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**POLICIES AND PROGRAMMES TO PROMOTE
AGRO-INDUSTRIALIZATION IN LATIN AMERICA**

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I. INTRODUCTION: The macro context

It must be stated from the outset that this paper deals with only a specific kind of policies to promote agro-industrial development in Latin America, namely those whose aim is to contribute to a change in the production patterns of small-scale agriculture with underutilized productive potential.¹

As is well known, most countries in Latin America have been implementing major economic reforms: where policies of stabilization, deregulation, privatization of public enterprises, trade liberalization, etc. have implied a drastic reduction of the public sector's former heavy involvement in agricultural commodity and service markets.

Given the productive potential of small-scale farmers, there is a need to look for policies to increase their levels of production and productivity in order to enable them to compete under the new rules, instead of being forced out as producers or into a precarious level of subsistence.

In fact, macro-economic and structural adjustment policies have mostly benefited only some producers (mainly large-scale and capitalized); some regions within each country (irrigated and well endowed with infrastructure); and some products (mainly export oriented or of higher value and/or income elasticity) increasing the already high degree of polarization in the agricultural sector.

There is, therefore, the need to redress these trends with a set of differentiated policies for the different types of agricultural producers, among them, those family units that, because of the size or the quality of their resources, have development potentialities that can be realized through linkages with specific types of agro-industries.

The aim of the research project on which this paper is based, was precisely to examine the potential role that agro-industrial development could play in changing production patterns of a sizable number of small-scale producers and to derive some general policy guidelines to achieve this.

To explore the factors determining successful and unsuccessful experiences of contract agriculture with small-scale producers, 62 case studies were carried out in 13 countries² to assess their impact on the demand for labour and on improving access to better technology, products and markets.

¹ The scope of this paper is limited to only one of the linkages that needs to take place if small-scale producers, with underutilized productive resources are to benefit from modernization. Other actions, for those living in the countryside who have no land or very little, include developing employment options in non-agricultural rural occupations, based on the dissemination of flexible specialization technologies; developing local infrastructure; etc.

² The case studies were carried out by ECLAC and FAO and financed by project grants from the Dutch and German Governments.

Before considering some general aspects of agroindustrial contracting it is worthwhile to make two qualifications on agro-industries' direct impact on the demand for labour.

Firstly, if a minimum density of infrastructure, services and human resources are required to attract or make possible the establishment of agro-industries of a certain size, then most probably they will settle at the outskirts of a town near to the primary product base. Moreover, a study of the Ica Valley in Peru (Figueroa, 1996) and evidence from Chile show that agro-industries in urban settings tend to recruit labour force from the immediate urban surroundings and not rural labour force. Thus the direct impact of urban agro-industries on rural employment is probably rather weak.

Secondly, investment per unit of labour in modern agro-industries tends to be rather high and therefore its direct impact on employment is not as high as many proponents of its development for direct labor absorption purposes usually assume.

Medium and large scale agro-industries employed 2 366 000 people in 1990 or 24.4% of the total employed in manufacturing industries, a share that has been maintained over the last 20 years.³ As far as we know, however, there is no information -except in case studies- of where these agro-industries are located.

If Ecuador is any guide on the situation in Latin America, then the average agro-industry is rather small and bigger agro-industries are concentrated in a few regions. Indeed, while the average for the country is some 90 employees per agro-industry, there are only six Provinces -out of 20- with an average of more than 50 employees per agro-industry.⁴

A rather daring conclusion is that a relatively small proportion of medium to large size agro-industries are located in the rural sector⁵ and that most of the rural EAP employed in industries as per the population census (some 3.1 million people)⁶ are in fact working in small to micro enterprises.

Where agro-industries do have a direct strong impact on the rural sector, is on the farmers that supply them with raw material. In the first place as an important buyer of their produce, but often also as an inductor of technological change. It is precisely with this kind of linkages that this paper will be dealing.

