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**TMD DISCUSSION PAPER NO. 94**

**THAT WAS THEN BUT THIS IS NOW:  
MULTIFUNCTIONALITY IN INDUSTRY AND  
AGRICULTURE**

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**May 2002**

This paper was prepared as part of the research project: WTO negotiations and Changes in National Agricultural and Trade Policies: Consequences for Developing Countries. The project is funded by DANIDA (Ministry of Foreign Affairs) and implemented jointly by IFPRI and the Danish Research Institute of Food Economics (FOI) of the Ministry of Food, Agriculture and Fisheries of Denmark.

TMD Discussion Papers contain preliminary material and research results, and are circulated prior to a full peer review in order to stimulate discussion and critical comment. It is expected that most Discussion Papers will eventually be published in some other form, and that their content may also be revised. This paper is available at <http://www.cgiar.org/ifpri/divs/tmd/dp.htm>

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## ABSTRACT

Current agricultural negotiations in the World Trade Organization are grappling on how to fully integrate agriculture within the general rules for trade in goods. The notion of multifunctionality of agriculture has been suggested as a reason to justify special treatment for that sector, including the continuation of its protection and subsidization. Many developing countries are still analyzing whether the idea has something to offer them in terms of their negotiating positions and policy framework.

While multifunctionality has been invoked for supporting agriculture in developed countries, a similar idea, although not called so at the time, was clearly behind support for industry in developing countries. Again in this case, the policy implication was that government intervention was required (through trade protection, subsidies, and other special policies) to develop an industrial base that contributed to society more than what market valuations alone would suggest.

The debate on industrialization in developing countries was part of a broader discussion regarding nation-building, economic development, and social modernization. The current arguments around multifunctionality are similarly embedded in a larger economic, political and social matrix. This paper, although it does not present a full account of either debate, discusses some of the intriguing parallelisms in their theoretical frameworks, policy implications and economic and social impacts. The main objective is to clarify current policy issues for the agricultural sector in developing countries, highlighting possible consequences for the negotiating position of developing countries in the WTO process.

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## I. INTRODUCTION

One of the central debates in world agricultural policy has been how (and, for some, whether) to fully incorporate agriculture within the general framework of the WTO (see Josling, Tangermann and Warley, 1996). Under the previous GATT framework, agriculture operated under different rules. This separate treatment was in part reduced during the Uruguay Round, but current WTO legal texts do not yet reflect a complete integration of agriculture within the general trade rules for goods.

There are two different views on what to do about this. One opinion insists that agriculture should not be treated differently from other sectors, like industry, and therefore current negotiations should complete the integration of agriculture into the WTO framework. One of the main issues in this regard is related to export subsidies, a trade practice that has been widely criticized as unfair and disruptive of international trade. In contrast with industrial goods, for which export subsidies are banned in the WTO legal framework, these subsidies are still allowed, although with some restrictions (see the discussion in Section VI).

Another view emphasizes the special role of agriculture, and wants to maintain a separate treatment. Usually, this view is linked to the notion of the “multifunctionality” of agriculture, which has been recently presented, mainly by industrialized countries, as a new concept that must be considered in the design and implementation of agricultural policies (European Union, 1999; Royal Ministry of Agriculture Norway, 1998; Ministry of Agriculture, Forestry and Fisheries, Japan, 1999).

The basic idea is that agriculture, in addition to its direct products, also generates separate positive externalities such as food security, environmental conservation, beautiful rural landscapes, employment, and vital rural communities. Only counting the market value of agriculture, it is argued, would overlook that sector’s overall contributions to society. A policy conclusion from this line of analysis is that the government could justifiably intervene to ensure an adequate supply of the postulated externalities linked to agricultural production.

The idea of multifunctionality has become a contentious issue in the continuation of the agricultural negotiations. Those negotiations began in March 2000, as mandated by Article 20 of the Agreement on Agriculture (AoA) of the World Trade Organization (WTO), and were reaffirmed and made part of a single negotiating undertaking in Doha in November 2001. The European Union, Norway, Japan and South Korea, among others, have argued that multifunctionality should be part of the non-trade concerns alluded to in Article 20 and the Preamble of the Agreement on Agriculture, which must be taken into account during current negotiations. Other countries (basically the members of the Cairns Group and the United States) have opposed granting an independent role for multifunctionality in the conceptual framework of the negotiations (ABARE, 1999; USDA/ERS, 1999). Multifunctionality has already been the subject of one of the longest documents presented in the WTO negotiations by a collection of industrialized and developing countries (WTO, 2000). Many developing countries are

still analyzing whether the idea has something to offer them in terms of their negotiating positions and policy framework.

While multifunctionality has been invoked for supporting agriculture in developed countries, a similar idea, although not called so at the time, was clearly behind support for industry in developing countries.<sup>1</sup> Again in this case, the policy implication was that government intervention was required (through trade protection, subsidies, and other special policies) to develop an industrial base that contributed to society more than what market valuations alone would suggest.

The debate on industrialization in developing countries was part of a broader discussion regarding nation-building, economic development, and social modernization. The current argument around multifunctionality is similarly embedded in a larger economic, political and social matrix. This paper, although it does not present a full account of either debate, will discuss some of the intriguing parallelisms in their theoretical frameworks, policy implications and economic and social impacts. The main objective is to clarify current policy issues for the agricultural sector in developing countries, highlighting possible consequences for the negotiating position of developing countries in the WTO process. The rest of the paper is organized as follows. Section II briefly presents the economic framework under which externalities can be addressed through policy. Section III and IV then review the externalities that have been invoked for industry (then) and agriculture (now), the policy debates, and the economic and social implications of the policies followed. Section V discusses briefly the differential treatment under WTO for industry and agriculture. Section VI concludes by analyzing some possible implications for the current WTO negotiations, particularly from the perspective of developing countries.

## **II. THE ECONOMIC FRAMEWORK**

Economic policies based on multifunctionality and industrialization have both made use of the concept of externalities (positive or negative) arising as by-products of normal market activity (Marshall, 1898) and the theory of public goods (Samuelson, 1954). The defining characteristic of externalities is the lack of markets to transact them, and that those by-products may have beneficial or costly impacts on parties other than the primary actors, while their generation is based solely on the private value for those primary actors. Society may therefore be oversupplied with a bad externality (e.g. pollution from a tannery), or undersupplied with a good externality (e.g. workers with practical high-tech skills). Without some form of collective action, there is no guarantee of appropriate (from the point of view of the society) levels of supply. But collective action does not necessarily mean government action. Here is where the notion of public goods comes in. They are a class of goods or services that are, from the moment of their existence, non-rival in consumption (my consumption doesn't take away from yours) and non-

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<sup>1</sup> Of course, the proponents of multifunctionality do not restrict its application to developed countries, although several dimensions of the concept apply mostly to more advanced countries (see below). Vice-versa, the notion of government support to industrialization is not confined to developing countries, as illustrated for instance by the debate on industrial policies in the US especially during the mid eighties (see, among others, Norton, 1986, Tyson, 1992).

excludable (I can't prevent you from consuming it). Such goods do not lend themselves naturally to market direction, and in pure cases, not even for voluntary collective action. Therefore a case can be made for government regulation, or outright supply.

This is precisely what has been argued both, more recently in regard to the agricultural sector, mostly in developed countries, and, previously, in relation to the industrial sector, mainly in developing countries. In both cases, the emphasis has been on positive externalities of industrial or agricultural production, and the need for government intervention.

According to proponents of support, the externalities emanating from industrial or agricultural production are numerous. Table 1 shows those commonly emphasized in the literature on industry and development/modernization (then), and the multifunctional character of agriculture (now).

The economic literature tackled most these issues early on, usually in the context of arguments related to adequate trade and development policies. Economic theory suggests defining the externalities clearly and identifying precisely how they are produced. Policymakers could then look for the intervention that most directly addresses the production (or suppression) of the postulated externality; or conversely, the intervention that least distorts other markets (Bhagwati, 1971, and Corden, 1974). By this approach, the first-best solutions prescribed would almost always be different from the measures, such as trade protection, that have typically been utilized. Assuming that the externality has been clearly identified, then the appropriate policy would be a subsidy (if it is positive) or a tax (if it negative), directly aimed at the externality. The farther away from the externality the postulated policy operates, the larger the costs it imposes on other aspects of the economy. If, for instance, the externality is workers with high-tech skills, a direct subsidy to firms for educating their workers would be more adequate than a subsidy on production of high-tech goods (that generates a production distortion without necessarily ensuring the desired outcome), which in turn is better than trade protection to firms producing high-tech goods (which creates a production and consumption distortion). More fundamentally, if a firm or industry can internalize and appropriate the externality (for instance, learning-by-doing by workers that can be retained), then there would not be a case for any outside intervention, particularly if there are financial markets that can finance the acquisition of those capabilities (as in the criticism of the infant industry arguments by Baldwin 1969; see also Kemp, 1964). Further, the intervention needed a full accounting of benefits, but also costs, in a general equilibrium framework.

The basic conclusions were that externalities had to be truly non-appropriable, had to be adequately priced (considering full costs and benefits), and had to be addressed with policies as closely as possible linked to the effect targeted (desired or undesired) to avoid indirect effects that may negate, at the level of the whole economy, the desired positive welfare effect.

Many of those debates, which have been substantially settled in the economic literature on trade and development, have reemerged, however, around the discussion about multifunctionality in agriculture. In what follows the current debate on agriculture is contrasted with previous discussions on industrial development, and then some possible implications for developing countries in the WTO negotiations are presented.

**Table 1. Some Postulated (Positive) Externalities to Agriculture and Industry**

<u>INDUSTRY</u>	<u>AGRICULTURE</u>
<i>Economics and Technology</i>	<i>Economics and Technology</i>
Employment	Employment
Economies of scale	
Skilled labor creation	<i>Politics and Society</i>
Promotion of an entrepreneurial spirit	Food security
Technological development	Reduction of rural-urban income disparity
Knowledge externalities	Cultural heritage
Capital accumulation	Vital rural communities
	Social cohesion
<i>Politics and Society</i>	
Nation-building	<i>Geography and Environment</i>
National security	Scenic vistas
Independence/self-sufficiency	Environmental protection
Social modernization	Biodiversity
Poverty alleviation	
<i>Geography and Environment</i>	
Urbanization	

### III. INDUSTRY IN DEVELOPING COUNTRIES

#### *Externalities and Policies*

After World War II, many leaders and intellectuals in the developing world saw industrialization as intrinsically related to nation-building. Most would have agreed with Alexander Hamilton’s “Report on Manufactures,” submitted to the US Congress in 1791, which argued: “not only the wealth but the independence and security of the country appear to be materially connected with the prosperity of manufactures. Every nation ... ought to endeavor to possess within itself, all the essentials of national supply”. He considered it necessary “to the perfection of the body politic; to the safety as well as to the welfare of the society” (Hamilton, 1791).

For newly independent countries during the 19<sup>th</sup> and 20<sup>th</sup> centuries, the policy approach began with the desire to break free from direct political and economic control by the colonial powers. In this line of analysis dependency was embedded in the productive structure of the developing countries: they produced primary products and sold them to the colonial powers, from which poor countries, lacking a domestic industrial base, had to import manufactures. It was argued that this international power architecture was also reflected in the social fabric of the developing countries through the presence of landowners and representatives of foreign capital (the latter tied directly or indirectly to agricultural production); and in the structure of land tenancy, where large estates and plantations occupied the dominant position. From this perspective, de-emphasizing the role of the agricultural sector in development was part of a double process of economic independence and political sovereignty, on the one hand, and of a transition to a more equitable internal distribution of income.

