

**Diversification or Specialization:
Challenges for Rural Livelihoods in a Changing World**

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1. Introduction

The process of globalization has become a fact. Firms and individuals face the challenge of adapting to it. Adaptation means reconsidering the way the interactions with the external world used to be, in order to revise them accordingly. This would allow decisions with more and different information and taking action in function of such information. Globalization also means that there is greater awareness of markets for goods and services, in places beyond the usual.

These challenges are faced by rural households in general, but they take a particular form in the case of those dedicated to agriculture². In those households, the degree of interaction with the external world will be determinant of the actions taken and the results. In agriculture it must be considered that not everyone has the same level of interaction with the external world, because of many reasons.

This paper offers an analysis of the challenges faced by households primarily involved in agriculture, facing the process of globalization. As requested, the paper centers on the issue of specialization or diversification. The paper is organized as follows:

Section 2 offers a brief reference to what should be recognized as part of globalization. The current focus on markets for agricultural goods and market distortions is incomplete. It leads to an unfortunate negative perception of globalization and therefore an attitude of protection. Instead there is need for a broader view and a search for opportunities, as discussed here

Section 3 discusses the rationale of decision making in agriculture, with particular reference to the relation between risk and net return. This is a key matter to address the issue of specialization or diversification. This section makes reference to what should be the desired pattern of diversification.

Section 4 describes the main features of agriculture and rural environments in Central America. This particular reference is necessary because, being the Central American countries small, with a reasonable degree of communications, and quite urbanized; their situation is particular and not comparable to the case of the Andean or African rural households.

² Although the title refers to rural livelihoods, this paper addresses primarily the case of agricultural households.

Section 5 examines the composition of income of agriculture oriented households. It shows the alternative means of diversification and the related sources of income and their implications.

The trend in rural incomes and other features in the rural sector has resulted because policies oriented such process. It is then important a brief review of such measures, in order to identify needs for change. This is achieved in section 6.

The previous information allows an analysis in section 7 of a possible pattern of change in agricultural households in Central America, in light of expectations associated with globalization and other factors. The paper closes with some concluding comments on section 8, regarding to policies needed to encourage the right type of diversification.

2. The Meaning of Globalization

Globalization is the process that allows greater interaction among persons, firms and governments around the world. It has occurred because the joint effect of at least three forces: First, the interest associated with international trade, to allow corporations to pursue larger markets. Second, as a result of political interest to capture partnerships, in a world were the communist – capitalist division tended to fade out. And third, it has occurred as a result of innovations in communications. The detail behind these major areas would allow several pages, beyond the scope of these notes.

Although globalization has been fostered by those primary forces, globalization is now to stay. Hence, it must be exploited to the best, by everyone wishing to move ahead.

Globalization includes many dimensions: Internet is a service for the world. It has overcome the benefits of the telephone. It means that more people can communicate on a permanent basis and at a much lower cost. This allows strengthening personal and corporate relations, to acquire knowledge, to advertise products and services, to obtain entertainment, etc.

Financial transactions are made now more rapidly and less expensively. It facilitates business to materialize easily; and it allows international financial flows to be an element of greater influence on the behavior of the international economy. Of course faster financial flows also contribute to a more significant international transfer of financial instability.

Tourism has grown substantially, in part due to the fact that more information about sites and opportunities is more readily available. This includes agrotourism and ecotourism offered by farms of any size and location. As a result, competition is also stronger.

Technological innovations, including those for agriculture and agro industry, can now be obtained anywhere in the world: Equipment, tools, materials, seeds, vegetative tissues and embryos, can be purchased anywhere in the world and ordered by mail and paid by electronic or card transfers.

International flows of goods and services are growing substantially, as a result of compliance with common rules and the countries efforts to lower the barriers to trade. Nevertheless, in the particular case of agriculture major constraints, as subsidies in developed countries, and escalating tariffs for more value added products, distort the common rules and work against the benefits of trade for lower income countries.

Globalization means especially that all actors around the world can participate in global relations under common rules. The WTO Agreements and the several other hundreds of agreements, provide the rules for trade, environmental care, labor relations, sanitary and food safety compliance, etc. As they are accepted by governments, they become mandatory and in many cases force revising previously defined national policies.

