

# TRADE REFORMS AND FOOD SECURITY

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Conceptualizing the linkages



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Commodity Policy and Projections Service  
Commodities and Trade Division

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
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## ABBREVIATIONS AND ACRONYMS

ACP	African, Caribbean and Pacific Countries
AMS	Aggregate Measurement of Support
AoA	Agreement on Agriculture
ATPSM	Agriculture Trade Policy Simulation Model
BULOG	National Logistics Agency ( <i>Badan Urusan Logistik</i> )
CAEMC	Central Africa Economic and Monetary Community
CAFOD	Catholic Agency for Overseas Development
CAP	Common Agricultural Policy
CARLs	Countries with Abundant Rural Labour
CEEC	Central and Eastern European Countries
CGE	Computable General Equilibrium
CGIAR	Consultative Group on International Agricultural Research
CIS	Commonwealth of Independent States
CME	Coordinated Market Economies
CMEA	Common Market of East Asia
COMESA	Common Market for Eastern and Southern Africa
CPI	Consumer Price Index
DFID	Department for International Development (UK)
EAC	Commission for East African Cooperation
ECOWAS	Economic Community of West African States
EPR	Effective protection rate
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FTA	Free Trade Area
GATT	General Agreement on Tariffs and Trade
GMB	Grain Marketing Board
GTAP	Global Trade Analysis Programme
H-O	Heckscher-Ohlin
IBRD	International Bank for Reconstruction and Development
IDA	International Development Agency
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
IOC	Indian Ocean Commission
LAC	Latin American and Caribbean
LDC	Least Developed Country
LIC	Low Income Countries
LIFDC	Low-Income Food-Deficit Countries
LME	Liberal Market Economy
LMIC	Lower Middle-Income Countries
MERCOSUR	Mercado Común del Sur (common market of Argentina, Brazil, Paraguay, Uruguay)

MFN	Most Favoured Nation
MNC	Multinational Corporation
NAFTA	North American Free Trade Agreement
NAEX	Net Agricultural Exporting
NAIM	Net Agricultural Importing
NFEX	Net Food Exporting
NFIM	Net Food Importing
NGO	Non-Governmental Organization
NIS	Newly Independent States
NPR	Nominal Protection Rate
NTB	Non-Tariff Barriers
OECD	Organisation for Economic Cooperation and Development
OPK	Operasi Pasar Khusus (targeted rice subsidy programme)
PMB	Paddy Marketing Board
PPI	Producer price index
PSE	Producer Support Estimate
QR	Quantitative Restriction
RIFF	Regional Integration Facilitation Forum, formerly the Cross-Border initiative (CBI)
RTA	Regional Free Trade Agreement
RUNS	Rural-Urban-North-South Model
SACU	Southern Africa Customs Union
SAL	Structural Adjustment Loan
SAM	Social Accounting Matrix
SAP	Structural Adjustment Programme
SAPRIN	Structural Adjustment Participatory Review International Network.
SECAL	Sectoral Adjustment Loan
SME	Small and Medium Enterprise
SOFI	State of Food Insecurity
SSA	Sub-Saharan Africa
SSG	Special Safeguard
STE	State Trading Enterprise
TNC	Transnational Corporation
TRQ	Tariff Rate Quotas
UMIC	Upper Middle Income Countries
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UR	Uruguay Round
USDA	United States Department of Agriculture
WB	World Bank
WCA	Washington Consensus on Agriculture
WFM	World Food Model
WFS	World Food Summit
WTO	World Trade Organization

## **PREFACE**

Although given prominence in the context of the current World Trade Organization (WTO) trade negotiations, trade reforms are generally a component of a wider set of economic and institutional reforms. The complexity of reform packages, the wide variation in policy sets, the context within which they are used, and the thoroughness with which they are followed through, makes it extremely difficult to isolate the impact of specific trade reforms on the food security status of developing countries.

As yet, there is no clear consensus on answers to general questions, such as “will developing countries benefit from reduced agricultural protection in economies of the Organisation for Economic Co-operation and Development (OECD)?”, let alone more specific questions which might include “how can developing country governments best promote smallholder agriculture in the new global environment, and what form of special and differential treatment might be required to allow them to do so?”

In many cases, “successful” reforms have been achieved not in isolation, but as a consequence of associated policy implementation. In drawing lessons from reforms that are perceived to have benefited food insecure groups, or at the very least, not to have disadvantaged them, it is therefore important to identify the complementary policies that facilitated the process of adjustment to more productive activities, and any compensatory policies that acted to alleviate the transitional losses that insecure groups may otherwise have faced.

A clearer understanding of the often-observed effects of trade reform on food security is therefore vital if the drivers of further reform are to result in changes to the benefit of insecure and vulnerable groups in poor countries.

### **Objectives of the publication**

The purpose of this publication is to inform the research that underpins policy analysis, and the negotiations and/or prescriptions that follow, such that these enhance, rather than worsen, the food security status of poor countries. It is intended to be complementary to the existing literature that explores the linkages between trade liberalization, economic openness and poverty, but which does not explicitly explore the implications for food security.

The publication contributes to understanding these relationships by:

- critically reviewing what is known from the existing literature and other resources so as to facilitate better targeted country-level research and analysis of trade and food security developments;
- presenting a conceptual framework for understanding how trade liberalization and related economic reforms can impact upon national and household-level food security;
- providing an operational framework for assessing the outcome of past policies, and predicting the consequences of future initiatives, on national and household food security;
- proposing an agenda for research.

### **Scope of the publication**

Other contemporary publications investigating the impact of trade reforms tend to relate their potential effects to all economic sectors. It is recognized that reforms in sectors other than agriculture can have far more significant impacts in terms of both poverty reduction and, via changes in levels of incomes or employment, on food security. However, the primary focus of this report is on the agriculture sector and the impact that trade reform can have on its ability to contribute to improved food security in the context of wider structural changes that result from reforms.

This focus is justified by explaining the multiple avenues by which agriculture can determine and enhance both national and household food security. While any trade agreement that changes the balance between liberalization and protection for a good or service in an economy can affect levels of food security, agriculture related reform is especially relevant because: (i) agriculture is one of the central contributors to food security in most developing countries, both via its direct contribution to the availability of food, and indirectly as a key engine of economic development and hence improved access to food, and (ii) agriculture is one of the most heavily distorted sectors in many countries and has, as a result, received significant attention in recent rounds of trade negotiations.

## **Structure of the publication**

The publication comprises four Parts. Parts I to III contain a series of edited papers prefaced by an overview chapter which draws out the key issues and sets them in the broader context of contemporary literature. The reader may therefore obtain the key points from these overview chapters (Chapters 1, 6 and 11) and then refer to the individual supporting chapters for further detail.

Part I introduces theories and definitions related to the concept of food security and its measurement, and to the gains from trade liberalization, before discussing how trade and food security are related at a theoretical level. It provides a conceptual background that governs thinking behind international trade negotiations.

The main purpose of Part II is to identify specific issues and debates, which have, as yet, received inadequate attention in research, and more notably, in international policy fora. The overview chapter (Chapter 6) introduces current debates relating to globalization in the context of the imbalance between developing and developed countries in levels of agricultural protection. It then describes the key role that agriculture plays in securing enhanced food security, a role that is often overlooked in international economic negotiations. Policy analyses and prescriptions that follow from, and have indeed been based upon, the orthodox understanding of the theory introduced in Part I are then examined. The implications in terms of stabilization and structural adjustment at an economy-wide level are then set out, followed by a more focused discussion of the agriculture sector. Specific areas of orthodox policy that may be misguided are discussed, with a particular focus on the often neglected role of institutions that allow the sector to maximize its contribution. Some of the assumptions commonly made about the competitiveness of domestic and global market conditions are examined. The way in which changes in these conditions affect incentives and opportunities within food systems, often to the detriment of the most vulnerable households, are explained.

Part III discusses both the types of methodological approach that have been used in analysing the impact of economic and trade liberalization, and the implementation of policy and institutional reforms in Africa, Asia, Latin America and the Transition Economies. The objectives of these studies are first, to identify systemic differences across regions in terms of the type and degree of reform, and their impact on agricultural performance; and second, to highlight specific issues which might be analysed in further research.

Drawing upon the ideas developed in Parts I to III, Part IV comprises two chapters that provide a framework for further research. Chapter 16 presents a framework for conceptualizing and clarifying the relationship between reform, the strength of the response of the agriculture sector to that reform, and the resulting potential impact on food security. The framework is then used to generate a series of researchable questions. Chapter 17 proposes a series of steps for operationalizing the conceptual framework within a research agenda.

## ACKNOWLEDGEMENTS

This publication draws on a wealth of existing and contemporary research that has been collated and analysed in the process of developing a conceptual framework for informing the Food and Agriculture Organization (FAO) research project on the relationship between trade and food security. In addition to setting out and explaining the framework, it introduces a range of related contemporary debates. These debates were reviewed in a set of commissioned papers presented at an Expert Consultation on “Trade and Food Security: conceptualizing the Linkages” held in Rome on 11 and 12 July 2002, upon which many of the chapters in this publication are based.

In addition to the authors of the commissioned papers, whose names are mentioned in the corresponding chapters, thanks are also extended to the discussants and other participants who contributed to the exchange of ideas during the Consultation (see List of Participants). Particular thanks go to Jamie Morrison and Richard Pearce of Imperial College, London who assisted FAO in the preparation of this volume for publication.

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## **PART I**

# **CONCEPTUAL APPROACHES TO FOOD SECURITY AND TRADE**

The World Food Summit of 1996 set as a target the halving of the number of undernourished people in the world by 2015. This goal was also adopted by the Millennium Summit in 2000. The progress made so far towards meeting this target was reviewed at the “World Food Summit; Five Years Later” conference in Rome in June 2002. The latest analysis by FAO indicated that if current trends at the national and international levels continue, it is unlikely that this target will be met.

Attention was also drawn to this issue in the Ministerial Declaration of the WTO Doha Conference, held in November 2001, which launched a new round of multilateral trade negotiations. In particular, with respect to agriculture, Ministers agreed that special and differential treatment for developing countries should be an integral part of the negotiations and embodied in concessions and commitments as well as in the rules and disciplines to be negotiated, “so as to enable developing countries to effectively take account of their development needs, including food security...”.

Because most studies of the impact of trade liberalization in developing countries have made only passing reference to the food security situation, Part I of the report seeks to provide a conceptual background to this aspect. It demonstrates the theoretical and empirical origins of much of the policy advice and proposals that inform discussions regarding both food and trade policies, particularly in the context of the Doha Round of international trade negotiations.

The first chapter provides an overview of the issues, sketching out the main factors that govern the interpretation and analysis of food security, and reviewing some definitions and conceptual base of current thinking on the subject. The main tenets of orthodox trade theory and the accepted wisdom of most policymakers regarding the outcome of trade liberalization forms the focus of the second section, which points out some of the shortcomings of these positions. The need to pace reforms and to implement complementary policies to facilitate adjustment to more productive activities and/or compensatory policies to alleviate the possible negative consequences faced by some groups in society is also highlighted. A final section poses a number of key questions relating to food

security, answers to which need to inform any discussion of developing countries' trade policy in the current context.

Chapter 2 provides an in-depth review of food security analysis, tracing the way in which the concept has changed in recent decades. A review of household food security measurements follows, with an analysis of changes resulting from trade liberalization. The chapter concludes by highlighting the complexity of the topic and stressing the importance of both identifying and investigating both chronic and transitory manifestations of food insecurity.

A primarily macroeconomic framework is provided in Chapter 3, using secondary sources to classify countries according to their agricultural and food trading positions. The analysis demonstrates which types of country will be most vulnerable to shifts in world prices consequent upon trade liberalization. The analysis focuses mainly on developed country liberalization, since this is the scenario likely to have the most profound effect on world markets, but some of the implications of developing country liberalization are also reviewed with respect to likely effects for the poorer sections of these countries.

A review of the implications of trade liberalization from the developing country perspective is provided in Chapter 4 where both the risks and the advantages of more open international markets are discussed. Reflecting the range of views on this subject, Chapter 4 draws on material that looks on more open markets with greater favour than the more cautious perspective of Chapter 1, arguing that the food security implications will overall be positive, providing a more comprehensive policy reform matrix is adhered to. Evidence from sub-Saharan Africa is provided in support of this perspective.

Finally, Chapter 5 provides an analytical framework linking trade and food security. The conceptual foundations of food security analysis outlined in Chapters 1 and 2 are investigated in the context of policy formation and implementation. The overarching issues that are likely to emerge within the Doha Round are also presented, together with a framework to help policymakers involved in the food security aspects of the negotiations.

# Chapter 1

## Food security and trade: an overview

### 1.1 Introduction

This chapter seeks to link the concerns of developing countries with respect to trade, food security and economic policy in the context of the Doha Round negotiations. It defines the changing conceptual basis of food security and presents some indicators and estimates of trends in aggregate food security status. This is followed by a review of approaches to food security at the household level, and of frameworks for investigating the wide range of factors influencing food security status at this level of disaggregation.

The second part of the chapter is concerned with the theoretical underpinnings of trade policies and strategies. It reviews the conventional or orthodox approach to trade theory and its predictions, as well as some of the criticisms of this approach and of the supporting evidence. Some of the associated risks for developing countries of further trade liberalization are reviewed.

The final section links the two issues of food security and of trade liberalization, highlighting the implications at the national and household levels.

### 1.2 Food security at the national and household levels

Food security is a multi-faceted concept, variously defined and interpreted. At one end of the spectrum food security implies the availability of adequate supplies at a global and national level; at the other end, the concern is with adequate nutrition and well-being.

In this section, issues surrounding food security at the national level are investigated first, before a review of approaches to household food security. The question of food security in intra-household relationships will not be pursued here.

## ***Food security at the national level<sup>1</sup>***

### *The extent of global food insecurity*

Recent initiatives aimed at improving the food security situation of the poor - most notably the World Food Summit (WFS) - have been stimulated by the fact that although food availability for direct human consumption grew by 19 percent between 1960 and 1994-96, to 2 720 kcal/day (against an estimated minimum daily energy requirement of 2 200 kcal/day), availability is still very uneven. In sub-Saharan Africa (SSA) calorific intake is still only 2 150 kcal/day compared to 2 050kcal/day thirty years earlier. In contrast, the average calorie consumption in South Asia rose from 2 000 kcal/day to 2 350 kcal/day in the same period.

However, during the 1990s per capita growth of world agricultural production slowed. World cereal output<sup>2</sup>, for example, fell from a peak of 342 kg per person in the mid 1980s to 311 kg per person in 1993-95, although it has since risen to 323 kg per person in 1996-98<sup>3</sup>.

The results of such statistics are evident in the fact that in 1995-97, 820 million were estimated by the FAO to be undernourished, with 790 million living in developing countries. Although the number of undernourished people in developing countries actually fell by 40 million between 1980/82 and 1995/97, this improvement was also uneven, being attributable to a reduction of 100 million in 37 countries, whilst in the remaining countries the numbers increased by 60 million. In addition, the fall in absolute numbers is too low to achieve the WFS goal of reducing the numbers of undernourished by half by 2015, since this would require an additional reduction of 20 million undernourished individuals each year until that date<sup>4</sup>.

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<sup>1</sup> This section is adapted from Morrison, J.A. & Pearce, R. 2000. *The Impact of Further Trade Liberalisation on the Food Security Situation in Developing Countries*. OECD Paris.

<sup>2</sup> Cereal output is often used as a proxy for food production, given data and aggregation problems.

<sup>3</sup> FAO. 1999. Salient trends in world Agricultural production, demand, trade and food security. *Paper 1. FAO Symposium on Agriculture, Trade and Food Security: Issues and Options in the Forthcoming WTO Negotiations from the Perspective of Developing Countries*, Geneva. 23 - 24 September, 1999.

<sup>4</sup> FAO. 1999. Agricultural Trade and Food Security. *Agricultural Trade Factsheet - Third Ministerial Conference*. Rome, FAO.

### *Food security indicators*

The Committee on World Food Security, a body set up in 1975 by the UN World Food Conference to oversee developments in food security, adopted in the early 1980s the recognition of food security as a tripartite concept, reflecting the criteria of availability, access and stability. Similarly, the OECD suggests that food security has three dimensions: availability, access and utilization, although this source indicates that there is a tendency to characterize it in terms of availability. Chapter 2 discusses these concepts in more detail.

Attempts to capture trends in variables that are likely to reflect food security<sup>5</sup>, can be broadly categorized into two interrelated sets: those that directly measure shortfalls in consumption requirements, and those that concern the potential to meet such shortfalls.

The United States Department of Agriculture (USDA)<sup>6</sup> evaluates two aspects of food security, availability and distribution, both of which capture the extent of the shortfall, and analyse predicted trends through to 2009. The most recent study covers 67 countries that have been, or are, potential food aid recipients. Two key indicators are used: first, the *Status Quo* gap, which measures the difference between projected food supplies (calculated as domestic production plus commercial imports minus non-food uses) and a base period (1995-97) per capita consumption<sup>7</sup>; and second, the Nutrition gap, which is the difference between projected food supplies and the amount of food needed to support minimum per capita nutritional standards.

The *Status Quo* indicator provides a safety net criterion, whilst the Nutrition gap indicator gives a comparison of relative well-being. In some regions, the size of food gaps is quite small relative to commercial imports, meaning that if imports grew at a slightly higher rate the projected gaps could close (for example in North

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<sup>5</sup> OECD. 2002. The medium term impacts of trade liberalisation in OECD countries on the food security of non-member countries. Paris: OECD.

<sup>6</sup> USDA. 1999. *Food Security Assessment*. USDA Economic Research Service. Situation and Outlook series GFA-11 Washington DC.

<sup>7</sup> Food aid is not included in projection of consumption.



Africa and in Latin America and the Caribbean). In Asia<sup>8</sup> however, the ratio of the nutrition gap to commercial imports is about 20 percent and in SSA it is projected to be 229 percent. It is highly unlikely that the gap can be filled. Food imports would need to grow by 10 percent per year in SSA and 4.7 percent in Asia to fill this gap by 2009.

At a more aggregate level, the FAO Committee on Food Security reviews a set of six indicators derived from observations of the global cereals market. Although these indicators (see Box 1.1) are confined to cereals, the contention is that they shed light on the global food situation due to the weight of cereals in the overall food basket and thus overcome the difficulty of aggregating over food commodities in calculations of the total food supply and of food imports.

**Box 1.1                      FAO's food security indicators**

**Ratio of world cereal stock to world cereal utilization**

A ratio of 17-18 percent is estimated to be the minimum necessary to safeguard world food security.

**Ratio of supplies to requirements in the 5 main exporters**

**Ratio of closing stock in the 5 main exporters to their domestic consumption plus exports**

**Cereal production in the 3 main importers (China, India and CIS).**

**Cereal production in Low Income Food Deficit Countries (LIFDC)**

**Production in LIFDC except China and India**

Source: FAO. 1999. Assessment of the Impacts of the Uruguay Round on Agricultural Markets and Food Security. CCP 99/12 Rev. Rome, FAO. October 1999.

A key difficulty in interpreting these indicators is that they make no reference to the ability of a country to meet increased import requirements. For some

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<sup>8</sup> Asia refers to the 10 lowest-income economies: Afghanistan, Bangladesh, India, Indonesia, Democratic People's Republic of Korea, Nepal, Pakistan, the Philippines, Sri Lanka and Viet Nam.

countries the availability of foreign exchange will be a binding constraint. Financial constraints can, however, limit the role of imports in filling the shortfall between production and consumption in many countries. Low commodity prices, for example, may limit export earning potential. The USDA<sup>9</sup> notes that the ratio of foreign exchange availability to food imports is not one to one, but is higher, meaning that a 1.3 to 2 percent increase in foreign exchange availability is associated with a 1 percent growth in food imports.

The second set of food security indicators relates to indicators of changes in world markets, which in turn indicate the potential to meet food shortfalls. Two key primary indicators are world food price stability and world food price levels.

These affect both the ability to finance imports via export earnings and changes in the food import bill, themselves potential indicators of changes in the food security situation.

The European Commission, for example, suggests that the instability of world markets is mainly transferred to each country via the import price of cereals<sup>10</sup>. The aggregate impact on a country therefore depends on cereal imports as a share of total imports, the price elasticity of imports and the capacity to finance imports via export earnings. Vanzetti concludes that the linking of domestic and world markets that would occur under a free trade regime with no government stocks would reduce the variability of the world price of grain by one-third. However, he cautions that any analysis of the instability of food consumption needs to distinguish between instability due to fluctuations in national production and instability of unit import costs, i.e. world prices<sup>11</sup>.

A recent study by Valdés and McCalla<sup>12</sup> calculates an indicator of Food Import Capacity as the ratio of the food import value to the total export value (excluding services). The authors find that this indicator is relatively large for small Island

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<sup>9</sup> USDA. 1999. op cit.

<sup>10</sup> European Commission. 1996. *Instability of World Markets. Topic Paper 4.* Solagral.

<sup>11</sup> Vanzetti, D. 1998. *Global Stocks, Price Stability and Food Security.* Copenhagen.

<sup>12</sup> Valdés, A. & McCalla, A. 1999. *Issues, Interests and Options of Developing Countries, Conference on Agriculture and the New Trade Agenda from a Development Perspective: Interests and Options in the WTO 2000 Negotiations.* Geneva, Switzerland.

Developing Countries (0.70), and for a number of sub-Saharan African countries including Gambia (1.99), Lesotho (0.85) and Mozambique (0.94). However, the ratio is much smaller for larger economies such as India (0.05) and Argentina (0.04).

In contrast to the above, Paarlberg<sup>13</sup> argues against using primary indicators of changes in international grain markets as indicators of food security, because most food insecure countries still depend only lightly on imports of grain from the world market. Paarlberg states that importing countries often do better overall when world grain prices are high, because prices often rise under conditions of rapid international growth. Evidence for this claim is that during the “world food crisis” of 1973/74, when the real export price of wheat increased by 103 percent and of maize by 58 percent, and when food reserves dropped to the equivalent of 33 days of global consumption requirements, there was no decline in overall consumption levels. Indeed, in most countries per capita cereal consumption was steady or even expanded. The increased prices in 1995/96 also failed to produce any notable decline in consumption. Paarlberg states that between 1994/95 and 1995/96 wheat export prices increased from US\$157 to US\$216 per tonne and global stock levels fell by 14.1 percent, but import levels were sustained. By contrast, the 1980s that were characterized by low world market prices and severe food crises were also marked by global recession.

However, Paarlberg does acknowledge that some poor countries have come to rely on food imports to a greater extent during the last three decades. Sub-Saharan Africa’s reliance on imports (import dependence calculated as the share of food import costs to total import costs), including food aid and commercial imports was 13.6 percent in 1993 (up from 10 percent twenty years earlier).

In the light of this discussion, it is apparent that potential indicators should reflect changes in the food import requirements of developing countries, and in their ability to finance any increase in the import bill (see also Chapter 4). They should also be able to capture the effect of the gap between an increase in the import bill and any increase in domestic production (and potentially exports) as a result of a world price increase.

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<sup>13</sup> Paarlberg, R. 1999. The weak link between world food markets and world food security. policy reform, market stability and food security. *Proceedings of a Conference of the International Agricultural Trade Research Consortium*, University of Minnesota.

Two indicators may prove useful in distinguishing the impact of a weak supply response in agriculture in some developing countries:

- changes in the ratio of cereal import requirements (derived in value terms as consumption requirements minus domestic production) to total agricultural export earnings;
- changes in the ratio of cereal import requirements (derived in value terms as consumption requirements minus domestic production) to total merchandise.

In economies where the agriculture sector is less flexible than in other sectors facing improved incentives, one would expect the first indicator to increase at a greater rate than the second. In assessing the potential for increased export earnings from agriculture, it is also important to determine changes not only in the total value of agricultural and merchandise trade, but in their shares of total exports and in the diversification of the export portfolio.

This brief review of potential indicators points to the fact that those capturing the ability to finance import requirements, by for example export earnings, are likely to be more robust indicators of food security than either those based on the primary indicators of price levels or price instability, or those based upon trends in stocks and flows in global cereal markets.

### ***Household food security***

The ability to ensure adequate food security hinges on the ability to identify vulnerable households. Chapter 2 reviews many of the links between food availability and nutrition. Here we focus on the broad picture. Vulnerability refers to the full range of factors that place people at risk of becoming food insecure. The degree of vulnerability of an individual, household or group of persons is determined by their exposure to the risk factors and their ability to cope with or withstand stressful situations. Generally, vulnerable households will constitute three groups:

- those which would be vulnerable under any circumstances: for example, where the adults are unable to provide an adequate livelihood for the household for reasons of disability, illness, age or some other characteristic;

- those whose resource endowment is inadequate to provide sufficient income from any available source;
- those whose characteristics and resources render them potentially vulnerable in the context of social and economic shocks: e.g. those who find it hard to adapt to sudden changes in economic activity brought about by economic policy. A significant increase in the consumer price of staple foods might be an example.

Although no definition of ‘vulnerable’ is complete, a useful starting point is estimates of income. It can be assumed that the first two categories will be relatively poor both in terms of income and assets, and it is also likely that the third category will have a fragile resource base and other characteristics which make its income sources uncertain. An appropriate proxy, therefore, in identifying vulnerable households, is how poor is a particular household measured against some established criterion or ‘poverty-line’.

Having defined who the poor are, the second step is to identify their household characteristics:

- location: rural/urban; small village/large village; remote province/near to capital city etc.;
- composition: size, age and dependency ratios; male/female head;
- sources of income: production, employment, trade, remittances and other transfers.

A frequent problem in delineating those sections of the population most vulnerable, or at risk from changes in policy direction, is the lack of baseline data regarding household income and consumption patterns.

The principal concern of this volume is the way that trade liberalization impinges on food consumption through food availability, food access, and the stability of food supplies. The notion of household entitlement to food, derived from the work of Amartya Sen<sup>14</sup>, is now widely used to investigate issues related to both food security and nutrition. Chapter 2 refers to this approach, while Chapter 5 elaborates the concepts as they relate to policy variables. The word “entitlement”

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<sup>14</sup> Drèze, J. & Sen, A. 1989. “Entitlement and deprivation” in *Hunger and Public Action*. Oxford: OUP.

refers to the various means through which households avail themselves of food, whether through household production, or through other income-generating activities such as the sale of labour or participation in trading. A number of these activities may be pursued by the same member of each household, or by different members. In addition, transfers from sources external to the household, i.e. from the state or friends and relatives, will also add to household entitlement.

Entitlement can also be perceived as the household's ability to express effective demand for food. It presupposes the availability of food, since for demand to be effective it must be capable of being transformed into consumption. This applies as much to food grown for household consumption as to that purchased with income generated through other activities or from transfers. The former entails a decision to retain part or the whole of the output of productive activity, as opposed to selling it and purchasing food or non-food commodities. Demand is expressed in these decisions.

Household activity or transfers do not directly result in access to food, for there are a number of intervening stages that mediate the process. Both governments and agencies concerned to augment household food security intervene in order to mediate between potential and reality.

In the first place, the resource endowment of the household will determine its capacity to produce or to trade. Events such as civil unrest or climatic disasters can seriously deplete households' resource potential, and increase the likelihood of structural food insecurity. If what might have appeared as a transitory problem is not to become chronic, the replenishment of productive capability should be a necessary part of programmes aimed at reversing this process. Physical resources by themselves, however, may be inadequate, and the upgrading or changing of the range of skills possessed by household members may be a necessary component of any programme. Consequently, training in new agricultural techniques, or in the necessary skills required by local industries or trades, can form an integral component of food security interventions.

For many poor households, particularly those whose resource base been eroded by drought, additional resources are the primary requisite if their productive base is to be restored. Recognition of this is apparent in the increasing emphasis on development programmes by governments, agencies and donors alike. For other households, both rural and urban, access to productive resources may be less relevant. These will seek, according to their location and particular skills, to generate entitlement to food through trade or direct employment.

The promotion of income-generating activities, both local employment opportunities and self-employment (particularly those associated with the rural informal sector), forms a second essential approach to food security.

Moreover, in circumstances where both the outcome of productive activity is always uncertain and the purchasing power of cash-generating activities is subject to sudden and dramatic shifts, it is both probable and desirable that households will seek to diversify their occupations. This may be either through the principal income earner undertaking a variety of activities, or through different household members generating income or produce from a variety of tasks. Here again, policies designed to promote food security might also simultaneously address resource and skill constraints.

Apart from the choice (insofar as one exists) between producing food or non-food crops, farm households also make decisions about whether to retain or sell the food they produce. To some extent, these decisions are dictated by the existence, non-and efficiency of marketing infrastructures and of household storage facilities. Where either of these is inadequate, inopportune selling in unfavourable markets can have a detrimental effect on food security. Inadequate storage facilities will, in most circumstances, lead to heavy storage losses, significantly affecting the seasonal availability of food.

The provision of marketing infrastructures is essential not only for traded income, derived through both farm and non-farm activity, and food and non-food production. Its absence in rural areas will also impede the transfer of essential food and non-food commodities, and so reduce the incentive for household economic activity.

Finally, transfers from the state or individuals can augment entitlement to food. Typically, these latter sources of entitlement take the form of cash payments or gifts, although in-kind payments and remittances are also a common occurrence. In the latter case, the household is faced with the previously discussed choice of sale or retention. In both cases there is likely to be a basket of essential cash purchases that households will wish to undertake, and cash remaining can be used to purchase food. The actual mix of food and non-food essentials that are purchased will be determined by both availability and price, with both absolute and relative consumer prices being a crucial determinant of household food security.

It is important to recognize, however, that access to food through any of these entitlement endowments contributes only to the availability of food to the household. It does not ensure efficient utilization and says nothing regarding intra-family distribution, both of which can have a profound effect on nutritional status regardless of food availability.

### **1.3 The gains from trade: theoretical perspectives**

The arguments for trade liberalization are strong, and typically inform policy advice to governments from international institutions. These arguments are premised on Ricardian “conventional” or “neo-classical” trade theory, and in particular the theory of comparative advantage using general equilibrium models. These deal with resource allocation in the whole economy under the stylized conditions of perfect competition.

The theory argues that differences in productivity and opportunity costs of production between countries form the underlying reasons why it is advantageous for countries to engage in trade. Many reasons explain why such differences occur. Climate is of obvious importance for agriculture as is the availability of extensive arable land and abundant water supply. The availability of other natural resources, such as large and easily accessible mineral deposits, and differential access to productive technologies give rise to varying labour productivities.

The Heckscher-Ohlin (H-O) theorem provides the most widely accepted explanation of the pattern of trade, based on countries’ differing factor endowments and the factor requirements of different kinds of goods. Chapters 3 and 4 draw their conclusions with respect to the advantages of trade liberalization from the H-O model.

The theory states that trade occurs because the cost of labour relative to that of capital is lower in the labour-abundant country, which means that the price ratio of labour-intensive goods to capital-intensive goods is lower in the labour-abundant country than in the capital-abundant country.

This provides a basis for comparative advantage and when trade begins each country exports commodities that use the relatively abundant factors and imports those that use scarce factors more intensively. This is the equivalent of exporting labour for capital, in the case of the labour-abundant country, but as factors are not mobile internationally, commodities have to move instead.



This model is sometimes referred to as the factor proportions or factor endowment model. An adequate non-technical representation of comparative advantage is that countries should produce those products that use relatively intensively the factors with which the country is relatively well endowed. A logical consequence of trade, therefore, is a process of eventual factor price equalization leading, for example, to real wages (as well as other factor prices) becoming the same across trading countries. It also implies that, other things being equal, the labour-abundant country exports labour-intensive goods, whilst the capital-abundant country exports capital-intensive goods. Arguably, this process could play an important role in poverty reduction in labour-abundant developing countries, by bidding up the price of labour and thus raising workers' incomes.

Advocates of free trade also argue that, under competitive free market conditions (the stylized conditions of perfect competition) trade maximizes potential economic welfare internationally, by creating a situation where no country can be made better off without another being made worse off. It is a situation where those that gain from trade could fully compensate those that lose and still be better off: the total gain will be greater than the total loss. With free trade a point would be reached where more of each traded good is produced, such that everyone will gain if suitable redistribution is made.

There are a number of important qualifications to these predictions of the model, however, that must be held in mind. First, the consequences described are dependent on the assumption of competitive markets (a level playing field). In the absence of these, countries may be better off intervening to restrict free trade. Second, countries will not necessarily gain equally from trade: the relative gains will depend on the terms of trade. Thirdly, there are no mechanisms in place to ensure that losers in the world market will be compensated by those that benefit, so the gains remain potential. Fourthly, the issue of redistribution also applies within countries, where there will also be gainers and losers from trade. Finally, any comparative static solution described by the conventional theory assumes that all external costs are internalized, including environmental externalities, a subject of some contemporary debate. Although this theory is the basis of modern "orthodox" trade economics, this does not mean that it is accepted without questioning: there are gaps in the theory's coverage and question marks over some of its predictions.

A large number of empirical studies have considered the extent to which the hypotheses of conventional theory are supported by empirical observation. These have usually tested the “factor proportion” prediction of the model by comparing the factor intensities of imports and exports. While empirical observations suggest that factor proportions alone cannot explain the pattern of international trade, the theory does seem to provide a partial explanation of trade flows between developing and industrialized countries. In addition, a variety of extensions to the model have been developed to take account of any empirical shortcomings, and to cater for such factors as externalities and the absence of perfect competition.

In sum, the conventional theory uses a simplified model of the world in order to generate a logically consistent theory of the effects of free trade liberalization. While the simplifications may be questioned, the theory has proven to have considerable analytical power, and to produce clear, testable predictions. For these reasons, it remains the dominant framework of analysis for the policy decisions of governments and international organizations.

The theoretical approach outlined above underpins the policy advice concerning trade liberalization given to governments by international institutions, as well as the approach adopted by the WTO Agreement on Agriculture. It is relevant, however, to review the assumptions that underpin the model: it assumes perfect competition, where no country or firm is able to influence prices, where there are no economies of scale and where products are homogeneous. It also assumes that second-best situations have been recognized and acted upon, and that externalities have been internalized.

An important question emerges from this theoretical review, however. If free trade could potentially raise economic welfare in the world as a whole and even in all trading nations, why are border intervention policies so commonly used by governments to restrict free trade?

Trade theory literature provides three main explanations for this apparent anomaly. First, the case of the “optimum tariff” shows that in certain circumstances a country can gain more from imposing a tariff than from free trade (assuming other countries do not retaliate). Such gains are at the expense of losses by trading partners (a zero-sum game, in other words). However, the optimum tariff argument mainly applies to large countries, which can use tariffs to influence their terms of trade in world markets. It does not generally inform

developing countries' portfolios of potential policies, unless they are part of a larger trading bloc.

A more interesting reason for protection in the context of this study is the infant industry perspective. Where an industry has large economies of scale, firms may need protection to allow them time to grow before competing head-on with more established firms overseas. This assumes that an underlying comparative advantage in the particular product exists. This remains an important justification of protectionism in developing countries, especially for manufacturing industries. It may equally concern the food and agriculture sector where the argument can be applied to primary processing industries, in the context of a development strategy involving an export shift from raw-materials to processed products.

A final explanation concerns political imperatives, including the influence of groups which gain from protection, and the importance of revenue from border measures for developing country governments, where other tax bases are not strong. While the latter may be a short-term expedient that is difficult, in some cases, to substitute for without reducing government spending or increasing borrowing, the importance of non-trade concerns such as food security and rural viability are often put forward as powerful imperatives for protecting domestic agriculture.

The political economy of trade policy, suggests that the glaring gap between theory (of gains from free trade) and reality (of widespread protectionism) can be largely explained by the political and economic forces that come into play when the assumptions of perfect competition and frictionless exchange do not hold. In other words, where there is not a level playing field.

#### **1.4 The impact of trade liberalization in developing countries**

As has been demonstrated above, the arguments that openness to trade contributes to economic growth and that this can, in turn, be beneficial for poverty reduction and food security, are well grounded in conventional economic theory and have been supported by a number of empirical studies. However, some commentators caution that in studying the correlation between more trade and higher economic growth, researchers need to be careful about implying causality.

At the same time, however, the potential gains from trade liberalization are not guaranteed and will not necessarily be reflected in improved food security status

of all groups within society. In particular, there are likely to be significant differences between the impacts on small scale and commercial farmers, rural non-farm producers and urban consumers both within and across countries. These need to be considered in identifying the food security implications of trade liberalization.

The apparent lack of success in stimulating development in many rural economies following economic and trade policy reform programmes has resulted in a wide-ranging debate that has recently broadened to consider the impact of not only domestic structural adjustment programmes, but also of globalization forces, including the global trade reform agenda.

A recent World Bank report<sup>15</sup> reviews the evidence as to whether globalization supports poverty reduction and concludes that whilst a category of “new globalizers” are benefiting from greater integration into the world economy, a significant group are becoming more marginalized. The degree of openness to trade has been proposed as one potential reason for this divergence. Diaz-Bonilla and Reca<sup>16</sup> for example, find a positive correlation between trade openness and economic growth. Sachs and Warner<sup>17</sup> suggest that openness explains in part, the different export performance of Asia, Africa and Latin American Countries (LAC) in processed and high value added agricultural goods. However, they also note that diverse performances can be attributed to a broad range of factors, including for example: differentiated population dynamics, climate patterns, degrees of technical development and domestic policy sets.

The main theme of a paper by Rodrik<sup>18</sup> concurs with this qualification, suggesting that “there is no convincing evidence that trade liberalization is predictably associated with subsequent economic growth” and that studies that suggest that there is evidence are “misattributing macroeconomic phenomena to trade policy”. Rodrik finds that the only “systematic relationship is that countries reduce

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<sup>15</sup> World Bank. 2002. *Globalization, Growth and poverty: building an inclusive world economy*. Washington DC: World Bank.

<sup>16</sup> Diaz-Bonilla, E. & Reca, L. 2000. Trade and agro-industrialization in developing countries: trends and policy impacts, *Agricultural Economics*, 23, 219 – 29.

<sup>17</sup> Sachs, J. & Warner, A. 1995. Economic reforms and the process of global integration, *Brookings Papers on Economic Activity*, 1-118.

<sup>18</sup> Rodrik, D. 2001. *The global governance of trade: as if development really mattered*. New York: UNDP.

barriers as they get richer”, concluding that initial economic growth was generated when trade was protected.

A similar standpoint is presented by SAPRIN<sup>19</sup>, which argues that liberalization has resulted in growth in imports exceeding growth in exports, and that this increased exposure to imports is associated with a reduction in domestic productive capacity and in the purchasing power of consumers. The authors also suggest that an absence of domestic market reform can result in reduced competitive advantage as trade reform proceeds, because the costs of production increase relative to those in countries that have successfully implemented domestic reform programmes. This may be reflected in trade patterns.

Whilst theory may suggest that the liberalization of trade policies will result in net benefits to the liberalizing country, and whilst there may be a growing collection of empirical studies to support the theory, it is also clear from the preceding discussion that the benefits of liberalization will not necessarily be achieved, and even where they are, some groups of individuals within some countries are likely to be disadvantaged. In a concise and convincing paper, Winters<sup>20</sup> argues that although he believes that trade liberalization aids economic growth, it “may have some adverse consequences for some – including some poor people – that should be avoided or ameliorated to the greatest extent possible”. He suggests that rather than using this as a reason for resisting reform, it should “stimulate the search for complementary policies to minimize adverse consequences and reduce the hurt that they cause”.

It is clear that there is no clear consensus that liberalization results in economic growth, despite a number of major research programmes investigating this relationship. It is therefore important to understand the types of reform that have had the greatest impact on economic growth in each country.

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<sup>19</sup> SAPRIN. 2001. *The policy roots of economic crisis and poverty: a multi-country participatory assessment of structural adjustment - Executive Summary*. Washington DC: Structural Adjustment Participatory Review International Network.

<sup>20</sup> Winters, L.A. 2001. Trade Policies for poverty alleviation in developing countries. In B. Hoekman, P. English and A. Mattoo, eds. *Trade Policy, Economic Development and Multilateral Negotiations: A Sourcebook*, Washington DC: World Bank.

## **1.5 The relation between trade reform and food security**

For many developing countries, especially the poorest, the relationship between trade reform and food security is likely to provide the foundation of one of the most critical debates of the Doha Round of international trade negotiations.

The international dimension is significant, since trade policy influences both global food availability (in the case of a major importer or exporter), and national food availability (through both imports and production). The effect on food imports will be mediated by any implications of trade policy for foreign exchange earnings.

Trade policy will also have implications for food security through the link with incomes and expenditures. Any change in the trade regime will have a direct effect on both rural and urban incomes, and employment, and through these on income distribution. In addition, there will be an effect on government revenues through, for example, a change in the level of revenue from import levies.

Both national food availability and government revenues impact at the household level, affecting household access to food directly and indirectly through household incomes.

### ***Food security and trade liberalization***

Trade liberalization implies a change in the relative prices of traded and non-traded goods and factors in a previously protected sector or economy. The change in relative prices will induce changes in the allocation of resources to different activities and hence changes in both subsectoral and aggregate levels of production. In turn, changes in income levels (which are expected to increase in aggregate as resources are used more efficiently) have the potential both to reduce poverty levels and in doing so, to improve the food security status by increasing the access of the poor to food.

In the short-run, agricultural sectors in poor economies are often not well placed to benefit from trade liberalization even when this has had a significant impact on both income levels. This is because of the inflexible structure of production and trade in this sector, often manifested in limited market access and weak institutional development, as well as limited capacity to respond to improved incentives. However, food importers are affected in the short-term via higher

import bills. As a result, there is often a hiatus during which the food security situation worsens.

The strategy employed by individual countries to improve their food security status is one of the key factors in understanding the relationship between trade liberalization and food security. Two broad options have generally been followed by countries attempting to achieve adequate levels of food security: food self-sufficiency and food self-reliance.

- Food self-sufficiency, or the provision of a level of food supplies from national resources above that implied by free trade, represents a strategy followed by a wide range of countries. While this approach implies the provision of sufficient domestic production to meet a substantial part of consumption requirements, it does not necessarily imply that all households in the country have access to all the food they require. In a number of countries which are net food exporters, substantial numbers of households are suffering from malnutrition.
- A strategy of food self-reliance reflects a set of policies where the sources of food are determined by international trade patterns and the benefits and risks associated with it. This strategy has become more common as global trade has become more liberal. It is even argued that improved food security, as well as efficiency gains, may be achieved more satisfactorily, even in countries where agriculture remains a major contributor to GDP, by shifting resources into the production of non--food export crops and importing staple food requirements.

The success of these broad options will depend, *inter alia*, on the ability of producers to react to price incentives (particularly important), or of countries to use income gains for improved efficiency of resource allocation in order to procure food on the international market. The distinction can also be used at the household level to motivate an understanding of individuals' entitlements to food.

## **1.6 Conclusion: some key questions**

Achieving food security means ensuring that sufficient food is available, that supplies are relatively stable and that everyone can obtain food. At least at the household level, if not at the national level, food security can be interpreted as being determined, *inter alia*, by purchasing power. Changes in the latter, in turn, are conditional on economic growth and the distribution of income and resources.

Put very simply, this implies that, for many developing countries, food security and equity are two sides of the same coin.

The main issues of contention regarding trade liberalization are summarized in the following paragraphs.

- Many commentators suggest that a positive correlation exists between more open trade regimes and economic growth. Although the evidence for this may be questionable, it can be argued that a production structure based on current comparative advantage is more likely to be efficient in terms of resource allocation. The case is less clear-cut with regard to the distributional consequences of this form of economic priming, however. For example, positive employment outcomes and consequences for the poorer strata of society may not be axiomatic.
- More open trade implies a change in the structure of production. It is important to know what is produced, with what resources and by whom; and how adaptable local resources are, particularly labour, both in terms of skills and location. If further trade liberalization leads to a contraction of the agricultural sector, it may be neither easy nor quick for investment and employment opportunities to be created elsewhere in the economy.
- It is argued that a more open trade regime reduces the supply variability of staple foods. This is certainly likely in the context of stable and predictable international markets, where reliance on domestic stocks to stabilize domestic consumer (and producer) prices may be an expensive alternative. If, however, the open trade context is less stable and predictable than under protection, then supply variability will increase.
- A further advantage of agricultural trade liberalization, it is argued, stems from the possibility of lower domestic food prices. If this does not occur there would be no reason for protection in the first place. Any effect will depend partly on the transmission elasticities between international and domestic prices. Even where food prices do fall, however, this is not necessarily a straightforward advantage. The outcome depends on the location and employment of the food insecure, i.e. of the poorest strata of society. If many of the poorest households are dependent directly or indirectly on agricultural production for their main income, the overall effect on food security may be negative.
- On the other hand, it can be argued that the tax revenue from additional imports can be used to finance the adjustment of those disadvantaged. Of



course additional tax revenue will only accrue if the increase in imports more than compensates for the lower tariff leading to the rise in imports. This is a reflection of the elasticity of import demand.

- It may well be the poorer, small-scale farmers who are using more labour-intensive techniques, who are more able to adapt to changing demand patterns. In any event, it is important to know the location of the poorest households, what their income earning possibilities are, and the constraints they may face in adjusting to changing economic opportunities. Where there may be short-run difficulties in responding to the changing context it may be incumbent on government to introduce the liberalization in a gradual and sequential fashion.

Obviously each case needs to be considered on its merits, and often it may be sensible to eschew a firm commitment either to freer agricultural trade or to greater self-sufficiency. The discussion concerning the advantages and disadvantages of a more open position does highlight a number of questions for policy makers. Before reviewing these, however, it is worthwhile considering the trade-off between growth and equity.

The ideology of liberalization which has dominated conventional wisdom in recent years as far as economic policy is concerned, makes an implicit assumption regarding the welfare effects of growth: i.e. that liberalization will engender economic growth which will in turn lead to enhanced economic welfare. This subsumes any argument regarding who is made better off by the growth which ensues, it being assumed that or in the long-term no-one will be made worse off. Once this assumption is accepted (as it is within most structural adjustment strategies) it becomes straightforward to model economic policy around a growth strategy, with distributional issues relegated to the role of short-term ameliorative measures: the provision of a social and economic safety net.

The problems of providing effective ameliorative measures in the context of growth orientated strategies, however, have often proved intractable, hence persistent high levels of under-employment and food insecurity in many high-growth economies. This is not to argue that growth should not be a priority, but to suggest that it might be helpful if economic policy was shaped around meeting short- and medium-term social and distributional priorities, with trade and investment strategies moulded around these more primary objectives.

Any new accord on international agricultural trade will imply a number of questions that governments might wish to take into account during the negotiation process.

- Is the goal of future policy more concerned with self-sufficiency or food security?  
Implicit in this question is the observation that self-sufficiency does not necessarily imply that all households in the country have access to all the food they require.. Implicit also is the notion that, in some circumstances, food security may be better achieved, even in countries where agriculture remains a major contributor to GDP, by shifting resources into the production of non--food export crops and importing staple foods.
- How would domestic production be affected by a more liberal import regime?  
To what extent would border prices be transmitted internally, and what would be the likely producer response? Would there be a restructuring of agricultural production? Would many farmers' livelihoods be threatened? Are these more likely to be small-scale or large-scale farmers?
- What are the employment implications of a more open trade regime?  
Important here is not only the future capacity of the agricultural sector to absorb labour, but also the likelihood that any labour shed from the sector could be absorbed elsewhere. The limited nature of employment prospects outside agriculture might be a valid reason for maintaining a larger agricultural sector than might be the case in the context of further trade liberalization.
- Food security for whom: who would be affected and how?  
It is axiomatic that a more open trading system will have different implications for food security depending on whether those households that are considered to be vulnerable in terms of access to food are net consumers or net producers of food. Notwithstanding the implications for household food security of any changes in production and employment, therefore, the relative impact on urban and rural food security and the relative weights attached to any changes in each need to be considered.
- What complementary and/or compensatory policies might be required?  
Although there is a body of evidence, both theoretical and empirical, to

support the case that liberalization does result in net benefits, these benefits are not guaranteed (if for example, implemented where markets are not functioning well) or may be associated with negative impacts on some groups in society. Successful liberalization has often been associated with complementary policies that are aimed at facilitating the process of adjustment, and/or with compensatory policies that minimize the negative impacts on potentially disadvantaged groups.

## Chapter 2

### Food security: concepts and measurement<sup>1</sup>

#### 2.1 Introduction

This chapter looks at the origins of the concept of chronic food insecurity, the implications for measurement, and suggests the need for a complementary investigation into the implications for transitory food insecurity of trade liberalization. The 2002 food crisis in Southern Africa is used to highlight issues for further discussion.

#### 2.2 Defining food security

Food security is a flexible concept as reflected in the many attempts at definition in research and policy usage. Even a decade ago, there were about 200 definitions in published writings<sup>2</sup>. Whenever the concept is introduced in the title of a study or its objectives, it is necessary to look closely to establish the explicit or implied definition<sup>3</sup>.

The continuing evolution of food security as an operational concept in public policy has reflected the wider recognition of the complexities of the technical and policy issues involved. The most recent careful redefinition of food security is that negotiated in the process of international consultation leading to the World Food Summit (WFS) in November 1996. The contrasting definitions of food security adopted in 1974 and 1996, along with those in official FAO and World Bank documents of the mid-1980s, are set out below with each substantive

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<sup>1</sup> This chapter is based on a paper prepared by Edward Clay of the Overseas Development Institute, London, UK, for the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages, Rome, 11-12 July 2002.

<sup>2</sup> Maxwell, S. & Smith, M. 1992. Household food security; a conceptual review. In S. Maxwell & T.R. Frankenberger, eds. *Household Food Security: Concepts, Indicators, Measurements: A Technical Review*. New York and Rome: UNICEF and IFAD.

<sup>3</sup> Maxwell, S. 1996. Food security: a post-modern perspective. *Food Policy*. 21 (2): 155-170.

change in definition underlined. A comparison of these definitions highlights the considerable reconstruction of official thinking on food security that has occurred over 25 years. These statements also provide signposts to the policy analyses, which have re-shaped our understanding of food security as a problem of international and national responsibility.

Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems - of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level. That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis. A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues<sup>4</sup>.

The issues of famine, hunger and food crisis were also being extensively examined, following the events of the mid 1970s. The outcome was a redefinition of food security, which recognized that the behaviour of potentially vulnerable and affected people was a critical aspect.

A third, perhaps crucially important, factor in modifying views of food security was the evidence that the technical successes of the Green Revolution did not automatically and rapidly lead to dramatic reductions in poverty and levels of malnutrition. These problems were recognized as the result of lack of effective demand.

### ***Official concepts of food security***

The initial focus, reflecting the global concerns of 1974, was on the volume and stability of food supplies. Food security was defined in the 1974 World Food Summit as:

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<sup>4</sup> ODI. 1997. Global hunger and food security after the World Food Summit. *ODI Briefing Paper* 1997 (1) February. London: Overseas Development Institute.

“availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices”<sup>5</sup>.

In 1983, FAO expanded its concept to include securing access by vulnerable people to available supplies, implying that attention should be balanced between the demand and supply side of the food security equation:

”ensuring that all people at all times have both physical and economic access to the basic food that they need”<sup>6</sup>.

In 1986, the highly influential World Bank report “Poverty and Hunger”<sup>7</sup> focused on the temporal dynamics of food insecurity. It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low incomes, and transitory food insecurity, which involved periods of intensified pressure caused by natural disasters, economic collapse or conflict. This concept of food security is further elaborated in terms of:

“access of all people at all times to enough food for an active, healthy life”.

By the mid-1990s food security was recognized as a significant concern, spanning a spectrum from the individual to the global level. However, access now involved sufficient food, indicating continuing concern with protein-energy malnutrition. But the definition was broadened to incorporate food safety and also nutritional balance, reflecting concerns about food composition and minor nutrient requirements for an active and healthy life. Food preferences, socially or culturally determined, now became a consideration. The potentially high degree of context specificity implies that the concept had both lost its simplicity and was not itself a goal, but an intermediating set of actions that contribute to an active and healthy life.

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<sup>5</sup> United Nations. 1975. *Report of the World Food Conference, Rome 5-16 November 1974*. New York.

<sup>6</sup> FAO. 1983. *World Food Security: a Reappraisal of the Concepts and Approaches*. Director General’s Report. Rome.

<sup>7</sup> World Bank. 1986. *Poverty and Hunger: Issues and Options for Food Security in Developing Countries*. Washington DC.

The 1994 UNDP Human Development Report promoted the construct of human security, including a number of component aspects, of which food security was only one<sup>8</sup>. This concept is closely related to the human rights perspective on development that has, in turn, influenced discussions about food security. (The WIDER investigation into the role of public action into combating hunger and deprivation, found no separate place for food security as an organizing framework for action. Instead, it focused on a wider construct of social security which has many distinct components including, of course, health and nutrition<sup>9</sup>).

The 1996 World Food Summit adopted a still more complex definition:

”Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”<sup>10</sup>.

This definition is again refined in The State of Food Insecurity 2001:

“Food security [is] a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”<sup>11</sup>.

This new emphasis on consumption, the demand side and the issues of access by vulnerable people to food, is most closely identified with the seminal study by Amartya Sen<sup>12</sup>. Eschewing the use of the concept of food security, he focuses on the entitlements of individuals and households.

The international community has accepted these increasingly broad statements of common goals and implied responsibilities. But its practical response has been to focus on narrower, simpler objectives around which to organize international and national public action. The declared primary objective in international

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<sup>8</sup> The list of threats to human security is long, but most can be considered under seven main headings: economic security, food security, health security, environmental security, personal security, community security, and political security. (UNDP. 1994. *Human Development Report 1994*. Oxford and New York: Oxford University Press).

<sup>9</sup> Drèze, J. & Sen, A. 1989. *Hunger and Public Action*. Oxford: Clarendon Press.

<sup>10</sup> FAO. 1996. Rome Declaration on World Food Security and World Food Summit Plan of Action. World Food Summit 13-17 November 1996. Rome.

<sup>11</sup> FAO. 2002. *The State of Food Insecurity in the World 2001*. Rome.

<sup>12</sup> Sen, A. 1981. *Poverty and Famines*. Oxford: Clarendon Press.

development policy discourse is increasingly the reduction and elimination of poverty. The 1996 WFS exemplified this direction of policy by making the primary objective of international action on food security halving of the number of hungry or undernourished people by 2015.

Essentially, food security can be described as a phenomenon relating to individuals. It is the nutritional status of the individual household member that is the ultimate focus, and the risk of that adequate status not being achieved or becoming undermined. The latter risk describes the vulnerability of individuals in this context. As the definitions reviewed above imply, vulnerability may occur both as a chronic and transitory phenomenon. Useful working definitions are described below.

**Food security** exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern.

**Food insecurity** exists when people do not have adequate physical, social or economic access to food as defined above.

***Household measurements: the focus on chronic hunger and poverty***

Sub-nutrition, often assumed in official literature to be synonymous with the more emotive term hunger, is the result of food intake that is continuously insufficient to meet dietary energy requirements.

Measurement is typically indirect and based on food balance sheets and national income distribution and consumer expenditure data. Linking hunger and sub-nutrition with inadequate food intake allows the measurement of food insecurity in terms of the availability and apparent consumption of staple foods or energy intake<sup>13</sup>. This type of measurement corresponds to the earlier narrower definitions of chronic food insecurity<sup>14</sup>.

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<sup>13</sup> FAO. 2002. *The State of Food Insecurity in the World 2001*. Rome pp. 4-7.

<sup>14</sup> World Bank. 1986. *Poverty and Hunger: Issues and Options for Food Security in Developing Countries*. Washington DC.



Where international cross-sectional and national time series comparisons are undertaken, as in SOFI 2001, national estimates are based on average per capita availability of staple foods, or apparent consumption. The estimates may also be weighted by evidence of food expenditure by income categories for countries where consumer expenditure surveys are not available. Because poverty lines, such as those calculated by the World Bank, also reflect assumptions about dietary energy intake, there is inevitably a high degree of correlation in these cases with estimates of poverty and extreme poverty<sup>15</sup>.

The international comparison of country estimates of chronic food insecurity therefore reflect cross-sectional patterns and trends in food production, supplemented by what is recorded about trade in basic foodstuffs (effectively cereals) as incorporated into national food balance sheets. These comparisons show broad differences in food security between the development categories of low, middle and upper income countries, as well as considerable variance within categories.

Attempts to explain these differences within categories, and in changes over time in the incidence of sub-nutrition, have met with limited success. SOFI 2001 notes that groups of variables that reflect shocks and agricultural productivity growth are significant influences in explaining periodic differences in country performance but concludes: "...attempts to seek one simple cause for either good or bad performance are not very useful. The power of just a few variables to explain changes in highly diverse, and indeed unique national situations is limited"<sup>16</sup>.

The factors that underpin this form of statistical investigation include the association of a single dependent variable to represent chronic food insecurity, with proxy variables for differences amongst countries and changes in agricultural trade regime. However, these are not suitable for studying trade and food security.

The problem of unreliable data on production and unrecorded trade is unavoidable, but may be serious for many of the most food insecure countries in sub-Saharan Africa. The current crisis in Southern Africa highlights this issue. Malawi appears to have been one of the twelve best-performing countries since

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<sup>15</sup> FAO. 2002. op cit. p. 10.

<sup>16</sup> FAO. 2002. op cit. p. 7.

the early 1990s in improving food security<sup>17</sup>. However, there is currently much debate about the reliability of food production data, particularly for roots and tubers in this country. Trends for countries in which these are important staples, especially in subsistence, and comparisons between these and other countries are a source of ambiguity.

An important intra-country gap exists in current analyses of food insecurity, which focus on national level or the individual level, as reflected either in averages derived as ratios of national aggregates or a national survey estimate. That gap is most apparent for larger countries such as Brazil, India, Nigeria or the Russian Federation. Substantial intra-country regional or zonal differences in the structure and dynamics of food security are also likely – for example, as a result of more rapid agricultural development in the Punjab and Haryana States in India or temporarily because of drought in Northern Nigeria. The trends in food security, as in poverty, may not be fully evident at a national level. Therefore, an investigation of a process such as trade liberalization that involves cross-country comparisons should be sensitive to possibly important variability within larger economies. This implies the need for regional analyses to complement country level investigations. The case study of Guatemala illustrates the intra-country dimension missing from national food security assessments<sup>18</sup>.