Even in Latin American countries, which had become independent mostly in the 19<sup>th</sup> century and which after World War II had a relatively developed industrial base compared to other regions, the contention of unequal relations had strong resonance.<sup>2</sup> Rather than the more obvious issue of direct political control, the argument, as elaborated by Prebisch (1950, 1968) and Singer (1950) was an economic one: contrasting market structures in developed countries (characterized by industrial oligopolies and strong unions) with those of developing countries (characterized by smaller firms and surplus labor), the argument was that the former could retain the benefits of technical progress, while the latter surrendered gains from productivity through falling prices of their primary exports (hence the decline in the terms of trade).

Besides nation building and economic and political independence, industrialization was also associated with (and, in the stronger version, would cause) social modernization. Rural populations were supposed to lack entrepreneurial spirit and appeared bound by traditional culture and organization. So, when pioneering firms started in the urban centers, the creation of non-farm jobs would reduce the sway of agrarian classes. Urbanization was itself linked to modernization in the social sense: progressive attitudes and affiliations would result from it. This process was supposed to lead to an open and mobile society, eliminating the assignment of occupations by traditional criteria (sex, ethnicity, family status). Increasing levels of general education for all citizens would generate a more active, pluralistic and participatory political and social life (the most complete presentation of these arguments is probably Kerr et al, 1964). Although the left did not necessarily share this benign view of modernization, some Marxist arguments emphasized the need to move beyond feudalism (which was associated with the agricultural sector) to capitalism (identified with industrialization and the development of the urban proletariat) (Mitrany, 1951).

Yet, for all the arguments regarding the military, political, and social externalities of industrialization, the bulk of the public policy discussion was conducted in economic

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<sup>2</sup> Latin American industry had emerged in good measure as a result of growing demand in the region and the natural protection offered by the breakdown of trade and finances during the Great Depression and the two World Wars.

terms. The main objectives of industrialization were growth, employment and elimination of poverty (see for instance Bhagwati 1993, on the sequence of Indian Plans), much as the current notion of multifunctionality emphasizes employment generation in rural areas.<sup>3</sup> But certainly, to characterize those objectives of economic policy as externalities of industrialization (or agriculture) would be stretching the notion too far.<sup>4</sup> The economic externalities of industrialization, which were at the center of what has been called “high development theory” (Krugman, 1994), involved a different set of issues: the interaction of economies of scale, pecuniary external economies, technological spillovers, backward and forward linkages, and strategic complementarities. The combination of these elements suggested the existence of multiple equilibria and the need for some form of coordination, probably, but not only, through government intervention, to move from lower to higher levels of economic activity (Chenery, Robinson, Syrquin, 1986).

The general case ran as follows. In any pre-industrial economy, pioneering firms are subject to considerable start-up costs. Without an industrial base (of skilled labor, supplier networks, experienced capital markets, etc.), each new industry is at much higher survival risk than they would be had they started in an already industrialized country. Survival risks are attributable to the structural factors noted above, and also to the fact that demand for industrial goods would initially be weak: without an industrial system producing many goods by many wage earners, the first industry is in a highly contingent position, whereas the hundredth is much less so (Rosenstein-Rodan, 1943; Murphy, Shleifer, and Vishny, 1989). At the same time, each new industry would contribute technological spillovers and the development of a skilled labor force to the society as a whole: learning-by-doing would contribute to the hiring firm’s bottom line (for which the firm is compensated), but also to the viability of the industrial sector overall (for which the firm is not compensated).

Another issue was macroeconomic stability. Although not specified as an externality, it was also clear that policymakers wanted to make the economy less vulnerable to external shocks and avoid macroeconomic crises through industrialization. It was assumed that, as the number of industrial firms increased, dependence on revenue from primary products would gradually be reduced, which was supposed to insulate the economy from external shocks and to protect against the losses implied by the postulated decline in the terms of trade (CEPAL, 1969).

In summary, using the current term, the multifunctionality of industry appeared substantial: nation-building, political and economic independence, national security, modernization, development, technological advance, protection from external shocks, and so on. But, even accepting the multifunctional effects of industry, another question still remained: what were the appropriate policies to attain those effects for the developing

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<sup>3</sup> Early development literature appears to assign zero marginal value to labor in the agricultural sector, or at least a value far smaller than in alternative uses (Lewis, 1954). Now multifunctionality appears to assign higher value to employment in agriculture than to alternative uses.

<sup>4</sup> There is a similar debate now regarding whether employment belongs into the notion of the multifunctionality of agriculture (see OECD, 2001).

countries. Much of the policy thinking, which coalesced around the notion that came to be called Import Substitution Industrialization (ISI), was based on some central themes:

(i) The need to accumulate capital, increasing investment and savings rates. For example Lewis (1954, 1955) argued that the central problem of underdevelopment was how to go from a situation where the economy is saving 4-5% of GDP to around 15-20%).

(ii) The importance of industrialization in the process of development. This process could advance in a more or less balanced fashion (although for some, like Rosenstein-Rodan (1943) this would focus basically on light industry, while for others like Mahalanobis (1955) heavy industry should be incorporated), or instead could be propelled by the fundamental tensions of disequilibria to generate investment, as argued by Hirschman (1958).

(iii) A focus on the internal market. Rather than expand exports, the approach was to reduce imports through domestic production. The feasibility of expanding the volume of exports was considered doubtful because they would come from the primary sector, in particular from agricultural production, which was supposed to have a low price elasticity of supply and because, in any case, international demand for those primary products was also deemed to be relatively price inelastic (Little, 1982 provides a review of this debate).

(iv) The belief that markets and the price system would not adequately guide the necessary process of investment and capital accumulation, which was to be led by government intervention, usually a development plan with instruments such as trade protection and subsidies for manufactures, taxes on agriculture, and a heavy involvement of the State in the economy (see the accounts by Hirschman, 1982 and Sen, 1983).

(v) The notion that inflationary pressures were not necessarily attributed to excess aggregate demand. It was thought that inflationary pressures could develop even without excessive levels of aggregate demand because the productive sector of the economy was fragmented, with key sectors operating at full capacity or showing rigidities to increasing the level of operation, while other sectors experienced higher levels of unemployment and unused capacity. Consequently, inflationary pressures were supposed to fade away once the investment process made production bottlenecks disappear, integrating and balancing the productive structure of the economy (a discussion of views on inflation and development can be found in Johnson, O., 1984). Investment and capital accumulation, it was argued, would not only solve the internal imbalance leading to inflationary pressures, but was thought to also solve the external imbalance, which caused recurrent balance of payments crises. The process of import substitution, which focused on industrial products, would move backwards from consumer goods to basic industries, replacing imported goods with domestically produced ones. In the end it was thought that the (small) remnant of non-substitutable imports could be financed through the (small) level of exports.

(vi) According to the post-war development strategy, the role of agriculture was subordinated to the needs of the industrialization process. Different arguments were utilized to support this view. Quantitative historical analysis (for instance Kuznets, 1966), showed that agriculture declined in importance with the advance of economic development. Also, and especially in Latin America, different authors argued that (a) agricultural production was inelastic to domestic prices, (b) that international demand

was also inelastic with respect to international prices, and (c) the international terms of trade were moving against agriculture (Cepal, 1969). If domestic production and international demand were inelastic, the imposition of taxes on agricultural products would not significantly diminish domestic production, and much of the tax would be paid by importing countries in the form of higher prices. Furthermore, over the medium to long term, deteriorating terms of trade led policy makers to pursue a diversification of the productive structure (industrialization) instead of favoring agriculture. Consequently, from the fifties to the early sixties, the prevailing idea was to transfer resources from agriculture (a low productivity sector) to industry (where it was assumed that resources would have higher productivity). The role of agriculture in development (see Johnston and Mellor, 1961) was one of transferring surpluses for higher economic growth: (a) the transfer of labor surpluses; workers supposedly unemployed in the agricultural would be transferred to industry (see especially Lewis 1954); (b) agriculture would provide food (wage goods) and raw materials to the industrial sector; (c) savings in the agricultural sector would be taxed away to sustain the process of investment in the industrial sector and for the development of public infrastructure; and (d) the agricultural sector had to generate surpluses of foreign currency to pay for the importation of capital goods and industrial inputs (Johnston and Mellor, 1961).

### *Second Thoughts*

By the mid 1960's several concerns began to be voiced about the adequacy of this development strategy. Protection and subsidies to the industrial sector to obtain the postulated multifunctional effects were damaging other sectors, such as agriculture. Schultz (1964), in an influential book, argued that the farmers in the developing countries were "poor but efficient", reacting with economic rationality to changes in prices and incentives. If the agricultural resources were efficiently utilized, there were not gains to be made by the economy from transferring labor and savings to other sectors. The suggestion was to support the agricultural sector through technological development and human capital formation in rural areas. The participation of the State in this process was considered crucial (complementing the traditional vision of the role of the public sector in infrastructure). The Green Revolution of the seventies and afterwards was based on the idea that there could be a technological solution to the rural problem.

Different studies during the 1970s (Little, Scitovsky and Scott, 1970, Balassa, 1971, Krueger, 1978), also criticized the strategy of development based on inward-oriented, import-substituting industrialization in terms of both long-run growth and efficiency aspects. They pointed to the supply-side constraints generated by the structure of macro prices (i.e. the relative price of tradables/non tradables, of industrial/agricultural products, the exchange rate, the interest rate, the wage level) established through governmental policies. According to these studies the policies analyzed had a triply damaging effect: (a) they made the economy operate inside the production possibility frontier (PPF), (b) they slowed the outward movement of the PPF, and (c) they did not allow the economy to benefit from trade.



Criticisms mounted about the basic assumptions, the policies followed, and the consequences of the ISI strategy. Some argued that the strategy of forced industrialization was a misapplication of historical lessons from English development: transfers of capital and labor from agriculture to the rest of the economy should take place naturally, not through policies highly discriminatory against the agricultural sector (World Bank, 1986). The obvious realization that the poor in developing countries were concentrated mainly in rural areas led to the conclusion that if poverty alleviation were to be an important objective of economic policy, then greater attention should be given to agricultural and rural development (Chenery et al., 1974).

Others pointed out that the supply of agricultural products was reasonably elastic, as was international demand. The terms of trade between industrial and agricultural products—after adjusting for quality and other factors—would not be deteriorating (for an overview of those debates see Balassa, 1986b). Discrimination against exports and the exclusively inward orientation was criticized because it failed to take advantage of the commercial opportunities offered by the international economy. The costs of inefficiency and lack of competitive incentives to productivity growth due to protection were higher than the ones associated with problems in international trade. Protected industries appeared to require (and strongly lobbied for) protection long after the intended period of “infancy.” Pervasive State intervention into capital markets made investment funds available only to the large, favored firms and discouraged technical advance in other sectors. On the other hand, developing countries following an export-oriented strategy would benefit from greater flexibility, efficient allocation of resources, technological development, economies of scale, and dynamic effects that could not be attained through reliance on the internal market alone (Balassa 1986b). It was also argued that industrialization fostered through protectionism had generated an industrial structure more capital intensive than the resource endowment of developing countries required. Therefore poverty alleviation was impaired by policies that protected capital-intensive industrialization and discriminated against agriculture, generating less employment and a distribution of income less equal than other development strategies would have allowed. This process of industrialization was accompanied by an uncontrolled process of urbanization and the continuation and even deepening of poverty in rural areas.

