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A Blueprint for Reform of the WTO Agreement on Agriculture

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ABSTRACT

As the Doha negotiations are at a dead end, this paper takes a step back to address the future direction of WTO disciplines in agriculture. It puts members' negotiating positions and the draft modalities with their ever growing list of exceptions aside to focus on three fundamental questions. First, which agricultural policy instruments should be permitted or prohibited by WTO disciplines so as to best account for the manifold effects of agriculture on societies' welfare? Second, how should inefficient agricultural policies be treated as long as their removal is politically infeasible? And third, how can the WTO facilitate agricultural policy reform beyond establishing maximum thresholds for distorting policies? The paper argues for moving from the current 'boxes' of domestic subsidies to a classification system that is more responsive to the differing degree of legitimacy of agricultural policy instruments. It also proposes to introduce 'good governance' norms that guide members' decision-making in agriculture towards policies that are at the same time domestically efficient and internationally responsible.

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1 INTRODUCTION[1]

Agriculture has a long history as a major bone of contention in multilateral trade negotiations. During the Kennedy Round (1964-67) and the Tokyo Round (1973-79), the European Community resisted US pressure to make agriculture an integral part of the GATT. On both occasions, the US had to abandon its ambitions in order to move forward with trade liberalization in industrial goods. Agriculture again delayed and endangered the conclusion of the Uruguay Round (1986-93), and the resulting Agreement on Agriculture did not bring significant market opening or subsidy cuts. In the current Doha Round, started in 2001, agriculture has repeatedly stymied other parts of the negotiations as delegations waited, usually in vain, for progress in the Agriculture Committee. In particular, agriculture has been at the core of the suspension of negotiations in 2006 and the failed meeting of trade ministers in Geneva in July 2008.

One reason for the difficulty of liberalizing agricultural policies is the sway held by well-organized farming interests. But there is another part to the story that explains why policymakers are willing to listen to special interest groups and why the citizens who suffer the consequences of protectionist policies as consumers and taxpayers accept their lot with extraordinary patience. This underlying force is the broadly shared understanding that agriculture is special.

In the first place, agricultural policies are deemed to serve a social function by helping poor farmers. More than that, agriculture is considered to fulfill a multifunctional role in society: It provides landscaping services, assures food security, drives rural development, and preserves cultural traditions. The surge of food prices in 2007 and 2008 has brought yet another strand of arguments for agricultural tariffs and output-oriented subsidies in developed countries to the forefront: The poorest households in developing countries are net-food buyers. Policies that increase developed countries' supply and reduce their demand on world markets are therefore considered justified in the fight against global poverty.

Against this background, the paper asks three questions. First, what would first-best WTO disciplines on members' agricultural policies look like? That is, which agricultural policy instruments should be permitted or prohibited by WTO disciplines so as to best account for the manifold effects of agriculture on societies' welfare? This issue is fundamentally contested in the public debate and needs clarification.[2] Many farmer associations, development organizations, and governments argue that standard free trade prescriptions are inappropriate for agriculture. By contrast, some WTO members with strong export interests and low levels of support think that trade in agricultural and manufactured products should be liberalized in essentially the same way and to the same extent.

Drawing on a large body of scientific literature, this paper concludes that tariffs, export subsidies, and the strongly trade-distorting domestic subsidies, classified in the so-called Amber and Blue Box of the Uruguay Round Agreement on Agriculture (URAA), should be abolished. They distort production and fail to efficiently respond to domestic distributional and multifunctionality objectives. Indeed, they often exacerbate inequality and poverty and harm the environment. Their removal should be undertaken gradually in order to keep adjustment costs low – but the path towards their abolishment should be fixed immediately in order to improve policy predictability.

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The so-called Green Box measures are deemed to be minimally trade distorting and to serve a legitimate policy objective. Therefore, they are currently permitted without a ceiling. They include expenditure for (quasi-)public goods, such as agricultural research, pest and disease control, and infrastructure. They also include decoupled income support, that is, payments that are not linked to farmers' current production decisions but generally based on historic entitlements. This paper recommends that the Green Box should be maintained without a ceiling. However, some measures should be deleted from the list, while others should be added. Furthermore, the eligibility criteria of most of the measures should be reformed. Current criteria are often too generous, tolerating unnecessary trade distortions, and sometimes too constraining, preventing policies suitable for non-trade objectives.

The political reality demonstrated in the Doha negotiations shows that members will not agree directly on such first-best policies. The second issue treated in this paper therefore raises the question of how inefficient agricultural policies should be disciplined, if their removal is politically infeasible. The current boxes conflate domestic subsidies that differ strongly with regard to their trade effects and their efficiency in attaining domestic policy objectives. This paper proposes classifying the domestic support into more fine-grained boxes in response to these two aspects. One advantage would be that WTO negotiations could be better focused on the most trade restrictive instruments. Furthermore, it would create stronger support for the WTO process if stakeholders saw members struggling to find an appropriate balance between trade and non-trade concerns, rather than fighting over market access volumes. Finally, reform promoters could refer more forcefully to WTO boxes in domestic politics if they were more nuanced and rational, offering guidelines for improving agricultural policies.

The third question tackled in this paper is how the WTO can facilitate agricultural policy reform beyond establishing maximum thresholds for distorting policies. Negotiating, monitoring, and enforcing agricultural policy reform through the WTO primarily depends on members' political will to liberalize. The WTO should therefore impose 'good governance norms' that help to create such political will and foster bottom-up liberalization. These could include members' commitment to define the objectives of their agricultural policies in specific and, wherever possible, measurable terms; to establish a transparent and balanced dialogue with stakeholders that explicitly empowers taxpayer, consumer, environmental, and development groups; to conduct and publish systematic cost-benefit analysis of policy proposals before passing them into law; to regularly evaluate current policies and the gains from reform, identifying in particular the net distribution of costs and benefits of all major policy instruments; and to establish an independent review body and endow it with sufficient resources so that it can conduct the above-mentioned cost-benefit evaluations, organize public debates on agricultural policy reform, and communicate its findings to a larger public.

Multilateral oversight short of formal dispute settlement should also be strengthened. Members should, for instance, be obliged not only to notify the WTO of their agricultural policies but also to justify them, giving sound evidence that each instrument is compliant with the criteria under which it is notified. Tight deadlines for submitting notifications and justifications should be set. The Agriculture Committee should meet more frequently to discuss the submissions, and its work should be spread out in sub-committees that are in charge of a group of policy instruments that require similar technical knowledge. The Trade Policy Review Mechanism (TPRM) should entail a more detailed examination of members' agricultural policies and their compliance with the procedural disciplines. Finally, the WTO Secretariat's capacity to support the Agriculture Committee and to conduct the TPRM should be enhanced.

This paper is organized as follows. Section 2 examines the efficiency of agricultural policy instruments with regard to the economic wealth of both the country applying the policy and foreign countries. Section 3 assesses the effects of agricultural policy instruments on income distribution at household and international level. Section 4 discusses the appropriateness of agricultural policy instruments for the attainment of multifunctionality objectives, namely promoting rural development, assuring food security, and protecting the environment. Section 5 derives recommendations for regulatory reform of the URAA from the preceding welfare analysis. Section 6 summarizes the findings.[3]

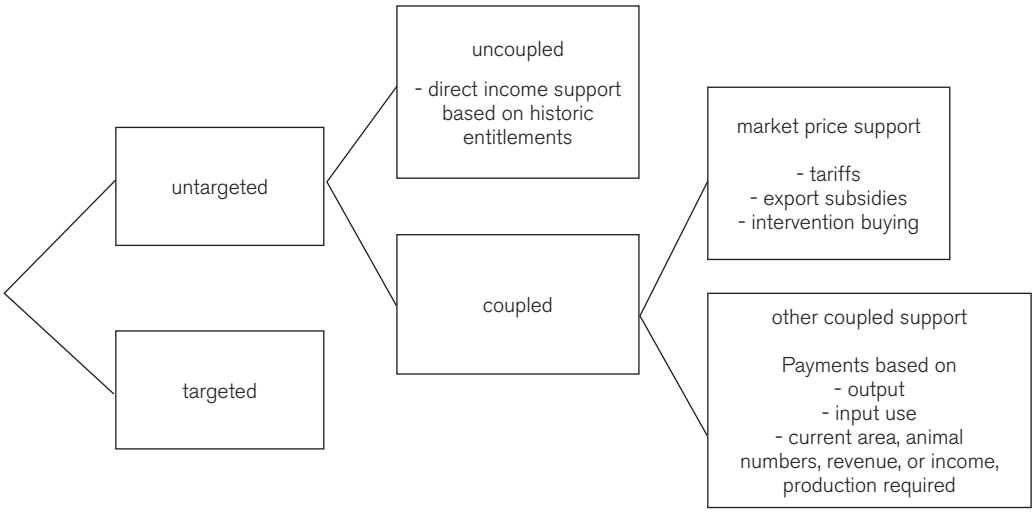
2 WEALTH EFFECTS

An overview of the policy instruments to be analyzed is presented in figure 1. The instruments can be first distinguished by the extent to which they are targeted at specific objectives. Highly targeted policies may involve payments to farmers, such as rewards for animal-friendly livestock production. They may also promote those objectives that commonly justify agricultural policies without directly involving farmers, such as public stockholding for food security or subsidies for agronomical research. Their common characteristic is that they step in where markets fail to deliver sufficient public goods. Untargeted policies, in contrast, support farmers and other businesses in the agricultural value chain without public goods being clearly linked in a way that is responsive, wherever possible, to local needs and circumstances.[4]

Untargeted policies can be coupled to current production decisions. One way to do this is by granting farmers payments in addition to market prices. Examples are premia on the production of, or on the area cultivated with, a specific crop. Another group of coupled policies raises market prices (so-called Market Price Support or MPS). Such interventions can take the form of public intervention buying, so that less agricultural supply is released on the market when prices are low. These interventions can also be implemented through export subsidies which reduce supply on the domestic market and thus drive up domestic prices; or they can consist of tariffs that raise market prices by keeping out imports.

Alternatively, untargeted policies can be decoupled by making them conditional on historic entitlements. Such historic entitlements are calculated on farmers' cultivated area, livestock numbers, yields, or subsidy revenues during a base period.

FIGURE 1: OVERVIEW OF AGRICULTURAL POLICY INSTRUMENTS[5]



2.1 MICROECONOMIC ANALYSIS

Microeconomic analysis looks at the impact of agricultural policies on farmers' production decisions. It helps to understand how and to what extent different policy instruments distort production.[6] Agricultural policies can create two types of distortions: They can distort 1) the decision of what to produce and 2) the choice of how much to produce.

The support measures differ in the flexibility they grant farmers in what to produce.

- **MPS and output payments** are inherently single-commodity specific, i.e. producers benefit only if they produce the protected product.
- **Input subsidies** distort production decisions even if they are not conditional on specific uses. Goods whose production heavily depends on the subsidized input are privileged.
- **Direct payments based on current production decisions** differ according to their design. Payments linked to animal numbers are almost automatically specific. In the case of payments linked to area, revenue, and income, it is possible to leave farmers free choice in what to produce.
- **Direct payments based on historic entitlements** are by their very nature not commodity-specific.

Support measures influence the quantity of production through several channels.