The definition of sub-nutrition includes poor absorption and/or poor biological use of nutrients consumed. The most convenient assumption for an agricultural economic analysis would be to ignore these factors. However, and again the current crisis in Southern Africa serves as a reminder, there may be significant differences between countries in these factors and the way they are changing. The deteriorating health situation in Southern Africa may be eroding nutritional status, not only with the recrudescence of malaria and tuberculosis, but most evidently because of the rapid spread of HIV/AIDS, with an incidence of 25 percent and more amongst the economically active adult population. People may become more vulnerable, and so the economy more fragile and sensitive to ever-smaller shocks. This is also a reason for reassessing the importance of transitory, acute food insecurity.

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<sup>17</sup> FAO. 2002. op cit.

<sup>18</sup> FAO. 2002. op cit.

### 2.3 The process of liberalization and transitory food insecurity

Policy statements on food security give less and less prominence to transitory food insecurity and the risks of acute food crisis. The frequently reiterated assurance that there is globally enough food to feed everyone is supported, moreover, by the success in limiting the impact of the Southern Africa drought crisis of 1991/92. Such considerations may even suggest that the risk of a natural disaster, an economic shock or a humanitarian problem resulting in a severe food crisis is diminishing. Before accepting that comfortable conclusion, it is appropriate to re-examine the issue of transitory food insecurity and the possible links with liberalization.

According to the World Bank, in 1986 “The major sources of transitory food insecurity are year-to-year variations in international food prices, foreign exchange earnings, domestic food production and household incomes. These are often related. Temporary sharp reductions in a population’s ability to produce or purchase food and other essentials undermine long term development and cause loss of human capital from which it takes years to recover”<sup>19</sup>.

Since that report, evidence that natural disasters and conflict have both severe short-term and persisting long-term negative effects has accumulated. The analysis is usually restated in terms of poverty rather than food security, as in the 2000/01 World Development Report.

It is possible that liberalization increases the risk of shock that precipitates a food crisis or makes populations, at least during the transition in trade regimes, more vulnerable. International grain markets were more volatile in the 1990s than since the crisis period of the early 1970s. Some commentators have asked whether this volatility is associated with regime changes linked to the Uruguay Round (UR)<sup>20</sup>. Tropical commodity export prices are performing badly, apparently still following the long-run Prebisch-Singer downward trend.

At a national level, agricultural liberalization could also be associated with increased volatility in production and prices. Maize yields, maize production and

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<sup>19</sup> World Bank. 1986. *Poverty and Hunger: Issues and Options for Food Security in Developing Countries*. Washington DC.

<sup>20</sup> Konandreas, P., Sharma, R. & Greenfield, J. 2000. The Uruguay Round, the Marrakesh Decision and the role of food aid. In E. Clay. & O. Stokke, eds. *Food and Human Security*. London: F Cass.

other agricultural products appear to have been more volatile since around 1988/89 when there have been considerable changes in agricultural institutions. Simple Chow tests show that in some countries, notably Malawi and Zambia, agricultural performance was significantly more variable in the 1990s than previously.

Other influences, such as climate change, also affect agricultural performance. Although as yet there is no conclusive evidence for Africa or elsewhere that climatic variability and the occurrence of extreme events such as drought, flood and storms, have increased significantly, nevertheless, global models suggest that such changes in climatic variability are likely to occur. As already noted, deterioration in the health status could make populations more vulnerable to less extreme shocks.

It is also possible that the current crisis in Southern Africa is the consequence of a combination of all these developments.

## **2.4 Conclusion: a multi-dimensional phenomenon**

Food security is a multi-dimensional phenomenon. National and international political action seems to require the identification of simple deficits that can be the basis for setting of targets, thus necessitating the adoption of single, simplistic indicators for policy analysis. Something like the “State of global food insecurity” analysis has to be undertaken. Since food insecurity is about risks and uncertainty, the formal analysis should include both chronic sub-nutrition and transitory, acute insecurity that reflects economic and food system volatility.

Such formal exploration is usefully complemented by multi-criteria analysis (MCA) of food security. This should lead to qualitative, if not quantitative, comparisons. Where the focus of investigation is on sub-nutrition, then the linkages between sub-nutrition and inadequate food intake need to be carefully explored. Some elements that need to be considered are:

- sources of dietary energy supply – taking account, for example, of different foods, trends in the acquisition of food from subsistence to marketing;
- climatic variability as a source of volatility and short-term nutritional stress;

- health status, especially changes in the incidence of communicable diseases, most obviously HIV/AIDS;
- spatial distribution within countries of poverty and forms of food insecurity, drawing on evidence from vulnerability assessment and mapping supported by the Food Information and Vulnerability Mapping Systems (FIVIMS), the FAO and the World Food Programme (WFP) interagency initiative.

It is sometimes suggested that there should be more practical use of Sen's entitlement theory (see Chapter 1). If this were to involve the re-labelling of indicators of food needs as entitlements, it would be less useful than, for example, reflecting entitlement failure in a formal MCA.

Entitlement as a construct introduces an ethical and human rights dimension into the discussion of food security. There has been a tendency to give food security a too narrow definition, little more than a proxy for chronic poverty. The opposite tendency is international committees negotiating an all-encompassing definition, which ensures that the concept is morally unimpeachable and politically acceptable, but unrealistically broad. As the philosopher, Onora O'Neill, recently noted:

“It can be mockery to tell someone they have the right to food when there is nobody with the duty to provide them with food. That is the risk with the rights rhetoric. What I like about choosing the counterpart, the active obligation of duties rather than the rights, you can't go on and on without addressing the question who has to do what, for whom, when”<sup>21</sup>.

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<sup>21</sup> O'Neill, O. Answer to question following the Second Reith Lecture, BBC Radio 4, 10 April 2002. Dr O'Neill is also the author of *Faces of Hunger*, one of the few explorations by a philosopher of the ethical dimensions of the subject.

## Chapter 3

### Trade liberalization and food security: conceptual links<sup>1</sup>

#### 3.1 Introduction

Food security is traditionally discussed in terms of either food self-sufficiency or food self-reliance. The former requires production of food in the quantities consumed domestically, while the latter requires domestic availability. Self-sufficiency rules out imports as a major source of supply while self-reliance has no such restriction. Some commentators do not regard self-sufficiency as an economically sound alternative, given the much greater worldwide capacity to produce food than to consume it, the few restrictions on the exports of food items in countries with excess capacity, and the availability of international transport. Instead, what countries need, it is argued, is sufficient capacity to generate the foreign exchange necessary to import whatever quantities they consume over and above what it is efficient to produce, based on comparative advantage.

Accepting food self-reliance as the means to achieve food security, it is possible to ask how the liberalization of trade in agriculture including food will impact on developing countries. To answer this question, it is necessary to distinguish between importers and exporters of the products and between liberalization in the developed and developing countries. If the object is to study the impact on the poor, much finer analysis is required since the effects must be decomposed at the national level into effects on the poor and non-poor.

#### 3.2 Trade liberalization and food security

Using FAO and World Bank data, Valdés and McCalla<sup>2</sup> classify 148 developing countries according to a variety of criteria. For the purpose at hand, the following two classifications are the most useful:

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<sup>1</sup> This section is adapted from a paper by A. Panagariya, *Costs, benefits and risks from trade: theory and practice for food security* presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome, 11-12 July 2002.

<sup>2</sup> Valdés, A. & McCalla, A. 1999. op cit.

- **Classification according to income:** the World Bank divides these countries into Low Income Countries (LIC), Lower Middle Income Countries (LMIC) and Upper Middle Income Countries (UMIC). Based on 1996 income levels, countries with per capita incomes of US\$785 or less are in the first group, those with incomes between US\$785 and US\$3 125 in the second, and those between US\$3 125 and US\$9 655 in the third.
- **Classification according to net trade status in food and agriculture:** countries are divided into Net Food Importing (NFIM) and Net Food Exporting (NFEX) on the one hand, and Net Agricultural Importing (NAIM) and Net Agricultural Exporting (NAEX) on the other.

Table 3.1 shows that of the 148 developing countries, 63 are LICs, 52 LMICs and 33 UMICs. As the bulk of the world's poor are in the LICs it is important to pay special attention to the countries in that group. As many as 48 out of 63 LICs are net importers of food. Even among the LMICs, 35 out of 52 are net food importers. It is clear that any realistic analysis of trade liberalization must address the question as to how food importing countries and the poor living there will be impacted by agricultural liberalization.

**Table 3.1 Countries classified according to income status and food trade position, 1995-1997(number of countries)**

	<b>Low Income Countries (LICs)</b>	<b>Lower Middle Income Countries (LMICs)</b>	<b>Upper Middle Income Countries (UMICs)</b>
Net Food Importers (NFIM)	48	35	22
Net Food Exporters (NFEX)	15	17	11
Total	63	52	33

Source: Valdés and McCalla, 1999.

Table 3.2 classifies the three groups of countries according to their net position in agriculture as a whole. More LICs appear as agricultural exporters (33) than as food exporters (15). Taking agriculture as a whole, therefore, export interests seem to dominate. The overall picture differs less for LMICs and UMICs when compared according to their trade position in food versus agriculture as a whole.

**Table 3.2** Countries classified according to income status and agricultural trade, 1995-1997 (number of countries)

	Low Income Countries (LICs)	Lower Middle Income Countries (LMICs)	Upper Middle Income Countries (UMICs)
Net Agricultural Importers (NAIM)	30	32	23
Net Agricultural Exporters (NAEX)	33	20	10
Total	63	52	33

Source: Valdés and McCalla, 1999.

Valdés and McCalla also report that of the UN classification of 46 Least Developed Countries (LDCs), as many as 45 are net food importers. Again, considering agriculture as a whole, the number of net exporters rises to 15.

Table 3.3 shows the extent of overlap between importers of food and of agriculture, and exporters of the two sets of items. Not surprisingly, the largest numbers concentrate along the diagonal: 83 countries are net importers of food and of agriculture, while 41 countries are net exporters of both. This still leaves a large number of countries (22) that are net food importers and net agricultural exporters. Fourteen of these 22 countries are LDCs.

**Table 3.3** Countries classified according to food trade and agricultural trade, 1995-1997 (number of countries)

	Net Agricultural Importers (NAIM)	Net Agricultural Exporters (NAEX)
Net Food Importers (NFIM)	83	22
Net Food Exporters (NFEX)	2	41
Total	85	63

Source: Valdés and McCalla, 1999.



It is clear from trade patterns described in the previous section that the effect of liberalization by the developed countries is bound to be quite uneven on developing countries. Of the 46 least developed countries, 31 are net importers of both food and agriculture. These countries are likely to be hurt by the developed country liberalization, which must raise agricultural prices. On the other hand, the bulk of the benefits will accrue to the relatively well-to-do developing countries in Latin America and Asia and the United States.

Thus, there is a case for transferring some of the agricultural subsidies currently given to farmers in the OECD countries to net importers of food and agriculture in the developing world. It must also be acknowledged that unqualified assertions by many, including the heads of some multilateral institutions, that subsidies and other interventions in agriculture in the OECD countries are hurting the poor countries are not grounded in facts. While there remains a strong case for the removal of agricultural protection and export subsidies on efficiency grounds, the claim that the change will bring net gains to the least developed countries as a whole is at best questionable and at worst outright wrong.

### **3.3 The implications of trade liberalization in developed countries**

Trade policy reform involves a combination of:

- domestic support measures;
- export subsidies;
- tariffs.

In each case, there are complications that must be taken into account. This is illustrated below starting with price supports.

The removal of domestic price support on, say, wheat, will lower output of wheat and raise its price in the world markets. Wheat-exporting developing countries will benefit and wheat-importing countries that continue to be importers after the removal of the support will lose and those that switch from being importers to exports may benefit or lose.

In some cases, however, the support may be given to induce farmers not to cultivate some proportion of their land. In this case, the withdrawal of support could expand output, lower the price and have exactly the opposite effect:

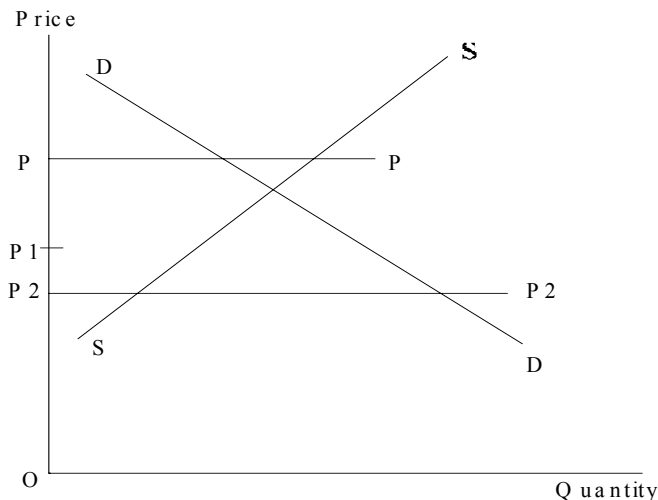
importers will benefit, exporters that remain exporters will lose and exporters who switch to being importers may benefit or lose. The critical question one must ask, therefore, is whether the removal of the support will increase or reduce the output of the supported product.

In the same vein, a reduction in tariffs by the developed importing countries will increase the world price of the product, benefiting exporters, hurting importers and leading to an ambiguous effect on those turning from importers to exporters. But this standard analysis is complicated by the presence of trade preferences. The reduction in the tariff cuts into the preference margin of the beneficiary countries and lowers the profitability of their exports. Liberalization can potentially hurt these exporters.

Finally, under normal circumstances, the reduction in export subsidies raises the world price of the product, benefiting developing country exporters, hurting importers and yielding ambiguous effect on those turning from being importers to exporters. Again, if the export subsidies were being countervailed, the net impact of the two measures is likely to be a transfer of the export subsidy from the exporting country government to the importing country government in the form of duty, without a significant effect on prices and output. The removal of the export subsidy will also result in the removal of the countervailing duty and the world supply will be unchanged. This is the case with export subsidies in general, although with the removal of targeted export subsidies the affect may be less predictable.

In all these cases, it is possible to consider one intervention at a time. But in practice these interventions have been used simultaneously in agriculture. An especially important case arises where a country is a potential importer of a product but domestic support measures, tariffs and export subsidies are combined in such a way as to turn it into its exporter. This case, characterizing some of the European Union (EU) policies, is illustrated in Figure 3.1.

**Figure 3.1 The Common Agricultural Policy of the EU**



In this figure, the demand and supply curves of a potential import of the EU are shown. Suppose the world price in the absence of any intervention by the EU is  $P_1$ , with the EU importing the difference between the demand and supply at that price. Suppose next that the EU sets the internal price at  $P$ , which generates an excess supply of the product. To eliminate this excess, it gives an export subsidy. Because the EU now exports rather than imports the product, the world price falls below  $P_1$  to, say,  $P_2$ . The export subsidy that supports the exports is  $P_2P$ . At the same time, to prevent imports from taking advantage of the higher internal price, an import tariff equal to  $P_2P$  or higher is also imposed.

It is evident that the removal of the three restrictions together in this case will have the effect of raising the price from  $P_2$  to  $P_1$ . If knowledge of the complete picture was not available, and each measure was looked at in isolation, the evaluation would be quite different. In the standard analysis, each measure by itself lowers the world price but they are not cumulative in this example. It is the export subsidy that holds the world price down to  $P^*$ . The tariff by itself only plays the role of eliminating the arbitrage between the world price and the internal EU price. It does not contribute to a reduction in the world price.

### 3.4 Trade liberalization by developing countries

On the assumption that developing countries are individually small, orthodox theory leads to the expectation of efficiency gains from their own liberalization. The main departure from theory may be that the adjustment process would be slower and therefore adjustment costs higher in countries primarily dependent on agriculture. The ability of other sectors to absorb workers released by such liberalization may be limited in the short-run, a limitation that would be compounded if there are unemployed resources elsewhere in the economy. This is a strong argument for adjustment assistance, which should, nevertheless, be temporary. This is because eventual adjustment is essential if liberalization is to produce efficiency gains.

Some countries also impose restrictions on exports. From a national welfare perspective this may not always be advantageous, but in practice export taxes may be a major source of government revenue, and one of the few that can be easily collected. It should also be remembered that export taxes can be used as an instrument for keeping domestic food prices relatively low, and in these circumstances their removal could have a negative impact on food security. Finally, following second best arguments, it may in the interests of a country exporting raw materials, to tax its exports when its processed exports in turn face tariff barriers. Exports do not affect food security adversely even if the objective is self-sufficiency rather than self-reliance. In all likelihood, they will enhance food security by increasing the country's ability to import food items it does not produce in adequate quantity.

At the same time, with respect to exports in which the country has market power such as cocoa and coffee, an economic case can be made for a modest export tax to exploit market power<sup>3</sup>. But countries need to be careful here since these taxes have frequently created internal bureaucracies in the form of marketing boards that make exporting costly. Bureaucracy can also result in a substantial part of tax revenues being used up in so-called rent-seeking activities.

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<sup>3</sup> Panagariya, A. & Schiff, M. 1991. Commodity Exports and Real Income in Africa: A Preliminary Analysis. In A. Chhibber, & S. Fischer, eds. *Economic Reform in Sub-Saharan Africa*. Washington, DC. The World Bank.

### **3.5 Conclusion: the impact on the poor**

Translating the impact at the national level into impact on the poor remains a tough task and room for error here is great. The best approach would be to identify the major sources of income of the poor and ask how liberalization would impact these sources. For example, for a large chunk of the poor population, the principal source of income is likely to be labour, and the question is how liberalization will impact the real wage. Some of the poor may own small amounts of land, and thus earn a part of their income from producing and selling agricultural products. In this case, how the profitability of what they produce is impacted must be taken into account.

Theory will not give an unambiguous answer even after the question is thus narrowed down, unless a specific model to determine the likely impact on the factor prices is chosen. For example, if we rely on the two-factor, Heckscher-Ohlin model and think of agriculture as being labour-intensive, the rise in agricultural prices will lead to a rise in the real wage and hence a reduction in poverty. But if we think in terms of the specific-factors model, where land is specific to agriculture and capital to industry, the rise in the price of agricultural products will increase the wage in terms of industrial products but reduce it in terms of agricultural products. In so far as the poor spend the bulk of their income on agricultural products, they are likely to be worse off.

Precisely how developing countries and the poor will be impacted by trade liberalization in agriculture under the Doha Round is a complex issue. The presumption that such liberalization will broadly benefit the poor countries, implicit in the allegations that agricultural subsidies in the rich countries hurt the poor in developing countries, is unlikely to be supported by closer scrutiny in its unqualified form. In so far as such liberalization will raise food prices and the poor spend a disproportionately large amount of their income on food items, the opposite is entirely possible. The lion's share of benefits of such liberalization is likely to accrue to potential exporters of these products, which happen to be relatively richer developing countries concentrated in Asia and Latin America. As such the case for agricultural liberalization must be made more on the grounds that the current system is hugely inefficient, resulting in very substantial deadweight losses and transfers to the relatively rich farmers in the OECD countries. Redirection of even a small fraction of these subsidies towards the poor in the Third World will go a long way towards alleviating poverty.

## Chapter 4

### Trade liberalization and food security in developing countries<sup>1</sup>

#### 4.1 Introduction

Developing countries face a number of risks associated with trade. Perhaps the best known is declining terms of trade, as the world prices of the primary commodities they export tend to fall over time relative to the price of the manufactures they import. A related problem is the volatility of world prices for the primary (especially agricultural) commodities they export. Furthermore, these prices are determined in markets beyond the influence of individual poor countries and typically affected by factors beyond their control. Related to this are supply side risks, especially the sensitivity of output to climatic variability. Droughts and excess rain creating flooding can cause serious damage to agricultural output.

An example is the decline in the value of SSA exports: “Of 47 African countries, 39 are dependent on a mere two primary commodities for over 50 percent of export earnings and the substantial drop in commodity prices in 1998 encompassed the entire range of African exports”. Food and tropical beverage prices fell by 13.6 percent and prices of agricultural raw material by 10.8 percent in 1998<sup>2</sup>.

The terms of trade faced by SSA countries deteriorated by 9 percent, a loss of real income equivalent to 2.6 percent of GDP, between 1997 and 1998<sup>3</sup>. The trend is continuing: coffee prices in 2002 fell to less than a third of their 1997 level. This is perhaps the most extreme example of a general trend, but highlights how severe the risk is. Uganda is an apposite example of a country that implemented the trade and economic reforms requested of it in the 1990s, reaping the benefits of

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<sup>1</sup> This chapter is based on a paper by Oliver Morrissey, *Costs, benefits and risks from trade: theory and practice for food security*. Presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11-12 July 2002.

<sup>2</sup> UNCTAD. 1999, *Trade and Development Report 1999*, Geneva: UNCTAD. p33.

<sup>3</sup> UNCTAD. 1999, op cit p. 29.

economic growth, increased coffee production and revenue, and reduced poverty. The country could soon see many of the gains undermined, if not wiped about, by a decline of world prices that is beyond its control. On a positive note, if this is associated with an increase in the relative return to food crops, farmers will substitute.

A new type of risk is emerging in the face of increasingly integrated global markets (one facet of globalization). This can be represented by distinguishing comparative from competitive advantage<sup>4</sup>. Comparative advantage captures the potential provided by a county's resource endowment to derive gains from trade. Competitive advantage considers why certain producers, in particular multinational firms, are able to exploit the rents from comparative advantage. Trade in agricultural commodities is dominated by large, typically multinational, companies that are present in all or critical stages of the commodity chain. At one extreme is contract farming where corporations control production<sup>5</sup>, at the other are supermarkets that control purchasing, and often multinationals control the distribution chain between production and final sale. The risk arises because small producers, and even some large producers in small countries, are the weakest link in the chain.

In addition, most developing countries are price-takers in the majority of international markets in which their nationals trade, but their activities are concentrated in a small number of markets. They cannot influence world market prices (mainly because of the small relative size of their market contribution), but at the same time are severely affected by changes in world market prices, especially when these changes are dramatic or unexpected. A related issue here is the increasing tendency for large multi-national companies to capture the benefits of comparative advantage by virtue of their monopsony position.

The distributional impact of trade reform can also be a critical issue in poor countries. The impact of trade liberalization on poorer groups within society may well be lost if only the aggregate implications are considered.

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<sup>4</sup> Kaplinsky, R. 2000, Globalisation and Unequalisation: What Can be Learned from Value Chain Analysis, *Journal of Development Studies*, 37 (2), 117-146.

<sup>5</sup> Burch, D., Rickson, R. & G. Lawrence, eds. 1996. *Globalisation and Agri-food Restructuring*, Aldershot: Avebury.

## 4.2 Trade policy and developing countries

Trade theory tells us that developing countries, since they tend to be endowed with land, labour and natural resources (rather than with capital and technology), should have a comparative advantage in agriculture. At the same time, the conventional view among trade economists at least, has been that the policy bias against agriculture in developing countries has often been severe<sup>6</sup>. Trade policies, by protecting manufacturing and taxing (implicitly or explicitly) agriculture, have contributed to this distortion. Misguided agricultural, fiscal and investment policies have also contributed to the bias. Consequently, it is argued, trade reforms alone will be insufficient to remove this bias against agriculture<sup>7</sup>.

It follows that even if a government wishes to support and promote certain sectors, restrictive or protectionist trade policies may not be the optimal way to achieve such aims. Protection of a sector, typically manufacturing, through trade barriers increases prices of the output of that sector and increases profits of producers, by conferring rents rather than encouraging efficiency. Resources are allocated to the protected sector but evaluated according to world relative prices, these “importables” sectors are less efficient than “exportables” sectors. In other words, protection encourages the allocation of resources into sectors in which a country does not have a comparative advantage. Of course, this perspective ignores the “fallacy of composition” argument and the evidence that many developing countries (especially those exporting to world beverage markets) suffered from lower export earnings as a result of reducing agricultural export taxes: world supply increased and commodity prices fell.

In many developing countries, according to this view, protection has encouraged excess resources into inefficient manufacturing and insufficient resources into potentially efficient agriculture. This bias is exacerbated by policies that tax and discriminate against agriculture. Furthermore, protection reduces the quantity and variety of imports and increases the price of importables, therefore reducing consumer welfare. Tariffs and non-tariff barriers also encourage unproductive activities (rent-seeking), tax avoidance and evasion. These also contribute to inefficiency in the economy.

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<sup>6</sup> Bautista, R. 1990, Price and trade policies for agricultural development, *The World Economy*, 13 (1), 89-109.

<sup>7</sup> McKay, A., Morrissey, O. & Vaillant, C. 1997. Trade Liberalisation and Agricultural Supply Response: Issues and Lessons, *European Journal of Development Research*, 9 (2), 129-147.



Assuming that a country initially has relatively high levels of protection, a satisfactory definition of trade liberalization is any set of reforms that reduces the bias against the production of exportables<sup>8</sup>. The objective is to bring relative prices for importables and exportables in a country closer to relative world prices for the relevant commodities. While this argument only holds if world prices are good indicators of comparative advantage, frequently this is not the case. However, the theoretical logic is explored further, making this rather heroic assumption.

Import liberalization - the removal of quantitative restrictions, reduction and simplification of tariffs - contributes by reducing the price of importables (which, due to protection, were above the relative world level). This confers two types of general benefit.

- First, it promotes greater efficiency as it encourages the reallocation of domestic resources, away from relatively inefficient production of importables towards increased production of exportables. Export promotion may be required to ensure investment in and expansion of the exportables sector (so that agents respond to the altered relative incentives).
- Second, it reduces the price and increases the variety of imported goods available to consumers. In this way trade expands the consumption possibilities of a country.

Not all countries will benefit equally, however, and some countries may not benefit at all while, at least in the short-run, liberalization is likely to impose costs on some developing countries<sup>9</sup>. The import-substituting producers that are most inefficient or are unable to increase efficiency will be unable to compete with imports and may close down. Export production may not increase fast enough to absorb resources released. Although this applies for the whole economy, consideration is restricted to the agriculture sector.

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<sup>8</sup> Greenaway, D. & Morrissey, O. 1994. Trade Liberalisation and Economic Growth in Developing Countries. In S. M. Murshed & K. Raffer eds. *Trade Transfers and Development*, London: Edward Elgar, pp. 210-232.

<sup>9</sup> Morrissey, O. 2000. Foreign aid in the emerging global trade environment. In F. Tarp, ed. *Foreign aid and development*, London: Routledge, pp. 375-391.

### 4.3 Some evidence from Sub-Saharan Africa

Many developing countries, especially in SSA, have liberalized trade policies since the 1980s<sup>10</sup>. While there is fairly convincing cross-country evidence that exports are associated with growth, the evidence that liberalization increases growth is much weaker<sup>11</sup>.

Much of the export growth (where it occurred) in the 1990s was indeed agriculture-led. However, the evidence for SSA is quite mixed (see Table 4.1). Uganda is one of the few cases where incentives were improved for both food and cash crop producers. This did not automatically translate into increased value of exports, largely because world prices are beyond the control of small-country exporters.

**Table 4.1 Impact of trade liberalization, Africa**

Sample	Food crops	Cash crops	Exports
Nigeria (1970-92)		-	-
Uganda (1986-97)	+	+	Mix
SSA (1980-90)			+
Africa (1970-88)	Mix	Mix	
Cross-country (1980s)	-	+	

*Note:* Coding is ‘+’ where effect was positive, ‘-’ negative and ‘mix’ indicates mixed evidence (trade policy reforms impacted differently across sectors/countries or over time).

*Source:* Adapted from Morrissey 2002, Table 20.3.

Often, the anticipated benefits from trade liberalization do not materialise because only limited or partial reforms are actually implemented, i.e. there is no

<sup>10</sup> Greenaway, D. & Morrissey, O. 1994, op cit.; Morrissey, O. 2002. Trade Policy Reforms in Sub-Saharan Africa: Implementation and Outcomes in the 1990s. In D. Belshaw & I. Livingstone, eds. *Renewing Development in sub-Saharan Africa: Policy, Performance and Prospects*, Routledge, 2002, pp. 339-353.

<sup>11</sup> Greenaway, D., Morgan, C. W. & Wright, P. 1997, Trade liberalisation and growth in developing countries, *World Development*, 25 (11), 1885-1892; Greenaway, D., Morgan, C. W. & Wright, P. 1998, Trade Reform, Adjustment and Growth: What does the evidence tell us?, *Economic Journal*, 108, 1547-1561.

significant increase in incentives for exportables<sup>12</sup>. This is especially true of many SSA countries. Furthermore, even when significant trade reforms are implemented, important constraints remain. Many countries face natural barriers to trade arising from geographical remoteness, especially if land-locked, and high transaction costs. In Uganda, for example, transport costs represent an implicit tax equivalent to 24 percent of value added of coffee exports<sup>13</sup>.

Several reasons explain the only limited agricultural export supply response. Unilateral trade reforms do not affect the price received by exporters (multilateral liberalization may affect world prices). Devaluation of the exchange rate increases the domestic currency value of a given world price, therefore increases incentives to exporters. There is evidence that farmers do respond to relative (crop) prices, and in particular they will shift into food production if prices increase relative to export crops<sup>14</sup>. However, their ability to increase production and exports to respond to increased incentives will be constrained by farming practices, limited access to inputs, credit and new technologies<sup>15</sup>. Poor infrastructure and natural barriers act as a tax, often very high, on exports<sup>16</sup>. Delays in implementing institutional reforms have been suggested as one factor limiting export supply response in Uganda<sup>17</sup>.

Another reason why one may not observe an increase in exports (by value if not by volume) is the fallacy of composition, whereby the simultaneous attempt by many countries to expand exports of the same commodity results in a decline in the world price. This is one of the problems faced by countries that are dependent for export earnings on a few primary commodities. While trade liberalization is

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<sup>12</sup> Milner, C. & Morrissey, O. 1999. Measuring Trade Liberalisation in Africa. In McGillivray, M. & O. Morrissey, eds. *Evaluating Economic Liberalisation*, London: Macmillan, pp. 60-82.

<sup>13</sup> See Milner, C., Morrissey, O. & Rudaheeranwa, N. .2000. Policy and non-policy barriers to trade and implicit taxation of exports in Uganda, *Journal of Development Studies*, 37 (2), 67-90.

<sup>14</sup> McKay, A., Morrissey, O. & Vaillant, C. 1999. Aggregate Agricultural Supply Response in Tanzania. *J. International Trade and Economic Development*, 8:1, 107-123.

<sup>15</sup> McKay et al. 1997. op cit.

<sup>16</sup> Milner et al. 2000. op cit.

<sup>17</sup> Belshaw, D., Lawrence, P. & Hubbard, M. 1999. Agricultural tradables and economic recovery in Uganda: The limitations of structural adjustment in practice, *World Development*, 27 (4), 673-690.

beneficial, both through improving incentives to exports and providing gains to consumers, it is not a guarantee of economic growth, nor even of growth in exports.

#### **4.4 Trade and food security**

There are two different approaches to problems regarding the relationship between trade, specifically imports of food, and food security. The first is to argue that it is unimportant that a country be able to grow the food it needs, all that is necessary is that it should be able to acquire the food it needs, i.e. to export goods to earn enough to pay for food imports. This has been defined above as self-reliance. Others argue that countries should be self-sufficient so that they meet their food needs fully from domestic production. This may imply supporting, if not protecting, farmers. Not all countries can expect to be self-sufficient in food. Some countries may not even be able to be self-reliant, if they have very limited export opportunities and high food needs relative to local production (e.g. many small island economies). Thus, governments should not begin by choosing a strategy of self-sufficiency or self-reliance. Rather, they should start by establishing an efficient (undistorted) agriculture sector and identify the extent to which this meets food needs.

Many developing countries start with a bias against agriculture, so agriculture sector reform complemented by trade reform will be necessary. Agriculture sector reforms are intended to increase productivity. In general, these will increase farm incomes or profit margins, and allow prices (especially of foods) to be reduced (at least in real terms). In this sense, agriculture sector reforms confer widespread benefits. Trade reform has mixed benefits. Import liberalization (easier access at lower prices) benefits those using imported inputs. This may include producers – farmers using imported fertilizer – or consumers (e.g. lower prices for food). However, it increases competition against those competing with imports, and this may include food producers. Commercial farmers, for example, may benefit from cheaper imported inputs but face increased competition from cheaper food. Measures that favour exporters are generally beneficial, but from the self-sufficiency perspective a problem arises if farmers substitute from food to cash crops. However, if the cash crops earn the revenue to import food, it is consistent with self-reliance. Assuming that appropriate reforms have been implemented so that policies are not biased against agriculture, countries can find themselves in a number of situations. Four cases are presented here.

- Some countries with efficient agricultural producers will be net food exporters. Food security will not be an issue, but they will be concerned with open access to foreign markets.
- Some countries will be naturally self-sufficient. At prevailing domestic prices, which should be equivalent to true world prices (see below), domestic producers are capable of meeting local food needs at least in normal years. In good years they could export food, or stock food as insurance against a bad year.
- Some countries will not be self-sufficient, but will have export earnings that allow them to meet food import needs, i.e. they are self-reliant. They may be exposed to risk if they are export-dependent on primary commodities. Therefore, it is preferable that export earnings are from a diversified, especially manufacturing, portfolio.
- Some countries will be naturally food insecure. Strictly speaking, it is only in respect of such countries that the issue of an active food security policy arises. A costly option is to provide subsidies to farmers, and this may not be viable. A number of countries are likely to remain dependent on food aid, or aid that can be used to finance food imports.

An important issue to address in the context of food security is whether imports are at true world prices or are in fact subsidized. The policies of many developed countries (and some developing countries) ensure that many temperate foods are sold on world markets at subsidized prices. Although this is a benefit to net food importers, it represents a clear disadvantage to developing countries that are aiming for self-sufficiency (it). They cannot afford, and in many cases are discouraged by the World Bank and/or the IMF, to subsidize domestic producers. If they permit food imports tariff-free, this amounts to unfair competition against domestic producers. In cases where subsidized imports compete with local production, it could be appropriate to levy a tariff equivalent to the subsidy. In fact, the distortion in world prices is, in many cases, substantially due to the massive transfers to agriculture and very high import tariffs in many developed countries, the combination of which has a much greater distortional effect on world prices than export subsidies.

It would be wrong to preclude this policy option (anti-dumping duties are a similar response, but are administratively more complex). This would be preferable, on efficiency and cost grounds, to direct subsidies to local farmers. Often, however, imports do not compete with local products, because of product

differentiation and/or market segmentation. The best solution is to ensure there are minimal, or no, biases against agriculture domestically. Once this is ensured, one can then assess if imports are indeed subsidized and if they compete with local products. A countervailing tariff is justifiable if the answer to both is yes.

The very poorest countries are typically predominantly rural. The combined effects of changes in prices and domestic policies will affect farmers in different ways, depending on how the relative margins on the crops they produce are affected. One possibility is that relative incentives to agricultural producers will alter in favour of food crops, especially if urban food subsidies are removed (as these are often engineered by reducing the price paid to farmers). Supply response should lead to an increase in output, and a corresponding increase in farm incomes (as farmers shift to more profitable crops). There should be a positive direct effect on rural employment, although this may require an increase in aggregate output. This depends on how mobile factors are within agriculture, but in general both land and labour should be quite mobile between crops. Agricultural reforms that improve factor mobility (such as improved access to credit and functioning markets for land) or productivity can play an important role here.

These effects relate to substitution possibilities between crops (a crucial feature of supply response). The effect on aggregate output is less clear, and depends crucially on the scope for adopting new technologies. A benign scenario would assume farmers can gain access to new technology, increase yields and profitability, and so increase food output and exports, whilst allowing lower domestic food prices. If the real price of food were reduced, both rural and urban poverty could be reduced. A less optimistic scenario would be where farmers' ability to increase yields and profitability were constrained. If increased output (or increased import competition) reduced food prices, less efficient farmers may suffer from reduced real incomes. The overall impact is impossible to predict, as it depends on features specific to the farmers and country in question, in particular the pattern of production and the severity of constraints to substitution and expanding yields. Nevertheless, if agriculture sector reforms are implemented, the potential impact of trade liberalization on farmers is beneficial.

Thus, a number of steps are necessary to evaluate the link between trade policy and food security, and such an evaluation needs to be specific to the country. First, one should account for any policies that discriminate against domestic agriculture relative to other sectors, and where appropriate these biases should be reduced or eliminated. Second, having done this one can classify the country

under one of the types listed above. Countries that are net exporters or naturally self-sufficient can expect to benefit from trade liberalization. Countries that are inherently food insecure will need some assistance, and will face increased import costs if multilateral liberalization leads to higher food prices. Some countries will be borderline self-sufficient, and these are the most likely to be adversely affected by subsidized imports (and should be permitted to take countervailing actions). Finally, some countries may be borderline self-reliant, if export earnings are volatile.

#### **4.5 Conclusion**

It is apparent that the relationship between trade policy and food security is not a simple matter. As a general principle, if domestic policy towards agriculture provides adequate support and incentives for farmers, trade barriers should not be used as an instrument of protection. If rich countries subsidize food exports, the presumption should be that this is good for consumers in food importing countries. The poor in particular can benefit from lower food prices. One needs to assess carefully if imports actually represent unfair competition with domestic producers. Often, independently of the price of imports, domestic production is insufficient to meet demand. For example, the United Republic of Tanzania retains a relatively high average tariff of about 20 percent on food imports, and this was unchanged in the late 1990s. The value of imports almost trebled between 1997 and 1998, but this was because of a shortfall in domestic production and not because of trade liberalization. Furthermore, the commodities imported are often not directly competing with local production (there is market segmentation), so an increase in (cheap) imports does not necessarily pose a threat to local farmers.

## Chapter 5

### Assessing the impact of trade reforms on food security<sup>1</sup>

#### 5.1 Introduction

This chapter provides an analytical framework within which to assess the linkages between trade reform (whether unilateral, plurilateral or multilateral) and food security. Problems arise at both ends of the link: with food security and with trade reform.

##### *Food security problems:*

- food security applies to individuals, but trade policy is implemented at state level; i.e. the analysis must be multi-tier;
- the impact on any individual's food security of a change in trade policy will be mediated through a host of domestic, social, economic and institutional structures that will produce different outcomes depending upon the individual's status; i.e. the analysis must be multi-faceted.

##### *Trade problems:*

- it is the relative as much as the absolute treatment of agriculture that is important, and so the analysis must cover not only trade policies focused on agriculture but also those on the non--agricultural sectors as well; i.e. the analysis must be multi-sectoral;
- policy changes in other countries have an effect on the impact of changes in the focus country; i.e. the analysis must be multi-country;
- trade flows are not only affected by trade policy narrowly defined, but exchange rate policy (not to mention international shocks) will also affect the relative prices of agricultural products; i.e. the analysis must be multi-instrument.

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<sup>1</sup> This chapter is based on a paper by Christopher Stevens, *Linking trade and food security* presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. 11–12 July 2002, Rome.



In addition, the process of policy making may often be so opaque as to hide the details of proposed trade policy change until it is too late to undertake *ex ante* analysis, as was the case in the Uruguay Round (UR). The data required for analysis, either *ex ante* or *ex post*, is often lacking also.

The aim of this chapter is to describe and explain the type of data that is required for impact assessment and the decisions that need to be made. Some of this data will be available in advance of the final negotiating decisions on trade policy change. In other cases, steps can be taken to undertake the collection of the data once negotiations have advanced sufficiently for the details of change to be known. In either case, the identification in advance of the type of information that is needed and the prior collection of whatever relevant data is available will not only facilitate speedy impact analysis once the details of trade policy decisions are known but, equally important, may inform the negotiating process.

## 5.2 Linking individual food security to national policy

### *The international dimension of entitlements*

The approach developed by Sen is helpful, since it emphasises the different ways in which individuals can acquire food<sup>2</sup>. Each can be affected directly and indirectly by trade policy change<sup>3</sup>.

The entitlement relationships Sen identifies enable individuals to acquire food in one of four ways.

- They may produce it for themselves (production-based entitlement), which may be particularly important, for example, for small farmers who aim for self-sufficiency. It can be affected by policies altering the demand and supply of factors used in production, some of which will relate to international trade.
- They may sell or barter physical assets (trade-based entitlement). Many farmers will augment their own production by exchanging either a surplus of some crops or a on-food product. The amount of food they

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<sup>2</sup> Sen. 1981. *op cit*.

<sup>3</sup> Stevens, C., Greenhill, R., Kennan, J. & Devereux, S. 2000. The WTO Agreement on Agriculture and food security, *Economic Paper* 42. London: Commonwealth Secretariat.

can acquire will be influenced by policies that affect the level and variability of prices for food relative to what they are able to exchange.

- They may sell their labour power (labour-based entitlement). Rural landless labourers and urban employees all need to buy or barter food in the market. Their food security is determined by the level and location of employment opportunities which, in turn, may be altered by trade policy.
- They may receive informal gifts from individuals and formal transfers from government (transfer-based entitlement). These are important for those lacking other adequate means. Formal transfers such as food aid may be influenced by multilateral trade agreements.

Trade policy can affect these entitlements and hence food security in two ways:

- directly, by introducing change to prices and to the policies (of both domestic and foreign governments) that impact on entitlements (e.g. by altering food prices, the availability of food aid, or the access of exports to foreign markets);
- indirectly, by making more or less feasible some of the policies that are considered desirable to promote or protect entitlements (e.g. by altering the legality or practicality of input subsidies).

### ***Domestic mediation***

While changes to international trade policy will affect food security both directly and indirectly, the actual impact on individuals will be heavily influenced by domestic mediation. This is provided by the institutions and structures that stand, metaphorically, between the individual and the external market and translate border prices into retail prices, which influence wages and endowments facing the household, and also determine the individual's relationship to the household<sup>4</sup>.

The impact of liberalizing a country's international trade policy on food security is likely to be different from (and probably smaller than) that of liberalizing its domestic trade policy. However, the effects of the former are difficult to disentangle from those of the latter. Liberalization normally occurs at the same

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<sup>4</sup> This impact is neatly illustrated in McCulloch, N., Winters, L. A. & Cirera, X. 2001. *Trade Liberalization and Poverty: A Handbook*. London: CEPR and DFID, Figure 4.2.

time as other changes, which may push in the same or a different direction (for example, in the case of Zambia, the collapse of the copper industry which had funded a substantial subsidization of agriculture). The expected results from an international trade policy change may not occur if there are either institutional or physical factors that influence domestic trade. Domestic monopolies or oligopolies (whether or not they are state-owned or private) will mute the transmission of any price signals. If rural infrastructure is degraded the transactions costs of domestic trade may exceed the price signal.

Moreover, governments rarely act in an entirely consistent manner, and so it may often be difficult to decide how much liberalization has actually occurred. For example, applied as opposed to bound tariff rates are often not known in detail by food security analysts, and still less is the impact of tariff-like taxes such as special duties that apply in practice, though not in principle, only to imports. If applied tariffs are set well below the bound rate but then are frequently raised and lowered, the effect of such uncertainty on traders' actions may outweigh in whole or part the effects of the initial liberalization.

### ***Relative sectoral effects***

The direct effects of a shift from a less liberal to a more liberal international trade regime will be to alter relative prices, principally between:

- tradables and non-tradables;
- sectors (those in which policy has changed most *vis-à-vis* the others);
- products within sectors (for example, between goods that are for export and those that compete with imports on the domestic market).

The net effect of trade policy changes that impact differentially on the various sectors of the economy may be very different from what might be deduced by looking just at the changes directed at agriculture<sup>5</sup>. Trade protection to manufacturing that is greater than to agriculture represents a bias against the latter even if it receives high absolute protection. By the same token, trade policy changes could result in an increase in the relative bias against agriculture even if the average level of trade protection is reduced.

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<sup>5</sup> Anderson, K. 2002. Economywide Dimensions of Trade Policy and Reform. In Hoekman et al. eds. *Development, Trade, and the WTO: A Handbook*. Washington DC: The World Bank.

Whatever the net effect, these shifts will produce indirect geographical and social changes. Some social/gender groups will be affected more than others (positively or negatively) if they are more associated with one group of products than with others. Even a shift between the production of maize for domestic consumption and horticulture for export will affect employment, and the effects of a shift between either (or both) of these and clothing production may be even more far reaching. There will be similar differential effects on geographical regions (both within and between countries).

### *Multi-country liberalization*

An individual will be affected both by what their national government does and by the consequences of changes introduced by other countries. In the case of sub-Saharan Africa (SSA), for example, it is the WTO policy changes made by foreign governments that may have the greatest effect on the price of agricultural goods people buy and sell. One implication is that governments cannot avoid these effects simply by not participating in the WTO talks.

For example, the food security of some vulnerable groups in developing countries will almost certainly have been affected in the past by Northern agricultural subsidies. The OECD's total agricultural producer support in 2001 was estimated to be equivalent to 31 percent of total farm receipts<sup>6</sup>. This compares with a figure of 38 percent in 1986-88 (the base period for the Uruguay Round subsidy cuts). This decrease is smaller than the 20 percent cut in aggregate producer subsidies to which the industrialized WTO members committed themselves in the Uruguay Round.

Such subsidies have depressed the world price of various temperate agricultural goods, of which cereals are probably the most important. In 2001 the OECD PSE stood at 36 percent for wheat and as much as 81 percent for rice<sup>7</sup>. In a static sense, this has made it easier to supply food-deficit countries with imported cereals. Whether this static "gain" has been offset by a dynamic "loss" (because it has dulled incentives for domestic agricultural growth) is a moot point. But, to the extent that they exist, both static and dynamic effects will change if Northern agriculture is liberalized.

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<sup>6</sup> OECD 2002. *Agricultural Policies in OECD Countries - Monitoring and Evaluation 2002*. Paris. Annex Table 2.

<sup>7</sup> OECD 2002: Annex Table 3.

The initial effect is expected to be an increase in world prices, especially for cereals. In due course, full liberalization will allow countries like Australia, New Zealand, Canada, Argentina and Brazil to increase production, which will moderate any rise in world prices. But full liberalization will not occur at one fell swoop. Crab-like, partial liberalization (see next section) could easily result in a combination of changes that raise world prices.

The effect of multilateral liberalization on developing country exports will vary considerably according to the product and the market. The broad effect is that a reduction of import tariffs by developed or developing countries should increase their demand for imports, including those from developing countries. But how this affects particular developing countries depends both upon the current trade regime for the products they export and their capacity to alter supply in response to increased demand.

A particularly important influence during the period before full liberalization is the position of any given country in the trade preference hierarchy of its actual and potential export markets. For example, many developing country exports will not benefit initially from EU liberalization and, indeed, may suffer. This is partly because traditional commodity exports (such as beverages) already face very low tariffs worldwide and so will be unaffected one way or the other. In addition, those agricultural exports that do face heavy protectionism (such as sugar, tobacco and horticulture) have preferential access to the European market, which absorbs the great bulk of exports.

To the extent that the EU liberalizes its agricultural regime, it will adversely affect exporters from countries receiving heavy preferences either by increasing competition from less favoured suppliers or by reducing prices in the protected export market. SSA will be most adversely affected since it is highly preferred in the EU, which is its main market. By contrast, there will not be such adverse effects in South Asia or those parts of Latin America (such as Mercosur), which receive no such preferences in the EU. But South Asia will be affected by the phase out of the Multifibre Agreement which will have differential effects for India and Sri Lanka (wholly positive), Pakistan (ambiguous) and Bangladesh (possibly negative). These, in turn, will affect the labour entitlements of clothing workers and, hence, their food security. The phase out of the MFA will also adversely affect SSA - magnifying the negative effects on food security. Only if SSA states could increase their output sufficiently to take advantage of

liberalization in non-EU industrialized country markets where multilateral liberalization may genuinely improve access, could they, too, could benefit.

In addition to the effects of liberalization on the level of prices, there may also be effects on price volatility. The practice of some OECD (and other) states of insulating their farmers and consumers from the price effects of world market shocks has been to transfer onto the rest of the world the burden of adjusting to price volatility. Empirical investigation has suggested that in 30 countries it takes five years or longer to transmit half of any world price shock onto their domestic market and a further 30 countries appear to be virtually isolated from international price signals<sup>8</sup>. To the extent that this continues the food security of individuals will be adversely affected by price volatility in those countries lacking the means (policy, implementing, or financial) to provide any buffer.

#### *Other instruments*

Trade liberalization will alter the domestic price of tradables - but so will other policy changes (that may be reinforcing or offsetting) as well as external shocks. The most important of these is the exchange rate. A recent study of four central European states showed an imperfect (and sometimes negative) correlation between border and domestic producer price changes, largely as a result of offsetting exchange rate changes<sup>9</sup>. Much of the past bias against agriculture has been produced by overvalued exchange rates that make imports artificially cheap.

### **5.3 The trade policy agenda**

Whilst there is broad agreement that full, global liberalization of agriculture could be expected to have favourable aggregate effects for developing countries, there is also a consensus that the Doha Round will not fully liberalize trade. It is also not the only liberalization act in town. The combination of partial multilateral

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<sup>8</sup> Valdés, A & Foster, W. 2002. Reflections on the Policy Implications of Agricultural Price Distortions and Price Transmission for Producers in Developing and Transition Economies. *OECD Global Forum on Agriculture: Agricultural Trade Reform, Adjustment and Poverty*, 23-24 May 2002.

<sup>9</sup> Valdés, A. 2000. Measures of agricultural support in transition economies: 1994-1997. In A. Valdés, ed. *Agricultural Support Policies in Transition Economies*, World Bank Technical paper 470, Europe and Central Asia Environmentally and Socially Sustainable Development Series.

liberalization and parallel change in other fora may produce complex results that are not easily predictable.

### *The WTO Agreement on Agriculture (AoA)*

Although the negotiations on the AoA formally began in 2000, there has been remarkably little progress on defining the precise rule changes and liberalization that are front runners. In the absence of such guidance the rules most likely to have effects on food security are those on:

- *tariffs*, which could affect the price of imported food (with differential effects on consumers and producers) and also government revenue (which would impact on many policies);
- *domestic subsidies*, which could alter the feasibility of policies to enhance labour entitlements (e.g. input credits or market development);
- *export subsidies*, which could affect the feasibility of transfer and safety net policies that use imported food, since cuts will tend to increase “commercial” import prices and may reduce the availability of food aid.

A particular cause for concern is that the Round might result in reductions in developing country tariffs that are more rapid than the removal of production and export subsidies in developed states. As long as developed country subsidies remain, prices in the world market will not reflect production costs.

It may be economically undesirable for developing countries to liberalize further their domestic markets on items from other countries that are sold at below the cost of production. Whilst this might favour transfer and also exchange entitlements (for producers of non-competitive goods) it would reduce the production entitlements of farmers.

In the absence of world prices that give the right signals, there will be a role for government action to promote production that would be self-sustaining in a situation of efficient markets. Yet in cases where a policy depends upon government expenditure, any reduction of tariffs (as a consequence *inter alia* of a WTO accord) is likely to make this more difficult. This will persist during an adjustment period (which could be quite lengthy) until alternative sources of government revenue are introduced. In addition, policies that require government to spend directly in the agricultural sector (for example to support marketing or assist labour-absorbing SMEs) could be affected by future changes either on the allowable areas of domestic subsidy or on the total permitted volume of subsidy.

Those policies that provide vulnerable groups with subsidized food may be affected as they will often be supported by concessional imports. The supply of these in turn will be influenced by the negotiations on export subsidies (particularly if these go beyond dealing with direct subsidies to cover cross-subsidy from the protected domestic market).

The reduction, or even elimination, of export subsidies is a high priority for the Cairns Group<sup>10</sup> and some others in the new Round. Developing country policies that involve the provision of cheap food to enhance the trade-based or transfer entitlements of the food insecure, and which rely upon imports to deliver some or all of these supplies, are likely to be less feasible if the substantial subsidies still given by two or three major exporters are removed.

#### *Plurilateral change*

Agricultural liberalization may also occur in fora other than the WTO. Two EU initiatives illustrate the ways in which these may affect entitlements.

The combination of the EU's domestic reform of its Common Agricultural Policy (CAP) and its new trade policies towards LDCs (under the 'Everything But Arms' initiative) and its free trade area partners may reduce the trade entitlements of preferred exporters without providing any opportunity to offset such losses. The extreme case is given by sugar which will be fully liberalized for LDCs by 2009. This will open the way for greatly increased imports from LDCs but at prices close to world market levels, displacing the high priced imports from current suppliers; non-LDC suppliers will be constrained in their ability to respond by the tariff quotas that apply under the EU-ACP Sugar Protocol and the prohibitively high Most Favoured Nation (MFN) tariffs that apply outside it.

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<sup>10</sup> The Cairns Group is a coalition of 17 agricultural exporting countries who together account for one-third of the world's agricultural exports (Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, the Philippines, South Africa, Thailand and Uruguay). The Cairns Group's objectives include deep cuts to all tariffs (including tariff peaks) and removal of tariff escalation, the elimination of all trade-distorting domestic subsidies; the elimination of export subsidies and clear rules to prevent circumvention of export subsidy commitments.



The other EU initiative is to seek the replacement of the non-reciprocal Cotonou<sup>11</sup> trade regime with reciprocal Economic Partnership Agreements (EPAs). These will require ACP states to remove tariffs and charges concerning about 86 percent of their imports from the EU. The negotiating mandate handed down by the member states to the European Commission makes reference to the possibility of a safeguard clause (which would be needed by ACP states to offset EU agricultural subsidies) but only in a weak form. The result of unrestricted imports of subsidized EU agricultural products would be a loss of trade entitlements by farmers.

### *Unilateral change*

Structural adjustment programmes (SAPs) often include the unilateral liberalization of international trade policy (which will have similar effects to multilaterally agreed liberalization under the WTO), but the package also usually includes a range of other elements, including reforms that affect the prices of things people buy and sell. Typical examples of these are domestically oriented trade-related policies (such as price controls, parastatal policy, etc.), non-trade international policies (such as the exchange rate and foreign exchange convertibility) and the creation/destruction of institutional infrastructure. In addition, altered government policies may affect the availability of physical infrastructure and supply of transport.

## **5.4 Conclusion**

The arguments presented in this chapter are summarized in Figure 5.1. It is based upon the flow charts in McCulloch *et al.* 2001<sup>12</sup>, designed to map the link between liberalization and poverty.

The figure applies only to changes to any particular state's national trade policy. The overall impact on food security will depend upon both national and foreign

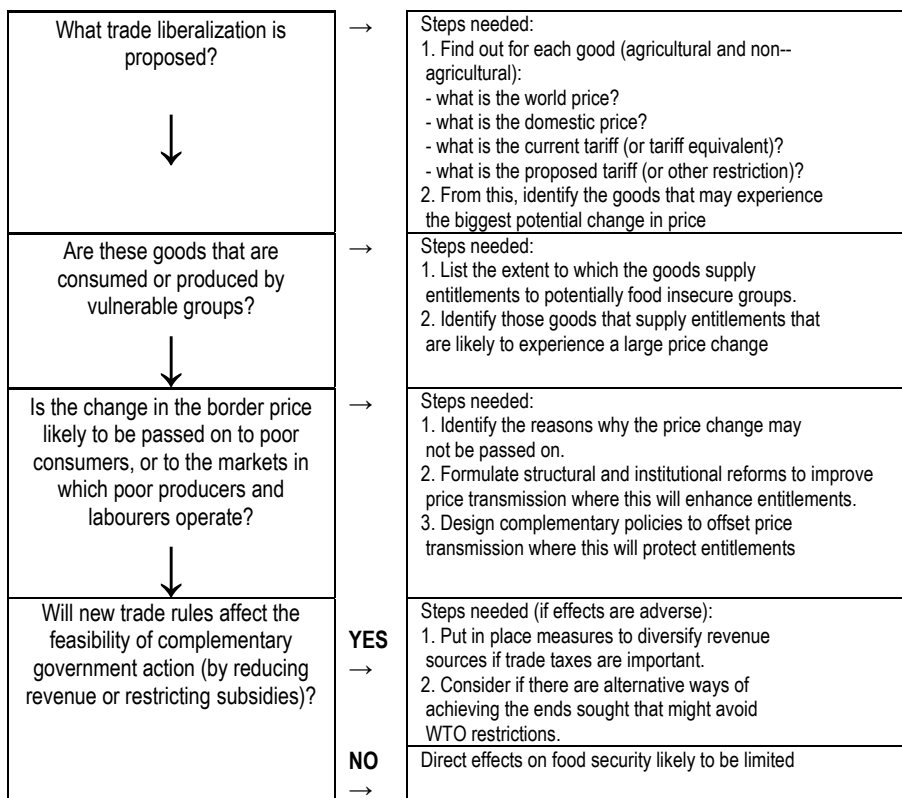
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<sup>11</sup> An ACP-EU Partnership Agreement signed in Cotonou, Benin, in June 2000, which includes a financial protocol covering aid programmes for member states through the European Development Fund (EDF). The agreement follows on from four successive Lomé Conventions.

<sup>12</sup> McCulloch, N., Winters, L. A. & Cirera, X. 2001. *Trade Liberalization and Poverty: A Handbook*. London: CEPR and DFID.

trade policy change. The greatest challenge for developing countries may be that both sets of change are likely to occur at the same time. This would produce substantial overall change to the production, trade, labour and transfer entitlements of many potentially food insecure people.

**Figure 5.1 Flowchart for policy-makers on national trade policy and food security**



Source: McCulloch, N, L A Winters, & Cirera, X. 2001. *Trade Liberalization and Poverty: A Handbook*. London: CEPR and DFID.



## **PART II**

### **CURRENT DEBATES ON TRADE POLICY AND AGRICULTURAL DEVELOPMENT**

Part II examines a selection of the debates illustrated in Part I, in order to draw out the key factors that need to be more fully considered in any analysis of the impact of trade and economic reform on the agriculture sector, and as a result on levels of food security.

Chapter 6 provides an overview of the issues and debates reviewed in the following four chapters. These relate to the potential opportunities and challenges faced by agriculture sector producers in developing countries due to economic and trade policy reform, and globalization. The debates consider issues ranging from the appropriateness of unilateral reforms carried out under structural adjustment programmes and their effects on the current levels of productivity within the agriculture sector, to the increasing ability of both international traders and retailers to determine the market opportunities open to producers.

Chapter 7 describes the opportunities open to, and constraints facing, the agriculture sector as a result of the increasingly penetrating drivers of globalization, in particular as they pertain to the export commodity composition of developing countries. A series of policy requirements, both from the perspectives of developed and developing countries is proposed.

In constructing an argument for a more balanced analysis of the institutions required to support the development of the agriculture sectors of developing countries, Chapter 8 discusses a number of gaps in the current orthodox analysis of the constraints to further productivity increases. The chapter argues for a more sophisticated treatment of national political economy institutions, particularly as they influence the roles of coordination and deliberative mechanisms. It also assesses the institutional prerequisites for enabling enhanced productivity in the smallholder agriculture sector.