At the macroeconomic level, import-substitution protectionism appeared to have increased inflationary pressures (Krueger, 1981, 1984), and fostered unsustainable fiscal deficits, associated with State interventions, leading to recurrent macroeconomic crises. Moreover, and contrary to expectations, the countries following inward-oriented policies appeared more vulnerable to external shocks, and more prone to balance of payments crises, which, when they occurred, tended to have a stronger negative impact on the economy (Balassa, 1984, 1986a). An important reason for economic instability was that the ISI strategy created a stop-go dynamics in economic activity: the acceleration of the economy usually led to fewer exports (because a larger percentage of the goods were consumed internally due to growing incomes) and more imported inputs and capital goods (demanded by the expanding industry), generating balance of payment crises when official external reserves reached very low levels.

Import substitution was even criticized in non-economic terms. While in India and South Asia, industrialization took place with domestic firms, in much of Latin America it was related to the expansion of multinational corporations. Critics from the left decried the increasing power of the international capital, and attributed different economic and social problems to the dominance of those international corporations (Frank, 1969, among others). From a very different perspective, what was called “neoclassical political economy” began to debate the notion of government as a benign planner interested in aggregate national welfare (the implicit view of much of the proposals for State-led development). They pointed out the rent-seeking behavior of actors, which a state-led environment allowed to flourish, with virtually any intervention creating an opportunity for privileges, waste and fraud (Bauer, 1972; Bhagwati, 1982; Krueger, 1974). Resources were misallocated because decisions were influenced by those rent-seeking activities, which, in addition, themselves consumed resources from the private sector that could have been applied to more productive ends.

But it appeared that the woes of the ISI strategy did not end there: developing countries seemed plagued by political problems, instability, military coups, and human rights abuses. Industrialization was obviously creating a labor class and urban sectors that began to claim a larger share of economic benefits and more political participation. Public and private sector wage increases related to industrialization and modernization strategies encouraged faster migration from farm to towns, demanding jobs and public services, and causing social unrest. When the economic limits of the ISI strategy (high levels of inflation, balance of payment crises) converged with social unrest, many developing countries suffered military coups against a civilian government accused of being too corrupt or too weak to control the economic and social crisis; the need to reestablish order were the reasons generally utilized to try to justify the breakdown of the democratic process (see for instance, Diaz-Bonilla and Schamis 2001, on Argentina). As Hirschman (1982) noticed, faith in the development consensus was badly damaged by a series of political disasters, “ranging from civil wars to the establishment of murderous authoritarian regimes”, and the “wholesale loss of civil and human rights” that were perceived as to be “somehow connected with the stresses and strains accompanying development and ‘modernization’”.

The accumulation of all these (true or alleged) negative impacts on society of the excess support for industry led to a reevaluation of the development strategy in many developing countries. It was considered that those countries would benefit by adopting a more decentralized focus, with better use of the price mechanism, and less protection and controls (Little et al., 1970). The development strategy had to be refocused by taking advantage of opportunities in international trade, eliminating the distortions created by extreme government intervention, allowing the price system to operate more freely, making sure that technology and investment reflected the endowment of human and other resources (thus avoiding the emphasis on capital-intensive enterprises), and positively reappraising the role of agriculture in the economy (see Balassa, 1971; Little et al., 1970; Krueger, 1978). Countries in Asia, and some in Latin America, building on previous ISI stages, turned towards export-led strategies that generated many of the success stories of the last decades in terms of growth, industrialization, employment, and poverty reduction.

Industrialization strategies increased over time the share of developing countries in world industrial value added (Table 2), from 15-18 percent during the period of ISI to less than 25 percent in the 1990s (clearly lower than the share of industrial countries in world agriculture, a fact whose implications are discussed later). However, and although it can be argued that industrialization in developing countries remained relatively small in a world context, their export successes began to find trade limits in industrialized countries, through some measures not necessarily GATT-compatible, such as voluntary export restraints and quotas (as in the case of textiles).<sup>5</sup> At the same time, within GATT, there was a strengthening of the Anti-Dumping Agreement during the Kennedy Round (1964-1967), and of the code for subsidies and countervailing measures during the Tokyo Round (1973-1979). Domestic, and above all, export subsidies for industrial goods were tightly disciplined. Agriculture, however, followed a different route.

#### **IV AGRICULTURE IN DEVELOPED COUNTRIES**

##### *Historical Perspective*

An obvious observation is that over the last half of the century or so, world economic policies affecting agricultural policies have differed markedly across countries: those policies tended to tax agriculture in developing countries, while the sector was subsidized in industrialized countries (World Bank 1986). In the United States, agricultural policies were a reaction to the Great Depression: the need to support farmers' incomes and the family farms and to stabilize prices and supplies provided the main rationale behind the policies followed (Gardner, 1990; Rapp, 1988). Although the world had changed substantially since the 1930s, the policies instituted then, with some variations, were in place until the 1995 Farm Bill when a different approach was followed, only to reappear with a vengeance in the current legislative initiatives considered by the US Congress for the new Farm Bill (Orden, Paarlberg, and Roe, 1999; Orden, 2002).

Modern agricultural policies in Western Europe and Japan emerged from somewhat different concerns. At the end of the WWII, Europe was a devastated territory, suffering food deficits, threatened by internal turmoil and menaced by the presence of the Red Army, stationed at the other side of the Iron Curtain. For the US and the western allies, it was important to develop a strong regional economy to counter the presence of the USSR in the other half of Europe. At the national political level, farmers were seen as a conservative force that would provide some balance to left-leaning urban political parties and labor groups. The Common Agricultural Policy, enshrined in the Treaty of Rome that launched in 1957 the then European Community, reflected in part those concerns. In Japan, not only agricultural policies but also agricultural structures were the result of the postwar developments. The victors of WWII implemented a sweeping land reform with

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<sup>5</sup> Of course, some of the trade restraints in industrialized countries were also directed to other developed countries, such as Japan.

the vision of a pacifist Japan in which a political block of numerous small family farms would provide the basic constituency for democratic parties.<sup>6</sup>

In summary, both regions were crucial strategic anchors in the Cold War era, the political support of agricultural groups was considered key to the pro-western alliances at the national level, political stability required that food shortages were avoided, and the economic reconstruction of those war-ravaged economies needed a strong and growing agricultural sector. The strategy followed can be called import substitution agriculture (ISA) for which there were also some postulated multifunctional effects to agriculture, although different from the ones emphasized currently. Policy regimes were (and still are) based on domestic subsidies and trade protection, and later, for some countries with growing surpluses, also included export subsidies (see below).

In a world of food shortages and weakened countries emerging from WWII, the US, as a dominant agricultural producer, did not see any need to include agriculture within the recently created GATT. In fact, in mid 1950s the US sought and obtained waivers for the establishment of quotas in peanuts, dairy, and sugar products, to isolate from world markets some of the agricultural programs instituted during the 1930's (Rausser, 1995; Josling et al., 1996). Although agricultural interests in the US grew more concerned over time with the increasingly closed markets in Europe and Japan, during the 1950s and 1960s Cold War concerns dominated economic disputes. The Dillon and the Kennedy Rounds failed to integrate agriculture into GATT.

The world economy grew at a healthy rate over the first postwar decades, trade expanded substantially (spurred by the initial rounds of GATT negotiations), and agricultural production increased in step with demand. During the seventies, the oil crisis and the sharp increase in prices in many commodities rekindled worries about global food scarcity and the exhaustion of natural resources. Policies to protect and encourage agricultural production seemed sensible given the alarm over food and natural resource shortages: USA, Europe, and Japan continued and reinforced their protectionist agricultural policies, and agriculture was again excluded from GATT disciplines during the Tokyo Round (Josling et al., 1996).

In the 1980s the macroeconomic environment changed substantially. After the second oil shock, governments in industrialized countries did not react by accommodating the higher oil prices but resorted to tighter monetary policies to control inflation. Macroeconomic deflation greatly depressed effective demand for agricultural products. Also, the treatment of the debt crisis (requiring a sharp adjustment in developing countries to the reversal of capital flows) forced them to step up the production of tradable agricultural products to cut imports or to expand exports, in order to service the debt.

An important modification in world agriculture was the transformation of the European Union (EU) from a net importer of a variety of products (including wheat and other

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<sup>6</sup> For the discussion of US strategic interests regarding Europe, and Japan during the Cold War, see, among others, Ambrose, 1980; Brown, 1983; and Gaddis, 1982.

cereals, beef, sugar, and some fruit and vegetable products) during the 1960s and 1970s, to a net exporter through the heavy use of domestic subsidies, import restrictions and export subsidies of the Common Agricultural Policy (CAP).<sup>7</sup> Since then the EU has been the main source of subsidized agricultural exports, but other countries, mostly the US and other industrialized countries, have also utilized export subsidies.<sup>8</sup>

The increased productive capacity created in the seventies confronted reduced growth in effective demand, and fears of food shortages were replaced by concerns about deflation and excess supply (Insel, 1985). Problems were masked in part by the accumulation of stocks in the US during the first half of the 1980s, but when the Farm Bill of 1985 changed American agricultural policies and stopped building those stocks, excess supply was revealed in its full extent. Other factors that added to the supply side and/or weakened the demand side of agricultural markets during the 1980s included the agricultural transformation in China, the expansion of the Green Revolution in many developing countries, and the break-up of the Soviet Union (see Sanderson, 1990; Borensztein et al., 1994).

By the end of the 1980's it was clear to policy makers in many countries that world agriculture showed important imbalances, that policies were working at cross purposes and that they imposed heavy burdens on consumers, producers and taxpayers in many regions. Total transfers to agriculture in Western Europe, US, Japan and Canada, ranged from 250 to 290 billion dollars in the second half of the 1980's (amounting to over 2% of their GDP) (OECD, several issues) and generated substantial welfare losses for the industrialized countries and the world (Sanderson, 1990).

Lower world prices and deteriorating public sector finances, both in developed and developing countries, led to fiscal adjustments and pressures to reduce support for agriculture in many countries. The discussions surrounding the Farm Bills of the US in the 1980s and 1990s, the adjustments in the CAP in the 1990s, and the structural adjustment programs which unilaterally or as a condition of loans by international financial institutions reduced support for agriculture in many developing countries during the 1980s and 1990s, are all events that can be viewed as part of the efforts to confront deteriorated circumstances in agricultural markets and macroeconomic variables (Diaz-Bonilla, 2001).

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<sup>7</sup> In the 1960s and 1970s the current countries of the EU imported per year an average of about 21 million metric tons (MT) of cereals, 550,000 MT of beef, and 2 million MT of sugar; since the 1980s, however, those countries became net exporters of 18 million MT, around 500,000 MT, and almost 3.5 million MT for the same products, on average per year (see Diaz-Bonilla and Reca, 2000).

<sup>8</sup>For the period 1986-1997, European exports subsidies amounted to about 123.9 billion US dollars; and the US utilized 9.5 billion US dollars (Leetmaa and Ackerman, 1999; the calculations do not include the US tax treatment of "foreign sales corporations", which has been found in violation of the export subsidies disciplines of the WTO). Those export subsidies amounted to almost 13% of all agricultural exports by Africa, LAC, and Asia (minus China) combined, during the same period (Diaz-Bonilla and Reca, 2000).