³ As defined by the International Standard Industrial Classification (ISIC): food, beverages, tobacco and wood products; medium and large-scale as defined by each country -in most cases, over 50 employees-; data pertaining to 14 countries (source: ECLAC's Programme for the Analysis of Industrial Dynamism (PADI)).

⁴ Agro-industries of ten or more employees, not including the wood industry (Source: INEC (1993): *Encuesta Nacional de manufactura y minería*, Quito, Ecuador).

⁵ Liudmila Ortega, a consultant to ECLAC and FAO, confirmed that most of the agro-industries of a certain size she found in her recent investigations in El Salvador and Honduras were located at the outskirts of towns and not in the rural hinterland; see also Reardon and Stamoulis (1997) on the subject.

⁶ Calculated on the basis of a participation of 22.3% of the total rural economically employed population (EAP) in manufacturing industries (Klein, 1992) and a total rural EAP in 1995 of 47.3 million (CELADE, 1996).

II. AGROINDUSTRIAL CONTRACTING:⁷ Some theoretical considerations

In what follows, the term "vertical co-ordination" will be used for all the situations that fall in between a purchase through the spot market on one extreme, and operations under one and the same ownership on the other extreme, for which "vertical integration" will be used.

In principle, the spot market will be used to organize transactions where a multitude of "anonymous" buyers and sellers gather and for which autonomous adaptation by each party is the prevailing need (Williamson, 1994).

In turn, vertical co-ordination mechanisms will be used for frequent transactions, for just-in-time delivery (Belden, 1992) or where co-operative adaptation between the parties is the prevailing requirement.

Bilateral dependency relations are created when buyers ask providers to make specific durable investments, in order to comply with their requirements. This is so, because the suppliers cannot reorient their highly specific assets -for which an investment was made in view of the transaction- without losing productive value, and the buyers cannot get the necessary supplies easily in case of breach of contract.

In the case of agriculture, the concept of durable investment can be extended to the sowing of a specific crop (even a short cycle one) when it is produced with characteristics and in quantities only usable by the agro-industry or for which agro-industry pays a higher price. The same holds for land used for a certain type of crop that, because of it loses (or gains) fertility or becomes less (more) appropriate for alternative uses.⁸ In dependency circumstances the norm is usually a contract for the duration of one or more seasons, including a series of security clauses, provisions against the revelation of information and dispute settlement mechanisms.

Finally, vertical integration will be the case when the product is of high specificity, when there are economies of scale or of proximity of the place of production with the place of processing (Johnson and Ruttan, 1994) and when the costs of production, supervision and administration are lower than the cost of purchase from third parties.

The agro-industry has therefore three (non excluding) alternatives to determine its sources of agricultural inputs: to buy in the open market; to establish vertical co-ordination with agricultural producers; or to produce those inputs by itself, depending on cost and risk considerations. There are two kinds of costs to be considered: own

⁷ It was found useful to expand the concept of agro-industry as a processor of agricultural raw material to one encompassing any agent that requires a certain volume of agricultural products, with a definite degree of specificity as to quality, volume and moment of availability. Thus, this agent can be an agro-industry, a farmers' cooperative, a fresh products packing industry, an exporter, a broker, a marketing board, a chain of supermarkets, and even a tourist resort.

⁸ The case studies have, for example, reported loss of fertility in the case of tomato plantations by agro-industry on rented land in Peru, and also nematode infestation in the case of Panama, on the one hand, and natural repelling of pests attacking melon after rotation with marigold in El Salvador, on the other hand.

production or purchasing costs of the input as such and transaction costs which, in turn, will depend on the nature of the inputs.

In the case of contracting, transaction costs include: "i) search for suppliers; ii) screening of potential suppliers; iii) negotiation of contracts; iv) transfer of goods, services, or property rights; v) monitoring behaviour for breach of contract; and vi) the enforcement of the contract terms. High transaction costs associated with contracting create an incentive for the firm to utilize markets or internalize the production process" (Runsten & Key 1995, p. 16). In the case of own production they include the cost of organizing, training and supervising personnel.