Part II concludes with two chapters on changes in the structure of markets facing developing country agriculture. Chapter 9 discusses the potential impact of

increasing levels of concentration in international commodity markets and the role of transnational corporations in influencing the changing power structure in global commodity chains. Chapter 10 examines the impact that capital market liberalization has had in opening up opportunities for the expansion of the supermarket sector in Latin America and how this in turn has impacted on both the ability of smallholders to access local markets. Both chapters provide a caution against using assumptions of a continuation of the *status quo* in the structure of both global and local commodity markets in the analysis of the impact of further trade liberalization on food security.

## **Chapter 6**

### **Current debates on trade policy and agricultural development: an overview**

#### **6.1 Introduction**

The objective of this chapter is to draw out the key issues developed in Chapters 7 to 10, whilst placing them in the context of the wider contemporary debates related to economic and trade reform.

Running through many of the debates, and an issue that has been brought to prominence recently by a number of the leading international NGOs, is the visible imbalance between both the level of agricultural protectionism in developed as opposed to developing countries, and the process of agricultural market and trade liberalization undertaken by many developing countries, and that committed to, but often not undertaken by, developed countries. A key emerging message is that this imbalance needs to be given greater attention in the analysis of the effects of both unilateral reform programmes, and the commitments to reform enshrined in the WTO Agreement on Agriculture. Section 6.2 provides an overview of the drivers of globalization (notably, reduced trade barriers and cost reduction), and sets these in the context of the differential levels of support and protection provided to OECD and developing country producers.

Section 6.3 examines the potential benefits of reforms that are aimed at increasing sectoral efficiency, by explaining the central role that agriculture can play in the wider economic development of the majority of developing countries, a role that goes far beyond simply expanding the quantity of food that is available to the food insecure, and which differs significantly from the role that it plays in developed countries. The section starts from the premise that there is significant disagreement, based to a large degree on the observed failings of agriculture sector interventions, on the extent to which the sector can contribute, and therefore on the level of investment, and on the form of policy change required, if it is to contribute effectively. This leads to an examination of instances where the orthodox policy analyses and prescriptions may have been lacking in terms of their understanding of differential impacts on different sets of producers both between and within countries. These failings can include a lack of recognition, on the one hand, of the importance of the imbalance, not just in terms of levels of

protection, but in the extent of supportive institutions across OECD and developing countries; and, on the other, of the vulnerability that changes to both global and domestic market structures, facilitated by reform, are imposing on the different groups within different societies.

The remainder of the chapter then focuses on two of the key drivers of globalization, namely reduced trade barriers and cost reducing advances in technology, in terms of the implications for resource poor producers. In considering the implications of unilateral reform, Section 6.4 provides a detailed critique of some aspects of the orthodox consensus, with particular focus on the form and role of institutions for supporting participation by poorer groups in the benefits of wider efficiency gains within the sector. It is argued that the current prescriptions are not providing for the development of some essential supporting institutions in the agriculture sector and that this in turn, is holding back vital productivity improvements and preventing the full contribution of the sector to economic growth, poverty reduction and improved food security.

Section 6.5 examines the scope for promoting developing country agriculture's role within the framework of multilateral trade agreements, discussing calls for changes to the framework that would allow some of the constraints that have been imposed in the context of past unilateral reforms, and of the contemporary global market situation, to be alleviated.

Finally, Section 6.6 considers the potential impact of changes in market structure, many of which have been driven by cost reduction resulting from technological advance, and which have been facilitated by reductions in barriers to trade. A set of new threats and opportunities that are emerging as a result of changes in market structure, some of which are being driven by recent trends towards capital market liberalization, are used to illustrate the potential impact of such changes. It is argued that these, often radical, changes have not as yet been incorporated in mainstream policy analysis and prescription, despite the fact that they can have overwhelming impacts on the ability of agriculture to contribute to the alleviation of poverty and food insecurity.

## **6.2 Imbalanced levels of agricultural protection**

Globalization can be defined as the integration of markets (capital and finance, input and output) culminating in rapid increases in both the absolute level, and the proportion of, goods traded; and which is facilitated by both rapid advances in

technologies which contribute to reductions in transport, information and transaction costs, and by the efforts of governments to reduce barriers to trade.

However, as Mellor explains in Chapter 7, there is an implication of frictionless movement and perfect knowledge that understates the requirements for benefiting from globalization. Globalization immediately transmits lower prices to producers who may not have participated in cost reduction, and who will experience a decline in income, and in some cases, eventually revert to minimum subsistence agriculture.

Concurrent to the cost reducing advances in technology, governments have worked to reduce barriers to increased trade flows. Although it is the failure of the WTO AoA to deliver the proposed benefits that has provoked criticism by the international NGOs, the imbalance in agricultural sector reforms<sup>1</sup>, runs deeper than those associated with the multilateral trade-related reforms. Reforms take place in the context of multilateral, plurilateral, for example Regional Free Trade Agreements (RTAs), and unilateral processes. As an example of the latter, structural adjustment programmes implemented over the past few decades have resulted in radical reform of the agricultural sectors of many developing countries, a period during which the majority of OECD agricultural sectors have continued to be heavily protected. Whilst it is generally acknowledged that unilateral reforms were often required, it has also been contended that the process adopted has, in many cases, severely damaged the capacity of developing countries to increase levels of agricultural production and/or productivity. These unilateral reforms tend to have been reinforced by multilateral agreements.

Unilateral trade liberalization has been undertaken in developing countries under pressure from international finance institutions as part of structural adjustment and stabilization programmes. By contrast, agricultural trade has only recently been impacted by multilateral agreements (for example, the AoA). WTO rules constrain the extent to which countries can protect themselves from increased competition. This has resulted in a number of NGOs, Oxfam and CAFOD for example, suggesting that the more negative aspects of unilateral liberalization in developing countries have been compounded by double standards in commitments to multilateral agreements, and maintaining that the “you liberalize, we subsidize” attitude is extremely damaging.

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<sup>1</sup> Oxfam 2002. *Rigged rules and double standards: trade, globalisation and the fight against poverty*. Oxfam International.



Between unilateral and multilateral reforms are RTAs, which as well as having a longer history than multilateral agreements, notable examples being the European Union and the North American Free Trade Agreement (NAFTA), are growing in number. WTO acknowledges that RTAs differ considerably in scope: “in their simplest form, they provide for the exchange of preferences on a limited range of products between two or more parties ... At the other extreme, they may both liberalize ‘substantially all’ trade and contain trade disciplines which stretch well beyond traditional tariff elimination to areas such as standards, services, intellectual property and competition.”<sup>2</sup> The WTO identifies 240 RTAs, of which 70 percent were in force as of July 2000. The remaining 30 percent are defined as being under negotiation, but likely to become fully-fledged RTAs by 2005. It is likely therefore that RTAs will become increasingly important in defining the conditions of trade between nations.

Whilst acknowledging the growing role of RTAs, this chapter focuses on unilateral and multilateral liberalization as well as the importance of the state of support and protection across developed and developing countries before the relevant episodes of reform were initiated.

### ***The impact of the structural adjustment episodes of the 1980s on relative levels of protection***

Generally, OECD agriculture has been, and continues to be, characterized by high levels of agricultural protectionism. In real terms, transfers to the agriculture sectors in OECD economies have fallen from 2.3 percent of total OECD GDP in 1986-88 to 1.3 percent in 2001<sup>3</sup>. Nevertheless, the transfer is still about one third of total OECD farm receipts and approximately six times the total overseas development assistance provided by OECD countries to the developing world (about \$US 50–60 billion per annum and fairly static). The World Bank has calculated that whilst the real level of aggregate support has fallen, so have both the farm value added and the number of farmers, resulting in a marginal decrease in support as a percentage of agricultural value added. Indeed, support per active

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<sup>2</sup> WTO. 2000. *Mapping of regional trade agreements*. WT/REG/W/41 11 October 2000.

<sup>3</sup> OECD 2002. *Agricultural Policies in OECD Countries: A Positive Reform Agenda*. COM/AGR/TD/WP(2002)19/FINAL.

farmer has actually increased by 25 percent and 50 percent in the United States and EU respectively since the late 1980s<sup>4</sup>.

By contrast to the OECD countries, there has been substantial reform in the agricultural policy of many developing countries over the past few decades. The 1960s and 1970s were periods of anti-agricultural bias in many developing countries. A dramatic illustration of the conditions under which developing country producers operated, pre-structural adjustment, is provided in Table 6-1.

**Table 6.1 Direct, indirect and total nominal protection rates by region 1960-1984 (percent)**

Region	Indirect protection	Direct protection	Total protection	Direct protection of importables	Direct protection of exportables
Asia <sup>1</sup>	-22.9	-2.5	-25.2	22.4	-14.6
Latin America <sup>2</sup>	-21.3	-6.4	-27.8	13.2	-6.4
Mediterranean <sup>3</sup>	-18.9	-6.4	-25.2	3.2	-11.8
Sub-Saharan Africa <sup>4</sup>	-28.6	-23.0	-51.6	17.6	-20.5

<sup>1</sup> Republic of Korea, Malaysia, Pakistan, Philippines, Sri Lanka and Thailand.

<sup>2</sup> Argentina, Brazil, Chile, Colombia, Dominican Republic.

<sup>3</sup> Mediterranean: Egypt, Morocco, Portugal, Turkey.

<sup>4</sup> Côte d'Ivoire, Ghana, Zambia.

Source: Table 1-2, p. 11, Krueger, A., Schiff, M. & Valdés, A., 1991. *The Political Economy of Agricultural Pricing Policy*. Volume 1. A World Bank Comparative Study. Johns Hopkins Press, Baltimore.

Although direct intervention on importables was positive, direct taxation of exportables dominated the protection of importables, and the net impact on the aggregate of all selected products was negative in all regions. Further, the negative impact of indirect protection (e.g. overvaluation of the exchange rate, industrial protection etc) was greater than direct taxation in all regions. Total net taxation of agriculture was greater than 25 percent of the value of production in all regions, and exceeded 50 percent in the SSA countries.

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<sup>4</sup> Stern, N. 2002. Making trade work for poor people. Speech delivered at: National Council of Applied Economic Research, New Delhi, November 28, 2002

The unilateral reforms implemented during the 1980s and 1990s reduced this quantifiable anti-agricultural bias in domestic policy, particularly that associated with indirect taxation. Given fiscal constraints on the use of subsidies, trade policy is now the primary tool used to protect agriculture in developing countries. Nevertheless, partly as a result of the adjustment programmes, protection in developing countries has decreased, with the halving of average tariff rates and a reduction in the variation in their levels<sup>5</sup>. Whilst the average tariff in developing countries for all manufactured and agricultural tariff lines is 14 percent (17.9 percent in LDCs) compared to 5.2 percent in industrialized countries<sup>6</sup>, the dispersion in the developing country region is less dramatic. On average the highest tariffs in developing countries are about 12 times the average level, compared to about 40 times higher in the OECD. These peaks invariably hit agricultural exports from developing countries.

However, the opening of markets in developing countries, in the context of a global agriculture still characterized by high levels of protection in developed countries, left the reforming developing countries less able to prevent (a) the flooding of their domestic market (import surges) with products sold on the world market at less than their cost of production; and (b) the displacement of local trading capacity which was intended to, and in some circumstances initially did, fill the void left following the deregulation of local markets and associated dismantling of parastatals.

On point (a), the Washington institutions promoting structural adjustment did not take into account the existing imbalance in designing and proposing the reforms and therefore did not predict the resulting disincentive effects on local production in some regions. On point (b) rather than the emergence of sustained local private sector involvement, internal markets have often been overwhelmed by larger companies dominant in global value chains.

### ***The relevance of the imbalance in the context of the AoA***

The impact of the unilateral reforms preceding the first multilateral negotiations on agricultural trade (negotiations that essentially excluded developing countries)

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<sup>5</sup> Anderson, K et al. 2001. *The Costs of Rich (and Poor) Country Protection to Developing Countries*. Center for International Economic Studies Discussion Paper 0136. Adelaide University.

<sup>6</sup> Lankes, H. 2002. *Market Access for Developing Countries*. Finance and Development. September. IMF, Washington DC.

was to leave developing countries potentially more vulnerable to greater openness, and to impose further constraints on policy intervention aimed at promoting agricultural growth.

Predictions made at the time that the AoA was signed in 1994, that “a reduction in price distorting subsidies would boost global agricultural trade, stabilize global commodity prices and benefit developing countries”<sup>7</sup> have not materialised. Indeed, many commentators, particularly among the international NGO community, suggest that developing countries far from benefiting, have suffered damage to their agricultural production capacity related to import surges following the reduction or elimination of tariffs, and to the intense competition to domestic production resulting from subsidization of exports and from dumping practices<sup>8</sup>.

These commentators do not however, use these facts to argue against the benefits of increased trade in agricultural commodities. Rather, they are concerned that the mechanisms by which increased trade is being pursued are fundamentally flawed and strongly biased against the interests of developing countries. This concern is dramatically reflected in a recent statement by Oxfam<sup>9</sup> that “international trade is a game governed by rules which are constructed to ensure that they (developing countries) cannot win” and that “rich countries combine protectionism at home with aggressive pursuit of markets overseas to the extent of using the WTO to prise open overseas markets”.

Multilateral reforms, if followed through to complete liberalization, should in theory begin to redress the current imbalance in levels of protection. However, even if OECD agricultural policy were to be radically reformed, there would still be an imbalance in terms of the ability of developing country agriculture to compete, particularly those countries whose sectors are dominated by many

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<sup>7</sup> Priyadarshi, S. 2002. Reforming global trade in agriculture: a developing country perspective. *Trade, Environment and Development*. Issue 2 September. Carnegie Endowment for International Peace.

<sup>8</sup> Green, D & Griffith, M. 2002. *Dumping on the Poor: The Common Agricultural Policy, the WTO and International Development*. CAFOD; Actionaid. 2002. *Farmgate: The developmental impact of agricultural subsidies*. Bailey, M & Fowler, P. 2001. *Is the WTO serious about reducing world poverty? A development agenda for Doha*. Oxfam International.

<sup>9</sup> Oxfam. 2002. *Rigged rules and double standards: trade, globalisation and the fight against poverty*. Oxfam International. p. 25 and p. 28.

resource-poor low-income producers who do not have access to the institutional support (for example mechanisms to offset risk, the research, development and extension capacity, and market information systems) that is widely available to producers in the OECD.

The imbalance that has been manifested in multilateral reform processes, notably the WTO, is reviewed as a series of specific issues in a critique by Green and Priyadarshi<sup>10</sup>:

- design and application inequities favouring developed countries;
- failure to recognize fundamental differences between the roles of agriculture in developed and developing countries;
- failure to address food production requirements in developing countries;
- no commitment to food security;
- lack of flexibility to correct anomalies in tariff structures especially with respect to food security crops;
- insufficient recognition of the impact of import surges;
- ineffective implementation of the Marrakesh Decision.<sup>11</sup>

### ***The importance of the imbalance in agricultural protectionism***

The current visible imbalance in levels of protection has been used by some to argue for a rectification of the imbalance before poorer countries commit to further reductions in their levels of protection. Some commentators however, question the emphasis given to providing this “fairer playing field”. Finger<sup>12</sup> for example, suggests that “perhaps the least development-friendly side of the Doha Declaration is its willingness to ladle out ‘special and differential treatment’

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<sup>10</sup> Green, D & Priyadarshi, S. 2001. *Proposal for a Development Box in the WTO Agreement on Agriculture*. FAO Geneva Round Table on Food Security in the Context of the WTO Negotiations on Agriculture. 20 July 2001. Geneva

<sup>11</sup> i.e. *Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries* concluded as part of the outcome of the Uruguay Round.

<sup>12</sup> Finger, J. M. 2002. *The Doha Agenda and Development: A View from the Uruguay Round*. Paper prepared for the ADB Study on Regional Integration and Trade: Emerging Policy Issues for Selected Developing Member Countries.

without a perception of where developing country members would be better off if they themselves observed the disciplines the negotiations aim to establish". Similarly, Stern<sup>13</sup> makes the point that trade reform is a key component of an improved investment climate, stressing that "developing countries have much to gain via unilateral liberalization and do not have to wait for the completion of the current negotiations."

From this standpoint, the current international NGO focus on reducing levels of protectionism in developed country agriculture could be argued to be taking attention away from efforts to alleviate constraints to responsiveness within developing countries. While less distorted world agricultural markets are certainly a precondition for improving the incentives required to stimulate developing country agriculture, they are by no means a sufficient condition.

However, it is not clear that protectionism, and more specifically, the use of domestic support, should incur a negative connotation in all cases. The fact that the terms of trade move against the agriculture sector as economies develop and become more diversified has been used as an argument for supporting the agriculture sector even as it declines in relative importance. Indeed, as countries become less fiscally constrained, there is a tendency for them to support their agriculture sectors, as evidenced in two of the poorer OECD countries, Mexico and Turkey, which have both increased levels of support recently.

Even if these arguments are negated to some extent by calls for less distorting redistributive policies towards the sector, there may still be strong arguments for the use of subsidies in the early stages of agricultural transformation. As Kydd argues in Chapter 8 of this volume, there may be phases of agricultural transformation during which the returns to the subsidization of input and/or output markets are high following the kick starting of agricultural growth. However, whilst such state intervention has been credited as having supported the Green Revolution in India, for example, as such countries continue to grow, these forms of supportive policy can become locked in. This can put a strain on budgetary resources and prevent their allocation to more efficient uses. There is, therefore, a need to consider, before subsidies are first initiated, how they would be phased out when the returns to their use diminish.

In attacking OECD protectionism, interest groups need to ensure that the types of policy instruments they want to see dismantled remain flexible. One way may be

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<sup>13</sup> Stern. 2002. op cit.

to target support reduction on commodities other than basic foods, for example cotton. The consequence would be that whilst higher world cotton prices would be beneficial for poor producers, higher world prices of basic food commodities could harm net consumers<sup>14</sup>.

Equally, in determining whether it is advisable for developing countries to resist opening their markets further to agricultural imports, two factors appear central: first, the extent to which unbalanced liberalization during the past few decades has mitigated the potential and expected benefits of unilateral liberalization; and second, even if trade barriers in rich countries are reduced by multilateral liberalization, whether this will actually result in an increase in the market share of poorer developing countries, given that they generally lack the infrastructure, skills and capability, and the institutional support, to take advantage of increased openness.

### 6.3 The role of agriculture in reducing food insecurity

The role of the agriculture sector in reducing levels of food insecurity goes far beyond simply increasing the amount of available food. It is therefore important to understand how agriculture can make its contribution, so often suppressed in the past, before considering the types of opportunities for appropriate intervention, and the threats that the sector may face following further liberalization in the context of the increasing force of globalization.

An emerging consensus view is that in many rural economies, agriculture has greater potential than other activities to stimulate initial growth and improvements in income<sup>15</sup>. Mellor argues that “there has been a tendency to

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<sup>14</sup> J.W. Mellor, personal communication, March 2003.

<sup>15</sup> The debate is reviewed for example in Mellor, J.W. 2000. *Faster more equitable growth: The relation between growth in Agriculture and Poverty Reduction*. Cambridge MA: CAER II Project Office, Harvard Institute for International Development; Kydd, J. Dorward, A., Morrison, J.A., & Cadisch, G. 2001. *The Role of Agriculture in Pro Poor Economic Growth in Sub-Saharan Africa*. Report prepared for DFID; Dorward, A., & Morrison, J. A. *The Agricultural Development Experience of the Past 30 Years: Lessons for LDCs*. Background paper prepared for FAO; Killick, T., Kydd, J. & Poulton, C. 2000. *The Rural Poor and the Wider Economy: The Problem of Market Access*. IFAD Rome.

generalise that economic growth reduces poverty, when in fact it is the direct and indirect effects of the agricultural growth that account for virtually all the poverty decline<sup>16</sup>. (In Chapter 14 of this volume, this statement is challenged by Valdés and Foster who argue that in Latin America, with its less rural economies, this is not necessarily the case.) Increases in agricultural productivity have the potential to increase incomes as rural households specialize and intensify production. The 2001 FAO State of Food Insecurity report suggests that weak rates of growth in agricultural production can be related to deteriorations in food security indicators, and that in countries where the number of undernourished increased significantly, the average agricultural growth rate was 0.4 percent per annum between 1990-92 and 1997-99. This compared with countries where the number undernourished decreased significantly, but which achieved an average agricultural growth rate of 3.4 percent per annum. Empirical evidence from the sectoral productivity literature also supports the view that agricultural growth promotes poverty reduction<sup>17</sup>.

The key issue is therefore not whether, but how changes in real income from increased agricultural production translate into improved food security. This is considered by turning to the literature on sectoral growth linkages.

### ***Agriculture sector linkages***

Four main categories of linkages have been identified:

- direct impacts on upstream production of, for example, fertilizer, pesticides, packaging materials etc;
- direct downstream production gains, for example in food processing;
- savings and investment linkages;
- indirect consumption linkages occurring via increased employment and income as a result of increased agricultural activity.

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<sup>16</sup> Mellor, J.W. 2000. op cit.

<sup>17</sup> Thirtle, C., Irz, X., Wiggins, S., Lin Lin, & McKenzie-Hill, V.. 2001. Relationship between changes in agricultural productivity and the incidence of poverty in developing countries. *Paper prepared for DFID*.



Delgado et al.<sup>18</sup> used SAM/CGE and semi input output models to investigate the relative contributions of these linkages to the overall multiplier effect of increased agricultural production, finding that the multiplier is most significant where any incremental income generated is spent on labour-intensive, locally produced non-tradable goods and services, (for example, where basic food is the main consumer expenditure item) and where production in the commodity generating the increase in income is labour-intensive. Hazell and Haggblade<sup>19</sup> calculated that on average in India, for each 100 rupee increase in agricultural income, an additional 64 rupees are added to the local economy. The incremental income in high productivity areas was Rs. 93, whilst in low productivity areas it was Rs. 46. In all cases they found that the greater proportion of the overall multiplier was attributable to consumption linkages rather than to inter-industry production. In similar studies, the relative importance of consumption linkages is also demonstrated.

Whilst there is less evidence that direct upstream and downstream linkages are significant sources of incremental income, savings and investment linkages are important, as increased income can result in increased investment and in reduced production risk and vulnerability. This in turn contributes to increases in productivity and enhanced supply response. However, there may be leakage from the local economy if rates of local savings and investment are too low or if the local economy is strongly linked to the wider economy, such that local opportunities are already available to outside capital, or outside opportunities are already available to local capital, suppressing the multiplier effect.

Indirect consumption linkages have potentially the strongest impact. However, the nature and scale of effects on income and expenditure will depend on the characteristics of the commodity that is subject to the initial price or productivity change, including both local demand characteristics (such as tradability and average budget share of households) and local production characteristics (such as supply elasticity and demand for labour and/or tradable inputs). There is, therefore, a requirement to determine whether any increased income is due to price or to productivity improvements. Higher prices will increase producer income but may have negative effects on consumers (this may include any local

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<sup>18</sup> Delgado, L., Hopkins, J. & Kelly, V. 1998. *Agricultural Growth Linkages in Sub-Saharan Africa*. Washington DC: International Food Policy Research Institute.

<sup>19</sup> Hazell, P. & Haggblade, S. 1990. *Rural-Urban growth linkages in India*. Washington DC: World Bank..

processing industry). This compares with productivity improvements, which increase producer income, but do not necessarily increase prices for consumers. Lower prices for tradables will reduce levels of income for net producers of these, but could also suppress any positive consumption linkages via wage income reductions<sup>20</sup>.

The extent of any gains achieved via consumption linkages will again be limited by leakages. If increased incomes are used to buy tradables, this will reduce the stimulus to local demand. Even with a positive stimulus, if local producers of non-tradable foods cannot respond (e.g. limited labour and/or capital markets or poor food market development) then there will be inflationary pressure on prices which will offset real income increase.

The distinction between expenditure on tradables as opposed to non-tradables is therefore important<sup>21</sup>. Shifts in production between tradables and non-tradables as a result of changing incentives therefore need to be investigated in terms of their food security implications.

Jaramillo,<sup>22</sup> examining the impact of reforms in Colombia in the early 1990s, demonstrated that living standards improved in rural areas despite reduced overall agricultural performance following the reforms. He concluded that this was due to growth in employment opportunities driven by increased production of non-tradable crops and growth in the rural service sector. Pre-reform, the sector was characterized by the protection of importables, whilst exportables benefited from export subsidies and subsidized credit programmes, but non-tradable production was generally ignored. The reforms of the 1990s were expected to favour agriculture, but tariff reductions resulted in reduced areas planted to import-competing annual crops, and therefore reduced production of these, but they increased production of non-tradable crops. Although Jaramillo also discusses the fact that expansion in labour-intensive crops drew in landless labour (with decreased employment in tradables compensated for by increased employment in non-tradables), an aspect not explored was whether the increase in the production of non-tradable crops resulted in decreased local market prices and whether this in turn increased real incomes and purchasing power.

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<sup>20</sup> Kydd, J. Dorward, A., Morrison, J.A., & Cadisch, G. 2001. op cit.

<sup>21</sup> Ibid.

<sup>22</sup> Jaramillo, C F. 2001. Liberalization, Crisis and Change: Colombian Agriculture in the 1990s, *Economic Development and Cultural Change*, 49 (4), 821-846.

### *Sources of agricultural growth*

The source of agricultural growth is therefore particularly important in understanding the extent to which agriculture can be expected to contribute to wider economic growth in an economy. On the basis of past studies and a review of countries that have experienced relatively high rates of agricultural growth during the past three decades, Dorward and Morrison<sup>23</sup> distinguish three categories of countries: extensive exporters, intensive exporters and those relying on semi-tradable, cereal-based intensification. The first two categories, which have generally been considered to offer the greatest scope for agriculture-led growth, are distinguished by the manner in which they have expanded the production of exportable products (generally non-food commodities): this has been either through land expansion with the associated maintenance, or even reduction of, average yields; or through intensification to increase yields on existing cropped areas. The authors suggest, however, that many countries in the early stages of agricultural transformation will need to follow the third strategy of cereal-based intensification if the multiplier effects explained above are to be significant enough to stimulate wider growth.

Several other findings could be used to support this proposition. In most African countries, cereals are the staple food and provide the basis of the livelihood of large numbers of small farmers. Increasing the effectiveness of cereal marketing systems is likely to be vital to food security of these households<sup>24</sup>. Other research<sup>25</sup> argues that cereal-based intensification is an increasingly important strategy in the face of declining tropical export commodity prices (and the terms of trade facing producers of these commodities). A decreasing, but not insignificant, number of poor countries are highly dependent on a single commodity without being the major supplier (e.g. coffee in Uganda, tobacco in Malawi) and it is difficult for these countries to increase their export revenues. Economies that are becoming more marginalized generally have a narrow export base and are therefore prone to terms of trade shocks<sup>26</sup>. In 1980, manufactured

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<sup>23</sup> Dorward & Morrison. 2000. op cit.

<sup>24</sup> Coulter, J & Poulton, C. 2001. Cereal market liberalisation in Africa. In P. Varangis, ed. *Commodity market reforms: lessons of two decades*. Washington DC: World Bank.

<sup>25</sup> Page, S. & Hewitt, A. 2001. *World Commodity Prices: still a problem for developing countries?* London: ODI.

<sup>26</sup> World Bank 2002. *Globalization, Growth and Poverty: Building an Inclusive World Economy*. Washington DC: World Bank

goods comprised 25 percent of exports from developing countries as a group. By 1998, this figure had risen to 80 percent<sup>27</sup>. Martin suggests that such changes in the composition of developing country exports are “related in part to the relatively high rate of accumulation of human and physical capital in developing countries”. He also argues that “while increases in capital appear to be much less important than technological change as a source of aggregate growth, trade theory suggests that rapid growth in these factors should increase the importance of those sectors that use them intensively”. In countries that have not benefited from trade-led growth, primary commodities still tend to dominate.

How will further liberalization impact upon the relative incentives for production in terms of crop mix; on the relative roles of area expansion and intensification in any increased output and therefore on food security? Changes in cropping patterns as a result of reforms have generated extensive debate. For example, on the question of whether an increase in the production of tradable non-food cash crops is beneficial for food security, it is suggested that this is undesirable at the national level because it implies large-scale, capital-intensive production<sup>28</sup>. However, whilst the commercialization of such plantation type export crops does not usually enhance food security, especially if it is not associated with increased food imports or increased productivity in food production, the outcome will depend on the technology used and whether the structure of production is dominated by large-scale or small-scale producers. For example, in Bangladesh the production of jute, a key export crop, is more labour-intensive than rice production. Additionally, countries that have seen increases in the growth rates of basic food production have also had positive growth in the production of non-food cash crops, and vice versa.

Recent research provides some convincing evidence from a range of African countries that commercialization of production, especially into export commodities, can increase both cash incomes and the productivity of food crops,

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<sup>27</sup> Martin, W. 2001. *Trade Policies, Developing Countries, and Globalization*. Washington DC: World Bank.

<sup>28</sup> Islam, N. 1994. Commercialization of Agriculture and Food Security: Development Strategy and Trade Policy Issues in *Agricultural Commercialization, Economic Development and Nutrition*, Von Braun, J. & Kennedy, E. Eds. Baltimore: Published for IFPRI by The Johns Hopkins University Press.

both of which contribute positively to food security<sup>29</sup>. An interesting agenda for research that follows from this finding is to determine the conditions that promote commercialization among smallholders. This research suggests that with appropriate policies cash crop production can offer a route to equitable growth<sup>30</sup>. At the national level, such increases in production levels are, however, not necessarily distinguishable. Lamb<sup>31</sup> provides a useful illustration of the extent of substitutability between food and non-food export crops. He finds that there is substitution in production in the short run, with total agricultural output responding negatively to increased export prices and positively to increased food prices, and suggests that this result is consistent with diversion of resources into perennial cash crops, resulting in short-run reductions in food crops with any increase in the production of export crops taking longer to come through.

The preceding text has established that there are a range of avenues by which improvements in agricultural productivity can contribute to economic growth and improved food security. In the following sections, potential constraints, particularly to smallholder agriculture, that may result either from inappropriate policy advice or from recent changes in global food systems are discussed.

#### **6.4 Unilateral reform: The Washington Consensus**

Most episodes of unilateral reform have been characterized by a dominant policy orthodoxy with respect to promoting sectoral efficiency as a mechanism for stimulating the development of poorer countries, and which is closely related to the concepts introduced in Part I. Such reforms are on the one hand, defended as necessary for promoting agricultural growth; and on the other, attacked for resulting in the marginalization of resource-poor farmers in many developing countries and thereby limiting the extent to which the agriculture sector can

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<sup>29</sup> Govereh, J. & Jayne, T. S. 1999. *Effects of cash crop production on food crop productivity in Zimbabwe: Synergies or Trade-offs?* USAID and Michigan State University. Strasberg, P.J. 1998. *Smallholder cash-cropping, food cropping and food security in Mozambique's cotton belt*, USAID and Michigan State University.; Strasberg, P.J., Jayne, T. S., Yamano, T., Nyoro, J., Karanja, D. & Strauss, J. 1999. *Effects of agricultural commercialization on food crop input use and productivity in Kenya*, USAID and Michigan State University.

<sup>30</sup> Maxwell, S. & Fernando, A. 1989., Cash crops in developing countries: the issues, the facts, the policies, *World Development*, 17 (11), 1677-1708.

<sup>31</sup> Lamb, R.L. 2000. Food crops, exports and the short-run policy response of agriculture in Africa, *Agricultural Economics*, 22, 271–298.

contribute to wider growth. In order to allow a considered assessment of this debate, the following sections discuss the appropriateness of the orthodox approach, often referred to as the “Washington Consensus”.

### ***What is the Washington Consensus?***

Srinivasan<sup>32</sup> comments that “in 1990, Williamson coined the term “Washington Consensus” to describe the lowest common denominator of policy advice, in terms of a set of analyses and prescriptions, being addressed by the Washington institutions as of 1989”. He notes that whilst there has been considerable success of many elements of the package, the consensus has come in for criticism over the past decade, and suggests that it is not so much the instruments themselves but the context in which they have been used that has resulted in lower than expected results. For instance, he makes the point that the response to any policy change, such as trade liberalization, that operates through price incentives depends both on non-price factors and the time horizon; and that if domestic supply constraints (other than the price received) are severe in the short to medium run, removing all price distortions would have only a limited favourable response. In analysing the impact of reform, assessment of complementary policies and of the context is therefore essential.

Stiglitz<sup>33</sup> takes a similar tack, suggesting that ideas developed for Latin America - the three pillars of fiscal austerity, privatization and market liberalization - have been inappropriately used in other developing countries at earlier stages of development. He also, suggests that whilst the key processes of globalization (reduced costs of transactions and decreased barriers to the movement of goods and services) are similar to those associated with earlier processes in which national economies were formed, there is no accountable “government” to oversee the process of globalization. Partly as a reflection of these criticisms and internal evaluations<sup>34</sup>, the Washington Consensus has evolved considerably since

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<sup>32</sup> Srinivasan, T. N. 2000. The Washington Consensus a Decade Later: Ideology and the Art and Science of Policy Advice. *The World Bank Research Observer* 15, no. 2: 265-270.

<sup>33</sup> Stiglitz, J. 2002. Globalisation and its discontents. Allen Lane. The Penguin Press. London.

<sup>34</sup> Jayarajah, C. & Branson, W. 1995. Structural and sectoral adjustment: World Bank experience 1980-92.; World Bank. 2000, Social dimensions of adjustment programmes and World Bank. 2001, Adjustment Lending Retrospective. This section draws upon these reports.

the early 1990s, and now includes strong emphasis on poverty, institutions and governance, participation and environmental sustainability.

The World Bank makes the important point that structural adjustment is policy and institutional reform that takes place at a country level with or without external support<sup>35</sup>. It gives the example of Malaysia as country that has adjusted without external support. Adjustment lending is the means through which the Bank responds to client countries' requests for financial and policy support in the process of adjustment.

Indeed, only as recently as 1999 did structural adjustment lending first exceed a quarter of total World Bank lending. In the 1980s the World Bank approved 191 adjustment operations in 64 countries totalling US\$27 billion (17 percent of its total lending). In the 1990s this had increased to 346 operations in 98 countries totalling US\$72 billion (29 percent of total lending). The main instruments by which these funds have been allocated are Structural Adjustment Loans (SALs) and Sectoral Adjustment Loans (SECALs), although more recently, subnational adjustment loans (SNALs) have increased in prominence, particularly to larger federal economies or at the state level, such as in Argentina and India. In the period 1980-2000, the 537 structural adjustment operations in 109 countries comprised 255 SALs and 233 SECALs with an annual average of 26 operations at US\$184 million per loan<sup>36</sup>.

A shift in donor financing took place between 1980 and 1985 from project based towards structural adjustment lending. Early adjustment loans focused on the achievement of economic stability (in the main, to help provide balance of payments support following the 1979 oil shock, so that countries could focus on stabilizing their economies) and on correcting distortions. The loans tended to support macro-policy reform such as trade liberalization, privatization and financial restructuring, designed to increase efficiency. Little attention was paid however to the social impact. It is this early lack of attention that is still used as a main point of criticism of structural adjustment programmes. During the remainder of the 1980s, the deep-rooted institutional and structural weakness that were causing weak performance became apparent, and lending became more focused on the short-term impacts on the poor (who tended to suffer most) and

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<sup>35</sup> World Bank. 2000. Social Dimensions of Adjustment Programmes. Washington DC: World Bank.

<sup>36</sup> World Bank. 2001. Adjustment Lending Retrospective. Washington DC: World Bank.

measures to alleviate them, for example: compensatory measures including public works and microcredit, and the maintenance of social spending.

During the 1990s, reform of financial and private sectors and public sector management have taken precedence over stabilization measures and greater emphasis has been put on poverty reduction and social sector reform, with the proportion of poverty-focused adjustment operations rising from 31 percent of all lending in 1995 to 69 percent in 1999<sup>37</sup>.

The change in emphasis has been credited with improved performance of the loans. The World Bank's own evaluation suggests that loans performing successfully have risen from 60 percent in the 1980s, to 68 percent in 1990-94, and to 86 percent in 1999-2000<sup>38</sup>. Over recent years, however, there has been greater selectivity of above-average performers. In the 1980s, 25 percent of countries taking loans had taken 4 or more; in the 1990s this number had increased to 42 percent. Three countries (Argentina, Ghana and Mexico) had each taken more than 15 loans.

The World Bank characterizes the goals implicit in adjustment lending as:

- stabilizing the macro economy;
- promoting economic growth and poverty alleviation;
- fostering openness;
- improving transparency in incentives;
- enhancing efficiency in resource allocation;

and more recently:

- broadening the scope for private sector development;
- strengthening institutions and capacity for policy analysis.

The main prescriptions of the Washington Consensus relate to price policy; fiscal policy; exchange rate policy; credit policy; trade policy; institutional reform; investment policy; and other less tangible, but no less important, areas of reform

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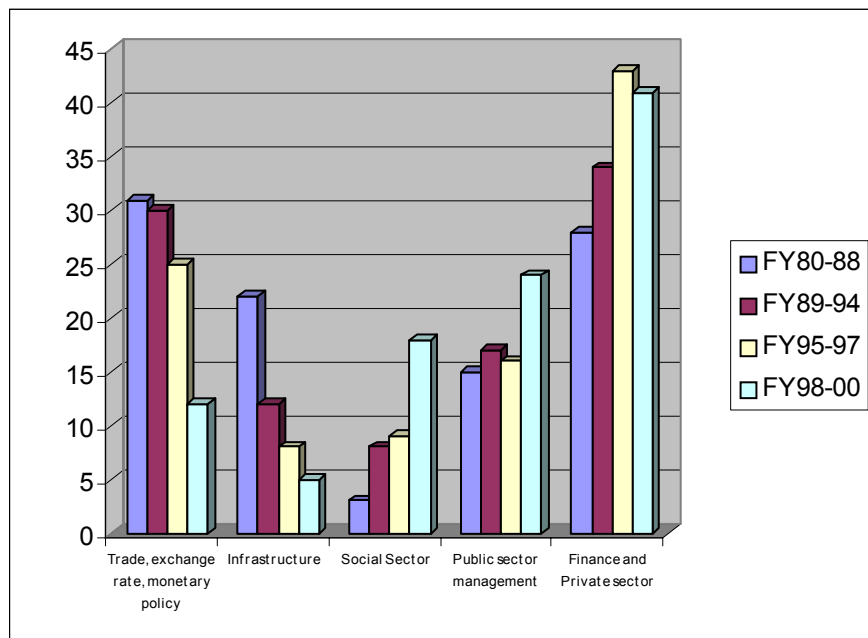
<sup>37</sup> World Bank 2000. op cit.

<sup>38</sup> World Bank 2001. op cit.



relating to improved democracy and governance, including reforms to better transparency and the rule of law<sup>39</sup>.

**Figure 6.1 Trends in conditional lending by sector**



FY = Financial year

Source: World Bank. 2001. Adjustment Lending Retrospective.

<sup>39</sup> Green, R. 1989. Articulating Stabilization Programmes and Structural Adjustment. *In* Structural adjustment and agriculture: theory and practice in Africa and Latin America, Simon Commander, (ed.). Overseas Development Institute, London.

Stiglitz suggests that inappropriate sequencing and pacing of reforms were amongst the “biggest blunders” of the IMF<sup>40</sup>. Liberalization often occurred before safety nets were in place, because he argues, of the misplaced emphasis on market fundamentalism when the reality was one of imperfect information and imperfect markets. Relating this to the agriculture sector, Stiglitz notes that the abandonment of pan-territorial pricing was often forced before improved road systems were in place and that this often resulted in remote, poor farmers becoming poorer.

### *The Washington Consensus applied to agriculture*<sup>41</sup>

Most adjustment lending to the agriculture sector has been in the form of SECALs. These operations have often not met expectations and have in recent years diminished in importance, as reflected in Table 6.2.

**Table 6.2 Share of IBRD and IDA adjustment lending by sector, 1995-2000 (percent)**

	Financial year 1995	Financial year 1996	Financial year 1997	Financial year 1998	Financial year 1999	Financial year 2000
Agriculture	4.6	5.1	13.8	0.0	0.5	0.0
Economic policy	54.7	34.2	32.5	13.0	64.4	23.3
Education	0.9	0.0	0.0	0.7	0.0	0.0
Electric power and energy	2.8	0.0	0.0	0.9	0.2	0.0
Environment	0.0	0.0	0.0	0.0	0.0	1.0
Finance	34.6	23.7	17.6	50.9	11.8	24.0
Health, nutrition, and population	0.0	7.8	0.0	6.2	0.0	0.0
Mining	0.0	11.1	5.9	7.1	2.0	0.0
Public sector	2.3	12.3	3.1	0.9	2.9	0.4

<sup>40</sup> Stiglitz. 2002. op cit. pp. 73- 75.

<sup>41</sup> This section draws on material from Kydd, J. & Dorward, A. 2001. The new Washington consensus on poor country agriculture: analysis, prescription and gaps: with particular attention to globalisation and finance for seasonal inputs. *Development Policy Review* Vol. 19 No. 4 pp 467 – 478, sections from which were presented in revised form at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11– 12 July 2002.

	Financial year 1995	Financial year 1996	Financial year 1997	Financial year 1998	Financial year 1999	Financial year 2000
development						
Private sector	0.1	5.9	8.4	7.8	4.7	41.1
management						
Social protection	0.0	0.0	18.7	10.9	11.5	9.9
Transportation	0.0	0.0	0.0	1.6	0.2	0.4
Water supply and sanitation	0.0	0.0	0.0	0.0	2.0	0.0
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0

Source: World Bank. 2001. Adjustment Lending Retrospective.

Recently, the World Bank has developed explanations of why the agricultural sector has failed to fully realise its potential in bringing about rural development and poverty reduction<sup>42</sup>. Agriculture is perceived as insufficiently competitive in the world market and, in many cases, as facing skewed distribution of resources and adverse resource endowments. For instance, Africa has inadequate irrigation, and in almost all developing countries traditional large-scale state managed irrigation schemes require continuing subsidy (especially maintenance costs). Soils are deteriorating, both in pre-Green Revolution areas, resulting principally from continued mono-cropping without adequate fertilizer application and/or soil conservation; and in Green Revolution areas, because of contamination of soils from inadequate drainage, water-table depletion, and salt-water infiltration. The key problems are identified as policy and institutional failures. Kydd and Dorward<sup>43</sup> suggest that policy failures are conceptualized by the Washington Consensus as the suppression of agricultural incentives through economy-wide policies which discriminate against agriculture; excessive explicit taxation of agriculture; urban bias consequent on the weaknesses of political institutions; and quantitatively inadequate, while also inefficient, support for agriculture. These failures are used to prescribe greater private sector incentives to engage particularly in input provision; sustainable resource management; commodity diversification, especially into non-traditional crops; decentralization of service delivery; and participation of farmers in setting objectives, conducting research and evaluating results.

<sup>42</sup> World Bank 1997 Report - Rural Development from Vision to Action and the 2000 World Bank, ABB and UNECA Report - Can Africa Claim the 21<sup>st</sup> Century?

<sup>43</sup> Kydd, J. & Dorward, A. op. cit.

Examples of these prescriptions are captured in Box 6.1, which provides a summary of specific policies aimed at reforming the agricultural sector in the countries studied in the SAPRIN study.

### **Box 6.1                    Characteristics of Structural Adjustment Programmes**

In **Zimbabwe**, the main policies were:

- (i) reduction of direct state involvement in the production, distribution and marketing of agricultural inputs and commodities;
- (ii) removal of subsidies on agricultural inputs and credit;
- (iii) liberalization of export and import trade; and
- (iv) privatization of agricultural marketing.

In **Uganda**, the reforms emphasized:

- (i) liberalization of the exchange rate (to eliminate currency overvaluation);
- (ii) control of inflation;
- (iii) liberalization of trade in agricultural inputs and outputs;
- (iv) provision of export incentives to the private sector (removal of export tax);
- (v) removal of government subsidies in the agricultural sector.

In the **Philippines**, the principal policies were:

- (i) foreign-exchange liberalization and currency devaluation;
- (ii) price and market liberalization;
- (iii) parastatal reform and privatization;
- (iv) export promotion;
- (v) removal of subsidies.

In **Mexico**, the measures adopted included:

- (i) constitutional reforms facilitating the privatization and concentration of land and natural resources;
- (ii) reduction of state participation in agricultural production;
- (iii) privatization of the production and distribution of agricultural inputs and services;
- (iv) liberalization of trade in agricultural commodities.

In **Bangladesh**, emphasis was placed on:

- (i) increased private sector involvement in irrigation and fertilizer distribution;
- (ii) reduction in subsidies on agricultural inputs;
- (iii) introduction of floor prices for some agricultural products;
- (iv) liberalization of food-grain exports and imports.

Source: SAPRIN 2002

Kydd and Dorward stress that although “the growing institutional emphasis in the Washington Consensus on Agriculture is to be welcomed, it is not sufficiently focused and does not go far enough”: it tends to focus on the effectiveness of political institutions and the organizational capability of governments, including issues such as freedom of association, transparency, accountability and the extent of devolution of decision making; and the strength and effectiveness of civil society organizations, such as farmers’ organizations and NGOs. They argue that while this is critically important, much more emphasis needs to be given to the development and evolution of “institutional arrangements”, and this is important in considering constraints to and expansion of food crop productivity. This theme, and in particular, the role of the state, is developed further in Chapter 8.

There needs to be greater recognition of the different challenges facing areas at different stages of agricultural modernisation, in particular, differentiating between those areas which have not yet experienced agricultural modernisation and those which have gone through the early stages of such modernisation, with associated development of institutions and of the non-farm sector. Experience from agricultural modernization in Green Revolution areas in Asia and Latin America and from the few and sometimes short lived Green Revolutions in Africa, shows that achievements in the past have been gained through, or associated with, large scale investments in development of appropriate technology, supportive policies, and infrastructure and support services enhancing the functionality of input and output markets, seasonal finance, and extension.

However, whilst subsidies to agriculture in OECD countries have increased 5 – 10 percent in nominal terms over the last 15 years to US\$300 billion per year, developing country expenditure on agriculture has typically fallen. This raises serious questions regarding the commitment of governments to agricultural development, as well as the appropriateness of the current orthodox prescriptions towards the sector.

## **6.5 Multilateral reform: the WTO reform process<sup>44</sup>**

Apart from the obvious fiscal constraints to the state adopting a greater role in facilitating agricultural development, additional constraints may be imposed by

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<sup>44</sup> This section draws upon FAO. 2000. *Agriculture, Trade and Food Security: Issues and Options in the WTO negotiations from the perspective of developing countries*. Volume 1. Rome; and Stevens, C. 2002. op cit.

multilateral agreements that are attempting to move in the opposite direction. These agreements can reduce further the flexibility available to developing country governments aiming to stimulate development by providing protection and/or support to the sector.

The principal objective of the UR AoA negotiations was to bring some discipline to the distortional policies in OECD countries, which few developing countries are able to afford. However, the FAO has stressed that the Agreement leaves a substantial imbalance in the remaining levels of domestic support and export subsidies allowed to developed countries, on the one hand, and to developing countries, on the other. The “standstill and roll back” principle underlying the Agreement implies that developed countries and some of the richer developing countries have WTO rights to their remaining high levels of support and protection mechanisms, while developing countries’ rights to initiate the use of similar support and protection are subject to considerably lower levels. Unless the levels of support and protection of the less fiscally constrained countries can be brought down quickly, the imbalance in support levels, together with the constraints on developing countries’ policies, could slow and hinder adjustment in the latter.

### ***The three pillars of the AoA***

In this section, potential constraints imposed by the UR AoA are considered.

#### *Domestic support*

In negotiating the Uruguay Round Agreement on Agriculture (AoA) it was recognised that domestic support to agriculture had the potential to distort trade via its encouragement of excess production which, by depressing world prices reduced incentives for production in regions holding a comparative advantage in those production activities. At the same time, it was recognised that not all domestic support measures will potentially cause significant distortion. The AoA reflects this by categorising policies into one of three boxes:

- Amber box which includes domestic support subject to reduction commitments such as market price support and input subsidies. These supports are subject to limits: “de minimis” minimal supports are allowed (5 percent of agricultural production for developed countries, 10 percent for developing countries); the 30 WTO members that had larger

subsidies than the *de minimis* levels at the beginning of the post-Uruguay Round reform period are committed to reduce these subsidies,

- Blue Box which allows exemptions to support measures involving direct payments under production limiting programmes based on fixed area, yields or livestock units, and
- Green Box which exempts measures consisting of publicly funded support that do not have the effect of providing price support to producers and having “no, or at most minimal, trade-distorting effects or effects on production”. They tend to be programmes that are not targeted at particular products, and include direct income supports for farmers that are not related to (are “decoupled” from) current production levels or prices. They also include environmental protection and regional development programmes.

Global levels of Amber Box support remain high and the distribution is skewed against developing countries. The majority of developing countries have reported zero or less than *de minimis* total base AMS levels. Most of these countries have no reduction commitments on domestic support, but neither do they have WTO rights to use Amber Box support in excess of the *de minimis* level in the future. Although many of these countries are not currently constrained by the domestic support provisions of the Agreement, they may find their policy options limited in the future. Although there has been some reduction in the use of Amber Box subsidies, this has been more than counteracted by the increased use of transfers falling within the Green Box and Blue Box exemptions. However, as Oxfam stresses, although considered minimally trade distorting, these interventions still impact on production decisions by reducing the risks faced by producers.

### *Market access*

High levels of border protection in many developed countries are an impediment to exports from developing countries. However, because some developing country exporters benefit from preferential access to these markets in some heavily protected products, it is difficult to achieve consensus among developing countries on reducing such barriers.

An across-the-board reduction in tariff bindings on agricultural products could also leave little room to provide a degree of protection for sensitive sectors. In addition, some countries have bound their tariffs at very low levels and

consequently now have little room for manoeuvre in the use of the tariff as a contingency measure against price fluctuations on world markets.

Whilst special safeguard (SSG) provisions are designed to allow an importer to increase tariffs above bound levels in response to a surge in imports or a decline in import prices, most developing countries do not have access to such measures, because the agricultural SSG measures were reserved for countries undertaking tariffication. Maintaining the SSG under present conditions will perpetuate discrimination against WTO members who do not have the right to safeguard measures. Some suggestions have been made to eliminate the SSG altogether.

### *Export subsidies*

Export subsidies further distort global markets and can destabilize world prices, as developed countries tend to use subsidies more when world prices are low, thus further depressing prices. On the other hand, subsidized exports tend to fall when world prices are high, just at the time when developing countries might be said to benefit from subsidized supplies. Currently, the EU is by far the largest user, accounting for about 90 percent of use<sup>45</sup>. In the past few years, many countries have eliminated or suspended export subsidies on some or all commodities beyond their UR AoA requirements. This maybe in part due to high world prices in the early years of implementation, which allowed countries to export without subsidies and in part due to the changes in domestic support measures as outlined above.

An alternative policy is the use of export credits, which provide access to financing which lowers the total cost of the exporter's goods. Export credits used on agricultural products increased from US\$5.5 billion in 1995 to US\$7.9 billion in 1998.

Related to export subsidies, the practice of dumping by private agents is said to exist if the export price into another market is less than the cost of production in the country of origin plus reasonable additions for selling cost and profit. Actionaid suggests that there are two main impacts: first, low cost imports will put domestic firms out of business; and second, exporters will have to sell into the world market at a lower price to avoid loss of market share. The gap between the

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<sup>45</sup> OECD. 2002. A forward looking analysis of export subsidies in agriculture. Paris.



export price and the cost of production has been used by Oxfam as an index of export dumping. They find that in the United States and EU, the wheat export price is 46 percent less and 34 percent less than the cost of production respectively. In the EU, the sugar export price is only 25 percent of the production cost.

One cause for concern is that the Doha Round might result in reductions in developing country tariffs that are more rapid than the removal of production and export subsidies in developed countries.

### ***Constraints on the capacity to increase production***

Although the focus of many contributions to the debate is on redressing the imbalance by achieving reduced levels of OECD protection, there is increasing (though by no means widespread) recognition that many, particularly poorer developing countries will simply not be in a position to expand their agricultural production to the degree required to take advantage of increased prices and enhanced market access, if it materialises. As discussed in Section 6.4, the capacity of developing country agriculture sectors to respond has to some extent been reduced by the structural adjustment programmes that have been implemented, especially the reduced investment in a range of agricultural and related services.

In support of the AoA, it is often noted that it gives countries sufficient flexibility to invest, not just in terms of the *de minimis* concession, but more promisingly, through Green Box type interventions. However, developing countries are limited in using such policy options both by budgetary constraints, where, particularly in economies with limited resources, the transfer efficiency to producers is important; and by institutional constraints, given that different policies will impose different levels of administrative burden on these countries. Administratively, Green Box policies tend to need more sophisticated administration than price support policies, which is relatively easy to implement, given that a predetermined price is paid on each unit quantity sold to agents included in a government scheme.

Green Box policies can be broadly divided into General Services, Food Stocks and Aid, and Direct Payments. At present, the majority of Green Box policies utilized by developing countries fall within the General Services Category (mainly research, pest control, extension and inspection). Within this category, the budgetary constraints are likely to be most apparent, given the reliance on

budgetary outlays to provide the services. By their nature, the transfer efficiency to farmers is also likely to be lower than would be the case with price support measures. The absorptive capacity of the sector will also be important. Often, the research infrastructure, for example, may require restructuring before expenditure on research, training and extension related to new export opportunities is effective.

In order for Direct Payments to be made, in addition to adequate funds being available, some recourse to information about productive activities in a base period is required. There are three main issues here. First, there is often no information about farm incomes and that it is only in developed countries that a more systematic collection of information based on the farm accounts is taking place. Second, annual output, yields and prices often vary considerably, resulting in high variability of income, making compensation policies difficult to implement. Third, although income support is usually provided directly to individual farmers, in many cases the necessary institutions (complete national land registration, land tenure rules to determine who receives the payment, efficient and integrated commodity markets, sufficient government credibility to transfer resources not on a per unit production basis) may not be supportive or indeed may not exist<sup>46</sup>

### ***Calls for change***

In his foreword to a recent Oxfam report, Sen states that “the basic objective [of reform] is to combine the great benefits of trade to which many defenders of globalization point with the overarching need for fairness and equity which motivates a major part of the anti-globalization protests.” It is very much in this vein that proposals for changes in the rules governing trade have been made.

At a general level, Oxfam calls for policy goals to include: increased market access and reduced use of export subsidies; an end to conditionality; and the promotion of diversification. Similarly, CAFOD stresses the need for an increase in the ability of developing countries to promote agriculture, proposing changes which would increase flexibility to enhance domestic production and protect livelihoods and to overcome supply-side deficiencies. It also calls for an increased ability to export to OECD country markets, requiring the latter to keep promises to open their markets, to reduce tariff peaks, to agree a comprehensive

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<sup>46</sup> Baffes, J. & Meerman, J. 1997. *From prices to incomes: agricultural subsidization without protection?* World Bank.

ban on export dumping and to recognize the rights of developing countries to protect agriculture.

While the Agreement on Agriculture acknowledges the need for special and differential treatment (SDT) for developing countries and has a number of provisions on the subject, these provisions have been seen by many as falling short of what is necessary and as failing to provide the requisite policy flexibility.

As a result, the concept of a Development Box has been proposed as a mechanism for protecting the poor from import surges and enhancing the efficiency of domestic production<sup>47</sup>. This would apply to developing countries only, and within these countries the focus would be on resource-poor, low-income farmers and on the main food security crops.

Such proposals for change to the AoA recognize the need to improve agricultural productivity in developing countries. In the previous section, it was demonstrated that despite the fact that the sector has an important role in improving access to food, there is current debate in the international donor community as to the extent to which the sector has the potential to actually play this role as an engine of growth and development. Perhaps more importantly, there is also widespread disagreement on how best to ensure the appropriate investment required to allow the sector to contribute its potential.

## **6.6 Changes in markets facing agricultural producers**

The existing agreements and current negotiations on multilateral trade liberalization are not, however, the only drivers of change in market systems and in the incentives faced by developing country producers. Compounding the difficulties, but at the same time opening potential opportunities, are radical changes in the structure and conduct of global and domestic markets, changes which have been facilitated by both cost-reducing advances in technology and by reduced barriers to both trade and foreign direct investment.

The 2001 IFAD Rural Poverty Report<sup>48</sup> states that “under globalisation, [local] market access becomes increasingly important as only those who have it can

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<sup>47</sup> Green, D. & Priyadarshi, J. 2002. op cit.

<sup>48</sup> IFAD. 2001. *The challenge of ending rural poverty*. Rural Poverty Report. Oxford: Oxford University Press.

exploit the new opportunities. Without such access, the potential benefits of higher product prices and lower input prices are not transmitted to poor households. With closed markets, such households can be protected against lower product prices, higher input or consumption prices and price fluctuations, though usually at high economic cost. Remoteness also restricts access to information about new technologies and changing prices, leaving the poor unable to respond to changes in incentives. Supply response will also be affected by many other factors, such as access to assets, skills and credit.”

The past decade has seen radical changes in the characteristics of, and access to, markets facing agricultural producers. Assumptions that changes in, for example, OECD policies will result in increased world prices, and that these increases will be passed on to all producers regardless of location or type, have received inadequate scrutiny. Whilst there have been numerous studies of country- or commodity-specific price transmission from border to producer, far less attention has been paid to the ways in which the structure and conduct of output markets and the supply chains that feed into them are changing; or to what this means for different categories of producers in different regions of the world.

## 6.7 Conclusion

The following chapters raise a series of questions about the relative power of different actors and about institutional aspects. Of particular interest is the degree and form of market access facing different sets of actors and as they relate to different commodity sets. To trade economists, the term “market access” is generally associated with the ability of developing country exporters to sell to developed country markets. In this discussion the interest is not in this albeit important issue, but in the access that domestic producers have to, for example, input and output markets and services. A motivating factor for researching this issue in the context of the current negotiations on global trade reform is the impact of increased exposure to competition on resource-poor farmers. Oxfam<sup>49</sup> asks whether small scale farmers can compete in a liberalized environment and whether there is a need to retain some level of protection. Sharma<sup>50</sup> notes that

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<sup>49</sup> Oxfam. 2000. *Agricultural trade and the livelihoods of small farmers*. Oxford: Policy Department.