Globalization is then a process that contributes to place the attention beyond the local site. However, interestingly, when the discussions focus on global matters, small entrepreneurs ask themselves what they should do about it. The advice has gone in several directions including: Building a partnership with other small firms; produce under contract with a larger firm or one in the next step in the production chain; sell the firm to a larger corporation; and resist the trend for generic products and become differentiated. This latter option of course means more management capacity and a much stronger effort to obtain identity..

Given the above, the question is therefore, how could the small business in agriculture benefit from it?. The three comments on this regard to close this section are: First, learn about its meaning and loose the fear to it. Second, learn how to be part of it: And third, take action to be part of it.

As simple as it would seem to engage in globalization for those individuals with some education and financial resources; the fact is that most small agricultural producers are very far away from being able to take the required steps. The point is then to recognize how each individual or community is currently affected or not by globalization; what challenges and opportunities it faces; and what are the steps to follow to take advantage of it. This is a new form of doing the analysis of opportunities for development, beyond the traditional approach of closed economies and local opportunities.

3. The Rationale of Decision Making in Agriculture

Decisions are taken at the agricultural enterprise in a continuous basis. Their relevance and impact depend on the complexity of the issue and the amount of

resources involved in implementing the decision. Nevertheless, decisions concern to small agricultural enterprises; whether family farms or large agricultural corporations.

In all cases, there are two basic elements that are taken into account: The expected net return of the decision and the implications on risk increase or reduction. The weight provided by each individual to both parameters, depends on his attitudes towards risk. Since the pioneering work of Chayanov (1966), it has been recognized that in general agricultural producers are risk averse. Also, in many cases there is uncertainty (more than risk) when the probability of the expected outcomes is not known.

Other considerations for decision making concern the magnitude of the effort required; the time until the returns are perceived and the requirements of resources, including family labor required. They could in occasions be definitive for the options chosen.

Regarding the risk, this also pertains to various possible considerations. It includes: the risk of market price; the risk of having to engage in larger costs than expected, because sanitary controls; the risk of losing the harvest or part of it, because of weather or other factors; the risk of having the harvest, animals or tools stolen; the risk of being kidnapped; etc. As mentioned earlier, in many of these cases the farmer also faces a high degree of uncertainty.

The exposure to risk means that the producer may not be able to obtain enough income from sales, or that the basic food security of his family is in danger. There may also be the risk that he may not pay his debt, in the case he had borrowed money and lose his property given in guaranty. As each individual has his own risk aversion attitude, and this may vary over time for the same individual, each one places a different value on these aspects when taking decisions.

Most options open to the producer at the farm unit are characterized by its cost, requirement of resources, and the level of return and associated risk. These characteristics apply to crops under different technologies, raising of animals of different species, producing higher value products such as cheeses (instead of selling fluid milk) and handicrafts. In many cases also producers have other options such as off farm employment and other sources of income.

It is in general observed that the portfolio of choices and subsequent decisions of the producer, are guided by Markowitz (1959) principle of the optimal combination of low variance - high negative covariance among the alternatives. Hazell (1970) introduced later the principle of the risk aversion coefficient, as a means to reveal the weight that each individual gives to these parameters when searching for an optimal combination. Even later, Hazell, Pomareda and Valdes (1986) incorporated the option of agricultural insurance in the risk decision

model, to allow a higher level of risk taking, when insurance coverage is available at a given premium.

These decision making principles continue in application today and they are likely to remain. What is new on it is the number of options available to the producer. They have increased in the last years. They will become greater as agricultural producers engage in the process of globalization.

The analysis has leaded us into the questioning of specialization. Apparently this would be the right choice as a sole activity, only under absolute no risk and perfect certainty. It is hard to think of an option in small scale agriculture of such fantastic characteristic. However, there are agricultural enterprises which specialize in one alternative, such as chickens, pigs, oranges, rice, etc. However, the particular conditions that allow for this specialization are found especially when such farm activities are not the primary source of income. That is to say that off farm income comes primarily from other sources.

Specialization may not always be the best option when risk is evident or when risk aversion is high.. However it must be admitted that specialization could allow greater efficiency in production. In that case for example, the programming planting and harvest dates of the same crop allow some degree to adequate risk management.

Considering that farm level specialization may be desirable for technical and efficiency reasons, then there is the issue of whether should specialized farming be encouraged as the only source of income; or should it be primarily pursued as a complementary source of income?. There is a trend in the latter direction. One reason why it is occurring is when there is a positive trend in land value. Thus, the producer keeps the land as long as it increases in asset value: It will be rational to keep it, as long as the discounted net benefit of such decision is positive.

