

**Workshop: “Agriculture for Development: the World Development
Report 2008”**

**Dualism and Power for Scientific and Technological Development
in Agriculture**

Carlo Pietrobelli

Centre for Research on the Economics of Institutions (CREI), University Roma Tre

Email: c.pietrobelli@uniroma3.it

Url: www.pietrobelli.tk

Forthcoming in

QA: Rivista dell'Associazione Rossi-Doria No.3, 2008

The World Bank “World Development Report” (WDR) is a document that traditionally awakes and deserves the interests of scholars as well as development practitioners. The same holds true this year, perhaps at an unprecedented level, and I am glad to participate in this high-level panel to discuss the WDR 2008 on “Agriculture for Development”. It is especially remarkable the enthusiasm Alain de Janvry raised with his presentation today, forcefully arguing in favour of the role that we, development practitioners and scholars, have, in order to improve our understanding of agriculture, such an essential piece in explaining the contributing to developing the poorest countries of the world.

A remarkable feature of the Report lays in the process to produce it. The Report is in fact generated through a lengthy progression of consultations and discussions in several countries. I was lucky enough to share some of these consultations with the group focusing on Latin America, and discussing the implications for Latin America of the WDR 2008. Thus, in a way, the Report does not represent the position of the Bank alone, but is somehow the expression of much wider analyses and debates.

I am glad to see that the WDR 2008 incorporates a number of innovative developments. First of all, it rightly acknowledges agriculture’s multiple functions for development: agriculture is not only an economic activity, but also a source of livelihoods, food security, jobs, harbor, foundation for rural communities, and a user of natural resources – with the many obvious environmental implications -. Secondly, the Report puts new emphasis on science and technology in agriculture – more than what was usually acknowledged – and on the role that the different modes of organization of production and distribution play.

Indeed, innovation is increasingly central for agriculture, and agriculture itself is mainly a science and technology-intensive activity, more than a resource-intensive one. In addition, innovation is also crucially related to the form of organization of production and distribution in the sector. Two chapters are specifically devoted to new ways of organising agriculture, to the

new role of supermarkets and of large (often foreign) buyers, sourcing produces from developing countries and having a remarkable impact on small farmers in developing countries.

Moreover, the Report explores the central role of institutions in agriculture, including finance and insurance, but also producers' organizations and the way they may contribute to agricultural development and to the diffusion of development results across small holders. This is very appropriate and necessary.

Here I would like to add some ideas on two major areas that are relevant for the Report, and try to express them with a little bit more courage than what I could actually find in the Report. The first one is the extent and continuing relevance of *dualism* in developing countries. The second one is *power* and *its uneven distribution* within and across societies, that actually conditions the development opportunities for small peasants and farmers in developing countries.

The continuing relevance of dualism

On the first matter, I have some evidence from Latin America that may help to direct the discussion. The situation may be different in other developing countries, but it is fair to say that dualism tends to be a widespread and mounting phenomenon across the world.

Take for example the case of a remarkable success in agricultural activities and exports: soybean production in Argentina, in two different periods 1973-74 and twenty years afterwards. As we all know, since the late 1980s Argentina has been going through a long process of structural reforms, with liberalizations, changes in relative prices, opening to international trade and liberalizations. One of the outcomes of such changes was the surge of agricultural commodities and exports since the mid-90s, and remarkably of soybean.

Table 1. Soybean in Argentina					
	# of Plants	Employment	Production (mill.tons)	Tons/plant	Tons/employee
1973-74	67	6 895	1 740	26	252
1993-94	59	4 934	12 196	207	2 472

Source: Jorge Katz, seminar at CREI, University of Roma Tre, June 2007.

Table 1 reveals that in Argentina soybean used to be produced by sixty-seven plants in 1973-4 and by 59 in 1993-4. Over this period, the sector experienced falling employment, a seven-fold increase in production and a corresponding rise in productivity, measured by both tons per plant and tons per employee. The productivity increase per se is clearly a positive result, but this is due an impressive role of large scale agriculture, with fewer more capital intensive and much more efficient farms. The relevant question here is: who is getting the benefits of this evolution? Certainly a smaller share of the population, with lower employment in spite of fast growing production and exports. There is probably some ground for taxation and redistribution of the efficiency gains, but I suspect this has been hardly attempted in Argentina in these years. Of course soybean production is very specific and highly capital intensive, thus it could be a special case of little general relevance, but evidence at the macroeconomic level appears to support the expectation that such improvements in agriculture accrue only to a small share of the population.