<sup>50</sup> Sharma, R. 2000. *An outline of an ESC work programme on Agricultural Trade and Household Food Security*. Rome: FAO.

missing markets for the poor and resulting higher costs of production may push them out of the subsector; he cites the case of jute in Bangladesh.

A key question that arises in relationship to the IFAD statement on market access is therefore, what form of protection against market exclusion would be required and what is the associated economic cost, i.e. what is the cost-benefit ratio of intervention?

This chapter has introduced a number of unresolved debates that require further investigation if the relationship between trade liberalization and food security is to be better understood. In the final part of this publication, the issues raised in this chapter, and elaborated in the remaining chapters of Part II, are used to inform the development of a conceptual framework and a series of guidelines for its operationalization.

## Chapter 7

### Globalization and the traditional role of agriculture<sup>1</sup>

*“A key theme that emerges is that agriculture potentially benefits more proportionally than other sectors but also suffers more from constraints to benefiting”.*

#### 7.1 Introduction

Globalization refers to increases in the movement of finance, inputs, output, information, and science across vast geographic areas. The gains from globalization increase net income in many places and facilitate decreases in levels of poverty and may thereby increase levels of food security. However, there is an implication of frictionless movement and perfect knowledge that understates the requirements for benefiting from globalization.

These trends have been underway throughout history. As reflected in the previous chapter, they have moved unusually rapidly in recent times because the cumulative breakthroughs in basic science have allowed an extraordinary acceleration in the reduction of transfer costs. Real costs of information transfer and shipment of goods have declined rapidly, while perishability and bulk have been drastically reduced. Concurrently, increases in per capita income in many regions, and in the total size of the market, have allowed scale economies to be achieved for myriad new products, most of which involve value added processes that themselves require investment and improved technology. These rapid changes have allowed a great increase in specialization in agriculture, and consequently lower costs and rapid growth in trade.

Globalization can greatly enhance the role of agriculture as an engine of growth in low-income countries by making it possible for agriculture to grow considerably faster than domestic consumption. It also increases the potential for agriculture to increase food security through enlarged multipliers to the massive, employment-intensive, non-tradable rural non-farm sector. With such potential benefits, it is important to understand what is required for participation and to

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<sup>1</sup> This chapter is based on a paper by John Mellor, *The Impacts of Globalisation on the Role of Agriculture* presented at the Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. 11-12 July 2002, Rome.

ensure that the poor and hungry are lifted out of poverty and hunger by these processes.

## **7.2 Competing in the context of globalization**

Three features characterize competing in the current globalization context:

### ***Cost reductions in one place have immediate impacts in other places***

Cost reduction and associated production increase constantly occurs in agriculture, and the pace is accelerating, partly due to the forces of globalization. Thus, lower prices are often rapidly transmitted to producers who have not participated in cost reduction. If they have not experienced cost reduction in other endeavours either, they will experience a decline in income, eventually reverting to minimum subsistence agriculture. All too many of the least-developed countries fall into this category. They become poorer and more food insecure.

### ***Cost reduction largely derives from technological advance***

Cost-reducing technological change is the product of applied research, which increasingly depends on constantly advancing basic research. Low-income countries that are not rapidly expanding and improving their agricultural research capacity will not experience cost reductions and hence as others reduce costs, and prices decline, incomes of the non-innovators will decline. Nowhere is this more dramatic than in Africa, which has suffered from increasingly efficient production of first oil palm, then cocoa, and now coffee from Asian countries that have been spending on research. Benefiting from research is now far more complex than a few decades ago.

Basic research is moving far faster than ever before, constantly changing the context for applied research. Private firms are responsible for a much larger absolute and relative share of agricultural research than in the past. To benefit from modern biological science, complex relations between low-income and high-income countries must be developed and even more complex relations between private sector and public sector research. The first requisite for benefiting from research externalities is a strong national research system. Rate of return analysis shows that all low-income countries are vastly under-investing in applied agricultural research, particularly Africa. For low-income countries, the role of the Consultative Group on International Agricultural Research (CGIAR)

should become far more important than in the past as a link to basic research, private sector research and high-income countries.

Well operating markets in low-income countries are concentrated in major cities with reasonably good physical infrastructure and hence at least moderate transaction costs. Undertaking international trade is constantly decreasing in cost. Thus major urban markets in low-income countries are increasingly open to foreign competition. Agricultural production in these countries takes place in rural areas that are frequently deficit in physical infrastructure. Hence foreign sources of competition may face low transport costs while domestic producers in low-income countries may face high transport costs. Such costs are reduced by investment in physical infrastructure – most notably roads, but also communications. However, improved infrastructure also facilitates the movement of imported goods further into the rural economy, posing the threat of increased competition to local production.

Globalization has greatly increased the returns to roads and consequently radical to reductions in costs. Rural roads in low-wage, low-income countries can be built with over half the cost in labour and roughly half the cost represented by the food consumed by labour from their wages.

### ***WTO rules constrain the extent to which countries can protect themselves***

Created to facilitate the processes of globalization, the WTO works to reduce trade barriers and to enforce agreed rules. However, the protectionist measures of the past are being allowed to continue in high-income countries, whilst many low-income countries are opening their borders to, often subsidized, imports.

## **7.3 The commodity composition of agriculture**

Globalization has allowed agricultural production to grow much faster than in the past. A few decades ago fast growth was somewhat over 3 percent per year. Now it is 4 to 6 percent<sup>2</sup>. However, these higher rates of growth involve a substantial change in its composition. The bulk of growth initially came from basic food staples when the scope for export markets is limited, whereas there is now a swing towards much higher value commodities. Explosive growth in income of

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<sup>2</sup> Mellor, J. 1992. *Agriculture on the Road to Industrialization*, Johns Hopkins University Press, Baltimore.



high-income countries means that large aggregates of production can now occur in what were previously small niche markets. High quality coffee and tea are examples. The market for horticulture exports has also grown immensely and can continue to grow.

As exports of high-value agricultural commodities increase and the multipliers to per capita income develop, domestic demand for high-value livestock and horticulture will increase rapidly<sup>3</sup>. Thus, even in quite low-income countries, around half the increments to agricultural production will be in high value horticulture and livestock for both export and domestic use. As a result, the role of cereal production will become relatively less important.

As the production mix moves more towards export crops and high-value crops and livestock, the rate of return to investments that reduce transaction costs will increase rapidly. The same is true for investments in all the value-added enterprises. There is however a caveat on value added. Much of such activity is through capital-intensive processes. There are also complexities in marketing. Both will give comparative advantage to high-income countries. Low-income countries need to pay attention to comparative advantage at every step in the chain from producer to consumer and should not attempt components in which they lack a comparative advantage.

Cereals play an important role in food security in a global economy. The cost of shipping is declining. Two forces in developing countries may lead to increased cereal imports. First, globalization and specialization may lead to an increase in the area planted to high-value commodities and potentially result in a decline in the area planted to cereals if either increased intensity of production (i.e. double cropping) or extensification are not possible. Second, any shift of income distribution towards the low-income, food insecure, will shift the demand schedule upwards. Thus, low-income countries may be beneficiaries of declining cereal prices, even while they lose from declining prices of other agricultural commodities.

#### **7.4 Converting the benefits of globalization into food security**

A major element in ensuring food security is increased incomes of poor people. The marginal propensity of the poor to spend on food is high. The primary means

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<sup>3</sup> Mellor. J. 1992. op cit.

by which low-income people increase their incomes and hence their food security is through increased employment.

It is agricultural growth that reduces poverty<sup>4</sup>, and agriculture's impact is dependent on growth rates that are considerably higher than population growth rates. The latter are indirect, working through their impact on the demand for rural non-tradables that occupy a high proportion of the total labour force and the bulk of the poor, food insecure<sup>5</sup>.

The great majority of persons below the poverty line work in the rural non-farm sector. They include many with a small tract of land that is insufficient to provide minimum subsistence. The rural non-farm sector uses very little capital and hence is highly employment-intensive. It produces goods and services that are dominantly non-tradable, that is they are dependent on local sources of demand. Agricultural growth is the underlying source of that demand growth.

The agricultural demand shows strong growth multipliers since the rural non-farm sector also tends to spend substantially on itself. This sector is highly elastic in supply, as would be expected of a labour-intensive sector in a low-wage economy. The supply of rural non-tradables is highly elastic, mainly because labour is the primary input and labour is elastic in supply as long as incomes are low or underemployment is endemic. It is demand that constrains growth of the sector<sup>6</sup> and that demand comes from high agricultural growth rates.

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<sup>4</sup> Ravallion, M. & Datt, G. 1996. How Important to India's poor is the sectoral composition of economic growth, *The World Bank Economic Review*, vol.10, no.1; Timmer, C.P. 1997. *How well do the poor connect to the growth process?* CAER Discussion Paper No. 178, Harvard Institute for International Development, Cambridge, December.

<sup>5</sup> Mellor, J. W. 2002. *Productivity increasing rural public works – an interim approach to poverty reduction in Rwanda*, Abt Associates, Inc, Bethesda; Mellor, J. W. 2001. *Rapid Employment Growth and Poverty Reduction: Sectoral Policies in Rwanda*, Abt Associates, Bethesda.; Mellor, J. W. & Ranade, C. 2002. *Modeling Egyptian employment with a three sector model, agriculture, non-tradables, and urban tradables*, Abt Associates, Mimeo, Bethesda.

<sup>6</sup> EQI. 2002. A study of SME's in Rural Egypt published by Abt Associates, Bethesda; Mead, DC. and Liedholm, C. 1988. The dynamics of micro and small enterprises in developing countries. *World Development*, Vol. 26, no. 1. pp. 61-74.

That the impact of agriculture on poverty is indirect is consistent with the three or four year lag noted before the full impact on poverty. That it works through the rural non-farm consumer-goods sector is consistent with the finding that agriculture has little impact on poverty decline when land distribution is highly unequal— usually associated with absentee landlords who have quite different consumption patterns from those of peasant farmers.

For a major effect on employment, agriculture must grow substantially faster than population growth. If it is to grow at the 4 to 6 percent rates required for achieving employment levels essential to food security, then major components of agriculture must be exported. This will include the traditional bulk exports such as cotton, coffee, tea, oil palm, and non-traditional exports including horticulture. Globalization requires constant reduction in costs through research and its application as well as constantly declining transaction costs through constantly increasing investment in rural infrastructure. Without these a nation cannot compete: it is no accident that it is African nations that suffer the most from declining commodity prices.

Below, the urgent requirements for low-income countries to benefit from globalization are presented.

### ***Opening the economy to trade and market forces***

The benefits of globalization flow from trade. Exports require imports, but trade restrictions tend to drive up the cost of exports through higher costs of vital inputs and technology. Comparative advantage needs to be seen for each component of a supply chain, not just for the final product. Customs inefficiencies and corruption and a myriad other bureaucratic constraints are just as stifling as tariffs and all need to be dealt with. However, opening to global market forces does little good if costs are not being constantly reduced. Put differently, if the result of global forces interacting with domestic investment and policy is to leave comparative advantage with subsistence production, no amount of opening of markets will help.

### ***Investing in agricultural research and dissemination***

Low-income countries need to invest far more than at present in agricultural research and technology dissemination. Without such investment, opening markets will do little good for agriculture and hence for poverty reduction and food security. Identifying supporting mechanisms such as research and training to

minimise the exclusion of small resource poor farmers from value chains is also important.

### ***Investing in rural infrastructure***

Given the deplorable state of rural infrastructure in low-income countries, massive investments are needed. Investment in other economic risk reduction services such as insurance, irrigation, storage are also likely to be required. Lack of such investment gradually shifts comparative advantage back towards subsistence production at very low-income and little multiplier to the rural non-farm sector. Winters<sup>7</sup> notes that “the transaction costs of trade with remote villages are often so great that it can be cheaper for grain mills to buy from distant commercial growers than from small farmers located in the region.” However, improved infrastructure also lowers the final cost of imports in the producing areas.

### ***Facilitating private sector activity***

All too often forgotten in these days of removing public sector constraints is the role that the public sector plays in conjunction with the private sector, especially in exports. It is not enough to remove bureaucratic constraints. Private sector investors in low-income countries tend to search for quick turnover, particularly in trade. Initially, governments have to play a role in assisting the private sector by participating in the costs of market analysis, assisting in the development of trade associations that can diagnose needs, developing and enforcing grades and standards, meeting health regulations of high-income importers, diagnosing special niche markets and carrying out analysis of constraints. In the case of most low-income countries, such efforts are sometimes financed by foreign aid programs, in a sense acting as public sector. Such efforts need to facilitate private sector action and gradually low-income countries need to play that role themselves, rather than relying on foreign aid.

## **7.5 High-income country assistance in the context of globalization**

High-income countries must play a major role in ensuring access to the best of modern science to low-income countries. That calls for greatly expanded support

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<sup>7</sup> Winters, L. A. 2000. *Trade liberalisation and poverty*. Brighton: University of Sussex.

of the CGIAR system and prodding the system into playing a lead role in linking advanced biological science in high-income countries with the needs of low-income countries, as well as bringing private sector research to low-income countries and engendering cooperation.

High-income countries must also open their markets to low-income countries, particularly for high-value crops. They should work with low-income countries in meeting phytosanitary rules and other obstacles to trade. They must also ensure that farm income transfers do not depress world prices. High-income countries must see that their measures to transfer incomes to their farmers do not result in downward pressure on world prices and reduction in markets for low-income countries. Delinking payments to farmers from prices is not sufficient, although it is a necessary condition. Payments to farmers keep resources producing that would otherwise be withdrawn serve to depress prices. Withdrawing land from production as part of payments and making payments that encourage lower yields per hectare and per animal, would also help meet environmental objectives.

Lower cotton prices are a disaster for low-income cotton producers and lower vegetable oil prices are similarly a strong negative factor. Reduced livestock prices are a particularly onerous burden on farmers of low-income countries with little mitigating benefit. The Doha Round should be used to obtain agreement from high-income countries to reduce support payments to farmers. This might roll back some of the recent excesses.

While production-increasing policies for cereals hurt some countries, they in general benefit the food insecure. These people are almost always net purchasers of cereals, so lower prices are helpful to them. Low-income countries are increasingly importers of cereals, and will be more so as the area devoted to high-value commodities is expanded. Thus, cereals are a special case, and as explained below could be used in the context of building rural public works.

High-income countries should provide financial support for a massive programme of rural public works. Calculations for Rwanda show that in a context of expanding rural employment (by 14 percent) and domestic agricultural production to meet major rural infrastructure needs, demand for basic food staples would expand 9 percent more than supply. That would bring about a roughly 30 percent increase in domestic prices of basic food staples, which are largely non-tradable in Rwanda, because of quality and transaction costs. This would be a disaster for poor people. Thus, a massive rural public works programme would require imports of cereals roughly equal to 9 percent of domestic basic food

staples production. Such a programme on an Africa-wide basis would absorb the bulk of excess production of cereals in the high-income countries. It follows that a massive food-aid programme in the context of rural infrastructure development would be an important contribution of high-income countries, particularly in the context of their domestic farm-support programmes.

## **7.6 Conclusion**

Globalization, in the sense of rapid transmission of the impact of technology to all areas of the globe with highly developed infrastructure, will continue to accelerate. Low-income countries that do not spend heavily on research and technology dissemination and do not upgrade their rural infrastructure and reduce transaction costs will experience continually declining prices for agricultural commodities, but without offsetting decreases in costs of production.

In contrast, where costs are reduced by research and improved infrastructure, agriculture can attain growth rates of at least 50 percent higher than in the past. That would have powerful multipliers to the rural non-farm sector, thereby reducing poverty, increasing employment, and increasing food security.

High-income countries can assist this process though continuing to open trade in agricultural commodities; preventing domestic farm support programmes from dumping commodities on world markets; and, in the case of cereals, massively increasing demand through financing rural public works programmes to reduce transaction costs in rural areas and bring them more fully into the global market. Low-income countries, especially in Africa, must redirect public expenditure to agricultural production, especially research and rural infrastructure. They should reduce constraints to trade, including over valued exchange rates, and consider cutting customs barriers.



## **Chapter 8**

### **Institutional analysis of trade liberalization and agriculture<sup>1</sup>**

#### **8.1 Introduction**

Mainstream analysis of agricultural trade liberalization has tended to focus on the effects of trade reform and other policy instruments on the volumes and location of production, consumption and resulting trade flows. Insofar as institutional change is a change in the rules of the game, trade policy liberalization can be thought of as a bundle of institutional changes. In this sense, mainstream analysis of trade liberalization is a form of institutional analysis. A number of gaps in the treatment of institutions are discussed in this chapter.

#### **8.2 The need for improved institutional analysis**

The nation, or an alternative aggregation such as a region, can be considered as a system with a particular historical institutional endowment. The institutions of its political economy must be examined from a perspective that recognizes there are different routes to the achievement of effective coordination. The liberal market economy (LME) institutional set is effective in some regards, but unsatisfactory in others. Thus, when liberalization policies are proposed for a particular nation or region, it is necessary to consider these as developments of that nation's systemic approach to dealing with coordination problems. Radical changes may be damaging, as they amount to new institutional models which are not rooted in accepted ways of solving coordination problems. They risk damaging existing sources of "comparative institutional advantage" while failing to find new ones.

LME institutions are probably not appropriate for the development of smallholder agriculture in pre-Green Revolution areas of the poorer countries, although this conclusion is tempered by the fact that transactions challenges differ by crop, and generally are at their most difficult for semi-tradable staples. Thus the

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<sup>1</sup> This chapter is based on a paper by J. Kydd, (Centre for Development and Poverty Reduction, Imperial College Wye), presented at the Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. 11-12 July 2002, Rome.



institutional changes required by liberalization measures within the Washington Consensus on Agriculture (WCA) (described in Chapter 6) may be taking poor farmers down a blind alley. For poor farmers, the key challenge is to devise institutional arrangements which are able to reduce transactions costs and also induce a much stronger strategic commitment to investing in needed specific (and co-specific) assets. The characteristics of poor smallholder agriculture are such that LME institutions are unable to solve the very particular coordination problems that arise. As yet there is little in terms of detailed alternative policy proposals or policy experiments to find alternative paths for trade liberalization to support growing rural welfare and food security.

Whether poor farmers do benefit from liberalization, and enhanced food security, will be partly a matter of the appropriateness of national institutions, rural institutions and the particular institutional arrangements that can be developed to support the transactions of smallholder farming. From this it follows that it is critical that policy be developed on the basis of an understanding of what are likely to be broad outlines of appropriate institutional arrangements, i.e., arrangements that will be transaction cost-reducing and specific asset investment-inducing.

While the increasing institutionalist emphasis in World Bank work<sup>2</sup> is welcome, it focuses mainly on property rights. Well defined, accessible and easily tradable property rights are, essential for modern economies, whether they follow the LME route, or the alternatives sketched out below. However, for some LME economists, a framework of strong property rights and competitive markets are most of what there is to worry about. If institutional arrangements evolve within this framework, these will be broadly satisfactory. From this point of view, institutional arrangements are interesting matters, worthy of study, but in policy terms second order in comparison to property rights and competition. Here an alternative line is taken, which argues that institutions such as non-market coordination and deliberative mechanisms, and institutional arrangements such as competitive coordination, interlocking and regulated monopolies need to be central to any analysis of the effects of trade liberalization on the poor.

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<sup>2</sup> World Bank. 2002. World Development Report *Globalization, growth and poverty: building an inclusive world economy?*

### 8.3 Coordination and deliberative mechanisms

Following in the tradition of North<sup>3</sup> and Williamson<sup>4</sup>, Hall and Soskice<sup>5</sup> construe the key relationships in the political economy in game theory terms, and focus on the kinds of institutions that alter the outcomes of strategic interactions. They see an economy as being populated by different actors seeking to advance their interests in a rational way through strategic interaction with others.

National political economies can be compared in terms of the means by which firms within these economies solve coordination problems. Hall and Soskice distinguish two ideal types, at opposite poles of a spectrum.

- **Liberal market economies (LMEs)**, which coordinate activities via hierarchies and competitive market arrangements, classically described by Williamson. The LME system is based on arms-length exchange of goods and services, in the context of competition and formal contracting. Actors adjust to the price signals generated by markets. In many cases an effective coordination is achieved and equilibrium outcomes of firms' behaviour are given by supply and demand.
- **Coordinated market economies (CMEs)**, which make more use of non-market relations. Key elements of non-market relations are extensive relational investment, incomplete contracts and network monitoring based on the exchange of private information within networks, as opposed to competitive behaviour.

Hall and Soskice argue that in LMEs, the principal institutions on which firms rely for coordination are markets and hierarchies (firms), together with vertical hybrid arrangements between firms in a supply chain. CMEs differ because they draw on a further set of organizations and institutions, those supporting more horizontal strategic interaction, both across and within supply chains. Strategic interaction is dependent on informal rules based on experience with a familiar set of actors; the shared understandings that accumulate from this experience; and a set of shared understandings of available "strategies for action" developed from

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<sup>3</sup> North, DC. 1990. *Institutions, institutional change and economic performance*. Cambridge, Cambridge University Press.

<sup>4</sup> Williamson, O.E. 1985. *The economic institutions of capitalism*. New York, The Free Press.

<sup>5</sup> Hall, P.A. & Soskice, D. (eds.) *Varieties of capitalism: the institutional foundations of comparative advantage*, Oxford University Press, 2001

experience of operating in a particular environment. This shared set of understandings is evolutionary and fragile. Hall and Soskice conclude that institutions of the political economy need constant reinforcement by the active endeavours of the participants. In general, CMEs are institutions which reduce the uncertainty that actors have about the behaviour of others and will allow them to make credible commitments to each other, providing capacity for exchange of information, monitoring of behaviour, and sanctioning defection from cooperative endeavour.

Particularly relevant to developing country agriculture, is the role in CMEs of deliberative institutions. These are institutions within which actors engage in collective discussions which, when successful, endow participants with a strategic capacity which they would not otherwise enjoy, because it facilitates cooperation. More specifically, deliberative institutions achieve cooperation by increasing and sharing knowledge and increasing confidence in the strategies likely to be taken by others, facilitating agreement about what may constitute a broadly acceptable distributive outcome, which is often a pre-requisite for effective cooperation, and enhancing the ability of actors to take strategic action in the face of shocks, through common diagnosis and common action.

The key competitive advantage for CMEs, which results from effective non-market coordination, is that firms and other actors are willing to invest in specific and co-specific assets, i.e. assets which cannot readily be turned into another use, and assets the returns to which depend heavily on the active cooperation of others. In contrast, in LMEs there is a greater interest in switchable assets, such as general skills or multipurpose technologies.

Hall and Soskice argue that the two types of political economy have distinctly different capacities for innovation, and have different income distributions. These different capacities for innovation are the basis for a theory of comparative institutional advantage. For these authors, the institutional structures of a particular political economy provide firms with advantages for engaging with specific types of activity. A key distinction is between: radical innovation, which requires substantial shifts in product lines, entirely new goods or major changes in the production process; and incremental innovation, the continuous small improvements to product lines and processes. In general, CMEs can be thought of as being specialized in activities characterized by continuous technical innovation, and the LMEs characterized as those more fully engaged in areas of radical innovation.

#### **8.4 Implications of comparative institutional advantage**

The key policy challenge is to induce economic actors to cooperate with each other. In some cases, markets can be used to secure this coordination, so the task of policy-makers is simply to improve the functioning of markets. In other cases, the challenge is to improve coordination in the context of strategic interactions. Much less is known about how to accomplish this, but as Hall and Soskice state, “It entails persuading private actors to share information, improving their ability to make credible commitments, and altering their expectations about what others will do.”

Hall and Soskice see the “strong state” as a potential source of disadvantage. States cannot simply tell economic actors what to do, as they lack the information needed to specify appropriate strategies. States can establish agencies, but what these can do is limited. Only where appropriate social organizations” exist, is it possible to work with them to improve their cooperation, for example, if the state improves the way in which it regulates.

#### **8.5 Institutional pre-requisites for agricultural in poor countries**

As set out in Chapter 6, the agriculture sector’s contribution to poverty reduction will be made, principally, where broad-based growth is achieved in smallholder farming communities. Important historical examples of the strategic contribution of agriculture to development are the Green Revolution areas of India and China. Both of these occurred within specific and well-defined institutional frameworks, including strong state intervention in irrigation infrastructure and in delivery systems that influenced prices, transaction costs and transaction risks in inputs, finance and output markets.

In contemporary India and China, the emerging challenges are to find means to modify the institutions which underpinned the Green Revolution to support urbanization and a diversifying rural economy. In contrast, in much of sub-Saharan Africa, and some parts of South Asia, sustainable broad-based agricultural intensification has yet to occur and agriculture has not yet made its strategic contribution to economic development.

The following institutional aspects of the challenge of smallholder development need to be noted.

- Development of smallholder agriculture requires high investments in co-specific assets by a variety of different players, in situations with significant information problems, high opportunity costs for capital and, for some parties, significant risk aversion. Therefore, a CME institutional set may be more appropriate than an LME set.
- Agriculture is an activity in which continuous technical innovation seems more likely and appropriate than discontinuous innovation, again suggesting that the CME institutional set may be more appropriate than the LME set.
- There is currently a serious lack of the asset-specific investment needed for development in input supply systems, in agricultural finance, in processing and marketing, and in transport and water infrastructure.
- If strategic commitment to asset-specific investment could be secured, both horizontally (among specific categories of players such as traders and farmers), and vertically (within supply chains), then much higher growth rates could probably be achieved.
- Institutions needed to promote strategic commitment to asset-specific investment are largely lacking. Up to the end of the 1980s, the state had played, with mixed success, the central role in providing infrastructure, subsidized finance and input and output marketing services. Processors were often state owned and/or operated under policies of protection.

The results have, by and large, been unsatisfactory, and a debate has been joined between:

- those who argue that liberalization policies have not yet been pursued with sufficient determination and credibility to elicit a strong supply response.
- those<sup>6</sup> who, while not unsympathetic to many of the aspects the WCA, nevertheless argue that it has tried to introduce elements of institutional change which are regressive, while failing to see opportunities for progressive institutional change. The view can be summarized by saying

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<sup>6</sup> For example research at the Centre for Development and Poverty Reduction, Imperial College Wye, available at <http://www.wye.ac.uk/AgEcon/ADU/research/index.html>.

that the WCA is trying to impose LME institutions on poor rural areas, whereas what is needed is an evolution in a more CME direction.

Interventions by the state are often associated with encouraging rent-seeking behaviour, inadequate deliberation, and a certain lack of dynamism. At the same time, however, as in the achievement of India's and China's Green Revolutions, a degree of success may be achieved which is difficult to imagine under a pure LME model, due to inadequate strategic commitment to asset-specific investment and, possibly, an unwillingness to support non-standard contractual arrangements, such as interlocking.

## **8.6 Conclusion**

The way forward is likely to involve a rethinking of the role of the state (at sub-national, national and international levels) and of the roles of producer organizations and other stakeholder (including trader) associations. The aim must be to find a way in which the state and other powerful actors can initiate deliberative processes and take a lead in encouraging appropriate asset-specific investments, while at the same time planning to become less involved in direct intervention in the agriculture sector as initial success is achieved. The second stage of a successful path of institutional development will have the state and other stakeholder (prominent among these producers) acting as equal partners.

Research on liberalization and poverty needs to be "institutionally informed". The challenge to institutional specialists is to provide insights, ideally quantifiable, into the consequences of liberalization policies driving changes in such features as "non-standard institutional arrangements", non-market coordination and the role of the government. Those engaged in institutional analysis are still far from meeting these challenges.

**Box 8.1      An institutional view of liberalization in poor rural areas:  
Sub-Saharan Africa**

The development of effective deliberative mechanisms is highly problematic for several reasons: the spatial dispersion of smallholders, their smallness, poverty, low levels of education, large cultural variation (e.g. in language and inheritance traditions) and weak information (in terms of access to reliable media, and farmers' understanding of the roles of other actors in the supply chain). Thus non-market coordination to induce asset-specific investment is very difficult to achieve.

In Africa, there has been little choice but for the state to take the lead in efforts at non-market coordination. Except in cases where private processors were present on a large scale (mainly in cash crops and with a degree of monopsony), there were few alternatives to a state-led approach. The alternative, feasible for certain cash crops only, of coordination being led by a dominant private interlocker, was politically unpalatable, and perhaps had nearly as much scope for rent-seeking.

Rolling back the state does eliminate organizations and a policy framework which have created scope for rent-seeking, while being technologically and managerially slothful. However, what has been largely ignored in the liberalization literature was that the state was involved in the first place because:

- coordination to encourage asset-specific investment was vital, and frequently the state was the only actor available for this;
- the state itself made asset-specific investments that, generally, independent private businesses would not have made;
- the state sometimes overcame market failure, particularly the near pervasive issue of credit market failure, though practising a form of interlocking, based on area monopolies and state power.

The current predicament in liberalized smallholder farming areas of Africa is the assumption that policy reform has created space for the flourishing of LME-type institutions, markets and hierarchies, with little non-market coordination. This is largely illusory, as neither the demand nor supply conditions nor the infrastructural or informational prerequisites are in place for a self-sustaining LME growth path to be attained. Players (farms and input and output marketers) are typically small, lacking in effective loan collateral and subject to high climatic and price risk. Transport costs are high and other forms of communication are underdeveloped. There is widespread market failure in smallholder finance, leading to weak use of inputs and failure to make much headway in intensifying production. This is a discouraging market for processors to invest in. The result is a low level equilibrium trap, arguably aggravated by the "institutional naivety" of liberalization policies.

## Chapter 9

### The role of transnational corporations<sup>1</sup>

#### 9.1 Introduction

Trade is an important development tool. Trade is not, however, an end itself. Increased trade volumes, and even increases in the value of trade, are not necessarily an indicator of improved human welfare or of development more generally.<sup>2</sup> The critical question is: who benefits? The answer requires looking beyond aggregations of countries or regions, to understand the food production system with all its component parts: input providers, farmers, grain traders, transportation systems, food processors, retailers and consumers.

This chapter is concerned with the way transnational agribusiness shapes trade and thus affects food security and development in developing countries. Through a discussion of market structures, and, in particular, of the market power of transnational agribusiness in world agricultural markets, the arguments presented suggest that improved trade rules and increased transparency about the operations of these businesses are essential if trade is to make a positive contribution to achieving food security for all.

The AoA provides many negotiators with the framework for tackling the issues which are important to them: market access, domestic support and export subsidies. The AoA failed to curb spending on agriculture in rich countries or to create market access opportunities, but it at least provided the basis for further negotiations. This framework remains the most frequently cited positive outcome of the AoA.

Two aspects of the AoA reflect abuses of power by developed countries: the lack of political will to implement the agreement and the capacity of rich countries to create exceptions to the rules for themselves. Both must be addressed, but they are not the only problems.

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<sup>1</sup> This chapter is based on a paper by Sophia Murphy, *Market Structure and the Gains from Trade* commissioned for the Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. 11-12 July 2002, Rome.

<sup>2</sup> Rodrik, D. 2001, *The Global Governance of Trade as if Development Really Mattered*, UNDP Background Paper, U.S.A.: October 2001.



Even were the European Union to end all export restitution payments, the United States, Japan, and EU to cease all payments to farmers, and all countries to establish duty-free market access for all agricultural products, agricultural market distortions would remain. These reforms alone would not ensure the most efficient use of limited natural and genetic resources. Perhaps most concretely, market distortions would continue to disrupt developing countries' agriculture and to limit the potential welfare benefits of increased trade in agricultural products. Food security would not be guaranteed, nor would a decent livelihood for all those living from the land be assured.

This is in part because the AoA framework ignores:

- the inelastic nature of demand in agriculture: food is a fundamental human right; it must be accessible to all, not only those with purchasing power in the market. The demand for food is not fully captured in market-based transactions.
- the relatively inelastic nature of supply in agriculture: supply responses to shortfalls are slow, necessitating physical stocks to protect against weather-related or conflict - induced production shortfalls. Yet, the high cost of maintaining the stocks limits private sector interest in this service. The public sector is required to either purchase the service from private providers, or to maintain its own granaries.
- the political and economic weakness of most farmers: farmers are price-takers in the food system. Most government interventions in the agricultural sector assume farmers can respond to price signals by changing production. In fact, the response is asymmetric, with planting and investment in infrastructure rising when prices are high but remaining high even when prices fall.
- the horizontal and vertical integration of the agricultural system: a smaller number of companies now dominate each part of the food chain.
- the fact that countries do not trade; farmers do not trade: transnational agribusiness trades.

## **9.2 The changing role of transnational corporations**

The role of transnational corporations (TNCs) is increasing and calls into question some of the assumptions about the degree of competitiveness of global

agricultural commodity markets. It is important to understand who benefits and who loses from these changes, but at the same time, why the changes are occurring and whether in fact they may be necessary. One factor may be that TNCs are becoming so large because agricultural commodity trading is very risky, requires a source of long-term capital on terms that can preclude effective participation by smaller players.

To answer the question of who benefits, it is necessary to look beyond aggregations of regions, or even of countries, to understand the food production system with all its component parts: input providers, farmers, grain traders, transportation systems, food processors, retailers and consumers.

It is critical to understand what is economically rational for the dominant transnational firms, because it is not the same set of concerns that drive producers, nor governments trying to maximize certain welfare gains. Policies designed with only producers, consumers, and government actors in mind miss the real drivers in much of the agricultural economy, whether local or global. Because transnational companies lobby vigorously to make sure that agricultural policies serve their trade interests, it is vital to understand transnational agribusiness operations in making policy aimed at enhancing food security.

Two key aspects of market power are developed in this section: the horizontal and vertical integration of the agricultural system; and the privileged access to information capital and political influence.

### ***Horizontal integration***

A small number of companies now dominate each part of the food chain in OECD countries. Chemical companies (now lead players in the seed business) are increasingly linked to grain traders and food processors in the production chain. The same companies buy, ship, and mill grain, then feed it to livestock or turn it into cereal, often crossing several national borders in the process. Fewer, bigger, more diversified across the range of commodities, and more vertically integrated upstream to the farmers' level and downstream in transport and processing – this is how one can characterize trading houses now as compared to two decades ago.<sup>3</sup>

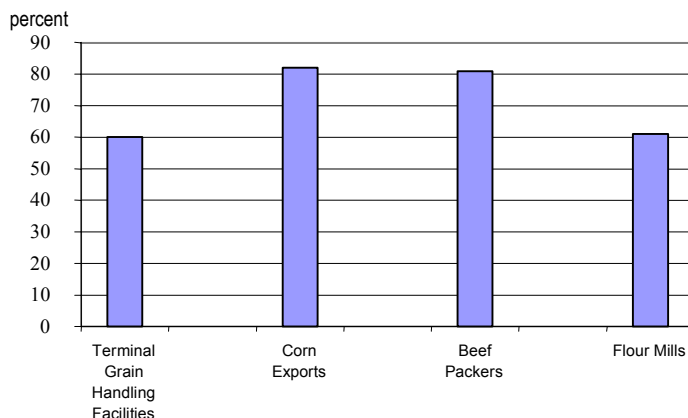
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<sup>3</sup> UNCTAD. 1999. The impact of changing supply-and-demand market structures on commodity prices and exports of major interest to developing countries, p. 10, *Report by the UN Conference on Trade and Development Secretariat to the*

Horizontal integration refers to consolidation at a given point in the production process: a relatively small number of firms effectively control a given market. Horizontal concentration increases the market power of the dominant firms, enabling them to secure excessive profits. Figure 9.1 illustrates the level of concentration for several agricultural subsectors in the United States.

- 60 percent of terminal grain handling facilities are owned by four companies: Cargill, Cenex Harvest States, ADM and General Mills.
- 82 percent of corn exporting is concentrated in three companies: Cargill, ADM and Zen Noh.
- Beef packing is dominated by an 81 percent share among four companies: Tyson, ConAgra, Cargill and Farmland Nation.
- 61 percent of flour milling capacity is owned by four companies: ADM, ConAgra, Cargill and General Mills.

**Figure 9.1** Concentration in agricultural markets, United States



Source: Heffernan, W., Hendrickson, M. & Gronski, R. 2002, *Consolidation in the Food and Agriculture System*, Report to the National Farmers' Union, United States.

A concentration ratio (known as CR<sub>4</sub>) where the top four firms control over 40 percent of a given market raises flags for economists concerned about maintaining competitive markets. In many agricultural sectors in the United States, this figure is well above this marker. Globally as well, a small number of firms control large parts of international commodity trade. For example, three companies control 90 percent of world coffee exports<sup>4</sup>. Each of these companies has a turnover larger than most African economies.

While concentration in the beef-packing industry in the United States has increased dramatically (CR<sub>4</sub> increased from 36 percent to 75 percent between 1980 and 1992) the price spread between farm gate and wholesale prices fluctuated but did not show a trend increase<sup>5</sup>. Reasons for this include relatively low barriers to entry, structural changes in the industry that saw rapid expansion in capacity and a change in the cast of companies that dominated the sector in the period considered. However, during the last ten years, the concentration of the top four companies in the beef packing industry continued to climb, reaching 81 percent<sup>6</sup>. USDA data shows that between 1995 and 2000, the farm to wholesale price spread for beef increased by 24 percent, suggesting that having increased concentration, the companies left in the field were then able to increase their profit margin<sup>7</sup>.

The dominant transnational agribusiness firms are characterized not only by horizontal integration in a given sector, but also by their simultaneous dominance of multiple sectors of agricultural production, shipping and processing. Cargill, for example, is the largest grain exporter in the United States and probably in the world. It is dominant in wheat, soybeans, corn and cotton. It is also ranked

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<sup>4</sup> Redfern, A. Third World Perspective, in *Proceedings of a meeting of the British Society of Animal Science and the Scottish Centre for Animal Welfare Sciences*, April 2002.

<sup>5</sup> MacDonald, J.M. 2001, *Agribusiness Concentration, Competition and NAFTA*, Economic Research Service, US Department of Agriculture, p. 9.

<sup>6</sup> Hendrickson, M. & Heffernan, W. 2002, *Concentration of Agricultural Markets, report for National Farmers Union*, Washington DC. On-line at: [nfu.org/documents/01\\_02\\_Concentration\\_report.pdf](http://nfu.org/documents/01_02_Concentration_report.pdf).

<sup>7</sup> Carstensen, P.C. 2000, *Competition, Concentration and Agriculture, A Food and Agriculture Policy for the 21<sup>st</sup> Century*, M.C. Stumo (ed.) Organization for Competitive Markets, Nebraska, p. 32.

seventh in the world as a food and beverage company<sup>8</sup>. Cargill is also a major player in beef packing, ethanol, steel, fertilizer production and financial services.

### ***Vertical integration***

Vertical integration describes an industry where one company either owns, or controls through joint ventures, multiple stages in a production chain. For example, Dole owns plantations and canning facilities, and has the marketing power to bring pineapples from fields in the Philippines to consumers in many countries.

The poultry industry in the United States is another example of vertical integration. Virtually all chicks raised for consumption as poultry are exchanged for money only when the meat processor sells them to the supermarket. All stages of production, from the hatching and rearing of the chicks to the slaughter of birds, are internal to the company. In this vertically integrated industry, there is no point at which prices for poultry can be discovered. The price charged for the chicks may be unfairly high, but these have become an internal question for managers to decide rather than a point where open market forces can intervene. As vertical integration is globalized, the open market assumptions upon which trade liberalization is based become less relevant to actual agribusiness operations.

The companies that dominate the grain trade are part of vertically integrated conglomerates, whose financial interests are varied. For many of them, grain has become a cost in the production of livestock and processed foods, where profit margins are much greater than in the grain trade itself. As grain prices have collapsed over the last four years, livestock industries have benefited from the cheap feed that results. United States consumers, however, have continued to pay the same price for meat in the supermarket. The meat packing companies and supermarkets have captured the profit, measured in the spread between farm gate and wholesale prices.

### ***Privileged access***

The sources of market power for transnational agribusiness are multifaceted, extending beyond concentrated market power. The companies also have

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<sup>8</sup> Hendrickson, M. & Heffernan, W. 2002. op cit.

privileged access to information, to capital and to political power, all of which help to limit competition by creating barriers to entry.

Through their operations in well over 100 countries, the dominant transnational agribusiness firms have access to information that very few other actors, including most governments, can aspire to. Commodity prices depend not only on supply, but also on forecasts about the future availability of supply. Futures and options markets are risk management tools, helping to offset the exposure of contracting to supply a given amount of commodity ahead of harvest time. The commodity exchanges in practice seem to be less a way to spread risk, and more a way to concentrate profits for those who know the most about a market.

Transnational agribusiness also has access to enormous sums of capital, necessary to cover futures and options contracts, and hence influence the prices by which trade-policy-mediated domestic support and export subsidies are set. At the same time, the global nature of their operations gives these firms a political voice in dozens of countries simultaneously, creating a powerful force for policies that reflect their interests.

### **9.3 Re-examining assumptions about trade**

The only entities operating in the global market are some governments, working with private and intergovernmental agencies, dispensing food aid; a few remaining state importers and exporters; and transnational agribusiness. Trying to guess what will happen to food prices by looking at commodity markets is to look at only a small part of the equation. Until the role of grain companies, food processors and retailers (and the emerging alliances among them) are looked at, it is not possible to build a sound understanding of trade, nor to develop recommendations for changes to trade policy that will serve the public interest.

The dominance of a few firms in multiple markets obviously affects the economics of the sector. For grain buyers and processors, the volume of sales is key to realizing profits. This is especially true when the companies own shipping, rail and barge companies, which need to be kept full and on the move to be profitable. As the companies acquire interests in milling, crushing and livestock operations, the overriding interest is to keep grain prices down. Large commodity traders can also benefit from price volatility, because they speculate on the commodity exchanges; the uncertainty, from the perspective of those without privileged access to information, increases the potential profits. Farmers and

consumers, on the other hand, both share a strong overall interest in price stability.

Commodity traders are not invulnerable. As in every other sector, agribusiness is changing. Firms traditionally based in processing, along with retailers, are reaching back into the food chain. Many of these companies now employ their own traders, brokering their own contracts with producers, and in various other ways squeezing out traditional commodity traders. Moreover, as firms grow larger and more diversified, they also increase their exposure to financial risk.

By building in the impact of market power, analysts are forced to ask: who will benefit from increased trade volumes or increased market access? The World Bank estimates that between 1975 and 1993, producers of seven basic commodities worldwide were underpaid as much as US\$96 billion<sup>9</sup>. Ten years ago the world coffee economy was worth US\$30 billion, of which producers received US\$12 billion. In 2002 it was worth US\$50 billion, yet producers received just \$8 billion of that total<sup>10</sup>.

Vertical integration in the food and agricultural sector of the United States and the European Union deserves international attention because it undermines the assumptions that have persuaded governments to embrace trade agreements and change their agricultural policies to allow increased food imports. To date, few corporate mergers or joint ventures have received government, much less intergovernmental, scrutiny outside the country in which they are headquartered.

However, this is an area of regulation that must get more attention because of effects in third-country markets, and because of the impact of vertical integration on the price and availability of food in the world market.

The following ideas could be considered as a way for the multilateral system to address the issue:

- documenting transnational agribusiness, to understand its global market reach better. This could mirror the WTO questionnaire required by countries that operate state-trading enterprises.
- evaluating the sources of market distortion, whether public or private, and discussing how best to address them. For example, rather than focus

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<sup>9</sup> Redfern, A. 2002 op cit.

<sup>10</sup> Manchester Guardian, available at: [www.globalexchange.org/economy/coffee](http://www.globalexchange.org/economy/coffee).

on export subsidies alone, trade negotiators should look at dumping more broadly, comparing cost of production prices (with a reasonable profit) in the country of origin to the price offered in the international market. The persistent dumping that currently characterizes commodity trade could be remedied through import tariffs or export taxes imposed in the country of origin.<sup>11</sup>

- creating a multilateral working group to discuss competition issues specifically related to international agricultural trade.

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<sup>11</sup> Ritchie, M., Wisniewski, S. & Murphy, S. 2000. *Dumping as a structural feature of us agriculture: can WTO rules solve the problem?* Institute for Agriculture and Trade Policy, Minnesota, USA.





## Chapter 10

### Capital market liberalization and the Latin American agrifood system<sup>1</sup>

#### 10.1 Introduction

This chapter draws attention to the increasingly important role of capital market liberalization (as opposed to the product market liberalization commonly associated with trade liberalization) in shaping the market opportunities for agricultural producers. It draws lessons from experience in Latin America where recent changes in agrifood systems have been dramatic. Caution may be required when generalizing to other developing regions, given the contemporary demographics in Latin America which has a relatively large middle income, and an urbanized consumer population, in a region where policy previously suppressed demand and was ripe for rapid expansion on the liberalization of foreign direct investment (FDI). Whilst similar patterns may be expected in South-East Asia for example, the demographics and income distributions are significantly different in South Asia and sub-Saharan Africa, and the impact of these changes may not be the same at this stage in their development.

Product market trade has been liberalized greatly in Latin America over the past two decades via individual countries' structural adjustment programmes (SAPs), regional free trade initiatives such as NAFTA and MERCOSUR, and adherence to GATT and WTO. The reforms have been substantial but, as elsewhere in the world, not complete and they are expected to continue (see Chapter 14). However, here it is argued that product market liberalization is only half of the story of trade liberalization, and perhaps not even the more important half in terms of long-term effects on household food security and on the agrifood system: the chain from farm input supply, to farming, to food processing, to wholesale, to retail, and across the product chains. The other half of the story concerns the capital market, and in particular the deep liberalization of capital flows in the form of FDI. Product-market and capital-market liberalization have usually been

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<sup>1</sup> This chapter is based on a paper by T. Reardon, *Product-Market and Capital-Market Trade Liberalization and Food Security in Latin America*, presented at the Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. 11-12 July 2002, Rome.

inextricably linked in the policy reforms (for example in the reforms in Brazil and Argentina and Mexico and NAFTA and MERCOSUR).

This liberalization has spurred a giant river of investment in part of the agrifood system – downstream, in retail, food services, and second-stage processing – very different from the pre-liberalization era when there was a relative trickle of FDI which was found upstream in the chains (in farming and first-stage processing). This change has resulted in a supermarket revolution, and rapid consolidation and multinationalization in the second-stage processing sector.

The effects of this expansion on the agrifood system are described in the following sections.

## **10.2 Increased foreign direct investment to the export sector**

The expansion of trade increased the profitability of exporting and that drew FDI into the agrifood export sectors. Nearly all of the inward investment occurred via mergers and acquisitions rather than the establishment of new firms. This in turn drove two very important changes:

- a rapid consolidation and increase in the scale of packing, processing and exporting firms and growers in the commodity sectors (cereals, orange juice, soy, sugar), in some product sectors (e.g. dairy products), but less so in most fruits and vegetables;
- a rapid multinationalization of the agrifood export industries, with huge FDI mainly via mergers and acquisitions.

Brazil provides a clear illustration of these changes. In the main export sectors (tobacco, poultry, oranges, orange juice, soybeans, beef, sugar, coffee) the share of multinational firms soared between 1994 and 1998. In tobacco, it increased from 82 to 90 percent, in soybeans from 30 to 48 percent, in pork from 11 to 40 percent, and in poultry, from 8 to 34 percent. Coffee alone did not multinationalize (the share stayed at 10 percent) although Jank points out that expectations are that this will change in the next decade. Brazilian export agribusiness is very concentrated (17 firms controlled 43 percent of exports, 42

firms, 60 percent, 156 firms, 80 percent; but 70 percent of exporters (4000 firms), have 1 percent of exports<sup>2</sup>.

### 10.3 Exclusion of small farmers

A second impact was the substantial exclusion of small farms and firms because of the increase in trade. A number of factors contributed to this.

- Increases in imports of cheaper staples, while helping urban consumers, meant that there were depressing effects on the economies of the zones where mainly small farmers produced staples such as cereals, beans, potatoes. The general tendency (such as in Mexico, Chile, Guatemala) was to find ways to continue protection and to subsidize farmers, albeit with great variety over countries and with a gradual tendency to reduce these policies over time. Some grain zones boomed, for example the soybean zones (traditional and new) in Brazil. Latin American farmers who stayed, and continue to stay, in basic staples will be protected/subsidized, find a place in the handful of grain niche markets or get bigger and more mechanized.
- Increases in exports of meat occurred in sectors that were already relatively concentrated as a result of a gradual shake-out of smaller players over several decades, for a diverse set of reasons including path dependence (a history of large ranches), technical change, animal health requirements, and the consolidation of slaughtering facilities.
- It has been generally argued that there are few, if any, economies of scale to be realized in the production of fresh fruits and vegetables, and thus one should expect small farms and firms to flourish in exports of this sector. There are some examples where small farmers have participated successfully in horticulture exports (such as that of snow peas from Guatemala in the 1990s). Nevertheless, there is emerging evidence that small farms and firms have had substantial difficulty in participating in the fruit and vegetable export boom following liberalization. For example, the low participation rate of small farmers in

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<sup>2</sup> Jank, M.S., Leme, M.F.P., Nassar, A.M. & Faveret-Filho. P. 1999. Concentration and internationalization of Brazilian agribusiness exporters, *International Food and Agribusiness Management Review*, 2(3/4):359-374.

the fruit export boom in Chile<sup>3</sup>, and the shedding of small farmers from berry exports from Guatemala after the cyclosporine crisis in the mid-1990s.

The main reason for the low levels of participation is the apparently low elasticity of substitution between unskilled labour and the diverse forms of capital required to meet the standards of fruits and vegetables for export, as explained in the next section.

The developing literature on Value Chain Analysis supports this conclusion, suggesting that value chains can act as a barrier to participation in new trade opportunities, but that the benefits of being a participant in the chain can be substantial. Tasks such as chopping, washing and combining vegetables are increasingly being transferred to Africa, for example, and in the process are generating new jobs. However, analyses generally conclude that decisions made at the top of the chain (e.g. in supermarkets) are increasingly defining what other actors in the chain have to do in terms of both the level and consistency of cost, quality, delivery etc. The fact that these factors need to be monitored and deficient performance acted upon, make it is easy to argue the case against obtaining supplies from large numbers of smallholders<sup>4</sup>. Evidence of a shift to sourcing from larger-scale producers is used to support this contention. This is coined as a “simultaneous process of power concentration in importing countries and power deconcentration in producer countries”<sup>5</sup>.

Whilst there is evidence of the increasing importance of value chains, it is also important to recognize that the production of some commodities (notably higher value added products) is affected more than others. In discussing prospects for diversification for example, value chains are likely to impact strongly upon the prospects for smallholder entry. There may however be the possibility for smallholders to become integrated into the chains of larger exporters.

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<sup>3</sup> Carter, M. & Mesbah, D. 1993. Can land market reform mitigate the exclusionary aspects of rapid agro-export growth? *World Development*, July.

<sup>4</sup> Dolan, C, J Humphrey, and C Harris-Pascal 2000, *Horticultural Commodity Chains: The Impact of the UK market on the African fresh vegetable industry*. Brighton: IDS.

<sup>5</sup> Fitter, R. and Kaplinsky, K. 2001, *Who gains from product rents as the coffee market becomes more differentiated?: A Value Chain Analysis*. Brighton: IDS.

#### 10.4 Domestic agrifood system change: foreign direct investment and supermarkets<sup>6</sup>

Latin America has experienced nearly the same increase in the importance in supermarkets in the national retail sector in one decade as the United States experienced in six decades, where supermarkets are now about 70 percent of the retail sector. The share of supermarkets in the national retail sectors of three-quarters of the Latin American economy increased from about 15-20 percent in 1990 to 60 percent in 2000. For the poorest one-quarter of the LAC countries, it increased from 5 percent to about 30 percent over the same decade, and is still rising.

<b>Box 10.1</b>	<b>The share of supermarkets in national food retail sectors of selected LAC countries</b>
Brazil	from 20 to 70 percent over the 1990s
Argentina	from 20 to 60 percent over the 1990s
Mexico	45 percent in 2000
Chile	62 percent in 2000
Costa Rica	50 percent in 2000
El Salvador	50 percent in 2000
Guatemala	25 percent in 2001
Nicaragua	20 percent in 2000
Peru	15 percent in 2001

While supermarkets in the 1970s and 1980s were located in the upper-income neighbourhoods of the largest cities, by the 1990s they were expanding rapidly from those niches into middle class neighbourhoods of big cities, then into intermediate cities, then into towns by 2000.

There has been rapid consolidation and multinationalization of the supermarket sector in Latin America mainly over the past 8 years. Competition for growing markets and increased FDI in the sector, mainly from the leaders Wal-Mart, Carrefour, and Ahold (which are also the top supermarkets in the world), has driven the process. Between 50 and 60 percent of the supermarket sector in

<sup>6</sup> Reardon, T. and Berdegue, J. 2002 (forthcoming). Globalization, the rise of supermarkets, and effects on the rural poor in Latin America: overview of issues, findings, and policy implications. *Development Policy Review*, September.

Mexico, Brazil, and Argentina (about two-thirds of the Latin American economy) is controlled by four or five firms, three or four of which are multinationals.

**Box 10.2      Increased reach of supermarkets**

Osorno in southern Chile has three supermarkets on its main plaza, all competing, and nearby Purranque (a town of 25 000 inhabitants) has had its own supermarket for one year. Sixty percent of supermarket sales in Chile are now outside Santiago. Supermarkets have recently been introduced in about 40 percent of the smaller towns in Chile and 30 percent in Costa Rica. Moreover, supermarkets have spread quickly from richer to middle class to poorer neighbourhoods.

Because supermarkets have taken over most of the retail sector in the region, small farms and firms now have to deal with them. Supermarkets are clearly dominant in urban (even town) food markets, and within those, in the most dynamic parts of those markets. Half or more of dairy products and a minority but growing share of fruits and vegetables are being sold through supermarkets. Moreover, whereas urban markets were considered as promising markets for the poor; to sell to these markets now means mainly selling to supermarkets.

Supermarkets are restructuring the agrifood chains from which they buy their products, in several crucial ways.

- They impose private quality and safety standards, especially in fruit and vegetable chains, as well to a certain extent in dairy and meat chains. These standards relate to the physical aspects of the products, as well as to cost, delivery and volume requirements. The public standards for such exports tend to be related to phytosanitary conditions of the produce but not the quality of food safety. However, private standards of quality and safety are more ubiquitous and more demanding than the public standards, and perhaps more difficult for small farmers to meet than the public phytosanitary and animal health standards. An example is the private standards for produce, formulated and implemented by EUREP (Euro-Retailer Produce Working Group), an association of the leading supermarket chains in Europe<sup>7</sup>. These include stringent requirements related to agricultural, post-harvest, environment, and labour practices.

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<sup>7</sup> [www.eurep.org](http://www.eurep.org).

The equipment, knowledge, management and accounting practices and investments implied by them are costly to small farmers. To the welfare of the small farms of Latin America, supermarket private standards are at least as important as WTO rules and United States public standards.

- Their procurement systems are shifting toward contracts rather than wholesale markets, and/or are establishing their own distribution centres, such as the huge Carrefour distribution centre in Sao Paulo serving a market of 50 million consumers). They are also moving quickly on sourcing via national, regional, and global networks (such as Ahold's new global melon sourcing network). The consolidation of purchases implied by these distribution centres and procurement networks implies more power to impose private standards, and need for larger volumes and/or continuous delivery in individual transactions.
- Where supermarkets still rely on wholesalers, such as in Mexico, they have induced change in the wholesale sector, with agroexporter-wholesalers becoming the main intermediaries for supermarkets, skirting traditional wholesalers.
- Supermarket chains have themselves become wholesalers and even exporters – such as melon exports by Carrefour via its global sourcing network to Brazil stores and to stores in 20 countries.

There are important implications of the above changes for small farms and firms and thus income and employment opportunities. The main point is that there is a huge potential for the supermarket and fast-food revolutions to exclude – or create markets for – small farms and firms. This potential is much greater than the export market one, simply because the export market is smaller than the domestic market for Latin American farmers, and because small farmers are more able to access, and in general more focused on, the domestic food market.

On the other hand, these changes bring the spectre of exclusion of small farmers. A poignant illustration is that of the experience of ASUMPAL, a farmers' association in Guatemala detailed in Box 10.3.



**Box 10.3 Exclusion of small farmers**

For several years ASUMPAL, with some 330 members (about 300 small farmers and 30 medium farmers) was producing roma tomatoes for the Guatemala City wholesale market. However, the over-supply of these tomatoes to the market resulted in 2000 in the association shifting to a contract for salad tomatoes with McDonalds of Guatemala. These contracts had strict private standards with respect to size, appearance, shape, safety, colour of the tomatoes, cost, volume of frequent deliveries, packing materials and temperature of delivered product. These requirements implied in turn the need for large investments in drip irrigation, greenhouses, worker hygiene facilities in the fields, and improvements in their trucks and packing sheds. The small farmers of the association found the investments impossible and dropped out. Membership fell from 330 to 30 in one year!

This is not just a Latin American situation: the Ahold supermarket chain in Thailand, Tops, recently cut its 250 vegetable suppliers to 50 and is aiming for 10 best-producers. The changes in procurement systems – with the large increase in scale and the increase in system coordination via private standards of quality and safety – are a double edged sword. On the one hand, they increase the market. But on the other hand, they remove the distinction between the export economy and the domestic economy, because standards and even products from the competition are being injected into the local market from the global market by the supermarkets. The supermarket brings global rules of the game and global competitors into the backyard of the local small farms and firms.

**10.5 Conclusion**

The long-used and long-cherished conventional distinction between the global/export and the domestic/local market has collapsed. NGOs, donors and governments have cherished the hope that if the going is too tough in the export/global market, the small farm and firm can easily retreat to the local market where standards are lower, and where global competitors do not operate. This is no longer the case. Urban and even small town food markets are now linked to the international economy through the thorough-going presence of supermarkets.

All eyes are on public standards and regulations (with focus on WTO). But at least half of the action in setting the rules of the game is in the domain of private standards set by large multinationals (global and regional) and large domestic firms. The debate needs to open as to what the effects are of these private standards, and how public policy should take them into account, such as harmonizing with them.

In June 2002, CIES (the world association of supermarkets and their main suppliers, with a combined sales figure represented of 2.8 trillion dollars!) met and decided on a global private standard system for food safety for their stores. Would such an initiative have an effect on the farmers of Latin America, selling to the global market, and selling to those same supermarkets or food manufactures that now dominate the food sector in Latin America?