For all these reasons, it was certainly welcomed that the Uruguay Round of the GATT (initiated in 1986) included the agricultural sector as a main priority. Policies that were based on reactions to the Great Depression of the 1930s, fears of food shortages in the 1970s, and the Cold War (that ended with the breakup of the Soviet Union in 1991), were still in place, and badly needed to be adjusted. But, as with ISI in developing countries, protection embedded in ISA in industrialized countries have been capitalized into economic assets that their owners did not want to see devalued. On the political side, the agricultural sector in the developed countries still has significant clout: it provides the necessary votes that support powerful senior positions in the US Congress, may make the difference in tight political elections in US and Europe, and agricultural constituencies are a key component of the main political party in Japan (see among others Rapp, 1988; Hayami, 1986 and 1990).

It is against that background of agricultural surpluses, fiscal constraints, and pressures from trade negotiation that the modern notion of multifunctionality emerged in developed countries, mostly in Europe and Japan.

### *Multifunctionality in Agriculture*

The arguments promoting the multifunctional role of agriculture have a similar structure to those utilized for industrialization. Some developed countries are fretting over the sustainability, under a liberalized agricultural regime, of agriculture and the externalities attributed to the sector. In this case it is not as much a question of how to move toward a desirable future (as in the ISI), but how to preserve a remembered past.

The argument runs as follows. Farmers receive money for the food and fiber that they produce. But to society as a whole, they bring numerous benefits for which they are not compensated. First, they provide rural jobs, considering that farm work is the principal form of employment in their rural areas. In order for people (especially young adults) to stay in rural areas, they need to see that local employment will continue to be a viable prospect. But the importance of agriculture would go beyond employment per se: for people in rural areas to be farmers has its own intrinsic merits, not the least that they provide some sort of social continuity and stewardship over a “cultural heritage.”

Farmers also create scenic vistas. For many urban dwellers, a drive through cultivated rural terrain is a stimulating experience, with their wide, open spaces offering a refreshing counterpoint to city life. Farmland may also attract foreign visitors, thus adding to tourist receipts. No market forces control the distribution of these views.

Another positive externality of agriculture, it has been argued, is environmental and biodiversity protection. Compared to abandoning the land or (some) other alternatives, cultivated land may conserve soil and recharge groundwater, create flood controls, and provide habitats for rare species. The environmental value of farmland is sometimes ingrained in the land, the farm and the rural community, as cultivation over many years has led to unique and specific adaptations, and knowledge.

Finally, there is the persistent notion that greater domestic food production equals greater food security. To the degree to which food can be produced locally, runs the argument, it should be (Hines 2000). World commodity markets can be tumultuous, and access is often imperfect, especially in times of international strife. More circumscribed arguments in this line emphasize the notion of insurance, suggesting the need to guarantee some (undefined) percentage of total consumption with domestic production, perhaps to maintain farmer's know-how and farmland in use if production has to be expanded due to unforeseen disruptions in world production and trade.

The argument also rests on the idea of joint production: the emergence of these positive externalities is inseparable from the production of food and fiber. Moreover, it is argued that these externalities do not have markets, and cannot be provided by private collective action. Again, as in the case of industrialization, there is an argument for governments to intervene in order to support and protect the private producers who generate these externalities (for a careful discussion of the economic arguments see OECD, 2001a).

### *General Assessment*

By now many of the arguments in favor of, and against, granting multifunctionality a separate role in agricultural policy-making and the negotiations have been extensively analyzed, and there are different publications arguing both sides of the policy debate (European Union, 1999; Royal Ministry of Agriculture Norway, 1998; Ministry of Agriculture, Forestry and Fisheries, Japan, 1999; OECD, 2001a; ABARE, 1998; USDA 1999). Most of the discussion so far has centered on whether the benefits of multifunctionality are jointly and inseparably obtained with agricultural production (and therefore if a country wants those benefits it has to support production, possibly distorting trade in the process), or whether the benefits have a separate existence (and thus can be generated through non-distorting measures, possibly those already considered in the Green Box of the WTO). Of course it is also important to determine whether there are missing markets, and even if that is the case, whether private collective action can solve the problem, before resorting to government action. And even after all those issues have been properly addressed, there is still the issue of what are the appropriate policy interventions: there may be several of them that need to be evaluated, or, even, it may be the case that no adequate policy instruments are available. Recently the OECD (2001a) presented a very detailed economic framework for analysis of alternative policies.

Criticisms point to the assumptions, policy implications and instruments utilized. For instance, showing that a productive sector (in this case agriculture, but similarly for others) has positive externalities for the rest of the society does not necessarily imply that production has to be especially encouraged beyond the level that it would have normally attained under no intervention. If the multifunctionality effect is separate from production, then it is better to subsidize directly that effect, rather than production.

If for some reason the postulated externalities emerge only as inseparable joint products with production, then there are still other issues to consider. For one, the sector may have negative externalities as well, such as damages to the environment and biodiversity (see

for instance European Environment Agency, 2001). Widespread use of chemicals, fostered by high prices of agricultural products due, in turn, to subsidies and protection, adversely affect soil and water quality. High levels of animal manure originating from intensive livestock production damage drinking water quality. Intensive farming and overgrazing leads to habitat loss and reduced biodiversity. The multifunctional effect of scenic vistas may also be damaged by farms with negative externalities (odor, pesticide use, habitat destruction).

Moreover, subsidizing a sector to make it expand beyond what would have otherwise been its normal level will increase its use of all types of resources from the economy, competing with other sectors. To the extent that some of those resources are not completely idle, costs of production will increase in the non-subsidized sectors, which may force them to contract. Then cost-benefit analysis would be needed to assess whether the costs of encouraging a sector beyond its “natural” level (in terms of the main products and of the externalities attached to them) may be larger than the benefits, considering the production and multifunctionality effects that may have been lost in other sectors.

Different studies of agricultural policies in industrialized economies have shown the welfare costs they are imposing on the rest of the society (and also the world; see below), although not all claimed multifunctional effects have been factored into those studies. Simulations of reductions of agricultural support in industrialized countries show important benefits for those countries (see, for instance, Sharma, Konandreas, and Greenfield, 1996; Goldin and van-der-Mensbrugge, 1995, for the Uruguay Round; and Hertel, et al 2000; USDA/ERS, 2001; ABARE, 1999; for the current negotiations). This is in part the result of consumers and taxpayers in rich countries receiving the equivalent of a tax cut in the form of less border protection and reduced fiscal transfers (or of being taxed with less distorting instruments, if import taxes are replaced with other revenues).<sup>9/</sup> Although not all those payments are net welfare losses for the society as a whole (because farmers receive part of what the consumer and the taxpayer transfer), they are still substantial: for OECD countries transfers from consumers amounted to about 170 billion US dollars per year during 1998-2000 and direct fiscal transfers to more than 80 billion US dollars per year (not counting general services for agriculture; OECD, several issues). In addition there are also production-side costs resulting from a less efficient allocation of resources. However, as agriculture represents a smaller fraction of the industrialized countries’ economies, the costs of the ISA (now), although important, do not necessarily have the same relative relevance for those countries as the ISI had for developing countries (then). This fact has important implications for how the costs and benefits of those policies are divided within and across countries (see below).

Even if there is undersupply of net positive externalities for the society as a whole (considering the agricultural sector itself and the impact on other sectors) due to the lack of production of the basic items that generate them, it is still a question of what is the best

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<sup>9</sup> Some critics have utilized those numbers as a demonstration of the lack of equity of the Agreement on Agriculture. Although there are indeed imbalances in the AoA, the criticisms utilizing the results from those studies are based on misunderstandings of how welfare is measured.



policy to foster those externalities. As shown before, most economic analysis would argue that the first-best alternative would most likely not be trade protection. For instance, if the concern is about rural livelihoods, it is not clear, nostalgia aside, that the most beneficial intervention on behalf of rural populations would be to target the agricultural sector per se instead of the geographic area in general with (say) tourism infrastructure and telecommunications. For environmental protection it would be better to subsidize directly the desired environmental practice. In other cases different approaches can be tried such as buying the land and selling it to trusts that can then administer the land according to best practice (which also goes towards scenic vistas). Also, even within a range of possible trade and/or production distorting policies, measures other than the ones currently applied may generate the desired multifunctional effects (Blandford, 2000).

Other criticisms, as in the case of the ISI, focus on the consequences of widespread government intervention for rent seeking and, eventually, corruption. The European Union's innovative efforts to monitor payments made under the 1992 CAP reforms display the unavoidable enforcement problems associated with subsidies in practice (see, for instance, Commission of the European Community, 1999; OLAF/ European Anti-Fraud Office, 2001). Even in the case of zero corruption, the influence of a well-informed and interested group of farmers, combined with (perhaps equally) interested bureaucrats dispensing the subsidy, will tend to produce a public good beyond its maximum net benefit for the society.

Another important issues to evaluate ISA, also discussed in the context of the ISI, are equity and income distribution. One of the objectives of the agricultural policies in many industrialized countries has been to bring agricultural incomes in line with the rest of the population. By and large, this objective seems to have been attained and perhaps exceeded in some industrialized countries (OECD, 1999). But those policies are also reinforcing unequal income distribution patterns within agriculture, with agricultural support mostly received by the largest farmers (OECD, 1999). A better way would be to target income transfers to smaller farmers or low-income farmers, but both in the EU and the US measures intended to cap the amount transferred to large farmers have faced strong resistance. Equity concerns must include also wider calculations considering consumers and taxpayers in general. Market protection to support agriculture increases the price of food and hurts the poor, who spend a larger share of income in those products. And the equity impact of budget transfers will also depend on the structure of taxes (OECD, 1999).

So far the discussion has focused on the impacts in the countries that claim the need to support their own agriculture to maintain its multifunctional effects. However, through the linkage of world markets, agriculture is affected globally through individual countries' policies. In what follows two different issues related to the concept of multifunctionality and the special role of agriculture, which have been less analyzed but whose implications for developing countries may be more significant, are discussed. The first point concerns what multifunctionality is being discussed, since the term seems to encompass several components. The second point concerns whose multifunctionality is

being addressed through the suggested policies, to the extent that there are distributional issues involved.

*What multifunctionality?*

The fact that different concepts are put together under a single name such as multifunctionality, or non-trade concerns, does not necessarily imply that they have strong similarities: important distinctions may be needed among those multifunctional effects, and, even more complicated from a policy perspective, there may be trade-offs among them.

Here the point is the possibility of differentiation within each of those concerns and across countries: all of them seem to have completely different meanings for industrialized countries, on the one hand, and for the variety of developing countries, on the other. For example, the issue of rural employment and vitality of rural communities in industrialized countries, where subsidies are predicated in part on the need to support a choice of life style, is completely different in developing countries where most of the population is in agriculture, not because that is where they want to be, but because the development process has not offered them other alternatives (FAO, 2000, p.65; WTO/India, 2001).

Also the notion of food security appears to have different meanings for different countries. Currently the WTO recognizes various classifications of countries: developed, developing, least developed (LDC), and net food importing developing (NFIDC). A recent study utilizes various methods of cluster analysis and data on five measures of food security (food production per capita, the ratio of total exports to food imports, consumption of calories per capita, consumption of proteins per capita, and the rural/non-rural population share) to classify 167 countries (including industrialized and developing ones) according to their food security profiles (Diaz-Bonilla et al., 2000). The analysis identifies 12 distinct clusters characterized by similarities and differences across the various measures. Among other things, the typology shows, unsurprisingly, that all developed countries are included in food secure categories. These results suggest that the notion of food security introduced as part of the multifunctionality of agriculture, or, more generally, among non-trade concerns, has a very different meaning in developed and developing countries. Maintaining the same label for altogether different situations in industrialized and developing countries (with further differentiations among the latter) only obscures the issues being negotiated (Diaz-Bonilla et al, 2000).

