



Food and Agriculture Organization of the United Nations

Linking smallholders to markets for non-traditional agricultural exports: a review of experiences in the Caribbean Basin

Inputs for strategy formulation by 'EU-ACP All Agricultural Commodities Programme'

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Summary

Rural poverty is an important and persistent phenomenon among the ACP countries of the Caribbean region. Agriculture is an important generator of employment and foreign exchange, but for many countries it is a weak and declining sector, notwithstanding recent decades of promotion of non-traditional agricultural exports (NTAEs) as a development strategy. While there have been some successes in specific commodity chains, for many Caribbean ACP states both export agriculture and food self-sufficiency have lagged. Natural capital resources are limited and agroclimatic factors make production risky. Institutional development such as phytosanitary controls, levels of producer organization and management, and capital investment are low, and significant competition in regional markets from better endowed neighbors creates challenging economic conditions, despite significant trade preferences. Moreover, development strategies for agriculture have been delinked from other economic sectors such as tourism and finance, creating sectoral 'silos' and exacerbating already adverse food trade balances.

Opportunities to enhance poor producers' participation in value chains are considered. This report reviews experiences in the Caribbean Basin – Caribbean states as such, plus Central and South American states bordering the Caribbean Sea - using illustrations of strengths and weaknesses among ACP countries. Opportunities and threats arising from the strategy of non-traditional agricultural export promotion are identified, drawing also on examples of regional competitors to ACP countries within the 'American hemisphere'. An extensive literature is cited, and secondary data sources are used throughout. Three commodity chain case studies are presented against which to benchmark a range of regional experiences in agricultural development. Attention is drawn to the lack of formal evidence to show that commodity, or value, chain approaches have a strong poverty reduction focus even where commercial strategies and linkages with the private sector have been successfully established.

The report concludes by summarizing lessons learnt:

- Commodity chains must be considered within the context of agricultural systems as a whole. Development strategies and interventions must acknowledge that smallholder agricultural systems are complex, diverse, and risk-prone. Simple commodity chain selection and promotion strategies are unlikely to tackle poverty at the farm level.
- For successful agricultural development, it is necessary but insufficient to identify precise market demand opportunities: supply constraints must be addressed. The supply capacity depends on resolving fundamental structural problems and uncertainties about land tenure; an adequate natural resources base; scale of enterprise; human, organizational and technological assets; and public and institutional infrastructure, including product quality control and enhancement systems.
- Agricultural development requires adequate linkage with related and supporting sectors: the labor market; input supplies; finance; business development and knowledge sectors.
- A 'sectoral silo' focus on export strategies has led to the neglect of other opportunities, such as local food markets, import substitution and the tourism sector.
- The poverty reduction benefits of specific strategies cannot be assumed. While value chain approaches to smallholder inclusion are notching up successes in the region and elsewhere, the poverty reduction impacts at community and household levels cannot be assumed.

- Producers face considerable barriers to entry into high value/high standards agricultural systems, whether for export or domestic consumption. The poorest smallholders are least likely to implement strategies of upgrading, novelty and innovation to be able to overcome such barriers and create sustainable competitive advantages.
- A fundamental question for the EU-ACP program is to consider whether
 - to support direct action by the public sector and NGOs through selected commodity interventions, or
 - to promote private sector-driven and demand-driven initiatives through creating and a coherent and entrepreneurial policy framework integrating related and supporting sectors.

In fact, there is a need for a judicious balance and apportioning of responsibilities and actions between private and public sector stakeholders which is likely to vary between ACP states.

- Major competitors and major markets are to be found within the Caribbean Region and other parts of the Americas. Development initiatives need to be formulated within the regional political and economic context, and coordinated with other regional interventions.

Among the limitations to this report are the need to draw lessons from diverse situations, thereby incurring the risk of over-generalization; and also that this was a UK desk-based review without primary data collection.

As a postscript, we note that the current critical context of world food markets adds significance to debates about poverty reduction and food security, even though a thorough analysis is not yet reflected in the literature: rural poverty reduction will be affected variously by the formulation of strategies to produce for domestic and regional food markets and for high-value global export markets, and the evolution of trends in global commodity markets.

SUMMARY	2
1 DEVELOPMENT CONTEXT IN THE CARIBBEAN	5
<i>Objectives and methodology</i>	7
<i>Terminology</i>	8
2 ISSUES IN CARIBBEAN AGRICULTURAL DEVELOPMENT	10
NON-TRADITIONAL AGRICULTURE EXPORT AS A DEVELOPMENT STRATEGY	10
<i>Link between non-traditional agriculture and poverty reduction</i>	12
<i>Constraints for promoting non-traditional agriculture</i>	14
VALUE CHAIN APPROACHES FOR PROMOTING NON-TRADITIONAL EXPORTS	18
<i>The value chain framework</i>	18
<i>Value chain approaches for development</i>	19
<i>Promoting smallholder linkages with the tourism sector</i>	24
3 CASE STUDIES	29
OVERVIEW OF CASE STUDIES	29
CASE STUDY 1 – NICHE MARKET PENETRATION: ORGANIC COCOA IN BELIZE	29
<i>Cocoa production and marketing in Belize</i>	30
<i>Organic cocoa and rural livelihoods</i>	32
<i>Rural enterprise development by organic cocoa producers</i>	33
<i>Lessons learned</i>	36
CASE STUDY 2 – VALUE ADDITION THROUGH PROCESSING: CITRUS JUICE IN BELIZE	37
<i>Cooperation and conflict among citrus stakeholders</i>	41
<i>Towards increased efficiency in processing</i>	43
<i>Lessons learned</i>	44
CASE STUDY 3 – FRESH PRODUCE EXPORTS: VEGETABLES FROM GUATEMALA	45
<i>Factors facilitating smallholder’s participation in the vegetable exports</i>	48
<i>Challenges for future development of fresh vegetable exports by smallholders</i>	50
<i>Impacts of fresh vegetable export promotion</i>	51
<i>Strengthening research & development for fresh fruit and vegetable promotion</i>	52
<i>Market & institutional issues fresh fruit and vegetable promotion</i>	53
CONCLUSIONS	54
REFERENCES	59