The phenomenon detailed above has been so fast that it has not entered public debate and the policy implications have not been discussed. Much more research and action are needed on this, as well as on how small farms and firms can sell to supermarkets and what investments and training are needed.

Moreover, the extremely rapid rise of fast-food chains in Latin America raises the same sorts of consolidation and multinationalization issues as in the supermarket sector. There are 1581 McDonalds in 2001 in Latin America, and 500 Kentucky Fried Chicken and Pizza Hut outlets in Mexico. This constitutes the start of a fast-food revolution. The effects on the agrifood system are similar to if not more intense than are the effects of the supermarket revolution. Similar changes are also apparent in second stage processing (defined as processed food products for final consumers, such as yoghurts and cheese, breads and noodles).



### **PART III**

## **STUDIES OF THE IMPACT OF TRADE AND ECONOMIC REFORM**

Parts I and II have examined theories and concepts relevant to the relationship between trade liberalization and food security, and discussed a range of current debates that are informing contemporary research questions. In Part III, the effects of economic reform, of which trade liberalization is a part, are examined in studies covering four broad groups of countries: Africa, Asia, Latin America and the Transition Economies. The objectives of these studies are to identify systemic differences across regions in terms of the type and degree of reform, and their impacts on agricultural performance; and to highlight specific issues which might be analysed in further research.

Chapter 11 comprises two main sections. It first provides a brief review of the types of methodological approach used to examine the relationship between trade and economic reform and food security. The chapter then summarizes the evidence and interpretations from the four succeeding chapters.

Chapter 12 reviews evidence of the impact of economic liberalization, primarily through structural adjustment programmes, on levels of agricultural productivity in sub-Saharan Africa. Contrasting with the arguments put forward in Chapter 8, it develops the thesis that it is because reforms have not been fully liberalized that responses within the sector have been lower than expected, rather than inadequacies in the design of the reform programmes themselves.

In reviewing the evidence from a selection of Asian countries, Chapter 13 describes a more positive picture of the contribution that trade and economic reforms have had on agricultural supply response and indirectly on indicators of food security. The chapter stresses, however, the central role that the state has maintained in supporting the sector during the process of reform.

Chapter 14 examines the impact of trade reforms on sectoral performance and food security in Latin America. The chapter begins by stressing that trade liberalization, whilst prominent, occurred in the context of structural reforms, macroeconomic adjustments, deregulation and privatization and that the impacts strongly reflect this country-specific context.

Finally, Chapter 15 introduces an additional set of factors that have determined the success of trade and wider economic and systemic reforms in the formerly centrally planned economies. Using China as a comparator, the chapter draws attention to the importance of the initial state of the sector and level of development of the country as a whole, and to the impact of policy design and sequencing on the success and on the magnitude of change in the agriculture sectors of these countries

## **Chapter 11**

### **Analytical studies of the impact of trade and economic reforms: an overview**

#### **11.1 Introduction**

This chapter first provides a brief overview of the range of methodological approaches used in recent investigations of the relationship between reform, agricultural performance and food security. The overview serves two main purposes. First it illustrates the types of studies that have informed the reviews of regional experience in the subsequent chapters of Part III. Section 11.3 of this chapter summarizes the evidence and interpretation set out in Chapters 12 to 15. Second it serves to motivate the conceptual framework and associated methodological guidelines for research that are developed in Part IV.

#### **11.2 Methodological approaches**

##### *Distinguishing objectives from methodological approaches*

###### *Objectives*

While there have been few studies that explicitly attempt to assess the impact of specific trade reforms on indicators of food security, there have been many that address one or more aspects of the linkage, for example, the impact of reform on agricultural performance, or the relationship between economic growth and poverty reduction.

Many studies have been primarily concerned with the impacts of reform on poverty levels. Insofar as poverty levels are a determinant of food security these studies provide important findings to a better understanding of the linkages. However most are limited in failing to capture the whole contribution of a change in agriculture sector performance, as outlined in Chapter 3, and as such, do not reflect the implications of, for example, changes in relative food prices and the impacts that these changes can have on expenditure patterns and requirements of net consumers and of net producers. Care should therefore be taken in associating poverty impacts and food security impacts too closely.

Before examining in more detail the methodological alternatives, it is important to recognise whether the focus of the analysis is *ex post* assessment, i.e. what has been the impact of a certain reform implemented in the past, or *ex ante* analysis, i.e. what would be the future impact of a simulated policy change or a shock. Although an *ex post* study can also provide information about the likely future impact of a policy change, the two approaches serve different purposes. *Ex post* studies are based on a rigorous analysis of the actual past data, while *ex ante* analysis generally uses a model with a base period. Although the data needs may be less demanding, a model requires *behavioural assumptions* to be made, for example, relating to supply and demand elasticities.

Whether an *ex ante* or an *ex post* approach is adopted, the issue of determining the counterfactual situation can be problematic. Any assessment of the impact of a policy reform requires a benchmark (e.g. of food consumption or income levels) against which to compare the current values (*ex post*), or the simulated values (*ex ante*). Even where a benchmark is determined, there is a potential problem of attributing the observed changes to a particular reform, because the outcome could have been influenced by many other factors. Where statistics are not available for two distinct periods in time, a “with and without” approach may be appropriate – comparing households, villages and countries undergoing the reform with those that are not deemed to have been impacted by these reforms. Several studies of structural adjustment programmes have taken this route.<sup>1</sup> Again, one might not be sure if such comparisons are valid because of the many other factors that could have influenced the outcomes differently in the two samples. By contrast, a counterfactual is constructed in the case of *ex ante* analyses by simulating the model without the reform.

### *Methodological approaches*

Two recent reviews adopt a fairly standard classification of the available methodological approaches according to whether they are (a) descriptive and/or qualitative; (b) data based and/or survey related; or (c) general equilibrium modelling-based approaches. McCulloch et al.<sup>2</sup> provide a summary of methodological approaches used both within and across sectors, and a similar but

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<sup>1</sup> See, for example, Corbo, V., Fischer, S. & Webb, S.B., (eds). *Adjustment lending revisited: policies to restore growths*, World Bank, Washington DC.

<sup>2</sup> McCulloch, N, Winters, L. A., Cirera, X. 2001. *Trade liberalization and poverty: A Handbook*. London: CEPR and DFID.

more exhaustive review by Narayanan and Gulati<sup>3</sup> focuses on the implications of globalization for smallholder agriculture.

Although this categorization provides a useful template, as Dorosh notes in Chapter 13, disentangling the impacts of policy reforms is complex. As observed in Chapter 12 on the African experience, for example, announced policy reforms are not always fully implemented. Other factors, such as terms of trade declines and climatic variation, and the medium-term effects of past policies, can confound the analysis.

We focus here on studies that have taken a quantitative approach to analysis. This does not however negate the importance of qualitative investigation. As Sahn et al. argue, whilst quantitative analysis can more fully address the counterfactual question of what would have occurred in the absence of reforms, they require substantial data and ultimately depend on how well actual economic behaviour is captured by model equations<sup>4</sup>. It is in informing the latter that more descriptive or qualitative approaches are often required. In many cases therefore, a range of methodological approaches will be adopted in any one study.

In reviewing recent research on the impact of trade policy reform on poverty indicators, Reimer<sup>5</sup> distinguishes between research that approaches the analysis from the household level, and research that uses economy-wide databases. He uses this distinction to clarify studies into four main groups, depending on whether they make use of:

- (a) Cross country regressions, to estimate relationships between trade, growth and poverty indicators at the national level;
- (b) Partial equilibrium and/or cost of living approaches using household expenditure data to examine the impact of changes in commodity markets on poverty indicators;
- (c) General equilibrium models; and

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<sup>3</sup> Narayanan, S. & Gulati, A. 2002. *Globalization and the Smallholder: Towards an Approach to Analysis*. Washington DC: IFPRI.

<sup>4</sup> Sahn, D.E., Dorosh, P.A. & Younger, S.D. 1997. *Structural Adjustment Reconsidered: Economic Policy and Poverty in Africa*. Cambridge University Press.

<sup>5</sup> Reimer, J. 2002. *Estimating the Poverty Impacts of Trade Liberalisation*. World Bank Discussion Paper. World Bank. Washington DC.



- (d) General equilibrium models used in association with post simulation of household level data, which he terms “micro-macro” approaches as they attempt to take estimates simulated at one level into the analysis at the other level.

These studies have attempted to analyse one or more of the following linkages, that is, the impact of reform on: (i) output prices and/or quantities of goods; (ii) factor prices, incomes and employment; (iii) government transfers; (iv) incentives for investment and innovation; (v) terms of trade; (vi) short term risk and adjustment costs.

Reimer argues that while most studies focus on the first type of linkage, i.e. impacts on prices and quantities, linkage (ii) is potentially the most relevant since households “tend to be much more heterogeneous with respect to income than with respect to consumption”. That is to say, they have different sources of income and it is these sources that are likely to be differentially affected. This point is considered further in Part IV.

The FAO Trade Reforms and Food Security project is most closely associated with investigating linkages (i) and (ii) These are returned to in more detail in Part IV.

There is a long tradition in the use of social accounting matrices (SAMs) and computable general equilibrium models (CGEs) for analysing the impact of policies, especially of trade liberalization, on income distribution and poverty. Recent examples of such applications are studies undertaken for several African countries by the Cornell Food and Nutrition Policy Program. IFPRI has also undertaken similar analyses based on SAMs/CGE models.

The main strengths of the SAM based approach are the comprehensiveness of the coverage of economic accounts, their inter-linkages and the consistency of the accounts (aggregate income must be equal to aggregate expenditure). But a SAM is only a database, not a model. It can be as aggregated or disaggregated as desired, or as permitted by the data. It may focus on a particular sub-sector of the economy on the production side. For example, an agricultural SAM may have 15-20 agricultural sub-sectors (e.g. major individual crops, food crops, export crops, processing, marketing etc) and a smaller number from rest of the economy (industry, services etc.) It could include many household groups that receive incomes from the resources that they provide to these activities, and which

consume the products of the activities. In other words, its design can be very flexible, depending on the focus of the study and availability of statistics.

SAMs can be constructed at different levels. Besides the national SAMs, there are analyses based on regional SAMs and village SAMs. Even before a SAM is subjected to some form of behavioural modelling analysis, the statistics can be very revealing. For example, a SAM will show income levels generated by various economic activities, and their distribution to various household groups. Thus, it already illustrates a lot about how various economic sectors are contributing to household incomes and food security.

CGE models are based on a SAM database. However, the construction of a CGE requires much additional information, e.g. how various economic accounts would be linked, parameters describing how producers, consumers and other economic agents would react (supply-demand elasticities, substitution elasticities). Once constructed, they can be used to analyse the impact of numerous alternative policy scenarios. A major advantage of CGEs is their ability to capture linkage, or multiplier effects.

The following sub-sections introduce a number of examples of the application of the types of approaches discussed above as used in the analysis of multilateral liberalisation and or unilateral liberalisation.

### ***Approaches to the analysis of multilateral liberalization***

Although this section draws upon a wide literature, it is not intended as a comprehensive review. Rather, the objective is to consider the merits of different broad approaches to analysing the impact of reform, and more specifically, how these approaches have been adapted to consider specific impacts on food security.

Of particular relevance to this publication are first, a series of exercises that have attempted to analyse the impact of the WTO Uruguay Round Agreement on Agriculture (UR AoA), both before (*ex ante*) and after (*ex post*) the agreement was reached; and second, a new literature that is repeating these types of analyses in light of the launch of the Doha Round of multilateral trade negotiations.

The majority of the ex-ante studies employed CGE modelling based approaches. In a review of these studies, FAO<sup>6</sup> summarizes the results of a range of exercises

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<sup>6</sup> FAO 1996. *Food and International Trade*. WFS 96/TECH/8 Rome.

that used global models such as the WFM, RUNS, and ATPSM. Of interest to the analysis of food security implications, the review notes that as a result of predicted world price changes in the different models, the food import bill for developing countries was projected to increase from about US\$ 40 billion to US\$ 65 billion in 2000 of which 15 percent could be attributed to the UR AoA.

As data on the actual impacts became available, more qualitative and descriptive approaches to ex-post analysis were employed. Using the findings from 14 developing country case studies<sup>7</sup>, FAO<sup>8</sup> suggests that when considering whether any trade related growth can be attributed to the UR, the evidence appears to be mixed. The study used a range of data series to compare for example, trends in the ratio of the food import bills to total agricultural export earnings. The study concludes that while trade liberalization led to an almost instantaneous surge in food imports, countries were often not able to increase exports due to significant supply-side constraints.

Prior to the 1999 WTO conference in Seattle, a number of initiatives to model the impact of further liberalization were initiated by the World Bank. Anderson, Hoekman et al.<sup>9</sup> used a modification of GTAP to analyse six alternative scenarios running from post-UR until 2005. Hertel et al.<sup>10</sup> used GTAP to consider the effects of 40 percent cuts in 2005 in agricultural protection, services protection and manufactured goods tariffs. Hertel and Martin<sup>11</sup> found that that when tariffs on manufactured goods are cut globally by 40 percent, agricultural exports of

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<sup>7</sup> Bangladesh, Botswana, Brazil, Egypt, Guyana, India, Jamaica, Kenya, Morocco, Pakistan, Peru, Senegal, Sri Lanka, Thailand.

<sup>8</sup> FAO. 2000. *Developing country experience with the implementation of the Uruguay Round Agreement on Agriculture - synthesis of fourteen country case studies*. Rome: FAO.

<sup>9</sup> Anderson, K., Hoekman, B. et al. 1999. Agriculture and the WTO: Next steps. *Second Annual Conference on Global Economic Analysis*, Avernoes Conference Centre, Helnaes, Denmark. 20 - 22 June.

<sup>10</sup> Hertel, T. W., Anderson, K. et al. 1999. Agriculture and non-agricultural liberalization in the Millennium Round. *Global Conference on Agriculture and the New Trade Agenda from a Development Perspective: Interests and Options in the WTO 2000 Negotiations*, Geneva, World Bank.

<sup>11</sup> Hertel, T. & Martin, W. 1999. *Developing country interests in liberalising manufactures trade*. Paper presented at the CEPR workshop New Issues in the World Trading System. London 19 - 20 February.

developing countries as a whole would hardly change, but in East Asia food imports would increase while in Latin America and SSA, exports would increase.

One of the criticisms of such models is that they fail to disaggregate the impact over different groups of individuals (or, as in a number of the World Bank studies, even between different countries within regions). A number of studies, for example Diaz-Bonilla et al.<sup>12</sup> and McCalla and Valdés<sup>13</sup> have since attempted to break down the country level aggregation on the basis of food security concerns, but as yet this has not been fully incorporated into mainstream modelling exercises. More recently, some progress has been made on disaggregating impacts within countries, for example at household level, in these global trade models.

This new literature is emerging in the light of the Doha declaration, and which goes some way to addressing the criticisms of past approaches. In May 2002, the OECD held a “Global Forum on Agriculture” which was concerned with “what can be done to ensure that the potential gains for the poor of agricultural trade reforms are realised, and that the possibly adverse effects on some groups are mitigated”<sup>14</sup>. A number of relevant papers were discussed at the Forum. Beghin et al.<sup>15</sup> took a standard approach, using a dynamic global CGE model to quantify the impact of trade and domestic agricultural distortions of high-income countries on terms of trade, welfare and trade flows of developing economies and their partners. They did this by modelling the removal of all export subsidies, tariffs and TRQ schemes, and output and input subsidies affecting production decisions in high-income countries.

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<sup>12</sup> Diaz-Bonilla, E. Thomas, M. & Robinson, S. 2003. Trade, food security and WTO negotiations: some reflections on boxes and their contents, in *Agricultural trade and poverty: making policy analysis count*, OECD. Paris.

<sup>13</sup> Valdés, A. & McCalla, A. 1999. Issues, interests and options of developing countries, Conference on Agriculture and the New Trade Agenda from a Development Perspective: Interests and Options in the WTO, 2000 Negotiations Geneva, Switzerland.

<sup>14</sup> OECD. 2003. *Agricultural trade reform and poverty: making policy analysis count*. OECD. Paris.

<sup>15</sup> Beghin, J., Roland-Holst, D. & van der Mensbrugge, D. 2003. Global agricultural trade and the Doha Round: What are the implications for North and South? in *Agricultural trade and poverty: making policy analysis count*, OECD. Paris.

Other papers attempted to overcome some of the limitations referred to earlier. Hertel et al.<sup>16</sup> focus on the impact of trade liberalization on households at the edge of poverty, stratifying households according to their primary source of income, and identifying those that are specialized (95 percent or more of their income) in agriculture enterprises, non-agriculture enterprises, wage/salary labour, and transfers. Taylor<sup>17</sup> reports a microeconomy-wide modelling exercise based on village models. It is argued that this combines the advantages of micro models focusing on individuals, households, and firms, with economy-wide models highlighting the economic linkages among economic actors that have traditionally been implemented at an aggregate (national or multinational) level. Micro economy-wide models explicitly take into account the market structures that govern economic interactions and make it possible to include linkages among households into an analysis of impacts of globalization and migration on migrant-source economies. Both of these approaches fall into Reimer's micro-macro category of approach.

OECD<sup>18</sup> attempts to link the liberalization of OECD agricultural domestic and trade policy to a series of indicators of food security in developing countries using the AGLINK model<sup>19</sup>. AGLINK was expanded using parameters governing price transmission and the responses of supply and demand for 115 countries, derived from the FAO's World Food Model. The results of the analyses vary depending on the characteristics of the country in question, but the ranges of change in their food security situation due to an increase in market access or a reduction in export subsidies on the part of OECD members are reported to be slight. The OECD explain this finding by the fact that OECD trade reform has only modest impact on world prices, particularly those world crop product prices that are most relevant in the context of food security; and that the parameters derived from the World Food Model indicate that there are weak links between world prices and local prices and weak responses of domestic agents to those

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<sup>16</sup> Hertel, T., Preckel, P., Cranfield, J. & Ivanic, M. 2003. Multilateral trade liberalisation and poverty reduction: seven country applications, in *Agricultural trade and poverty: making policy analysis count*. OECD. Paris.

<sup>17</sup> Taylor, E. 2003. The Microeconomics of Globalization: Evidence from China and Mexico, in *Agricultural trade and poverty: making policy analysis count.*, OECD. Paris.

<sup>18</sup> OECD 2002. *The medium term impacts of trade liberalisation in OECD countries on the food security of non-member countries*. Paris: OECD.

<sup>19</sup> Morrison, J.A. & Pearce, R. 2000. *The impact of further trade liberalisation on the food security situation in developing countries*. Paris: OECD.

prices. In addition, since the analysis is restricted to the aggregate level, the results give national level indicators of food security; the food security of selected individuals or groups will be improved or damaged to a greater degree than the average results would indicate.

Whilst the majority of quantitative studies that analyse multilateral trade liberalisation use CGE models, the conclusions of such exercises can be challenged on the basis of the assumptions used regarding, for example, the extent of price transmission and supply response. As indicated above, non-modelling approaches can be usefully combined with modelling approaches to improve the model equations.

### ***Approaches to the analysis of unilateral liberalization***

Studies which investigate the impacts of reform on a country level basis tend to use a variety of approaches. Sahn et al.<sup>20</sup> report conclusions from a ten-country study attempting to link changes in policy types (trade and exchange rate, fiscal and agricultural policies) to economic impacts. The studies use a range of descriptive data analysis and multimarket and CGE approaches to model the impact and attempts to draw conclusion across countries. Krueger et al.<sup>21</sup> summarize the results of an eighteen-country study with the aim of providing estimates of the degree of price discrimination against agriculture and to determine how this affected variables such as foreign exchange earnings, agricultural output and income distribution<sup>22</sup>.

Non-modelling based approaches may range from studies on price transmission to those concerned with determining producer response to changing incentives.

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<sup>20</sup> Sahn, D.E., Dorosh, P.A. & Younger, S.D. 1997. *Structural adjustment reconsidered: economic policy and poverty in Africa*. Cambridge University Press.

<sup>21</sup> Krueger, A, Schiff, M. & Valdés, A. (eds). 1991. *The political economy of agricultural pricing policy*. Washington DC: World Bank/ Johns Hopkins University Press.

<sup>22</sup> Two other large scale cross country studies have been conducted by the World Bank, although these are concerned less with agricultural reform than with trade liberalisation more generally: Papageorgiou, D., Choksi, A. & Michaely. M. 1990. *Liberalising foreign trade in developing countries: The lessons of experience*. Washington DC: World Bank; Nash, J., & Takacs, W. 1998. *Trade Policy Reforms: Lessons and Implications*. Washington DC, World Bank.

Price transmission studies are numerous, as for example reviewed by Prakash<sup>23</sup> or Baffes and Ajwad<sup>24</sup>. In addition Balcombe and Morrison<sup>25</sup> provide a critique of approaches commonly used.

The analysis of the evolution of relative prices forms the basis of a number of commodity based studies. Townsend<sup>26</sup> documents the extent of reform by developing a typology for comparing the fiscal, monetary, exchange rate and overall macroeconomic policy stance of African countries, in order to aid the comparison of the efficacy of reforms across countries. He also provides a comprehensive review of price and related policy in SSA economies. Akiyama et al.<sup>27</sup> detail a series of studies of the political economy and institutional aspects of commodity market reform in cocoa, coffee, sugar, cotton and cereal to derive lessons as to how sectoral reform can be implemented.

Some of the more subtle interpretations derive from review based studies which are less constrained by quantitative data availability. Although these studies (with one notable exception reported below) do not have as their main objective the assessment of the impact of reform on food security, they do reveal important observations about the component parts of the relationship.

Kherallah et al.<sup>28</sup> for example, discusses the extent of market reforms in both food and export crop sectors across a range of African countries, demonstrating that reforms were not fully implemented in most countries and that policy reversal

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<sup>23</sup> Prakash, A. 1999. *The Transmission of Signals in a Decentralised Commodity Market: The Case of the UK Pork market. PhD Thesis: University of London. 236 pages.*

<sup>24</sup> Baffes, J. & Ajwad, M. 2001. Identifying price linkages: a review of the literature and an application to the world market of cotton. *Applied Economics* 33, 1927 - 1941

<sup>25</sup> Balcombe, K. & Morrison, J.A. 2002. *Commodity price transmission: A critical review of techniques and an application to selected tropical export commodities.* Prepared for FAO ESCR.

<sup>26</sup> Townsend, R. 1999. *Agricultural Incentives in Sub-Saharan Africa: Policy Challenges.* Washington DC: World Bank.

<sup>27</sup> Akiyama, T., Baffes, J., Larson, D. & Varangis, P. (eds.) 2001. *Commodity Market Reforms: Lessons of Two Decades.* Washington DC: World Bank.

<sup>28</sup> Kherallah, M., Delgado, C., Gabre-Madhin, E., Minot, N. & Johnson, M. 2000. *The road half traveled: agricultural market reform in Sub-Saharan Africa.* Washington DC: IFPRI.

was observed in a number of cases. Mellor<sup>29</sup> uses descriptions and analyses of agricultural development in several countries (Chinese Province of Taiwan, Punjab, Philippines, Thailand, Costa Rica, Colombia and Kenya) to examine the factors behind success in agriculture and to consider the conditions necessary for such success to contribute to broader economic growth and poverty reduction. Similarly, Dorward and Morrison<sup>30</sup> examine a set of countries (Belize, Benin, Chad, China, Ecuador, Egypt, Ghana, Peru and Viet Nam) that had increases in labour productivity in the agricultural sector during the 1990s, to identify broad measures and strategies that may be supportive of agricultural development. Based on commodity and country studies, (cocoa in Cameroon and Nigeria; coffee in Cameroon, Ethiopia and the United Republic of Tanzania; coffee and cotton in Uganda, and cotton in Mali, the United Republic of Tanzania and Zambia), Shepherd and Farolfi<sup>31</sup> review approaches to and experiences with export crop liberalization in Africa to discuss ways in which specific problems (most notably, input supply and quality control) might be overcome.

Notable for its focus on food security, is a cross country study in eastern and southern Africa conducted by Michigan State University<sup>32</sup>. Impacts on farmers of border measures are examined by Jayne et al.<sup>33</sup>, who conclude that “dealing with the agriculture sector as if farmers are a homogenous group with similar characteristics is misleading”. They reach this conclusion on the basis that in Kenya maize accounts for only 14 percent of household income on average (including consumption) and does not exceed 25 percent even in maize bread

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<sup>29</sup> Mellor, J. (ed.) 1995. *Agriculture on the road to industrialization*. Washington DC: IFPRI/ Johns Hopkins Press.

<sup>30</sup> Dorward, A. & Morrison, J.A. 2000. *The agricultural development experience of the past 30 years: Lessons for LDCs*. Prepared for FAO ESCP.

<sup>31</sup> Shepherd, A. & Farolfi, S. 1999. *Export crop liberalization in Africa: A review*. Rome: FAO.

<sup>32</sup> Jayne, T.S, Govereh, J., Mwanaumo, A., Chapoto, A. & Nyoro, N.K. 2001. False promise or false premise? The experience of food and input market reform in Eastern and Southern Africa, in *EAAE Seminar on Livelihoods and Rural Poverty Technology, Policy and Institutions*. Wye, England; and Jayne, T.S, M Mukumbu, M., Chisvo, M., Tshirley, D., Weber, M., Zulu, B. Johansson, R., Santos, P. & Soroko, D. 1999. *Successes and challenges of food market reform: experiences from Kenya, Mozambique, Zambia and Zimbabwe*. Michigan: MSU.

<sup>33</sup> Jayne, T., Yamano, Y., Nyoro, J. & Awuor, T. 2000. *Do farmers really benefit from high food prices? Balancing rural interests in Kenya's maize pricing and marketing policy*, Tegemeo Institute for Agricultural Policy and Development.



basket areas, and that small scale farmers derive 25 to 75 percent of their income from non-farm sources.

Finally, it is not only quantitative, data based studies that reveal interesting observations as to the impact of reforms. A recent publication by SAPRIN<sup>34</sup> summarizes the results of a nine-country study (covering Ecuador, El Salvador, Mexico, Bangladesh, the Philippines, Ghana, Mali, Uganda, Zimbabwe and Hungary) which investigates the impact of economic policy reform in a participatory manner. In documenting the impact of agricultural reforms, the report claims that there is no clear conclusion, with some countries increasing production levels and others recording a decrease.

### 11.3 Evidence from experience

Chapters 12 to 15 document evidence of the impact of reforms. This section highlights a number of similarities and differences in the experiences described in these Chapters, first by documenting changes in agricultural performance and related indicators across the regions, and then by noting broad patterns of reform that may be associated with these changes in Africa, Asia and Latin America. Finally, a number of contrasting factors from the review of experience in the Transition economies are described.

#### *Trends in agricultural performance*<sup>35</sup>

Table 11.1 compares the performance of the agricultural sector in middle- and low-income countries in different continents over the last three decades. Taking a broad view across the continents, the picture is of growth in agricultural productivity increasing over the first half of this period and then dropping back somewhat. The lower growth was not initially sufficient to keep up with national population growth, and hence agricultural value added per capita fell at first, before higher growth began to overtake population growth later in the period. Growth in productivity of agricultural labour lies between absolute and per capita growth as the agricultural population increases over the period, but increases at a

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<sup>34</sup> SAPRIN. 2002. *The Policy Roots of Economic Crisis and Poverty: A Multi-Country Participatory Assessment of Structural Adjustment* Washington DC: Structural Adjustment Participatory Review International Network.

<sup>35</sup> This subsection draws on a review from Dorward, A. & Morrison, J.A. 2000. *The Agricultural Development Experience of the Past 30 Years: Lessons for LDC's*. Prepared for FAO ESCP.

slower rate than total population as labour moves out of agriculture within rural areas, and migrates to urban areas.

The East Asia & Pacific and Middle East & North Africa regions show a broadly similar pattern of agricultural growth advancing well ahead of population growth, peaking in the 1980s, but maintaining continuing increases in labour productivity in agriculture. South Asia shows continuing increases in growth over the period, again well ahead of population growth and with continuing increases in labour productivity in agriculture. The Latin America and Caribbean region experienced lower agricultural growth after the 1970s but as this was offset by a declining rural population, again there is evidence of increasing agricultural labour productivity. In three of these regions growth in agriculture has been accompanied by a dramatic decline in agriculture's share of the GDP from 1970 to 1998— by more than 35 percent. The Middle East and North Africa is an exception to this, as agriculture marginally increased its share of the economy: this is due in part to a massive increase in land under irrigation (see table 11.2).

**Table 11.1** Agriculture sector performance by income level and region, 1965 – 1998

	AGRICULTURAL GROWTH (average annual growth in value added %)				POPULATION GROWTH (average annual growth %)			AGRI-CULTURAL LABOUR (average annual growth %)	AGRICULTURE SHARE IN GDP (agricultural GDP as % of total GDP)		
	1965-98	1980-90	1990-98	1980-98	Total popula- tion	Agri- cultural popula- tion	Agri- cultural popula- tion	1980-98	1970	1980	1998
					1965-98	1980-90	1990-97				
World	2.3	2.7	1.7	2.3	1.7	..	..	..	9	7	4
Low-income countries	3.3	4.1	3.7	3.9	2.1	..	..	..	39	31	23
Low-income countries (except China & India)	2.8	3.0	2.7	2.9	2.5	..	..	2.4	41	29	26
Middle-income countries	2.3	2.7	0.8	1.9	1.7	..	..	1.1	17	12	9
High-income countries	..	..	0.8	..	0.7	0.0	0.0	..	5	3	2
Low- & middle-income countries:											
East Asia & Pacific	3.6	4.4	3.5	4.0	1.8	1.2	0.3	..	33	24	15
Latin America & Caribbean	2.6	2.1	2.2	2.1	2.1	-0.7	-0.6	..	13	10	8
Middle East & North Africa	4.2	5.5	2.5	4.2	2.8	..	..	2.2	13	10	14
South Asia	2.9	3.2	3.7	3.4	2.2	1.3	1.0	1.5	43	37	28
Sub-Saharan Africa	1.9	2.5	2.4	2.5	2.7	2.4	1.7	2.8	21	18	17

Source: World Development Indicators, 2000; FAOSTAT.

**Table 11.2** Production and productivity changes by income level and region, 1979/81 to 1995/97\* (percent change)

	ARABLE & PERMANENT CROP LAND		IRRIGATED LAND Area (ha)	FERTILIZER USE		CEREAL PRODUCTION			OTHER CROPS Area (ha)
	Area (ha)	Area per capita		Total kg	kg/ha	Area (ha)	Yield (kg/ha)	Yield share in production increase	
World	:	0	14	18	12	20	26	56	-5
Low-income countries	11	-17	29	130	114	14	15	52	8
Low-income countries (except China & India)	14	-22	40	133	109	50	17	25	-11
Middle-income countries	17	46	6	-14	-30	69	32	32	-3
High-income countries	-2	-11	12	-6	-3	-10	28	100	2
Low- & middle-income countries:									
East Asia & Pacific	27	0	25	141	100	3	29	91	109
Latin America & Caribbean	16	-16	35	46	26	-1	33	100	25
Middle East & North Africa	23	-28	69	85	57	13	53	80	32
South Asia	1	-30	40	157	157	-1	39	100	5
Sub-Saharan Africa	20	-22	26	-2	-18	71	28	28	-5

\* 1996/98 for some variables

Source: World Development Indicators, 2000

The pattern of agricultural change in sub-Saharan Africa has been quite different, with very low rates of growth in the 1970s, followed by increases in the 1980s and 1990s. It appears that per capita growth has been very low or negative over much of the period and that therefore sub-Saharan Africa is the only region with agriculture growing at a rate below overall population growth from 1965 to 1998, and at a lower rate than growth in the agricultural labour force from 1980 to 1998<sup>36</sup>. The general picture of low or negative per capita growth in agriculture in much of sub-Saharan Africa over the last 30 years is supported by the high incidence and severity of rural poverty compared with other regions, widespread reports of agricultural stagnation and reductions in both fertilizer use and yields.

Table 11.2 suggests that sub-Saharan Africa is achieving its agricultural growth largely through a different process from that found in other regions. Whereas the East Asia and Pacific region has maintained the area cultivated per capita and South Asia has suffered a large reduction in this respect, sub-Saharan Africa has increased its area under cereals dramatically at the expense of other crops, Sub-Saharan Africa's increased cereal area is accompanied by a slight fall in overall fertilizer consumption, a larger fall in the rate of fertilizer use, and only a small rise in cereal yields. The area of irrigated land also shows only a small percentage rise, and although this is similar to the percentage increase in irrigated land in the East Asia and Pacific region, sub-Saharan Africa's increase is from a low base (only 4 percent of crop land being irrigated, compared with 36 percent in the East Asia and Pacific region). As a result, whereas other regions have achieved 80 percent or more of their increased cereal production from yield increases, in sub-Saharan more than 70 percent of increased cereal production is from area increases.

### *Extent and impact of reform*

The changes in agricultural performance summarized above occurred during a period of often substantial economic reform. Although countries in all of the regions undertook reform programmes, there were significant differences in the

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<sup>36</sup> The data on which these low are calculated contain a number of inconsistencies (for example estimates of agriculture's share of GDP have varied and tend to be low, as shown in Table 11.1) and have been criticized as not reflecting dynamic growth that exists in sub-Saharan African agriculture and of being over sensitive to the effects of price changes and currency devaluations.

drivers of reform, the design of reform programmes, and in the extent to which they were implemented.

The region where there is perhaps most debate as to the impact of economic reform on the agriculture sector is Africa. Most sub-Saharan African countries initiated market liberalization in the 1980s as part of structural adjustment programmes. However, Govereh and Jayne suggest that many governments remain unconvinced about fundamental elements of the reforms. There is debate in the literature as to whether it is government intransigence over implementation, or inappropriately designed programmes that have resulted in a poor record of reform and weak associated agricultural performance. In contrast to the discussion in Chapters 6 and 8, where the poor record of reform was explained in terms of the inadequate attention of the orthodox approach to the institutional foundations of market and non-market mechanisms and the degree of market failure pervading the sector, Chapter 12 sets out an alternative viewpoint: that liberalization, rather than being inappropriately designed and prescribed, has not been implemented fully, and that the impact cannot therefore be properly measured.

In developing their argument, Govereh and Jayne provide evidence that countries that are implementing reform are performing no worse than those implementing *de jure*, or partial, liberalization. Using this evidence, the authors argue for a continuation of the reform process of economic liberalization and market integration. However, in line with the discussion in Chapters 6 and 8, the authors do premise their argument by questioning whether African countries should continue to open their markets to external trade in the face of continued high levels of OECD protectionism.

In setting out their evidence, the authors consider reform at domestic, intraregional and extra-regional levels of agricultural markets. Considering domestic market reform, the authors develop the idea of the conflicting goals of maintaining food prices at a level that is profitable for domestic producers and affordable by consumers. These goals, they suggest, were achieved via controlled marketing systems, which as a result of their reliance on state support, were financially unsustainable. Core policy changes aimed at rectifying this problem involved the removal of barriers to private sector participation in marketing, the privatization of State Trading Enterprises and the abolition of monopolies, in association with the deregulation of prices and the elimination of taxes and subsidies on food products.

The authors regard such changes as necessary steps in improving efficiency within the sector. However, they suggest that the extent of reform has varied widely across Africa. Countries are categorized into those that have been committed to the implementation of reform, for example, Mozambique, Uganda, Mali and Ghana, including others that have been through temporary reversals, such as the United Republic of Tanzania. A second category includes those countries that have resisted reform, for example Zimbabwe in the maize sector. Countries that have undergone *de jure* liberalization but still have *de facto* state control of marketing form a third category.

It is this aspect of the maintenance of state control over key activities in the marketing chain that the authors find problematic, suggesting that private sector participation, for example in the Malawian coffee sector, is being stifled. Whilst Chapter 12 acknowledges that it is problematic to draw definitive conclusions of the impact of liberalization of domestic markets, and that the development of credit markets in particular remain a major obstacle, they contend that this is reflective of the false premise of liberalization rather than its false promise. It should be noted that this analysis differs from that provided by Kydd in Chapter 8, which suggests that the state may still have an important role to play in the sector, particularly where agriculture continues to have a potentially important place in wider economic development and poverty reduction.

Turning to intraregional and extra-regional trade liberalization, the authors recognize the growth, and re-emergence, of a number of RTAs, which will allow freer movement and increases in efficiency. It is worth noting that RTAs can potentially increase the size of the domestic market, allowing some protection of sectors whilst they respond to a larger and perhaps less volatile demand, in preparation for more general competition on the global market.

Jones and Govereh also note that the number of countries with open trade regimes has increased from 7 in the early 1980s to 25 in the 1990s. Within this context, the authors raise the issue of exclusion of small scale producers (see also Chapters 9 and 10), suggesting that only through productivity growth and reducing trading costs will these producers be able to participate successfully. Additionally, the point that further opening domestic markets in the face of OECD protectionism is problematic is acknowledged. Indeed, with these points in mind, it is perhaps unsurprising that there is still wide difference of opinion in the literature as to whether African countries are ready for further liberalization of their agriculture and trade policy.

The discussion in the previous section suggests that Asia has been more successful than elsewhere in terms of achieving increased rates of agricultural growth, albeit with variation across countries within the region. In Chapter 13, Dorosh concludes that food availability at the national level is no longer a binding constraint for food security in most countries in most years, but that access to food by some groups of individuals is still a major problem. In summarizing the broad approach to reform, Dorosh suggests that governments have been influenced by the risks associated with a greater reliance on international trade, particularly at earlier stages of development, and hence there remains a perceived need for public intervention in the region.

On the whole, countries within the region have been under less pressure of the conditionality of adjustment loans than either African or Latin American countries. Policy has therefore been influenced to a greater extent by a history of intervention to stabilize food prices or to operate public food distribution programmes and whilst reforms have reduced their scope, STEs still play a significant role. Dorosh also identifies long-term investment in infrastructure, education and agricultural research continuing at a time when rapid labour intensive growth in the non-agriculture sectors allowed the release of surplus agricultural labour.

Latin America differs from Africa and Asia in a number of respects, which are detailed in Chapter 14. Amongst these, agriculture is, in general, less significant for Latin American countries, both in terms of employment and in its contribution to GDP. Valdés and Foster suggest that as a result, it is important to account for broader changes within the economy when determining the impact on levels of poverty and food insecurity. It is recognized that Latin America is heterogeneous in terms of its net trade position, which in association with different approaches to liberalization, makes it difficult to generalize findings across the region. Despite this difficulty, the authors do state that the primary objective of the trade liberalization programmes was to reverse the negative consequences of protectionism, in particular the anti-export bias, but that failures to reform macroeconomic policies and poor progress in the implementation of deregulation and privatization often negated any potential benefits.

In assessing the impacts of reform on agriculture sector performance, Valdés and Foster distinguish between the production of exports, import competing products and non tradables. They note that while the producers of exportables and labour employed in the labour intensive export sector often gained, producers of import substitutes generally lost. The former were often larger scale commercial



producers. Less clear was the impact on producers of non tradables, which are by definition, not directly affected. The early stages of reform were however associated with an unfavourable macroeconomic environment, which resulted in declining farm profitability, again negating possible improvements in agricultural performance.

Translating their findings to the investigation of changes in food security status, the authors stress that food supplies are not the main determinant of food security in Latin America. Indeed, policy that has been aimed at improvements in incomes, health and sanitation, in conjunction with targeted nutritional programmes, have been much more important. They note, however, that trade liberalization in the agriculture sector, by lowering consumer prices, has in general been consistent with these policies in helping to reduce levels of food insecurity.

The final chapter of this part of the publication provides an interesting contrast to the three regional based chapters. Swinnen and Beerlandt review the impact of reforms during the period of transition from centrally planned to a more market driven economy on agricultural performance. To assist in drawing out a range of important determinants of impact, experience from countries in central and eastern Europe and the former USSR is contrasted with experience from China, which has undergone a similar process of transition but under rather more gradual and controlled circumstances.

This contrast allows the authors to highlight a number of factors that might explain why the response in terms of agricultural performance was diverse across the countries, both in terms of gross agricultural output and changes in labour productivity. The authors surmise that the initial level of development, both in terms of the state of institutions, infrastructure and social policy, and in terms of GDP per capita, were important determinants of the direction and magnitude of change. Additionally, reform strategies differed quite widely in terms of both price policy, land reform and privatization. Recent advances in the agriculture sectors of the more advanced economies in the region has been stimulated by rapid changes in the levels of labour migration, capital inflows and openness to international trade. The changes in agricultural performance summarized above occurred during a period of often substantive economic reform. Although countries in all of the regions undertook reform programmes, there were significant differences in the drivers of reform, the design of reform programmes, and in the extent to which they were implemented.

The region where there is perhaps most debate as to the impact of economic reform on the agriculture sector is Africa. Most sub-Saharan African countries initiated market liberalization in the 1980s as part of structural adjustment programmes. However, Govereh and Jayne suggest that many governments remain unconvinced about fundamental elements of the reforms. There is debate in the literature as to whether it is government intransigence over implementation, or inappropriately designed programmes that have resulted in a poor record of reform and weak associated agricultural performance. In contrast to the discussion in Chapters 6 and 8, where the poor record of reform was explained in terms of the inadequate attention of the orthodox approach to the institutional foundations of market and non-market mechanisms and the degree of market failure pervading the sector, Chapter 12 sets out an alternative viewpoint: that liberalization, rather than being inappropriately designed and prescribed, has not been implemented fully, and that the impact cannot therefore be properly measured.

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On the whole, countries within the region have been under less pressure of the conditionality of adjustment loans than either African or Latin American countries. Policy has therefore been influenced to a greater extent by a history of intervention to stabilize food prices or to operate public food distribution programmes and whilst reforms have reduced their scope, STEs still play a significant role. Dorosh also identifies long-term investment in infrastructure, education and agricultural research continuing at a time when rapid labour intensive growth in the non-agriculture sectors allowed the release of surplus agricultural labour.

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declining farm profitability, again negating possible improvements in agricultural performance.

Translating their findings to the investigation of changes in food security status, the authors stress that food supplies are not the main determinant of food security in Latin America. Indeed, policy that has been aimed at improvements in incomes, health and sanitation, in conjunction with targeted nutritional programmes, have been much more important. They note, however, that trade liberalization in the agriculture sector, by lowering consumer prices, has in general been consistent with these policies in helping to reduce levels of food insecurity.

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### ***Some lessons from regional comparisons***

The degree of success has varied widely both across and within regions. Much of the failure has been attributed not so much to the set of policy reforms and associated instruments prescribed, but to both the environment (covering aspects ranging from macroeconomic, to institutional development, to agro-climatic) in

which they have been prescribed, and the willingness of decision-makers to follow them through.

Pre-reform conditions appear to have a major determining effect on the success of reforms. This point comes out strongly in the section reviewing reforms in the Transition Economies, but flags an important point that policy-makers cannot implement blueprint prescriptions and expect similar degrees of success.

The various regions have therefore differed in their ability to adopt new agricultural technologies to counter the negative effects of rising population sizes and falling prices. Some regions have been successful, with the development of Green Revolution technologies using irrigation, new varieties and chemical inputs to boost rice and wheat productivity dramatically. In many Asian countries, growth has been supported by supportive macroeconomic policies and investment in institutions, infrastructure and services<sup>37</sup>. There have also been new technological developments, diversification, area expansion and productivity increases in cash and export crops in Latin America and in Asia. The agrarian structures and urban biased macroeconomic policies in Latin America were however not as conducive to broad based agricultural growth as in many South-East Asian countries. South Asia has been slower to take advantage of Green Revolution technologies, partly because in large areas the technologies are not appropriate. Sub-Saharan Africa has suffered from a variety of problems, with initial poor resource endowments compounded by macroeconomic mismanagement discriminating against agriculture, parastatal marketing boards that were often inefficient and ineffective in providing services to farmers, landlocked countries with poor communications infrastructure, and crops and agro-ecological conditions unsuitable to the Green Revolution technologies.

Finally, within the agriculture sectors of individual countries, there are winners and losers from the reforms, and in many cases the resource poor have fallen into the loser category, particularly when excluded from participation in the more dynamic subsectors of agriculture.

From the reviews in Chapters 12 to 15, a number of lessons for further research emerge, which are considered further in Part IV of this publication.

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<sup>37</sup> This point is also made strongly in recent work by the Centre for Development and Poverty Reduction at Imperial College Wye, available at <http://www.wye.ac.uk/AgEcon/ADU/research/index.html>.



## Chapter 12

### Trade and economic reforms in Africa<sup>1</sup>

#### 12.1 Introduction

One of the most contentious policy debates in Africa concerns how domestic, regional and international agricultural markets should be organized. Most African governments initiated programmes of agricultural market liberalization in the 1980s as part of economic structural adjustment programmes. Yet many remain unconvinced of the most fundamental elements of the process. Some governments openly contend that agricultural market liberalization has contributed to the crisis facing small farm households across the continent, that private sector response and international trade has been too slow and too weak to spur development, and that the state should get back into direct distribution of strategic inputs and/or commodities and restrict regional and international trade to achieve food security.

The academic literature on agricultural market reform in Africa also ranks among the most divided within the field of economic development. While some scholars find that market reform and trade liberalization has generally supported agricultural growth and food security, a growing literature has explained the poor record of reform in terms of inadequate attention to the institutional foundations of markets and poor infrastructure, all of which lead to impeding growth. This literature has reinforced the common lay perspective that policy reform and trade liberalization has been a false promise.

An alternative view examined in this chapter is that agricultural market and trade liberalization has not actually been implemented, and hence its effects cannot be measured. Although the UNCTAD 2002<sup>2</sup> report shows that LDCs are moving in

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<sup>1</sup> This chapter is based on a paper by J. Govereh and T. Jayne, *Trade and related economic reforms in African countries - what were the impacts of actual policy changes on agricultural development, trade and food security?* presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11–12 July 2002.

<sup>2</sup> UNCTAD. 2002. *The Least Developed Countries Report 2002: Escaping the Poverty Trap*, Geneva, UNCTAD.



this direction, implementation is rather selective and not complete. It is the countries in which liberalization has been most severely criticized, such as the former settler maize economies of eastern and southern Africa, where reform has been largely *de jure* rather than *de facto*. While it is difficult to control for all relevant factors, some evidence indicates that countries currently implementing agricultural market and trade reforms are performing no worse in developing their agriculture sector and improving food security, and in some cases clearly better than those implementing only *de jure* liberalization. Perceptions that African countries with increasing export orientation have had a stagnant per capita GDP and have not experienced a reduction in the incidence of poverty are based on a false premise and suffer severe measurement problems.

It is unlikely that market reforms will have the same impact in a country with open trade as in one where trade is still restricted. Trade liberalization is associated with faster economic growth when accompanied by comprehensive domestic macroeconomic reforms. There is a perception among some countries that regional trade liberalization policies have failed. There is no doubt opening up Africa to global trade integration will present domestic challenges in the form of fiscal pressures and short term adjustment costs<sup>3</sup>. Reversing these policies would be an act of bad faith and would take away the little confidence domestic and international private firms have in the policy environment. Instead, states need to continue with the process of regional economic liberalization to achieve the much needed economic integration of Africa. It is debatable whether African countries should continue with the process of multilateral economic liberalization in the face of continued agricultural support measures by OECD countries.

Trade liberalization in Africa has not been reciprocated in terms of better access to markets of African producers and manufacturers in industrial countries. Massive subsidies afforded to agricultural producers in some developed countries and other forms of protection have hindered Africa's efforts to upgrade capacities and alleviate poverty. Increasing agricultural exports in the context of oversupply and correlative lower prices in world markets is not rewarding for African countries. African countries have drawn insignificant benefits from their participation in the international trading system. Agricultural support measures employed by developed countries need to be reviewed and simultaneously, provisions for preferential and differential treatment should be extended to African exports. For example, if tariff escalation is dismantled, there will be no duty or quantitative restrictions for imports of raw tropical products. Mobilizing

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<sup>3</sup> International Monetary Fund. *World Economic Outlook Survey*, May 2001.

the political support for constructive market reform will require seriously confronting the incentive dilemmas not only within African governments, but also within those of developed countries.

The first part of this section will discuss the extent to which domestic, regional and international reforms have been implemented. The following part discusses the preliminary or potential impacts of these reforms in Africa, and the final part identifies some of the challenges of reforming markets at domestic, regional and international levels.

## **12.2 Agricultural trade and market reforms in Africa**

African countries are at different stages of reforming their domestic, intraregional and extra-regional agricultural markets. Governments have been successful at reforming less sensitive commodity markets but have been slow at reforming the more sensitive ones. Several regional Free Trade Areas (FTAs) have been established in Africa but extra-regional agricultural trade is still restricted. It is expected that building preferential conditions for expanded intraregional marketing will take place prior to the lowering of trade barriers between regional trade groups and with the rest of the world.

### ***Domestic market reforms***

In Africa, the conflicting goals of maintaining food prices that are profitable for producers but affordable to consumers have been pursued through controlled marketing systems. Subsidies have been used to raise prices artificially for producers and lower them for consumers. SSA farmers need to be helped to invest, especially when they are facing agricultural prices below their production costs, but agricultural subsidies became fiscally unsustainable and led to domestic cereal market reforms in several African countries in the 1980s and 1990s. Management of this fiscal problem is often construed as misplaced antagonism to agricultural subsidies in SSA, given their use at incommensurably higher levels in industrialized countries. Domestic reforms in SSA meant modifying state interventions and policies to reduce marketing costs and reduce government budget costs. The core policy changes that African countries have been implementing include:

- removal of barriers to private sector involvement (e.g. licensing; movement controls on inputs and outputs);

- deregulation of consumer and producer prices;
- elimination of taxes and subsidies (implicit and explicit);
- privatization of state marketing or processing enterprises;
- abolition of official monopolies (and agents of the state) and the opening of trade to competition.

A broad assessment of the agricultural reform in Africa shows three basic patterns.

- First, some governments have implemented a committed programme of market reform. Examples in eastern and southern Africa would arguably include maize and fertilizer marketing in Mozambique and Uganda. Mali and Ghana are two other countries commonly cited for their relatively steady adherence to cereal market reforms<sup>4</sup>. This category would also include countries where reforms may have been temporarily reversed but over time have moved to a fundamentally market-oriented system (e.g. the United Republic of Tanzania's food markets). It is important to note that these cases are neither success stories nor failures when measures such as growth in GDP per capita and incidence of poverty are employed. On the other hand, the adherence to market reforms, for example, in cereal markets, has improved household food security.
- A second path includes countries that have openly resisted reform or reimposed controls after some experimentation with reform. This category is characterized by transparent resistance to liberalization (e.g. maize in Zimbabwe after 1998).
- The third form involves *de jure* liberalization and *de facto* state control of marketing, where the state maintains control while ostensibly implementing liberalization. The fertilizer markets in Zambia and

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<sup>4</sup> World Bank. 1994. *Adjustment in Africa: Reforms, Results and the Road Ahead*. New York: Oxford University Press; World Bank. 2000. *Can Africa Claim the Twenty-First Century?* Washington, DC.: World Bank; Dembele, N. & Staatz, J. 1999. The Impact of Market Reform on Agricultural Transformation in Mali. *Paper presented at the Fourth Agricultural Transformation Workshop*, Tegemeo Institute/Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, June 27-30, 1999, Nairobi.

Ethiopia and coffee market in Malawi also exemplify this category<sup>5</sup>. It is difficult to argue that countries which have followed this path have succeeded or failed to reduce the incidence of poverty but it is clear that private sector-led agricultural development has been severely stifled.

A close examination of countries in southern Africa reveals that many of the most fundamental elements of the reform process either remain unimplemented or were reversed within several years.

### *Zimbabwe*

Price controls on maize meal were reimposed in 1998, five years after the Government eliminated them under a 1993 World Bank/IMF structural adjustment loan programme. The Grain Marketing Board (GMB) has remained the dominant buyer of grain throughout the reform process<sup>6</sup>. This Board has reverted back to a two-tiered maize pricing structure, selling maize at a lower price to large-scale milling firms than it does to other buyers. The GMB has also remained the sole legal exporter and importer of maize, and continues to offer pan-territorial and pan-seasonal maize prices as it did prior to the reform programme. While this policy environment has provided niches for new entry and investment at certain stages of the maize supply chain, notably in assembly, local milling and retailing, it continues to impede private investment at other key stages. It has been argued<sup>7</sup> that policies that favour communities in remote rural areas can be used as part of the poverty reduction strategy, but that these should not impede sustainable economic development of other regions. Poverty reduction policies that improve conditions for private sector investment in these regions will assist in extending the benefits of market reforms to outlying areas.

### *Zambia*

The former state maize marketing board, NAMBOARD, was abolished in 1989 but since 1992, the government has designated various parastatal or private companies to distribute fertilizer on its behalf. The Food Reserve Agency, formed

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<sup>5</sup> Buccola, S. and McCandlish, J. 1999. Rent Seeking and Rent Dissipation in State Enterprises. *Review of Agricultural Economics, Volume 21, Number 2, pp 358-373*; Stepanek, J. 2000. Restructuring Fertilizer Markets: Lessons from Ethiopia. *Ph.D dissertation*, East Lansing: Michigan State University.

<sup>6</sup> Durevall, D. & Mabugu, R. 2000. Maize Markets in Zimbabwe. *Country Economic Report 2000:10*, Stockholm, Swedish International Development Agency.

<sup>7</sup> UNDP. Local Governance for Poverty Reduction in Africa, Maputo, May 2002.

in 1995 and initially intended to play a limited role of holding maize buffer stocks, became the country's largest distributor of fertilizer in 1997 and 1998. In 1999 with donors increasingly calling for the government withdrawal from fertilizer distribution, the Government responded by contracting private companies as logistical agents to distribute fertilizer to recipients designated by the Ministry of Agriculture. The designated agents received a flat fee for every tonne distributed. When state enterprises work hand-in-glove with selected agents, commodity market liberalization is incomplete. These government fertilizer programmes have continued distribution at subsidized prices, with repayment rates generally under 40 percent, undercutting private firms' ability to distribute fertilizer at commercial prices<sup>8</sup>. After almost a decade of aid-conditionality agreements with the World Bank, new entry of commercial fertilizer firms has been limited due to the uncertainties associated with government distribution programmes.

### *Ethiopia*

As part of aid-conditionality agreements, the Ethiopian government has curtailed the operations of its official state marketing board. However, in 1995 it permitted the creation of regional holding companies which enjoy near-monopoly rights for the distribution of fertilizer in their respective regions. Two large private companies have been forced to reduce significantly their level of participation in the fertilizer market because regional governments have been actively promoting the holding companies while simultaneously raising barriers to private sector companies.

### *Kenya*

Aid-conditionality agreements pertaining to maize market reform commenced in the late 1980s with the Agricultural Sector Adjustment Operation of the World Bank and the Cereal Sector Reform Programme of the (EU). The reform process has been marked by increased political interference in the decisions of key cooperative and joint-venture marketing organizations<sup>9</sup>. Rent-seeking

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<sup>8</sup> Copestake, J. 1998. Agricultural credit management in Zambia: business development, social security, or Patronage? *Development Policy Review*, Vol. 16, pp. 5-28; Govereh, J., Jayne, T., Hantuba, H., Ngulube, E., Belemu, A., Shawa, J., Banda, A., Donovan, C., Zulu, B. & Nijhoff, J. 2002 Fertilizer Market Reform Strategies in Zambia. *Working Paper*. Lusaka: Zambia Food Security Research Project.

<sup>9</sup> Kanyinga, K. 1994. Ethnicity, Patronage and class in a local arena: high and low politics in Kiambu, 1982-92. In K. Kanyinga, A. Kiondo, P. Tidemand & P.

arrangements that created resistance to reform in the early stages of the process have been re-established within the evolving “market-oriented” institutions that have developed since liberalization, a phenomenon that has been observed more widely in other countries<sup>10</sup>. In the maize sector, the state-owned marketing board has continued to support maize prices in certain areas<sup>11</sup>. Maize import tariffs, marketing board price supports, and relatively high transport costs have combined to make maize prices in Kenya among the highest in the world, particularly among countries where maize is a staple crop<sup>12</sup>.

These examples show that many policy barriers continue to inhibit the development of competitive input and commodity markets. There may be legitimate objectives underlying the government actions creating these policy barriers, but it would be inappropriate to evaluate the effects of private sector response to liberalization in such environments. These cases illustrate how *de jure* market reform can be implemented in such a way as to maintain *de facto* control over the system. In such cases, the market reform process clearly proceeded in a manner that was unintended by its advocates. Even though farmers in SSA compose the majority of the population, evidence is presented later to show that a smaller portion of these farmers participate in the market as net sellers while the majority are net buyers of food from the market. In these circumstances, price supports to farmers will raise prices for staple food and could render net food buyers insecure.

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Gibbon, *The New Local Level Politics in East Africa*. Nordiska Afrikainstitutet, Research Report 95.

<sup>10</sup> Bates, R. & Krueger A. (eds), 1993. *Political and economic interactions in economic policy reform: evidence from eight countries*. Oxford, Basil Blackwell.

<sup>11</sup> Nyoro, J., Kiiru, M. & Jayne, T.S. 1999. Evolution of Kenya's maize marketing systems in the post-liberalization era. *Paper presented at the Fourth Agricultural Transformation Workshop*, Tegemeo Institute/Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, June 27-30, 1999, Nairobi

<sup>12</sup> Jayne, T.S., Mukumbu, M., Chisvo, M., Tschirley, D., Zulu, B., Weber, M., Johansson, R., Santos, P. & Soroko, D. 1999. Successes and challenges of food market reform: Experiences from Kenya, Mozambique, Zambia, and Zimbabwe. *International Development Working Paper 72*, East Lansing, Michigan State University, 1999.

### *Intraregional trade liberalization*

The liberalization of domestic markets in Africa is taking place at a time when there is increasing renewal or creation of a number of regional trade arrangements. Countries in SSA share common colonial histories and characteristics, especially administrative and legal institutions. An increasing number of countries are coming together to forge stronger trading links among themselves. These trading blocs tend to allow for free movement of factors of agricultural production, agricultural commodities and services. Intra-Africa trade could prove to be a key avenue for achieving sustainable development of economies and preparing for competition and globalization. Increased regional integration in trade and investment is expected to lead to an expansion in the agricultural sectors of exporting countries and an overall improvement in the region's competitiveness.

Under regional trade liberalization programmes, the core policy changes involve:

- eliminating procedural barriers to free trade e.g., import licences;
- eliminating tariff and non-tariff barriers for intra-region trade;
- avoiding recourse to import bans and export prohibitions;
- eliminating import levies and export tax;
- adhering to a common external tariff in accordance with regional and WTO obligations.