- **Prices:** Policies that raise producer prices apparently stimulate output. Even if output-based payments are restricted to a quota, farmers face an incentive to produce out-of-quota quantities as a precaution against underfilling their quota in the case of a bad harvest.[7]
- **Risks:** Any agricultural policy that increases farmers' wealth encourages production if, as is likely, wealthier farmers are less risk-averse. Specifically risk-diminishing payments induce additional production among risk-averse farmers. Counter-cyclical output payments that refund (part of) the difference between actual and reference prices work as an insurance in this sense, as do import barriers that weaken the pass-through of world market prices to domestic prices.
- **Credit:** If farmers are credit constrained, any payment increases output. First, farmers can directly channel the payments into production. Second, farmers gain better access to credit, under the condition that support is likely to continue well into the future (thus reducing bankruptcy risks and driving up land values that can serve as collateral).[8]
- **Structure:** Support measures influence the structure of production. On the one hand, marginal producers may stay in business if part of the fixed costs can be financed through support programs (and they may even export at world prices below average costs provided that average costs are above variable costs).[9] On the other hand, support can be used to buy farmland, thus accelerating the exit of smaller and less efficient farms and the expansion of larger and more competitive suppliers.[10] Greater concentration of farmland may increase a country's output (by improving productivity) or decrease it (as labor exits the sector).
- **Expectations:** If farmers expect that entitlements for decoupled payments might be updated in the future, they are enticed to build reference quantities.

The OECD (2006c) notes that little is known about the relative importance of these channels, which appears to vary fundamentally in response to country- and product-specific conditions. Preliminary assessments indicate that the risk-related effects are important and occasionally greater than the direct price effects. The insurance effect through price stabilization is much stronger than the effect of decreasing risk-aversion with greater wealth.

Based on its Policy Evaluation Model and a series of empirical studies, the OECD (2006c) concludes that production and trade effects differ strongly across policy instruments.

- **Area-based payments** are least distorting. This is especially true if they grant farmers flexibility in whether (and what) to produce. However, even payments based on historical entitlements that do not require production cause a small positive supply response.[11]
- **MPS and output payments** have a similar distorting effect that is significantly higher than area-based payments.
- **Subsidies on variable input** are the most distorting policy instrument.[12]

2.2 CGE MODELS

Another approach for assessing the wealth effects of agricultural policies is macroeconomic analysis through Computable General Equilibrium models. This enables us to assess how much wealth would increase in response to removing agricultural policies that distort markets. The models analyze welfare gains according to which countries liberalize, which policy instruments are reformed, and how ambitious reform is.

2.2.1 Domestic/foreign reform

Table 1 gives an overview of the welfare effects of agricultural liberalization. It reports the absolute gains in $ millions for developed countries, developing countries, and the world (row 1). Furthermore, it distinguishes the percentage of these gains that stem from reform conducted by developed or by developing countries (row 2 and 3).

For instance, the OECD (2006a) finds for a scenario of 50% tariff and subsidy reduction that developed countries obtain 92% of the gains from their own reform and only 8% from developing countries' reforms. By contrast, developing countries own reforms make up for only 41% of their total gains from liberalization, while they depend on developed countries' efforts for 59% of their total gains. Anderson, Martin, and Valenzuela (2006) come up with similar results for a full liberalization scenario.

Mensbrugghe (2007) uses a different model to assess a full liberalization scenario with two variants – a standard static model and a dynamic model where capital is accumulated over time. In both variants, the overwhelming importance of their own reforms for developed countries is confirmed, whereas developing countries now receive 60% to 70% of their gains from their own reforms.

On a country basis (not reflected in the table), it can also be seen that many countries could gain more from reforming their own agricultural policies than from foreign liberalization.[13] Regarding global welfare gains, all models show that developed countries' reform brings about a far larger share of the global welfare gains (up to 88%).

TABLE 1: WELFARE EFFECTS OF LIBERALIZATION BY REGION

Anderson, Martin and Valenzuela (2006)			
GTAP-AGR model, full liberalization (Table 4)			
Reform by	Total Absolute Gains (mn. $)	Decomposition of Regional Gains (Percent)	
		Developed	Developing
Developed	n.r.	88.9%	75.6%
Developing	n.r.	11.1%	24.4%
World	n.r.	n.r.	n.r.
Developed: OECD			

OECD (2006a)			
GTAPEM, 50% tariff and subsidy reduction (Table 1.6)			
Reform by	Total Absolute Gains (mn. $)	Decomposition of Regional Gains (Percent)	
		Developed	Developing
Developed	23,269	91.95%	58.76%
Developing	3,024	8.05%	41.24%
World	26,294	88.13%	11.87%
Developed: OECD			

Mensbrugghe (2007)			
Static Linkage model, full liberalization (Table 2)			
Reform by	Total Absolute Gains (mn. $)	Decomposition of Regional Gains (Percent)	
		Developed	Developing
Developed	35,039	94.57%	29.53%
Developing	10,925	5.43%	70.47%
World	45,964	76.23%	23.77%
Developed: High-income			

Mensbrugghe (2007)			
Dynamic Linkage model, full liberalization (Table D2)			
Reform by	Total Absolute Gains (mn. $)	Decomposition of Regional Gains (Percent)	
		Developed	Developing
Developed	69,636	94.32%	39.52%
Developing	25,347	5.68%	61.48%
World	94,983	73.31%	26.69%
Developed: High-income			

2.2.2 Reformed policy instruments

Table 2 compares the welfare gains that can be reaped by reducing various support measures. It highlights the overwhelming importance of tariff reductions. It also confirms the microeconomic findings that domestic subsidies differ strongly in the distortions they cause. Reductions in payments on land (a factor of production that is inelastic in supply) bring much smaller welfare gains than reductions in capital payments (including capital grants, interest concessions, and headage payments for livestock), after adjusting for their relative weight in producer support. Reductions in export subsidies reduce developing countries' overall wealth as higher world market prices increase their food import bill.

TABLE 2: WELFARE EFFECTS OF FULL LIBERALIZATION BY POLICY INSTRUMENT

OECD (2006a)							
GTAPEM, 50% tariff and subsidy reduction (Table 1.5)							
Welfare gains for	Tariffs	Subsidies					All Measures
		Export subsidies	*Output payment*	*Capital payment*	*Interme-diate input payment*	*Land payment*	
World	78	2	0	15	0.5	3	100
Anderson and Valenzuela (2006a)							
GTAP-AGR, full liberalization (Table 4)							
Welfare gains for	Tariffs	Subsidies					All Measures
		Export subsidies	*Domestic subsidies*				
Developed Countries	89	5	6				100
Developed Countries	109	-10	1				100
World	93	2	5				100
Developed: OECD							

2.2.3 Reform ambition

Bouet, Mevel, and Orden (2007) compare full trade liberalization for agricultural and non-agricultural goods with a low and a high ambition Doha scenario, based on proposals made at the Hong Kong Ministerial Meeting in 2005. Differences between the scenarios concern mostly liberalization of agriculture. In the case of full liberalization, global welfare gains are at $ 158 billion. This amount decreases to $ 38/77 billion in the case of a Doha deal with low/high ambition. Anderson and Valenzuela (2007b) come to a similarly disappointing conclusion concerning the welfare gains from liberalization in cotton as outlined at the Hong Kong Ministerial Meeting. Sub-Saharan Africa is likely to realize only one-fourth of the gains it would attain under full liberalization.

Table 3 shows welfare effects on a country level. The Doha scenario of Hertel et al. (2007) is derived from the July 2004 Framework Agreement, and only tariff and subsidy reductions by developed countries are considered. The results confirm that most countries would win more from full liberalization than from a Doha deal.[14] Yet, some countries benefit from parts of the Doha package (such as duty-free access for least developed countries to developed country markets) but lose from multilateral liberalization that erodes these and other preferences and that increases their food import bill.

TABLE 3: WELFARE EFFECTS OF DOHA VS. FULL LIBERALIZATION, %GDP CHANGES

Bouet et al. (2007)				Hertel et al. (2007)		
Mirage model, developed and developing country liberalization				GTAP, developed country liberalization		
	Doha (low)	Doha (high)	Full		Doha	Full
HIGH-INCOME COUNTRIES				HIGH-INCOME COUNTRIES		
Australia/New Zealand	0.37	0.74	1.54	Australia/New Zealand	0.26	0.72
Canada	-0.03	0.05	0.09	Japan	0.47	0.95
Developed Asia	0.10	0.30	1.13	Canada	0.1	0.27
European Union	0.06	0.22	0.48	US	0.01	0.02
Mexico	-0.01	0.06	-0.16	Europe FTA	0.18	0.22
USA	0.01	0.02	0.12			
				FOCUS COUNTRIES		
MIDDLE INCOME COUNTRIES				Bangladesh	–0.10	–0.28
Argentina	0.19	0.34	1.18	Brazil	0.26	0.72
Brazil	0.13	0.31	0.83	Chile	0.01#	0.15
Chile	0.13	0.24	0.68	Colombia	0.01#	0.00#
China	0.40	0.44	-0.07	Indonesia	–0.09	–0.26
Colombia	0.04	0.19	0.24	Malawi	0.17#	1.82
India	0.34	0.37	0.34	Mexico	–0.08	–0.24
Indonesia	0.46	0.52	1.53	Mozambique	–0.14	–0.53
Malaysia	2.94	3.36	8.05	Peru	–0.01#	0.53
Peru	0.06	0.04	-0.33	Philippines	–0.11	–0.21
Philippines	0.10	0.12	-0.15	Tanzania	–0.08	–0.09
Thailand	0.65	1.38	4.91	Thailand	0.15	0.71
Uruguay	0.18	0.68	1.81	Uganda	–0.19	–0.23
Viet Nam	0.45	0.70	3.32	Venezuela	–0.06	–0.11
				Vietnam	–0.18	0.07#
LEAST DEVELOPED COUNTRIES				Zambia	–0.05	–0.20
Bangladesh	0.29	2.33	-0.46			
Malawi	5.06	5.12	11.25			
Uganda	0.18	0.22	0.53	#: Result cannot be distinguished from zero change		
Zambia	-0.10	-0.15	-0.58	at a 95% confidence level		

2.3 CASE STUDIES

A THIRD APPROACH for gauging the wealth implications of agricultural policy reform, besides micro- and macroeconomic analysis, is the study of country cases. This literature reveals many success stories of agricultural liberalization, with China being an outstanding example.[15] During the last two decades, China has implemented radical trade and domestic reform. The government used to hamper agriculture through high taxes, little public investment, and monopolistic government procurement at prices far below urban sales prices. Trade policies also imposed a net tax on agriculture. Imports were restrained by tariffs, quotas, and licenses, but potential export goods, which were disadvantaged by the public export monopoly, made up a bigger share than import-competing goods. The reforms liberalized not only prices and trading but included the phasing-out of agricultural taxes and substantial public investments into agricultural technology and infrastructure, market development, and rural education and health. The reforms have

increased production and lowered poverty in all provinces of China, even those specialized in import-competing production.

