ECOFAIR TRADE DIALOGUE
Discussion Papers

No. 10 / November 2007 / English Version

The World Bank's WDR 2008: Agriculture for Development

Response from a Slow Trade — Sound Farming Perspective

by Sophia Murphy and Tilman Santarius

MISEREOR
IHR HILFSWERK

HEINRICH
BÖLL
FOUNDATION

This document has been produced with the financial assistance of the EuropeanUnion. The contents of this document are the sole responsibility of Misereor and Heinrich-Böll-Stiftung and can under no circumstances be regarded as reflecting the position of the European Union.

Contacts:

Heinrich Boell Stiftung, Hackesche Hoefe, Rosenthaler Str. 40/4, D-10178 Berlin
Tel: ++49-(0)30-285-34-187
E Mail: chemnitz@boell.de

Misereor, Mozartstr. 9, D-52064 Aachen
T: ++49-(0)241-442-168
E Mail: kolmans@misereor.de, schimpf@misereor.de

This paper does not necessarily represent the views of the before mentioned organizations.

About the authors:

Sophia Murphy, currently living in Australia, is Senior Advisor to the US-based Institute for Agriculture and Trade Policy (IATP) and an internationally recognized expert in food and trade issues. She has authored a number of papers on food security, multilateral trade rules and the structure of global agricultural markets. She has a Master's in social policy, planning and participation in developing countries.

Tilman Santarius, from Germany, is Senior Research Fellow at the Wuppertal Institute for Climate, Environment and Energy. He also serves as Member of the Board to Germanwatch. He has widely published on issues such as climate policy, global governance, and trade & the environment. He co-authored the book "Fair Future. Limited Resources, Security, and Global Justice" (London: zed books, 2007). He has a Master's in sociology, economics, and anthropology.

Contacts of the authors:

Sophia Murhpy: smurphy@iatp.org

Tilman Santarius: tilman.santarius@wupperstin.org

Preamble

This paper is written as a discussion paper within the framework of the project "EcoFair Trade Dialogue. New Directions for Agricultural Trade Rules" (www.ecofair-trade.org).

The EcoFair Trade Dialogue is an international project carried out by the Heinrich Böll Foundation and MISEREOR in cooperation with the Wuppertal Institute. The overall aim of this project is to enrich the debate on the reform of the current regime of global agricultural trade through the development and advancement of forward looking guidelines and instruments, taking the concepts of 'food sovereignty' and 'sustainable agriculture' as reference points. Since the beginning of 2005 the EcoFair Trade Dialogue has brought together a group of 11 'experts' on agriculture and trade issues from around the world, the so-called Expert Panel, to exchange views, work intensively together and make innovative and feasible proposals for a profound reform of the international agricultural trade regime. During 2006 a series of stakeholder dialogues in different regions of the world are being conducted to bring additional expertise to the process, and ground the group's proposals in local and regional experiences. The main outcome of a two years first phase of the project was the report "Slow Trade – Sound Farming. A Multilateral Framework for Sustainable Markets in Agriculture" (2007), which emerged from an extensive consultation and exchange process that took place across all continents.

This discussion paper is one out of several "implementation papers" that are based on the perspectives and proposals contained in the "Slow Trade – Sound Farming" report. The authors bear all responsibility for any errors in the paper. As this is a discussion paper of a preliminary character, comments and contributions to the discussion are expressly sought. Please send them to smurphy@iatp.org or tilman.santarius@wupperstin.org.

Content

Introduction

For the first time in 25 years, the World Bank's annual Development Report (WDR 2008) is dedicated to agriculture. The report is a welcome indicator of a renewed interest in agriculture worldwide that is urgently needed. The generation-long silence on agriculture is indicative of how agriculture went out of fashion in development circles. Assistance to agriculture from bilateral and multilateral sources decreased from US$ 6.2 billion to US$ 2.3 billion between 1980 and 2002 (in 2002 prices), a neglect that is all but incomprehensible given that three quarters of the world's population living below the $2 per day poverty line live in rural areas, most of them directly or indirectly dependent on agriculture for their survival.[1] The share of agriculture in the International Financial Institutions' portfolio of loans fell from roughly 20 percent of the total to nearer 9 percent over the 1990s.[2]

The World Bank is not alone in producing a report on agriculture this year. In April 2007, under the auspices of the Heinrich Böll Foundation, Misereor and the Wuppertal Institute, a panel of trade and agriculture experts that had met over a two-year period as the EcoFair Trade Dialogue published a report entitled, *Slow Trade – Sound Farming. A Multilateral Framework for Sustainable Markets in Agriculture*. This review of the WDR 2008 is written from the perspective of that report, looking for synergies and informed in its critique by the thinking of the panel and the perspectives gathered in the whole EcoFair Trade Dialogue.

The choice of agriculture as the focus for the WDR 2008 is welcome. The report offers a comprehensive, detailed discussion of many of the facets of agricultural production and distribution, giving space to questions of gender equity, political voice, peasant organizing and unequal market power. The strong focus on institutional issues is welcome, as is the serious discussion of many of the environmental challenges confronting agriculture. Science and technology, in particular, are comprehensively discussed. For all these reasons, we welcome the report and trust the newly revived interest in agriculture's role in development will prove lasting. The following critique is just that: it is focused on where the authors differ with the authors of the WDR 2008. From our perspective, there are still important lacunae in the thinking and analysis that need further debate.

---

[1] Numbers from DFID (2004) "Official Development Assistance to Agriculture" p.8. DFID. UK. http://dfid-agriculture-consultation.nri.org/summaries/wp9.pdf

[2] FAO (November 2003), Anti-Hunger Programme, FAO. Rome. http://www.fao.org/DOCREP/006/J0563E/j0563e08.htm

This review is structured as follows: first an overview of the thinking and assumptions underlying the WDR 2008, then a more careful look at a handful of the issues that the EcoFair Trade Dialogue focused on: international trade; corporate concentration and market power; the role of science and technology; environmental constraints; and, governance. The review concludes with a look at the bigger picture for agriculture in the 21st century.

N.B. The report *Slow Trade – Sound Farming. A Multilateral Framework for Sustainable Markets in Agriculture* (2007) can be downloaded at www.ecofair-trade.org.

Overview

The WDR 2008 is comprehensive and detailed, filled with illustrations from different developing country experiences that make for a rich read. Yet there are some important and telling gaps in the story set out, as well as some contradictions. These are sometimes not explicit, but rather remain implicit in an analysis that does not, so to speak, join all the dots.

