

High Value Products and Smallholders Economies: Concepts, Issues and Research Needs in Latin America and the Caribbean

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Introduction

Recent structural social, economical and political reforms in the Latin America and the Caribbean (LAC) region have had a positive impact in acute poverty reduction but the region is still struggling with chronic poverty and its pervasive effects. Incidence of poverty is greatest in rural areas and is most severe among small and marginal farmers, who typically have limited access to the resources required for engaging in profitable agricultural systems (Barghouti, 2004). In fact, some authors content that there has even been negative effects of these reforms on rural smallholders whose livelihoods depend on agricultural activities, in particular those reforms which are related to the promotion of commodity exports (IFAD, 2004).

In recent times it has been recognized that an alternative that smallholders in the LAC region have for escaping the chronic poverty trap, is the diversification of their activities into high value agricultural products (IFAD, 2004). As a matter of fact, the development community in the LAC region and specially in the Andes has seen an increased interest in promoting diversified livelihoods rather than insisting on pushing smallholders into semi-industrial mono-product economic systems.

We can find several successful cases where comprehensive diversification strategies have had positive outcomes for smallholders living in asset-restricted contexts (Cespedes and Paz, 2005). These and other cases show us that the introduction of high value products in smallholders' production systems may represent interesting opportunities for improving their livelihoods.

However, there are several important issues that need to be addressed: a common understanding of what high value product means; and second, an understanding of smallholders' realities and their contexts. This paper is an inquiry into the latter and, far from proposing answers, we intend to draw researchers and practitioners' attention to the issues to help inform and direct future research initiatives.

What are high value products?

The so called high value products (HVP) have created global interest among researchers and practitioners in the development community, which contrasts to the financial aid neglect over the past decades from international development agencies and research centers (Weinberger, 2005).

There is not a common understanding about the characteristics that define a “high value” product. There are solid examples of products that are known to have high value but a thorough analysis

shows us that they cannot be grouped into the traditional definition of high value products¹; they are not horticultural products and they did not have had value added processing like quinoa, which is a grain and, in local markets it even behaves as staple food. On the other hand, we can find several horticultural products that behave as commodities such as tomatoes and bananas.

If we learned something from the last 25 years of agricultural research is that narrow definitions lead to narrow outcomes (Hazell, 2001). Although we need to have a clear understanding of what is and what is not a “high value” product, the definition has to be made in the widest sense possible.

The value of a product can be estimated by its market value compared to other products in the same market. So, if we take as valid this definition, “value” of a good is idiosyncratic by nature; consumers will craft a *perception of its value* and qualify it. This qualification will be reflected in its market price. An organic tomato will be more valuable to an organic-oriented consumer and (s)he will be willing to pay more for it compared with traditionally grown tomatoes.

Then, we know that consumers define the value of products but, where does the value come from? What makes a product valuable? A product is valuable if it is highly demanded and seldom offered. So, at least some of the value of a product comes from its scarcity in the market. A scarce product has one distinctive characteristic: it is mainly based on a scarce, rare and often *unique asset* that limits its availability in the market. A diamond necklace derives its value not from the design, but from the inherent scarcity of diamonds in the world. Also scarce resources can be intangible in nature; a Faberge egg derives its value not from the eggshell it self, nor from the paint used in it, but from its exquisite craftsmanship and the fact that the craftsmen that had the ability to make them all passed away a long time ago.

Products that have low value perception from consumers and low asset uniqueness fall into a “commodity” category: homogeneous products that have had little or no additional processing. Commodity production typically needs fairly big extensions of land and relatively large markets to derive positive returns on assets. Commodities fit well into semi industrial or industrial agricultural systems well value stems from economies of scale. Grains and other staple products are good examples of commodities but also some horticultural product may qualify in this category.

On the opposite side we find the “high value product” category, which is characterized by products that have high value perceptions among consumers and high asset uniqueness. High value products do not need scale to be profitable and usually niche markets. They are especially well fitted into micro and small-scale agricultural systems. Some spices, organic products and biodiversity-based products are good examples of them. But there are also examples of grains, such as quinoa that can be also considered high value products.

Products that have either low consumer perception and high asset specificity or vice versa fall into transitory categories; they might become either commodities or high value products. This is what Porter (1990) defines as products that are “stuck in the middle”. Changes in products’ position in this category depends largely of changes in consumer’s perceptions, which may be

¹ Traditional definitions of high value products are based on the assumption that a) a high value product is one that undertook some kind of value added process –mainly agro industrial processing or packaging- that raised its value considerably or, b) products that have a high return per unit or a high return per input, usually land. In either case horticultural products and spices are defined as high value products and grains are defined as commodities.

dynamic, compared to changes in asset uniqueness, which tends to be stable over long periods of time. So, products that have high value perception by consumers but are not based on any distinctive asset will eventually slide into a commodity market structure; hence industrial agricultural systems can produce it more efficient ways increasing its availability in the market and as a consequence, reducing its value. However, there are several exceptions; such as “buy local” campaigns that appeal to culturally embedded assets to redefine and refresh or even create value perception among consumers. As a matter of fact; new markets can be developed for this products.

Consumers’ perceptions of high value products

Global trends such as urbanization, international migration, increased average income in developed countries, increased interest in health, global information access, increasing adventurous consumption habits, and other trends have changed the way consumers perceive “value” in agricultural products (Barghouti, 2004). International trade of fruits and vegetables has increased fivefold in the last forty years (Weinberger, 2005); we can conclude that consumers are valuing more and more high value products but, what are they specifically looking for in them?