1 Development context in the Caribbean

With few exceptions, poverty continues to be an important issue throughout the Caribbean (Table 1.1). Moreover, there is a general consensus that Caribbean poverty is concentrated in the rural sector. For example, in St. Lucia the proportion of urban and rural populations in poverty was 16% and 30%, respectively. Rural poverty was also prominent in other small island states, including Grenada, St. Vincent, and St. Kitts. DFID (2001) concludes that poverty in Jamaica is chiefly a rural problem: 69% of poor people live outside the towns. Moreover, rural poverty in Jamaica has been declining less rapidly than urban poverty, and can be particularly severe in remote areas. In the case of Belize, the Country Poverty Assessment (2002) revealed that 33% of the population fell below the poverty line (based on expenditures for food and non-food items). The rural areas had 42.5% of their households living below the poverty line, while the urban areas had 20.6%. Of those defined as poor, 13.4% were deemed to be 'extremely poor'. In the case of Guyana, the IMF (2002) concludes: 'Guyana's future economic growth and poverty reduction depend heavily on agriculture and rural development.' Throughout the Caribbean, rural areas tend to have poor roads; the residents live in poorer quality housing, and have inadequate access to basic services such as potable water, electricity, sanitation, transportation, education, and health care. In other respects, heterogeneity is a characteristic of the rural Caribbean.

While the agricultural sector remains an important generator of employment and foreign exchange throughout much of the Caribbean, its overall contribution to national development has been declining, even with preferential market access to both North America and European markets. The agricultural and food trade gaps in the region widened significantly during the 1980s and then contracted in the 1990s due to an increase in export orientation. Since the mid-1990s export performance has declined, while imports have increased further. The overall performance of the agricultural sector varies markedly among the various Caribbean ACP countries³, based on agroclimatic conditions, total land available, and the overall structure of the economy (eg importance of tourism). Among the Caribbean ACP countries, there is considerable variation in terms of land area, population and economy. The combined area of the two largest countries (Guyana and Suriname) is more than double the combined area of all the other Caribbean ACP countries (Table 1.2). The combined area of the seven smallest countries (Dominica, St. Lucia, Antigua, Barbados, St. Vincent, Granada and St. Kitts), at 3,228 km sq, is seven times smaller than the land area of Belize – the smallest of the mainland countries. With the exception the Dominican Republic and Haiti, population numbers do not exceed 1 million, and in limited cases, do not exceed 100,000 (eg Dominica, Antigua, Grenada and St. Kitts).

³ The 15 Caribbean ACP countries are: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. Table 1.1 compares the human development indices for countries in the Latin American and Caribbean region.

Table 1.1 Human development index for selected Central American and Caribbean countries (2005)

Country	HDI Rank ⁴	HDI value ⁵
Barbados	31	0.892
Costa Rica	48	0.846
Bahamas	49	0.845
Cuba	51	0.838
Saint Kitts/Nevis	54	0.821
Trinidad/Tobago	59	0.814
Panama	62	0.812
Dominica	71	0.798
Saint Lucia	72	0.795
Colombia	75	0.791
Dominican Republic	79	0.779
Belize	80	0.778
Grenada	82	0.777
Suriname	85	0.774
Saint Vincent/Grenadines	93	0.761
Guyana	97	0.750
Jamaica	101	0.736
Nicaragua	110	0.710
Honduras	115	0.700
Guatemala	118	0.689
Haiti	146	0.529

In most Caribbean countries, development of the agriculture sector is important for sustaining traditional resource use and environmental stability, diversifying the local economy (eg reducing food imports, promoting alternative tourism), and achieving progress towards poverty reduction (McElroy & Albuquerque 1990). The contribution of agriculture to GDP in the region varies widely, from a high of 66% in Haiti to a low of 0.6% in Trinidad. States where the agriculture sector is relatively small include: the Bahamas, Saint Kitts, Jamaica, Antigua, and Barbuda. In most cases, where agriculture is important, the low contribution of agriculture to national GDP reflects the emergence of tourism and financial service sectors in the 1960s and 1970s. Overall, Caribbean agriculture continues to be characterized by an overall high dependence on a few export commodities for the majority of export earnings, such as bananas and sugar, and in most cases, production of these exports has been declining or stagnant since the 1980s, due in part to reductions in import quotas and increased extra-regional competition. On the other hand, in several cases, agriculture remains vitally important as a source of export earnings and employment; these include: Guyana, Dominican Republic, Haiti, Belize, Dominica, St. Lucia, and St. Vincent.

⁴ Out of a total of 177 countries included in the rankings.

⁵ HDI measures the average achievements in a given country based on three dimensions of 'human development': a long and healthy life, knowledge, and a 'decent' standard of living (for more details, see <http://hdr.undp.org/en/statistics/indices/>).