Environmental problems in agriculture also differ across countries, appearing mostly as pollution of land and water, due to excess use of agrochemicals in industrialized countries (in part, a consequence of generous production subsidies) and degradation and overuse of natural resources in developing countries (resulting mostly from poverty and lack of financial support to improve technology). Finally, the issue of maintenance of rural landscapes in industrialized countries, as a way of allowing urban dwellers scenic vistas and the possibility of country-side relaxation, does not seem to have an obvious equivalent in impoverished developing countries.

Therefore, from the perspective of developing countries, if the notion of multifunctionality is utilized during the negotiations, an important effort may be needed to identify exactly which is the nature of non-trade concerns as they apply to low and middle-income countries, avoiding the confusions that may be generated by using similar labels for altogether different situations. In any case, it is not clear that the main concerns of developing countries cannot be presented using more traditional argument linked to poverty alleviation, food security, and rural development, without the need to resort to new and more controversial notions such as multifunctionality.

### *Whose multifunctionality?*

If the premise that multifunctionality is a joint product with agricultural production is provisionally accepted for the sake of argument, the immediate problem is whose agricultural production levels are being supported and whose may be hurt in the process. Given some level of demand for food and agricultural products determined by income, prices, population, and tastes, any attempt at expanding production in a group of countries on account of the multifunctionality effects would negatively affect agricultural production in countries that do not have the resources to subsidize agriculture. The global implications of ISA, given the larger weight of industrialized countries in world agriculture (about 40 percent, clearly above the less than 25 percent share of developing countries in world industry; see Table 2), may be substantial.

Different studies before the Uruguay Round, during the Round, and now evaluating current negotiations, have tried to quantify the impact on developing countries of agricultural protectionism in industrialized countries. They usually predicted substantial positive effects on developing countries' income, production, and exports of agricultural and agroindustrial products from an eventual reduction of tariffs and other forms of agricultural protection and subsidization in industrialized countries (Valdés and Zietz, 1980; Goldin and Knudsen, 1990; Sharma, Konandreas, and Greenfield, 1996; Goldin and van-der-Mensbrughe, 1995; Hertel, et al 2000; USDA/ERS, 2001; ABARE, 1999; Diao et al 2002).<sup>10</sup>

For instance Table 3 and 4 show the percentage change in agricultural production (including primary and agroindustrial food products) that may result in developing countries and transition economies from the elimination of protection and subsidization in developed countries, as calculated from Diao et al (2002). Production increases by more than 42 billion dollars (in real terms) compared to the baseline, with the largest changes in Latin America and Asia (Table 3). The more disaggregated Table 4 shows that all the developing countries and regions increase their production, although with variations (some of the large increases are from low base values).

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<sup>10</sup> The reference is to production because multifunctional effects have been linked to it. In the simulations however, production effects may be different from overall welfare effects, depending on other issues such as changes in terms of trade.

To the extent that the notion of multifunctionality has been suggested mainly by industrialized countries, which have the resources to utilize those subsidies, the result of such an approach may be more production and multifunctional effects in richer countries, and less of both in developing countries, which cannot afford such policies. Considering that agriculture and agroindustry are the main economic activities in many developing countries, particularly poor ones, and that such activities usually have significant growth multipliers for the whole economy (see, for instance, Delgado et al, 1998, for Africa), the level of non-realized benefits (including the multifunctional effects) for those economies as a consequence of the expansion of agriculture in subsidizing countries, may be significant.

In summary, the notion of multifunctionality does not solve the issue of distributive effects across countries; it simply adds another dimension. There is always the question of whose production and, multifunctional effects, expand or contract as a result of protection and subsidization.

## **V. AGRICULTURE AND INDUSTRY IN THE GATT AND WTO FRAMEWORKS**

While in the previous sections the policy issues related to the different approaches to agricultural and industrial development were discussed, here the focus is on the legal treatment under international trade obligations for those sectors. It is clear that agricultural and industrial goods were treated differently in GATT (Josling et al., 1996), and although some of the most obvious differences have been narrowed during the Uruguay Round negotiations leading to the creation of the WTO, they are still subject to separate disciplines. A point to be noticed is that in note 2 to Article XVI Section B, primary products are defined as “any product of farm, forest or fishery, or any mineral, in its natural form or which has undergone such processing as is customarily required to prepare it for marketing in substantial volume in international trade.” This implies that many of the “agricultural” products treated differently, are in fact agroindustrial goods (meat, sugar, dairy products, and so on). Therefore, the differential treatment under GATT and the WTO is not only between primary agriculture and industry, but also between those industries based on agricultural raw materials and the rest of the manufacturing sector (Diaz-Bonilla and Reza, 2000).

The main differences in legal treatment under GATT and WTO regimes are discussed below.

### *Quantitative Restrictions*

GATT regulations, through Article XI *General Elimination of Quantitative Restrictions*, prohibited quantitative restrictions (quotas, import or export licences or similar measures) for goods in general. However, the same article included, in paragraph 2 (c), an exception for “agricultural or fisheries product, imported in any form (understood as “the same products when in an early stage of processing and still perishable, which compete directly

with the fresh product and if freely imported would tend to make the restriction on the fresh product ineffective”), necessary to the enforcement of governmental programs for those products or to remove temporary surpluses.

Over time, however, other types of quantitative restrictions, such as voluntary export restraints, orderly marketing arrangements, or similar export and import measures (referred as to “grey area” measures), were increasingly utilized, affecting mostly industrialized products. During the Uruguay Round those “grey measures” were prohibited in general, and it was agreed that those existing had to be phased out.

Yet, for agricultural goods, the negotiations maintained some quantitative restrictions, although on a more limited basis. The general rule was that all border measures in agriculture other than ordinary customs duties (such as quantitative import restrictions, variable import levies, minimum import prices, discretionary import licensing, non-tariff measures maintained through state trading enterprises, voluntary export restraints and any other schemes) had to be transformed into tariffs (the so-called “tariffication” process), and then reduced over the six year implementation period, by 36% (simple average) with a minimum rate of reduction of 15% for each tariff line. Developing countries could apply 2/3 of the rates of reduction indicated above. But tariff-rate quotas<sup>11</sup> were allowed to guarantee current access and minimum access (where there were no significant imports, minimum access opportunities had to be offered, beginning in the first year of the implementation period with not less than 3% of corresponding domestic consumption in the base period, and expanded to reach 5% of that base figure by the end of the implementation period). Also there was an exception for the tariffication of sensitive products under strictly defined conditions, leading to the possibility of utilizing tariff-rate quotas for some specific products in a reduced number of countries (originally only four countries applied to these provisions: Japan, South Korea, Philippines, and Israel).

### *Safeguards*

The Uruguay Round also clarified the rules for Safeguards, the trade constraints that countries can use to protect any productive sector when it is threatened by an unexpected surge in imports that can cause injury to that sector (Agreement on Safeguards of the WTO). But again another exception was created for agricultural products: the creation of a “special safeguard” for agricultural products that have complied with the “tariffication” of previous non-tariff barriers. This trade remedy is different from the normal safeguard of Article XIX of the General Agreement. The latter requires proof of injury to the domestic producers from imports and the granting of compensation (i.e. opportunities for market access in other products that are equivalent in trade value to the trade reduced due to the safeguard). The “special safeguard” for agriculture, however, does not require

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<sup>11</sup> A tariff-rate quota includes two components: a quota up to some defined quantity (that still may pay a tariff), and a high tariff for imports above that quantity. It differs from a common quota that has only the first component, while under a TRQ there may be imports above that quantity but paying the higher out-of-quota tariffs. In practice these tariffs are very high so no additional imports usually take place. However, as tariffs are reduced in successive negotiations, the quota component of a TRQ may become less binding and tariffs then become the main trade instrument, as was the intent of the tariffication process.

either proof of injury or compensation: it allows the application of additional duties based on a price trigger (i.e. shipments at prices denominated in domestic currencies below a certain reference level) or a quantity trigger (i.e. imports surging above certain levels depending on the current levels of imports as a proportion of consumption). On the other hand, the special safeguard can be maintained only until the end of the year in which it has been imposed, and “may only be levied at a level which shall not exceed one third of the level of the ordinary customs duty in effect in the year in which the action is taken” (Article 5 Special Safeguard Provisions, of the Agreement on Agriculture). The normal safeguard has more latitude in terms of the time period when it is applied (in principle not more than four years, but it can be extended up to a maximum of eight years), and the levels of tariffs or quantitative restrictions utilized (although if quantitative restrictions are imposed, they should not reduce the quantities of imports below the annual average for the last three representative years, unless clear justification is given that a different level is necessary to prevent or remedy serious injury) (see Agreement on Safeguards of the WTO).

### *Export Subsidies*

Probably the most important area of differences in treatment between agricultural and industrial goods is in export subsidies. In the GATT framework Article VI *Anti-dumping and Countervailing Duties*, and Article XVI *Subsidies, Section B*, specified a different treatment for export subsidies for primary products (but see above the discussion on the meaning of primary). Although it was recognized that export subsidies have harmful effects on other countries (Art. XVI, Section B, paragraph 2), GATT contracting parties were only exhorted to “seek to avoid the use of subsidies on the export of primary products”, but if they utilized those subsidies, countries should not apply them in a manner that “results in that contracting party having more than an equitable share of world export trade in that product” (whose meaning was left undefined, and led to many discussion within GATT; see Josling et al 1996).

During the Uruguay Round, export subsidies, in general, were considered in greater detail in the Agreement on Subsidies and Countervailing Measures (ASCM), building on a previous agreement that had been approved during the Tokyo Round. The WTO ASCM establishes that subsidies that are contingent, “in law or in fact, whether solely or as one of several other conditions, upon export performance” (as well as those based on the use of domestic over imported goods), are prohibited. If a WTO member complains and it is found that a country is applying those subsidies, they must be immediately withdrawn; and if this does not happen within the specified time period, the complaining member can withdraw equivalent trade concessions.

Although additional disciplines on agricultural export subsidies were agreed during the Uruguay Round, the differential treatment for agriculture was maintained: those practices were limited but not completely eliminated. WTO members agreed to cut agricultural export subsidies by 36% in value and 21% in quantity over the six-year implementation period compared to the 1986-90 base period level. In the case of developing countries, the reductions are two-thirds those of developed countries over a ten-year period (with no

reductions applying to the least-developed countries).<sup>12</sup> There is some limited flexibility to carry unused levels of subsidies between years.

Compared to export subsidies for other products (which, as indicated were prohibited and had to be eliminated if shown to exist), agricultural export subsidies, if they are within the limits considered in the schedules of the AoA (which established maximum levels per year based on the agreed cuts in value and quantity), receive a less drastic treatment if challenged by other WTO Member. Article 13 Due Restraint (also called the “Peace Clause”) point (c) indicates that “export subsidies that conform fully to the provisions of Part V of this Agreement, as reflected in each Member's Schedule” can be subject to countervailing duties only “upon a determination of injury or threat thereof”, and “due restraint shall be shown in initiating any countervailing duty investigations”; and they are exempted from other possible countermeasures based on nullification or impairment of concessions and/or serious prejudice (as defined in Article XVI of GATT 1994 and Articles 3, 5 and 6 of the Subsidies Agreement).