Somewhat glaring, for instance, is the marked lack of historical perspective in the report. The report does not ask how it is that sub-Saharan Africa, for example, came to be as poor as it is today. In the 1960s and early 1970s, commodity trade made the region wealthier than many Asian countries. Then commodity prices fell, and a wave of irresponsible borrowing and lending in the 1970s coupled with poor domestic policy choices left many developing countries in financial crisis, including much of sub-Saharan Africa. The policy prescriptions imposed by the World Bank and IMF in response to this crisis and the further liberalization of trade under the provision of the Uruguay Round Agreements at the World Trade Organization (WTO) did little to help, and in some cases aggravated the already serious situation. Many African countries are still not recovered from the effects of all these events.[3]

Though the WDR 2008 makes a few guarded references to the mistakes made under structural adjustment programs (eg. on p. 138[4]), there is no place that adequately describes the responsibility of countries and firms who made irresponsible loans, or of the Bank itself for its rigid and often misguided programs, which aimed to restore fiscal balance or to open markets to trade and investment but which ignored empirical experience. The lack of historical perspective is evident in the literature quoted, with very few sources from before the mid 1990s.

Unless we understand history, it is difficult to get the next generation of policies right. And without looking at history anew, we can miss lessons that are there for the taking—what we are looking for in our historical experience changes as our context evolves. Two decades ago, climate change was discussed but not widely

[3] The literature on the debt crisis and the structural adjustment policies developed by the World Bank and IMF in response to that crisis is vast. A good selection of literature is available at the Third World Network website – www.twnside.org.sg. UNCTAD also has a good literature on debt and commodity crises: www.unctad.org. Their annual *Trade and Development Reports* provide a good history, written as the issues unfolded.

[4] The pages refer to the printed report, not the pdf reference page numbers. In the pdf version, the pages are counted literally, starting with the front cover as page 1.

accepted by governments as an inevitable force necessitating fundamental changes in our energy use. Now that we are coping with climate change, what new things can we learn from history? What technologies, dismissed as impractical or outmoded or too expensive, might now make sense because global warming is changing the cost structure of almost every aspect of agriculture, from insurance against the weather, to farm inputs, processing, storage and transportation modes?

The WDR 2008 fails to set out a bold vision for agriculture. Nor does it set out a vision for rural economies as a whole. The WDR 2008 vision of agriculture implicitly incorporates mainstream development thinking, which has tended to assume that agriculture, once a country is becoming more developed, should not occupy a significant place in a country's economy. Because returns to agriculture are lower when compared to manufacturing and services, economists tend to view agriculture as necessary, but as of marginal interest. This neglect is sometimes justified by pointing to agriculture's modest share of overall GDP in developed countries. Yet this minimizing of agriculture is both disingenuous and partial.

Agriculture's neglect is disingenuous because although wealthy economies in our day and age have relatively small agricultural sectors compared to the economy as a whole, their agriculture is nonetheless worth billions of dollars. Small does not mean unimportant: indeed, many OECD countries spend tens of billions of dollars in public money on food and agriculture. Nor is share of GDP the only indicator of agriculture's importance to a country's economy. In contrast to developed countries, developing countries tend to spend relatively little on agriculture, despite its importance in the overall economy. Most have a significant share of employment in agriculture, even when agriculture's share of GDP is relatively small. For instance, about 50 percent of Thailand's employment is in agriculture, though agriculture only contributes about 9 percent of GDP.

And agriculture's neglect is partial, because the importance of agriculture is much greater than its economic value. Agriculture underpins the availability of common goods in both the natural and the social sphere. Ecologically, it is mainly through agriculture that humans shape the natural commonwealth and the biodiversity surrounding us. Socially, first and foremost agriculture is the basis for food security and subsistence. In addition, agriculture is the mainstay of the rural world, including its contributions to other sectors of the rural economy, as well as to social cohesion, community life, and religion.

The EcoFair Trade Dialogue chose multi-functionality as one of the principles that should underlie any policy prescription for agricultural trade. The report *Slow Trade – Sound Farming* defines this multi-functionality as the social and environmental webs around agriculture that, together with the economic activity, create a rural world. Agriculture has always been closely linked with worship,

with technology and science, with environmental management, with biodiversity and selective breeding, with domestication, with food habits, with art, and with community relations. Indeed, wealth and common welfare—the objectives of development—are crucially about the non-material aspects of agriculture, i.e. the provision of natural and social public goods, even though it is difficult to measure these with econometric tools. Indeed, it is social and natural capital together with monetary capital that generates the real wealth of nations.

Reading the WDR 2008, agriculture is presented in instrumental terms rather than as an end in its own right. "Agriculture remains one of the most promising instruments for reducing world poverty, as shown throughout this Report." (p. 245) It is portrayed as a way to raise GDP; to create jobs; to manage natural resources, but not as a way of life. The WDR 2008 considers agriculture's role as a provider of environmental services, but it limits its view on how poor management of such services, and the resulting deterioration in the quality and quantity of natural resources available, damages agriculture's economic performance. Similarly the WDR 2008 discusses agriculture "as a livelihood", but merely with a view to poverty reduction, where poverty is measured in dollar terms. By defining poverty reduction simply as raising the income of those who live in poverty beyond the one-dollar-a-day threshold, the report reduces the problem and solution to a monetary issue. By remaining silent on agriculture's wider contributions to ecology and society, the WDR 2008 limits the vision to "an essential but evolving role for agriculture in fostering growth and reducing poverty." (p. 27).

The WDR 2008 is structured around three categories of countries: agriculture-based, transforming, and urbanized. The first category is most of sub-Saharan Africa, with countries that have a large share of GDP in agriculture and where most of the people living in poverty live in rural areas. Transforming countries include most of Asia, the Middle East and North Africa, as well as parts of Europe and Central Asia. In these countries, most economic growth is in non-agricultural sectors, but poverty remains overwhelmingly rural. Urbanized countries are mostly in Latin America and some parts of Europe and Central Asia, where poverty is mostly urban and agriculture may be dynamic but is a small share of total GDP.

Given the report's focus on how to use agriculture to reduce poverty, it makes sense to categorize countries according to where poverty is concentrated and to consider the relative importance of agriculture in the economy before making recommendations for policy changes. On the other hand, the framework suggests a somehow inevitable progression from more to less agriculture in a country's economy. It assumes a progression from more extensive, small-scale and labour-intensive forms of agriculture, such as are still prevalent in the global South, to intensive, large-scale and input-intensive forms of farming. This assumption is

highly questionable. Despite the detailed discussion of the various environmental challenges facing agriculture worldwide, the WDR 2008 does not clearly point out the real limitations confronting the industrial agriculture model. Countries and regions in which this model is prevalent—either in Western Europe, North America, Australia, parts of Asia or elsewhere—are now paying for their irresponsible use of water, fertilizer, pesticides, and soil nutrients as well as for social problems like deteriorating nutrition levels and the collapse of rural communities. Many experiments are underway in these industrialized societies to introduce new, and sometimes to revive old, farming practices that move away from production that depends heavily on external inputs and instead use more integrated techniques that may even lower yields of specific crops, but increase the overall productivity of the land, as well as the diversity and overall soundness and resilience of the agricultural sector and rural areas.

