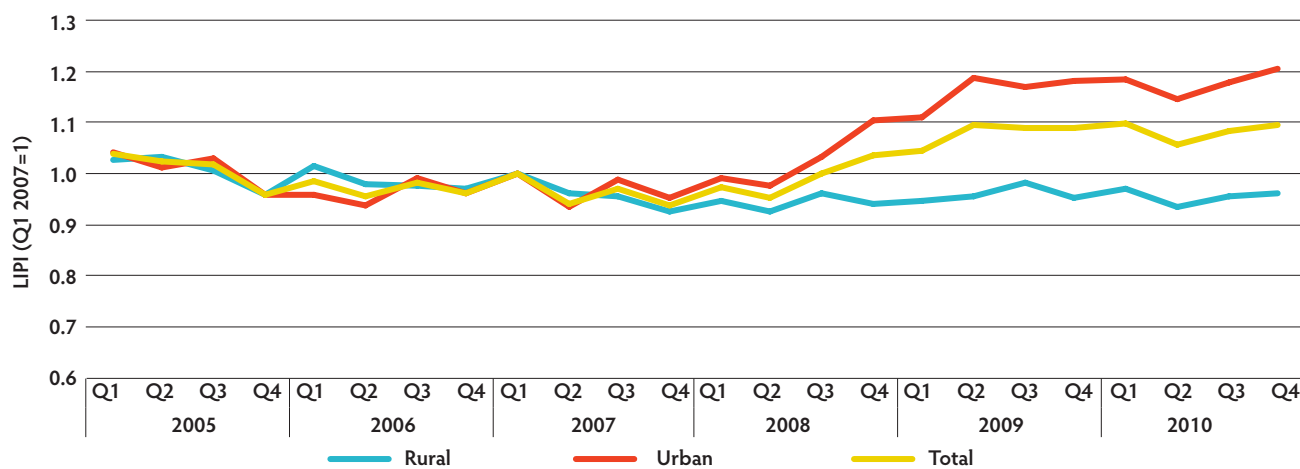
<sup>8</sup> LAC-PREM Poverty Reduction and Gender Department, 2010: Did Latin America Learn to Shield the Poor from Economic Shocks"

<sup>9</sup> Cutler, D. M. et al. 2002. Financial Crisis, Health Outcomes and Ageing: Mexico in the 1980s and 1990s, *Journal of Public Economics*, 84(2): 279-303; Arceo-Gómez, Eva O. 2009. Impact of Economic Crises on Mortality: The Case of Mexico, background paper of the RBLAC: The Effects of the Economic Crisis on Household's Well-being in Latin America and the Caribbean; Emmanuel Skoufias & Susan Parker, 2006. "Job loss and family adjustments in work and schooling during the Mexican peso crisis," *Journal of Population Economics*, Springer, vol. 19(1), pages 163-181, February; Firpo, Sergio and Andre Portela (2010) The Impact of the Economic Crisis on the Well-Being of Families in Brazil. *Estudios Economicos*, vol. 25 (1), enero-junio 2010, pag 63-104

**Figure 6. Labor Income Poverty Index (LIPI) – US\$2.5 /PPP <sup>10</sup>**



**Figure 7. Mexico Labor Income Poverty Index (LIPI) – US\$2.5 /PPP <sup>11</sup>**



<sup>10</sup> LAC-PREM Poverty and Gender Unit's "Implications of the Rise in Food Prices for Poverty in Latin America" using LAC-PREM harmonized datasets (CEDLAS and the World Bank)

<sup>11</sup> LAC-PREM Poverty and Gender Unit's "Implications of the Rise in Food Prices for Poverty in Latin America" using LAC-PREM harmonized datasets (CEDLAS and the World Bank)



## **B. Food at the Table: reducing the impact for those at risk through social protection and nutrition**

In addition to increasing poverty, rising food prices can negatively affect human development by worsening nutrition, reducing the utilization of education and health services, and depleting the productive assets of the poor. Disinvestment by the poor in their human and physical capital will have large and lasting effects, which are well documented and quantified in the development literature. Early childhood malnutrition results in poorer health, lower cognitive abilities, less learning, and lower lifetime earnings. Because such losses today may be irreversible it is important to prevent them as much as possible.

**Social protection programs play a triple role in the response to rising food prices by:**

- **Forestalling to a degree the increases in poverty and inequality that the change would bring.**
- **Helping households maintain access to food and essential services for health and education.**
- **When perceived as fair and compensatory, maintaining social equilibrium and avoiding less efficient tax, subsidy, trade, or production policies, some of which can even aggravate the problem.**

**The simplest social protection response is to increase the benefit and/or coverage in existing poverty-targeted programs.** It can take months to set up even the most basic versions of administrative systems needed to run such a program, and years to get systems operating well. However, where programs exist, are well targeted and have good coverage, a simple stroke of pen can increase benefit levels and provide significant protection for the beneficiary poor. For example, Brazil increased the basic benefit of Bolsa Familia in July 2008 by 8 percent and the transfer per child by 13 percent. The program was already targeted to the chronically poor who spent a high share of income on food and thus were most affected—with coverage of about 20 percent of the population. Subsequent evaluation showed that while the response was not large enough to fully protect the poorest, it did ameliorate the impact of the price increases for them. Even where programs have limited coverage, the existence of ‘rules of the game’ can speed up roll out. In 2008 El Salvador, for example, was able to expand more quickly than planned its rural Conditional Cash Transfer (CCT) program, but kept to the original plan of covering the poorest 100 municipalities.

**Most of the populous countries in the region have one or more substantial poverty-targeted programs which can serve as a basis for response.** In Latin America, most of these are CCT programs, most are proxy means tested, and most have been put in place in the last fifteen years, some within the last five years. In the Caribbean, a few countries (Jamaica and the Dominican Republic) have programs with similar characteristics. The smaller countries in the Eastern Caribbean (6 OECS member states) tend to have high degrees of fragmentation in their programming relative to their size and much less developed accountability and control systems. With the exception of Dominica, which has recently implemented a proxy means test for social assistance programs, OECS countries tend to use a mix of targeting instruments that absorb considerable staff resources.

**There is a great deal of variability in the readiness of safety nets to respond.** Responses to rising food prices will be most important in countries with high initial poverty, high shares of food in the budgets of the poor and high malnutrition. Thus, responses will be more urgent in, for example, Guatemala and Haiti than in Chile and Uruguay. Unfortunately, the caliber of safety nets to support such a response is generally lower in the poorer tier of countries than in the richer one, though even within the tier of countries with higher initial poverty, there is a great deal of difference in urgency and response capacity. Jamaica and Guatemala might both be considered at high risk because in both the poorest decile spend about 55 percent of their budgets on food but stunting in Jamaica affects only 5 percent of children, in contrast to 54 percent in Guatemala.

Jamaica developed its CCT program a decade ago and has systems well consolidated. Its coverage, at about 13 percent of the population, is consistent with local measures of poverty. Guatemala launched its program in 2008 and has expanded it, reaching now almost a third of its population, though excluding the urban centers. Given the high malnutrition rates, the program also takes measures to increase supply of community based nutrition services and the distribution of micronutrients. As a result, Guatemala is much better positioned today to support poor households in the face of rising food prices than it was in 2008. Most of the other countries with high poverty or malnutrition have less response capacity. Bolivia, for example, has safety net programs focused on subsets of the poor—the Juana

Azurduy CCT covers families with children between 0-2 years of age in 52 most vulnerable municipalities, Juancito Pinto covers all children in first grade, and the Bonosol covers the elderly universally. Haiti has a patchwork of largely donor-led programs for cash or food for work, school feeding, and food distribution, which do not have stable financing or administration, are not well-targeted and do not provide full coverage of those greatly in need.

**Even where there is strong base for response, there are limitations to achieving full coverage of all those most affected by increased food prices.**

- **Exclusions caused by explicit design features.** Several programs (e.g. Guatemala's Mi Familia Progresiva and El Salvador's Comunidades Solidarias Rurales), focus on rural areas where chronic poverty is traditionally more widespread and deeper than in urban areas. In the face of rising prices, however, the urban poor are also affected, and have much less ability to cover part of food consumption out of own production.

Similarly, in a number of the flagship CCT programs designed for families with children from birth to school age, households without school age children go uncovered, or covered by other programs that are not principally poverty targeted (e.g. social pensions, or disability assistance, etc.). And some CCT programs work only in locations deemed "supply ready", excluding thereby some areas, which are often poor and/or remote. Overcoming such exclusions suggests the use of complementary programs where possible. Mexico, for example, has used its less conditioned Programa Alimentario in areas too remote or with insufficient service capacity (even in urban areas) for Oportunidades co-responsibilities to work effectively. Another option is to make structural changes to existing programs, but these need to be considered carefully as there is the potential that they would not be helpful to the longer run goals of the programs.

- **Imperfections in coverage.** Errors of exclusion are a painful fact of life in social protection. Programs that minimize transactions costs and stigma, and that have good outreach, will have lesser problems of exclusion. However, there is some irreducible minimum even in the best of programs. Any attempt prompted by rising food prices to lower such under coverage is also useful to programs' long-run goals.
- **Relatively static targeting systems.** The eligibility threshold in proxy means tested systems is not a simple estimate of purchasing power, so is not straightforward to adjust to keep a steady value in the face of food price volatility. Moreover, a number of countries do not allow households to register year long as they are formed or feel hardship. In these countries registration is confined to defined periods and/or program entry is confined to a certain budget envelope. These factors do limit response, but because the bigger hardship from food price rise does not come from people thrown newly into poverty, but from exacerbated poverty of the already poor, the limitation is not so bad in the face of rising food prices as it has been in a loss of sudden loss of employment or income such as during the financial crisis.

**These limitations suggest that despite LAC's reputation for good safety net systems, a medium term agenda remains.** This includes development of at least one sound poverty targeted program in countries without such; developing agile targeting systems, especially allowing on-demand application; and ensuring that the mix of programs and instruments are suitable for crisis response as well as for combating chronic poverty and inequality.

**There are strategic questions to face about how to increase benefits or coverage and how to scale down again.** In increasing benefits or coverage in the face of food price increases, it is important to consider from the outset whether they should be scaled down if/when food prices drop. Sometimes the answer is "no" – a country that had an insufficient safety net and may be prompted by the new need to take a policy action to improve permanently their safety net. But some countries already had good coverage and reasonable generosity, so they would need ways to scale down a policy response to a temporary price increase. Some examples from responses to 2008 price increases show some of the options and tradeoffs.

- **The benefits of Brazil's Bolsa Familia were not indexed and had not been adjusted for some time before the price spikes of spring 2008.** Rising food prices helped trigger a periodic adjustment, and benefits were raised in line with the overall CPI. This left no need for a scale down later on, but since food prices rose more than the CPI, it did not fully compensate households for the increased price of food in their budgets.
- **In Chile, the government granted two one-off payments to the currently registered beneficiaries of several of its core social protection programs; altogether the payments reached about the poorest 40 percent of the**

**population.** The payments were explicitly granted as one-off, and were not incorporated into the benefit structures of any of the permanent social programs, so there was no need to scale down again. However, the one-off nature did not match very well households' recurrent expenditures.