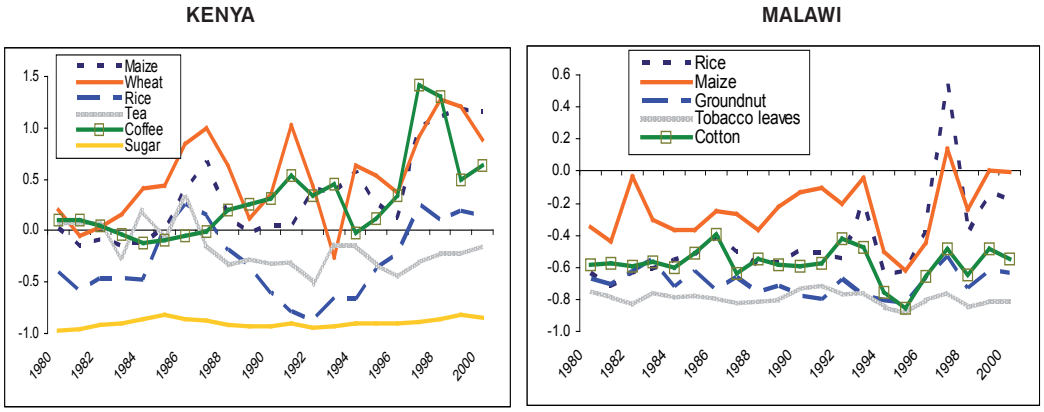
Numerous cases also show how interventionist and trade-restrictive policies have impeded growth in the agricultural sector. For instance, Botswana has tried to boost its horticulture production by using import permits as quantitative restrictions.[16] Though demand grew over time, domestic supply and producer gains remain stagnant, increasing quota rents for foreign suppliers (which have been much larger than domestic producer gains) and social costs (dead-weight losses). The net social costs are estimated to be greater than the additional producer gains: The "transaction costs" of transferring money to farmers turned out to be higher than the sum transferred.

A number of syntheses of such case studies is available.[17] Their common theme is that the success of sectoral policy reform in agriculture depends on its design and implementation. Several problems have emerged repeatedly:

- Macroeconomic policies interfere with sectoral agricultural policies. Lasting currency overvaluation,[18] high levels of protection afforded to the industrial sector, and insufficient public spending for rural areas and general services in agriculture may prevent agricultural liberalization from bearing fruit. Further, sudden currency devaluations may render fertilizer temporarily unaffordable to small farmers (until producer prices rise sufficiently).
- Sectoral reforms have been unreliable, with frequent changes in policy instruments and policy reversals. Figure 2 illustrates the volatility of nominal rates of protection – the policy-induced price difference between the domestic and the world market – in Kenya and Malawi.
- The sequencing of reforms may be harmful. In particular, farmers and farm production have suffered where support was cut before output prices were liberalized or before administered output prices raised.
- The rapid dismantling of state services may leave farmers helpless – without professional transportation and processing facilities, without sound input, capital, insurance, and product markets, and without reliable contract enforcement. Often, states have failed to make the necessary public investments and to set a credible, simple, and liberal framework for private investors.

The studies conclude that though the effects of past agricultural reforms have been mixed, they reduce poverty and improve food security if they are well designed and implemented. Success has been attained especially in horticulture, aquaculture, and live-stock production.[19] These sectors are intensive in low-skilled labor; they also facilitate export diversification, reducing developing countries' dependence on traditional staple goods.

FIGURE 2: THE VOLATILITY OF NOMINAL RATES OF PROTECTION



Source: FAO (2006)

2.4 SUMMARY

Untargeted agricultural policies distort production and reduce economic wealth – both in the country applying the measure and worldwide. The economic costs differ strongly across policy instruments. Though the multiplicity of channels through which policy instruments distort production complicate the assessment, a ranking can be established: Input subsidies are worst, followed by market price support and output payments, then come payments on current area and headage, and finally decoupled income support. The greatest global welfare gains can be achieved through liberalization in developed countries and through tariff cuts. A Doha-style agreement would bring about only a fraction of the benefits of full liberalization.

3 DISTRIBUTIONAL EFFECTS

Agricultural policies have important distributional effects within and across countries. Welfare considerations could thus warrant the use of agricultural policies for raising and stabilizing the real income of the poor.[20]

3.1 MICROECONOMIC ANALYSIS

The OECD (2003) examines the transfer efficiency of different agricultural policy instruments. This concept measures how much farmers benefit from a given amount of support. It disaggregates the transfer into the shares that go to farm labor, land owners, input suppliers and the share that is lost as efficiency costs when the economy shifts resources from more efficient uses into agriculture. The OECD makes several observations:

- **Payments on current cultivated area** lead to only a slight increase in production. The resulting marginally increased demand for labor and land minimally raises their factor rewards. The lion's share goes to the owners of land as a rent. Since ownership of land is rewarded by the government, its value appreciates.[21]
- **Payments based on output** cause a more substantial supply response than area payments. They thus have a stronger effect on increasing income for farm labor and input suppliers.
- **Market price support** is slightly less transfer-efficient than payments based on out-

put. Since it distorts not only production but also consumption, its efficiency costs consume a larger part of the transfers.

- **Input subsidies** benefit farmers the least as a large share of the money goes to the input producers.

These general results are not sensitive to changes in the key parameters (the elasticity of farm household supply of land and labor, the elasticity of other input supply) within a reasonable range. The numbers in table 4 are for medium-run elasticities (3-5 years). The longer the adjustment period, the more labor and other input supply expands, whereas land supply is limited. Consequently, a larger share of support goes to land owners.[22]

TABLE 4: TRANSFER EFFICIENCY

	Area payments	Output payments	Market price support	Input subsidy
Labor	1	11	11	8
Land	**91**	28	26	19
Input suppliers	3	**40**	**36**	**49**
Efficiency costs	5	21	27	25

These figures show that for all agricultural policies instruments considered, only a small slice of the transfers end up with farm labor. For all policy instruments except area payments, input suppliers are the main beneficiaries. Area payments mostly go to the owners of land. But those who own farm land tend to be wealthier than employed farm labor – and in many cases at least as wealthy as average citizens of their country. In sum, poor farmers benefit little from untargeted agricultural policies.[23] What is more, low-income incidence among farmers is equal or below national average in many countries (especially if disposable income is used for comparison as many countries have preferential tax arrangements for farmers). This is the case in Canada, Norway, and the US.[24] In such countries, targeting income aid at farmers is a not simply an inaccurate but a counterproductive rule-of-thumb for reducing social inequality.

Agricultural policies may also change food prices for consumers. Market price support disadvantages the poor who spend a relatively high proportion of their income on food. Output and input payments have a beneficial effect as they lower the price of agricultural products.[25] Nevertheless, output and input payments are not an efficient way to support poor consumers: The production distortion wastes resources, and the non-poor consume a large share of agricultural products.

3.2 CGE MODELS

The following discussion looks first at distributional effects on poor countries (which can be used as a proxy for poverty effects) and then directly at global household poverty levels.

3.2.1 Effects on global GDP distribution

Table 5 lists the 10 countries that lose most or gain least from multilateral liberalization. Note that models sometimes aggregate several countries into one group or focus on a country selection only. As long as labor markets are efficient, the worst-off countries stand to lose moderately as a proportion of GDP (-0.6% as the very worst case) – and little in absolute terms (given that losing

countries are small). In most models/versions, most 'relative losers', i.e. those 10 countries on the list of worst performers, are 'absolute winners' that see their GDP grow.

TABLE 5: LIST OF 10 COUNTRIES LOSING MOST OR GAINING LEAST FROM LIBERALIZATION[26]

OECD (2006)		**MENSBRUGGHE (2007)**		**MENSBRUGGHE (2007)**	
GTAPEM, 50% tariff and subsidy reduction		Static Linkage model		Segmented Labour Market and Urban Unemployment	
Country	*Welfare Change*	*Country*	*Welfare Change*	*Country*	Welfare Change
1) Canada	0.00	1) Bangladesh	-0.6	1) Bangladesh	-0.4
1) Russia	0.00	2) India	-0.1	2) China	0.2
1) United States	0.00	3) China	0.1	2) Mexico	0.2
2) China	0.01	4) Indonesia	0.2	3) Canada	0.3
2) Mexico	0.01	4) Mexico	0.2	4) United States	0.4
3) Indonesia	0.03	5) United States	0.3	5) Argentina	0.5
4) Japan	0.11	6) Canada	0.5	6) Australia/N.Z.	0.6
5) India	0.14	7) EU 25/EFTA	0.6	6) India	0.6
6) EU 15	0.15	8) Australia/N.Z.	0.7	6) Indonesia	0.6
7) Turkey	0.16	8) Argentina	0.7	7) Brazil	0.8
BOUET (2007)		**BOUET (2007)**		**BOUET (2007)**	
Mirage model, full trade liberalization		Doha (low)		Doha (high)	
Country	*Welfare Change*	*Country*	*Welfare Change*	*Country*	*Welfare Change*
1) Zambia	-0.58	1) Venezuela	-0.31	1) Venezuela	-0.28
2) Bangladesh	-0.46	2) Madagascar	-0.11	2) Zambia	-0.15
3) Venezuela	-0.45	3) Zambia	-0.10	3) USA	0.02
4) Peru	-0.33	4) Canada	-0.03	4) Peru	0.04
5) Madagascar	-0.32	5) Mexico	-0.01	5) Canada	0.05
6) Mozambique	-0.25	6) United States	0.01	6) Mexico	0.06
7) Mexico	-0.16	7) EU	0.05	7) Philippines	0.12
8) Philipines	-0.15	8) Peru	0.06	8) Tanzania	0.16
9) Morocco	-0.07	9) Mozambique	0.08	9) Colombia	0.19
10) China	-0.068	10) Philipines	0.10	10) Uganda	0.22

Understanding countries' gains or losses as a function of liberalization scenarios is not intuitive. It depends, first, on the efficiency of a country's resource allocation. If a country's production and consumption is highly distorted, it will gain a lot from its own liberalization. However, it may lose from mainly foreign market opening (with little unilateral liberalization) as the support it provides to agriculture attracts even more resources in excess of efficient allocation into agriculture.[27]

Second, changes in countries' wealth hinge on terms of trade effects. As a rule of thumb, liberalization raises world market prices, benefiting net-food exporters and harming net-food importers. But world prices are subject to many influences: They rise with tariff and subsidy reductions in the product concerned, and they are also influenced by price changes in substitutes and complements. In particular, products can be linked through the value chain, such as oilseeds that can be used for feeding, and thus become more expensive if livestock production expands.[28] In the final balance, most world prices will rise but some will fall in the wake of liberalization. Therefore, terms of

trade effects depend on the composition of countries' export and import bundles. Even countries that are net-food exporters may face deteriorating terms of trade (India, Peru, and Vietnam), while net-food importers may improve their terms of trade (Singapore).[29]

A special problem in the wake of trade liberalization is that poor exporters' terms of trade deteriorate as their preferences are eroded. The European Union is the most important provider of non-reciprocal, preferential market access to (least) developing countries, followed by the US. Both countries offer a Generalized System of Preferences (GSP) scheme for which the majority of developing countries are eligible and several targeted preference schemes (mostly based on geographic criteria) that have broader product coverage and larger preferential margins.

Estimates concurrently find that the losses from preference erosion in agriculture are low.

- The OECD (2005c) projects that most countries would win if the EU, US, and Japan cut their MFN *ad valorem* measures of protection by 50%. The only losers identified would be, in decreasing order, Mozambique (with only -0.21% of GDP the biggest loser), Zambia, Mexico, Uganda, Morocco and Tanzania. If all countries (including developing ones) were to cut their *ad valorem* measures of protection by 50%, the number of losers would be even smaller and the size of the gains significantly higher.
- Romalis and Amiti (2007) find that most preference-receiving developing and least developed countries stand to gain from industrialized country MFN-tariff reductions, with greater gains for sharper reductions and if sensitive products are not excluded.
- Analyzing preference utilization and margins, UNCTAD (2007a) concludes that losses would be low in absolute terms, though concentrated in few countries and sectors.

The main reasons for this result are:

1) **Coverage and margin:** The amount of trade conducted under preferential schemes is limited by the fact that those products with the greatest export interest to developing countries often have low preferential margins – either because the MFN tariff is (close to) zero (the typical case for tropical products) or because even the preferential tariff rates are high (where imports enter into competition with domestic production).