4. Small Scale Agriculture in Central America³

Although the principles discussed in the previous section have general validity in agriculture, they take a particular meaning in the case of Central America. The following paragraphs provide information for this particular case,

More than a geographical space Central America is a socioeconomic and ecological structure. The descendants of the Maya and other cultures remain as the dominant ethnic group, except for Costa Rica. It is true that the urban areas gather a mix of races and cultures, yet being our concern the rural areas, and in particular, small agricultural producers, the social characteristics of the rural population must be a point of entry for the analysis.

³ This brief reference to the region as a whole must be taken with care, as there are differences among countries.

Most small agricultural producers are descendants of the native inhabitants. Their cultures and values hold them strongly to the land and nature. They are agriculturalists, artisans and merchants, in principle; thus the prospects for their performance in other activities than agriculture are possible. However, education age and household commitments, not always allow the change.

The economic and social influences brought in with colonization, exposed them to change and migration towards urban areas. Rural - urban migration has been the most significant feature of demographic change in Central America. However, any of these migrants to the cities are not better off in their new habitat. Nevertheless, it is important to value urban - rural relations as a key element for the development of the region.

From the ecological side, the region has some dominant features: First, a high degree of biodiversity, which in turn explains why agriculture, silvopastoral systems, hunting and fishing were for many years the basis for living in their closed rural economies, until de 19th Century. Second there is a variety of ecosystems: They range between the flat drylands in the Pacific side, the hills and the tropical plateaus of the Atlantic. Third, there is a marked seasonality of the rains, abundant between May and November and almost nil between December and April. And, fourth, natural disasters, including earthquakes and hurricanes, are part of the continuous scenario, and this will not change. Thus, in general the agricultural producers in the region have on one hand alternatives and on the other, reasons for diversification.

The original social communal organization was built on the basis of a wise utilization of natural resources, the productive activities and the need for protection against disasters. They are revealed in the eating habits (strongly dependent on corn tortillas, beans, chilies, tomatoes and local fruits), social and religious gatherings, music and dance. Food security was a principle in the socio political model, because of the high risks of not having enough to eat, until the next season, due to natural disasters. These disasters have affected the stability of production and the available time for farming, as part of it had to be dedicated to reconstruction.

The social and economic structure of the Maya and the characteristics of the ecosystems, were not respected by colonization, which remains as an important force even in this new Century. The presumption of what was good for the White, had to be good for the Indians, encouraged agricultural production systems, and forms of organization, which have not always helped the smaller agricultural producers of the region. Deforestation and extractive agriculture were encouraged by policies aimed at economic growth and accumulation of economic power, but not motivated by development of the local populations. Resource exhaustion and rural poverty then, grew as a natural response.

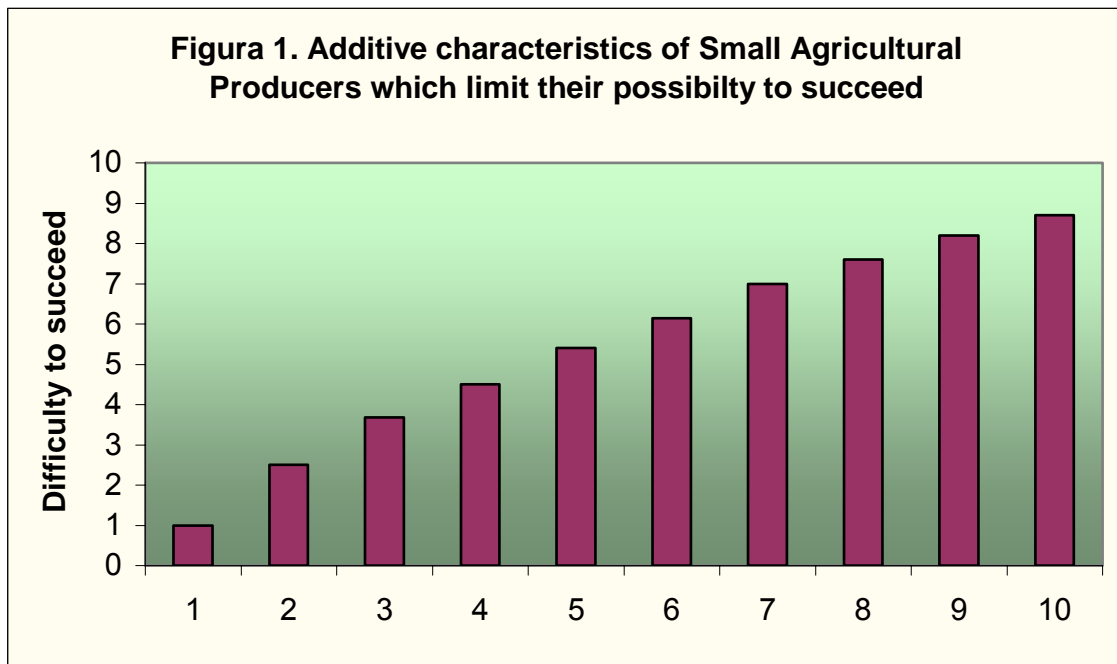
The referred issues are no arguments to go back trying to reconstruct the previous rural systems of Central America. Yet, they must be valued in order to suggest the adequate pattern for the future.