Table 1.2 Selected indicators of size and wealth for Caribbean ACP countries

Country	Land area (sq km)	Population (1,000x)	Per capita GDP at PPP (US\$)	% contribution of agriculture to GDP
Guyana	196,850	769	5,300	35.2
Suriname	161,470	471	7,800	8.0
Dominican Republic	48,380	9,366	9,200	17.0
Haiti	27,560	8,707	1,900	66.0
Belize	22,806	294	7,800	22.5
Jamaica	10,831	2,780	4,800	5.0
Bahamas	10,070	306	22,700	3.0
Trinidad/Tobago	5,128	1,057	21,700	0.6
Dominica	754	72	3,800	17.7
Saint Lucia	606	171	4,800	21.7
Antigua/Barbuda	443	70	10,900	3.8
Barbados	431	281	19,700	6.0
Saint Vincent/Grenadines	389	118	3,600	26.0
Grenada	344	90	3,900	5.4
Saint Kitts/Nevis	261	39	8,200	3.5

Source: CIA World Factbook (2007)

Export diversification was adopted throughout the region, as well as in Central America, during the 1980s as the dominant strategy for agricultural development, mainly in response to economic and political crises. However, overall results have been mixed: nontraditional agricultural export sectors, such as organic juice in Belize, fresh vegetables and fruits in the Dominican Republic and ethnic foods in Jamaica have been established and enjoyed defined periods of high growth, but overall they remain vulnerable to changes in preferential trade agreements, sanitary and phytosanitary challenges, increased extra-regional competition, and small domestic markets, among other factors. Responses by individual island governments and regional agricultural research and extension institutes have generally emphasized mitigating natural and economic constraints and ignored longer-term institutional and structural difficulties. Governments have specialized in the provision of subsidized inputs (seeds and fertilizers), mechanized services (plowing and harvesting) and protectionism, and in efforts to centralize crop marketing and distribution. With few exceptions, however, these efforts have been too limited in scope to effectively address the diseconomies of small farm size, chronic natural constraints and the massive sectoral wage imbalances unleashed by the emergence of the finance and tourism industries.

Objectives and methodology

This review aims to inform the process of project strategy formulation, as mandated in the European Union-African, Caribbean, Pacific States (EU-ACP) All Agricultural Commodities Programme⁶, by focusing on successes and limitations of different approaches in Caribbean basin ACP countries and regional competitors to linking smallholders with growing and higher-value agricultural markets. Recommendations are derived from critical analysis of previous strategies by both public and private sector and their related impacts on agricultural development and rural poverty in ACP Caribbean countries. In addition to a critical review of the literature related to agricultural development strategies, in general, and in the Caribbean, in particular, we present detailed case studies of strategies for linking smallholders to markets for non-traditional

⁶ The general objective of the EU-ACP All Agricultural Commodities Programme is to improve incomes for producers from traditional or other agricultural commodities and reduce income vulnerability at both product and macro level.

agricultural exports (NTAEs). Cases were selected to capture variation in terms of: institutional arrangements, overall investment requirements, and risks and limitations. Case studies are developed primarily based on secondary information collected from various academic sources (journals, monographs), the gray literature (reports from businesses, NGOs, bi-lateral donors, and development banks), and internet sources (newspapers, discussion fora, and websites), with particular focus on:

1. Value chain development
2. Impacts of non-traditional agriculture export promotion
3. Collective enterprise development for processing and niche market penetration
4. Political-legal framework, including development strategies and policies
5. Local market development, including 'pro-poor' tourism.

The scope of the report is wider than those countries included in the CARIFORUM which was created in 1992 for the purpose of coordinating and monitoring the delivery and planning of European Development Fund (EDF) resources to the region. The linkages between the EU and the region have recently been extended by the signing of the Economic Partnership Agreement in December 2007. Nevertheless, the rich experience of Central America in non-traditional export promotion and the similarities in the development context between Central America and the Caribbean, much can be learnt from regional competitors. Similarities among ACP and other countries in the region are not confined to the relatively small scale and level of development of the economies, the reliance on smallholder production, and agroclimatic factors underpinning the rural economy, but also economic factors such as participation in regional trade and competition in product and services markets, geographic proximity to the principal export market, ie the United States, which accounts for 54.6% of the exports and 38% of imports of CARIFORUM countries and makes the Caribbean different from other ACP EPA regions (South Centre 2008); moreover there are common 'western hemisphere' regional policy and organizational frameworks such as the Caribbean Basin Initiative (CBI)⁷, the Organization of American States and the Inter-American Institute for Cooperation on Agriculture (IICA)⁸, and the Inter-American Development Bank (cf the Lomé Convention and the Cotonou Agreement between the EU and the ACP, Caribbean Community and Common Market (CARICOM) and the Organization of Eastern Caribbean States (OECS), and CARIFORUM). Hence, with the agreement of FAO ESTT, lessons from Central America – and examples from other regions - are woven into the discussion where it is helpful to do so.

Terminology

The language surrounding rural development, in general, and value chain development, in particular, is riddled with overlapping and vaguely-defined terminology. In the interest of a common understanding the issues discussed in this report, we use the following definitions:

- *Smallholders*: Households who engage part time in agricultural production, often with relatively simple technologies and limited access to productive assets (usually less

⁷The CBI is intended to facilitate the economic development and export diversification of the Caribbean Basin economies. Initially launched in 1983 through the Caribbean Basin Economic Recovery Act (CBERA), and substantially expanded in 2000 through the US-Caribbean Basin Trade Partnership Act (CBTPA), the CBI currently provides 19 beneficiary countries with duty-free access to the US market for most goods'. Currently nineteen countries benefit from the CBI program: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Costa Rica, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, Panama, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago. (http://www.ustr.gov/Trade_Development/Preference_Programs/CBI/Section_Index.html accessed 01-05-08).

⁸ The Inter-American Institute for Cooperation on Agriculture (IICA) is a specialized agency of the Inter-American System, and its purposes are to encourage and support the efforts of its Member States to achieve agricultural development and well-being for rural populations (<http://www.iica.int/Eng/infostitucional/Pages/default.aspx> accessed 01-05-08).

than 2 ha). Agricultural production is destined for market as well as for household needs (subsistence). In the context of value chain development programs, participating smallholders are usually among the better off, but still relatively poor, smallholders.