- **In Mexico, the benefits of Oportunidades are indexed, but a decision was taken in spring 2008 to increase them by more than the CPI, recognizing that the weight of food in the poor's budget is higher than in the CPI.** The benefit was structured as a separate benefit, in the panoply of different Oportunidades benefits (named Vivir Mejor). It has, however, remained in the benefit structure rather than being removed or eroded away.

**It is therefore important to also consider the impact of increased food prices on dietary diversity and micronutrient intake.** When households face restricted purchasing power, they tend to lower dietary diversity and, with it, access to micronutrients. At the height of the 2008 crisis, poor families most frequently responded to higher food prices by eating cheaper foods with lower nutritional value, consuming less food in meals and skipping meals (Brinkman et al. 2010 and Compton et al. 2010). Such behavioural changes can cause micronutrient deficiencies even when caloric intake is sufficient.

**Nutrition programs should therefore be considered as part of the likely policy response, especially in countries with pre-existing nutrition problems.** Growth monitoring and promotion can detect where children are falling into trouble and action is most urgent. Nutrition education (exclusive breastfeeding until six months of age, appropriate weaning foods, information on micronutrient sources) can help household make the most of scarce resources. Micro-nutrient interventions gain importance as dietary diversity declines.

**If food is distributed in kind as part of safety net programs, it is desirable that it be fortified or has high nutrient value.** More generally, micro-nutrient supplementation may be needed even where there are reasonable transfer programs --depending on the context there may be a need for a combination of fortification of commercially sold staples and direct distribution of single or multi-nutrient supplements. The focus of these interventions should be first and foremost the 'first 1000 days' covering the pre-natal period up to age two, as this is the window when biological vulnerability is greatest, the consequences of under nutrition most damaging, and the cost-effectiveness of action greatest.

**The LAC region's experience with safety net programs places it in a good position to help other countries implement such programs.** The experience of the LAC countries is very well known as a result of the hundreds of impact evaluations of their programs, the transparency of their operations, richness of their websites, and their willingness to share in all sorts of global and South-South fora. A number of countries --notably Mexico, but also Brazil, Colombia, Chile and Jamaica-- frequently host study tours from countries around the world. Brazil has a unique program for providing technical assistance to Africa, especially Lusophone Africa. Countries like Ghana, Mozambique, Senegal, Angola, and Zambia are developing and implementing Bank-supported poverty alleviation programs with technical advice from Brazilian counterparts.

## C. Food at the Farm: benefiting from LAC's potential in food production

vLAC is well positioned to benefit from high prices and increase food production for several reasons. First, LAC as a whole, has a strong comparative advantage in agricultural production, as indicated not only by its position as a net food exporter, but also by its “revealed comparative advantage” index of 2.2, relative to a world average of 1 (Table 2)<sup>12</sup>. Even some countries and sub-regions that are net food importers have a comparative advantage in other kinds of agricultural production (e.g., Central America), and some countries with a low degree of comparative advantage as measured by agricultural trade are nonetheless important producers (e.g., Mexico).

**Table 2. Indexes of comparative advantage in agriculture and processed food, Latin America countries, 1965 to 2004, world = 1.0**<sup>13</sup>

	1965-69	1975-79	1985-89	1995-99	2000-04
<b>LA Studied Countries</b>	<b>na</b>	<b>2.8</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>
Argentina	3.5	3.8	4.4	4.9	5.4
Brazil	3.3	2.9	2.4	3.2	3.6
Chile	0.3	1.1	2.3	3.4	3.9
Colombia	3.0	3.9	3.6	3.2	2.6
Dominican Republic	na	3.9	3.2	1.2	4.7
Ecuador	3.8	2.3	3.2	5.5	4.9
Mexico	2.3	1.8	0.9	0.7	0.6
Nicaragua	3.4	4.3	6.1	7.4	9.5
<b>Other LA Countries</b>	<b>na</b>	<b>1.1</b>	<b>1.7</b>	<b>2.5</b>	<b>na</b>
Caribbean	na	0.6	0.9	1.5	na
Central America	3.1	3.8	5.2	5.4	5.0
South America	na	0.5	1.0	1.6	1.6
<b>All Latin America</b>	<b>na</b>	<b>2.1</b>	<b>2.1</b>	<b>2.2</b>	<b>2.2</b>

LAC has a high potential for scaling up production as a result of its natural endowments, particularly the key ingredients for agricultural production, land and water. Of the approximately 445.6 million hectares of land worldwide that could be suitable for sustainable expansion of cultivated area (i.e., land with high agro-ecological potential, non-forested, unprotected, and with population density less than 25 per hectare), about 123.3 million hectares (28 percent) is in Latin America, more than in any other region except Africa, which has 45 percent<sup>14</sup>. LAC's potential is even more pronounced if accessibility is factored into the equation: the region has 36 percent of the 262.9 million hectares of land suitable for expansion worldwide that is within 6 hours of travel time to the closest market. With about one third of the 42000 cubic km in renewable water resources worldwide, LAC is also well endowed in this resource. On a per capita basis, LAC has the highest endowment among developing regions (Fig. 8), although some sub-regions face higher than average scarcity<sup>15</sup>.

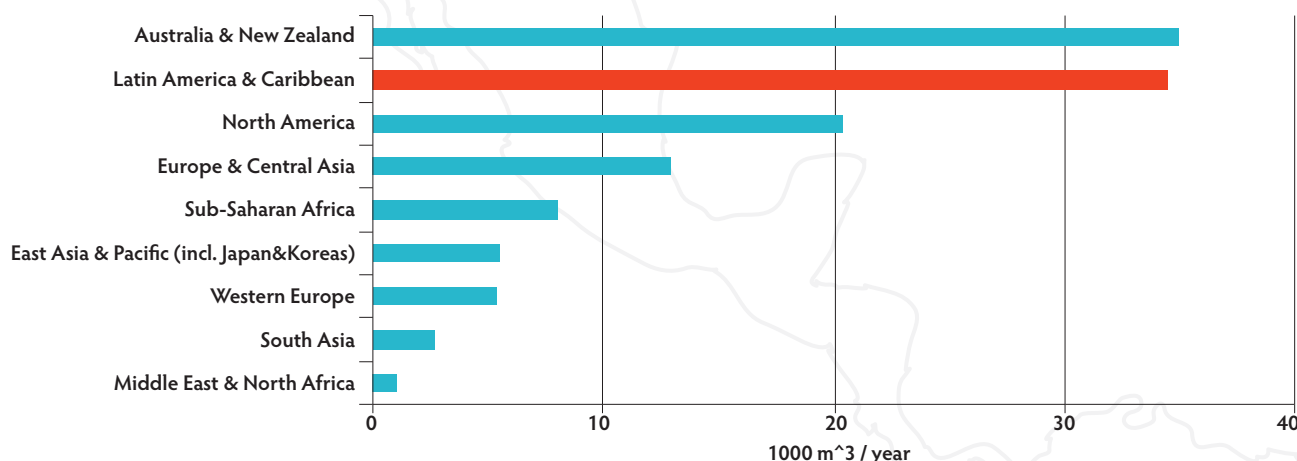
12 The revealed comparative advantage is an index used in international economics for calculating the relative advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. It most commonly refers to an index introduced by Bela Balassa (1965):  $RCA = (E_{ij}/E_{it}) / (E_{nj}/E_{nt})$ , where E=Exports; i=Country index; n= Set of countries; j=Commodity index; t=Set of commodities. A comparative advantage is “revealed” if  $RCA > 1$ . If RCA is less than unity, the country is said to have a comparative disadvantage in the commodity or industry.

13 Anderson, K and A. Valdes, 2008, Distortions to Agricultural Incentives in Latin America. Washington, DC, World Bank

14 Deininger, K et. At 2011 Rising Global Interest in Farmland. Can it Yield Sustainable and Equitable Benefits? Washington DC, World Bank.

15 Bruinsma, J. (2009), “The Resource Outlook to 2050: By How Much Do Land, Water, and Crop Yields Need to Increase by 2050?” in Proc. FAO Expert Meeting on How to Feed the World in 2050

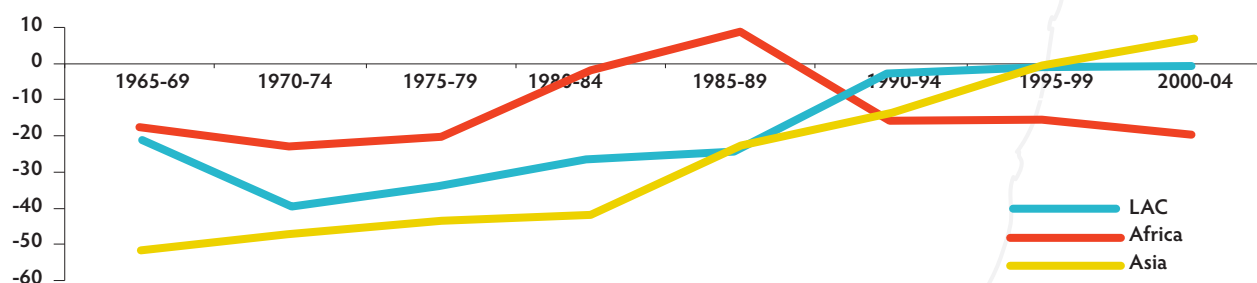
**Figure 8. Annual renewable water resources per capita<sup>16</sup>**



Another important factor contributing to LAC's potential for increasing production is its relatively high levels of technology and human capital. This places it in a good position not only to ramp up production in the region, but also to transfer knowledge to other regions, notably Africa (see below). Perhaps the leader in advances in production technology is Brazil, where technology developed mainly by the public research institute EMBRAPA, transformed the Cerrado (a Savannah-like biome) into a highly productive area, through improved crop varieties and environmentally-friendly soil management practices (e.g., no-tillage).

The region is also well positioned to respond efficiently to higher prices because of its incentive framework, which is perhaps the least distorted in the world. In the 1960s, countries in LAC, in common with other developing regions, generally heavily protected industrial sectors through trade and exchange rate policies, and sometimes explicitly taxed agricultural exports as well. This created a significant anti-agricultural bias in the incentive structures of these countries, indicated by the negative "relative rates of assistance" in Fig. 9<sup>17</sup> and Table 1 from Annex. The structural reforms carried out in LAC mainly in the 1980s and 1990s largely eliminated this overall bias, so the incentive structure is now close to neutral. Meanwhile, many countries in Africa continue to tax the sector, while developing countries in Asia have followed the pattern of the industrialized world, and subsidize agricultural production (though not to the same degree as high-income countries). While biases persist in some LAC countries – particularly in favor of import substitute vis-a-vis export crops (see Fig. 2 from Annex) the overall incentive structure is relatively conducive to an efficient agricultural supply response.