Not all countries are signatories to regional trade protocols and even after signing the protocols, trade tariffs still continue because the level of preparedness is low. Regional agreements that have been active in the 1990s include the West African Economic and Monetary Union (WAEMU), the Regional Integration Facilitation Forum (RIFF) formerly the Cross-Border initiative (CBI), the southern Africa Customs Union (SACU) and the Central Africa Economic and Monetary Community (CAEMC). Regional trade agreements have also been created under the Southern African Development Community (SAADC), the Common Market for eastern and southern Africa (COMESA), the Commission for East African Cooperation (EAC), the Indian Ocean Commission (IOC) and the Economic Community of West African States (ECOWAS) (see Table 12.1). With the

exception of WAEMU, members of the other regional bodies also belong to one or two other trading blocs<sup>13</sup>.

**Table 12.1 Membership in Regional Trade Agreements of selected African countries**

Country	Agreement						
	SADC	COMESA	SACU	RIFF	EAC	IOC	WAE
Angola	x	x					
Benin							x
Botswana	x		x				
Burkina Faso				x			x
Burundi		x		x			
Comoros		x				x	
Democratic Republic of the Congo	x	x					
Côte d'Ivoire							x
Djibouti		x					
Egypt		x					
Eritrea		x					
Ethiopia		x					
Guinea Bissau							x
Kenya		x		x	x		
Lesotho	x		x				
Madagascar		x		x		x	
Malawi	x	x		x			
Mali							x
Mauritius	x	x		x		x	
Mozambique	x						
Namibia	x	x	x	x			
Niger							x
Rwanda		x		x			
Senegal							x
Seychelles	x	x		x		x	
South Africa	x		x				
Sudan		x					
Swaziland	x	x	x	x			

<sup>13</sup> Subramanian, A. 2000. Trade and Trade Policy in Eastern and Southern Africa, *IMF Occasional Paper No. 196* International Monetary Fund, Washington.



Country	Agreement						
	SADC	COMESA	SACU	RIFF	EAC	IOC	WAE
Tanzania, United Togo	x	x		x	x		x
Uganda		x		x	x		
Zambia	x	x		x			
Zimbabwe	x	x		x			

### *Extra-regional trade reforms*

Regional trading blocs may include free trade areas (FTAs) but extra-regional tariffs remain restrictive. The restrictions on extra-regional trade have been lowered to a maximum of 20 percent in the case of West African countries, but in southern Africa, for example, national tariffs are as high as 35 percent. According to Subramanian et al., a number of countries in Africa made significant progress towards opening up their economies to international trade during the 1990s. The number of countries with open trade regimes has increased from 7 in the 1980s to 25 in the late 1990s<sup>14</sup>. Using the IMF's assessment of trade regimes, Table 12.2 demonstrates that Africa currently has the most restrictive tariff regimes. Africa also has the highest average level of tariffs and tariff revenue as a ratio to GDP. Countries in eastern and southern Africa are more highly protected than the remaining countries in Africa.

Despite these high tariffs, WTO agreements exempt Least Developed Countries from tariff reductions and allow lower commitments and longer implementation periods in developing countries compared to developed countries. The majority of African states face difficulties in balancing their budgets and cannot afford provision of support programmes and export subsidies to match developed countries.

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<sup>14</sup> IMF 2001 op cit.

**Table 12.2 IMF Trade Restrictiveness Index, Africa and other regions, 2000**

Region	Overall rating	NTB rating	Tariff rating	Average Tariff (%)
Sub-Saharan Africa	4.7	1.6	3.0	19.2
Eastern and southern Africa	5.6	1.8	3.5	20.3
Central and western Africa	4.3	1.4	3.0	18.9
Fast growing countries of Asia	3.4	1.7	1.3	7.2
Asia, excluding fast growing countries	5.0	1.9	2.4	13.8
Eastern Europe (early transition) & Baltic Countries	1.9	1.1	1.4	8.0
Eastern Europe (late transition)	2.9	1.4	1.8	11.5
Former USSR	4.2	1.8	1.8	10.2
Middle East and North Africa	5.6	2.0	3.0	18.1
Western Hemisphere	4.1	1.8	1.8	11.7
Industrial countries	3.9	2.0	1.0	5.4

Note: for definitions of the various regimes and groups, see IMF Occasional paper No. 196 Washington DC, Subramanian et al. 2000 *Trade and trade policy in Eastern and Southern Africa*.

### 12.3 The impact of market and trade liberalization

At the domestic level, market reforms have a potentially positive impact on consumers, millers, traders and producers in Africa. Domestic agricultural policy reforms can increase competition, reduce costs and risks to farmers, traders and consumers. Governments which opened up domestic markets earlier than the setting up of FTAs were likely to be in an advantageous position to capture the benefits of new regional trade opportunities. In addition, small farmers could move towards a more specialized commercial production system if risks in cereal markets could be reduced and overall marketing costs for inputs and outputs were reduced. Initial indications, however, show that the benefits of trade liberalization have been skewed in favour of consumers and against farmers.

#### *The impact of domestic market reforms on food security*

The part of the food marketing system that has been most affected by the reform process in each country has been at the stages of milling and consumption. For decades prior to the reforms, maize meal consumption in urban and grain-deficit

rural areas was predominantly in the form of a refined sifted meal processed by a few large-scale roller milling firms. These registered milling firms were integrated into the state's grain channel. Governments fixed milling and retail margins based on the milling cost structure. A second form of maize meal, wholemeal, was consumed in rural areas where grain supplies were available. Cross-country studies in eastern and southern Africa indicate that unit processing costs for hammer-milled maize meal are typically less than half those of the refined roller-milled meal, which is significant given that about 30-50 percent of the retail cost of maize meal during the period of state control of marketing operations was comprised of milling margins<sup>15</sup>.

The governments of Kenya, Zambia, and Zimbabwe in 1993, and of Mozambique in 1987, eliminated controls on private grain trading, deregulated maize meal prices, and eliminated subsidies on maize sold to registered millers. In each country, the large-scale millers swiftly lost a major part of their market to small hammer mills, whose numbers rapidly expanded in urban areas. Widely viewed during the period of state control of marketing operations as a product having negligible demand, whole maize meal by 1994 accounted for 40 percent-60 percent of total urban meal consumption in Zimbabwe, Kenya, and Zambia<sup>16</sup>. The increased availability of wholemeal at 60 percent to 75 percent the cost of roller meal had partially or fully offset the adverse effect of eliminating consumer subsidies on roller meal in these countries. Similar benefits have been achieved in rural grain-deficit areas that were formerly dependent on refined industrially produced meal prior to the reforms. Household surveys carried out in the 1993-1995 period indicated that low-income consumers in particular shifted quickly to hammer-milled meal

Long-term benefits of programmes to reform cereal markets were also expected both at trader and producer levels. The removal of official prices was associated with producer price increases, creating more incentives for farmers to intensify production through increased use of inputs. Between 1986 and 1992, marketing

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<sup>15</sup> Bagachwa, M. 1992. Choice of Technology in Small and Large Firms: Grain Milling in Tanzania. *World Development* 20.1 (January):97-107; Rubey, L. 1995. Maize Market Reform in Zimbabwe: Linkages between Consumer Preferences, Small Enterprise Development and Alternative Market Channels, *Ph.D. dissertation*. E. Lansing: Michigan State Univ.

<sup>16</sup> Jayne, T.S.; Hajek, M. & van Zyl, J. 1995. An analysis of Alternative Maize Marketing Policies in South Africa. *MSU International Development Working Paper No. 50*. East Lansing. MSU

margins for millet and sorghum fell by 20 percent. Since marketing costs account for 40-60 percent of the price consumers pay for staple cereal commodities in the countries reviewed, the reduction in marketing margins represents an opportunity where production incentives and household food security were improved<sup>17</sup>. The bulk of the evidence suggests that the savings in marketing costs are passed to producers in the form of higher prices. In Ethiopia, the benefits to surplus white teff and maize producers were evident in a producer price raise of 2 percent to 20 percent. More remunerative prices were expected to lead cereal producers to adopt more commercial and less subsistence production strategies<sup>18</sup>. The case of grain marketing reform in Ethiopia between 1990 and 1997 was associated with higher prices in major grain-producing areas and lower prices in major grain deficit areas. For traders, the benefits included an opportunity to specialize in trader operations including buying in surplus areas, storage, transportation and selling in deficit areas. The reduction in the risk of cereal trading and the elimination of restrictions on grain movement contributed to a stable market in a manner that reduced overall cereal marketing costs. In their review of export crop liberalization in Africa, Shepherd and Farolfi<sup>19</sup> found it premature to draw any definite conclusions but confirmed that producer returns have been higher and payments more prompt than under the former marketing arrangements. Financial and input market development remains a challenge as these markets are given a chance to develop for the first time.

For countries that have not reformed their commodity markets, reforms can reduce constraints that continue to inflate costs in the food system. Policy reforms are only part of the overall on-going programme of market development and they will not resolve all the problems of food security in Africa. Governments still have a vital role to play in developing key market institutions, infrastructure provision and in contract law and enforcement. While most reforms in Africa

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<sup>17</sup> Jayne, T.S., Rubey, L., Tschirley, D., Mukumbu, M., Chisvo, M., Santos, A.P., Weber, M.T. & Diskin, P. 1995. *Effects of Market Reform on Access to Food by Low-income Households: Evidence from Four Countries in Eastern and Southern Africa*. International Development Working Paper 55, East Lansing, Michigan State University, 1999.

<sup>18</sup> Dembele, N. & Staatz, J. 1999. The impact of market reform on agricultural transformation in Mali. Paper presented at the Fourth Agricultural Transformation Workshop, Tegemeo Institute/Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, June 27-30, 1999, Nairobi.

<sup>19</sup> Shepherd, A. & Farolfi, S. 1999. Export crop liberalization in Africa: A review. *FAO Agricultural Services Bulletin*. 135. Rome. Italy.

have improved output and input marketing, development of credit markets remains a problem.

### ***Impact of trade liberalization on agricultural productivity***

There is a strong correlation between export expansion and economic growth but the challenge is whether small farmers in Africa can participate effectively in international specialization<sup>20</sup>. Such participation is only possible if farmers' productivity can increase and the costs and risks of engaging in trade are reduced<sup>21</sup>. As producer prices rise and farm input costs are reduced, farmers are able to invest and commercialize their production activities, leading to structural transformation.

Although there is some evidence that output marketing reforms in Africa have been associated with increases in land and labour productivity at an aggregate level, much of the increase is due to shifts in crop mix and the geographical location of production rather than the intensification of existing farming systems<sup>22</sup>. There is even less evidence that food marketing reforms have promoted intensification of the key food crops. Crop mix shifts have often been towards crops whose output markets were not liberalized (e.g. cotton in Burkina Faso and Mali, groundnuts in Senegal and coffee in Rwanda). However, this does not imply that cash cropping incentives have not benefited from marketing policy reform in key subsistence crop sectors. It has been shown that the ability to

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<sup>20</sup> Yumkella, K., Roepstorff, T., Vinanchiarachi, J. & Hawkins, T. Global and Structural Transformation in Sub-Sahara Africa. Paper presented at the *Fourth Agricultural Transformation Workshop*, Tegemeo Institute/Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, June 27-30, 1999, Nairobi.

<sup>21</sup> Staatz, J. 1994. The Strategic Role of Food and Agricultural Systems in Fighting Hunger Through Fostering Sustainable Economic Growth. *MSU Department of Agricultural Economics Staff Paper No. 94 - 39*. East Lansing: MSU.

<sup>22</sup> Dione, J., Tefft, J., Yade, M., Kante, B. & Chohin, A. 1996. Ajustement structurel, politiques économiques et sécurité alimentaire du Sahel. *Paper Presented at the International Forum on the 20<sup>th</sup> Anniversary of the Institute du Sahel*, Bamako, M., Reardon, T., Kelly, V., Crawford, E., Jayne, T., Savadogo, K. & Clay, D. 1996. Determinants of Farm Productivity in Africa: A Synthesis of four Case Studies. *MSU International Development Paper No. 22*. East Lansing: MSU.

ensure reliable and low-cost food for rural households as purchasers of food is an important determinant of their ability to diversify into higher value non-food crops. Cash crop growers have benefited directly from pre-harvest support provided under commercial out-grower schemes. The development of credit markets to finance commercial cereal production remains a challenge<sup>23</sup>.

### ***Impact of reforms on agricultural trade***

Regional integration is occurring as evidenced by an increasing trend in trade volumes<sup>24</sup>. The countries that benefit most are those with the capacity to respond to the new opportunities conditioned by the domestic reforms carried out prior to regional free trade areas (FTAs). It is strongly suspected that the volume of trade among countries who are members of regional FTAs will increase significantly, but less sure that this trade expansion will be extended to the rest of the world. It is also a challenge for SSA to increase intra-FTA trade in the context of lower import protection on highly subsidized agricultural exports from industrialized countries. Cotton and tea exports from the region have been able to displace imports from Asia. This same impact has been observed in West Africa where Sahel livestock products are substituting for non-regional imports which are often heavily subsidized<sup>25</sup>. The current picture in COMESA shows more export concentration in regional trade than extra-COMESA trade. While the CFA franc had a remarkably long stability from 1947 to 1994, it hindered competitiveness of countries in the West African Monetary and Economic Union (UMEOA). The overvaluation of the CFA franc meant that EU agricultural imports into the region were cheap. With devaluation in 1994, the international competitiveness of countries in the CFA franc zone improved and opened up opportunities for intra

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<sup>23</sup> Jayne, T.S. Takavarasha T. & van Zyl, J. 1994. Interactions between food market reform and regional trade in Zimbabwe and South Africa: Implications for food security. *MSU International Development Working Paper No. 48*. East Lansing. MSU.; Goetz, S. 1993. Interlinked Markets and the Cash Crop-Food Crop Debate in Land-Abundant Tropical Agriculture. *Economic Development and Cultural Change* 41: 343 - 61.

<sup>24</sup> COMESA. 2001. Integrating trade and investment regionally. *Annual Report 2001*.

<sup>25</sup> Yade, M., Chohin-Kuper, A., Kelly, V., Staatz, J. & Tefft, J. 1999. The role of regional trade in agricultural transformation: the case of West Africa following the devaluation of the CFA Franc. Paper presented at the Fourth *Agricultural Transformation Workshop*, Tegemeo Institute/Egerton University and Eastern and Central Africa Policy for Agricultural Policy Analysis, June 27-30, 1999, Nairobi.

regional trade in meat, cereal and other products. However, increased regional trade has not prevented increases in food imports from third countries, namely wheat and poultry.

An alternative view is that trading blocs are not always good for international trading. Trading blocs create tariffs and barriers which inhibit free trade with third parties. The reverse argument is that international trade is not an end in itself when it links trading partners with highly differentiated levels of productivity and competitiveness. Trade analysts have shown that increased intra-African trade occurs at the cost of reducing trade with the rest of the world, helping to explain the continued under-trading of Africa on the global market. Intra-region trade is diverting trade from outside the trading blocs but no evidence suggests there has been trade creation. If partner-country production displaces production from more efficient non-members, this reduces welfare but when partner country production displaces higher cost domestic production, there is trade creation which enhances welfare. According to the IMF 2001 Economic Outlook<sup>26</sup>, it is more likely that trade diversion is taking place in Africa because of the higher trade barriers and relatively low levels of efficiency. The RIFF trading bloc may have reduced trade with the rest of the world while creating a relatively small expansion of intra-bloc trade. By contrast, the CAEMC and WAEMU show no contraction in extra-regional trade. While these results are preliminary, the overall implication is that regional trade integration has not as yet been a vehicle for substantial extra-African trade creation, even though extra-regional trade is not an end in itself.

A study by Mengistae et al<sup>27</sup> in a few selected African countries showed that exporting activities contributed a premium of 11 to 28 percent to productivity growth. One source of this gain is due to economies of scale possible only by a production scale larger than for the small domestic market. They also found that direct exporters were four times more productive than indirect exporters. Those exporting to destinations outside Africa were significantly more productive than those exporting within the region. This productivity growth is interpreted as evidence of “learning-by-exporting”, a process of inexpensive flow of technical information to exporters from their clients that lower unit costs or improve product quality. Other evidence of the benefits of openness suggests that greater

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<sup>26</sup> International Monetary Fund. World Economic Outlook Survey, May 2001.

<sup>27</sup> Mengistae, T. & Pattillo, C. 2002. Export orientation and productivity in Sub-Saharan Africa. *International Monetary Fund Working Paper 02/89* Washington DC.

openness to trade can boost long-term growth, largely through the impact on domestic competition and investment.

### ***Impact of trade liberalization on extra-regional agricultural trade***

Although the volume of exports from SSA shows an increasing trend, earnings do not show a similar picture. Trends in the world prices of commodities of importance to the region are an important factor in this weak performance. Between 1997 and 2001, cotton prices fell by 39 percent, coffee prices by 66 percent, food price declined 31 percent and agricultural raw material price by 20 percent, Table 12.3. The decline in the terms of trade is the major reason for the marginalization of the region. Despite the growth in exports from SSA, the share of SSA in world exports and imports has declined, because SSA exports/imports are growing less quickly than world exports and imports. The expansion of exports without any world wide efforts to stop the current slump in prices will not produce the expected impacts at the local level.

Domestic support programmes in some developed countries lead to cheaper imports into Africa, which weakens her capacity to supply these products regionally. This can be illustrated by the case of EU beef export subsidies. Imports into West Africa displaced Sahel meat exports to these countries<sup>28</sup>. Such programmes in a number of OECD countries, have hurt millions of Africans who depend on earnings from sugar, cotton, meat, groundnuts, fruits and vegetables exports for their livelihood. Some high post-UR tariffs are for tobacco in the United States at 350 percent; for groundnuts and coffee in Japan at 555 percent and 30 percent respectively and for maize to the EU at 84 percent.<sup>29</sup>. Nevertheless, many others have benefited from preferential access above world prices. On the other hand, a reduction of these domestic support programmes is also viewed as a threat to food security among net food importers in Africa as there appears to be little room for manoeuvre in ensuring food security through a growth in agricultural productivity and more effective market coordination. The impact of eliminating export subsidies on world prices and food security is not well researched.

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<sup>28</sup> Yade et al. 1999. op cit.

<sup>29</sup> Ingco, M, T Kandiero, T. & Nash, J. 2002. Liberalizing agricultural trade: issues and options for Sub-Saharan Africa in the Doha Development Round. Washington DC: World Bank.



**Table 12.3**      **Change in price indices of selected primary commodities of importance to SSA, 1997-2001 (1997 = 100)**

	1997	1998	1999	2000	2001
<b>All foods</b>	<b>100</b>	<b>87</b>	<b>71</b>	<b>69</b>	<b>69</b>
Cocoa	100	104	71	56	70
Coffee	100	82	64	48	34
Fish meal	100	109	65	68	80
Rice	100	101	82	67	57
Sugar	100	79	55	72	76
Tea	100	104	97	104	83
Wheat	100	79	74	76	80
<b>All agricultural raw materials</b>	<b>100</b>	<b>89</b>	<b>80</b>	<b>82</b>	<b>80</b>
Cotton	100	82	66	74	61
Tobacco	100	94	88	85	85

Source: UNCTAD, 2001. *Economic Development in Africa: Performance, Prospects and Policy Issues*. New York.

## 12.4 Conclusion

Substantial controversy remains over the effects of agricultural market reform in Africa. It has been argued that a primary cause of this confusion stems from differing perceptions as to whether the reforms were actually implemented. This review of food and input market liberalization in eastern and southern Africa shows great variation in implementation. Kherallah et al. show that reforms were not fully implemented in most countries and that policy reversal was observed in a number of cases. Reforms went further in markets related to food crops than in export crop or input markets, because government revenue derived from marketing boards involved in the export crop sector were generally positive, but were negative in food crop marketing where pressures to maintain low consumer food prices prevailed. In analysing the extent of liberalization across a range of 13 African countries, Coulter and Poulton 2001 suggest that in only three (Mali, Senegal and South Africa) have reforms been “unambiguously proliberalization”. In the remaining countries there has been a tendency to implement “second generation” controls which can undermine incentives for private sector involvement in marketing activities. Uncertainty over the sustainability of policy reform appears to be a main factor in the private sector’s perceptions regarding

the investment climate<sup>30</sup>. Reform implementation appears to have occurred most comprehensively for commodities that were not the most strategically important and in countries facing fiscal crises. In other countries, particularly the former settler economies where white maize remains the primary staple food, fundamental aspects of market liberalization remain unimplemented; others were reversed after a short period. Perhaps the most common path of reform implementation has been the adoption of some key reforms that legalize private trade, mixed with continued or new government activities that erode its profitability. Governments have typically defended this approach by arguing that markets are unable to perform certain social functions, and that direct government programmes are still necessary. In practice, this has left the door open for large-scale state programmes channelling key resources to selected beneficiaries -- generally not the poor<sup>31</sup>. This approach has often prevailed over strategies based on public investments to overcome market failure problems but which do not enable public officials to choose directly how commodities are distributed.

In this context, reform programmes have been implemented in such a way as to preserve patronage linkages not unlike those that existed before the reforms were implemented. These activities have clearly affected the risks and incentives for private sector investment in agricultural markets. Cases such as these, where some aspects of liberalization have been implemented, but where key features of state allocation of resources remain intact, contribute to the analytical problems of assessing the effects of the reforms or even reaching consensus on whether they have occurred. The weight of the empirical evidence indicates that in the minority of African countries in which agricultural policy reform has largely been implemented and sustained, the growth response has been relatively encouraging. There are market failure problems, but explanations for such problems have emphasized under-investments in complementary public goods and market institutions and have tended to neglect the importance of unresolved policy barriers. In such cases, therefore, frequently-heard conclusions that liberalization has failed to produce its intended effects may be inappropriate.

The co-existence of relatively low levels of productivity in Africa and the availability and widespread use of technical knowledge and productivity-enhancing inputs in many other parts of the world indicates the need for attention

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<sup>30</sup> Kherallah et al. 2000.

<sup>31</sup> Sahn, D.E. 1996. *Economic Reform and the Poor in Africa*. Oxford, Clarendon Press; Jayne, T.S. & Jones, S. 1997. Food Marketing and Pricing Policy in Eastern and southern Africa: A Survey. *World Development* 25.9: 1505-1527.

to the barriers to the adoption of productivity-enhancing inputs in African food and agricultural systems. So far, agricultural marketing reforms have replaced often unreliable, high-cost, and centralized forms of state marketing with more open markets that may be competitive but often lack information and infrastructure, and are poorly integrated with other key activities. On the input side, financial market failures restrict farmers' access to credit and thus constrain the demand for productivity-enhancing inputs, which in turn limits private sector investment in input production and delivery systems.

At the international level, the tariffs imposed by African countries across trading blocs are among the highest in the world. Given the limited reforms that have been implemented and the history of trade policy reversal in Africa, the credibility of an open African trading policy remains low. Few African countries have taken advantage of WTO agreements to lock-in their commitments to open trade particularly with trading partners from industrial countries. Like South Africa, other African countries could seek reciprocal free trade agreements with advanced industrial country partners in order to secure market access for their exports, which is currently conditional, partial and unilateral<sup>32</sup>. Reciprocal free trade agreements may have the additional benefit of eliciting higher levels of FDI and technology flows.

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<sup>32</sup>The EU Everything but Arms initiative and the US AGOA being examples of recent initiatives.

## Chapter 13

### Agricultural reform in Asia<sup>1</sup>

#### 13.1 Introduction

During the past two decades, Asia has enjoyed substantial gains in food production and real incomes. Growth in food production outpaced the 43.1 percent increase in population from 1979 to 1999, permitting absolute per capita gains in cereal production and calorie consumption. Several factors account for this growth, including long-term investments in infrastructure, education and agricultural research. In China, India and other large Asian countries, the evidence suggests that trade and related economic reforms also played an important role in these positive developments.

Yet, in spite of the progress achieved, 26 percent of Asia's population lives on less than one dollar per day. Forty-four percent of the world's poor live in South Asia alone. In this situation, the impact of economic policies on food security at the household level is an especially important issue.

The majority of Asian governments have intervened in markets to stabilize food prices or operate public food distribution programmes to address the perceived social and political risks of food shortages, particularly in major urban centres<sup>2</sup>. Economic reforms in the past two decades have reduced the scope of these interventions in many countries, however. This section highlights the experiences of several countries that conducted major reforms, including Bangladesh, India, Indonesia, Sri Lanka and Viet Nam. The discussion focuses on specific agricultural trade and pricing policies, rather than on the impact of broad trade and macroeconomic reforms.

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<sup>1</sup> This chapter is based on a paper by Paul Dorosh, *Trade and related economic reforms in Asian countries - what were the impacts of actual policy changes on agricultural development, trade and food security?* presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11–12 July 2002.

<sup>2</sup> Islam, N. & Thomas, S. 1996. Foodgrain Price Stabilization in developing Countries: issues and Experiences in Asia. *Food Policy Review* 3. Washington DC: International Food Policy Research Institute.

Disentangling the impacts of policy reforms is complex. Announced policy reforms are not always fully implemented. Moreover, other factors, including positive or negative shocks (e.g. terms of trade, weather) and medium-term effects of past policies, can confound the analysis, making simple before and after comparisons potentially misleading. Simulation models or cross-country statistical analysis can more fully address the counterfactual question of what would have occurred in the absence of reforms, but require substantial data and ultimately depend on how well actual economic behaviour is captured by model equations<sup>3</sup>.

### 13.2 Food production, availability and poverty in Asia

Table 13.1 presents data on food production and availability for selected countries in Asia. Overall, average annual growth in rice production, the major food staple in much of Asia, substantially exceeded population growth in the 1980s, but was less than population growth in the 1990s. Growth in total cereal production exceeded population growth in both decades. This growth in cereal production also outpaced total cereal demand, so that net imports as a share of production fell from a 10.9 percent average between 1988 and 1990 to only 8.9 percent between 1998 and 2000. Moreover, Asia's rice exports more than doubled from 8.7 million tonnes in 1988-90 to 19.0 million tonnes in 1998-2000. Overall, across Asia, per capita calorie consumption increased dramatically, from an average of 2 269 calories per person per day in 1978-80 to 2 710 in 1998-2000.

**Table 13.1** Calorie consumption, production and population growth rates, selected Asian Countries, 1978-2000

	Calories per capita per day	Growth Rates			
		Calorie Intake	Population	Cereal production	Rice production
	1978-80	1 986	-	-	-
<b>Bangladesh</b>	1988-90	2 060	2.75	2.56	2.75
	1998-2000	2 101	3.09	2.29	3.09
	1978-80	2 291	-	-	-

<sup>3</sup> Sahn, Dorosh & Younger, 1997 op cit.

		Calories per capita per day	Growth Rates			
			Calorie Intake	Population	Cereal production	Rice production
<b>China</b>	1988-90	2 661	2.97	1.46	2.97	-0.43
	1998-2000	3 030	1.78	1.06	1.78	3.68
<b>India</b>	1978-80	2 086	-	-	-	-
	1988-90	2 317	3.39	2.07	3.39	3.88
	1998-2000	2 426	1.97	1.82	1.97	1.81
<b>Indonesia</b>	1978-80	2 153	-	-	-	-
	1988-90	2 607	4.96	2.00	4.96	4.88
	1998-2000	2 904	1.97	1.56	1.97	1.45
<b>Sri Lanka</b>	1978-80	2 350	-	-	-	-
	1988-90	2 246	1.74	1.55	1.74	1.77
	1998-2000	2 360	1.64	1.12	1.64	1.75
<b>Viet Nam</b>	1978-80	2 059	-	-	-	-
	1988-90	2 207	5.41	2.21	5.41	5.35
	1998-2000	2 537	5.59	1.78	5.59	5.36
<b>All Asia</b>	1978-80	2 269	-	-	-	-
	1988-90	2 532	2.99	1.86	2.99	2.81
	1998-2000	2 710	2.07	1.76	2.07	1.62

Source: FAO, 2002.

There was substantial variation in the 1990s in growth rates across countries, however. Growth in per capita cereal production in the 1990s varied from only 1.06 percent per year in China to 2.29 percent per year in Bangladesh, while growth in calorie consumption per capita ranged from 1.64 percent per year in Sri Lanka to 5.59 percent per year in Viet Nam.

### 13.3 Trade and related reforms in selected Asian countries

The major factors behind these trends in food production are well-known: long-term investments in infrastructure, education and agricultural research, coupled

with rapid labour-intensive growth and productivity increases in non-agricultural sectors often associated with outward-oriented development strategies. The specific role that trade and related economic reforms played is far less well understood. The experiences of several countries suggest, however, that specific agricultural trade reforms have often led to increased real incomes and improvements in food security.

### **India**

In India, agricultural production, especially rice and wheat production, have increased dramatically since the Green Revolution, which involved improved seeds, fertilizer use and irrigation, began in the 1960s. Market reforms did not begin, however, until the late 1980s, when broad trade liberalization and exchange rate depreciation initiated a period of reforms<sup>4</sup>.

Reforms in rice and wheat have focused mainly on liberalization of the export trade as surpluses have emerged. India's Public Food Distribution System (PFDS) is oriented toward quantities distributed, though the influence of the Food Corporation of India (FCI) on domestic markets is larger than the PFDS's influence in Bangladesh<sup>5</sup>. Good weather and high procurement prices in the second half of the 1990s led to a sharp increase in government procurement, from an average of 17.2 million tonnes per year from 1980 to 1992 to an average of 26.6 million from 1993 to 2000. However, domestic distribution remained at approximately the same levels, so that average net procurement rose from 0.7 million tonnes per year to 10.4 million tonnes per year. As a result, public food grain stocks grew rapidly, from 11.8 million tonnes at the start of 1993 to 45.7 million tonnes at the start of 2001, and to 54.4 million tonnes by the end of February 2002. As stocks increased, the Government of India took increasingly active measures to promote exports. For example, in 2000/01, state trading

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<sup>4</sup> Panagariya, A. 1999. Trade policy in South Asia: Recent liberalization and future agenda. *World Economy*. 22(3): 353-78.; Srinivasan T. N. 2001. India's Reform of External Sector Policies and Future Multilateral Trade Negotiations. *Yale Economic Growth Center Discussion Paper*: 830.

<sup>5</sup> Tyagi, D.S. 1990. *Managing India's food economy: problems and alternatives*. New Delhi: Sage; Pal, S., Bahl, D. K. & Mruthyunjaya. 1993. Government interventions in food grain markets. *Food Policy*. 18 (5). Radhakrishna, R. & Subbarao, K. 1997. India's public distribution system. A national and international perspective. *World Bank Discussion Paper No. 380*. Washington, DC.: World Bank.

parastatals were permitted to buy wheat at the below-poverty-line (BPL) price for export.

High duties on imported edible oils have encouraged a “yellow revolution” of increased oilseed production. From 1980 to 1994, domestic costs of producing oilseeds (rapeseed, mustard seed, groundnuts, sunflower, but not soybeans) were on average greater than the cost of imports. The duty on edible oil imports was lowered from 65 percent in 1994 to 20 percent by 1996. Edible oil farmers are likely to lose from such a policy unless processing and marketing margins for edible oil processors (inflated far above margins in other countries by restrictions on stocking limits, imports of seeds, bans on forward trading, etc.) are reduced.

Nonetheless, using a multi-market model of Indian agriculture, Gulati and Kelley<sup>6</sup> estimate that if India completely liberalized trade in agriculture, both agricultural imports and exports would increase relative to their base 1991-94 levels; the value of agricultural production would increase by 13 percent; and rural incomes would increase by about 3 percent. Surprisingly, the overall cost of living does not rise in the simulation because the policy scenario includes a hypothetical optimal rice export tax that keeps domestic rice prices from rising, and because import liberalization of edible oils and pulses actually lowers domestic prices.

### ***Bangladesh***

Liberalization of agricultural input markets and trade liberalization in rice helped Bangladesh increase domestic cereal production and reduce variability of supply. A gradual liberalization of markets for modern inputs in agriculture was carried out between 1978 and 1990 under pressure from foreign donors and with the realization that various direct interventions were fiscally unsustainable and unproductive in the long run. These reforms greatly reduced the role of the Bangladesh Agricultural Development Corporation in marketing and distribution of fertilizer, irrigation equipment, power tillers, pesticides and seeds. Liberalization and privatization of input markets coincided with a large expansion in tube well irrigation and winter (boro) season rice cultivation in the late 1990s<sup>7</sup>.

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<sup>6</sup> Gulati, A. & Kelley, T. 1999. *Trade Liberalization and Indian Agriculture: Cropping Pattern Changes and Efficiency Gains in Semi-Arid Tropics*. Delhi: Oxford University Press.

<sup>7</sup> Ahmed, R., Haggblade, S. & Chowdhury, T.E. (eds) 2000. *Out of the Shadow of Famine: Evolving Food Markets and Food Policy in Bangladesh*. Johns Hopkins University Press.



Following broad trade liberalization in the 1990s, Bangladesh has successfully used private sector trade to help stabilize rice and wheat prices following major production shortfalls, reducing need for large government stocks<sup>8</sup>. Food grain (rice and wheat) is typically procured at fixed prices through direct purchases of grain from farmers or traders. Until the early 1990s, subsidized sales of grain through ration programmes were the major distribution channels. As part of reforms undertaken in the early 1990s, however, major ration channels were shut down and by the end of the decade approximately 85 percent of public sector distribution was targeted to poor households through direct distribution channels such as Food for Work and Food for Education.

No attempt is made to support a floor price or defend a ceiling price through unlimited purchases or sales. The Government's impact on market prices has greatly diminished, however, as the size of the PFDS has fallen while the amount of rice in private markets has sharply increased<sup>9</sup>

Private imports of wheat and rice were liberalized in the early 1990s. Then, in 1994, private food grain exports were liberalized in India as part of an ongoing broader macroeconomic reform including exchange rate depreciation. As a result of the liberalization of the Bangladesh import trade and India's export trade, India replaced Thailand as the main source of Bangladesh rice imports due to lower transport costs and quicker delivery to Bangladesh. Following several large domestic shortfalls of rice, domestic rice prices in Bangladesh rose to import parity levels, providing incentives for private sector imports. Thus, private imports surged in years of large domestic shortfalls and fell to zero in normal production years when domestic prices fell below import parity.

Private sector imports were especially important for national food security following the floods of 1998, which destroyed more than 20 percent of the monsoon season rice crop (about 10 percent of the annual production). Following the flood, the Government of Bangladesh adopted the cautious strategy of moderate government imports to supply government distribution channels while actively encouraging private sector imports through a policy of zero tariffs and

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<sup>8</sup> Dorosh, P. 2001. 'Trade Liberalization and National Food Security: Rice Trade between Bangladesh and India'. *World Development*. Vol. 29, No. 4; Goletti, F. 1994. The changing public role in a rice economy moving toward self-sufficiency: The case of Bangladesh. *Research Report No. 98*. Washington, DC.: International Food Policy Research Institute.

<sup>9</sup> Ahmed, Chowdhury & Haggblade, 2000. op cit

other measures. By following this trade-oriented stabilization strategy, Bangladesh was able to increase domestic supplies quickly and successfully stabilize prices.

Several conditions led to the success of this strategy. First, India had sufficiently good harvests at a low cost and the policy climate that encouraged private exports. Second, private sector trade in Bangladesh was competitive, involving hundreds of small traders importing small quantities of rice. Third, the Government had clear political will to encourage private import trade through removing tariffs and surcharge and pushing customs officials to expedite imports of rice. Fourth, Bangladesh had sufficiently large foreign exchange reserves to pay for rice imports<sup>10</sup>.

### ***Sri Lanka***

Sri Lanka historically relied on imports to supplement domestic production of several major and basic food commodities such as rice, milk and fish. From Independence in 1948, Sri Lanka's food security strategy was based on three major policies: achieving self-sufficiency in basic food items; public distribution system for procurement and marketing of paddy and other commodities; and welfare programmes involving a food subsidy, food stamps or income transfers<sup>11</sup>.

Major economic reforms in Sri Lanka began in 1977 with broad trade liberalization, exchange rate devaluation, and a new foreign investment regime. The country continued its policy emphasis on food self-sufficiency, however, with major investments in irrigation in drier parts of the country, fertilizer subsidies and allocation of most agricultural research resources on non-plantation crops to rice. Self-sufficiency in rice was nearly achieved in 1985 with only 3 percent of consumption deriving from imports that year.

The Paddy Marketing Board (PMB), which operated a Guaranteed Price Scheme of procurement and sales to support producer prices and provide milled rice at

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<sup>10</sup> See del Ninno, C., Dorosh, P.A., Smith, L.C. & Roy, D.K. 2001. Bangladesh. *Research Report No. 122*. Washington, DC.: International Food Policy Research Institute.

<sup>11</sup> Kelegama, S. 2000. Food security issues in Sri Lanka. In S.G. Samarasinghe, (ed.), *Hector Kobbekaduwa Felicitation Volume*. Colombo, Sri Lanka: Hector Kobbekaduwa Trust.

“fair prices” for consumers, was gradually phased out. Though it procured as much as 10 percent of total paddy production in 1995, purchases were only about two percent of production in the early 1990s, and the PMB ceased to function in 1997<sup>12</sup>. A universal food subsidy on essential consumer goods, in place since Independence, was abolished in 1977 and replaced by a food stamp scheme in 1979, targeted to about 10 percent of households. Other reforms consisted of adding welfare measures such as school mid-day meals and uniforms in 1989, and scaling up the programme to a national level in 1995.

Tariffs on agricultural imports were gradually reduced through 1993, and under the Uruguay Round Agreement on Agriculture, Sri Lanka bound all tariffs on agricultural goods at a uniform rate of 50 percent as of 1 January 1995 and subsequently removed quantitative restrictions on all agricultural products except wheat and wheat flour. Until 1990, a government parastatal held a monopoly on rice imports. Thereafter private traders were allowed to import rice with the Government varying the import duty between 12 and 20 percent to keep the price of imported rice slightly above the price of rice milled from paddy at the purchase price of the PMB<sup>13</sup>. In recent years, Sri Lanka has raised the import tariff on rice to keep low cost exports from India from depressing rice prices for its producers.

### ***Indonesia***

In Indonesia, macro-instability led to a temporary reversal of long-standing policies promoting private food trade, ultimately leading to liberalization of private imports and the creation of a nation-wide targeted food subsidy. Over a span of nearly three decades, from the late 1960s up until 1997, Indonesia made significant progress in increasing domestic food production, stabilizing food prices, reducing poverty and increasing food security. Through the National Logistics Agency BULOG (Badan Urusan Logistik), the Indonesian Government stabilized rice prices through the purchase of grain at harvest and open market sales in urban areas during lean periods, with a relatively small role for direct distribution of rice to “budget groups”, (civil servants and the military). BULOG maintained availability of rice through its monopoly on commercial imports and, when rice surpluses emerged in the mid-1980s, BULOG exported domestically procured rice to reduce domestic supplies and maintain adequate producer price

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<sup>12</sup> Kelegama, 2000. op cit. p. 217.

<sup>13</sup> Athukorala, Prema-Chandra & Kelegama, S. 1998. The political economy of agricultural trade policy: Sri Lanka in the Uruguay Round. *Contemporary South Asia*. 7 (1): 7-26.

incentives<sup>14</sup>. Equally important, substantial investments in irrigation and extension services enabled rapid increases in agricultural productivity and rural incomes. Poverty rates in rural areas fell from 59 percent in 1970 to 12 percent in 1996; urban poverty rates fell from 51 percent to 9 percent over the same period<sup>15</sup>.

The Asian financial crisis of 1997 and 1998 abruptly ended this long period of progress. Domestic rice harvests in these years were reduced following the El Niño weather system that delayed or reduced monsoon rains, making it necessary to import rice to stabilize domestic rice prices. However, capital flight led to a shortage of foreign exchange and the depreciation of the rupiah, greatly increasing the fiscal costs of imports. The Government responded by imposing sweeping controls on food trade and marketing (reversing its decades-old policy of promoting private trade), and trying to stabilize prices through sales of its food stocks. From mid-1997 to mid-1998, the Government kept domestic food prices at 50 to 60 percent of import parity levels through these trade and price controls, but the difference between domestic and international prices led to large-scale smuggling of rice and other food goods out of the country<sup>16</sup>. The Government was unable to supply enough imported rice to domestic markets, and in mid-1998, domestic rice prices rose sharply. Short-run food security in Indonesia and the Philippines was greatly affected by the interaction between foreign currency supplies, food import prices, and domestic food production.<sup>17</sup>

By August 1998 the Government abandoned its general food price subsidy policy, replacing it with a targeted rice subsidy programme (Operasi Pasar Khusus – OPK). Shortly thereafter, in September 1998, the Government announced that

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<sup>14</sup> Ellis, F. 1993. Private trade and public role in staple food marketing: the case of rice in Indonesia. *Food Policy*. Vol 18. No. 5.; Timmer, C. P. 1997. Building efficiency in agricultural marketing: The long-run role of BULOG in the Indonesian Food Economy. *Journal of International Development*. 9 (1).

<sup>15</sup> Irawan, P.B. & Sutanto, A. 1999. Impacts of the economic crisis on the number of poor people. *Paper prepared for the CASER Seminar on Agricultural Sector during the Turbulence of Economic Crisis: Lessons and Future Directions*. Bogor, Indonesia.

<sup>16</sup> Tabor, S.R. & Sawit, M.S. 2001. Social protection via rice: The OPK rice subsidy program in Indonesia. *The Developing Economies*. 39(3): 267-94.

<sup>17</sup> Gingrich, C.D., Horst, C.D. & Umidha, C.O.. 2001. Foreign exchange, food security, and financial crises in Indonesia and the Philippines. *ASEAN Economic Bulletin* 18(3): 305-319.

BULOG would no longer procure food commodities other than rice in domestic markets and that trade in foodstuffs would be liberalized, ending BULOG's monopoly on rice imports. By January 2000, rice imports were fully deregulated (though with a 30 percent import tariff) and the OPK became the Government's single most important instrument for food security, reaching more than 10 million households with 20 kilograms of subsidized rice per household in 1999.

### *Viet Nam*

Liberalization of Vietnamese agriculture took place over two decades, beginning with the introduction of the contract system in 1981, by which cooperatives contracted farm households to produce a specified amount of crops on the household's own plots, but any surplus could be sold on the open market. In 1988, as part of the *doi moi* (renovation) policy first announced in 1986, farm households were recognized as the basic unit of agricultural production, and farmers were allowed to buy, own and sell agricultural inputs, and allowed to sell 40 percent of production produced under contracts on cooperative-owned land. A year later, the Government ended compulsory purchase of farm products, and private traders were allowed to purchase directly from farmers<sup>18</sup>.

Rice production grew 57 percent during 1985-95, (4.6 percent per year), and per capita food production increased from by 21 percent over the same period<sup>19</sup>. Rice surpluses emerged and in 1989 Viet Nam began exporting rice, made profitable by a substantial depreciation of the currency, in 1989. By 1997, Viet Nam had become the world's second largest rice exporter after Thailand. Rice exports remained largely under the control of the Government, however, with the volume of allowable rice exports fixed by an export quota. Prior to 1997, rights to export rice under the national quota were allocated only to regional and provincial state-owned trading enterprises, and in 1999 private firms still accounted for only 4 percent of total rice exports. The rice export quota (and a fertilizer import quota)

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<sup>18</sup> Pingali, P. & Xuan, V. 1992. Vietnam: Decollectivization and rice productivity growth. *Economic Development and Cultural Change* 40(4): 697-718.

<sup>19</sup> Minot, N. & Goletti, F. 2000. Rice Market Liberalization and Poverty in Vietnam. *Research Report 114*. Washington, DC.: International Food Policy Research Institute.

was removed in May 2001, but the Government is still involved in nominating state owned food companies to trade in Thailand's major export markets<sup>20</sup>.

Multi-market model simulations by Minot and Goletti showed that eliminating the rice export quota would raise domestic rice prices by 14 to 22 percent (depending on whether internal marketing restrictions were also removed) and have a negative effect on urban households, non-farm rural households and households in the central highlands of Viet Nam. Net gains to farmers and consumers, however, would be US\$200 million; three-quarters of this net gain would represent a transfer from the state-owned enterprises that received the implicit export quota rents (estimated to be the equivalent of a 22 percent export tax). The overall net effect on poverty of export liberalization was found to be negligible or slightly positive.

Several lessons can be drawn from the Viet Nam experience. First, a relatively equal distribution of land assets is a key ingredient for reform to reduce poverty. The landless population is only 2 percent compared with rates of about 20 percent in many other Asian countries. Second, in order for market reform to lead to a major increase in production, other conditions (such as the good irrigation and extension systems in Viet Nam, and the well-educated labour force) should be in place. Third, an export-oriented development strategy can be consistent with food security and with smallholder production. The impacts of such a policy will likely vary substantially across regions and have important distributional consequences.

### 13.4 Conclusion

Long-term investments in agricultural research and rural infrastructure (roads and irrigation), coupled with price policies providing adequate incentives for domestic production have led to substantial gains in food production and real incomes in many Asian countries. Nonetheless, there are marked differences in policy regimes across countries. For example, Indonesia combined Green Revolution rice technology and rural investments with policies favouring private market development (up until the late 1990s). India also invested heavily in irrigation and extension to spur adoption of rice and wheat varieties, but the Government intervened heavily in grain markets and placed restrictions on private trade. In general, the five case studies suggest that trade liberalization (or more broadly, a

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<sup>20</sup> Nielson, C. P. 2002. Vietnam in the international rice market: a review and evaluation of domestic and foreign rice policies. *Report 132*. Kobenhavn, Denmark.; Oryza 2001. *Country Market Report* (available at <http://oryza.com/>).

liberalized domestic and international trade regime) may enhance food security (e.g. through stabilization of markets in Bangladesh, or increasing real incomes of farmers in Viet Nam), though substantial increases in food production were achieved by India before trade liberalization began in the late 1980s.

Whether liberalized trade regimes played a major role or not, increases in domestic food production have increased availability of food at the national level across many countries in Asia. Deeper world markets for rice and other grains, availability of foreign exchange from increased export earnings, and trade liberalization have also helped to stabilize availability of food through more reliable opportunities for imports in years of domestic production shortfalls. As a result, availability of food at a national level is no longer a binding constraint for food security in most countries in most years.

Yet, in spite of rapid overall economic growth, access to food is a major problem for hundreds of millions of poor people in Asia. External and domestic market reforms appear to have contributed to both overall economic growth, as well as agricultural growth, in Bangladesh, China, India, Viet Nam and elsewhere. Policy reforms in the 1990s also made possible the rapid response of private sector rice imports to serious production shortfalls in Bangladesh in 1997 and 1998 that, by limiting rice price increases, made a substantial contribution to access to food by the poor and calorie consumption. Reliance on international markets still entails risks, however. Macroeconomic instability and rapid exchange rate depreciation made large scale rice imports too fiscally costly for Indonesia in the late 1990s. Neither China nor India can purchase substantial amounts of their food grain needs on world markets without driving up world prices significantly.

Thus, there remains a perceived need for public interventions by many governments to address the risk of variations in availability as well as chronic poverty and household food insecurity. Evidence suggests that such interventions have enhanced food security at the household level to some extent in some countries. Food market interventions and direct distribution of food are not adequate instruments in themselves, however, to address the massive problems of household food insecurity caused by inadequate access to food. Reducing poverty and food insecurity in Asia will require continued broad-based, labour-intensive growth, particularly in rural areas. Market reforms have contributed to the progress achieved to date, but much remains to be done.

## Chapter 14

### Trade and related economic reforms in Latin America<sup>1</sup>

#### 14.1 Introduction

This chapter reviews the trade policy reform process in the last two decades relevant to agriculture in Latin America and the effects of those reforms on production, trade, household incomes, and food security.<sup>2</sup> Although trade liberalization was a prominent element in the reorientation of the economic policies of many Latin American countries, it was only part of the story. Trade reforms were made in the context of larger structural reforms, macroeconomic adjustments, deregulation and privatization, and a general redefinition of the role

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<sup>1</sup> This chapter is based upon a paper prepared in 2003 for FAO ESCP by A. Valdés and W. Foster: *Impact of Agricultural Trade Reforms in Latin America: Sectoral Performance and Food Security*.

<sup>2</sup> Edwards, S. Latin America and the Caribbean: A decade after the debt crisis, Chapter 5 in *Latin America and the Caribbean: A Decade after the Debt Crisis*, World Bank, 1992; Valdés, A., *Surveillance of Agricultural Price and Trade Policy in Latin America during Major Policy Reforms*, World Bank Discussion Paper No. 349, 1996; de Janvry, A., Key, N. & Sadoulet, E. *Agricultural and rural development policy in Latin America: New directions and new challenges*, Working Paper No. 815, Giannini Foundation, 1997; Quiroz, J. *La Economía del Desarrollo Rural*, document prepared by Gerens S.A., Santiago, December 2000; Quiroz, J. *Agriculture and the macroeconomy in Latin America during the nineties*, presented at the Annual Meeting of the Inter-American Development Bank, March 2000, New Orleans; Paz, J., and Valdés, A. Interest and Options in the WTO 2000 Negotiations: Latin America and the Caribbean, Chapter 5 in Ingco, M. & Winters, L.A. (eds.) *Agricultural Trade Liberalization in a New Trade Round*, World Bank Discussion Paper No. 418, World Bank, 2000; Tejo, P., El modelo agrícola de América Latina en las últimas décadas (síntesis), Chapter 4 in *Desarrollo Rural en América Latina y el Caribe*, M.B. David, ed., CEPAL, 2001; Lederman, D., & Soares, R.R. A note on the impact of economic reforms on the performance of the agricultural sector in Latin America, World Bank, 2001; Spoor, M., Incidencia de dos décadas de ajustes en el desarrollo agrícola de América Latina y el Caribe, Chapter 4 in *Desarrollo Rural en América Latina y el Caribe*, M.B. David, (ed.), CEPAL, 2001.



of the state in the economy. The final outcome of the reforms not only reflects what happened on the trade side, but also reflects both the consequences of other reforms and the initial conditions in which countries found themselves when introducing broader reform programmes.

## 14.2 The specificity of Latin America

In general, Latin American countries reformed early. At the beginning of the shift in economic policy, most were suffering from both low growth and serious macroeconomic disequilibria – high inflation, fiscal deficits, current account deficits, and financial sectors in critical trouble associated in part with the foreign debt crisis of the early 1980s. Not only were economic reforms pushed by an ideological impulse toward smaller governments, but agricultural trade reforms were implemented in this context of fiscal deficits and large foreign debt. Such constraints induced significant budget cuts generally, and – more relevantly for agriculture – specific cuts in subsidized credit, marketing programmes, and infrastructure. As well as trade liberalization, the macroeconomic constraint on government budgets has affected agricultural performance and farmers, particularly lower-income farmers, over the last two decades.

As part of a general reorientation of governments toward freer markets in order to solve a broad set of problems, the impetus for trade reforms in most countries began before the signing of the Uruguay Round Agreement. The removal of quantitative restrictions and the process of tariffication, which was an integral part of the UR, had already been adopted as a general principle in most of Latin America.<sup>3</sup> Even before the UR, Latin American countries were, relative to the rest of the world, among those with the most significant reductions in agricultural protection<sup>4</sup>.

Most LAC countries, therefore, emerged from the UR with no mandated policy changes<sup>5</sup> and ironically they did not get any concessions for their early moves toward freer trade. Most notably, countries that had previously tariffed were left without the benefits of special safeguards. Nevertheless, the impulse to trade

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<sup>3</sup> The precursor was Chile's decision in 1976 to adopt the uniform tariff (10 percent), to remove QRs and to eliminate state trading.

<sup>4</sup> Ingo, M., *Progress in agricultural trade liberalization and welfare of least-developed countries*, World Bank, 1996.

<sup>5</sup> Paz & Valdés, 2000 *op cit*.

liberalization in many countries was reinforced by that Agreement. The later emergence of numerous regional trade agreements (notably MERCOSUR, the Andean Group, the Central American common market, the Caribbean Group, Mexico entering NAFTA) and bilateral accords (Chile with Mexico, Canada and several countries) also contributed to a reduction in the levels of protection in many sectors, including agriculture.

Most Latin American countries are not agrarian economies and are land abundant. They are predominantly middle-income, with the majority of their populations engaged in non-agricultural activities, and with most having relatively low rural population densities. Structural transformations in most countries have already reduced the proportion of the labour force in rural areas to less than one third. In their important study on agrarian economies, Tomich, Kilby and Johnston<sup>6</sup> conclude that only three Latin American countries – Haiti, Honduras and Guatemala – can be considered agrarian countries or CARLs (countries with abundant rural labour). To put this in context, there are 58 CARLs worldwide.

The region can be characterized as having a small number of commercial farms – producing the bulk of agricultural production – coexisting with a much larger number of small farms. But the *hacienda* image is a thing of the past. Commercial farms are not particularly large compared to Canada, Australia and the western United States, although they are large compared to most of Asia, Africa and the Middle East. Another important characteristic of the region is that there is a high incidence of hired labour. For both farm and off-farm income, rural household incomes depend less on land ownership than on employment opportunities.

Differing from most other developing regions, Latin America has a smaller share of rural workers in the labour market and of agriculture in the total economy. The rural populations of some small economies (El Salvador, Guatemala, Honduras, Paraguay, Jamaica) still represent more than 45 percent of the total, but in the case of the larger economies (Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela) – representing at least two-thirds of the region's total population – rural populations make up less than 30 percent of the total and agriculture less than a fourth of GDP<sup>7</sup>. In general, the structural characteristics of Latin America

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<sup>6</sup> Tomich, T.P., Kilby, P. & Johnston, B.F. *Transforming Agrarian Economies*, Cornell University Press, 1995.

<sup>7</sup> Lopez, R., & Valdés, A. Fighting Rural Poverty in Latin America: New Evidence and Policy. In R. Lopez, R. & A. Valdés, (eds.) *Rural Poverty in Latin America*, Macmillan and St. Martin's Press, 2000.

should lead us to emphasize the importance of liberalization on economy-wide effects and consumers' welfare, and not merely on the impacts of trade policy changes on agriculture and the rural population.

Important though it is, the impact of agricultural growth in middle-income countries is likely to be less than in low-income countries. In contrast to least developed, agrarian countries, in most of Latin America it is hard to defend the argument that it is agricultural growth that reduces poverty (as argued in Chapter 7). But agricultural growth will unquestionably contribute towards reducing rural poverty. (Although the incidence of poverty is greater in rural areas, the absolute number of poor is small compared to urban areas.)

#### *Heterogeneity with respect to trade liberalization*

Latin America is heterogeneous not only in the timing and depth of reforms undertaken in individual countries (Table 14.1), but in terms of net trade positions, which influence the consequences of those reforms. Three different groups can be identified within the region. The first is the South American Block, represented in the Cairns Group, which was the group most oriented towards liberalized trade. A second group is the Caribbean countries, which favoured a slower pace of trade liberalization. The third group is Central America and Mexico, which took a position somewhat between the first two, but closer to the Cairns Group.

**Table 14.1 Degree and period of trade liberalization, selected Latin American countries, 1980s - 1990s**

<b>Degree of liberalization</b>	<b>Mid to late 1980s</b>	<b>Mid to late 1990s</b>
High	Bolivia, Chile, Mexico	Argentina, Bolivia, Chile, Peru
Medium	Colombia*, Costa Rica	Brazil, Colombia*, Costa Rica, Mexico
Minimal	Argentina, Brazil, Peru	

\* Colombia experienced a significant turn toward free markets in the early 1990s, but by 1995 had almost retreated to prior levels of protectionism for the agricultural sector. Source: p. 151, Spoor, 2001 *op cit*.

With respect to net trade positions, McCalla and Valdés<sup>8</sup> conclude that 13 out of 23 countries were net importers of both food and agricultural products; and 17 were net importers of food. More revealingly in terms of trade policy, is that 10 of the 13 net food and agricultural importers were small Caribbean island economies. The analysis helps dispel the misperception that the region as a whole is oriented purely toward agricultural exports. It is true that export sectors are a large component of agriculture in many countries, but the most sensitive domestic trade policy debates that remain typically centre on import-competing sectors.

### **14.3 Trade reforms in Latin America**

With respect to the timing of reforms, one can identify early reformers and late reformers (Table 14.2). The experience of the early reformers, especially Chile and then Mexico, provided lessons that influenced at least in part the reform efforts in other countries. The most important elements of policy reforms in the region relating to agricultural trade over the last two decade have been:

- the replacement of most quantitative restrictions on imports with tariff;
- the reduction in both the level and dispersion of tariffs;
- the removal of all export taxes, quotas and licenses;
- a reduction in the importance of food self-sufficiency as a policy objective;
- a reduction or elimination of state trading;
- the elimination of domestic price controls and the gradual removal of state procurement programmes.

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<sup>8</sup> McCalla, A., & Valdés, A. Issues, interests and options of developing countries, presented at the Conference on Agriculture and the New Trade Agenda from a Development Perspective, WTO, Geneva, October 1999.

**Table 14.2 Agricultural performance of early and later reformers, Latin America, 1980-1999**

Country	Year of reform	Growth rates of agricultural GDP <sup>1</sup> (%)		Growth rates of agricultural exports <sup>2</sup> (%)	
		1980-89	1990-99	1980-89	1990-99
<b>Earliest reformer</b>					
Chile	1975	5.81	4.74	11.98	11.81
<b>Early reformers</b>					
Bolivia	1985	1.11	3.28	14.16	15.19
Costa Rica	1986	3.33	3.38	3.48	9.36
México	1985	0.31	1.92	5.84	11.48
<b>Average early reformers</b>		<b>1.58</b>	<b>2.86</b>	<b>7.83</b>	<b>12.01</b>
<b>Later reformers</b>					
Argentina	1990	0.65	3.69	1.42	8.74
Brazil	1990	3.35	2.82	1.10	4.45
Colombia	1990	2.71	1.59	0.31	4.28
Ecuador	1991	4.30	2.57	3.45	10.48
El Salvador	1989	-2.17	2.02	-10.00	8.92
Guatemala	1988	1.01	2.95	-2.14	6.86
Peru	1990	3.27	3.99	4.31	10.18
Uruguay	1990	0.70	2.45	6.51	5.15
Honduras	1990	2.99	1.66	0.73	-1.02
(all years)					
Honduras			2.82		2.83
(excluding 1999)					
<b>Average later reformers</b>		<b>1.87</b>	<b>2.77</b>	<b>0.63</b>	<b>6.88</b>
<b>Others</b>					
Dominican Republic	n.a.	1.44	2.62	0.04	-1.42
<b>Total average</b>		<b>2.19</b>	<b>2.93</b>	<b>1.61</b>	<b>6.57</b>

<sup>1</sup> Agricultural GDP includes crops, livestock, forestry and fisheries.