A contract with a small-scale producer will represent a better alternative compared to own production in the case of agricultural inputs that have no economies of scale and are labour and care intensive.⁹ This is so because part of the household's labour is a non-tradable, has no opportunity cost and is only able to create value within the household.¹⁰ The results of the case studies show this to be by and large correct. However, they also show that the importance of transaction costs is such that they often become the determining factor for not opting for this alternative.¹¹

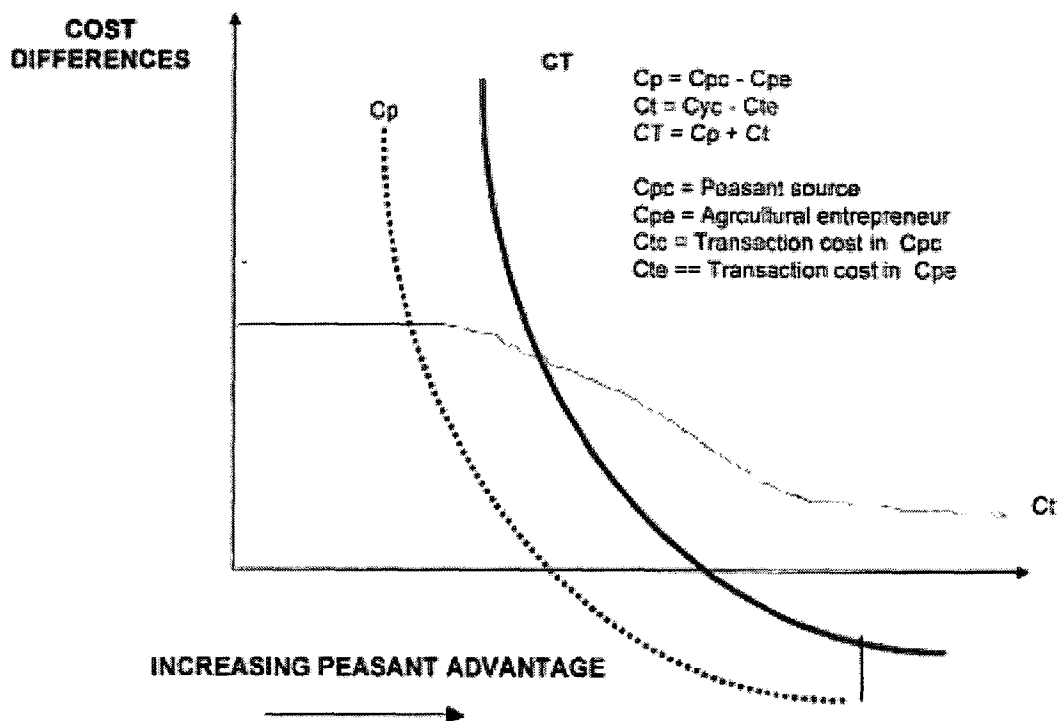
One can assume, however, that the more care intensive the production of the agricultural input is, the smaller the difference of transaction costs between vertical integration and contract farming with small producers will be, so that the sum of the cost differentials –i.e. production plus transaction--will favour the latter alternative at some point. (see graph)

⁹ There is also a greater tendency to establish contracts for perishables than for grains and tubers which are easily obtainable on the open market at required quality conditions

¹⁰ For the theoretical basis of this assertion see Schejtman (1984) pps.274-299

¹¹ A Mexican agro-industrialist summarized the additional costs involved in dealing with small-scale farmers as follows: the inability to call or fax the producers so that, in order to communicate with them, they have to be visited; the additional time spent and costs incurred at the factory for unloading and weighing products from small lorries; the increase in the number of accounting procedures and in the administrative costs due to the large number of producers working under contract; the need for additional technical assistance and more field visits; the need to advance operating or investment capital; the need to lend or lease special machinery; the greater difficulty of convincing them to use only authorized pesticides in the required quantities; etc.