### *Other Subsidies*

Within the GATT framework Article XVI considered the possibility of subsidies in one country causing “serious prejudice to the interests of any other contracting party” on export or import markets. As indicated during the Uruguay Round, subsidies and possible remedies were considered in greater detail in the Agreement on Subsidies and Countervailing Measures (ASCM). Three categories of subsidies were defined: prohibited (export subsidies and those based on the use of domestic over imported goods); actionable; and non-actionable or permitted subsidies.

The differences regarding export subsidies for agricultural and industrial goods have been discussed in the previous sections. But there is also a differential treatment in the case of the other two general types of subsidies, actionable and non-actionable. In the first case, the ASCM of the WTO indicates that “no Member, should cause, through the use of any subsidy... adverse effects to the interests of other Members, i.e.: (a) injury to the domestic industry of another Member...; (b) nullification or impairment of benefits accruing directly or indirectly to other Members”; and.”(c) serious prejudice to the interests of another Member.” (Article 5 of ASCM). But that Article immediately adds that it “ does not apply to subsidies maintained on agricultural products as provided in Article 13 of the Agreement on Agriculture.”

Subsidies are defined as financial contribution by the government, or income or price support (Article 1 of ASCM) , that benefit a specific (i.e. does not include generic support) industry, groups of firms, or firm (Article 2 of ASCM). Serious prejudice is presumed to exist under certain circumstance defined in the ASCM, particularly when the total ad valorem subsidization of a product exceeds 5 per cent. In those cases, the subsidizing

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<sup>12</sup> Developing countries are also exempted, provided that they “are not applied in a manner that would circumvent reduction commitments”, from cuts on subsidies to reduce the costs of marketing exports of agricultural products or internal transport and freight charges on export shipments (Agreement on Agriculture; Article 9 Export Subsidy Commitments).

member has to show that the subsidies in question do not cause serious prejudice to the complaining member (i.e. the burden of the proof is inverted). In general, actionable subsidies may lead to the imposition of countervailing duties on subsidized imports by the complaining WTO member when they affect a domestic industry. But in other cases (such as when subsidies are displacing exports of the complaining country in a third market), the disputes are referred to the dispute settlement process, and if it is determined that there are adverse effects, the subsidizing member must withdraw the subsidy or compensate the complaining party with access in other products.

The third category of non-actionable subsidies include those that are not specific (as defined in Article 2), and three exceptions defined in Article 8.2 (a), (b) and (c). These exceptions include assistance to industrial research (up to 75% of the costs) and pre-competitive development activity (up to 50%), assistance to disadvantaged regions, and some environmental subsidies (all those exceptions have additional conditions to qualify as such). Still, if another member complains that a non-actionable subsidy is causing serious adverse effects to its domestic industry, the issue enters the process of consultation, negotiations, and eventual dispute settlement.

The ASCM also exempts Least-developed countries and developing countries that have less than 1000 dollars of income per capita from disciplines on prohibited export subsidies, and they have 8 years to eliminate other prohibited subsidies. For other developing countries, the export subsidy prohibition applies after 8 years and the elimination of other prohibited subsidies after 5 years (7 for transition economies). There are also special provisions regarding the application of countervailing duties, and other remedies when the subsidizing WTO member is a developing country, in the case of privatizations, and for countries in transition towards market economies.

But while those rules apply to goods in general, agricultural products are again treated differently. Article 13 b) of the Agreement on Agriculture indicates that domestic support measures in the Green Box are (i) non-actionable for purposes of countervailing duties; (ii) are exempt from actions based on claims of injury, nullification and impairment of concessions, and serious prejudice; and (iii) are also exempt from actions based on non-violation nullification or impairment of the benefits of tariff concessions.<sup>13</sup> Further, Article 13 c) also exempts domestic support measures under Article 6 of the AoA (which includes the Blue Box, used now mostly by the EU; the *de minimis* levels of support in developed and developing countries and subsidies given to low-income and resource-poor farmers and some other subsidies permitted for developing countries) from (i) the imposition of countervailing duties unless there is injury (and due restraint shall be shown in initiating any countervailing duty investigations; (ii) from actions based on claims of injury, nullification and impairment of concessions, and serious prejudice, if the subsidies on a commodity basis did not exceed those budgeted for the 1992 marketing year; and (iii) from actions based on non-violation nullification or impairment of the benefits of tariff concessions, with, again, the limit of 1992 by commodity.

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<sup>13</sup> This is a special claim that a country can make against other country, arguing that even though the latter did not violate any specific WTO rule, it is doing something that the first country claims is reducing or eliminating the value of trade concessions.



In summary subsidization and protection of the agricultural sector is permitted to an extent not allowed for industrial products, while at the same time the possible actions to counter those practices by the countries affected are more limited, particularly due to Article 13 of the Agreement on Agriculture. Without discussing the welfare implications of this asymmetry, at least in legal terms there appears to be an imbalance between what developing countries can do for their industry and what developed countries can do for their agriculture. Some have called the latter a special and differential treatment for rich countries. Developed countries have maintained enough legal room under the WTO, and have the financial resources, to implement the variety of policies in agriculture, while developing countries, although also having enough legal room of maneuver on agricultural policies, often lack the needed financial resources to implement those policies, while facing some constraints on how to defend themselves from the agricultural policies of industrial countries. This situation is different in industrial goods, where developing countries appear more tightly constrained on policies aimed at subsidizing and protecting their industries, while developed countries retain more legal instruments to counter possible undesired practices from developing countries.

Certainly the adequate answer (in welfare terms) to this imbalance it is not to ask for developing countries to have more legal access to distorting policy instruments for industrial development (which, not even counting the possible negative welfare effects for developing countries themselves, is a battle that no amount of legal freedom can compensate given the disparity of financial resources between industrialized countries and the rest), but to move agriculture further into full integration of WTO rules.<sup>14</sup>

## **VI. THAT WAS THEN BUT THIS IS NOW**

This paper presented two cases where governments have found cause to subsidize certain sectors based on their expected multiple contributions to public welfare. A notion of multifunctionality was clearly behind support for industry in developing countries, particularly in the first decades after WWII. During the 1950s and 1960s there was a fairly broad consensus that industrial development in developing countries would lead to several desirable side effects: independence from the metropolis, nation building and national security, modernization of their societies, social mobility, employment, urbanization which was linked to more modern attitudes to government and society, the reduction of the impact of external shocks amplified by the dependency on primary products, and technological development, among other things. In this case (as it is now argued regarding the multifunctionality of agriculture), the policy implication was that government intervention (through trade protection, subsidies, and other special policies) was required to develop an industrial base that had a social value higher than markets

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<sup>14</sup> It should be noted that although the WTO legal system restricts the range of instruments that can be utilized to develop the industrial sector, the policies restricted are usually the most controversial in terms of net welfare effects for the country applying them, while those allowed still include a variety of measures that can be utilized within a vision of industrial development based on science and technology (Amsden, 2000). These measures, utilizing the terminology of the Agreement on Agriculture, are in most cases equivalent to those of the Green Box.

alone would suggest. But, also as in the case of multifunctionality of agriculture now, the problem was that extreme support for a sector had, as a counterpart the discrimination against other productive activities. Expanding the industrial sector, whatever its multifunctional qualities, affected production and employment in other sectors (such as agriculture), and some argued further that excessive protection and subsidization of industry decreased the level of welfare for the society as a whole. It was also claimed that the ISI strategy, although not necessarily industrialization per se, had negative impacts on income distribution, and that the pattern of development was more capital intensive than necessary, leading to chronic unemployment. Even in terms of external accounts sustainability, import substitution industrialization may have made developing countries more, and not less, vulnerable to external shocks. The accumulation of all these negative impacts on society of the excess support for industry led to a reevaluation of the ISI strategy in many developing countries, towards a more balance path between agriculture and industry, as well as between domestic and export markets.

Yet, from the point of view of the world economy, given the relative size of developing countries in the world economy, and the importance within their own economies of agriculture and industry (Table 2), the costs were borne basically by the countries following the ISI strategy -a key distinction from ISA in industrialized countries, which, as argued, has a larger weight in the world economy and important global effects.

Now developed countries invoke similar multifunctional arguments for agriculture. And it is also clear that subsidization and protection of agriculture in industrialized countries is imposing costs on the rest of their economies, as inefficient industrialization did in the case of developing countries. But industrialized countries are richer than developing countries and the share of the agricultural sector in their economies is small (Table 2): therefore the costs for industrialized countries of expanding the multifunctionality of agriculture beyond its non-subsidized levels, could in principle be absorbed by their societies without the relatively larger economic problems that extreme ISI appears to have caused to several developing countries.

However, while the industrial sector in developing countries fostered by ISI was relatively small compared to the industrial world economy, the agricultural sector in industrialized countries fostered by ISA represents a larger fraction of world agriculture (Table 2). Therefore, a manifestation of encroachment upon other sectors from the expansion of agriculture in rich countries appears mainly when the multifunctional effects are analyzed beyond the domestic economies of industrialized countries. Through the linkage of world markets, agriculture is affected globally. If all agricultural sectors generate externalities, policies subsidizing agriculture in some countries and encouraging their expansion beyond what would have been the case without that support, implies that the agricultural sector in other countries may be forced to contract (or grow less than what would have been otherwise the case). In this way, some countries would be denied the multifunctional benefits of their agricultural sectors. The old argument regarding the bias against agriculture due to the emphasis in industrialization can then be translated into the most recent discussion regarding subsidized production in industrial countries displacing production in developing countries.

A point already noticed is that the current distinction in the WTO texts (and before in GATT) is not between agriculture and industry in the disciplines applied, but between agriculture primary goods and agroindustrial food products, on the one hand, and the rest of the industry on the other. For instance beef and sugar are agroindustrial goods, which generate a good portion of the employment in the processing segment. This implies that it is not only the farmer or the rural economy that may be affected differently by this separate treatment, but also workers and entrepreneurs in the agroindustrial sector, some of them located in the urban sector. Therefore the possibility of expanding employment in developing countries both in the rural and urban economies may be hampered by this differential treatment of agricultural and agroindustrial goods (Diaz-Bonilla and Reca, 2000).

But whatever the economic arguments, the limitations under WTO of the instruments to promote the multifunctionality of industry in developing countries while maintaining the instruments to promote the multifunctionality of agriculture in industrialized countries would be a case of glaring legal imbalances between the rights and obligations of countries under the WTO. Certainly, as it was argued, the adequate approach considering the welfare implications is to move agriculture further into full integration of WTO rules, rather than developing countries trying to have additional legal access to distorting policy instruments for industrial development: even without factoring the possible negative welfare effects for developing countries themselves of such policies, it seems clear that they cannot possibly win a battle of subsidies against industrialized countries.

Yet, if the notion of multifunctionality in agriculture is eventually incorporated in the current negotiations, it would seem important to differentiate between the sets of issues of interest for industrialized countries and those that mostly affect developing countries, specially the poorer ones. Rather than talking about multifunctionality as a single notion, it would be better to separate non-trade concerns and then analyze them separately for different categories of countries. As argued before, the several components involved in the notion of multifunctionality (food security, employment, rural lifestyles, environment, and the like) assume very different forms in industrialized and developing countries. By mixing all those disparate aspects, the negotiations risk losing sight what is important for developing countries, particularly the poorest ones.