- *Non-traditional agricultural exports (NTAEs)*: This term is used to describe two general types of products: 1) products that have not been produced in a particular country before (eg organic coffee) and 2) products that were either traditionally produced for domestic consumption, but are now being exported (eg tropical fruits, fresh vegetables), or development of a new market for a traditional product (eg tropical fruits for local hotel industry).
- *Value chain*: inter-firm coordination associated with the flow and successive transformation of goods from the raw materials stage, through to the end-user. In the development literature, emphasis is placed on the relations between large-scale buyers, processors and distributors (usually in the North), where products are consumed, with producers (usually in the South), where they are produced. It is conceptualized that Southern firms must find a place for themselves in value chains according to conditions imposed by upstream buyers and processors. The ability to capture increased value (upgrade) for Southern producers implies making capital investments and it is assumed that learning and investments can be achieved, or at least facilitated, through participation in the value chain.
- *Rural collective enterprise (RCEs)*: A commercial enterprise based on the production of agricultural products and services, collectively owned by smallholders for the marketing of their production and/or supply of inputs to members. Similar to but not necessarily synonymous with farmer organizations or rural producer organizations, the focus is on 'enterprise', the organization as a firm. Nevertheless, they often pursue multiple objectives, with profit maximization as only one of many goals. Typically, other goals are community development, improved local safety nets, influence over political processes, and member education. Most rural enterprises fall into the category of small and medium enterprises (SMEs)⁹.

⁹ Official definitions of SMEs usually take into account the number of employees and the annual turnover. But these criteria vary widely across regions and countries. In the European Union, small and medium enterprises have between 11 and 50, and 51 and 250 employees, respectively. In the United States ranges are from 11 to 100, and 101 and 500 employees for small and medium enterprises, respectively. In developing regions, formal definitions and common understandings vary but the economic and social contexts suggest lower ceilings for SMEs, for example a maximum of 100 employees and an annual turnover of less than US\$3 million, according to the Inter-American Development Bank (IADB).

2 Issues in Caribbean agricultural development

Non-traditional agriculture export as a development strategy

Since the 1980s, governments in the Caribbean, as in other parts of the developing world, have based their agricultural development strategies on the promotion of NTAEs in hopes of 1) increasing foreign exchange and 2) finding alternatives to declining terms of trade associated with 'traditional' agricultural products (eg sugar, coffee, bananas). They may also perceive the NTAE sector as offering a possibility for the reduction of rural poverty, to the extent that it provides higher net prices for smallholders and generates rural employment. As part of the packages mandated by structural adjustment and trade liberalization programs, many governments in Caribbean introduced policies in favor of NTAE, such as export facilitation procedures, subsidy programs, and fiscal reforms. Trade agreements, such as the Caribbean Basin Initiative (US) and the Lomé Convention (EU) also created powerful incentives for NTAE promotion. In mainstream economics, NTAE strategies are typically justified on the principle of short-term comparative advantage, which, in the case of some Caribbean countries has related to a relatively rich natural-resource base and low-cost labor supply for harvesting and processing (eg Guyana, Belize, Jamaica). The basic argument is that, in the short run at least, by following the price signals of international markets and the cost signals of local technologies and resource availabilities, countries can specialize in products that they produce efficiently relative to the rest of the world. This specialization will maximize income from available resources and create an investible surplus for future growth. In the longer run, specialization and openness to the international market can allow for additional dynamic productivity improvement through technological innovation, economies of scale, and improved competition among firms.

Much of the literature on NTAE focuses on 1) the design and application of policy instruments for NTAE promotion and 2) the potential of NTAE market access to improve economic performance and increase export revenues. In their review of export promotion strategies from the late 1980s, Barham et al. (1992:46) identify a common theme: 'Their usual focus is to identify supply and demand conditions for nontraditional export products. A particular country's land, labor, climate, infrastructure, and natural-resource endowments are generally matched with evolving international demand patterns in an effort to target the best products for a national promotion effort led by the private sector. Recent data on price trends for the commodities and interviews with distributors in the importing countries about future demand prospects are compared with estimates of costs of production, rates of return on land and capital, some provisos about production-investments risk, and potential sources of financing to determine which commodities might be a good bet.' Recently, Barghouti et al. (2004: 3) have argued that '(export diversification) involves an unbiased economic analysis to identify the diversification opportunities at the community level. Information, extension, farming training and the attention of the private sector are then directed toward those opportunities...resources and training are provided to make appropriate selection of enterprises, especially to smallholder farmers cultivating in less favorable areas and landless poor people.'

Among several Caribbean countries, considerable progress in export diversification has been achieved. For the period 1961-2000, Taylor (2003) characterizes export diversification performance among Caribbean countries based on quantitative measures derived from trade data:

- *Barbados, Jamaica, and Trinidad:* Prior to 1980s, exhibited either declining levels of diversification or no clear trend. After 1980, all exhibited noticeable increases in diversification. In Barbados and Trinidad, the trend is attributed to decline in sugar exports, while in Jamaica diversification is related to increases in coffee and cigars.

- *Belize and Guyana*: Diversification measures exhibit generally declining values. In Belize, exports became concentrated in sugar, bananas, and juice. In Guyana, the decline is related to an increase in the proportion of sugar in total exports.
- *Dominican Republic (DR) and Haiti*: Prior to 1980, neither demonstrated a clear trend in export diversification. However, since then, both have exhibited a significant increase in the diversity of exports. In the DR, this is related to a decline in sugar exports and an increase in fresh fruits and processed products. In Haiti, increased diversification is associated with exports of mangoes, coffee, and essential oils.
- *St. Lucia, Grenada, Dominican, St. Vincent, and St. Kitts*: Demonstrated no clear trend in diversification. The exception is St. Kitts, where sugar production has fallen as land and labor have moved to more productive uses.