**PRODUCTION AND TRANSACTION COSTS:
A stylised representation¹²**



III. FACTORS THAT ENHANCE OR RESTRICT VERTICAL COORDINATION

There are various reasons why what should theoretically have resulted in a contractual arrangement becomes either a spot market transaction or a vertically integrated production. In the first case, there is a loss of product specificity and thus of product value and, in the second case, there are increased investment and administration costs, scale and location rigidities as well as the assumption of all the risks.

One of the most important reasons for a shift away from vertical co-ordination arrangements, is the lack of confidence in the institutions¹³ that support vertical co-ordination mechanisms, that is, the quality of contractual laws and their compliance, including a reliable system of arbitrage, and doubts concerning the reliability of the parties involved.

In an environment of non-existing or hardly functioning legal institutions for the enforcement of contracts -as is the case in most of rural Latin America-, the agro-industry can at least resort to the threat not to renew the contract (written or oral)

¹² For a detailed description see Schejtman (1998)

¹³ The set of political, social and legal norms and rules that form the basis for production, transactions and distribution (Williamson, 1994, p. 7).

whereas the individual farmer has hardly any means at all to exert pressure especially the small- or medium-scale farmer.

The existence of imperfect markets -either in land, labour, credit, information, technology, inputs or goods- is a frequent attribute of the rural areas in the Region, and helps to explain the presence of many vertical co-ordination arrangements where one would have expected a spot market transaction or vertical integration.¹⁴

Furthermore, very often, one finds interlinked transactions where the purchasing agreement is complemented with credit, technical assistance, provision of inputs, etc., as a substitute for missing or imperfect markets for one or more of these factors. In these cases, there usually is a lack of transparency in cost accounting and risk sharing between the parties. In fact, imperfect or missing markets is one of the reasons why small farmers are excluded from participating in the production of goods for which they seem to have comparative advantages (e.g., labour intensive and "supervision intensive" crops) because they are also intensive in the above mentioned factors. Were it not for their links with an agro-industry, a government agency, an NGO or another intervention to compensate for such imperfections, there would seldom be small-scale production of non-traditional export crops.

Vertical co-ordination is also influenced by the price paid for a product. Thus, when price differences do not compensate for distinct qualities, then the incentive to produce better or homogeneous quality products vanishes and so do the reasons to establish vertical co-ordination agreements.¹⁵

In instances of highly volatile prices, vertical co-ordination agreements will be difficult to establish or maintain because of the difficulty of pre-establishing a price and because of the temptation of both parties to breach the contract when the agreed price differs significantly from the one that can be obtained on the spot market.¹⁶

As legal requirements and consumer demands increase as to the use of labels, quality and appearance of the products and their ingredients, there is a tendency toward a growing use of vertical co-ordination. Trade liberalization has, of course, accelerated this trend. By contrast, the establishment of institutions that classify and control the

¹⁴ Rice and wheat are typical commodities that should be traded on the spot market. Instead, in some countries they are traded through co-ordination agreements because farmers need credit and a way to obtain it is through interlinked transactions with the future buyer of the cereal. Instead, in Nicaragua, the existence of imperfect land markets explains why factories buy a higher than usual proportion of sugar through vertical co-ordination agreements instead of growing it themselves.

¹⁵ Lack of quality discrimination by domestic consumers is probably the reason why in Ecuador and Paraguay tomato paste is mainly produced from tomatoes bought in the spot market. The lack of price differentiation on the international market for quality cocoa was the reason given by an Ecuadorian cocoa trader for the declining cocoa quality in Ecuador and the lack of remedial action taken by producers and exporters. The same decline in cocoa quality is observed in Trinidad and Tobago which also has the climatic conditions and a tradition for producing fine flavour cocoa.