<sup>2</sup> Growth rates of agricultural exports include only crops and livestock.

The averages for later reformers use the Honduran data excluding 1999.

Source: Elaborated by the authors from data of the Inter-American Development Bank (these may differ from FAO statistics.)

In broad terms, the primary objective of trade liberalization programmes in Latin America was to reverse the negative consequences of protectionism, especially its inherent anti-export bias<sup>9</sup>. It was not merely a question of eliminating explicit export taxes, but also of reducing the implicit taxation resulting from distorted relative prices that favoured importables and, indirectly, non-tradables. International trade was viewed as a potential engine of growth, consistent with newly-popular models of endogenous growth.

The introduction of an open economy was expected to affect economic growth through technological progress and productivity growth. In turn, higher potential productivity would induce greater investments and lead to further growth. The impact of trade liberalization would of course be conditional on progress in reforms on other fronts: deregulation, privatization, macroeconomic stability. The disappointments with some trade liberalization programmes (Colombia is an instructive example) can be linked to failures on these fronts, such as exchange rate appreciation, and the lack of advances in deregulation and privatizations.

The principal policy mechanism adopted to achieve this objective was a reduction in average protection economy-wide, not merely in agriculture. Once exchange rates were adjusted and quantitative restrictions reduced, the next goal was to adjust tariffs so that their levels and range (or dispersion) decreased. In almost all Latin American countries, the non-tariff barriers (NTBs) for all goods that existed in the 1980s were cut or eliminated during the initial phases of reform. Of the 14 countries surveyed by Edwards<sup>10</sup>, six had effectively eliminated NTBs, and the highest coverage of NTBs was for Mexico (20 percent of import positions). Likewise, tariff reductions were indeed substantial by the early 1990s compared to the 1980s (Table 14.3). While no country's tariff protection was below 20 percent in 1985, and the majority's was above 30 percent, by the early 1990s only Brazil had tariff protection slightly above 20 percent, and the majority had protection rates of 16 percent or below. In the specific case of agriculture, although the coverage of non-tariff barriers did fall considerably, in some countries it nevertheless remained for a time more significant than in other sectors<sup>11</sup>. This can be attributed in part due to the desire of governments to protect their farm sectors from world price fluctuations and to counteract export subsidies.

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<sup>9</sup> See for example the discussion by Edwards, *op cit*.

<sup>10</sup> *op cit*.

<sup>11</sup> Valdés, A. 1996. See particularly Table 9.

**Table 14.3** Changes in tariff protection and non-tariff barrier coverage, Latin America, 1985-1992 (percent)

Country	AVERAGE TARIFF PROTECTION (%)		AVERAGE NON-TARIFF BARRIER COVERAGE (%)	
	1985	1991-92	1985-87	1991-92
Early reformers				
Bolivia	20.0	8.0	25.0	0.0
Chile	36.0	11.0	10.1	0.0
Mexico	34.0	4.0	12.7	20.0
Recent reformers				
Costa Rica	92.0	16.0	0.8	0.0
Uruguay	32.0	12.0	14.1	0.0
Very recent reformers				
Argentina	28.0	15.0	31.9	8.0
Brazil	80.0	21.1	35.3	10.0
Colombia	83.0	6.7	73.2	1.0
Guatemala	50.0	19.0	7.4	6.0
Nicaragua	54.0	n.a.	27.8	n.a.
Paraguay	71.7	16.0	9.9	0.0
Peru	64.0	15.0	53.4	0.0
Venezuela	30.0	17.0	44.1	5.0
Future reformers				
Ecuador	50.0	18.0	59.3	n.a.
Average	51.8	13.8	28.9	4.2

Note: Average tariff protection is average total charges (tariffs plus paratariffs), unweighted. Average non-tariff barrier coverage is also unweighted.

Source: Table 5.2 in Edwards 1993, based on World Bank data and others.

Prior to the reforms, the trade regime in the region was that of a strong import substitution and an anti-export bias.<sup>12</sup> There was a sharp contrast between import-competing activities and export-oriented sectors. Importables were protected: the average nominal protection rate (NPR) for the decade 1985-1995 was 18.7 percent. By contrast, exportables were overall taxed: the average NPR during 1985-1995 was -7.7 percent. For some countries, there were significant policy-

<sup>12</sup> The discussion in this paragraph is based on a detailed analysis for Argentina, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Paraguay and Uruguay, between 1984-1994. See Valdés, 1996.

induced transfers of income out of the farm sector. For the period 1985-1990, prior to the reforms, transfers out of agriculture amounted to between 12 and 23 percent of agricultural GDP in Argentina, the Dominican Republic, Ecuador and Uruguay. Brazil and Paraguay extracted only small amounts from agriculture. Those input subsidies and non-price transfers that did exist compensated little or not at all for these transfers. During the same years, Chile (which had reformed much earlier, in the mid 1970s) and Colombia had positive transfers, subsidizing their agricultural sectors, from 5 percent to 8 percent of agricultural GDP.

#### **14.4 The consequences of reforms for agriculture**

Following trade reforms, the direct taxation of exportables declined in most countries. Between the mid-1980s and the early 1990s, the average level of taxation, measured as NPR on exportables, fell from 11.8 percent to 4.8 percent. Some countries, such as Ecuador, continued to tax agricultural exports, and others (Brazil and Colombia) continued minor subsidies on exportables.

From the perspective of incentives and resource allocation, however, the effective rate of protection (EPR) is more relevant than the nominal. In some countries, the patterns of effective protection in the initial years of reforms were still sizable and negative for exportables, averaging minus 6.9 percent in 1993, compared to a positive 30 percent for importables. This can be explained in part by an asymmetry in the effects of reforms. Although direct export taxes were removed, intermediate inputs were often still protected. Furthermore, some countries continued to provide a wide and selective pattern of boarder protection. The Dominican Republic, for example, in 1993 had an EPR of minus 7.1 percent for sugar and simultaneously had an EPR of 129 percent for rice, 270 percent for beans and 223 percent for maize<sup>13</sup>. At least in the early phase of reform, the bias against exportables, although reduced, nevertheless continued. Although for the period 1995-2002 no hard evidence is available, the overall trend in the region has been towards the complete elimination of export taxes and a significant reduction of intermediate input tariffs. As a consequence, the effective rates of protection of export products are now more favourable. Moreover, the proliferation of bilateral and regional trade agreements (e.g. MERCOSUR, Andean Group and others) has perforated tariff barriers and reduced the operative average tariffs below their MFN rates.

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<sup>13</sup> Valdés 1996, op cit.



Trade policy is only part of the story of incentives facing farmers. Other factors include the evolution of the exchange rate, interest rates and world prices. In the early phase of reforms in several countries, unfortunately for the political credibility of reformists, trade and agricultural policy reforms were taking place in an environment of declining profitability of farming. Real farm prices of tradables in domestic markets decreased, leading to strong pressures by farm lobbies for renewed protection and subsidies. In some cases, most notably in Colombia, the situation was such that there was political backsliding by the mid-1990s, a reversal of the reformist trend and a return to protectionism.

Between 1986 and 1995, in seven of the eight Latin American countries studied by Valdés all major domestic farm prices declined in real terms. Worse, during the early reform years of 1990-1993, real farm prices declined more than in the pre-reform period. Only in the case of Chile did the real price of exportables increase, due to a very different mix of export products. In this early phase of reform, real domestic farm prices for exportables fell between 22 percent and 47 percent for Ecuador, Dominican Republic and Colombia, and by over 50 percent for Argentina, Brazil and Uruguay. For the years 1994-1995, an increase in real farm prices took place in Brazil, Colombia, Dominican Republic and Uruguay; but a continued decline in Argentina and Ecuador. For these years Chile was also affected negatively. With respect to importables, for three of five countries,<sup>14</sup> real farm prices also declined during 1990-1993, and continued to decline for 1994-1995.

The main factor that explains these price declines was the appreciation of exchange rates of the early 1990s, a phenomenon that was amplified by tariff reductions and in some cases a fall in border prices. The decomposition analysis for the sample of countries in the Valdés study shows a substantial decline in the real exchange rate in all countries, coinciding with the initiation of the liberalization programmes. In several cases, the real exchange rate appreciation reinforced the decline in domestic prices, particularly between 1990 and 1993. While border prices recovered somewhat between 1994 and 1995, the continued exchange rate appreciation offset the gains. The case of Argentina is instructive: the real domestic price of beef, an exportable, fell 60 percent between 1990 and 1993, despite the increase in border prices of 14 percent and the removal of export taxes.

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<sup>14</sup> The Valdés 1996 study does not include importables in the case of Argentina and Uruguay.

In overall terms the principal results of trade liberalization were the change in relative incentives affecting the production of exportables and importables and the significant increase in the output of exportables. There is a positive correlation between reforms and the growth rates of the agricultural sector overall and of exports. Following reform, all countries except Brazil, Colombia, Ecuador and Honduras experienced an increase in growth rates of agricultural GDP during the 1990s.<sup>15</sup>

In the case of exports, the impact of the reforms is even more striking, most countries having experienced an increase in the growth rates of exports. More broadly, there was a consequent general growth in both exports and imports of agricultural products, although the net effect on the agricultural trade balance varied across countries. Early reformers, excluding the very early reformer Chile, expanded the value of agricultural exports at an average yearly rate of 11 percent during 1990s, compared to 3.4 percent in the previous decade. Later reformers expanded agricultural exports by 6 percent per annum in the 1990s, compared to 1.6 percent during the previous decade. Chile, having reformed in the mid-1970s, enjoyed rates of agricultural export growth of over 11 percent during the two decades following the initiation of its market-oriented policies.

Not only did the total value of exports expand, but trade liberalization appears to have encouraged a diversification of export products. There was a notable growth in the export of fruits in Chile, Costa Rica, Mexico, Saint Lucia and Dominica, Brazil and Panama. While the economic significance of traditional, tropical fruit exports (most obviously bananas in Ecuador, Costa Rica and Panama) continued, liberalization spurred an increase in non-traditional crops (e.g., soybeans in Brazil and Argentina), and induced an experimentation in products, many of which have been successful in export markets (e.g. asparagus in Peru, tomatoes and mangos in Mexico)<sup>16</sup>.

Moreover, the considerable expansion of perishable exports occurred in an environment of many simultaneous changes attributable to economy-wide reforms: modernization of ports, deregulation and privatization of telecommunications, domestic and foreign direct investments in processing and marketing channels, the adoption of technologies available elsewhere for

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<sup>15</sup> In the case of Honduras, excluding the year 1999, which was affected by the devastation of hurricane Mitch, the average growth of agricultural GDP would have been 2.8 percent, slightly below the growth rate of the 1980s.

<sup>16</sup> Paz & Valdés, 2000. op cit.

processing, storage and shipment. One example is the adoption of technologies permitting the profitable storage of fresh fruit on board ships.<sup>17</sup> It would be difficult to isolate the partial effects of trade liberalization alone from the myriad impacts on the supply chain of agricultural products that resulted from general economic reforms.

Nevertheless, reforms in Latin America generally led to an increase in the tradability of agriculture (Tables 14.4 and 14.5). The ratio of agricultural trade, both exports and imports, to total agricultural GDP averages 87 percent for 18 of the region's countries in 1996, compared to 74 percent in 1990. Some notable cases of increases in tradability are Argentina, Costa Rica (reaching 130 percent), Chile, Ecuador, El Salvador, Mexico and Venezuela. For all countries except Brazil and Peru, tradability is around or above 50 percent. Brazil's low tradability index is understandable given the size of its domestic market. Peru's low tradability index suggests that the country's agriculture is relatively more oriented toward non-tradables. With the increase in tradability, agricultural sectors become more exposed to world price and exchange rate changes, and to shifts in foreign market conditions generally.

**Table 14.4 Tradability indices\* in agriculture, Latin America and Caribbean, 1990 and 1996**

Country	1990	1996
Argentina	0.45	0.68
Brazil	0.17	0.24
Colombia	0.30	0.48
Costa Rica	0.82	1.30
Chile	0.53	0.80
Ecuador	0.58	0.89
El Salvador	0.45	0.71
Guatemala	0.33	0.48
Honduras	1.21	0.99
Jamaica	2.06	1.61
Mexico	0.52	0.79

<sup>17</sup> Reardon, T. 2002. *Product-Market and Capital-Market Trade Liberalization and Food Security in Latin America*. Presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11-12 July 2002.

<b>Country</b>	<b>1990</b>	<b>1996</b>
Nicaragua	0.81	0.84
Panama	0.70	0.73
Paraguay	0.55	0.55
Peru	0.32	0.38
Dominican Republic	0.46	0.50
Uruguay	0.79	0.86
Venezuela	0.36	0.65
Simple Average	0.74	0.87

\*Value of agricultural exports plus agricultural imports divided by agricultural GDP.  
Source: J. Quiroz (2000), based on FAO and World Bank data.

**Table 14.5 Tradability indices\* in agriculture in low-income countries, Latin America and Caribbean, 1980-1996**

<b>Country</b>	<b>1980-81</b>	<b>1984-86</b>	<b>1989-91</b>	<b>1994-96</b>
Bolivia	0.35	0.32	0.44	0.50
Colombia	0.21	0.20	0.23	0.35
Dominican Republic	0.46	0.42	0.42	0.96
Ecuador	0.54	0.46	0.50	0.57
El Salvador	0.45	0.38	0.38	0.57
Guatemala	0.49	0.32	0.37	0.44
Haiti	0.18	0.20	0.28	0.34
Honduras	1.10	0.92	0.88	0.86
Jamaica	0.86	1.07	1.17	1.29
Nicaragua	0.88	0.62	0.72	1.00
Peru	0.25	0.21	0.22	0.27
LAC region	0.21	0.19	0.24	0.32

\*Value of agricultural exports plus agricultural imports divided by agricultural GDP.  
Source: Table C-2 in Mathews and Trueblood (1999), based on World Bank's World Development Indicators.

### *Differential impacts within agriculture*

Within the agricultural sector of each country, reforms affected sub-sectors differently. To assess the diverse effects of trade reforms within agriculture it is useful to distinguish between the effects on producers of exports, producers of import-competing goods, and producers of home or non-tradable goods (often predominantly small farmers). It is also necessary to analyse the effects according to farm size and geographic region, characteristics which are not independent of the trade-orientation of the products produced by farmers. At least three well-documented cases (for Brazil<sup>18</sup>, for Colombia<sup>19</sup>, and for Nicaragua<sup>20</sup>) show that policy reforms affected producers differently according to these characteristics. Moreover, the effects varied according to time period.

Producers of exports gained generally, as well as wage-earners in agriculture and processing, because export products tended to be the most labour-intensive sub-sector. All else being equal, those farmers who could take advantage of the expanding export sector were those with the wherewithal to make investments and to face the price risks associated with export markets. These were mainly larger, commercial operations. In Chile, only a minority of small farmers could participate as producers in the expanding export growth of fruits and vegetables<sup>21</sup>, although as households they participated as wage earners, especially in post-harvest activities (e.g. in packing houses).

Import-competing producers probably lost in the short-run, but their long-run welfare depends on their capacity to increase productivity and/or change cropping patterns. In some regions, farmers had little flexibility to adjust their productivity and output mix, and as a consequence this subset of farmers was and remains critical of trade liberalization. The problem is not so much one of poverty but of potential profitability within the freer-trade environment. Worth noting is the case of *ejidatarios* in central Mexico who were harmed by the reduced protection of traditional grains resulting from NAFTA. In response, the Mexican Government instituted a compensation scheme (*Pro Campo*) that provides decoupled income

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<sup>18</sup> Helfand, S.M. & Castro de Rezende, G., Brazilian agriculture in the 1990s: Impact of policy reforms, presented at the IAAE International Conference, Berlin, August 2000.

<sup>19</sup> Jaramillo 1998. op cit.

<sup>20</sup> World Bank Poverty Assessment for Nicaragua, 2002.

<sup>21</sup> Carter, M. & Mesbah, D., Can land market reform mitigate the exclusionary aspects of rapid agro-export growth? *World Development*, 27 (7). 1993.

transfers to producers. By contrast, milk producers in Chile, who traditionally competed with imports (and who were protected prior to liberalization), managed to take advantage of the modernization of the economy in general and of the availability of new dairy technologies and genetic lines in particular. The sector grew in efficiency; production expanded and has now become an export sector - but those who could take advantage of the new environment were generally larger farm operators.

The third group - non-tradable producers - is less directly affected by trade reform, although it may be harmed indirectly by consumers switching to lower-priced importables, or may be benefited indirectly from the higher price of exportables. Small farmers tend to be producers of non-tradables, and the members of the household tend to be relatively more involved in rural non-farm labour. As in the case of Brazil, in Colombia, where the relationship between reforms and the non-tradable sector has been analysed, small farm households benefited during the reform process mainly due to increased employment opportunities that became available in the rural non-farm economy<sup>22</sup>. Whether or not greater employment was caused directly by trade liberalization is unclear.

Commercial farms, whatever their pre-reform product orientation, tended to be more technologically advanced and more flexible in terms of adapting to changing market conditions. They also tended to use relatively more purchased, imported inputs, the prices of which fell with trade liberalization. The across-the-board reduction and elimination of government subsidies on input use also increased the relative advantage of larger farms. With the change in the market environment, there was also a trend toward lessening the impacts of economic reforms through government-supported, targeted extension and credit programmes for small farmers, and through targeted social programmes for the poor in rural areas, including farmers (for example PRONAF in Brazil and INDAP in Chile for extension and credit, and PROGRESA in Mexico, FONCODES in Peru, IRD in Nicaragua, and *Previdencia Rural* in Brazil in the case of social programmes.)

*Brazil: a case study of the effects of trade liberalization and other reforms*

Evidence from Brazil, where recent good disaggregated data exist on the distribution of production across types of farms, clearly shows the manner in which reforms were to the relative disadvantage of smaller, low-technology

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<sup>22</sup> Jaramillo, 1998, op cit.

farmers<sup>23</sup>. Both changes in government policy and market conditions reinforced in three ways the advantages of technologically-advance commercial producers. First, technical assistance appears to have benefited to a greater degree larger farmers; especially those oriented towards import substitution.

Second, the commercial farmer used purchased inputs more intensively than did small farmers. Because input prices fell after reforms more rapidly than output prices, costs for larger commercial farms fell by a greater degree than revenues, and proportionally more than for smaller farms. In fact, per-hectare returns were negative for low-technology, small and subsistence farmers, who used no purchased modern inputs, and who experienced falling output prices without seeing any compensation in terms of lower costs.

Third, changes in the processing and market sector resulted in increased quality standards and the development of sophisticated systems of production financing and marketing. Chapter 10 presents the effects of supermarket development. To the extent that larger commercial enterprises were more apt to adapt to the new system of financing and the new emphasis on quality control, they had a relative advantage with respect to smaller farms. The two newly introduced factors of private financing and enhanced demand for quality each acted to compound the effect of the other. As the Government reduced subsidized credit, capital-intensive farmers were able to make greater use of the private sector – and were better prepared to use self-financing – for investments to meet the increased demand for higher quality products. Having entrance into marketing channels for higher quality products brought the benefit of having access to a more sophisticated production financing system.

The shifting concentration of production in Brazil is illustrated in Table 14.6. The share of the total value of production has been declining for smaller size farms (100 hectares or less) and increasing for larger size farms. In 1970 smaller size farms produced 57.8 percent of total production, and the largest size farms (over 1 000 hectares) produced 12.6 percent. By 1985 the contribution of smaller farmer had fallen below half of total production. By 1995 the largest farms had increased their proportion of total output by two-thirds, reaching a 21 percent share.

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<sup>23</sup> World Bank, *Rural Poverty Alleviation in Brazil: Towards and Integrated Strategy*, volumes 1 and 2, Policy Summary and Technical Papers, World Bank Report 27190-BR, December 2001.

**Table 14.6** Percentage share of production value by farm size, Brazil, 1970-1995

Year	Farm size in hectares			
	Below 10	10 to 100	100 to 1 000	Over 1 000
1970	17.8	40.0	29.3	12.6
1975	14.8	38.5	32.9	13.6
1980	13.0	37.7	33.2	16.0
1985	11.8	36.4	34.9	16.8
1995	12.2	34.4	32.3	21.0

Source: World Bank, *Rural Poverty Reduction in Brazil: Towards an Integrated Strategy*, Volume II, April, 2001.

Some of the changes observed in Brazil were almost certainly experienced in other countries in the region. In Chile, especially as the second phase of reforms unfolded in the mid-1980s, the demand by commercial, export-oriented enterprises for new varieties and for more sophisticated production techniques and financing was met by both the public and private sectors. To some extent, this was balanced by the emphasis on the targeting of public technical and financial assistance toward smaller and poorer farmers. But in relative terms, because private sector participation increased rapidly, the technological and financial support from all sources for commercial farms grew faster for larger farmers than for smaller.

*Exchange rates can also have different effects across farm sizes*

A common feature in Latin America during the early phases of the reforms was the appreciation of exchange rates. Changes in exchange rates can have differing effects across farm sizes, and therefore longer-term changes in exchange rates can affect the size distribution of the agricultural sector. Considering both a direct effect through the price of tradable goods, and an opposing but smaller, indirect effect through changes in the CPI, Lopez and Romano<sup>24</sup> find that a simulated 40 percent nominal devaluation increases real revenues by 13.4 percent for large farmers (50-2 000 ha), by 5.4 percent for small farmers (2-10 ha), and by 2.6 percent for very small farmers (*minifundia*, less than 2 hectares). At least in the

<sup>24</sup> Lopez, R. & Romano, C., Chapter 5 in *Rural Poverty Alleviation in Brazil: Towards an Integrated Strategy*, v. 2, World Bank Report 27190-BR, December 2001.



case of Brazil, smaller farmers gain less with devaluation because their revenues are skewed toward non-traded goods and traded goods make up a relatively larger share of their total consumption. Larger farmers produce more traded goods, and non-traded goods (such as services, housing, education and transportation) make up a relatively larger share of their total consumption.

#### *Real income effects on urban and rural consumers*

It is well known that low-income households, urban and rural, spend a large proportion of their incomes on food. To the extent that trade liberalization lowers food prices, household income of the poor will increase in real terms. Certainly low-income consumers (farmers are consumers too) benefited from trade liberalization as lower protection reduced the price of food relative to wage rates. There is clear evidence of this in Chile, Brazil and Nicaragua<sup>25</sup>. In the particular case of low-income farmers, there are fewer studies, but one recent study shows that importables weight heavily the consumption baskets in the real income of small farmers' households in the northeast of Brazil.

### **14.5 The effects of trade reforms on food security**

Chapter 2 describes the different concepts of food security. Here, food security is taken to be the ability of food-deficit countries, regions, or households to meet target levels of consumption on a year-to-year basis. Reaching target levels, which could be trend levels, does not guarantee that chronic malnutrition is avoided. At least for most of Latin America, the issue of chronic malnutrition associated with persistent poverty is a long-term problem, the solution to which lies beyond meeting aggregate targets.

#### *Latin American food supplies in the aggregate*

National food self-sufficiency is not synonymous with consumption stability for large segments of the population, who may remain exposed to food insecurity if the country does not have the means to transfer food or income to regions or households. An obvious example is Brazil and Argentina, where there is no

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<sup>25</sup> Hurtado, H., Muchnik, E. & Valdés, A. 1992. The political economy of agricultural pricing policies: The Case of Chile. In A. Krueger, M. Schiff and A. Valdés, eds. *The Political Economy of Pricing Policies in Developing Countries*, Volume 1, Johns Hopkins University Press; World Bank studies: the Rural Poverty Report on Brazil, 2001, and the Poverty Assessment for Nicaragua, 2002.

aggregate deficit in the food supply, but there are households suffering from hunger and malnutrition, the result principally of poverty and inadequate social programmes.

In middle-income countries, aggregate food supply is less relevant in the context of an open economy. With a few exceptions, in Latin America the question of attaining a target of food self-sufficiency is no longer an important consideration. Arguments over grain reserves or food security stocks have almost disappeared from informed policy debate. Practically all LAC countries for all food imports are price takers in world markets, with perhaps only two exceptions: white maize in Central America and some bean varieties in Brazil. Both products are traded within very “thin” markets. The question of food supply management has become primarily a matter of foreign exchange and the capacity of infrastructure (mainly ports) and logistics to deliver food imports to consumers. Tariffs and QRS certainly would do little to improve delivery systems.

Trade policy has been decoupled from the political discussion on food policy, because trade policy instruments are seen as being inadequate to deal with the goal of increasing household income and food consumption in the poorest households. There are two notable reasons for this. First, a large proportion of the poor are net buyers of food, and thus border protection on food imports would increase domestic food prices for all consumers, including the poor – there would be a decrease in real income. Second, trade in all products, including food, is practically everywhere in the hands of the private sector, and price controls at the wholesale and retail level have been eliminated. Although the situation with food aid, which only applies to a few countries in the region (some in Central America, Bolivia, Haiti), still gives governments flexibility and influence in selected food markets, politically, governments are increasingly free from food supply management. They would face severe political consequences if major food shortages were to occur – but such shortages do not occur, except in the case of contradictory signals sent to private producers and traders by the most inept governments.

### ***Food security at the household level***

In the context of Latin America, with some exceptions like Haiti, defining food security in terms of calorie intake is not always appropriate. For the region as a whole, calorie intake, stagnant prior to 1990 has risen steadily since, coincidental

with the initiation of reforms in most countries<sup>26</sup>. At the household level, particularly in middle-income countries, food security should be identified with nutritional status and health. This implies an emphasis on anthropometric indicators to measure nutritional status, and on specific indicators of health, rather than calorie intake, which is more relevant to the extremely poor. This is partly captured in the evidence of the evolution of the incidence of stunting (Tables 14.7 and 14.8) where regional data is presented on the incidence and prevalence of underweight, stunted and wasted children. Latin America has by far the lowest prevalence of all three measures in the developing world, measured as the percentage of the population falling below minus two standard deviations of medium as a threshold. Three percent would be the expected incidence in a well-nourished population<sup>27</sup>.

**Table 14.7 Incidence of stunting, Latin America and the Caribbean, 1980-1995**

	1980	1985	1990	1995
Central America and the Caribbean	31.6	30.4	29.1	27.8
South America	25.0	21.0	16.9	12.9

Source: Table 1.14 in Wodon, 2000, based on data from the World Health Organization, FAO *State of Food and Agriculture 2001*,

**Table 14.8 Prevalence of underweight, stunted and wasted children, developing regions and countries, 1995-2000**

	Underweight	Stunted	Wasted
Sub-Saharan Africa	31	37	10
Near East and North Africa	17	24	8
South Asia	49	48	17
East Asia and the Pacific	19	24	6
Latin America and the Caribbean	9	17	2
Developing countries	29	33	10
Least Developed countries	40	45	12

Percent of population falling below minus two standard deviations of reference value. Source: FAO, *The State of Food and Agriculture 2001*, Table 5, p. 63, based on data from UNICEF.

<sup>26</sup> FAO, *State of Food and Agriculture, 2001*, Rome, 2001. see Figure 22, p.133

<sup>27</sup> A slight decline in incidence of stunting in Central America (Guatemala, El Salvador, Nicaragua) and Haiti should be viewed in the context of civil conflicts and economies that were recovering from war conditions during the 1980s and early 1990s.

More generally, one could argue that, for middle-income countries in Latin America, the variable of concern is household welfare, an important component of which is the health status of its members. Health status depends in part on nutritional status. As with nutrition, the concept of a health production function could be relevant: it would be determined by nutritional status, privately provided inputs (clean water, boiling capability, refrigeration, time and health care in preparing food), publicly provided inputs (potable water, sewage, electricity, nutritional information, and others), and socio-economic variables. Families decide to allocate additional income to improve their infrastructure in their home (electricity, refrigeration, sewage, potable water) rather than to buy more calories, and this could improve their nutritional and health status. Income gains could thus reduce malnutrition even when it has a small or insignificant effect on a simple measure of nutrient intake at the household level. Agricultural growth in the context of more open and dynamic economies could be one source of income growth at the household level, and indirectly a source of government revenues for the provision of publicly provided inputs<sup>28</sup>.

It appears that the principal policy concerns following the reforms of the last two decades have centred on household income, health, and sanitation, in conjunction with targeted nutritional programmes as part of broader social safety net schemes. Social programmes include food stamp type programmes, school lunch programmes, and direct cash and in-kind transfers as part of an integrated policy of nutrition and health systems. With adequate domestic policies targeted to the poor, trade liberalization in agriculture has not been inconsistent with food security; on the contrary, it may have lowered the price of food, benefiting all consumers, including those with the greatest food insecurity.

### ***The effect of price shocks***

Does trade liberalization increase the risk of shocks that might precipitate food crises? At a national level, is agricultural liberalization associated with increased volatility in production and prices? The diet in Latin America has become more diversified and less dependent on one or two products. The removal of price controls and the deregulation of markets contributed to this diversification by

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<sup>28</sup> Schiff, M. & Valdés, A., Poverty, food intake, and malnutrition: implications for food security in developing countries, *American Journal of Agricultural Economics*, 1990 (pp 1318-1322).

removing the artificially low prices of only a few staples. This in turn has made the poor less vulnerable to food supply or price shocks in specific products.

Nevertheless, tariffication has increased the transmission of world price variability to domestic markets. The peaks in international prices, however, tend to be of short duration, unlike periods of low commodity prices which tend to endure, much to the dismay of producers. Tariffication did expose consumers to momentary price spikes, but also allowed them to benefit from extended periods of low prices. In Latin America, the enhanced price transmission resulting from trade reform has not appeared to have generated major consumer problems associated with price volatility.

But what of small farmers producing food and not net-buyers of food? The small farmers in non-tradables are not affected by trade policy, but those producing importables are harmed by reduction in the border protection of food. As documented for farmers of North Eastern Brazil, small farmers, as consumers, are often net-buyers of importables (not only food) which could compensate part of their loss on the output price side. In most cases small, farmers qualify as recipients of social safety net schemes. Distant rural areas, however, are often the problem, and much is yet to be done on improving the delivery of programmes to these areas.

## **14.6 Conclusion**

Most Latin American countries reformed early and trade liberalization was part of economy-wide reforms involving deregulation, privatization, and macroeconomic adjustment. These reforms were for the most part unilaterally implemented before the Uruguay Round Agreement. Compared to other regions, Latin America as a whole implemented the most significant reductions in agricultural protection. Considering the economy-wide nature of reforms, any assessment of the effects of trade reform must take account of the many other reforms and factors.

Latin America is a heterogeneous region, both in terms of the timing and depth of reforms, and in terms of the net trade positions and initial conditions which influenced the consequences of the reform process. Nevertheless, common threads are discernable. In general, prior to the reforms, the trade regime in the region was characterized by strong import substitution and an anti-export bias. Most countries adopted an explicit trade reform policy, the central objective of which was to reverse the negative consequences of protectionism, especially its inherent anti-export bias. The principal policy mechanism in common was to be a

reduction in average protection economy-wide. Once exchange rates were adjusted and quantitative restrictions reduced, the next common goal was to adjust tariffs in a manner that their levels and range were decreased.

Unfortunately for reformists, early in the reform process trade and agricultural policy changes were taking place in an unanticipated environment of declining profitability of farming. Between 1986 and 1995, in seven of the eight countries studied, all major domestic farm prices declined in real terms. The main factor explaining these real farm price declines was the appreciation of exchange rates observed in the early 1990s, a phenomenon amplified by tariff reductions and in some cases a fall in border prices.

In spite of these unfavourable conditions, there is a positive correlation between reforms and the growth rates of the agricultural sector overall. In the case of exports, the impact of the reforms is even more striking. Not only did the total value of exports expand, but trade liberalization appears to have encouraged a diversification of export products.

Within the agricultural sector of each country reforms affected subsectors differently. A useful way to assess the diverse effects within agriculture of trade reforms is to distinguish between the effects on the producers of exports, the producers of import-competing goods, and the – often small-scale – producers of home or non-tradable goods. Winners were the export-oriented sectors, commercial farmers and hired workers. Increased labour income as a result of the output mix has been one of the positive effects of the reform process from a welfare point of view. Import competing producers, however, probably lost in the short-run. Their long-run welfare depends on their capacity to increase productivity and/or change cropping patterns, which for some farmers and regions were very limited. Certainly low-income consumers (and farmers are consumers too) benefited from trade liberalization as lower protection reduced the price of food relative to wage rates.

Regarding trade liberalization and food security, the most relevant dimension is at the household level, considering that in middle-income countries, food self-sufficiency, and aggregate food supply policy are less relevant in the context of an open economy. Moreover, one observes that trade policy has been largely decoupled from the political discussion on food policy. Trade policy instruments are now seen as being inadequate to deal with the goal of increasing household income and food consumption in the poorest households.

With adequate domestic social policies targeted to the poor, trade liberalization in agriculture has been consistent with food security. It has lowered the price of food benefiting all consumers, including those with the greatest food insecurity. Diet has become more diversified making the poor less vulnerable to insecure food supply or price shocks in specific products. Although tariffication has increased the transmission of world price variability, the spikes in international prices tend to be of short duration, unlike periods of low commodity prices which tend to endure. Tariffication did expose consumers to momentary price spikes, but also allowed them to benefit from extended periods of low prices.

Looking ahead to the forthcoming Doha Round of negotiations, the most sensitive domestic trade policy debates in Latin America will centre on policy instruments to deal with import-competing sectors. By contrast the issue of food security will remain imbedded in the problems of poverty at the household level, to be addressed not by trade policy, but by integrated programmes of health, nutrition, sanitation and income transfers.

## Chapter 15

### Trade and economic reform in transition economies<sup>1</sup>

#### 15.1 Introduction

In this chapter, some of the key reforms in trade and related economic policies undertaken during the process of transition from a centrally planned, to a market driven economy are identified and their effects on agricultural production, trade levels and food security explained. The reforms included not only changes in trade policies but also a package of significant changes in property rights, price regimes, and in the institutions coordinating economic exchanges. The review, whilst focusing on the formerly centrally planned economies of Central and Eastern Europe and the former USSR, contrasts trends in these countries with reforms that have been undertaken in a more gradual and controlled fashion in China. Comparisons across the range of transition economies allow a number of key determinants of the impact of reform on agricultural production, trade levels and food security to be identified.

The most striking observation when looking at these countries is how diverse their experience has been so far. In China, the reforms began in agriculture. Agricultural production, productivity, and rural incomes soared immediately after the reforms and the growth of the sector contributed importantly to poverty reduction and improved food security. Unlike China, agricultural output in the Russian Federation and Eastern Europe collapsed in the immediate wake of the reforms, increasing the numbers in poverty and reducing levels of food security. However, after a few years, growth resumed in Central and Eastern European countries (CEECs), and both incomes and food security improved. In contrast, agricultural production continued to decline in Russia and many other countries of the former USSR for almost a decade, with negative effects on food security, especially for low-income groups. These widely different experiences were the

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<sup>1</sup> This chapter is based on a paper by J. Swinnen, J and H. Beerlandt, *Trade and related economic reforms in Transition Economies - what were the impacts of actual policy changes on agricultural development, trade and food security?* presented at the FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages. Rome 11–12 July 2002.



result of a complex set of factors and their interactions. Only some of the major factors and developments are identified in this section<sup>2</sup>.

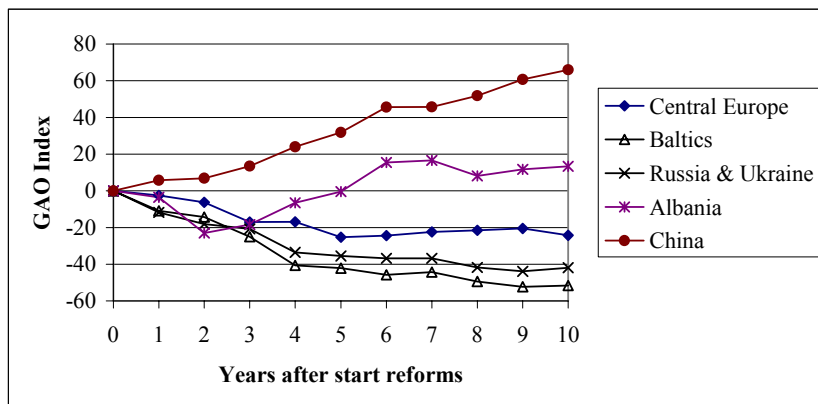
## 15.2 Causes of growth and decline during transition

One can distinguish several patterns in agricultural transition, summarized in Figures 15.1 to 15.3. The first pattern, referred to as the Chinese pattern, is characterized by a strong increase in output and productivity from the start of transition. During the first decade of transition, output increased on average by more than 50 percent in China, while labour productivity and yields increased by 40 percent. Growth continued during the years afterwards. A similar, though more muted pattern was observed in Albania, after a sharp reduction in the indicators in the first two years of transition.

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<sup>2</sup> Further information can be found in: EBRD. 1999. *Ten Years of Transition*, Transition Report 1999, London.; Lin, J.Y., 1992, Rural Reforms and Agricultural Growth in China, *American Economic Review* 82(1): 34-51; Macours, K. & Swinnen, J. 2000, Impact of Reforms and Initial Conditions on Agricultural Output and Productivity Changes in Central and Eastern Europe, the Former Soviet Union, and East Asia, *American Journal of Agricultural Economics*, 82(5):1149-1155.; Macours, K. & Swinnen, J. 2002, Patterns of Agrarian Transition *Economic Development and Cultural Change*, 50(2): 365-395; O'Brien, D.J., Patsiorkosvski, V.V. & Dershem, L.D. 1999, *Informal Institutional Arrangements and the adaptation of Russian Peasant Households to A Post –Soviet Economy*, Prepared for the annual meetings of The International Society for New Institutional Economics, Washington, DC., Sept 16-18, 1999.; Rozelle, S., 1996. Gradual Reform and Institutional Development: The Keys to Success of China's Agricultural Reforms. In J. McMillan and B. Naughton, eds. *Reforming Asian Socialism. The Growth of Market Institutions*, The University of Michigan Press; World Bank, 2000, Social Protection Developments: Eurasia vs. European Approach, in *Balancing Protection and Opportunity: A strategy for Social Protection in Transition Economies*, World Bank, Washington, DC.

**Figure 15.1** Changes in gross agricultural output (GAO), in transition economies, first decade of transition (index)

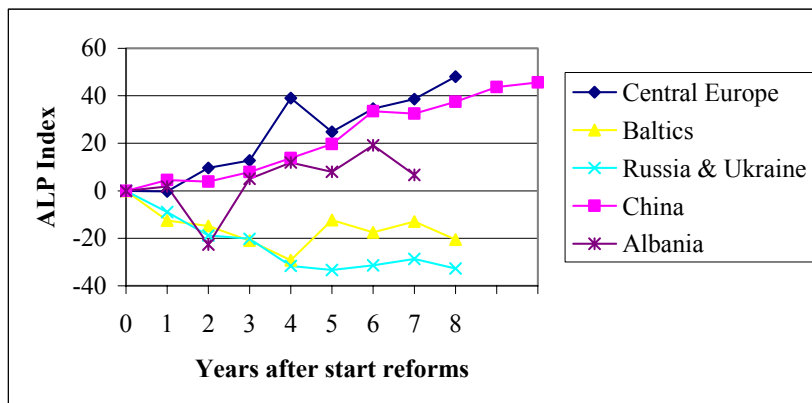


The second pattern is that of Central Europe, where a decline in output coincided with a strong increase in labour productivity because of a heavy outflow of labour from agriculture. This is the pattern followed by, for example, the Czech Republic, Slovakia and Hungary. Output declined by around 30 percent during the first years of transition, but stabilized after 4 years. At the same time, agricultural labour productivity increased rapidly: on average around 10 percent annually during the first transition decade. After three years, yields also started to increase, by 3 percent annually on average.

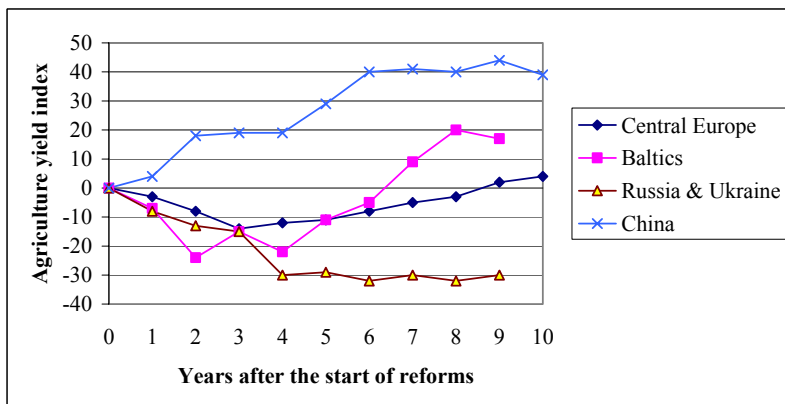
A third pattern is that of the Russian Federation, Ukraine and Belarus and several other Newly Independent States (NIS<sup>3</sup>). Here both output and productivity declined throughout the first transition decade and only started recovering after 1999. On average output fell by almost 50 percent in these countries and both yields and labour productivity by around 30 percent.

<sup>3</sup> The NIS include all former Soviet Union countries except the Baltics.

**Figure 15.2** Changes in agricultural labour productivity (ALP), transition economies, first decade of transition (index)



**Figure 15.3** Changes in yields, transition economies, first decade of transition (index)



Initial conditions, illustrated in Table 15.1, affected the way in which trade and other economic reforms influenced agricultural performance, as well as poverty and food security. Nevertheless, reform policies did have a significant effect as well, and the relative impact of the initial conditions decreased as transition progressed<sup>4</sup>.

First, price and trade policies diverged among the formerly centrally planned economies. In China, as in many developing countries, agriculture was taxed through price and trade regulations. In contrast, in most of the CEECs and the former USSR, agricultural producers and food consumers were supported with heavy subsidies. Under the central planning system, planned inter-country trading regime among the centrally planned economies dominated their trade patterns countries. China, on the other hand, traded mainly with non-CMEA countries.

As a result, price and trade liberalization had vastly different impacts. In China, the administered prices that farmers received for their output were increased. The rise in prices in the late 1970s and early 1980s partly explains the increase in farm profits during this period. In most other countries liberalization implied price and subsidy cuts, because of the heavy consumer and producer subsidization. In many countries the combination of the fall in the real price of output and the rise in the real price of inputs led to a crisis in the agricultural sector.

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<sup>4</sup> See Macours and Swinnen (2000, 2002) op cit. for a more detailed analysis.

**Table 15.1 Pre-reform indicators, transition economies, 1978, 1989 and 1990**

		Share of agricultural employment	GNP per capita	Labour/land	CMEA export	Years of central planning
		%	PPP \$ 1989	Persons/ha	% GDP	#
Central Europe	Czech Republic	9.9	8 600	0.122	0.10	42
	Hungary	17.9	6 810	0.131	0.10	42
	Poland	26.4	5 150	0.258	0.17	41
	Slovakia	12.2	7 600	0.139	0.10	42
Balkan	Albania	49.4	1 400	0.627	0.02	47
	Bulgaria	18.1	5 000	0.132	0.15	43
	Romania	28.2	3 470	0.204	0.03	42
	Slovenia	11.8	9200	0.116	0.07	46
Baltics	Estonia	12.0	8900	0.072	0.27	51
	Latvia	15.5	8 590	0.085	0.31	51
	Lithuania	18.6	6 430	0.098	0.34	51
European NIS	Belarus	19.1	7 010	0.105	0.45	72
	Republic of Moldova	32.5	4 670	0.269	0.25	51
	Russian Federation	12.9	7 720	0.044	0.13	74
	Ukraine	19.5	5 680	0.118	0.25	74
Caucasus	Armenia	17.4	5 530	0.218	0.21	71
	Azerbaijan	30.7	4 620	0.203	0.33	70
	Georgia	25.2	5 590	0.217	0.19	70
Central Asia	Kazakhstan	22.6	5 130	0.008	0.18	71
	Kyrgyzstan	32.6	3 180	0.054	0.21	71
	Tajikistan	43.0	3 010	0.185	0.22	71
	Turkmenistan	41.8	4 230	0.015	0.34	71
	Uzbekistan	39.2	2 740	0.109	0.24	71

Note: Pre-reform indicators are from the following years: 1978 for China, 1989 for the CEECs and 1990 for the Former USSR

Source: World Bank, ADB; de Melo et al.; FAO; OECD and European Commission

The negative impact was reinforced by the collapse of the CMEA trading system, which led to trade disruptions in countries where CMEA trade integration was strong, and by the shift to hard currency payments for imports. The impact on consumers was mixed: real food prices increased significantly, but with trade

liberalization consumers had access to higher quality imported food products, and indirectly pushed domestic food companies to improve their standards.

Second, at the outset of transition, China, and to a lesser extent Central Asian countries, had a much lower level of development. Not only was the initial level of poverty much higher and food security much lower, but also the agricultural system was quite different. The importance of agriculture in employment was much higher in China (around 70 percent) than in the Russian Federation (less than 20 percent), or in Central Europe (13 percent). Moreover, China's agriculture was much more labour intensive: the ratio of labour to agricultural land area was higher than one, compared to less than 0.15 in Central Europe and the Russian Federation. This had an important impact on the reforms.

Reforms in China started with re-allocating land rights from the communes, brigades and teams to rural households. With very labour-intensive production, this caused a break-up of collective farms into small-scale household farms. The resulting changes in incentives caused a dramatic increase in productivity and contributed to a strong growth of output. In contrast, large-scale capital-intensive farming dominated in the Russian Federation and CEECs, where large-scale farms still cultivate much land. The difference between the Russian Federation and CEECs is not so much in the scale of the farm operations, but rather in their management. In CEECs, effective restructuring and hard budget constraints induced sharp shifts in input use and effective management reforms, causing gains in productivity levels. In contrast, farm restructuring in the Russian Federation was more superficial, and local authorities continue to influence farm management through informal relationships.

Differences in restructuring are linked to land reform. In CEECs land was restituted to former owners or distributed to farm workers. Although these land reforms were complex, they ended up with relatively strong and well-defined property rights. The Russian and Central Asian land reforms distributed land as paper shares, leading to weak land rights. As a result, family farming is emerging only slowly: large farms have less incentive to restructure and productivity is lagging.

Third, in Central Europe and the Russian Federation, the reform strategy included rapid privatization and restructuring of up- and down-stream enterprises. However, the removal of the central planning and control system, in the absence of new institutions to enforce contracts, to distribute information, and to finance intermediation, caused serious disruptions throughout the agro-food chain. In this

aspect, China's reforms differ considerably. In the initial phase, she chose not to disrupt agriculture by reforming the up-and down-stream sectors. In essence, the procurement and input supply systems remained fully under the control of the state during the early reforms. Deregulation of the input and output marketing was only allowed to take place several years after the initial reforms. This gradual liberalization strategy allowed enterprises to reap the informational benefits from price liberalization while avoiding the disruption associated with the breakdown of the planning system.

The importance of creating new institutions to facilitate the exchange of inputs for outputs and the trade of commodities can also be seen from the recent performance of CEECs and the Russian Federation. While output in the latter continued to decline, growth in CEECs resumed and increased with the emergence of new institutions for information, product exchange and contract enforcement.

Foreign direct investment (FDI) has also played an important role in the emergence of new institutions of exchange. Beyond supply of capital, foreign firms have introduced a number of arrangements to encourage greater production and to overcome transition constraints. For example, food processors have negotiated contracts with banks and input suppliers to provide farms with inputs that enable them to deliver high quality products to their company.

### **15.3 Food security**

The changes that were induced by the first reforms undoubtedly had consequences on food security. The level of food security and changes during transition have differed importantly between countries. Before transition, whereas the average Hungarian consumed 3 100 kcal/per capita/day, Russians had a daily energy intake of 2 500 kcal/per capita/day and in China per capita consumption was 2 100 kcal /day. In comparison with countries of similar income levels, CEEC and former USSR countries had high levels of food consumption, sustained by food subsidies which kept food prices low. Consequently, initial drops in food intake after transition were not solely a consequence of lack of food availability but rather caused by a sudden lack of access to food by the collapse of these subsidies. Income declines and disruptions of social support systems also contributed to the initial drop in food entitlement.

In Central European countries - characterized by higher income levels, better developed social welfare systems, smaller output falls, and quicker turnaround with more successful reform effects - declines in income had limited effects on food intake, at least in terms of energy adequacy for most of the population. Hungary and Slovakia, for example, experienced average drops in energy intake of less than 5 percent during the first years of transition.

In Southern European transition countries, such as Romania and Bulgaria - with lower income, less developed social welfare systems and more pronounced output falls- poverty increased more strongly, and food consumption declined on average with 15 percent and more severely for the lowest income groups in the first stages of transition. These developments (and the factors behind them) were more marked in the Russian Federation, Ukraine, and Central Asia with some of them showing energy intake drops of more than 20 percent.

Generally, food intake (kcal/capita) remained surprisingly stable over the whole transition period, compared with output falls and with income drops. This was partly due to successful coping strategies at household level referred to as: "muddling through transition with garden plots". In the poorer countries, households turned quite drastically to household food production. In some countries the share of household production in total consumption doubled. Even amongst the urban population 'kitchen gardens' have become important. Especially in former USSR, this shift was combined with increasing informal social exchange helping networks and barter trade. Diet composition shifted towards cheaper, but inferior energy sources (e.g. replacing cereals by potatoes).

The story was entirely different in China, where food security was highly problematic and poverty very high before transition. Daily energy intake was about 2 100 kcal/per capita/day and levels of severe poverty in the 1980s reached 44.7 percent. Since the start of transition, the poverty and food security situation has improved, with daily intakes increasing to 3 044 kcal/per capita. In the late nineties severe poverty levels had dropped to 30.8 percent.

#### **15.4 Conclusion**

First, it is clear from the discussion above that trade was only one of several key reforms that affected agricultural performance and food security in transition countries. The initial situation and transition changes differ strongly among countries. China had a poor level of food security at the outset of transition, but



incomes and food security have increased dramatically within the rural population, in contrast to the situation in Central Europe and former USSR. Before transition, these countries had lower poverty levels and better food security status than market economies of comparable level of incomes. Food security was never a serious issue in terms of energy intake, except for the most vulnerable groups, such as pensioners, and except for some poorer European countries such as Romania. Yet during the initial stages of transition, this situation worsened considerably in several former USSR countries, although in general the situation is still better than in many other countries of comparable per capita incomes. In the former USSR, the rural population of several countries is still dealing with deep income poverty and lack of formal support systems, resulting in relatively low levels of food security.

Second, trade reform in general has reinforced changes induced by other reforms. For example, the initial negative effects on farm profitability of cuts in subsidies and price supports in CEECs and the former USSR have been reinforced by trade liberalization, which has increased competition with foreign imports. Trade liberalization also reinforced the reallocation of production activities caused by the abolition of central planning. Planned allocations of resources to the production of certain commodities, often in inappropriate regions, were no longer economically sustainable when trade had to be financed by hard currencies and when inputs were accounted for at real costs. The result has been a major reorganization of production activities across the region. For example, trade between the CEECs and the former USSR fell initially, while trade between the CEECs and the EU has intensified very strongly over the past decade (agri-food exports from CEECs to EU doubled while imports from the EU increased ten-fold). Another development was the shift from centrally imposed extreme specialization (e.g. dairy production in the Baltic countries and cotton production in parts of Central Asia) to more diversified production systems, thereby increasing domestic production of staple foods in those countries.

Third, the impacts of trade liberalization should be considered in combination with other aspects of economic integration in the regional and global economy such as increased flows of capital and labour.

- Labour migration has contributed to grow, from several CEECs to the EU and from USSR to Central Europe. The most extreme example is probably Albania, where close to one-third of the male workforce emigrated to neighbouring European countries, contributing strongly to

growth and food security in Albania – the poorest country in Europe – mostly through remittance payments.

- Capital inflows from the West, in combination with integration in WTO and regional trade agreements, such as the Association Agreements with the EU, have contributed to macro-economic stability and policy credibility in those countries where basic reforms had been implemented, such as Central Europe, the Baltic countries, and Bulgaria after 1998. These factors had an important and reinforcing positive impact on growth indirectly by stimulating impact on foreign direct investment. Obviously, liberalized capital flows and trade can also reinforce domestic instability when the fundamentals and policy credibility are not there. This is well illustrated by the 1998 Russian financial crises.
- Foreign direct investment has played a key role in creating strong and sustainable productivity growth in the CEEC agricultural economies since 1993. Large foreign investments in the food industry and input supply industries have created productivity gains and institutional innovations throughout the food chain, with important spill-over effects on domestic companies and on farms, and thereby rural households.
- Increased involvement with global markets has, in the second phase of transition, also strongly contributed to growth in China. The effect was indirect, by contributing to new jobs and growth in non-agricultural sectors, thereby allowing rural labour to move out of agriculture into higher earning activities, and reducing the pressure on agricultural incomes.

A variety of particular evolutions in agricultural production, poverty, social security and thus food security can be distinguished between the transition countries, mostly due to differences in initial conditions and in reform policies. Trade and economic integration have mainly re-enforced these effects in direct and indirect ways and at national, regional and household levels. General trends indicate that trade is associated positively with lower poverty and food insecurity in transition countries.



## **PART IV**

### **A FRAMEWORK FOR EMPIRICAL RESEARCH**

The final part of this publication comprises two chapters that describe a conceptual framework and a set of guidelines for examining the relationship between trade reforms and food security.

Chapter 16 presents the framework in a schematic way in order to identify significant aspects of the relationship that warrant further research. It uses the framework to develop a series of researchable questions that are pertinent to the debates outlined in previous chapters.

In Chapter 17, a set of practical guidelines for implementing empirical analysis designed to operationalize the framework is proposed.

The primary intention of the framework and guidelines is not to attempt to quantify the magnitude of the impact of reforms on indicators of food security (i.e. that a change in Policy X has a Z percent impact on the food security status of Group Y), but to provide a mechanism for better understanding the likely direction of change brought about by reform, and how this is modified by the current policy and institutional environment in a particular context. The aim is to inform a more considered design and implementation of reform packages.



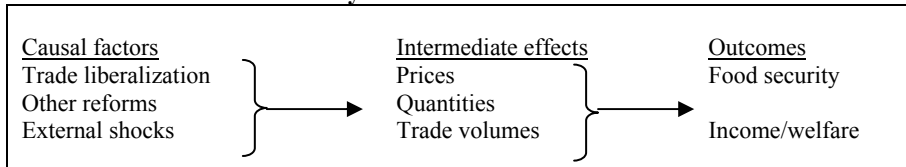
## Chapter 16

### A conceptual framework for research<sup>1</sup>

#### 16.1 Introduction

The relationship between trade reforms and food security status can be conceptualised at a fairly general level, depicted in Figure 16.1, as a two stage relationship where a set of causal factors impact on a series of intermediate indicators, which in turn determine the final outcome in terms of changes in food security status. It is recognised that an identical policy change in two different contexts, whether within a country at two discrete points in time, or across a set of countries, can result in quite different outcomes, because of modifying factors.

**Figure 16.1 A simple analytical framework for linking trade reforms and food security**



Any attempt to assess the impact of trade reform on levels of food security must therefore take into account the existing policy and institutional environment<sup>2</sup>, the agro-climatic constraints, and the level of physical and human capital which will all influence the extent to which reform will cause a change in the intermediate indicators. In addition, even if increases in aggregate agricultural production and net incomes do result from such reforms, it does not necessarily follow that the level of food security of the insecure will rise, especially if the distribution of the benefits associated with increased agricultural production is not in their favour, or the potential impacts of changes in agricultural production levels are offset, or indeed swamped, by changes elsewhere in the economy. In other words, the “effective route” will be context specific.

<sup>1</sup> Prepared with inputs from Jamie Morrison and Ramesh Sharma.

<sup>2</sup> See Chapter 8 for a detailed definition of institutional environment.

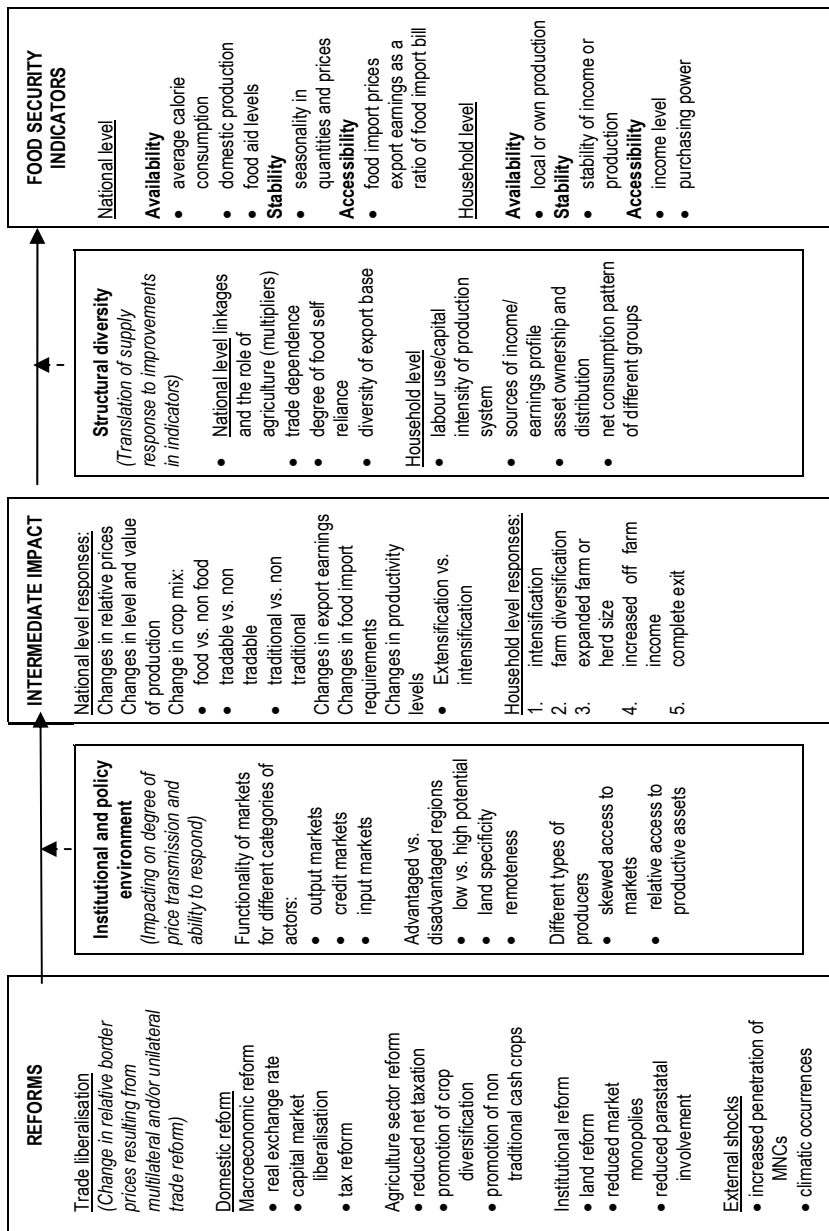
In order to conceptualize the context specificity of the implications of economic reforms on food security, a framework is proposed in which the impact on food security is described as a two stage process, the strength and extent of which is determined by a set of parameters. It is these parameters that account for the diversity of national- and household-level responses to a policy change both between and within countries.