2) **Value:** The value of preferences is lower than the preference margins suggest.[30]

- **Rules of origin:** The rules of origin limit exporting countries' flexibility to source inputs from the most efficient provider. Furthermore, the administrative costs of proving that a good complies with the rules of origin can be substantial. While these problems are less severe in agriculture than in manufacturing, they can cause problems for processed food.
- **Policy uncertainty:** Preferential access is uncertain. Producers must fear that 1) their proof of origin may not be accepted, 2) the preferential schemes may change or be (temporarily) discontinued, 3) their country may be disqualified from a scheme for not meeting "foreign-policy" conditions (such as respecting human rights or fighting against drug trafficking), 4) their country may be "graduated" (excluded from further preferential access for being overly competitive), 5) in the US, preferential access is limited to quotas which may already be filled. This uncertainty discourages investment and it complicates the creation of long-term trading relationships that are often necessary for developing country producers to export to developed countries.

- **Competition:** Most competitors of an exporter benefiting from preferential schemes also receive preferences. Countries that receive preferences may even lose from the existence of preference schemes because their competitors enjoy larger preferences or are less encumbered with the rules of origin.
- **Export response:** Least developed countries may have such a weak export capacity and NTBs, particularly SPS, may be so restrictive, that preference margins do not translate into exports.
- **Distorting exports:** If preferences trigger exports, they may distort production of the exporting country contrary to its comparative advantage. The opportunity costs are thus high, i.e. the resources employed for the production of exportables under preferential schemes could be used efficiently elsewhere.

3) **Beneficiaries:** Most of the gains from preferential market access in absolute terms go to large developing countries that are competitive and diversified agricultural producers. For them, the advantages of enhanced MFN access dominate the losses from preference erosion. UNCTAD (2007a) calculates that duties waived for LDC imports of agricultural products amounted to only $ 17.7 million in the case of the EU, $ 4.5 million in the case of the US, and $ 0.4 million in the case of Japan in 2004.

3.2.2 Effects on the household level

The findings on price changes from CGE models can be combined with data on households' consumption and income patterns. For developed countries, this confirms the results from the microeconomic analysis, namely that current agricultural policies tend to benefit richer farmers disproportionally. Keeney and Beckman (2007) demonstrate that full liberalization of the rice market would hit US producers with high incomes harder than low-income producers (-18% income for the highest, -5% income for the lowest income decile). The disaggregated US farm household impacts calculated by Hertel et al. (2007) show that this is a general (albeit not universal) pattern across agricultural sectors in the US.

With regard to developing countries, Ivanic and Martin (2008), Aksoy and Isik-Dikmelik (2008) and Wodon et al. (2008) estimate that higher prices – which would be increased by developed countries' tariff liberalization – harm the poorest in developing countries on average. This occurs even in many rural areas and in strongly net food-exporting countries. The findings result from a short-term, partial equilibrium perspective which traces only changes in food prices, and sometimes in wages for low-skilled labor, but excludes adaptation in consumption and production quantities.

In the long run, tariff removal in developed countries will lead to an expansion in agricultural production and spill-over effects into other sectors that will improve the situation of the poor compared to the short-term perspective. Moreover, developing countries that experience GDP increases after developed countries' liberalization are likely to spend more money on their poor. Taking account of some of these linkages, Hertel et al. (2007) find that rich-country agricultural liberalization would diminish poverty in 9 and increase it in 6 of the 15 developing countries they consider. Absolute poverty figures would fall significantly.[31]

Furthermore, it is important to look beyond the poorest that live on between $1 and $2 a day. Aksoy and Isik-Dikmelik (2008) find that the average income of net food buyers is higher than that of sellers, with the result that rising food prices reduce inequality in developing countries.

3.3 PRICE STABILIZATION

Production runs many risks – such as bad weather, pests or animal diseases – and prices for many agricultural products are notoriously unstable.[32] The resulting instability of farm income is undesirable from a social/distributional perspective because it can bring hardship to producers with below-average incomes. Nevertheless, the conclusion that governments should stabilize farm income across the board through untargeted policies is wrong.[33]

First, farmers themselves have a variety of tools at their disposal in order to cope with these risks. They can influence their production risk through their planting decisions and preventive actions to protect plant and animal health. They can diversify their income sources through off-farm work and non-agricultural on-farm activities, such as tourism. They can share farm risks along the agricultural market chain through contractual arrangements, for instance with supermarkets. They can rely on risk-sharing in producer cooperatives, on capital and debt management, and on insurance and hedging on options/futures markets. Reducing price fluctuations through untargeted policies actually weakens farmers' incentive to lower their income variability: The more the state takes care of them, the less they will take care of themselves. It is a typical case of 'moral hazard'. This has a reinforcing effect: The less farmers demand private risk management tools, such as insurances, the less risk management markets will develop – making it more difficult for the willing to take care of their own income risks.

A second problem with across-the-board income stabilization schemes is that they are poorly targeted. Large commercial farms can be expected to use risk management instruments efficiently – or suffer the consequences like any other enterprise in a market economy. Households with small farm incomes are generally less able to use financial risk management instruments. But the higher share of their off-farm earnings makes them less dependent on their farm income. Finally, many of the gains from reduced price volatility go to rich households – for instance, to owners of land. Since they are already well-off, there is no reason for the public to worry about the smoothness of their income stream.

Third, the counter-cyclical nature of income-stabilizing schemes increases world price volatility. One example is specific rather than *ad valorem* tariffs. As world prices fall, a fixed duty per quantity translates into a higher tariff compared to the product's value. As a result, specific tariffs function like a hidden form of counter-cyclical income support, offering enhanced protection during world price slumps. Countries that stabilize farm income with such instruments exert a negative externality on the rest of the world. In the absence of agricultural policies that affect price volatility, world market prices are less volatile than domestic prices because the many national supply and demand shocks are only partly correlated: a drought in Australia can be off-set by a good harvest in Europe. The world market can thus act as a buffer – provided it is not undermined by counter-cyclical policies.

If society is willing to provide farmers with an income-stabilization scheme, there are targeted instruments that are much less burdensome to the public. Governments could assist farmers in employing financial risk management tools, promote the creation of risk-sharing markets, and subsidize private insurance schemes. Such subsidies could focus on farmers whose low wealth levels and high shares of agricultural earnings in total household income make them vulnerable to fluctuations in their agricultural earnings.

3.4 SUMMARY

Untargeted agricultural policies are highly inefficient in assisting poor farmers and reducing social inequality. Input subsidies are particularly unattractive because of the distortions they cause and the large share of benefits appropriated by input suppliers. Market price support and output subsidies benefit farmers only slightly more, while market price support also has undesirable side-effects on poor consumers. Payments on current area (and even more so on historic area) go almost entirely to the owners of land, but only a small share of land is likely to be owned by poor farmers.

Similarly, untargeted policies for stabilizing agricultural prices and incomes are inadequate. They weaken farmers' own risk management efforts, they are insufficiently targeted at poor farmers, and they increase world price volatility.

The most straightforward policy instruments to raise low incomes and provide a minimal income are those linked directly to income, such as progressive taxes or social security benefits.

4. EFFECTS ON MULTIFUNCTIONALITY OBJECTIVES

So far, the analysis has focused on the economics of agricultural policies: the wealth and distributional effects. But agricultural production also affects rural development, food security, and the environment (including landscapes and animal welfare).

4.1 RURAL DEVELOPMENT

Rural development – understood as promoting rural economic activity, employment and, consequently, rural settlement – is seen to bring several benefits. It reduces income disparities between urban and rural regions and thus enhances national cohesion. It helps to avoid migration to congested urban centers. And it contributes to maintaining a rural culture and historically grown settlement structure.

Whatever the merit of these arguments, untargeted policies are not suitable for rural development.[34] First, they drive up the prices of land and other agricultural input. As a result, much of the money does not stay with farmers but goes to land owners and input producers located in cities or abroad. Second, important parts of the support go to companies further down the agricultural value chain, especially to those who process and brand agricultural products.[35] The countryside benefits only from a share of these subsequent steps that add value to the primary produce. Third, income and employment levels differ significantly across rural areas.[36] Similarly, birth, death, and migration rates vary across rural areas, and many regions have seen their population grow. But untargeted policies ignore these differences: They benefit the regions with the highest agricultural output or the largest entitlements to decoupled income aid, instead of those with the greatest needs.

Efficient approaches to promoting rural development would be non-discriminatory across sectors. This is the case with investment in infrastructure, education, or vocational training. Alternatively, they would be targeted at the particular potential of each region, depending on its location, natural and cultural richness, entrepreneurial spirit, or existing industrial and service structure. In some regions, the preferred sector may well be agriculture – but even where this is the case, subsidies should go into enhancing farm competitiveness rather than just promoting agricultural production and farm income.

4.2 FOOD SECURITY

Two types of food insecurity need to be distinguished because the efficiency of agricultural instruments to ensure food security differs fundamentally between these two cases.[37] In the first case, insufficient or inadequate food supply is a threat to poor individuals. A food crisis then means that a persistent problem becomes more serious. The root problem is thus poverty – and, as argued above, untargeted agricultural policies neither promote economic wealth nor favor the households with the lowest incomes.

In the second case, insufficient or inadequate food supply temporarily affects large shares of the population that usually encounter no shortages. Under these circumstances, a food crisis implies that food supplies in a country are insufficient to nourish the population even if food is distributed with reasonable equity. Such famines have historically resulted from bad harvests, bad governance, and war – or a combination of these factors.[38]

Harvest failures have lost most of their danger. First, self-sufficiency levels are reassuringly high, at least in most rich countries (that can afford the luxury of worrying about national food insecurity rather than fighting poverty and persistent hunger), even with complete liberalization of agricultural production.[39] Second, in the case of severe production shortfalls, countries could easily expand cultivated areas, use more intensive farming methods and shift production patterns to increase yields. In particular, curbing meat and dairy production could free up capacity for growing basic grains. Third, advancing integration of world markets allows foreign sources to compensate for bad national harvests. Fourth, international food aid nowadays works well enough to prevent grave famines due to bad harvests as long as the aid is not impeded by political or military forces.

Regardless of the actual level of national food insecurity, traditional production-stimulating agricultural policies and decoupled income support provide little insurance. In order to protect against harvest shortfalls, agricultural policies would best be targeted at public stockholding; growing food products with high and stable nutritional yields; diversified production; diverse, stable eco-systems; water management; and early warning systems and emergency planning.

The same argument against untargeted policies can be made regarding famines provoked by governance that is either overly weak or implements detrimental policies (such as in the U.S.S.R. and China during communist rule or in today's Zimbabwe). Stimulating current production or enhancing farmers' income is unlikely to work as an insurance against hunger in the case of future domestic turmoil.

The third traditional threat is war and international conflict – which has to interrupt trade and, in the case of most countries, devastate national production in order to provoke a famine. However, improvements in production capacities attained through current untargeted agricultural policies are unlikely to be maintained in the case of war, and they will not produce the agricultural goods most needed during wartime. More targeted agricultural policies are possible, such as public stockholding, making farming more independent from imports of energy and other inputs, and maintaining decentralized production capacity in agricultural goods that can be easily produced under war conditions and that have high nutritional yields. Such policies can be scaled up massively if the risk of war increases.

4.3 ENVIRONMENT

Agricultural production can have various positive environmental effects that are not remunerated on the market. Agriculture may preserve open spaces, enhance scenic variety, and maintain traditional landscape characteristics that carry cultural significance. Similarly, agriculture can promote biodiversity, for instance by offering a habitat to species that depend on (traditional) farming and open spaces.