An attempt is made here to refer the main characteristics of small agricultural producers in Central America. Each one of the identified characteristics is additive to the precedent, hence as more of the characteristics are added to the first one, the poorer are the producers and less feasible is to overcome their condition, through farming and even more difficult through specialized farming. Small agricultural producers are:

1. Owners or holders of farm lands, of a size such that can not produce enough for a decent living of the family.
2. Usually located in fragile ecosystems, thus highly exposed to losses, because of natural disasters.
3. Deprived of irrigation water, therefore the land can only be exploited part of the time, with a result of very low productivity.
4. Limited in their availability of tools, equipment and machinery, hence the productivity of labor is very low.
5. Owners of very few low value capital assets, and many times without title of the land; this makes them unable to obtain formal credit;
6. Dedicated to produce basic grains, beans other low profit crops and cattle of low productivity, and dependent on such products for basic food;
7. Limited in their technological knowledge and managerial capacity, hence unable to incorporate innovations and;
8. Isolated from main roads and without access to transportation, hence costs of commercialization and post harvest loses are high, plus prices paid for inputs and services are also high
9. Usually highly risk avert, hence unwilling to bear debts; and
10. Without access to health and other basics services, therefore illness and diseases are common, contributing to low productivity.

Figure 1 provides the hypothetical case of small agricultural producers with increasing difficulties to be feasible, as the referred features mount onto the producers shoulder. Evidently not all features occur in all cases, neither one excludes others. Presenting the situation in this mode allows us to identify critical issues, which need specific policies for improvement.

Along with these characteristics, it should be recognized that many small agricultural producers in Central America, for which some of these constraints were not present or removed, were successful in producing high value crops and livestock products for domestic and international markets. As a result, their income and welfare has improved: Their children are better nourished, many of them went to the university and they become successful entrepreneurs and important local political leaders. Group organization, technology, individual capacity and willingness, were key conditions observed in most successful cases.



The number of successful small agricultural producers in Central America is limited, probably less than five percent. Others manage to live in reasonable conditions. The larger portion live in very miserable conditions, their income places them easily below the poverty line. They are frequently exposed to temporary government relief programs, which provide transitory benefits. Furthermore, such programs are often managed within an environment of corruption and are of low effectiveness.

5. Land Use and Income among Small Producers

A limitation for this research comes from the unknown number of agricultural producers in the region, the size of their land holdings; the crops grown and animals held; as well as the composition of income. There is not recent census

of agriculture in any of the countries. An approximation is that the number of farm units is in the border of one million.

It is estimated that in Central America around 375,000 farm units hold some cattle. The total cattle population is 11 million; thus the average number of cattle per farm would be around 30. Considering that a limited number of farms that hold more than 200 head; most of the farms hold less than twenty head of cattle. That could be considered a small operation, particularly if most of them are for a dual purpose, with milk yields of around 1000 liters/cow/year. Most of these producers also grow other crops, particularly basic grains, plantain and cassava.

In the coffee sector, the most important in Central American agricultural sector; most of the farms are of less than two hectares. CEPAL estimated that, in Central America, there are 291,000 coffee producers. Around 200,000 have average plots of 0.8 hectares and 47,900 have average plots of 3.6 hectares. Even with such a small size of plots, producers who grow coffee used to generate on the average, a reasonable income per hectare, before the coffee crisis of the last three years. Larger incomes among small producers are obtained only by those growing vegetables for domestic and export markets. In this case, the size of plots is smaller than one hectare; and it is limited to the lands of better quality and with water for irrigation.