The EcoFair Trade Dialogue debated the questions these new departures often give rise to: can we feed the world with other technologies than those that have so dramatically increased yields over the past 50 years? How can we increase productivity where we need to (especially in sub-Saharan Africa) without relying on ecologically destructive external inputs? Without definitively answering these questions, the EcoFair Trade Dialogue did challenge the assumption that more of the same is an option: developing countries must not imitate developed countries to find the answer to their agricultural needs. The WDR 2008 does not ultimately confront these problems, leaving a tension in the report that still needs to be answered: what conclusions for the future should be drawn from the sad irony that the world basically produces more than enough food to meet the needs of all its six billion people, but hunger is still prevalent? Furthermore, in an era of fossil fuel scarcity, severe water crises and increasingly unstable and unpredictable weather patterns, what model for agriculture can best assure sufficient food and a decent return for producers and farm workers, especially those living in poverty in the South?

The EcoFair Trade Panel explored a different conception of three rural worlds.[5] Our notion was to capture three co-extensive, indeed interdependent, kinds of agriculture: a heavily capitalized industrial agriculture, found everywhere but more typical of developed countries and developing countries with plantation agriculture; an agriculture based on family-owned enterprises, the most common model of agriculture, including in the U.S., Europe and Japan; and, subsistence agriculture and landless agricultural workers, in which even those who own land may depend on selling their labour to survive.

Central to this conceptualization of three rural worlds is the way the worlds interact with one another. For instance, heavily capitalized industrial agriculture

[5] Vorley, B. (2003), Food Inc. Corporate Concentration From Farm to Consumer, UK Food Group. p. 14.

depends on a supply of low-cost workers, many of whom have too little or too poor quality land to support a household. Industrial agriculture, besides its parasitic relationship to nature, has unfortunately a well-deserved reputation for exploitative levels of pay and for taking advantage of workers with very few choices who sell their labour for nearly nothing. The WDR 2008 does acknowledge a "dualism" in the agriculture of many developing countries. For instance, in Chapter 3 the report says, "Livelihood strategies in agriculture are characterized by dualism between market-oriented smallholder entrepreneurs and smallholders largely engaged in subsistence farming." (p. 72). It does not, however, consider how these sectors relate to one another, or how, for instance, the investments to meet the needs of the modern sector (such as port terminals, and roads or locks and dams to get produce to the terminals) come at the expense of infrastructure to meet domestic demand or to build regional markets. Nor is the competition for productive resources, such as land and water explored. Yet these resources, while renewable so long as they are carefully husbanded, are scarce—and also finite.

The WDR 2008 describes the poorest countries as "agriculture-based" nations, which underplays the role of large-scale and modern farm operations in these countries. The large, modern farms often produce with high external social and environmental costs, at the expense of their smallholder counterparts. For example, commercial tomato growers that export from Sénégal have seriously depleted ground water levels in one of the most prosperous agricultural regions of the country.[6] At the same time, describing richer countries as "urbanized" or "industrialized" hides the presence of (poor) farmers in these countries. In many "urbanized countries" of Latin America, poverty is widespread; in the U.S., the worst poverty is found in rural areas, not in the urban centres where much of the population lives.[7]

The three rural worlds framework used by the EcoFair Trade Panel avoids the assumption that there is an inevitable progression from agriculture-dependence to urbanization. The framework allows the possibility that countries' economic wellbeing, developed and developing, is inter-related. Without suggesting a simple zero-sum distribution, it is clear, for instance, that processing firms such as Sarah Lee and Nestlé take a much larger share of the value of coffee than do the farmers who grow the coffee. In the current market structure, consumers in developed countries are able to buy relatively cheap coffee. With higher tariffs on processed coffee in most rich countries, which reinforce the market power advantage of the processing firms, Nestlé and like firms make good profits from

[6] Kwa, Aileen/Bassoume, Souleyman (2007): Exploring The Linkages Between Agricultural Exports and Sustainable Development. EcoFair Trade Dialogue Discussion Paper No. 8. www.ecofair-trade.org, p. 29.

[7] See for example the numbers provided by the Rural Poverty Research Center at http://www.rprconline.org.

these sales. But coffee producers do not earn enough to make a decent living or to invest in the future of their families and communities. Meanwhile, exporting countries are short-changed on their foreign exchange earnings. This makes coffee growers, and coffee exporting countries poorer than they should be, while increasing the returns to food processing based in developed (urbanized) countries—the actual value of the commodity production is not realized by producers in the agriculture-dependent country, because they are exploited by firms based in urbanized countries. Understanding this inter-relationship is central to any policy analysis of agriculture. It is not absent in the WDR 2008, but its implications for countries' agricultural development strategies is strangely lacking.

Global agriculture is marked by deeply unequal distribution, which reduces farmers' returns from the market in both developed and developing countries and affects what developing countries earn for their agricultural exports. The WDR 2008 gives important space to the differentiated impact of different policies on women. It also acknowledges differences among rural populations and how they might be affected by various policy measures. The WDR 2008 discusses the violence that unequal access to land gives rise to and gives due importance to peasant organizing and the need for political empowerment at the local level to allow rural communities some political control. The report does not talk about political power at the global level, however, nor about the power of transnational corporations and their ability to extract a disproportionate share of the benefit of agricultural production and processing, as a result both of market distortions and uncorrected market failures. We return to these important issues in more detail below.

Issues

1 International Trade

The WDR 2008 analysis on international trade in agriculture for development (chapter 4) includes a lot of welcome statements: the report acknowledges that trade liberalization creates losers as well as winners, both across and within countries. The report points out that beyond national level gains and losses, household level analysis is necessary to understand how people living in poverty are affected. The WDR 2008 provides a differentiated account of the effects on urban and rural areas, which is particularly important in countries where out-migration is both a symptom and a cause of impoverished rural economies, and contributes to rising urban poverty levels (see the discussion in chapter 3).