Healthy products (Barghouti, 2004. Riveros, 2005). Consumers nowadays are willing to spend “an extra buck” in return for products that promise to be healthy. This may be related to the perception among consumers that non-traditional horticultural products may contribute to attain a more balanced diet. Also recent concerns about heart disease related to high fat and high carbohydrate intakes have raised awareness about the importance of consuming fruits and vegetables rich in vitamins, antioxidants and fiber.

Rare products (Barghouti, 2004. Riveros, 2005). Certain segments of consumers, in particular consumers from developed countries have become interested in consuming exotic rare products, such as “pithaya”, a type of prickly pear grown in México. This kind of adventurous consumption is being boosted by changing demographics and the increasing interest in remote cultures and places, promoted by mass media documental programs and increased global traveling.

Safe products (Riveros, 2005). Products’ safety attributes are being valued highly by consumers. Products that allegedly have contaminants such as pesticide residues, rat feces, fungal aflatoxins, toxic residues or that pose bio-security and other environmental risks are being refused by consumers both in developed and in developing countries. This trend appears to derive in part from current disease outbreaks such as the mad cow’s disease (Barghouti, 2004) and stories of intoxications due to residues in food and other products.

Environmentally and culturally friendly products (Riveros, 2005). Consumers are now interested not only in products’ attributes but also in the way in which they are produced. High value products that may have been produced in sustainable production systems which assure environment protection, biodiversity conservation and such, and are *labeled* to reflect this production manner are receiving higher market prices in fast growing consumers’ segments. This is the case of organic and biological products. The same trend can be seen on products that can certify that quality assurance methods have been applied in production, marketing and management of production processes. This is the case of products that hold ISO conformance certifications and quality awards such as the Malcolm Baldrige price.

Asset uniqueness

Global supply of high value products in particular non-traditional fruit, vegetables and cut flowers has increased dramatically in recent years (Weinberger, 2005). It is our content that, at least some of this growth can be explained by the increased production of products related with *unique assets that provide unique attributes to the products*. What are these assets in the LAC region?

Eco-geographical and seasonal location. Certain high value products can only be produced in certain locations that have special climate, altitude or that have unique access to the market. This is the case of gourmet coffee in Colombia and recently in Bolivia. Location is also related to preferential access to local markets; several high value products have nearby markets that have been held captive by locally produced products. This is the case of organic tomatoes grown in greenhouses near Cancun resort zone.

Biodiversity, traditional knowledge and culturally related assets. Products that are based on biodiversity assets such as genetic resources, products of the forest (honey, mushrooms, orchids) and particular varieties of endogenous species of agricultural products are, by far the best examples of asset uniqueness. Asset uniqueness can also be seen in products that are based in ancient know-how or have strong ties to local and traditional cultures. A good example is “maca pill” a pharmaceutical product sold in Canada as a dietary supplement, that contains maca extract which is a tuber that grows in the Andes and that has been domesticated by ancient cultures.

Locally available assets. Although many times not unique, assets such as waged hand labor availability and under allocated family hand labor, water availability and good soil fertility, account as valuable assets. This is particularly true when we consider that valuable assets do perform in an intertwined fashion.

Smallholders and poverty in Latin America and the Caribbean

Smallholders can be defined as farmers that have binding asset restrictions that limit their possibility of generating economies of scale that would enhance returns to their assets (Siegel, 2005). The most important restriction that smallholders face is access to land and technology to increase productivity (Hazell, 2001). But also, smallholders have other constrains that limit their access and use of other -often overlooked- assets such as market information, access to adequate financial credit and commercial connections with profitable markets (Bargouthi, 2004).

Although we cannot say that all smallholders are poor, we can assure that all poor rural people are smallholders or rely on micro or small agricultural production systems to survive. Typically smallholders’ population in a community can be segmented into three groups, depending on the level of asset restriction they have (Cespedes and Paz, 2005):

- a) The “rich” smallholders who have managed to allocate their assets in it most productive economic positions and -taking into account their specific context limitations and risks- have managed to guarantee the reproduction of their way of life. This group usually has yearly earnings that exceeds their basic economic needs and show important levels of capitalization; they often have cars, a good house, and relative modern technology such as tractors. They also tend to have some relations with local financial systems.
- b) The “poor” smallholders who, due to increased asset restrictions and more exposition to context risk, strive year after year to survive and sustain their way of living. These groups of smallholders relate strongly to global poverty descriptors; they typically live on a few

dollars per day and their yearly earnings are just enough to cover their basic economic needs.

- c) The “very poor” smallholders. Who have enormous asset restrictions, are very exposed to negative context shocks and usually have little or no land of their own and work part-time for other land owners. This group live way under poverty thresholds and its economic product is not enough to cover their yearly economic need. They relate strongly to the concept of “poorest of the poor”.

The structure of smallholders’ population is important due to the fact that the “very poor” are often the target population for development initiatives that aim at improving their situation. For example increasing their access to markets. This group, in the face of enormous asset restrictions cannot benefit from such kind of initiatives. On the other hand, the “rich” are also seen as target population for development projects that want to find “economic leaders” that may work as economic drivers in poor communities. These initiatives have also seen pitfalls hence the latter have high opportunity costs and usually are not interested in engaging in traditional development initiatives (Cespedes and Paz, 2005).