If markets fail to deliver these environmental benefits in the qualities and quantities demanded, government intervention may be warranted. In areas where farm land is a scarce habitat for wildlife, payments that are coupled to production have the environmental benefit of keeping farmland under cultivation that would otherwise be abandoned. But they can also lead to environmentally more harmful production methods as farmers strive to increase per-hectare yields.[40] The damages include water, air, and soil pollution; release of greenhouse gases; water and soil depletion; and the loss of biological diversity as a result of environmental degradation and monoculture.[41]

From an international perspective, coupled payments or tariffs could be warranted to prevent leakage of production to foreign countries with less demanding environmental standards. But several considerations contradict this possibility. First, imported food must in any case meet many of the importing countries' standards, notably those on human, animal, and plant health. Second, the additional costs of complying with environmental standards in agriculture appear generally moderate. Even with regard to animal welfare, where compliance costs are particularly high and cannot largely be recuperated through price premia, pressures to relocate production are mostly minor.[42] Third, land is a key factor of production specific to agriculture – and one that cannot be moved abroad. This limits the extent to which domestic production will be replaced by foreign production. Fourth, most environmental problems caused by agriculture are local (for instance, ground water pollution or soil erosion). It is therefore efficient that every country decides on the environmental standards that best conform to its level of development and other characteristics, such as population density and other sources of environmental pollution. Fifth, even where a global public good is concerned, such as biodiversity or the climate, it is not clear whether a country with higher standards has indeed a better environmental performance. A country with relatively high environmental standards may at the same time employ relatively polluting production techniques – for instance because land is scarcer while agro-chemicals and machines are cheaper than in other countries, or because its cold climate requires using energy to keep animals in stables while animals can graze freely in other countries throughout the year. A transfer of production to countries with lower standards is thus not necessarily harmful to the global environmental commons.

It can be concluded that coupled payments are generally not beneficial on environmental grounds. Subsidies on environmentally harmful inputs, such as fertilizers, herbicides, insecticides, fungicides, and energy, are worst, followed by market price support. Decoupled income support does not significantly change production quantities or techniques – it is environmentally harmless but mostly useless. By contrast, targeted environmental payments can help to improve the environmental performance of agriculture.[43]

One common scheme is payments for maintaining buffer strips, hedges, and stone walls. Other schemes compensate farmers for reducing the use of fertilizer and crop protection chemicals. In doing so, targeted subsidies can take the local valuation of the environmental services into account. Maintaining pasture will be valued especially highly in a tourist region, and avoiding excessive fertilizer use is especially important in an area with poor water quality or rich wildlife.

Similarly, targeted subsidies can respond to different local production costs of the environmental services. Maintaining the pasture mentioned above will be more expensive on a slope than on a flat area, and farmers' losses from reducing fertilizer use will differ according to soil quality. Well-targeted payments can thus keep public expenditures low by reimbursing farmers their individual costs of providing environmental services.

4.4 SUMMARY

Multifunctionality objectives cannot justify the use of untargeted measures. Considering rural development, those areas that gain most are not necessarily those in need. Besides, many of the benefits of untargeted policies end up with urban businesses further up and down the agricultural value chain or in the pockets of urban land owners – rather than in rural areas.

Thanks to strong domestic production and the potential to increase yields, imports, and international food aid, national food insecurity (as distinct from poverty) is not a significant threat in most countries. Furthermore, untargeted agricultural policies do not provide adequate insurance against famines provoked by any of the likely causes (natural production shortfalls, domestic political turmoil, and war).

Finally, untargeted policies do little to enhance the socially valued environmental services of farming. Instead, they often stimulate intensive production techniques that pollute water, soil, and air, destroy wildlife habitats, and diminish landscape variety.

5 REGULATORY REFORM

Up to this point, this paper has assessed the performance of different policy instruments with regard to economic wealth, income distribution, and multifunctionality. This leads to the question of how suitable WTO disciplines of these instruments would be.

The URAA distinguishes between three pillars: market access (tariffs and tariff-rate quotas), export subsidies and domestic support. The latter has been further divided into three boxes. The Green Box measures are deemed to be minimally trade distorting and to serve a legitimate policy objective. Therefore, no absolute ceilings have been imposed, although conditions on their use exist. The Blue Box measures comprise different payments that are implemented in combination with production-limiting programs. They are also exempted from reduction commitments. All domestic support that does not fall into the Green or the Blue Box and does not remain below a *de minimis* threshold falls into the Amber Box.

This classification system has largely been maintained in the Doha Round.[44] The major change is the introduction of an Overall Trade-Distorting Domestic Support (OTDS) ceiling composed of Blue Box, *de minimis*, and Total AMS payments. This category does not serve to better target WTO disciplines according to the trade-distorting effects of policy instruments or their effectiveness in meeting legitimate domestic policy objectives. Instead, its main use is to reassure negotiating partners of the aggregate trade liberalizing effect of the multiple disciplines and exemptions that have been introduced to resolve distributive bargaining problems. In addition, the Blue Box definition is to be slightly expanded to include certain types of direct payments and some Green Box criteria are to be modified.

5.1 WELFARE-MAXIMIZING, FIRST-BEST DISCIPLINES

The preceding sections have shown that tariffs, export subsidies, and Amber and Blue Box payments (such as output-based payments, payments based on input use, payments based on current area, animal numbers, revenue, or income) are misguided. They distort production, inhibit trade, and thus diminish global wealth. They also fail to efficiently respond to domestic distributional and multifunctionality objectives, often exacerbating inequality and poverty and harming the environment.

In addition, governments' actual use of these instruments across products shows that they have been employed in a manner especially detrimental to welfare.[45] For instance, tariffs have been highly heterogeneous across products in many countries. Since the distortions increase disproportionately with tariff levels, this heterogeneity imposes an additional welfare cost. This could – some might argue – be justified if tariffs are higher on those products that are especially labor intensive and thus have a particular potential for reducing poverty, such as horticulture. This could also be justified if tariffs are lower on products that are especially important for poor consumers. Instead, current levels of protection are best explained by path dependency on historic levels, by the political influence of different agricultural sectors, and by an anti-export bias to the disadvantage of relatively competitive agricultural sub-sectors.

Therefore, tariffs, export subsidies, and Amber and Blue Box payments should be abolished. This should be undertaken gradually in order to keep adjustment costs low – but the path towards their abolishment should be fixed immediately in order to improve policy predictability.

The case of the Green Box is more complicated. The Green Box, contained in Annex 2 of the URAA, comprises 11 permissible measures:

1. Expenditure on **general services** for public goods, such as research, pest and disease control, training, extension and advisory, inspection, marketing and promotion, and infrastructure;
2. Public **stockholding for food security** purposes;
3. **Domestic food aid**;
4. **Decoupled income support;**
5. **Income insurance** and income safety nets that protect farmers against individual income losses;
6. **Disaster payments** that protect farmers against income losses from natural disasters;
7. Programs that facilitate **producer retirement** from agricultural production;
8. Programs that facilitate **resource retirement** from agricultural production, such as land or livestock;
9. **Investment aids** for producers that want to restructure their operations and suffer from 'objectively demonstrated structural disadvantages';
10. Payments under **environmental programs;**
11. **Regional assistance** to which all producers in a disadvantaged region are eligible.

5.1.1 Categories of instruments

In order to categorize these payments, two dimensions are helpful. The first is how and to what extent the payment affects foreign interests, notably by distorting trade. The second is whether the payment can be an efficient response to a domestic market failure. By combining these two dimensions, several groups of measures can be distinguished.

5.1.1.1 Efficient and internationally benign

General service expenditures can be needed to deliver public goods where markets fail. They can thus promote economic wealth and multifunctionality objectives, for instance through research on sustainable agricultural practices. If research findings spill across national boundaries, foreign producers benefit as well. Similarly, expenditures for pest and disease controls and inspection services can have positive effects on foreign producers and consumers if they limit the risk of internationally contagious pest and disease outbreaks.

Public **stockholding for food security** purposes and **domestic food aid** can both serve a legitimate objective in an efficient way. With some simple disciplines, such as the requirement for governments to purchase food only at market prices, they are unproblematic for foreign producers because they increase demand rather than supply. Furthermore, public stockholding exerts a positive externality on foreign consumers because greater global public stocks reduce world market volatility.

5.1.1.2 Efficient and trade distorting

Some **general service** expenditures are efficient responses to legitimate policy objectives but may nevertheless distort trade flows. This may be the case for certain training, extension, and advisory services that make farmers in one country more productive but are not sufficiently delivered by the market.

Income insurance can mostly be delivered through the market. Governments may nevertheless have an incentive to subsidize insurance schemes in order to avoid reliance on general safety nets. A special case is insurance against **natural disasters** where markets frequently fail to provide efficient protection, thus justifying state intervention. Both types of insurance set incentives for domestic farmers to increase production and may distort the choice of what to produce (biasing farmers towards increased risk taking).

Payments under **environmental programs** are strongly justified by non-trade objectives. They can also be internationally benign. Foreign countries benefit if cross-border pollution is reduced or biological diversity preserved. Foreign farmers also gain if environmental programs cut production, for instance by limiting fertilizer use, by prescribing buffer strips between fields and watercourses, or by requiring livestock extensification. Yet, environmental programs may also distort trade. First, payments cannot always be limited to farmers' costs of providing the environmental services. Since farmers' have private information about their costs of providing the environmental services, they will frequently reap some additional benefits (which in turn may stimulate production by lowering farmers' income risks and enhancing their access to capital). Second, synergies between agricultural production and provision of the environmental service can exist. Subsidizing such environmental services therefore inherently stimulates agricultural production. Environmental programs may even explicitly include production-stimulating payments, notably based on area, where these synergies are strong and direct monitoring of the provision of the environmental service is difficult.

5.1.1.3 Inefficient and not trade distorting

Producer and resource retirement are attractive to governments: They foster structural change the soft way, directly compensating those who leave the sector and indirectly increasing the income of the fewer producers and resources that remain in agriculture.[46] However, they are an inefficient means of reducing production. They require complete withdrawal of some factors of production, instead of reducing their use to a locally adapted degree. Put simply, it is often more reasonable to farm two fields extensively rather than farming one intensively and setting the other aside. The right approach to curbing overproduction is to remove the misleading incentives that inhibit structural change. Resource retirement payments are not necessary for environmental purposes either. Environmentally efficient land retirement can be notified as an environmental payment instead.

5.1.1.4 Inefficient and moderately trade distorting

Decoupled income support primarily serves distributional objectives. As argued in this paper, decoupled income support is less efficient in reducing inequality and fighting poverty than measures that are directly targeted at low incomes and that are independent of how much farmland and livestock the household has possessed at the historic period on which entitlements are based. In addition, decoupled income support is not harmless for foreign farmers. The legal definition of 'decoupled' implies that payments are not formally linked to production but they still have a production-enhancing effect by reducing income risks, improving access to capital, and creating expectations about entitlement updating.

5.1.1.5 Inefficient and significantly trade distorting

Marketing and promotion services, which form part of **general services**, have a significant impact on trade. Some public marketing expenditure may be socially desirable. For example, market information systems may improve the efficiency of markets and assist small farmers, especially with exporting. For other public marketing expenditure, the public-good argument based on market failure is missing. The promotion of particular products, for instance, should be left to farmers, processors, and retailers.

Structural investment aids for disadvantaged producers have no justification in domestic objectives. Provided that capital markets work smoothly, publicly-provided investment aids distort resource allocation and reduce economic wealth (and furthermore, governments should focus on improving capital markets rather than outguessing them). If distributional objectives are behind investment aids, payments should be targeted at low income and not be tied to investment.