Yet despite this nod to the different empirical experiences of trade liberalization, the WDR 2008 assumes trade must be liberalized, and that governments should then compensate likely losers. This ideological presumption that open markets will always deliver the hoped for results sits oddly with a number of the WDR's own admissions, including that the transmission of world prices to local producers is "very imperfect" (p. 112), "So the overall effect of trade policy reform on farm incomes of food staple producers in the poorer developing countries is likely to be small." (p. 112). Similarly, although elsewhere in the report, the WDR 2008 discusses the role of transnational corporations and their dominance of a number of agricultural markets; yet the failure to ensure competition in global markets are nowhere explored in chapter 4. The WDR 2008 fails to connect three deeply interrelated policy areas: trade, investment, and competition.[8]

The WDR 2008 assumes trade reform means trade liberalization. Yet these are distinct concepts; reform can imply re-regulation and new regulations, not just deregulation. The discussion of the WTO's Doha Agenda is superficial. It avoids discussion of the actual politics and the proposed desired outcome has little to do with what countries are in fact negotiating. This then begs the question: why should developing countries support the Doha Agenda, when it is so far from the prescription outlined as desirable for development? A variation on the "moving bicycle" argument is made on p. 111 of the report: without Doha, the likelihood is

[8] For such a comprehensive view, see for example Murphy, Sophia (2006): Concentrated Market Power and Agricultural Trade. EcoFair Trade Dialogue Discussion Papers No. 1. www.ecofair-trade.org.

a "spiraling back to global protection." This kind of pressure is not helpful to governments seeking to find a trade strategy that will contribute to real reductions in poverty, not least through creating employment and allowing local capital formation.

The WDR 2008's position on the Doha Agenda is not coherent with its empirically grounded review of how trade liberalization plays out in practice, for different countries and for different populations within countries. On the one hand, the report insists on support for the Doha Agenda. On the other hand, the report says OECD member state agricultural subsidies are not particularly relevant to developing country welfare because their effect on world prices of food staples is small relative to the large year-on-year fluctuations in staple food prices. The report also discusses the many internal blocks that interfere with smallholders' ability to take advantage of new market opportunities. So if the Doha Agenda is mostly about market opportunities that other factors are going to block, and if the Doha Agenda is a long way from anything resembling full liberalization anyway, why should developing countries expend political capital on trying to get a deal? Against this background, the report *Slow Trade – Sound Farming* takes the position that the failure of the Doha Agenda would not be a defeat. Instead, it would open up the opportunity to construct a new architecture of trade rules but from a different starting point.

One of the issues that most preoccupied the EcoFair Trade Dialogue was imports: the necessary flip-side of the drive to expand exports that has underpinned a lot of World Bank advice in recent decades. The WDR chapter on trade is taken up with exports and supply-side issues, as if trade liberalization were mostly about creating opportunities to export. Yet trade liberalization also means imports. WTO and bilateral and regional trade accords all assume reciprocity as a basic underlying principle. Exceptions to such reciprocity are hard-won, as the ACP partners in the negotiations with the EU over the new Economic Partnership Agreements are finding out. Fuelled by the assumption that it is good for all countries to liberalize, concessions for small, vulnerable and/or poor economies are kept to a minimum and are generally in the form of transitional steps to slow but not stop market opening.

For many developing countries, imports of agricultural goods have outpaced exports in value terms, so that liberalization has been a net cost, even though the volume of exports has expanded in most developing countries. Import liberalization carries significant risks for agriculture both because of the prevalence of under-priced (dumped) commodities in world markets (maize, cotton, rice, wheat and soy from the U.S., for example), which undermine local markets by distorting prices, and because of the oligopolistic nature of a number of commodity markets and commodity processing chains. Reinforcing this trend, the unilateral trade liberalization policies required by Structural Adjustment

Programs were a major driving force behind opening agricultural markets in the South. The resulting surge in imports too often devastated local farm and livestock production and left thousands of farmers bankrupt.[9]

These experiences suggest that in many of those countries where agriculture remains the main source of livelihood for the majority of people, the management of imports is more important than the facilitation of exports. Based on this analysis, the report *Slow Trade – Sound Farming* suggests that trade liberalization should not drive policy when domestic livelihoods and food security are at stake. Instead, national governments must regain the authority to govern the import of goods, services, and investments to protect the public interest. Trade regulation at the bilateral, regional or multilateral level that accepted this norm would no longer focus on the liberalization of trade as the overriding goal. Instead, trade regulation would oversee the restoration of national policy space, while taking responsibility for extra-territorial effects of national decisions and border control measures on other countries.

2 Multinational Corporations and Market Power

The WDR 2008 makes a number of critical comments about the role of transnational corporations in developing country agriculture and, particularly, the problem of their excessive market power and resulting market distortions. There is a strong emphasis on producer organizations, for example and their importance in correcting market and government failures (p. 248). The points made, however, are never pulled together into a clear set of proposals for how to properly regulate market power. Given the clear economic implications of unfair competition in global markets for any country that is considering (or is being pushed to consider, as the WDR 2008 does) opening its markets, the gap is inexcusable.

The WDR 2008 says, "But growing agribusiness concentration may reduce efficiency and poverty reduction impacts." (p. 135). Most clearly, perhaps, Focus D of the WDR on Agribusiness includes the statement, "Concentration widens the spread between world and domestic prices in commodity markets for wheat, rice, and sugar, which more than doubled from 1974 to 1994. A major reason for the wider spreads is the market power of international trading companies." (p. 136).

The WDR 2008 proposes three solutions to the problem of concentrated market power: improve the conditions for small and medium enterprises; encourage public-private partnerships; and, encourage corporate social responsibility

[9] See for example Glipo, Arze (2006): Achieving Food and Livelihood Security in Developing Countries: The Need for a Stronger Governance of Imports. EcoFair Trade Dialogue Discussion Papers No. 2. www.ecofair-trade.org.

initiatives. These are all valuable proposals, but none grasps the nettle of how to actually regulate the power of the multinational firms themselves. Indeed, the WDR 2008 rather suggests that such regulations are to be avoided, in case, "… private enterprises vote with their feet or pass on increased transaction costs…" (p. 136). Which is of course the problem that has to be tackled, not avoided: namely, the lack of private sector accountability to local communities, especially when those corporations are foreign-owned and multinational in scope.

Governments need to ask themselves how investment rules should be structured, not just to attract foreign direct investment, as the proposals in this section of the WDR 2008 all assume. How should foreign investment actually be directed in desirable ways, from the perspective of eradicating poverty, creating decent livelihoods and protecting natural resources? The WDR 2008 discussion of investment is about how to bring small and medium enterprises into the market, yet the fundamentally unequal nature of that market will surely have to be confronted if fair competitive conditions that give locally-owned enterprises a chance are to exist.

The WDR 2008 claims, "…a growing tendency among large enterprises to pursues business ventures that not only appeal to corporate interests but also deliver a social return," (p. 137). Yet besides some singular examples, the report is unable to underpin this "growing tendency" with reliable data. Some of the great Victorian social reformers were owners of food companies, such as Joseph Rowntree in the UK. Not withstanding, the great majority of large enterprises then and now remain firmly convinced that their first and overwhelming obligation is to shareholders. If they invest in social or environmental projects, it is usually because they see a financial gain possible, even if only in the long-term. Initiatives that create privileged space for smallholders are vital—some South African supermarkets have done this, and the WDR 2008 gives the example of a Mars Corporation project for cocoa growers in Indonesia (p. 137). But the demand for fairly traded products did not start with these firms, nor did they welcome the differentiation of products with labels such as organic or fair trade. Food corporations continue to resist a number of public policy interests, including clear labelling of contents, they have fought to water down organic standards, and they have created their own fair or sustainable niche products rather than take on the whole structure of their businesses, to ensure ethical practice is the norm. The question of how to take on unfair market power structures in agriculture will require much more from the World Bank and national governments than the WDR 2008 has to offer.