¹⁶ For agricultural products it is not unusual to see price fluctuations from 1 to 10 depending on time and place. Additionally, as evidence from melon producers in El Salvador shows, risk aversion among small-scale producers have them prefer a fixed price above other formulae such as a commission or a (lower) fixed price plus a percentage of profits formula. This, of course, increases the possibility of contract and market prices being wide apart at sales time.

quality of agricultural products, by reducing transaction costs, make spot market transactions more feasible even for specific goods.

For a novelty or newly introduced product, at the bottom of the learning curve, characterized by little demand and supply, high risk and high returns, the type arrangement will probably begin as a vertically integrated or co-ordinated venture (or a mixture of both). The transition from novelty to commodity, that is to a product of high demand and supply, less risk and less returns per unit, might change the type of arrangement (von Hesse, 1994), depending on the particular situation, either towards the spot market -because of the increase in the number of buyers and sellers;¹⁷ toward contracting small farmers who tend to work for a smaller compensation than a commercial firm, or remain vertically integrated, in order to capture all the profits now that risks are lower.¹⁸

Small farmers' organizations tend to reduce transaction costs since negotiations can be done through farmers' representatives instead of with each farmer separately. At the same time, they can improve their bargaining position. It will therefore be the balance between the two that will lead the agro-industry to allow (even encourage) the organization or act against it.¹⁹

In the case of agro-industries owned by farmers' cooperatives and contrary to expectations, conflicts may arise between the industrial part and the farmers, in relation to prices, strategies and other conditions.²⁰ Wann and Sexton (1992, p. 988) point out that this kind of cooperatives do not necessarily increase competition between agro-industries for their inputs supply but instead, may diminish it in as far as the farmers are obliged to deliver them to the cooperative.

Diagram 1 tries to visually summarize the above. It has been divided into three areas: the **characteristics** that ideally should lead to a certain type of interaction between the agents are stipulated in the first area; some **consequences** of this interaction are mentioned in the second area; and in the third, mention is made of the **displacement factors** that move the type of interaction from the "optimal" one to another one.

¹⁷ In Chile, cling peaches (for canning) are an example of this: they are traded through the spot market although the specificity of the product would have led to expect otherwise.

¹⁸ It could be the case of pineapples in the Dominican Republic.

¹⁹ This was precisely the dilemma faced by ASAGRO in the Santa valley in Peru whose first administration opposed the organization of the asparagus producers because of price disagreements while its second administration backed its formation with resulting drastic reductions in transaction costs.

²⁰ CONAPROLE (Milk Producers' National Cooperative) in Uruguay and the Cooperative Citrus Growers' Association in Trinidad and Tobago offer two clear examples of these types of conflicts.

Diagram 1

FACTORS THAT ENHANCE OR RESTRICT VERTICAL COORDINATION

MARKET	VERTICAL COORDINATION	VERTICAL INTEGRATION
<u>CHARACTERISTICS</u> - Low product specificity and requirements - Autonomous adaptation	- Mutual dependency (product and investment specific) - Need to adapt in co-operation	- High product specificity - Economies of scale
<u>CONSEQUENCES</u> - Each agent assumes all the costs, risks, information efforts and profits	- Supervision and transaction costs - Risk and profit sharing power play - Possibilities of free-riding - Possibilities of principal-agent relations and inter-linked transactions	- Costs of administration, supervision, capital and land - Total absorption of risks and profits - Size and location rigidities
<u>DISPLACEMENT FACTORS</u> - Little price/quality differentiation <-----> - Big price fluctuations (foster free-riding from both sides) <-----> - Product perishability -----> - Growing consumer protagonism -----> - Increase in trade volume and number of agents <----->	- Lack of confidence in existing institutions <-----> - Increase in mutual confidence -----> <-----> - Imperfect markets/lack of access to production factors -----> <----->	

Source: Martine Dirven

III. LESSONS LEARNED: Risks and advantages for the participants

The kinds of arrangements and the displacement factors mentioned above were observed in the more than sixty CEPAL/FAO case studies. In all of them it was the balance between specific advantages and specific risks that determined the presence, absence, abandonment or change of the particular form of organization adopted by the agro-industry. The risks and advantages for each party of entering into a contractual arrangement are summarised in the following paragraphs.