Payments under **regional assistance programs** go to all farmers of a disadvantaged region. If they are intended as a distributional instrument that diminishes spatial income disparities, rural development programs that promote the rural economy as a whole (such as investment into education) appear more efficient than support to agriculture. If regional assistance serves environmental objectives (e.g. to maintain agricultural production in disadvantaged mountain regions where they embellish the landscape and offer habitats to animals), this should be justified as an environmental program to assure its ecological efficiency. Furthermore, these payments threaten to significantly distort trade because they can be linked to agricultural production (although current disciplines rule out payments related to output and current prices).

5.1.2 Legitimacy of different instruments and categories

Table 6 shows the Green Box measures and the objectives they are primarily intended to serve. It also gives an assessment of whether they efficiently promote domestic objectives and whether they harm foreign interests. An (x) means that a Green Box measure comprises several instruments of which only some have the effect in question.

TABLE 6: THE OBJECTIVES AND EFFECTS OF GREEN BOX MEASURES

	Objective			Domestic efficiency	Foreign harm
Measure	Wealth	Distributional	Multifunctionality		
General services	x		x	(x)	(x)
Food security stockholdings			x	x	
Domestic food aid		x		x	
Decoupled income support		x			x
Income insurance		x		x	x
Disaster payments		x		x	x
Producer and resource retirement	x	x	x		
Investement aid	x	x			x
Environmental payments			x	x	(x)
Regional assistance		x	x		x

The instrument categories each require a separate assessment of their legitimacy:

- It is easy to argue that measures that are domestically efficient and internationally benign, such as research, public stockholding, food aid, and some environmental programs, should be permitted under WTO rules without absolute ceilings.
- It is equally clear that measures that are domestically inefficient and internationally harmful should be eliminated. These include decoupled income support, certain marketing and promotional support, structural investment aid, and regional assistance programs.
- Efficient but trade-distorting policies, including some general services, income insurance, disaster relief, and certain payments under environmental programs, should be permitted but be subject to particularly stringent disciplines.
- Whether producer and resource retirement should be allowed, depends on one's understanding of the role of the WTO. On the one hand, one may argue that the WTO exists exclusively in order to deal with negative cross-border effects and should therefore not get involved in cases where governments waste money without harming foreign interests. On the other hand, one may claim that the WTO is gradually moving towards an institution that promotes good economic governance, and that it may well help governments to commit to avoiding wasteful expenses as long as this does not infringe on the WTO's core business of tackling trade distortions.

5.1.3 Additional categories

A further category, which would be reserved for developing countries and is currently absent, might be created for the Green Box. The inefficiency of developing countries' markets for agricultural inputs and goods may justify temporary payments not covered in the above categories.

For instance, fertilizer subsidies can be efficient in order to create a functioning fertilizer market in a developing country. The central idea of this category would be that payments do not distort markets but are time-limited programs to enhance market efficiency.[47] The Doha draft modalities go in this direction, without laying sufficient stress on long-term market orientation.

Another additional category might be appropriate for measures that assure food security other than stockholding. Some of the measures included in such a box would have no negative trade effects, such as risk analysis, early warning systems, and contingency planning. Other measures may involve payments to farmers and may stimulate production. This would be the case with payments for maintaining genetic variety of plants and animals in agricultural production or for maintaining farming and processing capacity that would otherwise go out of use in such a state that it can be re-activated within reasonable delay. The least costly way to do so may be to keep those capacities constantly in production. Such payments would have to be justified by a science-based food security assessment and be designed in the least trade restrictive way.

5.1.4 Additional criteria

The criteria of those categories that are to be maintained should be reformed as current criteria threaten to rule out legitimate payments or to tolerate excessive trade distortions.[48] In the case of environmental programs, one misguided criterion is that environmental payments must not exceed the costs of complying with environmental programs. This causes a problem if farmers have different compliance costs while it is not possible or practical to differentiate environmental payments according to compliance costs. In order to attain the optimum level of environmental services under imperfect discrimination, farmers with low compliance costs necessarily make windfall profits. The requirement is also problematic because it would require treating farmers differently for the same environmental service according to the extent to which they have already provided the service in the past (as those who have already complied with parts of the environmental program incur lesser additional costs). Consequently, this requirement should be softened.

By contrast, tighter limits should be imposed on income insurance schemes. Entitlement to income insurance support could be limited to farmers with low household income for a predefined period, or absolute limits of payments per farmer could be added. Also, payments for relief from natural disasters could be made conditional on farmers' wealth levels and, again, absolute limits of payments per farmer could be established.

5.2 POLITICALLY FEASIBLE, SECOND-BEST DISCIPLINES

In practical terms, it seems not possible to agree directly on a path towards abolishing tariffs, export subsidies, Amber and Blue Box payments, and the trade-distorting Green Box payments that are not justified by domestic policy objectives. This raises the question of how these instruments should be disciplined as long as their removal is politically infeasible.

The following proposals may to some degree be taken up in the negotiations under the current Doha Agenda. However, it may be preferable to clinch a deal on the basis of what has been negotiated so far rather than re-opening the package through conceptual changes. The suggestions should thus be most relevant for the future of agricultural policies in the longer term when the Doha Round has succeeded, formally failed, or rested without progress for a long period so that members prefer to take a fresh start.

5.2.1 A revised system of domestic support boxes

Members should consider re-defining the domestic support boxes in response to the trade-distorting effects of agricultural policy instruments and their efficiency in attaining domestic objectives. A revised box system could include the following levels of legitimacy:

1. Highly legitimate policies (uncapped)
    a. research and most other general services,
    b. public stockholding,
    c. food aid,
    d. environmental programs,
    e. income insurance,
    f. disaster relief,
    g. food security,
    h. agricultural development for developing countries.

2. Selected moderately legitimate policies
    a. some general services (e.g. some marketing and promotion support),
    b. decoupled income support,
    c. structural investment aid,
    d. regional assistance programs,
    e. producer and resource retirement.

3. Other moderately legitimate policies (instruments that fail to meet the tighter criteria of more legitimate Green Box levels but fulfill more generous criteria of targeting domestic objectives), e.g.
    a. direct income aid without production requirement which is counter-cyclical to current prices,
    b. poorly targeted regional assistance programs,
    c. payment to set up young farmers.

4. Payments on a fixed production base, production required

5. Payments on current area, animal numbers, revenue, or income

6. Most trade-distorting instruments
    a. market price support,
    b. output-based payments,
    c. payments based on input use,
    d. other.

Such a legitimacy-driven re-classification has several implications. The Green Box payments that are inefficient in attaining domestic policy objectives (at least where they have a trade-distorting

effect) should be removed from the Green Box into several new boxes which are subject to caps and cuts. The only payments remaining in the unrestricted box should be those justified by their efficient contribution to domestic policy objectives (in the outline below, this is called level 1).

One box could be created for selected moderately legitimate policies that fulfill strict criteria (level 2). This could include some general services (such as certain marketing and promotional support), decoupled income support, structural investment aid, and regional assistance programs (and possibly producer and resource retirement).

One box could comprise instruments that fail to meet the tighter criteria of more legitimate box levels 1 and 2 but are still somewhat targeted at domestic non-production objectives (level 3). These payments are currently mostly part of the Green Box but some of them are in the Amber Box. In the US, this would include direct income aid without a production requirement which is counter-cyclical to current prices. A fitting example in the EU is Least-Favored-Area payments that are not "limited to the extra costs or loss of income involved in undertaking agricultural production in the prescribed area" (URAA Annex 2 Art. 13(f)) but spread money with little differentiation across large shares of cultivated area. Another example is EU support to young farmers that set up a farm. This measure deals with a real problem: an aging farm population that is increasingly unfit to use modern production techniques. But it is neither an economically efficient measure to improve human capital in agriculture, nor is it in line with the URAA that limits eligibility for structural adjustment assistance to assisting "the financial or physical restructuring of a producer's operations in response to objectively demonstrated structural disadvantage" (URAA Annex 2 Art. 11(a)).

Blue Box payments can consist of three types of payments: on fixed area or yields; on fixed animal numbers; or on current areas provided that at least 15% of the area is idled. However, the incentive to idle land is the wrong approach. Achieving production reductions through market forces is more efficient as farmers can optimally diminish their use of labor, land, fertilizer, machinery, and other input. Therefore, the combination with land idling should not entitle payments on the current production base to be shifted to the box reserved to subsidies tied to a fixed production base (level 4).

The Amber Box conflates domestic subsidies that differ greatly with regard to their trade effects and their efficiency in attaining domestic policy objectives. Included are market price support (the administered price minus a fixed reference price dating back to the Uruguay Round, multiplied by the eligible quantity); output-based payments; payments based on input use; payments based on current area, animal numbers, revenue, or income; and other subsidies that resemble Green or Blue Box payments but fail to fulfill all the respective criteria, such as certain types of marketing aid and direct income aid (without a production requirement) which is counter-cyclical to current prices. Input subsidies have been seen to be even more production-distorting than tariffs and to cause particular environmental damage. Market price support and output-based payments strongly distort production, while market price support also hurts consumers. Payments based on animal numbers, revenue, or income have weaker effects on production quantities and the environment – but still stronger effects than payments on area, which do not encourage farmers to intensify production. These instruments should thus be split into different boxes (level 5 and 6).

These boxes should be ordered by their level of legitimacy in terms of their trade-distorting effects and their efficiency in attaining domestic objectives. It should always be possible to shift subsidy entitlements from a less to a more legitimate level. This means that it would be possible to change from output to area payments, then to entirely decouple these payments from production, and finally to make them increasingly contingent on the provision of public goods. However,

transferring entitlements between boxes at the same levels should be prohibited in order to avoid domestic reform energy and time being lost by switching between similarly inefficient policies.

5.2.2 Assessment

Such a revised box system (including the changes to the Green Box categories and criteria proposed in Section 5.1) would have several advantages:

1. **Focusing negotiations on the most distorting subsidies:** By sorting measures according to their legitimacy in a more fine-grained way, priority in WTO negotiations could be given to the least legitimate measures. Instead of pressing for cuts in diffuse Blue and Amber Box entitlements without knowing what kind of subsidies governments will put in place, members could focus on the most trade restrictive instruments.
2. **Preventing the return to strongly distorting subsidies:** Policy changes towards less legitimate instruments could be better prevented as members could bind policies at current levels (and even rule out instruments they are currently not using or see no need to use).[49] Furthermore, members are currently inclined to keep Blue and Amber Box entitlements as a fallback position. Uncertainty about future conflicts with WTO ceilings arises, among other factors, from counter-cyclical and thus price-sensitive instruments, intervention prices (which fluctuate with production quantities), insurance schemes (which may vary according to indemnities paid and the pick-up of the schemes by farmers), input subsidies (especially whether states might be forced to report more accurately on them in the future), and WTO dispute rulings (e.g. deciding that supposed Green Box payments do not comply with Green Box disciplines).[50] With a revised box system, many such fallback entitlements would either not be necessary (due to a clearer delineation of the boxes) or be preserved in boxes for policy instruments that are more legitimate than the input and output payments possible under the Amber Box. Finally, a more nuanced box system would make it impossible to 'buy' flexibility for Amber Box subsidies simply by cutting intervention price support (as intervention prices heavily raise calculated Amber Box subsidies often without leading to any payments to farmers).[51]
3. **Limiting low-legitimacy Green Box subsidies:** A growing share and absolute amount of trade-distorting subsidies that are not efficient in addressing domestic policy objectives escape any WTO ceiling by being shifted into the Green Box. Splitting up the current Green Box into several boxes and capping all but the most legitimate category is therefore increasingly needed.
4. **Gaining public support for the WTO:** The boxes and exceptions decided in the Uruguay Round and discussed in the Doha Round reflect a mercantilist, producer-oriented spirit. Centering the negotiations and the resulting agreement more strongly on the legitimacy of policy instruments would change the perceptions of decision-makers, the media, and the public. It would create stronger support for the WTO process if stakeholders saw members struggling to find an appropriate balance between trade and non-trade concerns, rather than fighting over market access volumes.
5. **Providing reference points for domestic politics:** WTO boxes and their criteria are used as reference points in domestic debates. Green Box compatibility is a 'selling point' for domestic reform promoters, as a way of avoiding pressure in WTO negotiations but also as a quality label for internationally responsible policies. Refer-

ence to overarching norms has proven to be an effective means for bringing about policy changes in many fields. This mechanism could be much strengthened if WTO boxes and their criteria were more nuanced and rational, offering guidelines for improving agricultural policies.