Some facts about smallholders and poverty in the LAC region

How many smallholders are there in the LAC region? Around 126 million people live in the rural areas of LAC (23.2%), but according to data of the Organization of Cooperation and Economic Development (OCED) the rural population would reach to 42%. FAO (2005) mentions that 20% of the LAC’s population in 2003 was dedicated to the agriculture (543 million people). The total population economically active in agriculture is around 40% (Annex, Table 2). Of this population about 48% are considered small-scale farmers. Taking the former data into account we can estimate that there are around 61 million people that are smallholders.

The LAC region is still one of the poorest regions in the world. By the end of the nineties, 11% of the population of the region did not consume a moderately satisfactory eating diet in terms of caloric consumption; in 1980, this percentage was about 13%. In the case of Haiti, it reaches to 62% and in Nicaragua 31%. In terms of the Index of Human Development (IHD), LAC has a value of 0,777 in comparison with high-income countries of the OECD where it reaches to 0,929. The smallest value in LAC is 0,467, which correspond to Haiti. Such value is very close to the Sub Saharan value of 0,468.

Smallholders in the LAC region, besides the lack of access to productive assets, such as land and technology, also lack access to basic services (health, education, and other) and infrastructure. Around 37% of the poor live in rural areas of LAC, and in countries such as Bolivia, Guatemala, Honduras, Nicaragua, Paraguay and Peru, 70% of its rural population live under poverty thresholds. According to Quijandria et al (2001), the poverty groups are distributed as follows: 33% corresponds to rural and indigenous communities; 31% to small farmers and; 29% is composed of subsistence and landless farmers.

In the rural area of LAC, the 62% of the population lives under the line of poverty, this means that they do not cover their basic needs, the most affected countries are: Honduras, Haiti, Bolivia and Nicaragua with almost 80% of its population below the poverty line (CEPAL, 2004^a). approximately 37,9% of the total rural population is indigent; which means that they do not cover their essential needs.

According to estimations by Quijandria et al (2001), 90% of the LAC's rural poor population live in four main agro ecological zones:

1. The arid and semiarid tropics are characterized by low levels of precipitation (less than 700 millimeters per year), a rainy season lasting three or four months, and irregular annual patterns of cyclical rainfall and drought (at intervals of four to five years). Agricultural production depends highly on annual rainfall, which generates a high level of uncertainty and risk for growers of traditional and cash crops. In natural grasslands with low carrying capacity, small herds of cattle, sheep, and tropical goats are raised using very extensive grazing systems. It is estimated that 32% of the region's poor population live in this ecological area.

2) The slopes and plateaus of the Andes in South America, the small mountain ranges of Central America, and the mountain system of Mexico. This region encompasses a total of more than five million square kilometers and is home to 28% of the region's rural poor population. The inhabitants of this ecological area grow traditional crops on hillsides and raise small herds of cattle and sheep. Coffee is often grown as a commercial crop at the foot of mountain slopes in subtropical areas. In the Peruvian and Bolivian altiplano (at altitudes of more than 3500 meters above sea level, alpaca- and llama-raising are the only productive activities. Annual rainfall ranges from 900 millimeters to 1400 millimeters and occurs over a period of five or six months. Soil loss and marked erosion, resulting from traditional crop management practices, are common in this ecological area. Another ongoing problem is overgrazing of animals. Indigenous groups and communities inhabit this area.

3) Sub Tropical valleys. With a total area of 2.5 million square kilometers, where 17% of the region's rural population lives. Small farmers live on the fringes of the valleys, on lands of poor quality that are generally outside large irrigation systems. Small farmers complement their earnings by performing paid seasonal work for businesses in the same valleys where they live, in neighboring valleys, or in urban areas. Seasonal urban migration is therefore also a common characteristic of the rural poor population living in the valley areas. Agricultural activities practiced include both production of subsistence and cash crops and cattle-raising on a very small scale.

4) Humid and semi-humid Tropic. Although it has an estimated area of 5.3 million square kilometers, this area is home to only 7% of the rural poor in the region. The agricultural activities practiced in these areas combine production of annual traditional and cash crops, permanent fruit crops, and extensive production of small livestock, using slash-and-burn systems. Other economic activities include wood-harvesting and river fishing. In the areas surrounding cities and the principal waterways, the small farmers are of "mestizo" origin, while in the remote and isolated areas, the only inhabitants are indigenous tribes native to South America.

The CGIAR/TAC (2000) mentions that in Latin America and the Caribbean, 34% of the rural population lives in favored lands that represent 9.6% of the total land, and only 10% is irrigated.

There are two main types of poverty in the region: structural and transitory. Firstly, people affected by this type of poverty generally have little or no schooling, few or no productive assets, limited knowledge about production, few work skills and lack of access to basic services. According to UNICEF and the World Bank (2005b) statistics this type of poverty is found mainly among indigenous communities and ethnic minorities, but mainly affects rural women. Transitory poverty applies to rural families that have little or no access to land and are especially vulnerable to the structural changes, economic reforms and political and social instability. In that sense,

around 8 to 10 million rural households are headed by women; 2 to 3 million women are employed in agriculture or agro-industry; and 30 to 40 million women with a male partner are partially or totally responsible for agricultural production and small rural enterprises.

Global poverty has the face of a woman, and this is also true in LAC's Smallholders population. At least the following factors are needed to improve the living conditions of rural women: (a) land ownership; (b) access to formal financial and technical assistance services; and (c) a good level of education and training (IFAD, 2002).