1. Advantages for the agro-industry

- a) Delegation to third parties of the risks inherent in agricultural production;
- b) Avoidance of problems deriving from the employee relationship;
- c) Avoidance of the risk of giving grounds for expropriation under Land Reform legislation;
- d) Avoidance of the need to tie up capital in land;

- e) Access to land suitable for cultivating the inputs it requires in areas to which access is only obtainable by agreement with small producers, if this is how land is held in these areas;
- f) Cost reduction when it would be more expensive to carry out production by itself, small producers being opted for when large or medium agricultural firms demand higher prices, even taking into account the extra transaction costs incurred when procuring supplies from such producers;
- g) Public incentives to stimulate these agreements or government legislation, requiring that part of the inputs should be to purchased from small producers.

2. Risks to the agro-industry

- a) Increasing transaction costs as the number of suppliers mounts (transportation, technical assistance, quality control, administration, etc.);
- b) The complexity of contracts which, to ensure efficiency, include many variables (quality, delivery times, price) that are difficult to control and give rise to continual disputes;
- c) Sale to third parties when the price agreed is lower than the market price at the time of delivery;
- d) Diversion of supplies delivered by the agro-industry to uses other than those agreed upon.

3. Advantages for the small producer

- a) A guaranteed market and, if the contract so stipulates, a price set in advance;
- b) Technical assistance enabling productivity per hectare to be increased;
- c) Introduction of higher value products;
- d) Better use of family labour since the products involved are generally more labour-intensive per hectare;
- e) The opportunity to extend the new knowledge gained to traditional products or other ones not included in the agreement;
- f) In some cases, access to production equipment or machinery belonging to the agro-industry.

4. Risks to the small producer

- a) Manipulation of quality standards to regulate prices and deliveries;
- b) Late acceptance to reduce prices;
- c) Linking of the contract to another one which is less advantageous to the producer, when the firm buys more than one product;
- d) Tendency to monoculture, with the dependency and vulnerability that stem from this;
- e) Deficiencies in technical assistance, the effects of which become the responsibility of the producer and not of the company providing it;
- f) Late payment or lack of clarity in settlements;
- g) Favouritism in allotting the most favourable planting dates.

IV. POLICY IMPLICATIONS: A synthesis

Some general policy guidelines can be derived from the lessons learned in the CEPAL/FAO study, considering the context of the more or less radical changes being implemented in most of the economies of the Region. These may be summarized as follows:

- A *laissez-faire* policy, even in a context of reasonable macroeconomic balances, is not enough to promote a process of modernization in family agriculture and hence bring this sector into a pattern of growth with equity.
- The public authorities have not in the past proved very successful when they have taken on the task of promoting technical progress in family farming. Under the conditions brought about by the adjustment process their powers have been even more limited, so there is a need to find formulas to increase the efficiency of government action in these new circumstances.
- Certain agro-industries have considerable capacity to promote technical progress in their agricultural hinterland in general and in the segment of small farmers in particular.
- Concerted action by the public sector and those agro-industries that have greater capabilities in terms of promoting technical progress, appears to be the right way to realize this potential on a much more effective basis than can be achieved by spontaneous initiatives.