There is also a disadvantage to increasing the number of boxes: Reciprocity in WTO negotiations becomes more difficult to handle as countries cut entitlements in different boxes. Related to this, the use of negotiating formula becomes restrained. This is not only a matter of complexity (as more boxes would have to be covered in a differentiated way) but the reasonability of the formula approach in itself would be undermined. Because countries would have their individual patterns of entitlements, any formula would be perceived as unfair.

The balance of these considerations is shifting in favor of a revised box system.

- The share of the Green Box in terms of domestic subsidies and total support to agriculture is growing.[52] The need to better discipline Green Box payments is thus becoming more urgent.
- Agricultural policy reform and the WTO are increasingly politicized at the domestic level. Gaining support from domestic constituents by focusing on the legitimacy of policy instruments therefore becomes more important for attaining policy change. A revised box system might even facilitate locking in at the WTO those reforms that have been unilaterally decided under domestic pressures.
- It appears unlikely that the WTO will see another big trade round after the Doha Round, at least for several years to come. If a new big round is ever initiated, it will likely last many years. This means that any disadvantage for WTO negotiations (resulting from a more complex box system that makes the principle of reciprocity and negotiating formula harder to apply) would only be relevant in the far future.

5.3 WTO DISCIPLINES TO PROMOTE AGRICULTURAL POLICY REFORM

5.3.1 Good governance norms

WTO disciplines can be perceived as situated between two poles. On the one hand, prohibitions or quantitative limitations of specific trade instruments – quota, tariffs, and subsidies – constitute the traditional core of the WTO. On the other hand are a set of good governance norms characterized by one or several of the following criteria. They guide governments towards policies that are at the same time efficient for promoting non-trade objectives and least trade restrictive. They consist of general rules that influence policy making with regard to a broad set of instruments that affect trade. They establish standards not only on outcomes but also on policy-making and implementing processes. And they are not always binding or enforceable.

The most common good governance norms found in all WTO agreements are transparency requirements. Their apparent function is to ease the costs of doing business but they also help to highlight protectionism more effectively. The strongest good governance norms can be found in the Agreement on Sanitary and Phytosanitary (SPS) Measures. States that implement SPS measures need to comply with several conditions:

- SPS measures must not restrict trade by more than what is necessary to attain their health objectives.

- Foreign SPS measures that provide the same level of protection as domestic ones shall be accepted as equivalent by importing countries.
- States must be consistent in the level of protection they choose across different situations (e.g. when setting standards for permissible hormone levels for different types of meat).
- States need to justify their SPS measures by a systematic risk assessment that uses scientific methods and data.
- States shall base their SPS measures on international standards – alternatively, they may be asked to demonstrate why the international standard would not be suitable in the specific case.

The WTO should take inspiration from the SPS agreement and strengthen the good governance norms on agricultural policy making. States are not caught in a prisoner's dilemma where each of them can benefit at the costs of others but selecting least trade restrictive policies is in each country's own best interest. Trade-friendly agricultural policies are therefore a question of good governance – of governments serving their people. The WTO should explore how it can help countries to implement rational policies and not to succumb to special interest groups and misguided beliefs about the advantages of protectionism and state interventionism.

To fully appreciate the advantages of good governance norms in agriculture, the special features of agricultural policies with regard to monitoring and enforcing WTO disciplines need to be considered. While monitoring tariffs is usually easy, the implementation of targeted payments is difficult to observe. For instance, governmental bodies may continue to raise agricultural income by extensively defining areas for which special environmental payments are to be made or by paying excessive compensation for farmers' environmental services.[53]

Even if trading partners can identify a case where subsidies appear not to comply with the disciplines of the WTO article under which they have been notified, enforcement is likely to pose problems. First, the complexity of the issues will burden the dispute settlement system once members begin to challenge Green Box subsidies systematically at the WTO. Second, any ruling that establishes non-compliance runs the risk of being criticized for its intrusiveness into domestic affairs and for imposing trade over non-trade values. Even if bringing policies into compliance would mean better achievement of non-trade objectives, such criticism is likely to resonate with the public and damage the perceived legitimacy of the WTO. Third, members will find it difficult to bring their policies into compliance if setting them up has involved substantial administration costs and long-term contracts with farmers.

Gaining domestic political support for reform is therefore particularly important in agriculture. The good governance norms on agricultural policymaking could include:[54]

5.3.1.1 Policy-making process

- Members should establish a transparent and balanced dialogue with all relevant stakeholders. The list of stakeholders that have a right to be heard should explicitly mention taxpayer, consumer, environmental, and development groups, the entire agricultural value chain (input suppliers, farm interests, processors, importers and traders, retailers), and foreign interests concerned. Members should also acknowledge the heterogeneity of farm interests and not grant monopoly representation to any federation.[55]

- Members should commit to a balanced inter-ministerial process which grants a strong role to the ministries in charge of the economy, consumers, and development, in addition to the ministry responsible for agriculture and rural areas.

5.3.1.2 Objectives

- Members should define the general objectives of their agricultural policies in specific and, wherever possible, measurable terms.
- Each policy program should define its objectives in specific and, wherever possible, measurable terms and set target values for performance assessment.

5.3.1.3 Design principles for efficiency

- The efficiency of policy programs for attaining their stated objectives should be scientifically evaluated and a systematic cost-benefit analysis should be conducted before passing them into law. The results should be published.
- Any income support program should be strictly separated from other programs aimed at promoting public goods.
- Members should pay subsidies aimed at promoting public goods only where market failures cannot be efficiently and legitimately corrected through other means, such as information or regulation.
- Members should commit to target subsidies at their policy objectives and to avoid transfers to farmers that are not necessary for attaining these objectives. This includes employing market-based mechanisms for allocating subsidies, such as auctions for environmental stewardship contracts; using outcome oriented compensation; and negotiating individual contracts with farmers based on transparent selection criteria and compensation schemes.
- Members should commit to improving the implementation capacities of public bureaucracies so that more targeted policies can be designed.
- Program design should enable learning and adaptation. This includes pilot testing and regular evaluation of programs through the implementing agencies.
- Efficient monitoring and sanctioning systems should be in place to prevent farmers from shirking their obligations and reaping unwarranted subsidies.

5.3.1.4 Independent review body

- Members should establish an independent review body and endow it with sufficient resources so that it can conduct *ex ante* and *ex post* cost-benefit evaluations (including the assessment of alternative policies).[56] In doing so, they should identify the net distribution of costs and benefits of all major policy instruments. This analysis should distinguish between consumers (breaking them down by income groups), non-agricultural businesses (singling out the sectors hit hardest by market price support), and agricultural producers (differentiating by sectors and farm size/income). Evaluations should also assess the effectiveness of agricultural policies for attaining multifunctionality objectives and for fighting global poverty.
- The independent review body should organize public debates on agricultural policy reform and communicate its findings to a larger public.

- The review independent body should also develop or at least verify its country's WTO support notifications.

Many will agree with the desirability of such principles but raise three objections. First, that the WTO may not be the right place for disciplines that cannot be strictly enforced, threatening to transform the organization into a UN-style talk shop. However, the WTO already contains many best-endeavor commitments. In the SPS agreement, for instance, one can find such non-binding commitments with regard to the use of international standards, the cooperation in the elaboration of international standards, the conclusion of mutual recognition agreements, technical assistance, and the special attention that states should pay to developing countries' interests when setting their SPS standards. This has not done any damage to the binding nature of other commitments. The point is to clearly spell out which status is intended for each norm.

Second, one might argue that non-binding norms are irrelevant. This claim would mean ignoring the extensive research that has been conducted on the functioning of 'soft' law in general,[57] and the more limited research on the communicative function of trade law in domestic politics, in particular.[58] The claim would also contradict the experience of practitioners that Green-Box compliance has become a legitimizing quality of policy options beyond its immediate legal consequences. Bringing good governance norms into the WTO will give them broader recognition and greater public attention than developing these norms in specialized agencies.

A third uncertainty is whether states will be willing to tolerate such interference into their domestic policy-making processes, especially non-democratic ones. Here, the SPS agreement shows that states are prepared to accept strong disciplines on their policy-making processes, such as the role of science in risk analysis, and even in the area of health which is more sensitive than agricultural subsidies. Convincing states to extend such sophisticated good governance norms, which go beyond general transparency requirements, to other areas may take time and effort. Nonetheless, it is far from being an undertaking that should be dropped from the outset for lacking serious chance of success. In particular, states could have the flexibility to sign up to certain principles but not to others or to make reservations. This would facilitate a gradual spread of better policy-making practices driven by successful implementing experiences, international herd behavior and peer pressure, and lock-in through liberal governments. Developed countries may sign up sooner than developing countries; developing countries that are in a close policy dialogue with the World Bank and the IMF sooner than their more autonomous peers; the more democratic and progressive countries sooner than authoritarian and corrupt laggards. Such a gradual process sits well with the idea of good governance norms that serve countries' own interests even more than those of their trading partners and do not require simultaneous implementation in the name of reciprocity.

5.3.2 Multilateral oversight

In addition to this domestic control of agricultural policies, the multilateral oversight should be strengthened.

- Members should be exhorted to give notice of and provide explanations on major policy changes before they are passed into law.
- Members should be obliged not only to notify their agricultural policies but also to provide access to the sources they used for their calculation so as to facilitate easy verification. Furthermore, they should justify their subsidy notifications (sound evidence that

each instrument is compliant with the criteria under which it is notified; evidence on compliance with procedural requirements in creating or adapting the instrument).

- Tight deadlines for submitting notifications and justifications should be set directly in the Agreement on Agriculture (the most recent domestic support notification from the US is for the marketing year 2005 and from the EU for 2003/2004). It should be examined whether some kind of sanction for undue delay could be introduced.
- The Agriculture Committee should meet more frequently than every six months as practiced so far. Sub-Committees should be created to be in charge of a group of policy instruments that require similar technical knowledge.[59]
- The Trade Policy Review Mechanism (TPRM) should entail a more detailed examination of members' agricultural policies and their compliance with the good governance norms.
- The WTO Secretariat's capacity to support the Agriculture Committee and to conduct the TPRM should be expanded.

6 CONCLUSION

Agriculture is indeed special: It is a servant to many masters. Agricultural policies are expected to improve global wealth and especially that of developing and least developed countries. They are intended to raise and stabilize the real income of below-average income households. And they are supposed to promote a host of multifunctionality objectives. The problem with current agricultural policies is: The overwhelming majority of them are not efficient in *any* of these regards but actually detrimental to *many* objectives.