The report *Slow Trade – Sound Farming* presents a number of solutions to tackle the issue, addressing both the international as well as the national and sub-national level of policy-making. For example, it is suggested that a multilateral institution such as UNCTAD or the FAO should set up a publicly accessible databank

containing information on the size and scope of large agribusinesses, as well as information on mergers, acquisitions and joint ventures in the food system. More radically, *Slow Trade* proposes the establishment of an independent multilateral Anti-Trust Body, which would scrutinize mergers and acquisitions, and prevent corporations from abusing their market power (by controlling prices, for example, or building cartels). For the national and local level, the *Slow Trade* report recommends a set of policies that would regionalize production chains and favour rural economies over the business in transnational commodity chains. Countries should gain the ability to better embed the activities of corporations in their domestic economies, so as to reap the benefits of cross-country technology transfer and information-sharing that multinational corporations have to offer, while still giving priority to realizing the full potential of their rural economies and ensuring their farmers and local businesses a fair share in global value creation.

3 Science and Technology

The WDR 2008 discussion of science and technology is one of the report's best chapters. It provides a nuanced review of the issues and offers specific strategies and suggestions, not just to enhance productivity, but also to promote sound policy for the environment, for improved outcomes for women in particular, and to ensure that poor farmers gain access to new technologies and know-how. The WDR 2008 points out the importance of institutional innovation to complement technical innovation: indeed, institutional innovation is the focus of the largest part of the chapter. The importance of considering the effects on women of different technologies and extension services is also reviewed. The WDR 2008 puts due emphasis on farmer-controlled systems, which is a positive evolution from either centralized government control or from policies that give the firms that sell inputs to farmers ownership of all the technologies.

As elsewhere in the WDR 2008, there is a tension around suggestions for the role of the state in this area of agriculture: governments are encouraged to privatize research and development and to work in partnership with the private sector (p. 159 and 170, for instance). In a similar vein, but with rather different consequences, the WDR 2008 suggests how to encourage farmer-based and farmer-led technology development. For example, the success of "participatory varietal selection and breeding approaches" (p. 160) is mentioned. The troubling question, especially in public-private partnerships, is how to define and regulate the role of corporations. The trend in biotechnology is to patent genes, plant varietals and the technologies for their propagation, all of which introduces significant new costs and reduces farmers' control of inputs. In some cases, firms have been patenting knowledge that has traditionally been in the public realm.

The struggle to maintain public access to this knowledge is far from over.

Private multinationals investing in patenting different seeds, inputs and their accompanying technologies have been among the strongest voices for strong intellectual property rights (IPRs) protection to be part of any and all bilateral and regional trade agreements. The World Bank has strongly encouraged developing countries to participate in such agreements, as a way to attract foreign direct investment and ensure competition in open markets. The WDR 2008 points out that IPRs do not make sense if the intended users of the patented technology are poor farmers because patents are not cost-effective at subsistence-level incomes (Box 7.3, p. 167). Yet the report does not go on to discuss the wider problems associated with IPRs, despite the emphasis in today's agriculture on biotechnology, most of which depends on privately owned research that is jealously guarded with patents.

The WDR 2008 cites Bt cotton as a "win-win-win" success for increasing yields, improving farm income and significantly reducing pesticide applications (p. 163 and in more detail in Focus E, pp. 177-17). However, while the report acknowledges that some farmers in India have experienced losses from their Bt cotton crops, the review of Bt cotton ignores a number of recent studies that suggest negative experiences with the seeds.[10] These studies conclude that in parts of India, Bt cotton yields are lower than yields from traditional cotton seeds. The reduced yields together with rising seed costs increased farmers' indebtedness. Broadly based diffusion of Bt cotton is still relatively recent, and already some experiences suggest the technology is not a success. The World Bank's enthusiasm needs tempering.

The treatment of cotton is symptomatic of an unjustifiably rosy view of GMO crops more generally. A number of more general risks are not adequately considered. For instance, the emerging debate in scientific circles about the complex inter-relationships among genes—e.g., that isolating a gene with a given trait is one thing, but understanding how that gene does its work probably requires understanding the interaction of multiple genes—is completely lacking. Focus E on GMOs opens with an important acknowledgement, "However, the environmental, food safety, and social risks of transgenics are controversial, and transparent and cost-effective regulatory systems that inspire public confidence are needed to evaluate risks and benefits case by case." (p. 177). Yet the report does not then discuss how to do this. It suggests that fears of GMOs harming human health or the environment, for example by crossing over to contaminate wild relatives, have been exaggerated (p. 178), but says continued monitoring and careful management of the GMO crops are essential. Given how much of the

[10] E.g., Sahai, Suman/Rahman, Shakeelur (2003): Performance of Bt Cotton – Data from First Commercial Crop, Economic and Political Weekly 38.; Chandrasekar, K./Gujar, G. T. (2004): Bt Cotton Benefits Short-lived: Study. Indian Agricultural Research Institute, 2004.

report is about institutional weaknesses in developing countries, it is not clear how this monitoring can be guaranteed.

While most explicit in the promotion of GMOs, the WDR 2008's more general reliance on capital-intensive technologies is also evident in the discussion. The report writers assume technologies will eventually trickle down to be of use to the poor, despite the long experience of history where this usually does not happen without policy interventions along the way. For example, the report says, "Rapid advances in the biological and informational sciences promise even greater impacts that have yet to be tapped for the benefit of the poor" (p. 159). In our experience, such capital-intensive technologies, especially when owned and controlled by the private sector, are unlikely to ever be tapped for the benefit of the poor. They must either be subsidized by the government, or provided on favourable terms by a private firm that lends investment capital in return for a contracted obligation by the farmer to sell the firm the crop, or the technology must be paid for up front, in hard money or even foreign currency. This forces farmers to get as quick as possible a return on any new technology they use. Maximizing monetary output becomes the single and overriding goal, to the neglect of nurturing the multi-functional roles of agriculture.