**Figure 9. Relative Rates of Assistance<sup>18</sup>**



a. 5-year weighted averages with value of production at undistorted prices as weights. b. NRAs (for 1965-80) and RRAs (for 1965-81) for China have been extrapolated back assuming they were the same as the average for years 1982-89. Source: Chapters 2-9 of this volume and Chapter 1 of Anderson (2008)

<sup>16</sup> data from FAO AQUASTAT

<sup>17</sup> The "relative rate of assistance" is an index that indicates assistance to agriculture relative to non agriculture.  $100 * ((100 + NRA_{Ag}) / (1000 + NRA_{NoAg}) - 1)$ , where  $NRA_{Ag}$  is the nominal rate of assistance to producers of tradable agricultural goods and  $NRA_{NoAg}$  is the nominal rate of assistance to non agricultural tradable (mainly mining and manufacturing).

<sup>18</sup> Anderson, K (ed) Distortions to Agricultural Incentives: A Global Perspective, 1955-2007, London: Palgrave Macmillan; Anderson, K and Valdes, A 2008 Distortions to Agricultural Incentives in Latin America, Washington DC, World Bank.

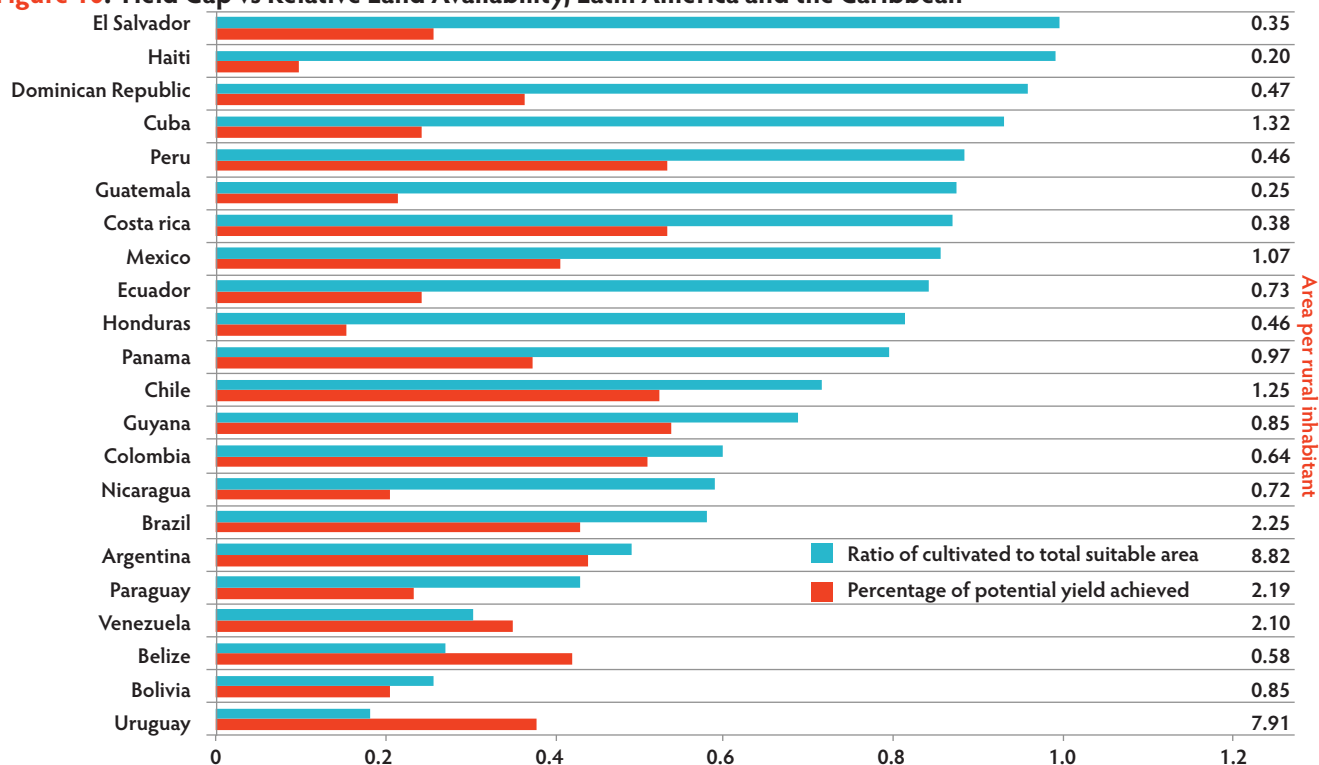


**There is a window of opportunity for LAC countries to scale up production, both by increasing area being farmed in environmentally sustainable ways, and by improving productivity.** Many countries have the potential to make a contribution to ramping up production in LAC, but the countries with the greatest potential can be grouped broadly into two categories: (1) those with a relatively high percentage of suitable land that is currently uncultivated, particularly those with a high ratio of land/ rural inhabitant; and (2) those with a large gap between current yields and the level that might be attainable with better production technology. The appropriate strategies for increasing production are country-specific, of course, but in general the strategies would roughly correspond to these two categories of countries.

**For countries with a high percentage of suitable land that is currently uncultivated, the strategy would focus on expansion of production –that is, bringing land into production in a sustainable way that avoids deforestation and destruction of biodiversity, over-exploitation of water resources, and other environmentally destructive practices.** Countries falling in this class would include Argentina, Uruguay and Brazil (Fig. 10).

**For countries with a high yield gap, the strategy would focus more on intensifying production – that is, raising productivity per hectare.** Such countries would include Ecuador, Bolivia, Paraguay, and parts of Central America. Success in intensification of production will depend on the availability of complementary inputs such as water, fertilizer and seeds, a farm system that enables control of growth conditions (including an irrigation/water management system and pest management plan), and a well-functioning distribution, market and finance system. This type of farming is more knowledge-based, enterprising, market driven and capital-intensive. The above taxonomy is only a first cut, of course. Ensuring that investments achieve the biggest bang for buck requires more detailed analysis of the potential constraints to supply response in each country and indeed in different regions within countries. Especially in large diverse countries, an optimum strategy will incorporate elements of both extensive and intensive growth in production. For example, even within Brazil, a country with potential for area expansion, regional disparities in yields are large, and closing these productivity gaps alone could raise production by an estimated 50 percent in the long term with no increase in cropped area. An ongoing region-wide research project should shed light on responsiveness in different agro-ecological zones within countries and provide valuable input into this kind of diagnostic.

**Figure 10. Yield Gap vs Relative Land Availability, Latin America and the Caribbean<sup>19</sup>**



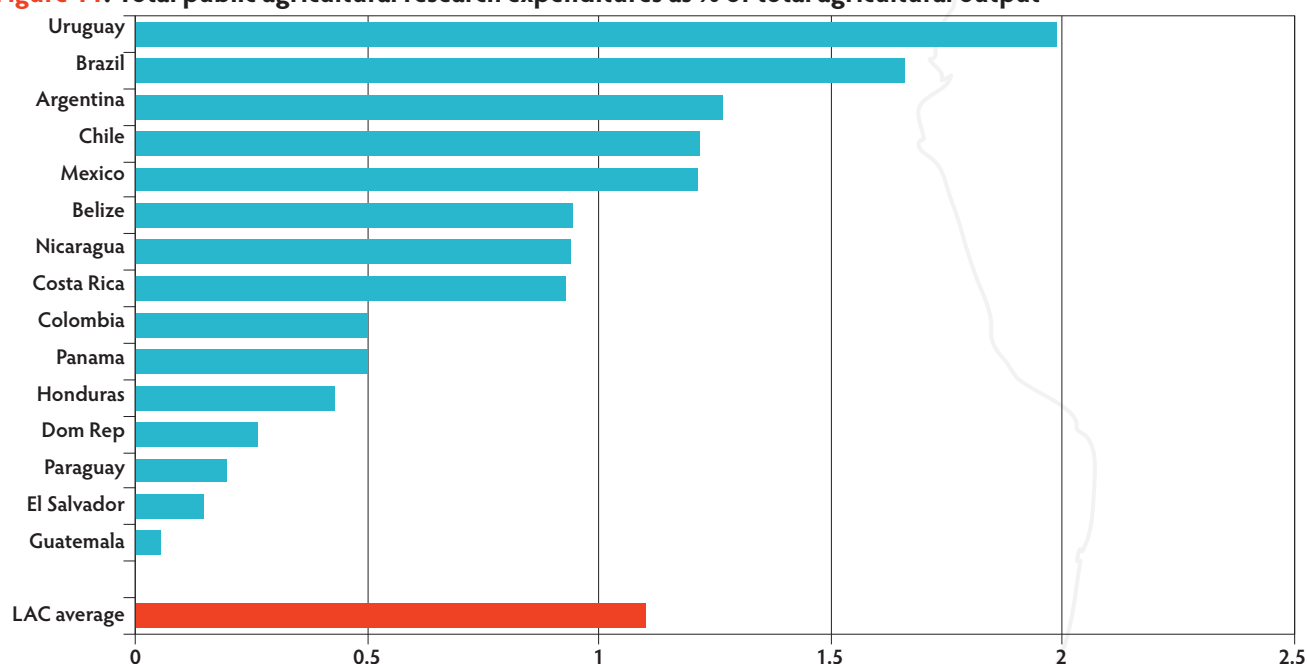
<sup>19</sup> Deininger, K et. At 2011 Rising Global Interest in Farmland. Can it Yield Sustainable and Equitable Benefits? Washington DC, World Bank



**But taking full advantage of this potential will require addressing a number of supply-side constraints.** One lesson emerging from the region's response to recent global price movements is that countries that had prepared well ex ante were in a very good position to respond strongly. Brazil, for example, had been investing in technology over many years, and had a policy environment supportive of agricultural development. As a result, Brazil is today the third food exporter in the world, after USA and the EU. Other countries with policies that were not as supportive of agricultural production did not benefit as much as Brazil, and in some cases have been criticized for policies that insulated their domestic markets, thereby exacerbating the price spike in world prices.

**The food crisis underscores both the challenges facing long term agricultural development and the necessity of overcoming those challenges through a multi-prong approach that addresses both production and distribution.** Clearly, any policy reforms or investments that enhance sectoral efficiency will increase production, but some are aimed more directly at this goal. One measure focusing squarely on improving productivity that governments can take is a rebalancing of public expenditure to give higher priority to research. Empirical evidence suggests that rates of return to public spending in agricultural research and extension are high<sup>20</sup>. The rate of return across Latin American studies averages at 53 percent, which is close to the average for developing countries (60 percent), but well below the average for developed countries (98 percent). Yet, other than Uruguay and Brazil, countries in LAC spend little on agricultural research: only a little over 1 percent of agricultural GDP, compared to 2.36 percent in developed countries (Figure 11). Though appropriate level of funding for research and development is related to the stage of development, a level of 2 percent of agricultural GDP is often mentioned as a desirable target for developing countries.

**Figure 11. Total public agricultural research expenditures as % of total agricultural output**



**Instead, much of the public sector's agricultural budget is spent on subsidies of various kinds, which often promote environmentally destructive practices and by their very nature are captured disproportionately by large farmers (Table 3).** The political economy of such subsidies makes them difficult to eliminate in all countries -developing as well as high-income. But a period of high food prices, when farmers would enjoy healthy profits even without subsidies, creates an opportunity to rationalize public expenditure policy by eliminating inefficient and regressive subsidies, thereby freeing up fiscal space for more productive expenditures in the sector.