Taylor's analysis shows that a limited degree export diversification has taken place over the past 4 decades, however, overall trade volumes are low and sporadic, and that most Caribbean countries remain specialized in a limited number of exports. A few examples exist of Caribbean countries taking advantage of the emergence of niche markets, for example: organic cocoa in Belize and the Dominican Republic and fair trade bananas in the Westward Islands and Dominican Republic (see Box 2.1)

Box 2.1 Diversification into fair trade banana market by Caribbean producers

A decade ago the Caribbean supplied two-thirds of the bananas consumed in the UK, but lack of competitiveness has led to dramatic reductions in Caribbean exports. For example, throughout the Windward Islands (St. Lucia, St. Vincent, Grenada, Dominica) production fell from 123,000 in 2000 to 82,000 MT in 2004. The Caribbean banana industry has increasingly turned to fair trade and organic markets for generating increased returns. Two smallholder-owned enterprises in the Caribbean have been established for facilitating links with international traders: Windward Islands Farmers Association (WINFA) based in St. Lucia and Ecological Bananas from the Northwest Line Association (BANELINO) based in the Dominican Republic.

- In 2002 and 2003, WINFA shipped 4,734 MT and 13,000 MT fair trade bananas, respectively. WINFA counted some 535 smallholders as members (approximately 11% of the 5,000 bananas producers in the Windward Islands), who, in turn, employed some 500 permanent workers and 1,200 temporary workers. WINFA bananas are exported by WIBDECO for distribution. However, changes to fair trade certification systems are raising more barriers to entry into the EU market
- BANELINO was formed in 2000 with extensive technical and financial assistance from government agencies and international donors. Between 2001 and 2005, exports increased from 9043 MT to 16,980 MT and membership levels rose from 60 to 275. Since its formation, BANELINO has enjoyed a beneficial relationship with a local banana exporter (Plantaciones del Norte), which provides credit to BANELINO members for planting and purchase of production inputs. In addition, importers in the EU have facilitated loans for critical infrastructure development. Recent analysis has identified some challenges to the future development of BANELINO, including: 1) insufficient communication regarding fluctuations in price and rejection of fruit for quality control problems at various nodes in the value chain and 2) insufficient remuneration perceived by producers for bearing the high costs of EurepGap (now GlobalGap) certification (required by EU importers) (Donovan et al. 2008).

However, concern is warranted regarding the sustainability of fair trade in bananas. Producers in some developing countries face problems of rationing, as potential supply is exceeding demand. There are also concerns about long-term effects on investments and productivity and the efficiency of fair trade channels.

Link between non-traditional agriculture and poverty reduction

Most NTAE strategies are based on the notion that increased exports of higher-value projects result in reduced poverty, directly through increased incomes or employment or indirectly through spillover effects. However, there is no a priori reason to attribute NATE promotion to poverty reduction. Barham et al. (2002) make a strong case that assumptions regarding the competitive advantage of smallholders in NTAE export promotion may often have little validity in practice. First, rather than being a 'given', comparative advantage is a product of clearly defined land tenure, investment in service provision and technology, and institutional arrangements among smallholders and between smallholders and other actors in the value chain. Case studies of Paraguay, Chile and Guatemala by Carter et al. (1996) illustrate the range of possible impacts of NTAE promotion. Paraguay's wheat boom directly favored large-scale farmers who absorb relatively little labor per hectare, and created a highly exclusionary pattern of growth that left peasants out as both producers and workers¹⁰. In highland Guatemala the adoption of vegetable exports favored smallholders, at least up to a point, but pesticide residues began to threaten entry into the US markets. Access to good roads and infrastructure played an important role in stimulating adoption in Chile's fruit export boom which bypassed the smallholders as economies of scale in production and packaging were an impediment to small quantities of products. Export credit was made available, but most smallholders were not able to obtain loans. In each of these cases, land concentration appears to have increased. Evidence suggests that food safety assurance in the design and implementation of NTAE strategies has been given insufficient attention by donors, governments and the private sector alike (Box 2.1).

Drawing on experiences in Central America in the 1980s, William (1998) highlights the importance of land tenure for the effective implementation of NTAE strategies. Historically, the main negative impact of NTAE promotion on smallholders has been their displacement from the land they previously operated and the conflict associated therewith: when land and labor become more valuable, the rich focus harder on asserting control over these resources' The beef boom of Central America during the period 1960-1980 displaced thousands of smallholders from land that they had previously farmed either without official title or with only usufruct rights. This displacement created unemployment due to the low labor requirements of cattle ranching. When the benefits to be obtained from exports are modest, they may not induce serious conflict over the resources which produce them. On a more positive note, physical displacement may also be less likely when resource ownerships and usage are more clearly defined (including official recognition of customary rights), governments prioritize smallholder development, and smallholders are effectively organized into social and business organizations (see Carrera et al. (2004) for discussion of the role of social organization in land access by smallholders in Petén, Guatemala).

The connection between NTAE expansion and poverty reduction and increased livelihood security hinges fundamentally on 1) the ability of exports to provide a source of effective demand for mobilizing idle resources; 2) relatively inelastic international demand; and 3) producers having the resources and capacities to effectively respond to the more demanding requirements of NTAE markets. When these assumptions do not hold, NTAE expansion and its related impacts of economic development, in general, and poverty reduction, in particular, may be limited. The following lessons have emerged from experiences since the 1980s:

- *The 'adding up effect'*: There is a general assumption that export revenues for NTAEs are not adversely affected by increased supply, based on the 'small country'

¹⁰ This situation is being repeated with the current soya boom: <http://ipsnews.net/news.asp?idnews=39972> accessed 01-05-08.

assumption that any given country will produce only a small share of the product. Although this assumption is reasonable for one country, it overlooks the potential for regional overproduction of NTAEs – also known as the ‘adding up effect’ (for a detailed discussion of adding up for NTAE from developing countries see Hallam et al. 2004). Moreover, to the extent that NTAE strategies require large sunk investments (eg construction of large-scale processing plants, establishment of tree crop plantations, and conversion to organic production systems), supply adjustments will be limited even if prices fall.