High value products for smallholders

Smallholders can benefit from introducing high value products into their economic systems. Benefits range from increased profits to the creation of employment. The fact that these kind of products are usually more lucrative than staple crops and that economies of scale are not critical to have high returns over critical assets such as land (Weinberger, 2005) demonstrate the validity of the later affirmation. However, at least three main issues need to be taken into account:

1. Not all high value products are real opportunities for smallholders; hence not all perform well in asset-restricted environments

Several high value products perform only in environments where several assets are available in quality and quantity, such as paved roads, access to profitable markets, access to irrigated water sources and so on. In spite of being profitable products, high value products that represent real opportunities must fit into asset-restricted systems. Profitability of product may be high in ideal conditions but it may be low in asset-restricted conditions and may not be able to compete with traditional alternatives, considering transactional cost of change. Key questions that have to be addressed are:

- a) Does the product have high quality standards that can be met within current and future asset restrictions?
 - b) Does production process demand short-term financial input? Does it demand high technology?
 - c) Is it profitable enough to compensate costs of change?
2. The integration of high value products into smallholders economic systems in the LAC region is not a straight forward process

The integration of high value products into smallholders' economies has to be seen as a *diversification process* where substantial changes are made in the underlying characteristics of the farm system. (Bargouhti, 2004). This process is complex in nature; smallholders must respond to new, often uncertain opportunities that demand improvements in quality and quantity of outputs, they have to reallocate valuable assets to new uses; process that often increases short term risk in their systems and most of all, they have to undertake substantial behavioral changes in their livelihood strategies. The process of diversification usually demands financial resources that are seldom available to smallholders. On the other side, positive outcomes of such changes are not seen in the short term, and smallholders systems that undergo this process may face a "system stress" period which in many cases causes the abandonment of the process. Some key questions that need to be solved regarding this issue are:

- a. Will the diversified product serve as core business or as a side business in the system? What kind of synergistic or antagonistic effects can be expected?
 - b. Will it add liquidity to the system or will it raise capital base requirements?
 - c. Will its production fit into smallholders' economic logic or will it demand substantial behavioral changes?
 - d. Will overall system outcomes improve?
 - e. Will the smallholder capture actual outcomes of diversification or will benefits stay upstream in the agri-food chain?
3. High value products usually need specific local, national or even regional institutional organizational conditions that are not readily available in the LAC region.

Smallholders in developing countries are largely immersed in ill-structured markets, fragile organizations and, most of all they face enormous institutional restrictions. As a consequence, basic and advanced services, such as financial and marketing are not available for them (North 1967, Dorward, 2001). This is an important issue that remains to be addressed by researchers and development practitioners that are interested in promoting the incorporation of high value products into smallholders' systems. Key questions regarding the latter are:

- a. What kind of institutional and organizational improvements need to be made in order to generate basic conditions in which high value products can perform well?
- b. Do actual policy reforms promote or hinder the development of smallholders' initiatives that are related to the production of high value products
- c. How effective and efficient are the efforts of making available critical services for smallholders? How long will it take?

We are sure that these issues may be a disappointment to more than one development practitioner that is reading this document but we have also good news; there are several success cases in which high value products have successfully been adopted by smallholders' initiatives.

Parsley in Bolivia a good example of smallholders engaging in high-value product business (Cespedes and Paz, 2005)

The story

Bolivia is known for having a spicy cuisine. The use of herbs such as parsley is common among people in cities and in rural communities. However, the national spice market has never been a quality-led market; hence, consumers and producers' quality standards remained in a very low, stagnant level. As a consequence parsley production was characterized by being a backyard crop, grown in very marginal plots with no irrigation and seldom cultivation and post harvest attention.

The product –dried parsley leaves– usually presented black spots due to oxidation during rustic sun-drying processes, were contaminated by dust and often had rat feces and other disease carrying agents. It is known in spice markets that parsley can loose at least 70% of its flavor and as a consequence -its value- if postharvest processes are not carried out properly. But this did not bother the producer or the consumers; they simply did not care. So parsley production was never seen as a business; rather it was a good way to put into production small marginal plots.

In the late nineties consultants from SOCODEVI a Canadian ONG linked to the Canadian union of cooperatives arrived at the central valleys of Chuquisaca as part of an international development program. Their objective was to help local cooperatives in particular a union of cooperatives called AGROCENTRAL to engage in profitable business, develop solid cooperative-based services for small holders and, most of all help smallholders improve their income. As traditionally done they hired experts to help on the identification of market opportunities suited to harsh, asset restricted small-scale farming. The experts read several agronomic essays with a wide variety of crops and concluded that spices such as parsley and others were the best options for local smallholders. They also recommended the use of parsley varieties particularly well adapted to marginal plots.

SOCODEVI aggressively promoted parsley cultivation among smallholders but their results were marginal; the “market problem” limited interest among smallholders. So they engaged in finding markets for parsley and although they managed to identify some international wholesalers that were interested in buying parsley, Chuquisacas’ parsley did not meet quality standards nor did they have enough produce to meet wholesalers volume requirements. So the parsley business did not prosper, with obvious frustration of both smallholders and SOCODEVI personnel.