20 Alston, J., Chan-Kang, C., Marra, M., Pardey, P and T. Wyatt. 2000. A Meta-Analysis of Rates of Return to Agricultural R&D. Ex Pede Herculem? IFPRI Research Report 113.

**Table 3: Composition of rural public expenditures.**

Countries	Subsidies (\$ millions)	Subsidies as % of total expenditure	Public goods (\$ millions)	Public goods as % of total expenditure	Total Expenditures (\$ millions)
Costa Rica	41.6	47.4	46.1	52.6	87.7
Dominican Republic	174.6	65.4	92.2	34.6	266.8
Ecuador	89.8	67.3	43.61	32.7	133.4
Honduras	3.3	10.8	27.6	89.2	31.0
Panama	82.9	80.8	19.6	19.2	102.5
Paraguay	106.5	86.5	16.6	13.5	123.1
Peru	197.3	55.0	161.4	45.0	358.7
Uruguay	7.7	19.1	32.42	80.9	40.1
Venezuela R.B. de	283.8	54.2	239.9	45.8	523.8

**LAC countries can assist other regions to increase production through South-South knowledge transfer.** In addition to its potential for expanding their own food production, countries in the LAC region have developed a number of innovations in policies and institutions, commercial practices, and production technology that could help other countries efficiently ramp up their production. Knowledge transfer needs to be promoted not only outside the region, but among countries within the region as well. A few of the areas in which LAC countries could make a significant contribution by sharing knowledge and experience would include:

- **Making agricultural support more efficient.** Among developing countries, Mexico pioneered the replacement of highly inefficient input subsidies and price supports with “decoupled” area-based agricultural support payments (the Procampo program). This model has been emulated with some success by other countries, including Turkey and Romania, and is currently under consideration by others, including Thailand and the Philippines.
- **Improving institutional capacity.** Uruguay has contributed to important innovations in animal tracking systems and mitigation of greenhouse gas emissions from agricultural and livestock production<sup>21</sup>. Uruguay is the first country to have achieved 100 percent traceability of cattle, an experience already shared internationally with South Korea and Bolivia. With support from a Bank low-carbon growth study and a sustainable development project, Uruguay is also developing a ‘National Response to Climate Change Plan’ in an effort to mitigate climate change by adapting agricultural production techniques and strengthening water and land use management.
- **Reforming land policy to facilitate equitable land consolidation and expansion.** Recently attention has focused on the large-scale acquisition of land in many regions. A Bank study<sup>22</sup> concluded that if carried out in an appropriate framework of policies and institutions, this has great potential to help countries with large agricultural sectors and ample endowments of land to expand production while avoiding adverse environmental and social impacts. Doing this right will require, above all, improvements in land governance, and the report cites Latin American experience that could provide good models for Africa. These include Peru’s legal structure for handling compulsory acquisition and its auction system for divesting public land, as well as Mexico’s successful land registration drive and the country’s Procuraduria Agraria agency, which helps resolve agrarian disputes, particularly those involving land regularization and land use planning.
- **Sharing innovative technologies and commercial practices.** Thirty years ago, Brazil started an agriculture revolution that turned its most unproductive region (the dry area of the Cerrados) into one of the world’s largest food reserves. Because Brazil has much in common with Africa (similarities in climate and soils), this revolution can be transferred to Africa. On an initiative of former president Luiz Inacio Lula Da Silva,

<sup>21</sup> Both activities have been actively supported by the World Bank.

<sup>22</sup> Deininger, K et. At 2011 Rising Global Interest in Farmland. Can it Yield Sustainable and Equitable Benefits? Washington DC, World Bank.

Embrapa (the public research agency) is actively sharing this knowledge with African countries through the Africa-Brazil Agricultural Innovation Marketplace. This supports the creation of partnerships between African and Brazilian organizations. Argentina also has a number of innovative technical practices to share, especially in low-till agriculture, which is very widespread, and adoption of Genetically Modified Foods (especially soy). Firms in Argentina have also been pioneers in commercial practices that help cope with underdeveloped financial markets and increase business efficiency, such as “planting pools” and innovative organizational forms that develop extensive upstream and downstream linkages<sup>23</sup>.

- **Facilitate inter-sectoral collaboration.** This can be done notably between agriculture, health, social affairs, industry and private sector, to take care of opportunities arising from program targeting the same beneficiaries and benefiting from economies of scale.

## **D. Food from the Farm to the Table: assuring that food reaches those at risk**

**Transport and logistics costs are high in the LAC region when compared to OECD standards, driving a wedge between the prices consumers pay, and the prices farmers receive, penalizing both.** On a macro-level, the World Bank has estimated LAC logistics costs as a percent of GDP as between 16 and 26 percent compared to the OECD benchmark of about 9 percent. At the national level, average logistics costs represent a share of product value between 18 and 32 percent, compared again with 9 percent for the OECD<sup>24</sup>. For food, supply chain analyses conducted by the World Bank over the last two years reveal a range of logistics costs for food imported or traded across borders in LAC from about 25 percent to 60 percent of final price—depending on product and trade route.

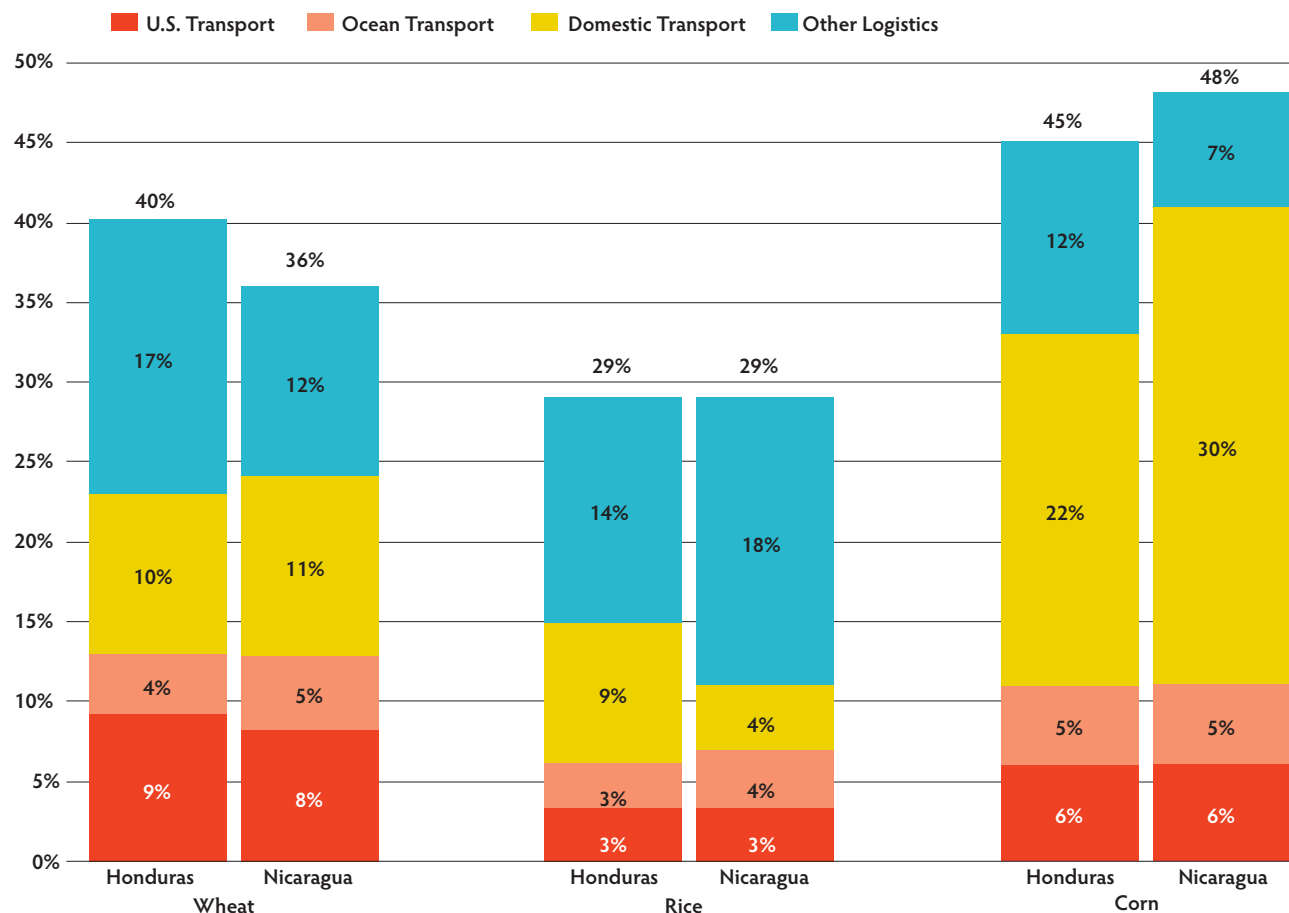
**However, there is a great variability on the disaggregation of logistics costs by country and commodity (Fig 12, Also Fig 3 in Annex).** Within these, inland trucking costs are usually the highest cost components and the biggest factor in driving overall distribution costs up —especially for small food exporters. The causes for this variability in logistics costs are not distance from port to market, but rather:

- **Road conditions, capacities and average travel speeds.**
- **Trucking competitiveness, efficiency, and protective measures restricting backhaul of cargo and crossing of borders by national trucks.**
- **Degree of competition among modes of transport (roads vs. rail vs. short-sea shipping).**
- **Supply of warehousing, silos, and cold chain facilities.**
- **Sophistication of logistics services such as consolidation and freight forwarding.**
- **Customs and border clearances (time and financial costs).**
- **Maritime costs are particularly punishing for small economies and countries with inefficient ports structures.** Costs are driven by degree of agglomeration of cargo in ports so that larger and more efficient vessels can carry the cargo.

23 Sinnott, E. et al. 2010. Natural Resources in Latin America and the Caribbean: Beyond Booms and Busts? World Bank, Office of the Chief Economist, Latin America and Caribbean Region.

24 Guasch, J.L. and J. Kogan (2006): Inventories and Logistic Costs in Developing Countries: Levels and Determinants – A Red Flag for Competitiveness and Growth. Revista de la Competencia y de la Propiedad Intelectual. Lima, Perú; Guasch, J.L. (2004): Presentación: Elementos de Una Estrategia de Desarrollo de la Competitividad en un Entorno Descentralizado. Mimeo.