If the potential offered by stronger links between agro-industry and agriculture is to be realized, the following measures, among others, will be required:

- **Decentralization of public administration** and the resources that go with it, establishment of complementary functions at a local level and creation of local forums for joint action by the public and private sectors such as to ensure transparency and symmetry in relations between farmers and agro-industry;
- **Encourage agro-industries to train and transfer technology** to those small producers with the ability to turn themselves into stable suppliers to these agro-industries. Among other things, these incentives must include subsidies to compensate for the higher transaction and training costs involved in creating this supplier base. One possible way of attaining these objectives would be to set up public funds or trusts for this purpose;²¹
- **Encourage small producers to organize**, taking care that a reasonable degree of homogeneity exists between members in terms of potential, expectations and motivation. Such organizations reduce transaction costs and, by making it easier for producers to communicate and co-operate in their work, allow them to present

²¹ CORFO/Chile's experience with promotional funds and the ANEP/GTZ initiative in El Salvador are a case in point.

a united front to the agro-industry and also point the way to the establishment of cooperative agro-industries or mixed partnerships with private businesses;

- **Creation of easily accessible and continuously updated databases** and information on product varieties, their prices and market conditions so as to increase the information to which producers have access and improve the transparency of their relations with agro-industry and agribusiness. Better transparency will also improve the producers' negotiation capacity, improve their understanding of price setting mechanisms and, ultimately, set better conditions for mutual confidence. In the same vein, help small-scale farmers analyze contract terms and calculate interest costs when credit is provided by agro-industry and repayment is deducted from the purchase price;
- **Improvement of the legal framework** for commercial contracts giving due consideration to the special requirements of transactions involving -usually perishable- agricultural and livestock products and often vertical co-ordination agreements. Also, set up or improve public, private or mixed institutions for the establishment of product standards, their classification and quality control. Both measures are aimed at diminishing transaction costs, while the second should diminish discretion, increase transparency, and ultimately build up mutual confidence;
- **Creation of arbitration mechanisms** acceptable to all parties and recognized by the national justice system so that conflicts can be resolved in a more expeditious way than through the normal court procedures and, at the same time, be dealt with by specialists with a knowledge of the laws governing contracts but also of the specificities of the products, markets, agents and local conditions involved;
- **Creation of credit modalities** where agro-industry plays the role of intermediary and administrator (where it has significant advantages as to knowledge of the investment and working capital requirements of the product, monitoring of chores and use of inputs, and finally, can deduct the financial cost from the sales value) rather than have the agro-industry bear the cost of lending and of worsening its capital/debt ratio when alternative credit markets do not exist or the transaction costs for the formal credit institutions is prohibitive;
- **Improvement of roads and other infrastructure** (irrigation, energy, communication, etc.) since deficient infrastructure limits competition and reduces the participation possibilities for farmers, agro-industries and markets that otherwise have a high potential.
- **Follow a particular sequence of actions.** Once an enabling environment for the development of contract agriculture with small farmers has been created the lessons learned from successful and unsuccessful experiences suggest that a particular sequence of actions needs to be followed to reduce the chances of failure. These are (Marsh and Runsten, 1994):
 - a) ensuring that a profitable market exists as the first requirement;

- b) technical assistance and training since in the transition from traditional crops to more valuable ones intended for more demanding markets, training is a crucial factor;
- c) financing, because the amount of investment needed to introduce and sustain crops with a high unitary value of the type considered particularly suitable for this type of partnership is significantly higher than that required for traditional crops;
- d) organization, because when small producers are organized, the processes of communication, training, financing, supervision, administration, etc. are facilitated and transaction costs are reduced for the agro-industry or government agency and, in addition to this, the producers gain bargaining power;
- e) reducing risk since the risks faced by a small producer who gives over all or some of his land to a product destined for an agro-industry can come from various quarters and in the absence of any system of insurance, there is a need to incorporate mechanisms to dampen the effects of an adverse result;
- f) information on markets for supplies and technology, factors influencing price changes (above all in export prices), regulations on pesticides in foreign markets, the effects that the use of particular inputs and the cultivation of particular products can have on health or the land.

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