So they went to ask for help to MAPA project, an initiative that helps smallholders to access profitable markets. The MAPA team analyzed the situation and concluded that: a) parsley grown in Chuquisaca was well adapted to harsh agro-ecological conditions but its quality was not suitable for the international parsley market; it lacked flavor and aroma, b) smallholders were not using the proper production, post harvest and processing techniques, c) market demand *was not* a problem, in fact, parsley represented a very good business opportunity d) gathering, and drying processes needed radically new structure to perform in a “business oriented” manner.

After these conclusions the “wise thing to do” by SOCODEVI was to make a gracious and silent retreat from Chuquisaca, at least in what was concerned with the parsley business. But they didn’t. On the contrary they teamed up with MAPA project and AGROCENTRAL and started a long-term aggressive development program that, in our point of view, challenged the traditional way development initiatives in Bolivia approached this kind of situation.

At first they did a non formal analysis of context restrictions, organizational and institutional conditions and business structure needs and concluded that “the missing link” was that smallholders cooperatives lacked business capabilities and that a private enterprise was needed as a core element in the business, so the three partners invested in UNEC; a business unit embedded in AGROCENTRAL structure but independently managed by very skillful personnel. Salaries and operational expenses were entirely covered by the initiative. This was highly criticized by the development community in Bolivia, particularly the aid agencies which thought “ *MAPA and SOCODEVI are substituting smallholders’ responsibilities by assuming a paternalistic attitude.This will surely lead to poor local capability development..... They are also engaging in private business activities that do not comply with the true nature of development initiatives... instead the should be helping smallholders develop their own enterprise, with their own resources (anonymous comment)*”

Regardless of criticism they went on. Some unorthodox measures were taken: a) since parsley variety was not suited for international markets they bought an entire years production of the former variety and promoted the substitution of the former variety with a new one that complied with international standards. This variety needed more care and, most importantly did not grow in marginal lands; it needed to be grown in fertile irrigated soil. Smallholders, far from rejecting the option of variety substitution, actually planted the new variety in part of their irrigated plots. This

was undertaken with the assistance from MAPA and with pre-defined prices for future parsley production. As you may suppose this also generated high level of criticism among development practitioners in Bolivia “*they are substituting market dynamics... There is no way that these initiatives will be sustainable once the project is over! (Anonymous comment)*”

Smallholders, quickly found that it was a fairly beneficial activity compared to other traditional ones but only with project pre-defined prices and together with their main business: potato growing. They also changed dramatically their behavior and started taking exceptionally good care of their parsley plots. On the other hand UNEC, always in a strict business manner, integrated backwards and started to collect fresh parsley, invested in modern drying facilities and started a “side business” with low quality parsley collected from smallholders; parsley essential oil production. So smallholders stayed on the basic agricultural production side of the business and UNEC took care of the processing and marketing activities. They also provided backward services; they mounted greenhouse facilities and started producing and selling parsley seed-plants that served to satisfy the growing demand of new smallholders interested in joining the initiative.

Today in the central valleys of Chuquisaca you can see a complete cluster of parsley production. From no more than 10 hectares of parsley grown by 40 smallholders in 2000 today there are now more than 300 hectares grown by almost 1200 smallholders. UNEC has this year started to report net profits on their operation and the numbers are large, although, again in a strict business manner, they kindly asked us not to show them in our research.

Actually UNEC is a very profitable corporation. Its governance structure has MAPA Project, SOCODEVI and AGROCENTRAL holding 33% each of the chairs on the board of investors. AGROCENTRAL chairman represents the interests of all smallholders involved in the initiative. Profits are actually being used to cover partially technical assistance costs and to build up a risk fund in order to cover eventual price falls in international parsley markets.

Parsley: A high value product

Parsley derives its value on one hand, from the fast growing global spice market. Spice consumers are asking for extremely high quality products; strong and homogeneous flavor and aroma, essential oil concentration and freshness. Some segments are also demanding organically grown produce and good packing and labeling. All these characteristics are met by Bolivian parsley, which is now a competitive product in highly demanding markets, such as Brazil, Argentina and Uruguay. Parsley essential oil is also highly demanded in the spice market. UNEC has started trial export operations in order to sense market requirements for this new product.

On the other hand, Bolivian parsley value comes from location related assets such as proximity to tree major spice markets and relative good roads that connect production and processing areas with an airport. These assets made good synergy with relatively available irrigated land and availability of family hand labor. Both groups of assets combined resulted in relatively low production, processing and transportation costs that gave the business a net advantage in the market.

Parsley performed well in Chuquisacas’ central valleys because it fitted well into local context restrictions and quality was easily reached with little increases in financial and other inputs. Although profit for smallholders was not comparable to the returns they were receiving on potato production, smallholders were more interested in adding financial liquidity to their systems, so overall outcomes for smallholders were enough to drive change.

Smallholders' sound economic logic

Smallholders in Chuquisacas' central valleys have diversified livelihoods based on irrigated potato production and other rain dependant crops, such as wheat. But potato domestic market over the past years has seen an enormous increase in price volatility. So traditional livelihoods in the region repeatedly suffered great stress; only one every three years there could report earnings from potato harvesting. Migration increased as an emergency strategy in "bad years".

As previously mentioned, smallholders quickly responded to the market opportunity made available by the initiative. They supplanted a small portion of their potato fields for parsley fields. Interestingly, they were not worried about trying to get better prices for its produce, for example by bargaining price raises with UNEC, neither they were willing to totally substitute their potato fields. Rather, they were much more interested in *price stability during the year*. When asked about why don't they grow parsley in their entire irrigated plots, they answered, "*potato is still our main business, with spices we get cash but when a good year for potato comes, we make money*". They were using a high value produce to add liquidity to their system.