**Figure 12. Logistics Costs (Transport + Other Logistics Costs) as a Percentage of the Final Price of the Good by Product and Country<sup>25</sup>**



Source: World Bank LCSSD Economics Unit (2011), Shipper, forwarder and producer surveys

**High logistics costs seem to be a particular problem in two regions with vulnerable populations –the Caribbean and Central America.**

- **The Caribbean also has the highest import tariffs, punishing its consumers twice.** This situation is particularly worrisome given that, in addition to higher import tariffs, the shipping structures of the Caribbean islands provide for very little direct service and low connectivity, which in turn leads to higher ocean freight rates. Estimates suggest that if Caribbean countries could “double” their centrality within the global shipping network, transport costs would decrease by over 15 percent<sup>26</sup>.
- **In Central America, Honduras and Nicaragua have very high transport costs for grain, particularly in-country.** Domestic transport costs for the corn chain in Nicaragua, for example, are higher than the U.S. transport, ocean transport, and other logistics costs combined --30 percent vs. 18 percent. Logistics costs involved in the reception of the grains at the port of entry, especially those related to phyto-sanitary and sanitary review are also significant. The sanitation process (fumigation) can take place on board the vessel, at the port or at the mills, and represents substantial additional costs, delays and operational uncertainties. These additional costs include, for example, the pur-

<sup>25</sup> Source: World Bank LCSSD Economics Unit (2011), Shipper, forwarder and producer surveys

<sup>26</sup> World Bank (2008) OECS Backward Linkages Study.

chase of the fumigant (US\$11.25/MT), delays in the unloading process and in the time that the vessel must remain at the port<sup>27</sup>, and unpredictability in the timing of shipments, which may result in increased storage costs at the mills<sup>28</sup>. Finally, these grain supply chains reveal bottlenecks at land border crossings, which prevent regional integration from materializing effectively.

**Logistics costs are, on average, much higher than import tariffs for food.** Import tariffs for foods across LAC have fallen steadily in recent years, averaging 16 percent for Caribbean countries, 11 percent for Central America, and 5 percent for South America. This compares low to the 25 to 60 % represented by logistics and transport costs. In recent years international and domestic freight costs have risen and fallen along with commodity prices, magnifying the price movements at the consumer level. This seems to be due to a kind of two-way causality. Higher transport costs create some upward pressure on food prices. It also appears that rising food prices may draw logistics costs up with them. This may be due to the fact that shipping and trucking companies understand the level at which their services are affordable at each price point of the commodity. Also, as a major input to transportation, rising fuel prices help to push up logistics costs (for both ocean shipping and trucking) while the higher transport costs also drive up fuel prices. Thus, food and logistics price movements can feed each other, and this trend can be exacerbated by fuel price movements.

**Lowering logistics costs will help countries in reducing food prices to consumers while simultaneously maximizing their contribution to global food supply.** This could be achieved both by taking policy actions and making critical investments to relieve bottlenecks in areas such as road and port infrastructure, customs, and warehousing and storage, among others. Priorities will be country-specific, but the kinds of value chain analyses described above are important tools to identify critical choke-points. To cite one result, grain importers in Central America expressed dissatisfaction with the way phyto-sanitary controls are managed in the region. Importers consistently emphasized the importance of harmonizing phyto-sanitary regulations between the United States and Honduras and Nicaragua as importing countries. They complained that even though the product was sanitized and certified in the United States, OIRSA, the Regional International Organization for Farming and Livestock Sanitation (an intergovernmental organization in charge of sanitary integration in the region), often does not accept U.S. certifications and forces importers to sanitize again.

**Lowering transport costs by focusing on infrastructure quality and competition among transport service providers are other areas where countries could focus to lower food prices to consumers.** Results from a supply chain analysis of wheat imports from Canada into Ecuador comparing transport costs from the Port of Manta in Ecuador to different cities within the country, show that the cost of domestic transportation to Quito is minimal due mainly to the high degree of competition in the Quito market and the availability of good roads linking the coast and the capital city. However, when the price of wheat flour to other cities is assessed, domestic transportation costs are more significant. The delivered cost to a city such as Ambato adds another 20 to 25 percent onto the cost of the product despite the fact that it is closer to the Port of Manta than is Quito. The large price difference is mostly explained by the quality of the road infrastructure and the ability of trucks to make a return trip within a day when traveling to and from Quito.

**A final factor driving-up consumer costs and reducing the region's export capacity is food waste.** For all classes of products, the percentage of food fit for human consumption that is wasted between production and consumption is higher in LAC <sup>29</sup> than in developed countries or the world as a whole (Fig. 13). Cereals and starchy roots are very important in poor people's diets<sup>30</sup> but they are among the most wasted commodities. Across the region between 3-14 percent of the cereals produced is wasted and up to 23 percent of starchy roots is wasted. Up to 7 percent of the milk produced is wasted. Fruits and vegetables are key for diversifying diets and ensuring a balanced consumption of nutrients but between 3-13 percent are wasted before they reach consumers.

27 The regulations guiding charges during unloading at the ports differ between countries. In Puerto Corinto, Nicaragua, importers are rewarded US\$5,000 per day if they manage to unload the vessel in less than three days. If they take longer they are fined US\$20,000 per day. In Puerto Cortes, Honduras, there is no fine/reward system. They charge a flat fee of US\$7,000 per day.

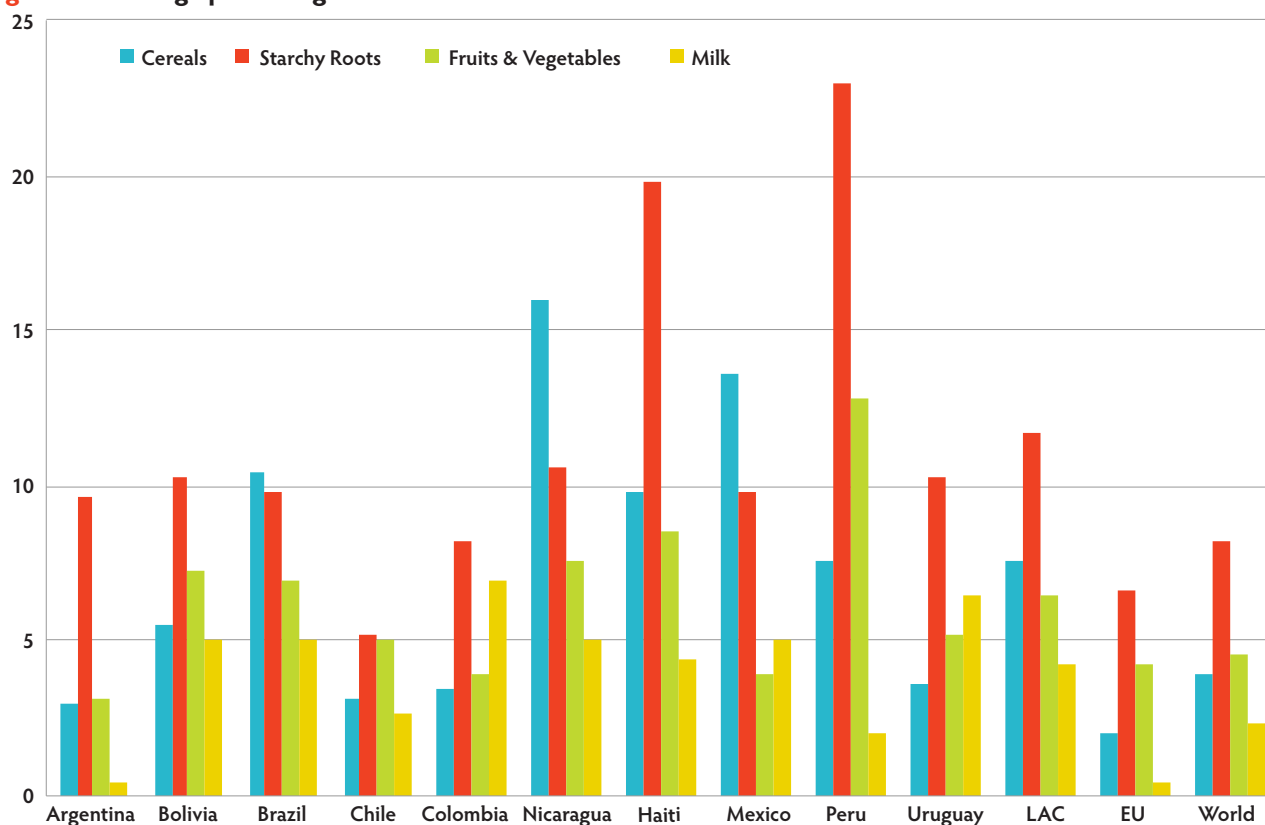
28 Importers may choose to buy in advance to be able to fulfill demand fluctuations.

29 The Latin America and Caribbean Average is based on an 11 country average: Argentina, Bolivia, Brazil, Chile, Colombia, Nicaragua, Haiti, Mexico, Paraguay, Peru and Uruguay. The EU average is based on the current EU 27 country average.

30 FAO, Global and regional food consumption patterns and trends, 2003.

**The lack of infrastructure and poor harvesting technologies is a major factor in generating food waste** <sup>31</sup>. Haiti and Peru stand out as priority countries, with total waste for the 4 commodity groups exceeding the regional and world averages with 11 percent waste. Hot climatic conditions and inadequate storage or processing facilities are the major factors contributing to Haiti's food waste. In Peru the remoteness of some producing areas and the difficult topography points to poor market integration as the underlying cause of its food waste. A realistic objective would be reducing the region's waste levels to the world average at around 4 percent. Solutions should focus on two types of intervention: improving post-harvest infrastructure and increasing market integration. Improving post-harvest infrastructure will primarily benefit medium to large scale farmers who produce non-perishable crops such as cereals. Enhancing market integration between growers, buyers, processors and distributors by improving transportation infrastructure, logistics and information systems will mainly help small to medium scale farmers who produce perishable crops <sup>32</sup>.

**Figure 13. Average percentage food waste**



<sup>31</sup> J. Parfitt, M. Barthel and S. Macnaughton, Food Waste within Food supply chains: quantification and potential for change to 2050, Biological Sciences, 2010

<sup>32</sup> Same as above



## IV. What Can the World Bank do to Help?

Given its expertise and a history of fruitful partnership in the region, the Bank can help countries implement their policy responses, both on the supply side (agriculture and infrastructure) and on the demand side (poverty monitoring and social protection). The strategy of the World Bank's LAC region aims to assist client countries in addressing immediate needs for coping with the effects of the current price spike, as well as the longer term issues of living in a world of higher and more volatile prices. In the very short term, strategic responses focus on ensuring that the current situation does not evolve into a catastrophe for the poor.

One characteristic of the LAC region that has reduced the impact of crises on the poor is the presence in many countries of developed safety net programs, (often, but not only or necessarily, Conditional Cash Transfer programs), where the Bank has a long history of involvement, both in designing and financing them. However, as this report has highlighted, these programs could be improved in an number of countries, and in most of the region, policy action may be needed, either to scale up or adapt programs from their original roles (often to address chronic extreme poverty and inequality and to build human capital), or to complement them with other programs. The Bank has an active dialogue on safety nets across LAC, including most of its poorest economies, and active lending for safety nets in many of them. There is also an active dialogue in all countries with high malnutrition rates. The Bank is thus well placed to provide technical advice as needed, and in select cases, to provide additional financing. In line with the above, the Bank's strategy will include measures to:

- Help governments devise appropriate safety nets and nutritional responses, through existing programs or by establishing new ones.
- Provide technical advice to develop more flexible program targeting.
- Finance increased support through existing social protection programs (cash transfers, food vouchers, and provision of micro-nutrient supplements).
- Provide investment loans or grants that support broader nutrition security operations aimed at preventing nutritional deficiencies by improving diet quality, diversity of foodstuff, and delivery of nutrition and health services.
- Continue to support the dissemination of good practices from LAC to other countries.