## **16.2 A framework for assessing the impact of trade reforms on food security**

The framework proposed incorporates some significant components of that developed by McCulloch et al.: the extent of price transmission, the ability of farmers to respond to price changes and the impact of this response upon farm enterprise profitability, labour use and real incomes in the local economy, and changes in the government fiscal position and its response in terms of changes in poverty reducing expenditure. It differs, however, by focusing on agriculture-related reforms and food security, and adopting a case-study methodology designed to capture more completely the micro-level factors that influence the direction and strength of the relationship. In the conceptual framework described below, greater emphasis is placed on the diversity of country positions with respect to trade and food security, and to both the regional differences and the diversity of household types within and between countries. This emphasis enables the identification of the winners and losers from trade reform in both the short run and in the longer term. It also allows the “endogenization” of the domestic institutional and policy environment in order to identify other domestic reforms that may have modified the impact of trade reforms.

Figure 16.2 shows the relationship between trade reforms and a set of food security indicators, and lists examples of the key modifying parameters. Columns 1, 3 and 5 depict an elaboration of the simple causal relationship from Figure 16.1. Columns 2 and 4 list examples of the types of parameters that might affect the strength, and indeed the direction, of the causal linkages in a particular context.

Fig 16.2 A conceptual framework for analysing the impact of reform on food security





The parameters can be categorized into two groups:

- Those that can be considered as impacting on the incentives faced by producers (i.e. modifying the degree to which changes in relative border prices are transmitted to producers and consumers) and on the magnitude of the consequent response in supply or demand, as suggested in Column 2.
- Those that determine the way in which the agricultural supply and demand responses will feed through to impact upon the food security status of different groups of individuals.

Developing a better appreciation of the importance of these parameters will enable a more informed understanding of the relationship between trade reform and food security.

In the remaining sections of this chapter, the components of the framework depicted in Figure 16.1 are first discussed in more detail at a conceptual level, before focusing in on the two sets of modifying parameters, where the discussion revolves around the types of questions that researchers might ask in interpreting the strength of the relationship. In the following chapter, methodological guidelines are developed with a view to explaining how the conceptual framework might be operationalized in practice.

### ***Framework components***

#### *Causal factors*

In Column 1 of the diagram, examples of both potential reforms within the agriculture sector, and of reforms external to the sector, but which influence incentives within it (for example macroeconomic reforms) are listed. While the focus is on the impact of trade liberalization, it is recognized that the extent, speed and sequencing of associated reforms in the agricultural sector and in the wider national and international economy will influence both the incentives faced by producers, and the food prices faced by net producers and net consumers. This impact will often be greater than that of agricultural trade liberalization alone.

*Parameters modifying the degree of price transmission and supply response*

The second column reflects the factors that may influence the impact of economic reforms. It describes a set of parameters that can modify both the transmission of prices to producers as well as the response to any price changes. Fully implemented reforms, which liberalize the economy or increase its openness, may be expected to improve both price transmission from border to producer, and the ability of producers to respond. This response can, however, be muted by a series of factors related to both the type, sequencing and speed of the reforms and to the context in which they are implemented. In order to examine both the extent of price transmission and any consequent response, it is therefore necessary to investigate the extent of the influence of both the institutional and policy environments.

In this respect, two broad issues appear relevant for further research: first, the functionality of markets used by different groups of agricultural producers in terms of their access and integration; and second, access to productive assets. These may include, in addition to assets that can be procured in functioning markets, natural, social, financial and infrastructural capital to which the producers have access. Three broad categories of questions may be investigated:

- market access, which relates to the ability of producers to engage in the production of marketed crops and/or to obtain marketed inputs;
- market integration which relates to how well changes in prices in one market, for example at the border, are reflected as changes in other related markets, for example, the wholesale or retail market. Trade liberalization, by definition, causes changes in relative prices at the border but often these changes are only partially transmitted to producers;
- the degree of access to marketed assets. This will in part be governed by the functionality of the markets to which producers have access, but access to financial capital and other, non-marketed assets (which might include land and water for example) is conditioned by a range of additional non-market institutions. It is essential therefore to understand how alternative institutional reforms promote (or hinder) such institutions.

Boxes 16.1 to 16.3 provide examples of the types of researchable questions that might be considered in investigating the impact of these parameters.

**Box 16.1**                      **Questions relating to market access**

- Is there differential access to output, input or credit markets for small compared to large producers?
- Is there differential access to markets for those engaged in the production of key cash crops as opposed to food crops?
- Has market access for different categories of agricultural producers improved or deteriorated as a result of trade reforms? Does this vary depending on the commodity in question?
- What has been the role of government in improving market access, or protecting small farmers against exclusion?
- Have new institutional arrangements emerged? In particular, what alternative arrangements have replaced the activities of agricultural parastatals?
- What is the best way of promoting competition in agriculture? Is improved competition in input provision essential? Are there examples of successful institutional arrangements?
- Do farmers have more or less choice of market outlet following the reforms?

**Box 16.2**                      **Questions relating to market integration**

- Is the producer price for a particular crop identical for all regions and producers?
- Is there a differential price related to the time of sale or availability of market information?
- Are there any mechanisms to offset the effect of price fluctuations (for example, storage capacity, warehouse receipt systems)?
- What mechanisms are effective in helping to manage commodity price risk?
- Can the extent of reform be linked to the degree of price transmission?
- What is the effect of reducing the activities of marketing boards on price transmission?
- Does transmission vary according to whether trade is in local, regional or national goods?
- Does transmission differ by crop type?
- Is it more positive for cash as opposed to food crops?
- Do all producers benefit from reform (for example, is transmission negatively associated with geographic remoteness)?

**Box 16.3**      **Questions relating to access to assets**

- What is the current policy on land ownership?
- Is ownership skewed in favour of certain categories of farmers?
- Are producers able to expand land area in response to improved incentives?
- Are tradable inputs readily available to all categories? (this relates to previous questions about market access)?
- Is there differential access between farmers to other forms of non-marketed productive asset (for example land or water)?

Simple examples of the impact of these parameters may include those associated with the impact of reducing or eliminating the activities of an organization involved with integrating cash crop and input distribution systems, including the provision of credit to smallholders. A set of reforms that resulted in improved price incentives, but at the same time reduced access to inputs, could result in a negative supply response if alternative institutions facilitating input supply are not in place. On the other hand, where a positive response does occur despite a reduction in the availability of inputs, this may be based on the extensification of cropping, which itself may not be sustainable as an expansion strategy.

*Intermediate impacts*

Once a better understanding of incentive transmission and access to assets has been achieved, questions related to agricultural supply response can be more appropriately answered. The intermediate impact column of Figure 16.1 identifies indicators of a broad set of possible responses to changes in incentives faced by the agriculture sector.

In assessing supply response, the interest is not only in understanding the response of the sector in aggregate, but also how this response differs between producer categories. It is also important to know whether expansion in agricultural output has occurred as a result of substitution between crops, or extensification onto new land; or intensification on existing cropped land.

In addition to issues related to the empirical measurement of both national and household agricultural supply response, a number of questions relating to the preceding discussion are of interest to the investigation. These include whether (and why) changes in cropping patterns in response to changed incentives may result in:

- reduced production of food as opposed to non food commodities;
- changes in the relative levels of traditional as opposed to non-traditional commodities produced;
- increased production of tradables compared to non tradables;
- different outcomes among producer categories with respect to technology adoption, and with respect to the area under food as opposed to export crops.

Given an improved understanding of both the extent, and sources, of supply response, it is important to relate this information to the reforms implemented, and to the degree of market functionality. This facilitates better understanding of the first stage link set out in the conceptual framework. Research questions might include the following.

- What is the evidence that completeness, speed and sequencing of reforms negatively affect price transmission or supply response?
- Has agricultural production grown faster in countries in which reforms have been more fully implemented?
- What are the characteristics of an investment climate that is conducive to growth in the agriculture sector?
- Is there a differential response in the food compared to the cash crop sector, and if so, and is this differential influenced by the extent of reform?

Answers to these types of questions may then be used to inform these further investigations.

- What policy packages appear to be best at helping small-scale farmers to improve productivity (or shift out of agriculture) when exposed to liberalization?
- How should the activities of parastatals and other STEs be regulated by international agreements?

However, the influence of changes in relative prices needs to be considered at a broader level than simply investigating changes in aggregate levels or values of agricultural production and trade.

For example, a recent FAO/WB publication<sup>3</sup> considers the importance of dominant farming systems on strategies followed by farm households. They list five broad strategies:

- the intensification of existing production patterns;
- farm diversification of production and processing;
- expanded farm or herd size;
- increased off farm income (both agricultural and non agricultural); and
- complete exit from agriculture.

These strategies differ in their impact on the sector with respect to its potential for food production and income generation. The authors contend that although producers will often combine a subset of these strategies, the current farming system (notably its productive potential) is a key determinant of the preferred strategy. For example, in irrigated farming systems, intensification has been observed to be an important strategy for enhancing livelihood standards, compared to leaving agriculture altogether (exit) for some other income generating activity. This is contrasted with pastoral systems where exit is often seen to have the greatest potential for improving livelihoods. This example also raises the issue of the ease with which individual producers or households can diversify into alternative agricultural commodities or non-agricultural activities.

*Parameters modifying the transmission of intermediate impacts to final outcomes*

Once the extent of agricultural supply response and the factors influencing it have been established, this information needs to be related to the wider economic context in order to determine its contribution to reducing food insecurity. The second stage link between reform and trade security, described in Figure 16.1, requires an understanding of the influence on agricultural supply response of on

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<sup>3</sup> Dixon, J., Gulliver, A. & Gibbon, D. In M. Hall, ed. *Farming Systems and Poverty: Improving Farmers' Livelihoods in a Changing World*. Rome and Washington DC: FAO and World Bank, 2001.

the one hand, the country-specific economic context and on the other, household characteristics.

The key point here is that even if improvements in the aggregate value of agricultural production (and related activities) do occur, they will not necessarily be translated directly into an improvement in food security. Changes in the incentives facing the agriculture sector do not usually occur in isolation. Other economy-wide changes, for example in non-agricultural employment and income levels, can offset or even negate the potential impacts of any change in agricultural production.

The fourth column in Figure 16.2, therefore, describes a second set of modifying parameters that reflect the structural background to the activities (both producing and consuming) of poor households in different regions and countries. These parameters reflect the economic and institutional structures that can modify the impact of supply response on food security status. It facilitates an understanding of how the agrarian structure determines the characteristics of household groups within the agrarian economy, and consequently why the strategies employed by different household groups will vary in response to changes in the incentives that they face. In this respect, the concept of “diversification”, both within the agriculture sector or from agriculture to other income earning activities, is useful in describing these responses, and consequently their implications for food security status. Box 16.4 proposes a series of questions that might be relevant in helping to analyse this stage of the relationship.

**Box 16.4**                      **Questions relating to agricultural supply response and food security**

*At the national level:*

- What are the sources of agricultural growth and the characteristics of local demand?
- How are surpluses invested? Are increases in export earnings reinvested in agriculture, used to increase food imports or invested in other sectors? Do food deficit countries import more food when export (agricultural or total) earnings increase and vice versa?
- Have there been significant changes in the technologies used in the sector?
- How has the intensity of factor use changed?
- What have been the implications for returns to these factors?

- What are the relative opportunities for investment of surpluses locally, nationally or internationally?
- What are the implications of these findings for the magnitudes of agricultural multipliers?

*At the household level:*

- How has the net production position of rural households changed?
- What has happened to the levels and sources of household incomes of different household categories<sup>4</sup>: net producers/ consumers, urban vs. rural-farm vs. rural-non-farm?
- What is the distribution of earnings from increased agricultural production, and total value added by income class/ household type<sup>5</sup> (i.e. what assets do they hold)?
- What are the changes in expenditure patterns of households?

### *Outcomes*

Answers to questions on agriculture supply response and its effect on household incomes can assist in improving our understanding of the complexity of the link between trade reforms to food security. In the fifth column of the table, examples of indicators of food security at both national and household level are listed. These are the types of indicators that will be affected as a result of the changes in agricultural sector performance driven by the reforms.

From a research perspective, a number of general questions arise. For example:

- How can country level diversity be accounted for in determining the impact of agricultural growth (or otherwise) on food security?
- To what extent can a direct link be made between changes in border measures and food security status at national and household levels?

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<sup>4</sup> For categorizing households according to income sources, see Hertel, T., Preckel, P., Cranfield, J. & Ivanic, M. 2002. Multilateral trade liberalisation and poverty reduction: seven country applications. In OECD (ed.). *Global forum on agriculture: agricultural trade reform, adjustment and poverty*. Paris.

<sup>5</sup> Here the use of SAM/CGE models and household surveys would be relevant.



The answers to these questions can also inform debates on other issues, for example:

- To what extent do multilateral agreements influence the incentives faced by agricultural producers?
- Are changes related to the changes in international value chains (for example, the increasing power of supermarkets cited in Chapter 10) more relevant than the liberalization of border protection?
- How should these changes be factored into both unilateral reforms and multilateral negotiations, in order to allow developing country producers most scope for inclusion in, as opposed to exclusion from, market opportunities?
- What are the implications for current WTO negotiations?

The types of question set out above will be common to all countries, but specific questions of interest will vary by country. The most appropriate method for addressing them will depend on depending upon the importance of the questions for a particular country, as well as the existing level of knowledge and data availability.

In the final chapter of this publication, a strategy for operationalizing the framework and for addressing the questions posed in a cross-country case study setting is proposed.

## Chapter 17 <sup>1</sup>

### Guidelines for empirical analysis

#### 17.1 Introduction

This chapter details a series of steps that could be followed in order to provide an empirical basis for addressing some of the questions raised by the conceptual framework presented in Chapter 16.

These guidelines are developed as an aid to researchers attempting to draw insights from within-country, *ex post* analyses. The guidelines focus attention on the key aspects of the relationships depicted in Figure 16.1. These require empirical information additional to that already available in the literature, and sufficient to allow informed discussion of the two-stage links.

Given the complexity of the reforms, and the counteracting forces that reforms often generate with respect to agriculture performance and food security, identifying strong causal linkages between instances of reform and changes in the levels of food security is likely to be difficult, if not impossible. The guidelines set out below attempt to break down the linkages into their component parts, where the strength of the relevant relationships may be identified more easily. In bringing together the component parts it may be possible to infer likely directions of change in key indicators, and in some cases the relative values of such changes.

#### 17.2 Analytical guidelines

Using Figure 16.3 as a basis, the guidelines cover five main areas of investigation:

- description of the main episodes of reform and changes in key indicators of agricultural production, trade and food security;
- analysis of the characteristics of domestic agricultural markets in terms of changes in relative prices;

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<sup>1</sup> Prepared with inputs from Ramesh Sharma and Jamie Morrison.

- analysis of aggregate supply response;
- analysis of the impact of agricultural change on household incomes and expenditure patterns;
- assessment of the link between (a) agriculture sector change and national level food security; and (b) changes in household incomes and expenditures and household food security.

### ***A focus on commodities***

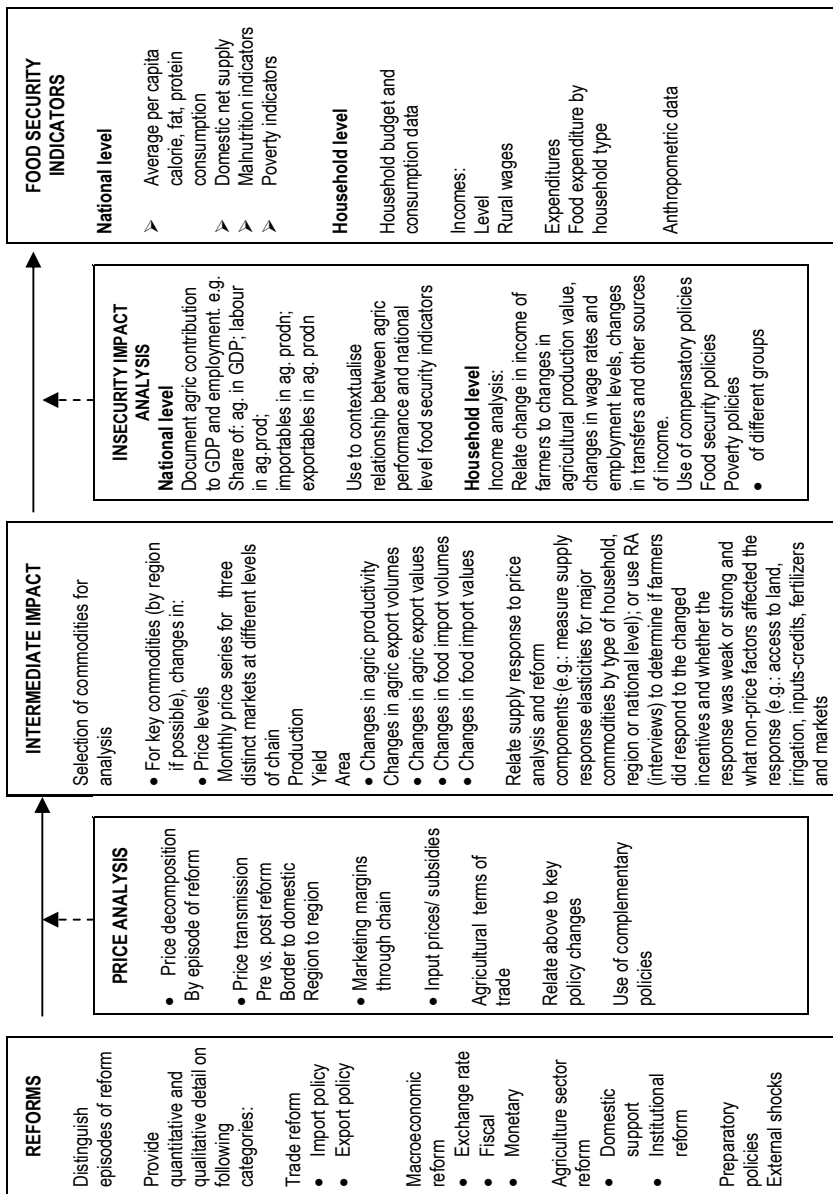
There are many ways of approaching the analysis of links between trade reform and food security. For example, one could start with indicators of food security and attempt to work backwards through changes in consumption patterns and then agriculture sector changes; alternatively, one could investigate the impact of a specific reform on incentives and supply response across the agriculture sector. Given the large number of possible modifying parameters, however, it is felt that focusing attention on a limited range of key commodities and tracking through the impact of a bundle of reforms on commodity price and production levels, will lead to the clearest understanding of the linkages.

### ***Methodological approaches***

The guidelines proposed below do not set out a rigid methodological approach. The method adopted for examining a particular aspect of the linkage may differ from country to country depending upon the data and expertise available and the complexity of the particular relationship being investigated, and therefore, the questions that will be relevant for each country. For example, in investigating the relationship between two sets of market prices, methodologies may range from a graphical representation to the use of co-integration analysis. Similarly, the classification of households may be based on key informant interviews or on a cluster analysis using key characteristics. The focus of these guidelines is on *ex post* analysis. In such cases, each step set out below may be analysed separately, in others, a more inclusive modelling approach may be used to analyse a number of the steps simultaneously, although this approach would be more generally used within an *ex ante* framework.

The investigation is approached as a series of sequential steps, following Figure 16.1. The framework is adapted in Figure 17.1 to concisely depict the key data requirements and proposed analytical approaches.

Figure 17.1 Analyses to link reforms, intermediate effects and food security outcomes



### ***Step 1: Description of episodes of reform and trends in key variables***

The key episodes of reform and the main policy instruments and institutional changes implemented within them should first be documented. The investigation would typically start with the situation before the reform, for example, the types of exchange rate controls, trade controls, pricing and marketing arrangements. Next past episodes of reforms should be described. Economic reforms, such as the SAPs, often come in episodes, for example, one could be in 1986, the next in 1992, then in 1997 and so on. This description would be in terms of the reform objectives, instruments in each package, the intensity of the reform, implementation (there are many examples of reversals of reforms initiated) and evaluation of effects<sup>2</sup>

There are some problems worth noting at this stage. One is deciding upon the time frame for the analysis. In particular, what is the “pre-reform” period for the benchmark against which to measure the impact? If the reform started in 1986, the pre-1986 period may look like a good candidate, but even if household survey data for that period are available - many structural changes could have occurred since then, which makes it difficult to justify the attribution of computed changes to the reform. A second problem is that several reform measures may be implemented gradually, for example, exchange rates may be devalued in steps, or trade reforms taken over several years.

A timeline of reform episodes could therefore form the basis of this documentation. For each episode of reform identified, information should be collated for the key policy instruments implemented.

- Policy change and policy design: key policy instruments can be described in terms of their design and implementation. Indicators of quantitative change in the levels of the instruments are described in Table 17.1 by policy type. A qualitative ranking might judge policy reform as being ambitious, complicated, or simple.
- Objectives: policies might be aimed at one or more of the following general targets:
  - i. economic stabilization;
  - ii. economic growth;

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<sup>2</sup> WTO's Trade Policy Reviews are a good source for identifying the range of trade policy instruments used in the past and currently.

- iii. diversification;
- iv. agricultural or rural development;
- v. income or asset redistribution;
- vi. food security.

The overall trade policy stance may be characterized as one of:

- i. import protection;
- ii. outward oriented;
- iii. two track reform (e.g. China).

As a measure of policy stance, total levels of support and protection, such as the Net Protection Coefficient and Producer Subsidy Equivalent could be calculated

- Drivers of reform: reform may occur for a wide range of reasons including:
  - i. a change in the system of governance, for example introduction of democracy or increased transparency;
  - ii. pressure from lobby groups;
  - iii. requirements to adjust in light of bilateral or international agreements e.g. WTO, loan conditionality.
- Date initiated/sequencing: A timeline of policy events including start date and change dates where relevant should be constructed.
- Adherence: The implementation of key policy reform should be tracked. Slippage against original plans and changes in the level of governmental commitment should be noted
- Expected outcome: Against each key component of the reform, the expected direction of change in primary indicators reflecting the desired outcome should be recorded. Where evidence to the contrary is available, this should be noted. Both objectives and expected outcomes could be treated from both the government and from IMF/World Bank/donor perspectives.

**Table 17.1** Examples of indicators associated with the reform of policy

Type of reform	Indicators for design/extent of change in policy	Possible data source
	Nominal exchange rate (T) Real exchange rate (T) Incidence of devaluation/revaluation Dates of government intervention	Central bank IMF
<i>Monetary</i> Money supply Inflation Savings Interest rates	Inflation rate (T <sub>m</sub> ): CPI, PPI Savings: consumption ratio (T) Interest rate (savings) (T) Interest rate (borrowing) (T) Role of government Independence of central bank	Statistical yearbook Central bank Treasury
<i>Fiscal</i> Budgetary constraints Introduction of user fees Taxation policy	Budget deficit (T) Government investment (T) General taxation (T) Sectoral taxation (T)	Statistical yearbook Central bank Treasury Agricultural yearbook
<i>Trade</i> Tariff  <i>NTB</i> Export subsidies Export incentives Export credits/guarantees Export bans Trade agreements	Tariff bindings (T); Applied tariffs (T); Tariff revenues (T) NTB tariff equivalents (T)  Expenditure on export promotion (T)	WTO schedules FAO green volumes for countries covered  Regional trade agreement documentation (e.g. COMESA) Trade yearbooks
<i>Agriculture sector policy</i> Subsidies: Output Input Investment Credit Price controls (e.g. pan-territorial) Risk management Direct payments R&D, extension	By crop (and if appropriate by region):  Subsidy type and level at each change (P)  Other interventions type and level at each change (P)  Total Expenditure by amber, green and blue box categories	WTO Domestic Support Schedules  Agricultural yearbooks
<i>Poverty/Food security</i> Social spending Food stock adjustment Safety nets Strategic food reserves	Urban vs. rural expenditure (P) Programme type and level of expenditure at each change (P)	WTO schedules  National level data

Type of reform	Indicators for design/extent of change in policy	Possible data source
<i>Institutional reform</i> State withdrawal from distribution, infrastructure and service provision Role of NGOs	Number and type of STE  Proportion of activities by level in marketing chain in private sector (P)	WTO schedules

The following symbols are used to denote the minimum periodicity of data required for the subsequent analysis:

(P) = at discrete intervals i.e. 5 yearly

(T) = time series annual unless specified by e.g. (Tm) = monthly

(D) = derived from collected data

Data should be collected over the period 1970 – present as a minimum.

### *Indicators of change in agricultural production and trade*

An aggregate-level depiction of the status of the agriculture sector and of food security should be developed as a basis for developing initial hypotheses relating to the impact of reform and to give context to the succeeding analyses.

For major food and non-food commodities, time series data should be collected on:

- changes in aggregate production levels in terms of the quantity of production, area harvested and average yields;
- changes in the crop mix, for example: the ratios of land area devoted to food and non-food production, to marketed and subsistence production, and to traditional and non-traditional export crop production;
- changes in the value of domestic agricultural production by commodity could be calculated, in combination with the price data.

Of particular interest to this research is the associated impact on the agricultural trade balance and composition. Time series data would be required to illustrate the changes in, for example, total value of imports and exports, the contribution of agriculture and non-agriculture to trade and the value of imports and exports for major food and non-food commodities. For selected food and non-food commodities changes in the direction of trade should be noted.



### *Indicators of change in food security indicators*

National level<sup>3</sup> indicators of food security can be categorized in terms of Availability, Stability and Accessibility. Various indicators have been described in Part I, and include:

- per caput food production
- *Status Quo* gap and nutrition gap indicators as calculated by USDA;
- daily calorific intake per capita and proportion of individuals undernourished as calculated by FAO;
- food commodity price stability;
- per caput food imports
- per caput total food supply
- food import bill;
- food import bill: export (total merchandise and/or agricultural) earnings;
- food self sufficiency ratio (level and variation);
- food aid: food imports.

### ***Step 2 - Relating reforms to agricultural performance***

Once an overall picture of the reforms and of trends in indicators of agricultural production and of food security has been established, the next step is to determine the extent to which the reforms can be related to the indicators.

To understand the extent to which the episodes of reform documented in step 1 promoted change in the agriculture sector, it is necessary to understand the changes in the incentives that different types of producers faced, and how they responded to them.

Changes in relative prices and in quantities produced and consumed are the two most important intermediate outcomes of reforms. The challenge here is both to quantify the level of the outcomes and to establish the connection or linkages

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<sup>3</sup> Household level food security indicators are derived in steps 3 and 4.

between reform measures and outcomes. Again, there is no easy approach or method to doing this in *ex post* analyses. Researchers often use a number of approaches and methods.

Sharma<sup>4</sup> provides a useful insight into the types of approaches that might be used to further inform the analysis by breaking down the intermediate impact of reform. The two most common elements of analysis at this stage are estimating price effects and supply responses. The impact resulting from changes in relative prices only (i.e. prior to changes in quantities produced and consumed) may be called “first-round effects” while the “second-round effects” would be those after taking into account quantity responses also. In some cases, both effects are analysed simultaneously, as part of the single model (discussed below). But it can be more revealing to conduct the analysis sequentially, i.e. first of prices and then quantity responses. In Figure 1, these effects are called “intermediate effects”. The focus in adopting these types of approaches is on one or a limited number of markets within and economy. However, a limitation of these approaches is that household expenditure is assumed to remain fixed and that changes in demand due to changes in incomes and prices tend to be ignored – i.e. the second round effects may not be fully captured.

It is proposed that these impacts be investigated on an individual commodity basis (for the reasons given above) by examining both changes in relative prices and the sources of changes in the level of commodity output. A range of commodities should be selected, according to criteria such as a ranking of products by agricultural production value, but also including emerging non-traditional crops. Although the focus of this step is upon the impact of reform on producer incentives and supply response, the selection should consider the importance of the products to the livelihoods of vulnerable groups both as producers and/or as consumers (see also Step 4).

#### *Analysis of price data*

The analysis of the impact on relative prices is the starting point because most reforms aim at “correcting” prices, and relative prices invariably change following economic reforms.

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<sup>4</sup> Sharma, R. 2003. An Overview of the FAO Studies on International Trade and Household Food Security and Methodologies. INFOSAMAK Expert Consultation on International Fish Trade and Food Security. Casablanca 27 – 30 January

Thus, one can form expectations about the direction to which relative prices in the post-reform period would move. Beyond this, the analysis is complicated because it is very difficult to estimate the magnitude of the change in *ex post* studies (in *ex ante* studies one simulates a model to determine the size of the change). At times, different instruments in the reform package may impact on prices differently, some raising prices and others depressing them. It is for this reason that analysts often use a number of tools to conduct price analysis so that informed conclusions may be drawn.

For a better understanding of the influence of policy reforms on the relative prices faced by producers it may be necessary to investigate the extent of price transmission and market integration. For example, in analysing the impact of trade policy reforms it is important to establish the extent to which changes in international prices are transmitted to domestic prices. If the purpose of reform is to increase the openness of the economy, then one may expect the transmission of changes in international price levels to be more fully reflected in changes to domestic prices. The results of such analysis will provide insights into the extent to which incentives are modified by reform. It is therefore proposed that for each main commodity selected, a set of price series data derived from different segments of the domestic market within a country be analysed.

If changes in price series can be related to episodes of reform, it may therefore be possible to assess the extent to which margins, and in some cases, the strength of price transmission, have changed. Judgements could then be made about the impact of reforms on incentives. To facilitate this, a timeline of reforms impacting (directly and indirectly) on the commodity could be related to trends in the price series. A decomposition of price by source may also help to identify the extent to which reforms are contributing to price changes. Comparisons of the characteristics of price series across commodities should also be made to inform discussion of how reforms have impacted on relative prices.

On the basis of the preceding discussion, three components of price analysis may be warranted:

#### *Price decomposition*

This type of analysis is used to determine whether, and to what extent, it is the reform process that explains the evolution of market prices (producer, consumer or wholesale) of commodities. In reality, domestic prices are influenced by a number of factors, notably world prices, exchange rates, tariffs, domestic

marketing margins and the institutional environment. It is useful to know the percentage contribution of these various factors to changes in market prices so that some informed conclusion may be drawn about the relationship between changes in price incentives and the reform process.

One way to conduct this analysis is to use a technique to decompose the contributions to price changes.

Assume that the domestic price of a product, for some period “0”, is determined as in equation (17.1)<sup>5</sup>:

$$P^d_0 = P^w_0 * E_0 * t_0 * c_0 \quad (17.1)$$

where  $P^d$  is domestic price (e.g. at farm level),  $P^w$  is world price,  $E$  is exchange rate,  $t$  (or  $(1+t)$  to be exact) represents *ad valorem* tariff and  $c$  (or  $(1+c)$  to be exact) represents other (proportional) costs (e.g. transport and marketing costs). A similar relationship is defined for some other period (period “1”) as in equation (17.2):

$$P^d_1 = P^w_1 * E_1 * (1 + t_1) * (1+c_1) \quad (17.2)$$

Taking logs (ln) of both equations and subtracting (17.1) from (17.2), one obtains equation (17.3):

$$(\ln P^d_1 - \ln P^d_0) = (\ln P^w_1 - \ln P^w_0) + (\ln E_1 - \ln E_0) + (\ln t_1 - \ln t_0) + (\ln c_1 - \ln c_0) \quad (17.3)$$

Since the first-order difference of logs gives the (approximate) percentage change (after multiplying by 100), the change in the domestic price is decomposed in a way that the contributions of the four factors sum to 100 percent. The data for the first three variables are often easily available; it is only in the last two cases that researchers will face data problems. In view of this, many analysts simply combine the last two terms when conducting the decomposition – which is also useful in that this term represents the effect of domestic factors (policies and others). Table 17.2 shows an example from an application by Quiroz and Valdés<sup>6</sup>

<sup>5</sup> This expression for domestic price determination applies to trade products. For non-trade products, domestic prices are determined by forces of domestic demand and supply.

<sup>6</sup> Quiroz, J & Valdés, A. 1993. Decompositions based on real price and exchange rate data.

**Table 17.2.:Decomposition of the sources of change in domestic prices of agricultural importables, Malawi, 1980-87**

Period	Change in domestic price	Change in world price	Exchange rate	Other factors
1980-82	67.5	-16.5	22.1	61.8
1982-85	-20.3	-5.8	18.3	-32.8
1985-87	-10.3	-5.8	-5.0	0.5
1980-87	36.9	-28.1	35.4	29.6

Source: Quiroz and Valdés (1993). Decompositions based on real price and exchange rate data.

#### *Price transmission analysis*

There is a separate literature on price transmission in the context of market integration. The purpose of price transmission analysis is to determine the degree of integration of two or more markets, notably the world and domestic markets, but also spatially separated markets within a country. One of the potential effects of policy reforms is to increase the degree of market integration post reform. For example, changes in world market prices would be more strongly reflected in domestic prices following the removal of quantitative controls on trade. Similarly, competitive procurement and free internal trade following the removal of the monopoly right of marketing boards should result in much stronger transmission of price signals across domestic markets.

Price transmission analysis can therefore be used, in principle, to determine whether there is stronger evidence of transmission in the post reform period.

To conduct the analysis, one can specify a regression relationship between prices in their lagged form. In its simplest form, the specification can be written as:

$$P_t^d = \varphi_1 + \varphi_2 P_t^w + \varepsilon_t \quad (17.4)$$

where  $P_t^d$  is domestic price of a product in period  $t$ ,  $P_t^w$  is world price,  $\varphi_1$  and  $\varphi_2$  are parameters to be estimated and  $\varepsilon_t$  is the stochastic error term.

The interpretation of the estimates of the parameters should however be undertaken with caution. The estimated parameter  $\varphi_2$  has been treated as an

estimate of the ‘transmission elasticity’. This implies that as the price  $P^w$  rises by 1 percent the price  $P^d$  will rise by  $b$  percent in the long run. This type of conclusion could be misleading. For instance, the two prices could be unrelated except that they are both driven by a common trend (such as general inflation). They will therefore be cointegrated. However, a rise in  $P^w$  that was unrelated to this trend (and was a temporary shock), does not require that the price of  $P^d$  change at all. If the parameter  $\phi_2$  is being thought of as a partial derivative of  $P^d$  with respect to  $P^w$ , the estimate of  $\phi_2$  will almost certainly not estimate this partial derivative<sup>7</sup>.

In analysing the extent of price transmission, given the qualifications regarding the use of the transmission elasticity as discussed above, the establishment of causality is an important first step.

In practice, the analysis of price transmission can be approached using a Vector Autoregression (VAR) model. A VAR is a simultaneous equation system in which all variables in the model are regarded as endogenous and expressed as a linear function of each variable’s past, or lagged values, and the lagged values of the other variables.

For example, a VAR model of  $P^d$  and  $P^w$  using 2 lags can be expressed as follows:

$$P_t^d = \alpha_1 + \sum_{j=1}^2 a_j P_{t-j}^d + \sum_{j=1}^2 b_j P_{t-j}^w + \mu_{1t} \quad (17.5)$$

$$P_t^w = \alpha_2 + \sum_{j=1}^2 c_j P_{t-j}^d + \sum_{j=1}^2 e_j P_{t-j}^w + \mu_{2t} \quad (17.6)$$

Where the  $\mu$ ’s are the stochastic error terms and are assumed to be uncorrelated. Each equation is estimated by ordinary least squares regression. The objective is

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<sup>7</sup> In addition, this technique has been found to suffer from several problems, including the non-stationarity of the data and high degrees of positive autocorrelation. Most economic time series are non-stationary in their level forms, which means that they will tend to drift in a random way following a shock. So, the relationship obtained from the static regression analysis could be misleading.

to test whether statistically one can detect the direction of causality between  $P^d$  and  $P^w$  in a lead-lag relationship. This is done by implementing the Granger causality test<sup>8</sup>, which consists of using an F-test to test the hypothesis, for example, with respect to equation (17.5), that  $\sum b_j = 0$ ; that is, lagged  $P^w$  terms do not belong in regression. If the statistical test rejects this hypothesis, then we cannot say that  $P^w$  does not ‘Granger-cause’  $P^d$ .

If there is transmission from the world market to the domestic market, then  $P^w$  would commonly be found to Granger-cause  $P^d$ . Thus, one might interpret causality as being evidence of transmission.

It is important to emphasise that a lack of Granger causality does not necessarily imply an absence of transmission. Signals may be transmitted instantaneously. Therefore, it is possible that there is no Granger causality, yet transmission might be perfect. If all relevant shocks were transmitted instantaneously then this could show up as correlation between  $\mu_{1t}$  and  $\mu_{2t}$ .

An interpretation of the estimated coefficients and of the restrictions placed upon the model can therefore be used to provide evidence as to whether the world price is a better explanatory of the domestic price following the implementation of reforms.

### *Analysis of marketing, transport and other margins*

Economic reforms should reduce the cost of doing business, or margins facing economic agents. Thus, margins are important intermediate impact indicators in themselves. They are also indispensable statistics for related analysis: to explain the share of consumer price received by producers; to explain the price transmission results; and to examine differential terms of trade facing small and

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<sup>8</sup> According to Granger (1969), since the future cannot predict the past, if variable  $x$  (Granger) causes variable  $y$ , then changes in  $x$  should precede changes in  $y$ . Hence, in a regression of  $y$  on other variables (including its own past values) if past or lagged values of  $x$  are included and it significantly improves the prediction of  $y$ , then we can say that  $x$  (Granger) causes  $y$ . In contexts where price transmission is occurring, but not instantaneously, Granger causality would be expected. A test for Granger causality therefore provides an indication as to whether, and in which direction, price transmission is occurring between series.

large farmers. The analysis of margins plays an important role because many studies have shown that smaller farmers invariably face much higher margins (and transaction costs) than larger farmers, and this explains a great deal of their differential participation in commercialisation.

These analyses of price series should help to illustrate and explain why different sets of producers are differentially affected and allow comparisons across both crops and countries. The analyses would stimulate hypotheses as to the key factors causing constraints to integration and market functionality.

Data limitations will determine what is feasible, but a number of options for segmentation of the market for analysis could be considered:

- market segmentation by region to give an indication as to the degree to which incentives affected by reforms pass through to remoter areas;
- market segmentation by level in the commodity chain (e.g. border, wholesale, retail, farm) in order to examine the extent to which these markets are integrated;
- market segmentation by producer type, for example sales by smallholders to communal markets and commercial farms to marketing boards (e.g. Zimbabwean domestic beef sales). In addition, information on the extent of engagement by semi-subsistence producers in the market should be collected.

#### *Supply response*

The analyses set out above provide a mechanism for understanding how policy change is related to price changes and thus to changes in the incentives facing producers. Having analysed the incentives faced by producers and how changes in these incentives are related to reforms, a next step is to investigate how producers have responded. Different sets of producers will be more or less able to respond to identical changes in output prices depending on the current policy and institutional environment and on agro-climatic constraints. Establishing the supply response is therefore a critical link in explaining the impact of reforms on income levels (see below).

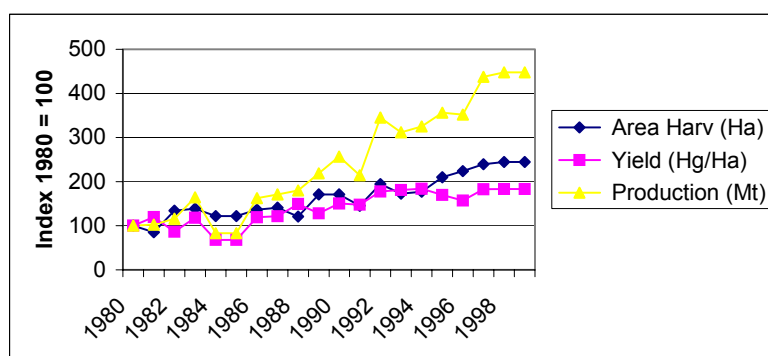
Good quality survey data is essential for measuring the response. Even where the quantification of elasticities using econometrics is not feasible, insights should be gained through other techniques. Interviews with farmers, key informants and



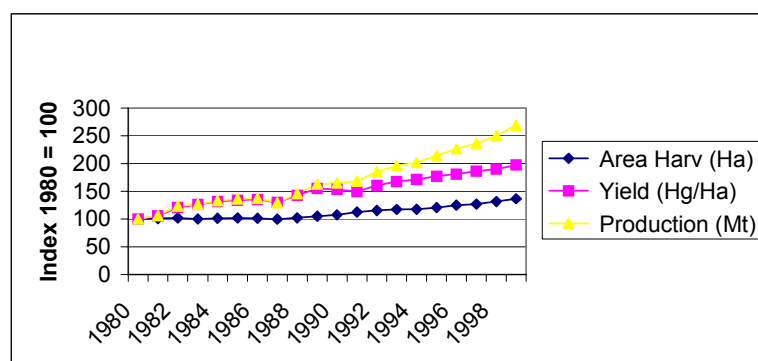
extension workers often reveal whether producers responded to incentives following a policy change, whether the response was weak or strong, and what non-price factors were important for facilitating the response. Where there was no response, these surveys should point to constraints limiting the response. One technique that has been used to study supply response to prices and other constraints at the farm level is to use linear programming methods. This would provide a “what if” type of analysis, rather than quantifying past responses, but could be useful for insights about how farmers would have responded.

- Output response by source. Data on aggregate commodity production should be analysed to determine the proportion of changes in the level of production that can be attributed to changes in the harvested area and the proportion attributed to changes in yield. The sources of agricultural production growth are likely to vary across commodities and across countries as a result of the different incentives, opportunities and constraints faced, as Figures 17.2 and 17.3 demonstrate. Rice sector expansion in Mali during the past two decades appears to be driven mainly by area expansion, although there is some evidence of yield increases. By contrast, the dominant driver in Viet Nam has been yield increase with more limited area expansion. Questions need to be asked as to why the different responses occurred and whether they were the most desirable.

**Figure 17.2 Sources of rice sector expansion, Mali, 1980-1998**



Source: FAOSTAT (2000)

**Figure 17.3 Sources of rice sector expansion, Viet Nam, 1980-1998**

Source: FAOSTAT (2000)

- Output response by producer category. Where data are available, the analysis could be disaggregated by producer category or by region. This would make it possible to examine whether the proportion of changes in levels of production achieved by area expansion or yield enhancement has differed across producer types or regions. From this, improved hypotheses could be developed regarding the likely sources of these differences. The latter could be related to framework parameters such as non-price policy and institutional reforms, and initial conditions which may result in different impacts of similar policy reform in different contexts.
- Linking output response to the reform variables and to the framework parameters. Given that there are differential responses to policy change, it is of interest to determine how this can be related to the combined effect of the package of price and non price policies and institutional reforms. These may include among others, access to tradable inputs, changes in the land tenure system, access to credit and initial agroclimatic conditions.

Examples of analyses that may be required to understand the relationships are provided in Box 17.1.

The insights derived from the analysis of prices and production levels could be combined to inform analysis of the impact of episodes of reform on agricultural supply response.

**Box 17.1      Investigations for relating output response and the modifying parameters**

An investigation of access to tradable inputs may include analysis of:

- the extent of competition in input provision;
- examination of the terms of trade (for example relating prices of fertiliser, chemicals and fuel to output prices at border and farm gate levels).

Land tenure systems may be characterized by:

- functionality of the land market;
- number of farm holdings by size group;
- proportion of land under each category of producer;
- land prices by region;
- land rental prices by region.

Formal and informal mechanisms for credit may be characterized by:

- differential terms;
- contractual forms;
- collateral requirement;
- interest rates.

Regional differences may be characterized by

- low vs. high agricultural potential;
- agricultural population by zone;
- agricultural activity by zone;
- transport costs.

***Step 3 - Impact of agricultural change on household incomes and expenditure***

The second stage of the link depicted in Figure 17.1 can be broken down further to aid analysis:

- the relationship between agriculture sector change and household food security

- the relationship between agricultural sector performance and national indicators of food security

The household level relationship can be considered in two stages: first, the impact of agriculture sector change on household income and expenditures; and second, the relationship between changes in household incomes and expenditures and household food security. In step 3, the first stage is examined, with the other components being investigated in the next step of the analysis.

*Reform implications by category of rural household*

To understand how households have been differentially affected by agriculture sector change brought about by reform, it is necessary first to categorize household types. Indeed, the proper identification of the household typology is often crucial. The most appropriate classification will vary between countries, but ideally would emerge in part, from the market segmentation of step 2. For example, if the market for key crops has been segmented regionally, household types could be classified within each of the regions.

The following mechanisms for farm household classification may be appropriate:

- by degree of commercialization (subsistence, pre-commercial, commercial);
- by types of main products (export crops, import crops, non-tradables);
- by organization of farming (owner-operated, cooperative, contract farming, sharecropping, plantation);
- by mode of market access (e.g. how output and credit markets are accessed);
- by location<sup>9</sup>
- by scale of resources access (particularly land);
- other non-farm rural household types (e.g. rural labourers).

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<sup>9</sup> McCulloch (2002) notes that remoteness can determine the extent to which farm households are engaged in market related activities as opposed to production for home consumption.

For each selected household type the information should be documented on income patterns (percent of total income by source) and on expenditure patterns (proportion on food and non-food items). For farm households, data should be documented on the production of each commodity and on the proportion of each that is sold. Ideally, the information should be collected for two or more discrete periods of time in order for changes to be identified.

A commonly used approach is to construct an accounting framework to record all incomes and expenditures of a household in order to compute the net change, and could also incorporate quantity responses to price changes. Applications based on this approach to quantifying the impact of reform on poverty are numerous, as reported in McCulloch (2002). Sahn and Sarris suggest that there are two issues that require careful analysis when adopting this approach. One relates to the structure of household income and consumption and how this might change during the reform period, and the other is the effect of price changes on the magnitudes of these values.

The following framework is somewhat simplified, but adequate for most cases.

For a selected household type, and a given period, the full income and consumption expenditures are defined as in equations (17.6) and (17.7) after McCulloch (2002).

$$\text{Income: } Y = (\sum p_j^o q_j^o - \sum p_k^i q_k^i) + w.L + T \quad (17.6)$$

where the first term within the bracket is value added (income) from own production (the p's indicating prices and q's indicating quantities, the superscript "o" output and subscript "j" commodities produced). The "w.L" term is to measure labour income (wage rate times employment) and T is transfers received by the household (e.g. from government, pension, remittance etc.).

$$\text{Consumption expenditure: } C = (\sum p_j^c q_j^c) \quad (17.7)$$

with variables as above (the superscript "c" standing for consumption).

The purpose is to measure change over two periods. Where survey data are available for two periods, the Y and C in equations (17.6) and (17.7) are measured for two periods. Where this is not possible, analysts have measured the impact of price changes (induced by policy reforms, as estimated in the previous steps, or shocks) assuming that quantities do not change.

Using the change operator  $\Delta$ , equations (17.8) and (17.9) are used for this purpose:

$$\Delta Y = (\sum \Delta p_j^o q_j^o - \sum \Delta p_k^i q_k^i) + \Delta w.L + \Delta T \quad (17.8)$$

Similarly, the change in consumption assuming that consumed quantities remain fixed is:

$$\Delta C = (\sum \Delta p_j^c q_j^c) \quad (17.9)$$

A first-order approximation of the change in money metric utility, or welfare  $W^{10}$ , resulting from changes in prices (including wage rates) is given by expression (17.10):

$$\Delta W = \Delta Y - \Delta C \quad (17.10)$$

With this framework, it is possible to analyse the impact of changes in many variables, including output prices, food prices, input prices, wage rates, transfers etc. In particular, the focus of many studies has been on the impact of a change in food prices. This is because an increase in food prices not only leads to higher income but also higher consumption expenditure. The net gain will depend on the net position of the household (net seller or net buyer) and the weights (income and consumption shares).

Many studies also “embed” quantity responses, i.e. price and income elasticities of supply and demand, in equations (17.6)-(17.10) in order to derive expressions that permit the analysis of multiplier effects.<sup>11</sup> However, analysts need to weigh

<sup>10</sup> Most poverty-focussed studies measure welfare in income terms. In food security-oriented studies, there is a justification for extending the analysis to quantify the impact in terms of food consumption, e.g. by measuring food energy (kilocalories) and protein. Several studies on agricultural commercialization in von Braun and Kennedy (1994) extend the analysis from incomes/expenditures to food energy.

<sup>11</sup> There are numerous references on agricultural household models and their applications to cite here. A good exposition of the theory and application is in Chapter 6 of Sadoulet and de Janvry (1995). Sahn and Sarris (1991) apply similar method in their study of five countries in Africa (they trace welfare changes for 15 years, 1975-89). The Ethiopian study of Dercon (2001) uses similar technique.

up the benefits and costs (in terms of data and expertise required) of attempting to estimate these elasticities. Consumption elasticities are likely to be of less interest than production elasticities. The model can also be used for *ex ante* simulation studies, under a variety of assumptions about markets, e.g. complete and fully functioning markets, missing markets, or imperfect markets.

#### *Data sources*

Data availability is likely to impose constraints on the options available for collating and examining these changes. In most situations, household survey data could be used as the basis for household categorization and the analysis of changes in expenditure and income levels. A particular constraint is likely to be data availability on rural labour markets, notably wages, and this may preclude analysis of the impact on household income levels as a result of labour reallocation. Where the required information is not available from existing surveys, rapid rural appraisal (RRA) approaches may be undertaken to provide an approximation of the values associated with the key variables.

In some cases, only one survey may be available during the period under analysis. In such cases, these surveys will provide the quantity information required in equations 17.6 and 17.7 above, and the analysis will reveal the impact of changing prices and wage rates under the assumption that the structure of the households' income and consumption patterns remain constant. In other words the household income and consumption levels are projected forward from the initial situation.

Where two surveys are available it is possible to incorporate quantity changes into the analysis. In this case, it would also be feasible to undertake the projection as explained above, but with the added advantage of being able to cross check the results against the situation described by the second survey.

Whether one or more surveys are available, it is important to construct a counterfactual. This can be achieved by determining the expected income, given past trends in income and productivity levels, in the absence of reforms. It would then be possible to judge the impact of reform by determining the difference between the counterfactual and the observed level of income. Any divergence

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Minot and Goletti (2000) apply the method in their study of the impact on poverty of Vietnam's rice market liberalization.

could then be related to the policy reforms that had been implemented during the period.

In some circumstances, existing modelling exercises which analyse the impact of policy reform may exist, and these could also be used to cross check or verify these micro level analyses.

Once the sources of incomes and the patterns of expenditure have been established, attempts should be made to relate these to reforms of the agriculture sector.

#### ***Step 4 - Explaining changes in food security***

The information derived from the analyses above can now be used to infer relationships between agriculture sector performance and both national and household food security.

##### *National food security*

FAO has been publishing, on an annual basis since 1999, estimates of the number of undernourished population for some 125 developing countries and economies in transition.<sup>12</sup> By using national-level data on the availability of food calories per capita, requirements and their distribution across population groups, estimates are made of the percentage of people in each country whose average calorie intake falls below the minimum required for living and light activity. Although national-level data are used to derive these estimates, the methodology yields the prevalence of undernourishment in terms of individuals in a country.

Most countries in the world have some food insecure. Thus, one can not say that a country is food secure or insecure, but countries can be ranked. For example, one may categorize countries on the basis of the severity of food insecurity, extremely low food insecurity when the prevalence rate is 2.5 percent or less and very high food insecurity when the rate is over 35 percent.

There is tendency to use some food-related indicators to infer the state of national food security, notable ones being per caput food production and self-sufficiency ratios (SSRs). A fall in the value of these indicators is then said to indicate a

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<sup>12</sup> FAO, *The State of Food Insecurity in the World* available on-line at [www.fao.org](http://www.fao.org).



deterioration in national food security. Although one may find some correlations between these indicators and the household/individual based indicators of food security, the inference could be misleading. There are many instances of countries where these indicators worsen but the country becomes more food secure. In the context of economic reforms and trade liberalization, what happens to the food sector following a reform episode will depend on the situation prior to the reform. For example, if food sectors are protected with tariffs while cash crops are taxed, a trade reform (lowering of tariffs on foods and export taxes on cash crops) should lead to an expansion of the cash crop sector while the food sector will shrink, resulting in a deterioration in food security situation based on the two food-based indicators. If overall agricultural incomes rise as a result of this result (notably if the overall income gains are also captured by food insecure households), the country should be importing more food than before the reform. If so, per caput consumption or total supply of food would be higher. The new outcome should also be reflected in terms of the ratio of food imports to agricultural exports, which should fall or should not increase.

It is also possible that trade reform may even lead to a deterioration in agriculture as a whole (both food and non-food sectors) if the sector was supported, to the extent that it is no longer profitable to produce the same volume at world market prices. Additionally, economic growth has historically been associated with declines in the share of agriculture in overall GDP, while industries and service sectors expand. In that case, all three indicators (per caput food production, SSR and ratio of food imports to agricultural exports) may deteriorate.

Even in these cases, there is no guarantee that household food security has improved, since it is possible that increased food imports go to feed livestock for the rich, for example, maize and soy products.

At the national level, broad indicators of food security should therefore be related to broad indicators of agricultural sector change collected for step 1 with caution. The main objective at this stage is to analyse the effect of the modifying parameters on this relationship. These relate to the structural diversity of economies and of the role of the agriculture sector within them. Examples are provided in Box 17.2.

**Box 17.2 Characterizing structural diversity**

The importance of agriculture may be characterized by indicators such as:

- agricultural employment as a proportion of the total workforce;
- agricultural value added as a proportion of total value added;
- level of multipliers (where available).

The degree of trade dependence may be characterized by:

- the ratio of food imports to total exports;
- the ratio of the value of food imports to the value of food production;
- the ratio of the quantity of grain imports to the quantity of grain production;
- the diversity of agricultural export base (e.g. number of commodities exceeding 5 percent of the value of agricultural exports);
- dependence on primary commodities (e.g. the ratio of primary exports to total exports or primary exports earnings to GDP);
- agricultural and non-agricultural tariff revenues accruing to government.

Poverty levels may be characterized by

- the poverty headcount index;
- the Gini coefficient.

*The country context*

In addition, the context within which the reforms are taking place will also affect their impact on food security either directly or indirectly. In making comparisons across countries, context will be especially important. Indicators describing the country context are suggested in Table 17.3

**Table 17.3 Indicators of country-level context**

CATEGORY	DESCRIPTION OF INDICATOR	INDICATOR
Demographic	Population  Rural versus urban	Total (P) Density (P) Growth rate (P) Number in rural areas (P) Number in urban areas (P) Ratio of population in rural to urban areas (D)

CATEGORY	DESCRIPTION OF INDICATOR	INDICATOR
Macroeconomic	Age profile	Dependency ratio (P)
	Education level	Literacy rate (P)
	Cultural diversity	Ethnic group ratios (P)
	GDP	GDP (T)
		GDP growth rate (D)
		Per capita income (D)
	Sectoral contribution	Share of agriculture, industry, services (T)
	Unemployment	Proportion of workforce unemployed (P)
	Employment by sector	Numbers of employed by sector (T)
		Proportion of workforce by sector (D)
Economic stability	Inflation (T)	
Resource endowments	Land area	Consumer price index (T)
		Low-income price index (T)
		Total
		Total agricultural (P)
		Total arable (P)
		Per capita arable (D)
	Suitability/ potential	Proportion potential agricultural utilised (P)
		Proportion potential arable utilised (P)
	Climatic e.g. drought risk	Rainfall (Tm)
		Evapotranspiration (Tm)
	Irrigation	Proportion of arable land irrigated (P)
		Irrigable area (potential) (P)
		Irrigation type (e.g. surface, groundwater, harvesting)
		Irrigation recharge (e.g. snowmelt versus rainfall)
		Forest coverage (P)
Non-economic events	Water availability	Use to recharge (P)
	Civil war, mineral discovery, political change, famines, floods etc	Timeline to record instances

The following symbols are used to denote the minimum periodicity of data required for the subsequent analysis:

(P) = at discrete intervals i.e. 5 yearly

(T) = time series annual unless specified by e.g. (Tm) = monthly

(D) = derived from collected data

Data should be collected over the period from 1970 to the present as a minimum.

### *Household-level food security*

In the previous stage of the analysis, agriculture sector change was related to changes in the levels and sources of incomes and expenditures in different categories of households.

At this stage of the analysis attempts should be made to relate the information on changes in incomes and expenditures to indicators of food security. Following Sen's entitlement approach, analysts might characterize the relationship in terms of:

- the implications of changes in income and expenditure levels for purchasing power;
- changes in subsistence strategies;
- changes in average calorie consumption<sup>13</sup>.

The objective is to identify whether positive shifts in income and expenditure patterns that have been attributed to changes in the agriculture sector are associated with improvements in food security status and in doing so, to identify groups of households that have lost or gained from these changes.

Indicators that may be used to inform this identification may include:

- relative proportion of own production, cash, exchange for labour, safety net, remittance in incomes;
- cost of food relative to wages and other income;
- share of total expenditure on food;
- stability of food basket costs.

### **17.3 Conclusion**

Although, it is probably not possible to forge a direct link between a specific reform and the status of food security, the research strategy proposed above should improve the existing understanding relating to the factors which can modify the strength of any potential change brought about by reform.

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<sup>13</sup> It is not expected that anthropometric data will be used in the analysis.

Understanding the effect of these parameters is likely to be more important than the ability to predict the exact response to reform, as it is an understanding of these parameters that will guide appropriate policy reform and the design of required complementary policy and institutional reforms.

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