In any case, the argument in support of a legal treatment under the WTO that ensures rural and agricultural development in developing countries may not need new and debated notions such as multifunctionality, and can be more effectively based on traditional arguments linked to growth dynamics, poverty alleviation, food security, and environmental issues, as they apply to those less favored countries. Further, the notion of multifunctionality may be not only unnecessary for developing countries to support the policies needed for rural development, but may also be harmful. As argued, this would be the case if it leads mostly to expand the production of industrialized countries more than what would have been the case without the additional support predicated upon such notion. In that case, agricultural production in developing countries (and the multifunctional effects linked to it) would contract because of the excess of subsidized

production in industrialized countries. This may be the case even under the more restricted debate of whether there are Green Box measures that are less production and trade distorting than those currently being suggested by the advocates of the notion of multifunctionality.

## REFERENCES

Anderson, K., and Y. Hayami. 1986. *The political economy of agricultural protection*. Sydney: Allen & Unwin Australia Pty Ltd

Anderson, K., Y. Hayami, and M. Honma. 1986. The growth of agricultural protection. In *The political economy of agricultural protection*. Sydney: Allen & Unwin Australia Pty Ltd

Australian Bureau of Agricultural and Resource Economics (ABARE). 1999. 'Multifunctionality' A Pretext for Protection?. *Current Issues*, 99 (3), August.

Australian Bureau of Agricultural and Resource Economics (ABARE). 2000 The Impact of Trade Liberalization on Developing Countries. ABARE Research Report 2000.6. July 2000

Ambrose, Stephen. (1980) "Rise To Globalism. American Foreign Policy 1938-1980" Penguin Books. England

Amsden, A. 2000. Industrialization Under New WTO Law. Paper presented at UNCTAD X, January 26-27, Bangkok, Thailand.

Balassa, B. and Associates. 1971. *The Structure of Protection in Developing Countries*. Baltimore: The Johns Hopkins University Press.

Balassa, B. 1977. *Policy Reform in Developing Countries*. Oxford: Pergamon Press.

Balassa, B. 1980. *The Process of Industrial Development and Alternative Development Strategies*. *Essays in International Finance*, no. 140. Princeton: Princeton University.

Balassa, B. et al 1982. *Development Strategies in Semi-Industrial Economies*.

Balassa, B. 1984. Adjustment Policies in Developing Countries: A Reassessment. *World Development*, September.

Balassa, B. 1986 a. Policy Responses to External Shocks in Developing Countries. *American Economic Review*, May.

Balassa, B. 1986 b. *Outward Orientation*. World Bank Development Research Department Discussion Paper No.148 Washington DC: World Bank.

Baldwin, R. 1969 "The Case Against Infant Industry Protection," *Journal of Political Economy* 77, (May-June), pp. 295-305

Bauer, P.T. 1972. *Dissent on Development*. Cambridge: Harvard University Press.

Bhagwati, J. (1971), "The Generalized Theory of Distortions and Welfare", in Bhagwati et al (eds). *Trade Balance of Payments and Growth: Papers in International Economics in Honor of Charles Kindleberger*, North-Holland, Amsterdam.

Bhagwati, J. 1982. Directly Unproductive Profit Seeking (DUP) Activities. *Journal of Political Economy*, vol. 90.

Bhagwati, J. 1993. *India in Transition: Freeing the Economy*. London: Oxford University Press.

Blandford, David. 2000. Are Disciplines Required on Domestic Support? Paper Presented at the Canadian Agri-Food Trade Research Network Workshop on Agricultural Trade Liberalization: Can We Make Progress?

Borensztein, E.; Khan, M.; Reinhart, C; Wickham, P. (1994) The Behavior of Non-Oil Commodity Prices. Occasional Paper, No. 112. September 15, 1994. IMF

Brouwer, F.M. and van Berkum, S. 1996. *CAP and Environment in the European Union*. The Hague: Wageningen.

Brown, Seyom. (1983) "The Faces of Power. Constancy and Change in United States Foreign Policy from Truman to Reagan" Columbia University Press. USA

Bruton, H. 1989. Import Substitution. In *Handbook of Development Economics*, ed. Chenery H. and Srinivasan T.N. Amsterdam: Elsevier Science Publishers B.V.

Bruton, H. 1998. A Reconsideration of Import Substitution. *Journal of Economic Literature*, vol. 36 pp. 903-936.

CEPAL 1969. *América Latina. El Pensamiento de la CEPAL*. Santiago de Chile: Editorial Sudamericana.

Chenery H., Ahluwalia M., Bell C., Dulloy J. and Jolly R. 1974. *Redistribution with Growth*. New York: World Bank, Oxford University Press.

Chenery H., S. Robinson, and M. Syrquin, 1986. *Industrialization and Growth. A Comparative Study*. A World Bank Research Publication. Oxford University Press.

Commission of the European Communities. 1999. *Protecting the Communities' Financial Interests and the Fight Against Fraud – Annual Report 1998*. Brussels: European Commission.

Corden, W. Max (1971) *The Theory of Protection*, Oxford University Press, 1971

Corden, W. Max, (1974) *Trade Policy and Economic Welfare*, Oxford University Press, 1974.

Delgado, C.L., J. Hopkins, V.A. Kelly. 1998. *Agricultural growth linkages in Sub-Saharan Africa*. IFPRI Research Report 107. Washington, D.C.: International Food Policy Research Institute.

Diao X., Roe T. and Somwaru A. (2002) Developing Country Interests In Agricultural Reforms Under The World Trade Organization TMD Discussion Paper No. 85 January 2002

Diaz Bonilla, E. (1991) "*Global Grain Wars and Argentina*". Canada Grains Council, 22nd Semi-Annual Meeting. Toronto, October 23, 1991. Canada

Díaz-Bonilla, E. (1999) "*Southamerican Wheat Markets and MERCOSUR*" in J.M.Antle and V.H. Smith (Ed) "The Economics of World Wheat Markets" CABI, 1999

Diaz-Bonilla E. (2001) *Globalization and Agriculture: Some Facts, Interpretations, and Policy Issue*. Chapter 17 of Solbrig, O, Paarlberg, R. and di Castri, F. (Ed) *Globalization and the Rural Environment*. The David Rockefeller Center for Latin American Studies and Harvard University Press. USA 2001.

Diaz-Bonilla, E. and L. Reza. 2000 Trade and agro-industrialization in developing countries. *Agricultural Economics* 23 (3).

Diaz-Bonilla E., and Schamis, H. 2001 "From Redistribution to Stability: The Evolution of Exchange Rate Policies in Argentina, 1950-98". Chapter Three in *The Currency Game: Exchange Rate Politics in Latin America*. Jeffrey Frieden and Ernesto Stein (Editors). Inter American Development Bank and The Johns Hopkins University Press. 2001

Díaz-Bonilla, E., M. Thomas, A. Cattaneo, and S. Robinson. 2000. *Food security and trade negotiations in the World Trade Organization: A cluster analysis of country groups*. Trade and Macroeconomics discussion paper 59. Washington, D.C.: International Food Policy Research Institute.

European Environment Agency, 2001 "Europe's Environment - The Dobbris Assessment - Chapter 22" May 2001

European Union. 1999. *Preparation of the Third WTO Ministerial Conference: Council Conclusions*. October 25, 1999.  
[http://europa.eu.int/comm/dg06/external/wto/officdoc/index\\_en.htm](http://europa.eu.int/comm/dg06/external/wto/officdoc/index_en.htm). Accessed June 8, 2000.

European Union. 2000. Fact-Sheets: Reinforcing control of agricultural expenditure. <[http://europa.eu.int/comm/dg06/publi/fact/fraud/index\\_en.htm](http://europa.eu.int/comm/dg06/publi/fact/fraud/index_en.htm)>. (accessed May 18, 2000).

Eurostep, 1999. *Eurostep Dossier on CAP & Coherence*, prepared for Eurostep by Rian Fokker and Jan Klugkist (Novib). Brussels/The Hague, April 1999

FAO (Food and Agriculture Organization of the United Nations). 1999. *Agriculture, trade and food security: Issues and options in the WTO negotiations from the perspective of developing countries*, vol. 1. Rome, Italy: Commodities and Trade Division, Food and Agriculture Organization of the United Nations.

Fei J. and Ranis G. 1966. Agrarianism, Dualism and Economic Development. In *Theory and Design of Economic Development* ed. Adelman I. and Thorbecke E.

Frank, A.G. (1969) *Capitalism and Underdevelopment in Latin America*. Monthly Review Press. New York

Gaddis, John Lewis (1982) "Strategies of Containment. A Critical Appraisal of Postwar American National Security Policy" Oxford University Press. USA

Gardner, B. L. 1990. The why, how, and consequences of agricultural policies: The United States. In *Agricultural protectionism in the industrialized world*, ed. F. H. Sanderson. Washington, D. C.: Resources for the Future.

Goldin, I., and O. Knudsen, ed. 1990. *Agricultural Trade Liberalization: Implications for Developing countries*. Paris: Organization for Economic Co-operation and Development and Washington, D.C.: World Bank: 488.

Goldin, I., and D. van der Mensbrugge. 1995. The Uruguay Round: An assessment of economywide and agricultural reforms. Presented at a World Bank Conference: The Uruguay Round and the Developing Economies, January 26-27, 1995. Session

Hamilton A. 1791 "Report on the Subject of Manufactures" in *The Papers of Alexander Hamilton*. Edited by Harold C. Syrett et al. 26 vols. New York and London: Columbia University Press, 1961—79

Hayami, Y. 1986. The roots of agricultural protectionism. In *The political economy of agricultural protection*. Anderson, K., and Y. Hayami. (Editors) Sydney: Allen & Unwin Australia Pty Ltd

Hayami, Y. 1990. The why, how, and consequences of agricultural policies: Japan. In *Agricultural protectionism in the industrialized world*, ed. F. H. Sanderson. Washington, D. C.: Resources for the Future.

Hertel, T. W., K. Anderson, J. F. Francois, and W. Martin. 2000. *Agriculture and non-agricultural liberalization in the millennium round*. Discussion Paper No. 0016. Adelaide, Australia: Centre for International Economic Studies Policy.



- Hines C. (2000) *Localization A Global Manifesto*. Earthscan Publications. UK, June 2000
- Hirschman, A. 1958 *The Strategy of Economic Development*. New Haven. Yale University Press. USA 1958
- Hirschman, A. 1968. The Political Economy of Import-Substituting Industrialization in Latin America. *The Quarterly Journal of Economics*, February.
- Hirschman, A. 1982. The Rise and Decline of Development Economics. In *The Theory and Experience of Economic Development* ed. Gersowitz, et al.
- Insel, B. "World awash in grain", *Foreign Affairs*, USA, 1985
- Johnson, O. 1984. *On Growth and Inflation*. IMF Staff Papers, December.
- Johnston B. and Mellor J. 1961. The Role of Agriculture in Economic Development. *American Economic Review*, vol. 51, no.4.
- Jorgenson D. 1967. *Surplus Agricultural Labor and the Development of a Dual Economy*. Oxford Economic Papers, November.
- Josling, T., S. Tangermann, and T.K. Warley (1996) *Agriculture in the GATT*. McMillan Press U.K. and St. Martin's Press, USA. 1996
- Kemp M.C. (1964) *The Pure Theory of International Trade*, Prentice-Hall, Englewood Cliffs NJ.
- Kerr, C., Dunlop, J.T., Harbison, F., and Myers, C.A. 1964. *Industrialism and Industrial Man*. New York: Oxford University Press.
- Koester, U., and M. D. Bale. 1990. The common agricultural policy: A review of its operation and effects on developing countries. *World Bank Research Observer* 5(January): 95-121.
- Koester, U., and S. Tangermann. 1990. The why, how, and consequences of agricultural policies: The European community. In *Agricultural protectionism in the industrialized world*, ed. F. H. Sanderson. Washington, D. C.: Resources for the Future.
- Krueger, A. 1974. The Political Economy of the Rent Seeking Society. *American Economic Review* 66 (May) : 1-19
- Krueger, A. 1978. *Liberalization Attempts and Consequences*. National Bureau of Economic Research.