The reliance of the report on capital-intensive technologies is mirrored by too little discussion of low-cost, farmer-led technologies. So whereas the report's discussion of institutional development conveys a number of innovative approaches, the discussion on actual farming technologies does not reflect state-of-the-art knowledge. There is too little analysis on what kind of technologies—or simply farming practices—would be most appropriate to reduce dependencies on external inputs; limit and reverse environmental damage; and encourage a model of agriculture that is low-cost, bottom-up and as much as possible in farmers' control. Examples in the report that should have been amplified include the description of fertilization through planting nitrogen-fixing legumes and integrated pest management techniques (IPM). Yet, the report is weak in examining decades of research and good practices on a great number of low-input farming practices around the world. Neither chapter 7 (science & technology) nor chapter 8 (environment) promote concepts like Resource-Conserving Agriculture, Agroecology, or organic farming, to mention but a few, nor do they analyze the experiences of whole countries (e.g., Cuba) or regions (e.g., in Austria) in converting high-input farming systems into more sustainable forms of farming.[11]

In contrast the report *Slow Trade – Sound Farming* calls for a much more vigorous reorientation of R&D. Governments, research institutions as well as farmer's organizations should advance low-cost, locally adapted technological

[11] For details, see for example Sachs, Wolfgang/Santarius, Tilman (2007): World Trade and the Regeneration of Agriculture. EcoFair Trade Dialogue Discussion Papers No. 9. www.ecofair-trade.org.

development that improves both the overall productivity and the environmental and social sustainability of more extensive and traditional knowledge-based farming systems. Research should be re-oriented towards the needs of small-scale and family farmers and sustainable agriculture, and it should become more farmer-led. In addition, research should professionalize the exchange of traditional knowledge, in particular for female farmers, because in times of global environmental change and fast-evolving economic restructurings, traditional knowledge on seed breeding, sustainable farming practices, and small-scale marketing strategies must be constantly improved by inter-cultural learning and information sharing.

4 Environment

The WDR 2008 gives important attention to environmental issues, acknowledging both agriculture's dependence on sustainable resource management, and agriculture's often negative contribution to pollution and degraded natural resources. The report points out the failure of the market to capture the value of environmental services, even though the results—including falling water tables, depleted soils, deforestation and loss of biodiversity— have very real monetary, as well as socio-cultural, effects (for instance, on p. 16). The water crisis, which for many regions is among the most immediate environmental problems governments and farmers face, is analysed in particular detail. The WDR 2008 rightly points to a number of approaches that would help reduce water use, improve water management, and arrive at a more integrated water management, in particular in irrigated areas.

Several of the concrete policy proposals for mitigating the water crisis are market-based approaches. For example, the WDR 2008 suggests water fees, and setting up water markets for trading water rights (pp. 186-187). While these suggestions may be valuable for agricultural systems where most of the economic transactions take place in markets, they are not so obviously appropriate for farming systems that include small-scale or subsistence farmers. In particular, poor producers often have limited access to water resources and no means to pay higher prices when the water table starts to fall. Too often, it is other, larger farms that use water more intensively, but all have to pay the price once market rates are introduced. As with other market-based policy prescriptions in the WDR 2008, these suggestions lack adequate consideration of environmental justice and equity.

The question of perverse subsidies is also mentioned (pp. 185-186) but deserves fuller treatment, given the strongly negative role they have played in agriculture. As the WDR 2008 highlights in a number of places, the state's role in agriculture in developing countries (and in developed countries, too, of course) has often been

negative, encouraging over-production and irresponsible use of polluting inputs, such as synthetic fertilizers and pesticides. The WDR 2008 does not, however, go on to discuss how more sustainable agriculture might be encouraged. Those policies, too, are likely to require strong state involvement, coupled with the devolution of power to local areas (a policy the WDR 2008 does support, in chapter 11 and elsewhere). Trusting to the market alone—particularly the global market, with all of its failures and distortions—is not likely to provide developing countries with a fair and sustainable model for their agricultural development.

One of the biggest gaps in the environmental discussion is the destructive effect of industrial agriculture on biodiversity, whether on communities that continue to gather a large part of their diet from the wild and find agriculture and its pollutants encroaching on their territory, or on farming communities that depend on a broad range of seeds and livestock breeds to cope with micro-climates and varying growing conditions. Diversity can be a great insurance for those vulnerable to risk. Yet "modern" agriculture tends to be about specializing, in part to justify very specific inputs, e.g., a particular machine or a hybrid seed with particular traits. In recent years, the FAO has sounded the alarm more than once about the dramatic decline in livestock breeds available, as farming has become more specialized and a handful of breeds have come to dominate. According to the FAO's *State of the World's Animal Genetic Resources* report, the world has lost at least one livestock breed a month to extinction over the past seven years. A further one fifth of all cattle, goat, pig, horse and poultry breeds are at risk.[12]

In keeping with the WDR 2008's more general failure to push its analysis to uncomfortable conclusions, the environmental discussion tends to focus within agriculture rather than to consider agriculture's contribution to wider environmental degradation. The depletion of resources or distraction of environmental services is mainly considered as a cost that undermines agriculture's economic performance, and not as a significant contributor to global environmental problems. Yet agriculture is a massive user and waster of water, just as it is a massive user and waster of energy—usually fossil fuels. Agriculture is, together with deforestation, among the top two reasons for the irreversible loss of the world's biodiversity; and with about 15-25 percent of anthropogenic greenhouse gases, it is also a big driver of global climate change. While these issues are of course mentioned in the report, were they given the importance they deserve, the WDR 2008 would be calling for radical changes to agricultural production worldwide. This sense of urgency—that more of the same will not do—is completely absent.

The detailed discussion about climate change in Focus F (pp. 200-201) is symptomatic of this deficiency. The extensive and comprehensive discussion in

[12] FAO, 4 September 2007, "FAO sounds alarm on loss of livestock breeds," news story on-line at http://www.fao.org/newsroom/en/news/2007/1000650/index.html

the WDR 2008 of how to adapt farming systems to climate change, including the important contribution of adaptation funds as a way to channel resources from North to South, is useful. Yet the discussion is also superficial. In particular, it lacks an analysis of how energy-intensive farming practices, namely large-scale industrial farm and livestock operations, contribute to global warming. For instance, fully 25 percent of anthropogenic methane emissions come from livestock, a level that has grown rapidly with the spread of concentrated animal feed operations. This problem is not discussed in the WDR 2008—indeed, concentrated livestock operations are encouraged. Per head, grass-fed animals emit less methane than animals fed on a high protein diet.[13]

Apart from missing the contribution of intensive livestock production to climate change, the discussion of intensive livestock systems (p. 189) is surprisingly positive in other ways. The myriad documented problems with this form of agriculture include pollution and animal diseases on the farms themselves, as well as off-farm problems, such as air pollution, human diseases and destroyed eco-systems. The solutions proposed to make concentrated systems less damaging are merely technological and policy-based. But the deeper question of whether such systems are a good idea, is not raised. The WDR 2008 misses an opportunity here to weigh short-run economic interests (realizing economies of scale, reducing marketing costs) against longer-term costs that are harder to give a monetary value to but which undoubtedly cost money, as well as undermining both environmental and human health.