Parsley was integrated to Chuquisacas' smallholders systems because it did not compete with their core business, rather it complemented it; hence financial liquidity derived by parsley production served to buy potato seeds and other agricultural inputs. Economic logic of smallholders changed due to the fact that the initiative absorbed process change costs by providing a stable price all year-round, together with sound technical assistance. Although specific benefits from parsley production were relatively low and most of the business value was captured by processing and marketing stages. Part of these benefits returned to smallholders as very low cost technical assistance, quality seed plant. Provision and eventually profit sharing hence they are actually partners of UNEC

The enterprise

UNEC has been successful because it was born as a true enterprise, with sound business philosophy and expert businessman in charge of the operation. UNEC provided the lacking organizational and institutional conditions needed to boost smallholders' engagement in the business. Some key business issues that UNEC and MAPA project tackled successfully were market intelligence, indirect financial services, marketing services and management of distribution channels. Another key action taken by MAPA project was to understand, before the initiative was launched, the dimension of the initiative in terms of financial and technical resources and in terms of time.

Although Bolivian national agricultural policy did not favor this kind of venture, UNEC and MAPA project managed to minimize negative effects of ill designed agricultural policy. And certainly they have earned a lot of "detractors" by doing this.

Research context in the LAC region

Worldwide agricultural research has seen in the past twenty years an increased institutionalization process (Engel, 1997); Influence of past green revolution successes defined the focus these organizations and institutions: increase food supply through cost-reducing technological changes that would lead to lower food prices. So, research effort focused on increasing yields of

important food staples. This strategy was extremely successful. Overall staple food prices have shown a steady decline. But the strategy was not sufficient to eliminate rural poverty, which now abounds even in countries that now have national food surpluses (Hazell, 2001).

The LAC was no exception; we have seen the emergence of supranational research organizations, which aimed at boosting agricultural productivity; and they were successful. However, we have also seen in recent times certain “discomfort” within the LAC research community. As a result, research organizations in the LAC developed initiatives that had renewed objectives regarding poverty alleviation.

Research centres of CGIAR like CIP were questioned about the actual results of research outcomes regarding its effectiveness in diminishing rural poverty. The latter stemmed both from internal strategic reflection process that organizations undertook but also from increased pressure from research sponsors to show objective, positive impacts on rural poverty (personal communication A. Devaux, 2005).

New initiatives from such centres have developed as a consequence. These initiatives are actively engaging in research activities devoted to: a) develop technological innovations and methodologies that are particularly fitted for rural poor contexts b) understand how smallholders can be linked to competitive markets c) develop policy recommendations to national research systems (Bentley and Paz, 2003).

Some outstanding examples, in our opinion, are the rural innovation institute of CIAT, which is led by Dr. Jacqueline Ashby and has developed pro-poor innovations in cassava, maize, and other crops and agri-chain approaches to link poor smallholders to the market and CIP's Papa Andina Project led by Dr. André Devaux; that has actively promoted the use of native potatoes to improve smallholders' livelihoods.

National research systems also have been questioned and had also developed new imaginative projects and initiatives that are oriented to: a) achieving food security for the poor b) expanding agricultural exports by linking smallholders to agri-chains. c) alternative development for substituting coca production and d) promoting sustainable agriculture e) promoting private, market-based research and extension services. Good examples of the latter are INCAGRO project in Peru and the former PROMSA project in Ecuador, the recently created SIBTA national agricultural research system in Bolivia, the PBA corporation in Colombia and PROINPA Foundation in Bolivia, among many others.

Finally we have seen also very interesting grassroots organizations –mainly ONGs– that are launching very innovative initiatives that are oriented towards: a) providing technical and commercial services to smallholders, b) improving empowerment among smallholders, c) developing gender biased initiatives. These organizations also carry out research activities. Some examples are: CIPCA in Bolivia, Swiss Aid in Ecuador, etc.

Issues regarding research organizations the LAC region

MORE LAC COUNTRIES NEED TO BE DISCUSSED IN THIS KEY SECTION OF THE PAPER. Although every organization has unique objectives, interests and strategies about how to approach poverty reduction, some common issues can be highlighted. Bentley and Paz (2003) identified such issues for the Andean Region of LAC but we think they can illustrate what's going on in the rest of the region.

Chains, markets and private technical assistance and research. This is the focus now in style in Bolivia, Ecuador and Peru. It aims to alleviate poverty by improving the living standards of farmers, developing their capacity to generate and capture economic benefits. SIBTA in Bolivia, PROMSA in Ecuador and INCAGRO in Peru are the institutions that promote this focus. These institutions share a vision of the farm-food chain, where the market is what defines the crops that are important for the country as well as the priority research topics. Farmers' research and extension demands are considered while prioritizing project and they are required to pay monetary counterparts, which increase as new projects are financed. IICA and other cooperation and donor agencies (World Bank, UNDP, IFAD, DANIDA) hold this focus and are actively promoting it.

The SIBTA focus in Bolivia is similar, but it is carried out a little differently, since SIBTA aims to be a permanent institution, while PROMSA and INCAGRO are projects. SIBTA has spent three years getting organized, and is now starting to work, while PROMSA rapidly got started and financed many activities during the same time. INCAGRO has planned two more phases, in total, and plans to operate for eight or ten years. There are different opinions about the results of these projects; some say that the private research and technical assistance services will not be sustainable when the Project ends, that the farmers cannot and will not pay for these services. Nevertheless there is anecdotal evidence of potential impacts: PROMSA has trained 500 technical people, some at the M.Sc. level, and it currently has 128 research projects, and SIBTA has involved more than 26,000 smallholders in its 80 projects, while INCAGRO has 68 projects running.