- Krueger, A. 1981. Interactions Between Inflation and Trade Regime Objectives in Stabilization Programs. In *Economic Stabilization Policy in Developing Countries* ed. Cline and Weintraub.
- Krueger, A. 1984. Trade Policies in Developing Countries. In *Handbook of International Economics*. Amsterdam: North Holland.
- Krugman, P. and Taylor, L. 1978. Contractionary Effects of Devaluation. *Journal of International Economics*, vol 8.
- Krugman, P. 1997. *Development, Geography, and Economic Theory*. Second Edition. Cambridge: MIT Press.
- Krugman, P. 1994. The Fall and Rise of Development Economics. In *Rethinking the Development Experience*, ed. Rodwin and Schon. Washington: Brookings Institution Press.
- Kuznets S. 1966. *Modern Economic Growth*. New Haven: Yale University Press.
- Kydland F. and Prescott E. 1977. Rules Rather Than Discretion: the Inconsistency of Optimal Plans. *Journal of Political Economy*, 85.
- Lanyi, A. and Saracoglu, P. 1983. *Interest Rate Policy in Developing Countries*. IMF Occasional Paper 22, October.
- Lau, L. 1984. Comments. In *Applied General Equilibrium Analysis* H. Scarf and J. Shoven eds., University of Cambridge.
- Leetmaa S, and Ackerman K. (1999) Export Subsidies. ERS' WTO Briefing Room. Economic Research Service, USDA January, 1999
- Lewis W. A. 1954. *Economic Development with Unlimited Supplies of Labour*. Manchester School of Economic and Social Studies, Vol. 22, May 1954
- Lewis, W.A. 1955. *The Theory of Economic Growth*. London: George Allen & Unwin.
- Lipset, S.M. 1963. *Political Man*, 2<sup>nd</sup> ed. New York: Anchor Books.
- Little, I. 1982. *Economic Development: Theory, Policy and International Relations*. Basic Books.
- Little, I., Scitovsky, T. and Scott, M. 1970. *Industry and Trade in Some Developing Countries*. Paris: Oxford University Press.
- Mahalanobis P.C. 1955 The Approach of Operational Research to Planning in India Sankhya: The Indian Journal of Statistics Vol. 16. 1955

Marshall, A. 1898. *Principles of Economics*, 4<sup>th</sup> ed. London: Macmillan.

Ministry of Agriculture, Forestry and Fisheries, Japan. 1999. Annual Report on Food, Agriculture and Rural Areas in Japan FY 1999 Summary Provisional Translation. <<http://www.maff.go.jp/hakusyo/kaigai/ehakusyo99.htm>> Accessed June 8, 2000.

Mitrany, D. 1951. *Marx Against the Peasant: A Study in Social Dogmatism*. London: George Weidenfeld & Nicolson Ltd.

Murphy K., A. Shleifer, and R. Vishny (1989) Industrialization and the Big Push Journal of Political Economy Vol 97 October, 1989

OLAF 2001, the European Anti-Fraud Office.  
<http://europa.eu.int/comm/dgs/olaf/index.htm>

OECD (Organisation for Economic Co-operation and Development), Directorate for Food, Agriculture and Fisheries. 1999. *Distributional Effects of Agricultural Support in Selected OECD Countries*. Agr/ca(99)8/Final. November 1999. Paris: OECD Publications.

OECD (Organisation for Economic Co-operation and Development), Directorate for Food, Agriculture and Fisheries. (several issues) *Agricultural Policies in OECD Countries: Monitoring and Evaluation*. Paris. OECD Publications.

OECD (Organisation for Economic Co-operation and Development). 2001a. *Multifunctionality towards an analytical framework*. Paris: OECD Publications.

OECD (Organisation for Economic Co-operation and Development). 2001b. *OECD in figures*. Paris: OECD Publications.

Orden, D. 2002. Reform's stunted crop: Congress re-embraces agriculture subsidies. *Regulation*. 25 (1): 26-32

Orden, D., Paarlberg, R., Roe, R. 1999. *Policy reform in American agriculture: Analysis and prognosis*. Chicago: The University of Chicago Press.

OXFAM, 1987 Common Ground. How changes in the Common Agricultural Policy affect the Third World Poor. Prepared by Adrian Moyes. January 1987. OXFAM, UK.

Prebisch, R. 1950. *The Economic Development of Latin America and its Principal Problems*. New York, United Nations.

Prebisch, R. 1968. Development Problems of the Peripheral Countries and the Terms of Trade. In *Economics of Trade and Development*, ed. Theberge, J.D.

Rapp, David (1988) "How the U.S. Got into Agriculture. And Why it Can't Get Out" Congressional Quarterly. Washington D.C. USA.

Rausser, G. C. 1995. *GATT negotiations and the political economy of policy reform*. New York: Springer-Verlag Berlin Heidelberg

Rausser, G. C. 1995. The Uruguay Round and the GATT negotiations. In *GATT negotiations and the political economy of policy reform*. New York: Springer-Verlag Berlin Heidelberg

Rodrik D. (1997). *Has Globalization Gone Too Far?* Institute for International Economics. Washington, D.C.

Rodrik. D. 2000. *Development Strategies for the Next Century*. Paper presented at the conference on Developing Economies in the 21<sup>st</sup> Century, Institute for Developing Economies, Japan External Trade Organization, January 26-7, 2000, Chiba, Japan.

Romstad, E., Vatn, A. Rorstad, P.K., and Soyland, V. 2000. *Multifunctional Agriculture: Implications for Policy Design*. Oslo: Agricultural University of Norway.

Royal Ministry of Agriculture (Norway). 1998. *Non-trade Concerns in a Multifunctional Agriculture—Implications for Agricultural Policy and the Multilateral Trading System*. Paper presented by Norway to the WTO  
[http://www.landbruk.dep.no/landbruksdepartementet/multifunctionality/assets/images/NTC\\_paper.doc](http://www.landbruk.dep.no/landbruksdepartementet/multifunctionality/assets/images/NTC_paper.doc)> Accessed June 8, 2000.

Samuelson P. (1954) "The Pure Theory of Public Expenditure", Review of Economic and Statistics Vol. 36

Sanderson, F. H., ed. 1990. *Agricultural protectionism in the industrialized world*. Washington, D. C.: Resources for the Future.

Schamis, H. 1999. Distributional Coalitions and the Politics of Economic Reform in Latin America. *World Politics* vol. 51 (January).

Schultz, T.W. 1964. *Transforming Traditional Agriculture*. New Haven: Yale University Press.

Sen, A.K. 1983. Development: Which way now?. *The Economic Journal*, December.

Sharma R., P. Konandreas, and J. Greenfield, J. 1996. An overview of the assessments of the impact of the Uruguay Round on agricultural prices and incomes. *Food Policy* 21(4-5): 351-363.

Singer. 1950. The Distribution of Gains Between Investing and Borrowing Countries. *American Economic Review*. May 1950

Tyson, L.D. 1992. *Who's Bashing Whom? Trade Conflict in High-Technology Industries*. Washington: Institute for International Economics.

USDA/Economic Research Service. 1999. *The Use and Abuse of Multifunctionality*. Washington: USDA.

USDA/Economic Research Service. 2001. *Agricultural policy reform in the WTO : The road ahead*. Agricultural Economic Report No. 802. Washington, D.C.: USDA/ERS

Valdés A. and Zietz, J. A. 1980. *Agricultural Protection in OECD countries: Its costs to less-developed countries*. IFPRI Research Report Series, No. 21, Washington, D.C: International Food Policy Research Institute.

World Bank. 1986. *World Development Report*. New York: Oxford University Press.

World Bank. 1987. *World Development Report*. New York: Oxford University Press.

WTO (World Trade Organization). 2000 Note on non-trade concerns. Submission to the November 2000 special session of the WTO committee on agriculture by Barbados, Burundi, Cyprus, Czech Republic, Dominica, Estonia, the EC, Fiji, Iceland, Israel, Japan, Korea, Latvia, Liechtenstein, Madagascar, Malta, Mauritania, Mauritius, Mongolia, Norway, Poland, Romania, Saint Lucia, Slovak Republic, Slovenia, Switzerland, and Trinidad and Tobago. G/AG/NG/W/36Rev.1. Committee on Agriculture. Special Session. 9 November 2000.

WTO (World Trade Organization). 2001. Proposals by India in the areas of : (i) food security, (ii) market access, (iii) domestic support, and (iv) export subsidies. Negotiations on WTO Agreement on Agriculture. G/AG/NG/W/102.

**Table 2. Agriculture and Industry Value Added (percentages)**

	1965	1985	Average 1990s
<i>Developing Countries</i>			
Agriculture Value Added			
*share of world agriculture	59	61	61
*share of developing countries GDP	29	20	14
Industry Value Added			
*share of world industry	15	18	24
*share of developing countries GDP	29	34	24
<i>Industrialized Countries</i>			
Agriculture Value Added			
*share of world agriculture	41	39	39
*share of industrialized countries GDP a/	5	3	2
Industry Value Added			
*share of world industry	85	82	76
*share of industrialized countries GDP a/	40	36	30

Source: 1965 and 1985 from World Bank Development Report 1986; average 1990s for developing countries from World Development Indicators, 2001; late 1990s for industrialized countries, estimated from OECD, 2001b

a/ High income OECD countries

**Table 3. Increase in Agricultural Production a/**

	Increase in billion dollars
Asia	12.6
Latin America and the Caribbean	13.3
Transition Economies	4.8
Middle East	3.5
Africa	6.8
Rest of the Developing World	1.2
<b>TOTAL</b>	<b>42.2</b>

a/ Primary and Agroindustrial Food Products

Source: Diao et al, 2002

**Table 4. Increase in Agricultural Production a/**

	% over base		% over base
China	1.3	Former Soviet Union	3.8
Indonesia	1.1	Rest of Central European b/	2.8
Malaysia	2.7	Turkey	1.7
Philippines	1.2	Rest of Middle East	3.0
Thailand	12.4	Morocco	3.9
Viet Nam	3.7	Rest of North Africa	1.6
Bangladesh	0.4	Botswana	28.2
India	0.5	Rest of SACU	4.6
Sri Lanka	0.8	Malawi	4.9
Rest of South Asia	0.5	Mozambique	2.2
Mexico	1.2	Tanzania	1.1
Central America and Caribbean	7.5	Zambia	3.2
Colombia	1.5	Zimbabwe	5.9
Peru	3.7	Rest of Southern Africa	43.4
Venezuela	0.6	Uganda	0.7
Rest of Andean Pact	3.7	Rest of sub-Saharan Africa	2.1
Argentina	1.6	Rest of world	1.1
Brazil	1.7		
Chile	2.6		
Uruguay	4.1		
Rest of South America	11.8	TOTAL	2.2

a/ Primary and Agroindustrial Food Products

b/ Not including Hungary and Poland

Source: Diao et al, 2002

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