The WDR 2008 proposes that a new investment in agriculture is needed: "Greening the Green Revolution" (p. 188). The WDR 2008 says, "Faced with these resource-related problems, farmers need assistance to fine-tune their [Green Revolution] cropping systems and crop management practices to local conditions. (p. 188). This suggests applying the same high-response varieties, chemical inputs, capital-intensive technologies all around the globe. The report by and large neglects the severe environmental constraints farmers faced after the first green revolution, particularly over time, as water tables diminished, soil became salinated and pesticides began to lose their effectiveness. Given the large variability in social and economic capabilities as well as ecologic conditions the world over, the proposal is inadequate. In particular, it is not the appropriate strategy for less favoured areas, where ecosystems will not sustain intensive farming systems.

The report *Slow Trade – Sound Farming*, in contrast, calls for a worldwide de-industrialization of farming and livestock raising. There is sufficient scientific

[13] Saunders, Peter (2004): Industrial Agriculture and Global Warming. European Parliament Briefing 20.10.04. Download at: http://www.indsp.org/IAGW.php; Kotschi, Johannes/Müller-Sämann, Karl (2004): The Role of Organic Agriculture in Mitigating Climate Change – A Scoping Study. Bonn: IFOAM.

evidence to prove that the future of sustainable agriculture lies with small-scale, low-input, and biodiverse farming systems. For instance, in what has probably been the largest ever analysis of sustainable agricultural practices, Jules Pretty and a group of scientists, studying 286 completed and on-going farm projects in 57 countries, concluded that small farmers increased their crop yields by an average of 79 percent simply by using environmentally sustainable techniques such as crop rotation and organic farming. With these practices, they were able to reduce fertilizer and pesticide use, maintain or even build up soil fertility, and increase the efficiency of water, land use and carbon sequestration.[14] The WDR 2008 fails to advise governments to foster the broad implementation of such sustainable farming practices, and to support farmers in their transformation towards low-input but highly productive farming practices.

5 Governance

The WDR 2008 rightly dedicates a chapter of the report to Governance (chapter 11). How decisions are made and implemented, and how decision-makers are held accountable matters if policies are to change. Democratic sovereignty is one of the seven principles around which the *Slow Trade* report recommendations are built. The WDR 2008 covers important elements of governance: for instance, the importance of establishing and supporting producer organizations, not just for local level decision-making and accountability, but for creating a voice in national politics as well. The difficulties faced by rural women in finding a political voice are examined, as are a few of the problems related to unresolved conflicts created by grossly unequal access to land—a problem that plagues much of Latin America in particular.

The report talks mostly of the state as an administrator rather than a legislator. The recommendations made on the role of the state focus on devolving power from the centre to the regions; coordination of cross-sectoral initiatives; outreach and support to isolated or disconnected producers; and, regulation of markets (the most problematic of the assigned roles, given the narrow parameters the World Bank thinks appropriate). These roles, "to coordinate, facilitate, and regulate," are important (p. 247). But they leave out the most important roles, including the need to make choices on where to spend public money, implementing those choices and standing accountable for how the decisions are implemented. The market cannot make political decisions for us. The state has to decide how to allocate resources, of course with democratic input through elections, free speech and open and participatory decision making processes. Will the government build a railway line to the neighbouring country, or concentrate that investment on getting

[14] Pretty, Jules et al. (2006): Resource-Conserving Agriculture Increases Yields in Developing Countries. In: Environmental Science and Technology, No. 40, Iss. 4, pp. 1114-1119.

goods to ports for export to countries that are further away? Will the government provide a safety net for poor consumers that could not otherwise secure an adequate diet, or will they intervene to keep prices down in the market? Will the government insist that public money is spent procuring from local growers and agribusiness firms, or will it give public money to the lowest cost bid, regardless of where the resulting jobs and other benefits might go? These are political decisions that the state must make, and they go far beyond coordination, facilitation and regulation.

Regulation is a vital area that is too superficially dealt with in the WDR 2008. The report claims, "The private sector can—and often does—engage in self-regulation and adopt corporate social responsibility practices that support the agriculture-for-development agenda." (p. 248) That may be—despite the fact that the reader might wonder: how often is "often". Of course, some companies do support a fairer more sustainable agenda. But sadly, many firms in the private sector show themselves wholly uninterested in corporate social responsibility of any kind and require stiff regulation to avoid their breaking the law, let alone going above and beyond to help people living in poverty and/or to preserve the environment.

Moreover, when firms do take on self-regulation, the results are also not necessarily desirable, from the perspective of small producers, or from national governments that might want to encourage an export sector. The unified but wholly private efforts of such organizations as GlobalGAP has led to many developing countries protesting, in vain, that new market barriers are being created more quickly than tariffs and non-tariff barriers are being reduced.[15] The whole question of how to manage private regulation is complex and yet is left basically unaddressed by the WDR 2008.

The discussion under the "Global Agenda" (p. 258-265) does underline some important issues: "Conducting global R&D for the poor in an era of privatization," for example, gets its own sub-section (p. 259), building on the references to the problem in the chapter on Science and Technology. The problem is urgent, and the World Bank could itself play a role in supporting countries in negotiations to, as the WDR 2008 says, "establish effective biosafety protocols and regulations and to provide access for developing countries to genes and techniques protected by intellectual property rights" (p. 259). Again, however, the contradictions are not explored: will an agenda of public-private partnership and corporate social responsibility be adequate to address this problem? It seems highly unlikely. Similarly, if "transboundary costs from pandemic animal and plant diseases and invasive species" are a problem, caused by trade according to the WDR 2008, then managing the diseases to "reduce disruptions to trade" seems like an odd goal. How about to protect genetic diversity, or simply to protect

[15] See the report in *Food Law News* on a discussion of this issue at the WTO's Sanitary and Phytosanitary Committee in 2005. http://www.foodlaw.rdg.ac.uk/news/in-05023.htm

human and animal health?

For the EcoFair Trade Dialogue, the question of governance is fundamental. From the Principles that were set out in the *Slow Trade* report, which include Democratic Sovereignty and Extra-territorial Responsibility; to the solutions, which include setting standards, democratizing the food chain and redressing asymmetries, the government (as a political, legislative and administrative entity) has a central role in building a fairer, more sustainable agriculture. The history of agriculture includes many failed state-led experiments, such as collective farming, as well as land-tenure and trade policies that have favoured the privileged over the rest. Yet the failures of national governments have to be assessed next to the failures of deregulated markets: in the end, we need a bigger, longer-term vision than the open market, or a devolved local government, can provide.

The agriculture we rely on today to feed the world's still growing population is not sustainable—this is not just a problem for our great-grandchildren, but is already a problem for millions of us, mostly people living in poverty. Many of the ingredients to do the right thing are touched on in the WDR 2008: a stronger role for women and peasant organizations, devolved political and economic power, use of more appropriate technologies, greater investment in R&D, and more commitment to rural development from multilateral and bilateral donors. But nowhere is the central role of the state in making all this happen given sufficient attention. The shyness is not surprising: the World Bank has spent several decades advising governments to get smaller and to privatize numerous services. But unless these policies are abandoned for an empowered role for an accountable state, the fundamental changes needed to make agriculture a way out of poverty for millions of people cannot happen.