New evidence on GDP per capita in selected Latin American countries reveals that only a small share of the economy would be converging to advanced countries' GDP pc. Indeed in 2005 the distance between the top 10 percent and bottom 20 percent of the population in Latin America was still huge, much larger than in advanced countries, and leading some authors to write of "fragmented convergence" (Katz, 2007).

Thus, there is evidence to argue that the benefits of years of structural reforms in Latin America have gone to the richest segments of society. Table 2 presents evidence on average GDP per capita, and GDP per capita of the richest and poorest quintiles in a selection of Latin American countries, the G7, the Anglo-Saxon countries, the European Union and Japan. Although the gaps appear still noteworthy at average GDP per capita levels, as we observe the figures for the different deciles of the population we discover that only a small share of the population is indeed converging to advanced countries' levels of income and consumption. The richest consumers in the capital cities of these Latin-American countries share the same pattern and level of consumption of European and North American consumers.

In contrast, the poorest segments of the population in Latin America are far behind the poorest segments in advanced societies (although remarkable inequality persists in the latter). In Latin America the GDP pc of the top richest amounts to at least 25 times (or up to 39 times in Brazil) the GDP pc of the poorest!

Economic convergence is therefore "fragmented", and only few segments of society are indeed "converging" in Latin America, and the traditional dualism – typical expression of underdevelopment – persists. As a consequence, this dimension needs to be given central attention in our policy-related analyses of development, and this also applies to a large extent to agriculture.

Table 2. Fragmented Convergence in GDP per capita:

	Latin America and Comparators, <i>circa</i> 2005.			
	GDP pc	Average Top 10%	Average Bottom 20%	Top 10% / Bottom 20%
Argentina	11,775	45,749	1,832	25.0
Brazil	7,679	35,981	920	39.1
Chile	10,631	49,915	1,769	28.2
Mexico	9,046	39,021	1,383	28.2
G7	29,015	71,051	11,354	6.3
Anglosaxon	30,473	82,880	9,321	8.9
EU-Japan	28,285	65,434	12,277	5.3

Source: adapted from Jorge Katz, seminar at CREI, University of Roma Tre, June 2007. Original data from Heymann and Ramos, ECLAC Buenos Aires office.

Power and its uneven distribution

The second remark focuses on the issue of power and its uneven distribution, especially related to the different forms of governance and organization of commercial agriculture that are emerging. I refer to the growing phenomenon of supermarkets, large foreign buyers and traders that source their goods in many African, Asian or Latin American countries, and sell them in richer markets. I noticed an interesting emphasis on these issues in the Report, for example in page 118, that

states that “...efficient markets require good governance and public policy ... however ... smallholders may need to build their (bargaining) *power*” (emphasis added).

Along similar lines, Fig.5.6 in page 129 reports the cost structure of French bean exports from Bangladesh where we could discover that of the US\$ 34 of the final value, US\$13 were accounted for by the packaging function: the firms engaged in packaging, were getting one third of total production value. This is very interesting in terms of the ongoing discussing of where the benefits of agriculture go, and the use of words such as “decommodification”, and “institutional innovation” reveals a new and promising attitude (Kaplinsky and Fitter, 2004).

My recent work on the impact of the different forms of governance and organization of production may add some elements to this discussion (Pietrobelli and Rabellottii, 2007, Pietrobelli and Saliola, 2008). Indeed, there is an interesting potential for combining the insights from the emerging literature on global value chains with the analysis of local clusters and local agglomerations of small farms and firms. These branches of literature come from different traditions, as the cluster literature has traditionally focused on the economic geography and sociology, and looks at society at a local level, stressing the relevance of local linkages for economic performance. Instead, the global value chains literature was started by scholars of trans-national corporations and their organisation in developing countries, and gradually reflected the changes in organizations that these companies are experiencing. In our recent research we actually addressed this issue, and we indeed argued that the governance of these different forms of organization of production affects the opportunities for small farmers and enterprises to benefit from these new forms of international organization of production.