A key factor in responding appropriately to the current situation and designing better strategies to deal with future shocks is better information. Yet as noted in this report, monitoring frameworks are not highly developed in many countries, creating an information gap that makes it difficult to judge how serious the situation is, or to plan a response. Given that high and volatile prices are likely to remain a feature of food markets in the future, it will be important that countries in the region better monitor the social and poverty impacts of crises in real time. Some actions that the Bank should help countries take would include:

- Design and start implementation of a social risk monitoring system that integrates data from various sources on household and labor impacts of food and other economic and natural crises, to allow policy makers to better track impacts and program responses.
- Before more consistent and frequent household survey tools are in place, help strengthen administrative records to help judge how serious impacts are and the need for response. Of highest priority would be to monitor malnutrition in real time, but including monitoring applications for social assistance, school dropouts, and child death rates would also be helpful.
- Develop high frequency indicators for social welfare monitoring and instruments to collect the data in a timely and efficient manner. In this, it will be important to learn from and scale up efforts such as Listening to LAC, an initiative focusing on using mobile phones to collect panel household data to detect emerging vulnerabilities and crises. Listening to LAC will be piloted this spring in Peru and Nicaragua. In the coming year, the Bank will work with the Government of Colombia to help build a

social monitoring system that will use a range of administrative and market data to track household welfare more closely.

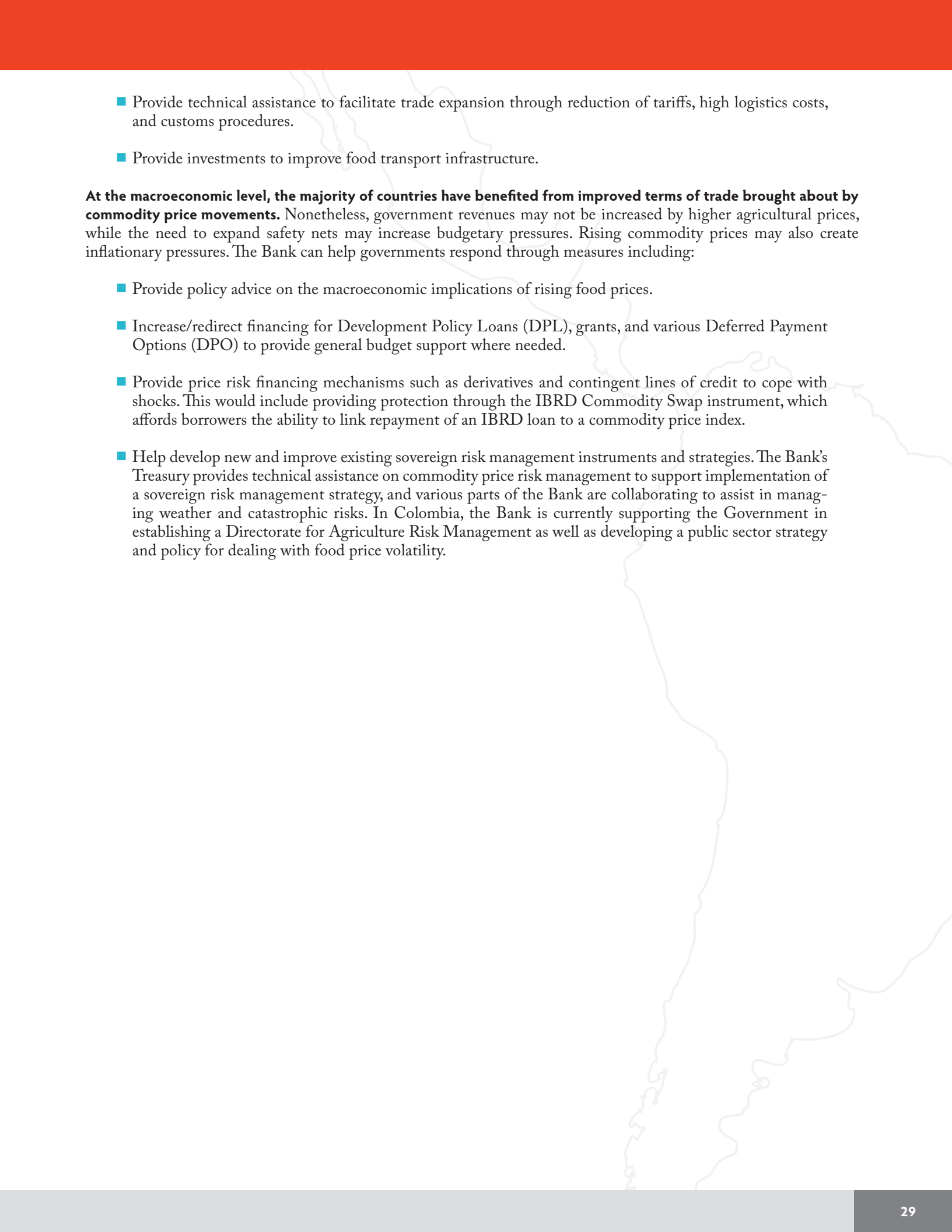
- Improve quality and frequency of household survey data, especially in the Caribbean, which tends to be hard hit by disasters and for which there is no regular survey for monitoring household welfare.
- Support the design and implementation of evaluation programs of crisis-related social assistance interventions.
- Increase research on drivers of food price increases and improve ability to forecast food inflation.

**In a world of higher prices, farmers in LAC need to be prepared to scale up production in environmentally sustainable ways.** The Bank's expertise and long experience in agricultural sector strategies, combined with a commitment to sustainability, will help support the triple objectives of promoting rural development, increasing the world's food supply, and protecting the environment. Of particular relevance would be the Bank's expertise in agricultural policy aimed at improving supply responses—for example, through rural development programs and measures aimed at enhancing agricultural productivity and competitiveness, and its ability to combine technical assistance with financing to improve infrastructure and logistics for distributing food. In vulnerable countries serviced by the International Development Agency (IDA), grant financing through the Global Food Crisis Response Program (GFRP) and the Global Agriculture and Food Security Program (GAFSP), and donor coordination to support concessional financing, would be an important part of any potential Bank's response to rising food prices. Unfortunately, this grant financing is not available for other LAC vulnerable countries in the Caribbean. Actions that should have high priority to increase food production would include:

- Provide technical assistance and loans to improve property rights and resource tenure systems (including land administration).
- Provide technical assistance and loans to promote development and diffusion of improvements in production technology. The Bank has long supported agricultural research with lending projects and technical assistance. A recent example is the advisory service undertaken to help modernize Chile's innovation system.
- Provide technical assistance to improve efficiency of public expenditure to ensure that governments get the biggest "bang for buck". Agricultural Public Expenditure Reviews are increasingly used as the vehicles to provide this assistance.
- Provide technical assistance and financial support to promote South-South knowledge exchange on policies and productive technologies, along the model now being used in the Africa-Brazil Agricultural Innovation Marketplace cited above.
- Provide technical assistance to build agriculture risk management policies and programs, in particular to help with extreme/catastrophic exogenous systemic shocks such as price and climate risk.
- Provide best practice policy advice, to help countries implement agricultural policies that establish a clear and predictable framework aimed at enhancing productivity, supply and price stability.

**Food costs can be reduced for consumers and increased for producers by lowering distribution costs.** The Bank can work on several fronts to do this:

- Undertake studies to identify bottlenecks in food distribution and sources of post-harvest losses.
- Promote private-public partnerships through projects to support food price "busters" initiatives. Examples could include: greater use of electronic/mobile banking; set up integrated management systems to deploy more effectively trucks around the country, and manage more effectively storage facilities.
- Provide technical assistance to improve food supply chain integration and reduce logistics' costs.

- 
- Provide technical assistance to facilitate trade expansion through reduction of tariffs, high logistics costs, and customs procedures.
  - Provide investments to improve food transport infrastructure.

**At the macroeconomic level, the majority of countries have benefited from improved terms of trade brought about by commodity price movements.** Nonetheless, government revenues may not be increased by higher agricultural prices, while the need to expand safety nets may increase budgetary pressures. Rising commodity prices may also create inflationary pressures. The Bank can help governments respond through measures including:

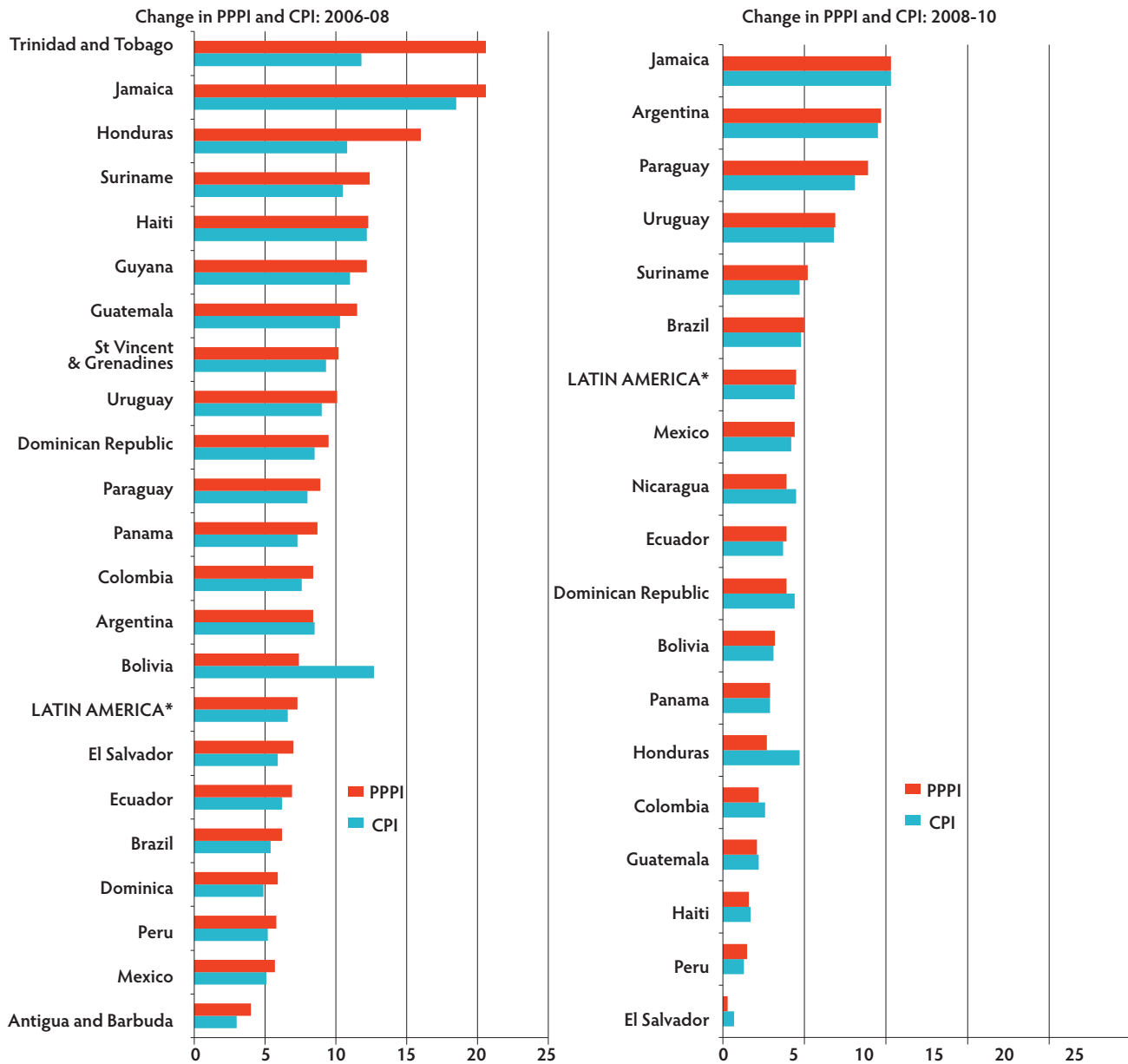
- Provide policy advice on the macroeconomic implications of rising food prices.
- Increase/redirect financing for Development Policy Loans (DPL), grants, and various Deferred Payment Options (DPO) to provide general budget support where needed.
- Provide price risk financing mechanisms such as derivatives and contingent lines of credit to cope with shocks. This would include providing protection through the IBRD Commodity Swap instrument, which affords borrowers the ability to link repayment of an IBRD loan to a commodity price index.
- Help develop new and improve existing sovereign risk management instruments and strategies. The Bank's Treasury provides technical assistance on commodity price risk management to support implementation of a sovereign risk management strategy, and various parts of the Bank are collaborating to assist in managing weather and catastrophic risks. In Colombia, the Bank is currently supporting the Government in establishing a Directorate for Agriculture Risk Management as well as developing a public sector strategy and policy for dealing with food price volatility.