Small producers in Central America also engage in other farm level activities. They include poultry for eggs and meat produced under contract with commercial plants and distributors. There are around one thousand small broiler operations that hold an average of 5000 chickens, during growth periods of seven weeks. These small producers usually have very small plots; they depend basically on family labor and they are located in periurban areas.

Relating the sources of income of agricultural producers in Central America, few live exclusively from farming. The composition of income comes from: crops, milk and cattle, off farm employment in other farms and other rural activities; and remittances from relatives in urban towns and abroad. This composition varies among regions in each country and among countries. In Costa Rica off farm employment is significant; in Nicaragua remittances from Costa Rica are crucial and in El Salvador remittances from the U.S.A account for almost 50 percent of total family income in the lowest rural income strata.

Small agricultural producers and landless peasants in Central America account for the largest portion of the rural poor. Also, it is estimated that currently the rural poor account for near sixty percent of total population under the poverty line. Even when there are interesting proposals to generate rural income outside agriculture, like in ecotourism and services, it should be recognized that many of the rural poor have limited possibilities to employ themselves outside agriculture. Age, education, location and other factors limit their options.

An important feature to consider in Central America is the location of poor agricultural producers with respect to urban markets or just to roads. In general the situation is not as dramatic as in the Andes or in the larger countries as Brasil. However there are important variations. In general those located closer to roads and towns have been able to generate complementary incomes and receive better prices for their products.

6. What policies contributed to the Current Conditions?

Without any question, there are a number of government policies, which have contributed to the current situation of poor small agricultural producers in Central America. This has happened in contrast with what is observed in Europe, for example, where there is a specific goal to protect the small producer and it is not just the result of having the money to do it. More important than that, this form of agriculture is a model for development.

The model in Central America did not value small agricultural producers as an asset. Rather, they were always seen as a liability. With that view, land reform during the sixties was the means distribute resources in order to pacify the interests. In the seventies and eighties, subsidies to products, inputs and credits were provided to level off the field with the industrial sector: Little was done to assist the small farmers in their route to progress.

Early in the eighties an effort was supported throughout the region, with important contributions from USAID, to assist small producers in the change towards non traditional crops, with a reasonable success in few cases. In the nineties a more radical attitude was taken as part of the structural reform programs: “Small farmers had to organize themselves, change crops and be competitive”. Quite often Ministers of Economics and Trade and even some Ministers of Agriculture, repeated the poorly learned lesson: “Either small producers change or get out of agriculture”. Of course, this did not always happen. Many small producers continued with the same crops, just got poorer and less deprived of opportunities.

Table 1. Policies in the 90’s and their influence on Small Agricultural Producers

Policy Measure	Effect
Agricultural Export Promotion	Creation of rural employment
Urban Bias – maquilas	Migration of the most capable
Diminished tariffs to agricultural products (grains)	Increased imports of grains and lower domestic prices
Financial reform	Higher interests rates for agriculture and more stringent credit conditions
Fiscal austerity	Lower expenditures on agricultural research

	and development and diminished capacity of Ministries of Agriculture
Diminished tariffs on agricultural inputs	Lower costs of production, but benefits were more significant for larger agricultural producers which use imported inputs

Table 1 summarizes the main policies in practice in the nineties and even now, with direct influence on the situation of agricultural producers. In each case, the column in the left identifies the policy measure and the one on the right identifies the policy effect.

Evidently, there is a mix of positive and negative effects, yet the latter outweigh the former. Some of these policies have been in practice for many years, thus they have already created structural changes.

The nature of structural conditions makes it more difficult to change the situation of small agricultural producers, as simple response to market signals. For example, the size of the plots is getting smaller, because of the division of property; the older and less capable are staying at the farm; the quality of the resource base has diminished; water for irrigation is getting scarcer and in general small producers face large transaction costs. These conditions can not be reverted easily, thus the solution of the problem may take many years and only if there is continuity in the policies.

7. Prospective Scenario under Globalization

At the risk of omissions of some important factors, one can expect that the scenario ahead will be dominated by difficult conditions and possibly some opportunities. The expected features would likely include the following:

- Increased difficulties to compete in the international markets for the agricultural products exported from the region. This would lower the possibilities for employment in rural areas.
- Continued negative trend in the prices of basic grains. This would make more difficult for small agricultural producers to produce these crops competitively, unless a portion is produced primarily for family consumption.
- Remaining high tariff protection to agricultural products with higher aggregate value in developed countries. This will make more difficult to create employment in export oriented agro industries.
- Stronger pressure to attend social matters in urban areas. This would leave fewer public resources for agricultural programs and rural infrastructure.
- There is no reason to expect that natural disasters will diminish or lower their damaging effects. This will continue affecting the livelihoods of the rural poor, especially those located in the most fragile environments.
- Opportunities brought by the trade agreements, allowing exports of differentiated higher value products.