We have based the analysis on several original case studies, and I like to discover that the Report sometimes makes reference to the same experiences, like for example the San Francisco Valley or Petrolina Juazeiro in Brazil, where local cooperatives, local service centres, and the local branches of powerful agriculture research organization in Brazil played a remarkable role to improve the opportunities for upgrading offered by their relationships with large global and national value chains.

The research carried out for the WDR, as well as our own research, point to a number of areas for further research and for new public policies to improve local suppliers perspectives in their interaction with GVC (or integrated value chains, following the wording of the Report). Let me briefly mention them below:

First of all, one key area for analysis and for policy experimentation would be to involve the key stake-holders in designing and delivering policy support. The large firms, the supermarkets, the Carrefours or Wallmarts of the agricultural world have a role to play and need to be involved in policy experimentation.

Secondly a number of studies have shown how the benefits of participating in value chains are not distributed equally among all partners, and the distribution of rents is affected by power within the value chain (Kaplinsky, 2002, Pietrobelli, forthcoming). Within value chains there is no free competition but power gaps and asymmetries that explain the distribution of rents among firms in the GVC. Policy approaches need to identify the powerful interests at play and shape interventions accordingly.

Thirdly, we need to remember and emphasise even further the role of knowledge flows in value chains: this goes far beyond the market transactions regulated by the price system. The knowledge flowing within a value chain represents power and may offer remarkable opportunities to local suppliers (Pietrobelli, forthcoming)

Fourthly, in this new world of integrated chains and global rules it is very difficult to design and implement policies to support local producers. It is very hard to know what to do with these large players, what kind of policies to design, how to implement them. Therefore, international organizations – like the World Bank – and donors have a role to contribute to developing countries' policy design and implementation capabilities.

Fifthly, an emerging area is represented by the national standard infrastructure that need to be in place to help local farmers to deal with global rules and practices. This is well explained by the Report, that explores several examples of how small suppliers may be helped to comply with standards, and develop institutions in charge of incorporating international standards in national legislation and practices, and of diffusing the necessary knowledge.

Sixthly, science and technology support deserves renewed attention, and the Report rightly stresses this need. A central role for public policy is to guide research priorities. Indeed, research takes different avenues depending on the most powerful and profitable interests, which do not necessarily correspond to the interests of the poorest. Policies need to direct research efforts in the directions that are most relevant for the poorest.

Finally, there is a growing scope for horizontal cooperation, conceptualising and implementing policies and programs at the local level by exploiting the opportunities offered by local clusters and cooperatives, that can help design and deliver policy usefully and effectively.

References

- Kaplinsky, R. (2002) 'Gaining from global value chains: the search for the nth rent' in G. Gereffi (Ed.) *Who Gets Ahead in the Global Economy? Industrial Upgrading, Theory and Practice*, New York, Johns Hopkins Press.
- Kaplinsky, R. and Fitter, R. (2004) 'Technology and globalisation: who gains when commodities are de-commodified?', *Int. J. Technology and Globalisation*, Vol. 1, No. 1, pp.5–28.
- Katz J., (2007), Seminar at CREI, University of Roma Tre, June. Original data from Heymann and Ramos, ECLAC Buenos Aires office.
- Pietrobelli C. and Saliola F. (2008) "Power Relationships along the Value Chain: Multinational Firms, Global Buyers, and Local Suppliers' Performance", *Cambridge Journal of Economics*, forthcoming.
- Pietrobelli, C. (2007), "Global value chains and clusters in LDCs: what prospects for upgrading and technological capabilities?", Background paper for *UNCTAD: The Least Developed Countries Report 2007*, United Nations: Geneva. Available online at: http://www.unctad.org/sections/ldc_dir/docs/ldcr2007_Pietrobelli_en.pdf
- Pietrobelli, C. (2009) 'Global value chains in the least developed countries of the world: Threats and opportunities for local producers', *Int. J. Technological Learning, Innovation and Development*, forthcoming.
- Pietrobelli, C. and Rabellotti, R. (2007) *Upgrading to Compete. Global Value Chains, Clusters and SMEs in Latin America*, Harvard University Press, Cambridge, MA.