## Annex

**Figure 1. Poor Person's Price Index**



Source: Authors' calculations based on CPI and food price data from the International Labor Organization, downloaded March 9, 2011 from <http://laborsta.ilo.org/>. For 2008-2010 only Jamaica, Suriname, Dominican Republic and Haiti are included for the Caribbean. For both sets of years, the PPPI for Caribbean countries is calculated using Jamaican consumption data.

**Table A1. Relative rates of assistance to agriculture, Latin America countries, 1965 to 2004**

(percent)

	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
<b>Argentina</b>								
NRA Agriculture	-22.7	-22.9	-20.4	-19.3	-15.8	-7.0	-4.0	-14.9
NRA Non-Agric.	52.3	35.1	21.1	17.7	15.8	11.0	10.5	5.7
RRA	-49.2	-43.0	-34.2	-31.5	-27.4	-16.2	-13.1	-19.7
<b>Brazil b</b>								
NRA Agriculture	-6.1	-27.3	-23.3	-25.7	-21.1	-11.3	8.0	4.1
NRA Non-Agric.	na	34.7	35.7	33.6	29.6	8.3	7.8	5.4
RRA	na	-46.1	-43.5	-44.4	-39.1	-17.9	0.2	-1.2
<b>Chile</b>								
NRA Agriculture	3.1	3.5	1.9	6.1	13.6	8.1	7.4	3.5
NRA Non-Agric.	26.1	32.1	11.2	7.2	9.0	5.9	5.3	2.3
RRA	-18.0	-20.0	-8.0	-1.0	4.2	2.2	2.0	1.1
<b>Colombia</b>								
NRA Agriculture	-5.1	-17.8	-15.2	6.2	0.8	10.6	16.6	33.3
NRA Non-Agric.	28.1	24.4	18.9	23.7	23.5	9.6	7.9	7.1
RRA	-25.6	-34.0	-28.7	-14.0	-18.4	1.3	8.1	24.5
<b>Dominican Rep.</b>								
NRA Agriculture	5.3	-18.2	-22.2	-31.4	-37.3	-1.0	9.7	2.8
NRA Non-Agric.	9.1	8.7	10.2	10.4	10.2	9.3	5.8	4.2
RRA	-3.5	-24.8	-29.5	-37.9	-43.0	-9.4	3.6	-1.4
<b>Ecuador b</b>								
NRA Agriculture	-14.8	-31.5	-20.8	9.9	-0.8	-6.4	-2.6	11.2
NRA Non-Agric.	1.2	-3.2	4.8	9.4	8.6	2.5	5.8	8.5
RRA	-15.8	-29.3	-24.5	0.3	-8.8	-8.8	-8.1	2.2
<b>Mexico</b>								
NRA Agriculture	na	na	na	3.9	3.0	31.2	4.2	11.8
NRA Non-Agric.	na	na	na	7.2	4.0	5.8	3.2	6.8
RRA	na	na	na	-3.3	-1.1	24.1	1.0	4.7
<b>Nicaragua b</b>								
NRA Agriculture	na	na	na	na	na	-3.2	-11.3	-4.2
NRA Non-Agric.	na	na	na	na	na	7.1	6.1	5.7
RRA	na	na	na	na	na	-9.6	-16.4	-9.4
<b>All LA studied countries (unweighted average) c</b>								
NRA Agriculture	-6.0	-19.0	-16.4	-7.2	-8.2	2.6	3.5	5.7
NRA Non-Agric.	16.8	20.6	15.6	14.3	13.4	7.7	7.3	6.5
RRA	-19.5	-32.9	-27.7	-18.8	-19.1	-4.8	-3.5	-0.8
<b>All LA studied countries (weighted average) d</b>								
NRA Agriculture	-9.3	-23.0	-19.0	-12.9	-11.2	4.4	5.5	4.9
NRA Non-Agric.	15.9	27.8	23.3	18.5	16.8	7.3	6.6	5.5
RRA	-21.4	-39.8	-34.2	-26.6	-24.0	-2.7	-1.0	-0.6
Dispersion of national RRAse	17.0	12.7	13.6	20.6	19.1	14.0	10.3	13.4

a The RRA is defined as  $100 * [(100 + \text{NRA}_{\text{agt}}) / (100 + \text{NRA}_{\text{nonagt}}) - 1]$ , where  $\text{NRA}_{\text{agt}}$  and  $\text{NRA}_{\text{nonagt}}$  are the percentage NRAs for the tradable parts of the agricultural and non-agricultural sectors, respectively.

b Ecuador and Brazil 1965-69 column refers to 1966-69 data; and Nicaragua 1990-94 column to 1991-94 data.

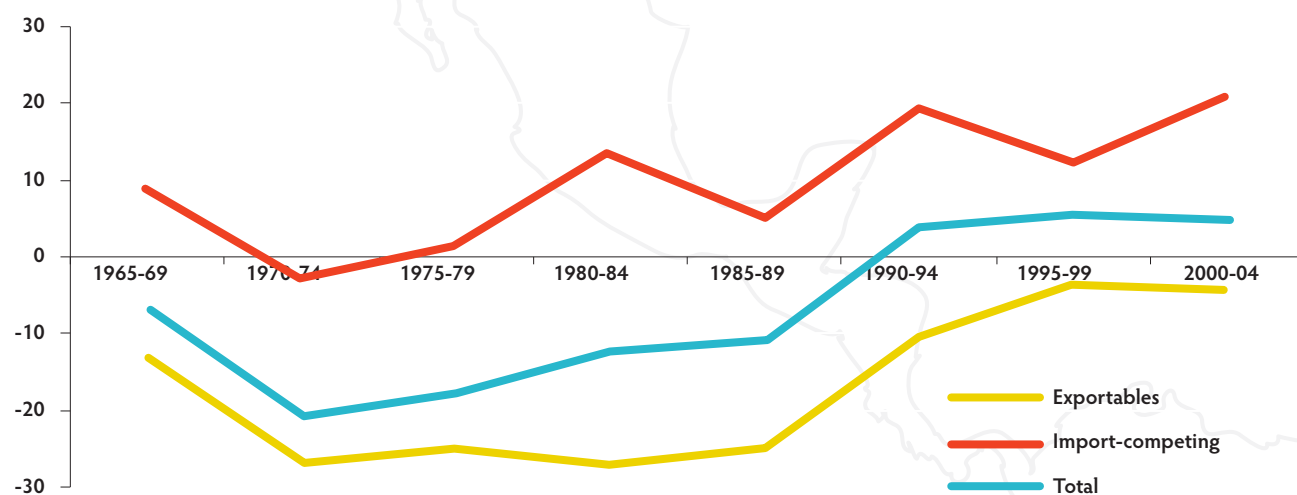
c Simple averages of the above (weighted) national averages.

d Weighted averages of the above national averages, using weights based on gross value of national agricultural production at undistorted prices.

e Dispersion is a simple 5-year average of the standard deviation around a weighted mean of the national agricultural sector NRAs each year.



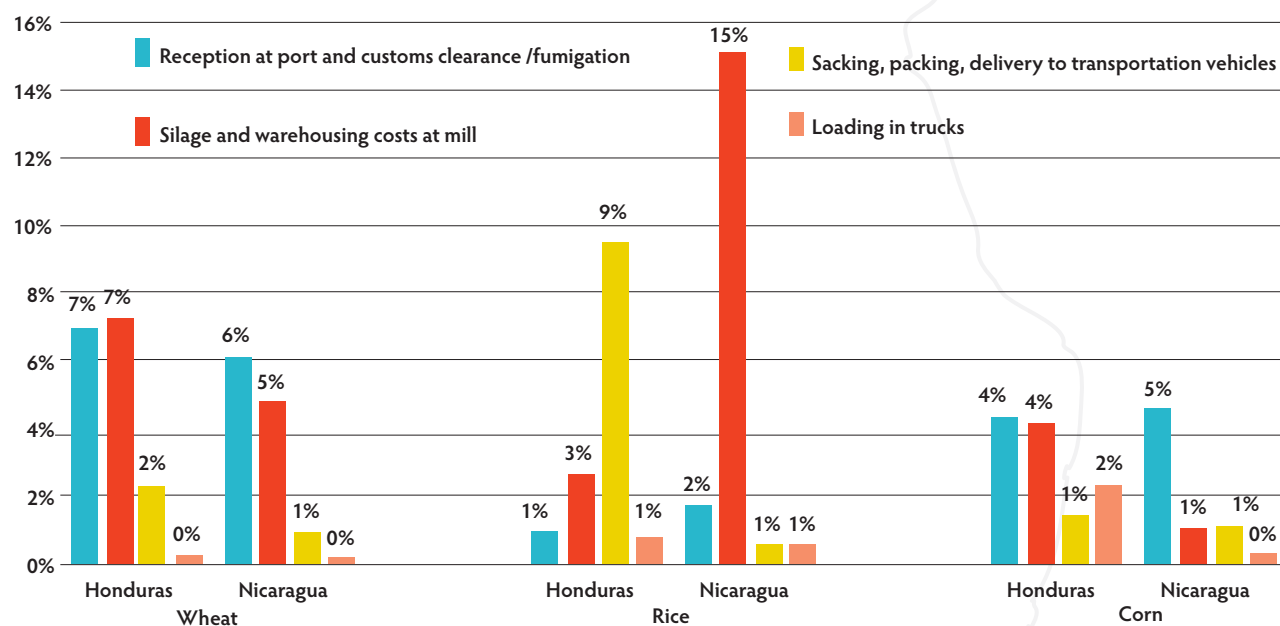
**Figure A2. weighted averages across eight countries**



a The total NRA can be above or below the exportable and importable averages because assistance to non-tradables and non-product specific assistance is also included.