This has important implications for the definition of first-best WTO disciplines which would ascertain that members' agricultural policies optimally respond to the manifold effects of agriculture on societies' welfare. In terms of the main policy instruments, tariffs, export subsidies, payments based on output, payments based on input use, and payments based on area, animal numbers, revenue, or income (whether entitlements are current or historic, whether production is required to not) should be eliminated. In terms of WTO boxes, the Amber and the Blue Box should be abolished. The Green Box should be modified. Several inefficient measures should be abolished from the policymakers' toolkit. For the remaining measures, eligibility criteria should be elaborated in more detail, tightening access to Green Box payments in many instances but easing it in others.

Since it is politically difficult to directly move to such welfare-maximizing first-best policies, the WTO should revise its system of domestic support boxes. The policy instruments should be differentiated more accurately according to their trade-distorting effects and their efficiency in attaining legitimate domestic policy objectives. This would permit focusing WTO negotiations on the worst forms of domestic support, locking in benign policy reforms to avoid their reversal, limiting trade-distorting Green Box spending, enhancing the public legitimacy of the WTO by preventing conflict with non-trade values, and providing reference points for domestic reform debates.

The WTO should also strengthen good governance norms that promote sound design and implementation of agricultural policies in the members. This comprises members' commitment to empower a broad spectrum of actors in policy making, to clearly identify the objectives of agricultural policies, to base program design on a scientific evaluation, to target subsidies and mini-

mize transfers that do not serve program objectives, and to install monitoring and sanctioning systems to prevent farmers from reaping subsidies without complying with program obligations. In addition, members should establish an independent review body and endow it with sufficient resources to conduct cost-benefit evaluations, organize public debates on agricultural policy reform, communicate its findings to a larger public, and develop or at least verify its country's WTO support notifications.

Finally, the WTO should further develop its multilateral oversight mechanisms. Key elements here are timely notification and justification of agricultural policies, frequent meetings of the Agriculture Committee to discuss these submissions, a more in-depth Trade Policy Review Mechanism (TPRM), and an increase in the WTO Secretariat's resources on agriculture.

The deadlock of the Doha Round offers an opportunity to go beyond the framework inherited from the Uruguay Round and to engage in some creative thinking. The central idea should be that trade-friendly agricultural policies are, at the same time, efficient in attaining domestic objectives. The role of the WTO should therefore be to facilitate bottom-up reform by enhancing transparency, stimulating the domestic debate, and empowering reform promoters.

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FOOTNOTES

1. I am grateful to Pierre Boulanger, Daniel Capparelli, Fredrik Erikson, Christian Häberli, David Kleinmann and Sallie James for helpful comments.

2. See Panagariya (2005) for a list of frequently encountered fallacies on the link between agricultural policies and poverty.

3. Two important issues that should be part of reforming the URAA – WTO disciplines on biofuels and on export restrictions – are not treated in this paper as they require separate studies.

4. The distinction between targeted and untargeted instruments is based on technical aspects without immediate normative implications, and it describes two poles of a continuum. It may well be that even highly targeted payments are not welfare-enhancing because they fail to promote an important public good, or that weakly targeted payments are the best choice where targeting is administratively costly.

5. Targeted policies can also be distinguished by whether they are coupled or decoupled. In practice, the link between agricultural production and delivery of a public good is rarely so close that coupled policies could be considered as targeted.

6. Some targeted agricultural policies that provide a public good, such as research or marketing information, can enhance economic wealth. The focus of this section on the cost side arises because only untargeted policy instruments are considered.
7. See Buysse et al. (2007) and Gohin and Bureau (2006).
8. See Vercammen (2007).
9. See Chau and De Gorter (2005). Von Witzke and Noleppa (2007) show that most farms in Germany would operate at a loss without the EU's Single Farm Payment.
10. See Ahearn, Yee, and Korb (2005).
11. See also Goodwin and Mishra (2006).
12. This is in line with a survey of the determinants of US farmers' acreage decisions where variable input costs rank first. See Goodwin and Mishra (2005).
13. See also Hertel and Ivanic (2006) and OECD (2005c) arguing that developing countries would gain more if they also undertook liberalization rather than leaving reform to developed countries.
14. See also Romalis and Amiti (2007).
15. See Huang et al. (2008).
16. See Seleka (2007).
17. See FAO (2003), FAO (2006), World Bank (2007) and the World Bank project on distortions in agriculture. See also OECD (2007a).
18. See Cheng and Orden (2007).
19. See also Irz et al. (2007) and UNCTAD (2007b).
20. Governments also care about the distributional effects for political reasons – in particular, they attempt to gain the support of special interest groups that can influence election chances. This political dimension is not considered in the following as the intention is to identify welfare-maximizing rather than politically beneficial policies.
21. Payments based on historic entitlements that are fully decoupled go 100% to land owners. The EU's Single Farm Payment does not fulfill this criterion because entitlements need to be matched with eligible land (that is also kept in good agricultural and environmental conditions). The precise incidence of support then depends on policy design characteristics, such as the ratio between entitlements and eligible land.
22. See OECD (2008a) and Witzke, Noleppa, and Kennedy (2007) specifically on estimates of capitalization of support into land values.
23. A special case arises in developing countries where the poorest farmers often produce for subsistence; they sell no or little food (but are forced to occasionally buy food). Consequently, policies that raise domestic prices may not benefit poor subsistence farmers and worsen inequality among farmers. See McMillan, Zwane, and Ashraf (2005).
24. See OECD (2003) and Katchova (2008).
25. For a single small country, this holds true only if there are barriers that prevent the additional output being exported in its entirety. If many/large countries increase output, they drive down world prices.
26. The second model by Mensbrugghe (2007) is particular in its treatment of the labor market. It assumes that 1) wages differ across sectors, 2) labor markets are segmented, so that labor moves slowly from lower to higher wage sectors, and 3) urban unemployment exists. The assumption of agricultural productivity being below average sector productivity (corresponding to lower calibrated wages) worsens outcomes for countries whose agricultural GDP share grows after liberalization. By contrast, countries with urban unemployment stand to gain from shifting labor into agriculture. These effects are especially important for Brazil, which has high levels of urban unemployment and would experience strong agricultural GDP growth in the wake of multilateral liberalization.
27. This could be a problem for the Philippines and Peru. See Hertel et al. (2007).
28. See OECD (2007b).

29. See Bouet, Mevel, and Orden (2007).

30. See Bureau, Chakir, and Gallezot (2007), Mattoo and Subramanian (2004) and OECD (2005b).

31. Fabiosa (2008) also argues that poverty will decline in response to full trade liberalization in agriculture as tariffs on key food items are higher in almost all poor countries than the world price increases that would flow from liberalization.

32. See Sarris and Hallam (2006).

33. See Meuwissen, van Asseldonk, and Huirne (2008) and OECD (2000).

34. See Diakosavvas (2006), OECD (2003), OECD (2006b), OECD (2008c), Shucksmith, Thomson, and Roberts (2005) and World Bank (2007). It is interesting to see that China, a country heavily concerned with urban-rural migration, has chosen to remove agricultural taxes and invest in general services in the countryside, such as healthcare and education, rather than intensifying production-stimulating support.

35. Indeed, the tariff protection granted to agricultural processing industries by OECD countries in 2001 was higher than the total support provided to primary agriculture. Anderson, Martin, and Valenzuela (2006) estimate the support that went to primary agriculture at $136 billion, compared to $198 billion for agricultural processors, even after subtracting their higher input costs resulting from protection of primary agriculture.

36. See OECD (2007c).

37. See FAO (2003) on a framework for analyzing the relationship between trade liberalization and food security. See Mann (2008) and Hättenschwiler and Flury (2008) for a discussion of national food security. If food security is understood in qualitative terms as safe and healthy food, the right instruments are sanitary and phytosanitary measures that equally apply to imported and domestic products.

38. See Ó Gráda (2007).

39. See Anderson and Valenzuela (2007a).

40. E.g., the OECD (2006d) analyzes how market price support and input subsidies (on irrigation infrastructure, maintenance, and operation; on water supply charges; and on energy costs of pumping water from aquifers) stimulate water pollution and overuse in the OECD countries.

41. See OECD (2008b).

42. See Grethe (2007).

43. An assessment of the effects of the different policy instruments on the environment is more difficult to produce than an assessment of economic effects. The problems start with the valuation of the multifunctionality objectives themselves. See Pearce (1993) and Glebe (2007). Nevertheless, some attempts at quantifying environmental effects have been undertaken. See Chang, Boisvert, and Blandford (2005) for an attempt of calculating the gains that could be attained through using more targeted agri-environmental policies in Taiwan. See also Brady et al. (2007) and Kaditi and Swinnen (2006) for an assessment of the multifunctionality implications of different policy scenarios in the EU. The OECD (2005a) assesses agri-environmental policies from a qualitative perspective.

44. See WTO (2008).

45. This argument about poor use of distorting policy instruments can also be made with regard to time. The lack of stability and predictability that characterizes agricultural policies in some countries diminishes the benefits from protection for domestic producers and increases the costs for foreign suppliers and for businesses that trade or use imported goods.

46. See Kubota (2007). The following criticism of this instrument is not to deny its usefulness in facilitating policy change but only states that it is not efficient on immediate welfare grounds.

47. This would mean redefining the current Art. 6.2 and changing it from an Amber Box exemption to a Green Box category. The Doha draft modalities consider adding 'policies and services related to farmer settlement, land reform programmes, rural development and rural livelihood security in developing country Members, such as provision of infrastructural services, land rehabilitation, soil conservation and resource management, drought management and flood control, rural employment programmes, nutritional food security, issuance of property titles and settlement programmes, to promote rural development

and poverty alleviation' to the Green Box. See WTO (2008). This would need much more detailed and stringent criteria than what is currently on the table.

48. See also Blandford (2006), Blandford and Josling (2007), Brunner and Huyton (2008), Diakosavvas (2003) and UNCTAD (2007c) for criticism of current Green Box disciplines.

49. A discussion could be had on whether a country should also have the option to commit to not using specific policy instruments it might use in the future by shifting subsidy entitlements from lower to higher levels of legitimacy.

50. See, in particular, Brazil's and Canada's legal challenge of US subsidy notifications (WT/DS365/1 and WT/DS357/1).

51. Josling and Swinbank (2008) estimate that, had the EU notified its support for the 2006/07 period, the market price support would have constituted 23.2 billion Euros, compared to less than 5 billion Euros for all other Amber Box subsidies.

52. See the IFPRI project on 'Improving WTO Transparency: Shadow Domestic Support Notifications'.

53. See, e.g., BirdLife International (2005), and Oréade-Brèche (2005) on the poor quality of agro-environmental payments even in the EU.

54. The WTO would have less guidance when developing these guidelines than in the area of SPS measures where several standard-setting organizations develop templates for risk assessment and management. The work done by the OECD offers a good starting point, even though it focuses on developed countries.

55. Even if an open dialogue with society exists in many countries, explicitly mentioning the diverse stakeholders as equals could help to change bureaucrats' perception that their main task is to serve farmers. Furthermore, some stakeholders that engage little in agricultural policy making could become more aware of the role they should play if they are explicitly summoned.

56. The Australian Productivity Commission could serve as a reference in some regards.

57. See Abbott and Snidal (2000), Hillgenberg (1999) and Onuma (2003).

58. See Lang (2005).

59. Currently, the Cotton Committee is the only sub-committee. Organization along product lines appears less adapted to the trend from commodity-specific to horizontal and more targeted policies.