Platforms, clusters, and networks. have been formed in Bolivia, Ecuador and Peru, bringing together a series of organizations. Examples include: the INNOVA Project, Red Unitas, and AIPE in Bolivia, CEA and the Red Cántaro in Ecuador. Sometimes these platforms are explicit and are proactively created (Red Unitas, AIPE, CEA), and at other times they are informal and link institutions around themes or common donors (The network of SDC projects, Red Cántaro). Some platforms are “networks of networks” which act like groups for discussing national themes and helping with national and international coordination. There are local networks and institutions, which promote synergistic actions and generate “shared knowledge” of methods, technologies and focuses. There are also networks that act like “second floor” agencies, financing projects or providing services to their members. Lastly there is a solid chain of information networks in the Andes, like INFOANDINA and even a network of information networks called REDISAL.

Structure of research and extension. The general opinion in all three countries is that there is no connection between scientific researchers, extensionists, smallholders and the market. The supply of new technology and the demand do not find each other. The supply and demand of technology do not “come and go” from researchers and extensionists to farmers and the market and back again. Since the scientists do not know what the market and the farmers think of their technologies, they cannot improve them. The institutions, even when using participatory methods, have problems communicating as equals with smallholders and of knowing what they want. Some think that the smallholders have “limited demands,” and that they do not know the opportunities that the market offers. Furthermore, the countries have dismantled (consciously or unconsciously) the national extension systems, which complicates even further the relationship between researchers and smallholders. The million-dollar question is: how do you take knowledge generated in research institutes to the field, and back again?

Biodiversity, plant breeding and the fight against poverty. Many institutions study and promote actions to conserve and use biodiversity in Bolivia, Ecuador and Peru, but these clashes with plant breeding and the fight against poverty. Plant breeding with native species can improve the food security and the living standards of the farmers, but will biodiversity decrease? The use of transgenic crops is smack in the middle of this discussion. In Ecuador and much less in Peru and Bolivia, many organizations are fighting to impose a moratorium on the research and use of GM organisms in Ecuador and Peru.

Pro-poor research and extension with resource-dependent technologies. In the Andes everyone is talking about having a pro-poor focus (helping the poorest of the poor first), but they do it with technologies that require resources (money, good land, water, organization, a 15% counterpart fund, nearby roads). These technologies are accessible for the poor who have such resources. The poorest of the poor are excluded from the pro-poor focus.

Research and extension in the Andes have focused on research-dependent technologies (e.g. land, water, money). However, the agro-ecology movement is also strong perhaps more so in Ecuador than in Peru and Bolivia. These movements seek kinds of production based on the smallholders' own resources to achieve self-sustainability in farming. The promotion of whole, or integrated farms—which use few external inputs, produce most of their own inputs and produce many crops on a small-scale, for home use—is a common notion among development organizations in Ecuador, although we are not aware of any integrated farms in Bolivia or in Peru. Agro-ecology, linked with concepts of the whole farm, is an alternative to resource-dependent technologies and can be a good option for poor farmers. Institutions that use these focuses in Ecuador are also trying to link these farms to the market; they want to achieve high quality, competitive products, without using resource-dependent technologies.

Smallholder-indigenous groups doing research and development. In Ecuador there are several indigenous-smallholders groups, which are involved in R&D activities (examples include TUCAYTA and the Asociación de Agrónomos Indígenas de Cañar). These groups have consolidated organizations and some of them can show a clear impact of their activities. Nevertheless, they need some help with participatory extension methods and knowledge of markets. In Bolivia we do not know of any such groups, although there are the OECAS (organizaciones económicas campesinas), which do not do R&D, but are responsible for the joint marketing of products.

Smallholders' business corporations and cooperatives. There are some interesting experiences of smallholders doing business with entrepreneurs. In Bolivia there are two experiences: Irupana, which is a “mixed” firm cooperative which exports high quality coffee and works with poor smallholders. ASOFRUT (Asociación de Fruticultores), an incorporated firm which processes and sells tomato products (mainly tomato paste) on the Argentine market. It buys the produce of smallholders, hires technical assistance from a specialized NGO and has made the NGO's employees and the smallholders “partners” of the firm. In Ecuador there is the firm IQF, a consortium of entrepreneurs and smallholders, promoted by IICA, which produces, processes and exports high quality frozen broccoli. In Peru we know that organized groups of asparagus growers have exported their products using similar mechanisms. These organizations use market-entrepreneur-smallholder relationships. This can be a good way to create sustainable links between the market and smallholder. It also seems that these types of relationships can sustain the technical assistance and even some of the research.