- *Price volatility in thin markets for NTAEs*: NTAE strategies are based on the notion that by expanding the number of different types of exports, there will be a reduction in exposure to the boom and bust cycles of commodity markets. However, reduction in export earning fluctuations will not be achieved if prices of the products in the new export portfolio move in the same direction as those of the old portfolio (covariance in price). Interestingly, the portfolio of NTAEs adopted by some Central American countries may fluctuate more due to the increased price volatility than they did before diversification took place (Conroy 1990).
- *Limited resources and capacities at the household level*: Links between the decision to adopt particular NTAE strategies and the existence of institutions and services that help mitigate the associated risks or cover resource gaps have not been given the attention that research on such adoption in other contexts suggests is essential. Especially for smallholders, the risks associated with NTAEs can be substantively reduced by crop insurance, technical assistance on pest control, improved access to credit and services for enterprise business organizational strengthening and diversification of market contacts. Land tenure remains an issue in throughout the Caribbean and Central America (see Box 2.2 for discussion on current land tenure struggles among the Maya of Southern Belize). Barham and colleagues note that without attention to the need for such programs, higher returns and incomes may be forgone by smallholders, or worse yet, lost permanently because of one bad crop.
- *Growing conditions in the tropics for annuals*: In the rainy season when climate conditions are more favorable, smallholder plantations are affected by pest infestations. Proper application of pesticides during the season and, therefore, availability of the required financial liquidity and access to technical assistance are preconditions for successfully cultivating NTAEs. The dry season is characterized by relatively low pest problems but low water availability. Irrigation, thus, often becomes a prerequisite for successfully growing NTAEs. Failure effectively to address these issues can reduce the comparative advantage that smallholders may have in growing labor-intensive NTAEs (Carletto et al. 1999)
- *Limitations of smallholder business organizations*: The formation of smallholder business organizations can help to reduce transaction costs and the inefficiencies associated with imperfect information. They often provide members with access to credit, links with buyers and processors (improved trust relations), and insurance through limited liability on loans. However, rural enterprises tend to be ill-equipped to carry out their functions over the long term, often characterized by discontinuity in management, low prices, and high default rates on pending debts (consequence of poor credit decisions and low prices).
- *Latterly climate change and instability*¹¹ through global warming, and the current *dramatic price rises*¹² in basic commodities and derived agricultural inputs and foodstuffs are changing the short, medium and long-term conditions of and prospects for global agriculture (von Braun 2007, FAO 2008a). In the Americas, short and medium term prospects for the production of major food crops are not unfavorable for Central America and the Caribbean, while the scenario for the principal South American producers is mixed (FAO 2008b), and much affected by policy intervention (Financial Times 2008).

¹¹ <http://www.occ.gov.uk/activities/stern.htm>; <http://www.ipcc.ch/> accessed 01-05-08

¹² <http://www.ifpri.org/pubs/fpr/pr18.asp>; <http://www.fao.org/worldfoodsituation> accessed 01-05-08

Box 2.2 Land tenure among the Maya peoples in southern Belize

Land tenure issues remain a constraint to long-term agricultural development throughout the Caribbean. As the experiences in Belize show, these issues can be especially complex when they involve indigenous peoples. In Belize, there are two types of tenure arrangements among Maya communities: the reservation system and the lease system. The reservation system allows Maya communities to hold land collectively and provides community members with flexibility in its use under traditional management systems. This arrangement is preferred by some Mayans, since slash and burn agriculture requires shifting cultivation, the reservation provides limited restrictions on movement. Approximately 70,000 acres are unofficially classified as reservation. However, reservations have never been physically demarcated nor legally defined as the communal property. At least 20 Maya villages are located outside reservation boundaries where smallholders operate under the lease system. The leaseholder has the use of the land as long as he continues to use the land and pay rent to the Government. For some Maya, leases can be appealing as they allow for increased access credit and grant the right to retain land claims during village absences (Emch 2003).

There is division within Maya communities about how to resolve the land tenure issue. Some communities have parcelled out their holdings among members, thereby facilitating lease agreements. In contrast, others want their community boundary demarcated, with land inside the boundary held under their collective ownership. Nonetheless, all communities want their boundaries demarcated whether they prefer lease or communal ownership or a combination of the two. In addition, the construction of a new highway that connects with the Guatemalan border is a concern to the security of the land under Maya occupation. This highway will cut through the centre of the Maya territory, and has the potential to increase land values and accelerate logging activities where few people have legal recognition of their landholdings. During the 1990s, the government granted concessions to logging companies in or close to the reservations, increasing the tension between GoB and the Maya communities of the land tenure issue.

As part of its long-term vision for the development of the agricultural sector, MAF has identified the need to 'resolve land tenure issues that inhibit more optimum and sustainable uses of land for production activities' (MAF 2003). However, little advancement has been detected in resolving this issue. Effectively addressing the Toledo land tenure issues will require extensive consultation and careful preparation, as well as financial commitments, by both the GoB and the Maya communities.

For some smallholders, failure to address these issues may result in a shift back to the production of traditional crops for the domestic market, which had been partially abandoned in the early stages of NTAE adoption.