- Increasing interest in the provision of environmental services on agricultural farms, thus encouraging practices that are congruent with this goal.
- Rapidly growing technologies for agricultural production and processing which could allow production of higher quality and higher value products.
- Growing tourism (local and international) interested in the rural scenery and culture s an alternative.

The scenario referred is realistic, thus getting smaller farmers out of their current critical situation poses three major challenges. First, the conditions are more difficult regarding competition; second, the structural negative factors have built stronger regarding deterioration of the land and infrastructure; and; third, there are less public financial resources than in the past for poverty alleviation programs.

On the other hand there are opportunities. First, he prospects are reasonably good on markets for differentiated, new and value added products and for services that can be provided by agricultural enterprises. Second, in general markets have become wider in the sense that consumers for specific products and services can be found anywhere in the world. And third, globalization does not deny opportunities to the products and services that built image and quality on the basis of local characteristics.

8. Concluding Comments

The analysis of constraints and opportunities here referred ought to be taken as a point of departure to identify the policy options. Policies should be defined to remove those constraints, but also keeping in mind the goal of positively guided diversification. Hence, the goals of these policies, one at a time and in conjunction, would include.

- Avoid further fragmentation of the land
- Provide water for irrigation
- Built infrastructure and production systems to improve quality of the land
- Improve knowledge and managerial quality of producers
- Improve capitalization of farm units with small size equipment and machinery and basic infrastructure, through longer term credit programs
- Decrease the impact of seasonality on production patterns;
- Develop non-agricultural activities in the farms and local communities, mainly for women and younger people
- Attract investments that create higher quality employment; through tax policy and promotion of rural attributes
- Strengthen local producer organizations in a corporative way; through specific support on management matters

For policies to achieve these goals, they need a substantial change from the current pattern. This has focused on free low-quality agricultural extension and giveaway programs. Governments and donors are responsible for them. Both only create dependence on public sector entities and international agencies; which in turn are used as an argument to perpetuate inefficient bureaucracies. There is a strong need for education and clear messages about the role of government and elimination of the notion that public entities are gift minded. On this regard, a substantial change is needed in the old-fashioned Ministries of Agriculture, Institutes of Agricultural Research and Institutes for Rural Development.

From this analysis it could be concluded that some small agricultural producers may improve their incomes through increased productivity, higher quality of products and adding value if they face globalization with an optimistic attitude. For many of the poor farmers, that may not be possible, or it could not be achieved as fast as it is needed. Even if it was possible, it would not be enough for everyone. Hence, off farm employment is needed. To make this possible, there is a strong need to focus public investment in key aspects as education and health and attract private investment, domestic and foreign, in commercial agriculture, rural agro industries and other activities feasible in rural areas. These firms ought to commit themselves to work with the human resources available and contribute to improve their skills.

A comment needed pertains to the policies needed to allow the addition of value at the farm level and rural areas and to attract investments. At least three matters deserve more attention. First, policies for agriculture must encourage a better relation among actors in the production chain and training of farmers in the “how to” of positive diversification and aggregating value. Second, define specific incentives to attract investment into agriculture; including urban business, the transnational corporations and national food industries willing to assume social responsibility. And third, take a very strong position in international trade negotiations, regarding the need that developed nations eliminate the current tariff structure to agricultural and food products with aggregated value.

A closing remark is much needed: The quality of life of smaller agricultural producers depends strongly in two mayor forces: First, their own effort, to get out of poverty, without expecting more gifts from government agencies and donors. And second, a new framework of policies, to create better conditions for competitive farming and private investments in rural areas. Regarding the latter point, three focal points are: First, more efficient public investments and programs to lower transaction costs; second, a heavy emphasis on programs to create capabilities of individuals and organizations; and third, a strong reliance on private actors and market forces and less emphasis on give away-government managed programs.

Left for the last comment, is the need for a positive image of the rural sector. This is fundamental. Very little will be achieved, if there is not a change from the current view of the rural sector as the worst possible option, to one that sees in it opportunities. ◀

9. References

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