Conclusion

We are living in a period of great uncertainty related to agriculture. We know that climate change is real and that temperatures are rising more rapidly than most scientists at first predicted. We know that many of the technologies developed during the Green Revolution have run out of steam, while the social and environmental problems they have created, including the debt crisis of resource-poor farmers and their loss of land, the over-use of water, soil salinity, polluted waterways, and loss of biodiversity, have reduced the options for the next generation of technologies. At the same time, the world's population is still increasing—although the rate of growth is decreasing, absolute numbers will continue to rise for some time to come.

There are a number of hopeful signs that a new paradigm will emerge for agriculture. The signs are there in the WDR 2008, although the report as a whole leans towards a better thought through version of more of the same. This will not do if we are to meet the challenges we face. The WDR 2008 provides a lot of illustrative examples but no vision for the next decades of agriculture. And while large-scale visionary development planning is out of style, for plenty of good reasons, nonetheless a new paradigm for agriculture is needed. The strong assumption underlying the WDR 2008 recommendations is that all countries are at different points on a road that culminates in an economy such as that of the U.S. or Western Europe. The heavily polluted, economically distorted nature of that agriculture, which nests in depressed rural economies which see little benefit from agriculture because the profits are mostly captured off-farm and in metropolitan centres rather than local market towns, is not any kind of model to emulate. Mainstream agriculture in developed countries is not a good example to follow.

First, the land's productive potential should be assessed from the perspective of diversity not yield per plant. There is significant productivity to tap once this is understood, which can be realized with less or no reliance on the inputs and pollutants that supported the Green Revolution.

Second, we need to move beyond the fossil fuel age. Global demand for oil will soon outpace global supply, resulting in unprecedented price peaks. Oil will not be available as cheaply as the oil that has fuelled economic growth for a century or so. Far before we run out of supply, humanity is facing the need to find new ways to generate energy, and to dramatically cut overall energy use, to avoid further irreversible damage to the planet's ecosystem. The report does mention so-called Peak Oil issues (especially in chapter 2, on performance, diversity and

uncertainties). Yet, whether because too many authors contributed to the report or because the magnitude of Peak Oil is underestimated, the WDR 2008 at no point factors in the mounting expense of fossil fuel inputs as a real brake on agricultural production as we now know it. Already, oil imports are a significant drain on foreign exchange reserves in many developing countries. The widely anticipated significant increase in oil prices will make it impossible for many developing countries to pursue the agricultural development path mapped out by developed and transitional economies. Already, despite some push back from NGOs and UN agencies, there is a movement among consumer and environmental groups in developed countries to stop buying fresh fruit and vegetables flown in from developing countries. Planning ahead, especially for low-income resource poor farmers, opportunities would best be developed in local and regional markets, where transportation needs are reduced and local crops, appropriate to the prevailing water and soil conditions as well as local tastes, will find buyers.

Linked to this need to curb dependence on fossil fuels is the need to respond to climate change. "The primary source of the increased atmospheric concentration of carbon dioxide since the pre-industrial period results from fossil fuel use, with land-use change providing another significant but smaller contribution." (IPCC, WG1, AR4 *Summary* p. 2). The WDR 2008 focuses on the issue in its chapter on the environment and in Focus F. Yet the issue is so significant that it ought to have shaped other chapters as well, particularly the question of science and technology. Countries should be investing in preparedness for uncertainty. Climate change will also affect the risks facing smallholders and their strategies to get out of poverty (chapter 3), the regulation of international trade and approaches to food miles (chapter 4), and will open new opportunities for income generation, from carbon sequestration to bio-based materials to new forms of energy generation (chapters 5 and 9). Given the ambition of the report, it is not surprising that chapters have a different focus, but the failure to carry some of the biggest challenges facing agriculture as themes into each chapter is one of the reasons the report as a whole is ultimately unsatisfactory.

The thinking on poverty reduction shows a similar inconsistency. Chapter four is about how to integrate the poor in the global trading system, not about how to develop trade rules and practices that give priority to the needs of rural economies, and particularly the rural poor, in developing countries. Chapter 7 focuses on how to bring capital- and resource-intensive technologies to the poor, rather than on how to generate and validate approaches that increase local self-reliance and access for the poor.

Ultimately, just as there are better measures of poverty than dollar per day income, there are also other ways out of poverty than increasing that income. As UNDP has documented in its Human Development Reports since 1990, money matters, but human welfare is about much more. The poverty of someone who has

no money in a developed economy is very different to the poverty of someone without money in an economy that is still significantly reliant on subsistence production, barter and exchange, and where there are resources held in common that everyone can access. Agriculture and rural cultures more broadly have paid a price, sometimes a heavy price, with the commodification of not just their produce but also their production systems. Seeds that were saved and sorted using local knowledge of micro-climates and soil conditions are now purchased based on their responsiveness to inputs, which also have to be purchased—and for most developing countries, have to be imported, which requires precious hard currency. Breeds of livestock that were maintained for their particular adaptation to local conditions have been irreversibly replaced with breeds that meet the demands of the largest buyers, who in a globalized supply chain are not interested in local conditions, or even in consumer tastes, as much as in speeding up lifecycles and bringing a uniform (if often tasteless) product to the market.

Poverty lies not just in lack of income, but in the loss of culture and loss of diversity. This tension, and the failure to consider development from a wider perspective—such as Amartya Sen's notion of entitlements—leaves the WDR 2008 without an anchoring vision from which to advocate some of the really radical changes needed to move agriculture beyond reliance on fossil fuels and beyond servicing the markets of a few wealthy countries and social groups, towards a sustainable, locally-owned and locally accountable sector that neither excludes trade nor makes trade the focus of infrastructure and technology investments.

The WDR 2008, just as it is by and large silent on the past and the question of how things came to be as they are, is also silent about the role of the World Bank and other development funders and investors in meeting the challenges and seizing the opportunities described in the report. Given the prominent role of the World Bank in promoting and financing structural adjustment; in promoting a trade agenda that is now acknowledged to have paid insufficient attention to developing countries' supply constraints and the concentrated power of the firms that operate in world markets; and, in financing projects that caused significant environmental damage, it would be good to see the World Bank setting out a new agenda for itself. This should be to think how a lending institution can assist governments and communities to build the institutions and physical infrastructure they need for a productive agricultural sector that is ready for the challenges that lie ahead. The reader is waiting for an annex to the WDR 2008, perhaps to be entitled, "The role of the World Bank in Building Sustainable and Fair Agricultural Systems for the Future".