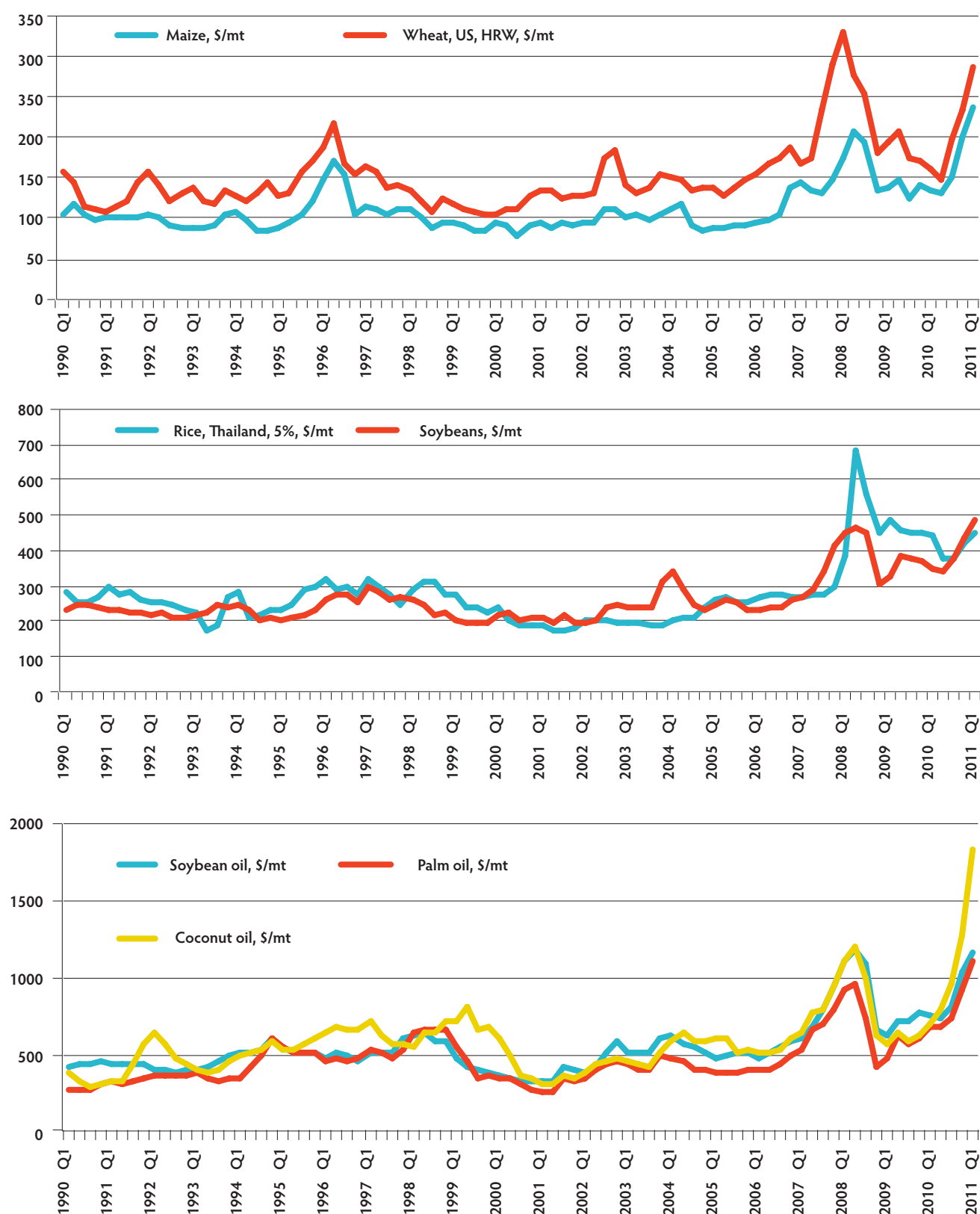
Source: From estimates reported in Chapters 2-9 of this volume.

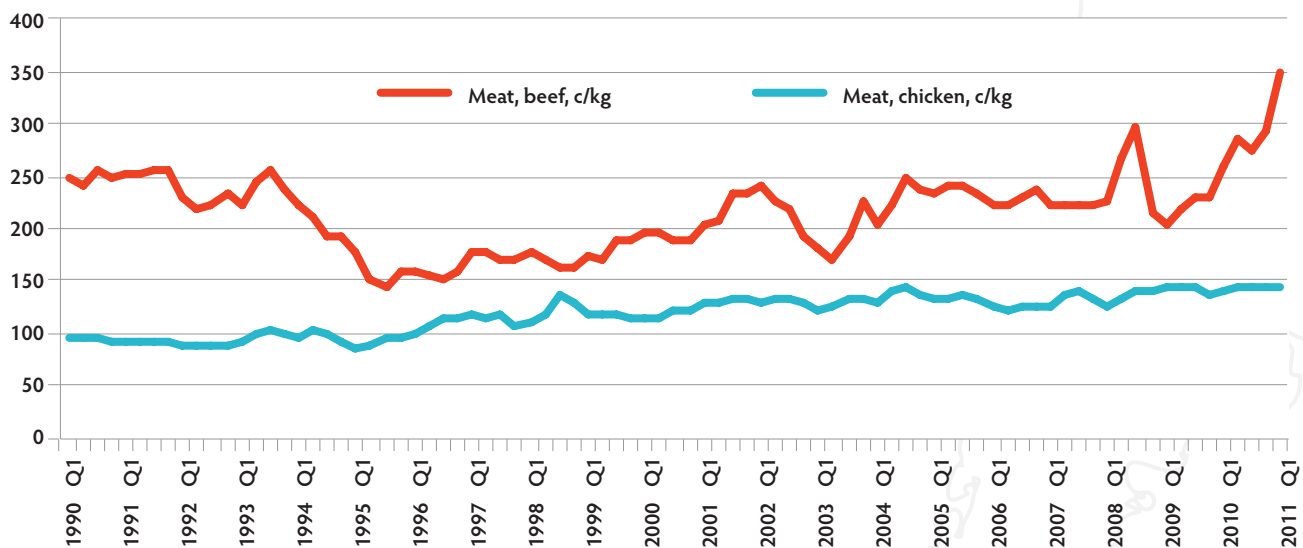
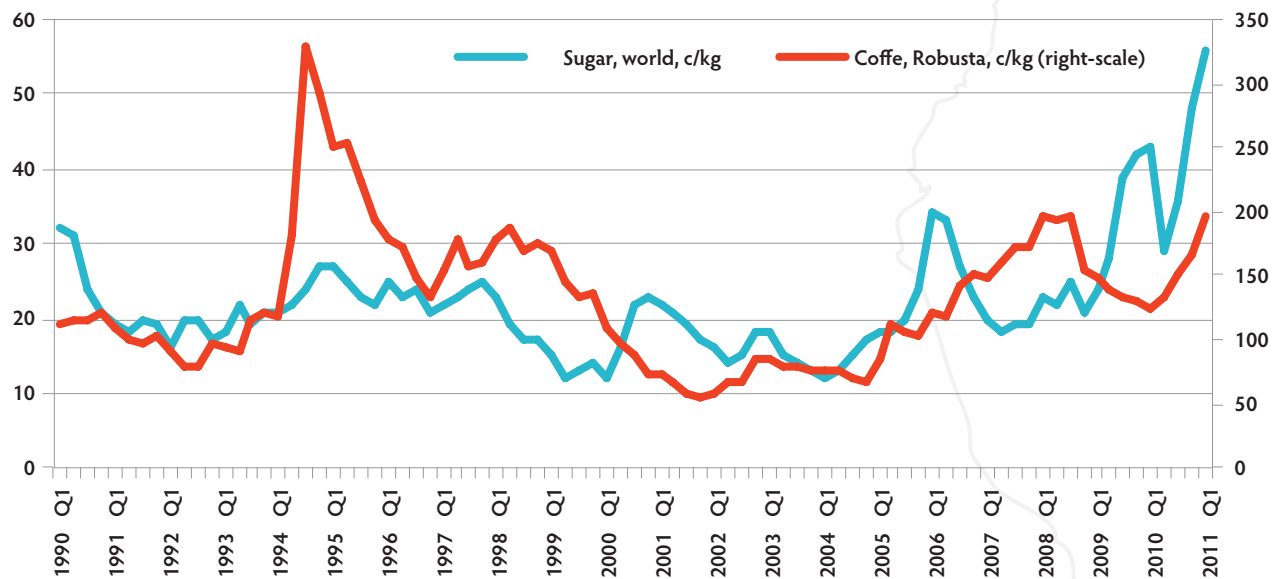
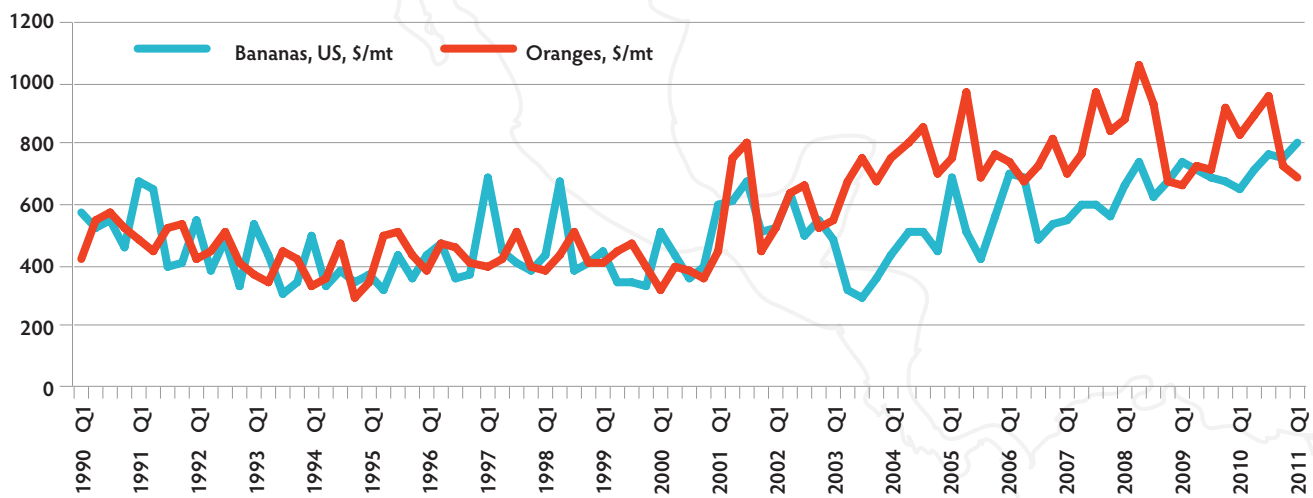
**Figure A3. Other Logistics Costs as a Percentage of the Final Price of the Good**



Source: World Bank LCSSD Economics Unit (2011) Shipper, forwarder and producer surveys

**Figure A4. International food price data**









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