Constraints for promoting non-traditional agriculture

Despite national-level incentives to diversify agriculture, and multitudes of development projects with some type of diversification component, the overall trend in exports from Caribbean ACP countries is one of dependence on traditional commodities for the bulk of agricultural export earnings (McElroy & Albuquerque 1990). In a recent study, Skoet et al. (2004) identify Caribbean ACP countries that rely on one commodity for more than 20% of their export earnings: Guyana (20% sugar), Belize (21% orange juice), Grenada (21% nutmeg, mace, cardamom), Dominica (22% bananas), Dominican Republic (26% cigar cheroots), St Vincent (39% bananas), St Lucia (66% bananas). The few commodities that are exported go to a limited number of markets (Ford & Rawlins 2007): the E.U. and the US markets alone account for more than two-thirds of Caribbean agricultural exports, with only 12.7% of exports going to 'other' destinations.

Several authors have noted the overall decline in Caribbean agriculture, in general, and the limitations faced for diversifying into NTAEs, in particular. Drawing on lessons from the English-speaking Caribbean, Heath (1988) argued that Caribbean governments have been ill-prepared to promote NTAEs given that 1) production is highly fragmented among smallholders, due in part, to problems associated with the passing of former plantation lands from private into public ownership and their parceling out among smallholders as leasehold or freehold properties, 2) there are limited capacities of smallholders and small enterprises to compete inter- and intra-regionally on the basis of price and quality (see box 2.3 for discussion on food safety challenges in Jamaica), and 3) there is reduced the scope of intervention in the agricultural sector, giving priority to industrial and tourism development. In light of these limitations, Heath recommended that development strategies include the promotion of staple production for the domestic market and increasing food security. Recognizing the potential for market saturation and limited economic incentives for production of staples, Heath suggests the need for investments in market intelligence services, thus allowing smallholders to identify and respond to local and intra-regional market opportunities: 'By increasing the consistency of produce quality and reducing supply irregularities, smallholders will be better placed to tap the large tourist demand that exists on many islands.' While increased focus on staples can contribute to increased livelihood security (mainly through lower risk), effectively dealing with the issue will most likely require efforts well beyond those of market intelligence. First, recent evidence suggests that most market intelligence systems installed by governments in Latin America have been unable to provide timely information in a format that is usable by smallholders. Second, these recommendations largely ignore the central limitations to smallholder development, including limited access to productive resources, lack of infrastructure, inputs, and technology, and ineffective arrangements for overcoming scale inefficiencies (eg collective organizations). A recent report has highlighted the continuation of separate development paths of agriculture and the tourism industry in Caribbean countries (ECLAC 2005): export-oriented agriculture has been disconnected from local food demands.

Box 2.3 Food safety challenges in Jamaica's NTAE sector

Henson & Jaffee (2005) examine the food safety challenges faced by Jamaica in the development of NTAEs. Jamaican trade in a wide range of NTAEs accelerated in the first half of the 1990s, including: fresh fruits and vegetables (eg yam, sweet potato, hot peppers, mango, papaya), herbs and spices, fish and fishery products (eg lobster, tilapia), and processed food products (eg pepper sauces, chutneys, soups, juices). However, for any of these NTAEs, Jamaican supplies are currently encountering significant market access challenges associated with pesticide residues, plant pests, food hygiene, additives and contamination. Henson & Jaffee argue that Jamaica's system of food safety and plant health management has not evolved sufficiently in response to changes in international standards, the requirements of Jamaica's major trading partners, and shifts in composition of its agricultural and food exports. While the basic elements of capacity are in place and existing public institutions operate relatively well, they are directed at outdated principles and procedures. The current level of resources is inadequate to meet the needs of the export sector. In general, Jamaica's NTAEs face a broad range of competitiveness constraints related to inconsistent raw material production, high post-harvest losses, relatively high cost and limited availability of labor, and intensified regional and other competition. Market access problems related to SPS matters have exacerbated and reinforced these constraints, reducing the profitability and raising the risks associated with these trades. The resolution of such SPS constraints is necessary, although not sufficient, to restore and improve the competitiveness of Jamaica's NTAEs.

In Guyana, NTAE expansion has been limited, in part, by an unfavorable political-legal framework for agricultural development. Canterbury (2007) compares the performance of the agricultural sector in Guyana under two contrasting development approaches: state-driven (1964-1992) and market-driven (1992-present). He argues that policy aims under both approaches sought to address essentially the same set of problems: expansion of NTAE to reverse mono-crop production (sugar), increased output of secondary crops for domestic consumption, and improved infrastructure. However, the related approaches were dramatically different. Under the state-led approach, the overall aim was to 'secure food supply' (i.e., import substitution). In addition to restricting the importation of a wide range of foods, policies focused on: 1) nationalization of sugar industry, 2) formation of cooperatives and marketing boards for increased efficient in input and output markets (eg Guyana Rice Milling and Marketing Authority), 3) provision of credit through development banks, and 4) research for alternative methods of food processing and preservation. Overall, the programs were not effective, resulting in severe shortages of food in the 1970s and 1980s. Sugar production levels were halved, from 324,000 tons in 1978 to 168,000 tons in 1988, due, in part, to lack of management experience, labor unrest, and insufficient investment (Merrill 1992). No radical land reform was carried out, despite claims of the necessity for such change.