Priorities for research related to HVP in the LAC Region

As we have pointed out previously, smallholders in the LAC region have to overcome limitations and manage constraint in order to benefit from HVP opportunities. We have also pointed out that several issues have to be taken into account in order to make HVP true opportunities for smallholders. Needs for research are many in the region some of the most important ones and probably the most common in the region are:

- *Basic research on biochemical and physical proprieties* and potential new uses of biodiversity-based products. We have already stated that biodiversity related products could potentially become HVP if consumers' demands are met. But for this to happen it is necessary to have a thorough knowledge about products' attributes. This is particularly important for products that may have potential nutritional or pharmaceutical appeal, hence these markets expect products that have full disclosure about its components. Examples of research needs are:
 - Identification of active principles for Andean roots and tubers used by ancient cultures to treat diseases such as diarrhea, and other stomach diseases
 - Identification of molecular structure of starch and sugar from rainforest roots as alternative sweeteners for diabetics
 - Ultraviolet stability determinants of organic tropical tinctures of achiote
- *Genetic improvement* is needed on introduced and traditional varieties such as tomato research on tomatoes is conducted globally, is this really a priority. Is this a pro-poor crop? and asparagus but also there are genetic improvement opportunities for endogenous, semi-domesticated crops. Research initiatives of this kind must use hi-end technology such as gene characterization techniques and in vitro vegetative propagation. Some issues for future research are:
 - Sauco shrub vegetative material production, This shrub grown in Peruvian central highlands, produces a delicious berry often used for making marmalade but It is highly variable in its fruit taste, juiciness and yield.
 - Characterization of gene fingerprint of black amaranth in the Chimborazo's valley of in order develop a territorial identity product.
 - Seed production of exotic fruits of the Lacandonian Region, in south México
- *Sustainable agriculture farming systems* need to be developed for smallholders that live in asset restricted contexts. Emphasis should be made in the development of agricultural input production such as biofertilizers and biological pest controllers that can be locally produced with the support of national or supranational biotechnology research facilities. Also sustainable farming techniques may have to respond to local hand labor availability. Some research issues are:
 - Biofertilizer pelletization and stabilization of active components
 - Identification of insect pheromones and production of insect attractants
- *Post-harvest y conservation systems* particularly suited for smallholder agriculture. Particularly the development of innovative systems that can cope with plot dispersion and variable harvesting periods.

- Development of mobile or semi mobile pre-freezing and packing facilities for horticultural produce
- Small scale, efficient drying facilities that use removable, environmentally safe fuel sources
- *Market development for exotic produce* that may have strong market potential. This has to be made having in mind that public initiatives have not been known as “big buck spenders” and that traditional market development techniques are almost always resource demanding.
 - How to market biodiversity based products in new markets
 - Markets for Andean roots and tubers
 - Markets for gourmet coffee
 - Markets for amaranth and quinoa
- *Strategies for developing products with cultural and territorial identity* may have an enormous impact in products that are based in such assets. The question is how to assure outcome appropriability for smallholders and, if it can be done, how to effectively share the benefits. Some examples are:
 - Peruvian Pisco
 - Bolivian gourmet coffee
 - Mexican prickly pears
- *National agricultural research and development policies* need to be crafted so they can cope with HVP initiatives that often require flexible open-minded policies to develop. Important research issues are:
 - Allocation of public resources to private development operators who will produce public and private goods
 - Long term public financing arrangements to support process oriented initiatives rather than product oriented projects
 - Improvement of financial mechanisms such as competitive funding in order to make them more “sensible” to innovative, unorthodox proposals.
 - Development of strategies for developing local service markets, such technical assistance and marketing services and initiatives to enhance connections to the already developed financial services
- *Creation and conservation of enabling business environments in rural areas* that favor the emergence of private smallholders’ ventures. For the latter to occur there is an urgent need to shift from the traditional view of development where neoclassical maximization axioms define the purpose of organizations and institutions to a more systemic view where transactional and institutional principles are used.
 - Understanding smallholders “economic logic” of sub-maximization of benefits in asset restricted environments
 - Developing recommendations for promoting business alliances between smallholders and private corporations
 - Design of novel local and national public incentives for the development of new ventures

Conclusions

We can conclude from this document that there are important issues that need to be taken into account in order to effectively promote HVP integration into smallholders' economic systems. Specific attention should be devoted to developing a sound but simple framework to define what we understand as a HVP. Some principles for crafting this framework were proposed and hopefully they will serve to this purpose.

It is also important to acknowledge particular characteristics of LACs smallholders in order to help them grasp opportunities related to HVP. Particularly important is the fact that the adoption of HVP by smallholders is complex; elements such as asset restrictions, behavior and context conditions have to be thoroughly studied in order to develop successful initiatives.

It is important to take into account that smallholders are not as homogeneous as we researchers and practitioners of the development community would like; smallholders can be defined as farmers that have important asset restrictions that limits their possibility of generating economies of scale that would enhance returns to their assets. Therefore, a clear differentiation is needed in order to plan effective initiatives.

Also we have to bare in mind that although smallholders can benefit from introducing HVP into their economic systems we have to understand that a) not all HVP are real opportunities for smallholders, b) the integration of HVP into smallholders economic systems in the LAC region is not a straight forward process; substantial changes have to be undertaken the underlying characteristics of the farm system b) HVP usually needs specific local, national or even regional institutional and organizational conditions that are not readily available in the LAC region.

Research centres at the supranational, national and local level, after a period of strategic reflection have developed innovative responses for assessing rural poverty issues that are spear points in the process of developing a common understanding of poverty can be defeated.

There are many needs for research regarding HVP for smallholders. They are related to themes like basic research on biochemical proprieties, genetic improvement, sustainable agriculture, post harvest technologies, market development, cultural and territorial products, national research policies and enabling environments for smallholders' business development. These themes, far from being exhaustive, are just an example of research priorities of the region.

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