McElroy & Albuquerque (1990) examined the general decline in agriculture among several small-island states (Antigua, Dominica, Grenada, St. Kitts, St. Lucia, and St. Vincent) during the 1980s. They argue that with the economic restructuring from rural development to tourism and export manufacturing, together with increased urbanization and immigration, land and labor resources have been unnecessarily drawn away from the agricultural sector. That is, tourism and urban development have come at the expense of rural development¹³. In addition to institutional constraints common throughout Caribbean ACP countries (eg inadequate infrastructure, limited access to credit, policy environment favoring large scale production), small island states have additional challenges. First, agro-climatic conditions are critical, including steep topography, thin soil, inadequate rainfall, and susceptibility to periodic flooding. Second, smallholders are more likely to suffer from scale issues: uneconomic scale of production, intense competition from imports, imported pesticides and fertilizers. Finally, wage and land-price differentials between agricultural and tourist/industrial sectors reduce incentives for pull resources out of agriculture. However, as highlighted in Box 2.4, smallness can also have some important benefits, for example: reduced risk from disease and pests. McElroy and Albuquerque call for a re-conceptualization of the agricultural development approaches, whereby the agriculture sector is recognized as a source of 'outputs, linkages and livelihoods,' rather than land and labor inputs to the urban and tourism economies. Specifically, they recommend: increasing attention to the environmental costs of large scale tourism projects, building awareness regarding the role of agriculture in sustainable resource management, shifting of policy from large-scale commercial exports toward greater emphasis on smallholder agriculture, and integrating agricultural policy into long-term tourist development strategies. While some progress has been made in this direction due to efforts by international donors and the private sector in the Dominican Republic (organic cocoa, coffee, bananas), the Windward Islands (organic bananas), and Belize (organic cocoa), considerable work remains to be done.

In addition to the impacts of the industry and tourism industries on agriculture in small island states (SIS), the overall political and market environment has discouraged

¹³ Not all researchers agree on the tradeoffs between agricultural and tourism development – for review see Telfer & Wall (1996). For example, Latimer (1981) argues that, while tourism has caused an increase in wages and has drawn labour from other sectors including agriculture, the fact that younger generation do not want to work in agriculture cannot be blamed on tourism. Along a similar vein, Weaver (1988) suggests the decline of agricultural in the Caribbean can be 'attributed largely to the emergence of tourism as a viable alternative to a chronically unstable agricultural sector, prompting the lateral transfer of investment capital by local and expatriate plantation interests from agriculture to tourism.'

agricultural production, especially as related to production for local markets, giving rise to the high levels of food import penetration observed in the region (ECLAC 2005). Drawing on evidence from St. Vincent, Grossman (1993) challenges the often-held perception that the decline of local food production is a direct result of increased production for export markets. During the 1990s, export banana production in St. Vincent was expanding while food production in banana-growing areas was declining. However, he argues that export agriculture was not the primary cause of the decline in local food production. In fact, certain environmental features associated with banana production actually facilitate agricultural production for local markets, mainly fruits and vegetables. Nor was limited interest in production for local markets resulting from the pressures of export agriculture. Agricultural production for local markets was declining in banana-growing areas in St. Vincent primarily because of unfavorable political-economic contexts of producing and marketing local food crops as compared to bananas for export. Among the problems that limit production for local markets are: marked volatility in prices, consumer preferences for higher quality foods, and lower costs of imported products. In addition, intervention by the state and foreign capital in smallholder production has made banana production more attractive than production for local markets by facilitating access to credit to obtain agrochemical inputs and establishing fixed prices for banana exports. In addition, bananas are less prone to crop theft and face better access to scarce labor supplies. According to Grossman, in general, shortages of agricultural wage labor in SIS inhibit fruit and vegetable production more than banana production, as working in banana-related activities is considered less arduous and provides more status than work in fruit and vegetable production.

Box 2.4 The benefits and limitations of being a small-island state (SIS)

The main advantages of a SIS economy can be encapsulated as follows:

- *Limited scope for economies of scale:* One of two patterns may emerge: The economy becomes very specialized relative to larger countries or the average size of enterprise remains small. In the former case, the economy is highly vulnerable to demand swings; in the latter, costs remain high relative to larger economies.
- *Small domestic market:* May result in difficulties to attract outside investment, or keep local investment at home (high fixed costs relative to the scale of the investment). In addition, transport costs may be raised by the inability to buy in bulk. However, bulk goods when they do arrive can flood the domestic market.
- *Small impact on other economies:* Exporters from SIS are more likely to be able to exploit a niche market without raising the fears of the domestic producers or alerting larger competitors. However, smallness raises problems of achieving the volume needed to engage in advertising, and the difficulties of maintaining regular supplies.
- *Vulnerable to external events:* Being small magnifies the impact of an external economic event or weather-related disaster. World market price changes for the small range of goods produced by SIS can have a devastating impact.
- *Natural barriers against disease:* Small islands are still relatively disease-free than large landmasses. This is increasingly important in a time of stringent sanitary and phytosanitary barriers and the availability of higher prices for organic crops.

Source: Josling (1998)

As highlighted by Kendall et al. (2003), not all agree on the role of agricultural development in the overall development process of small island states (SIS) in the Caribbean. Based on the failures of previous strategies to promote import substitution, Kendall and colleagues call for increased attention to 'competitive advantage' in policy making in the Caribbean SIS. For some countries in the region, they argue, agricultural development may not be a desirable option, given low resource endowments and

comparative advantage in non-agricultural exports (mainly tourism and financial services). These include: Barbados, Bahamas, and St. Lucia, Trinidad, with St. Kitts, Grenada, Antigua and St. Vincent tending in this direction. Moreover, these countries are already highly dependent on food imports. They suggest that rather than invest in the development of agriculture per se, countries should develop food reserves at the national and regional levels, whereby countries in the region with a relatively strong agricultural sector are used as depositories of food stocks for the region as a whole. While there is general agreement in the literature regarding the limitations of import substitution policies, it is difficult to support these recommendations. First, they largely ignore the issue of equity within Caribbean countries (i.e., poverty concentrated in the rural sector). Second, they assume a priori that trade offs exist between agricultural development and urban and tourism development; however, as the discussion below highlights, synergies can be derived through linkages with between agriculture and tourism. A policy of creating food reserves is unlikely also to benefit the local agricultural economy.

Value chain approaches for promoting non-traditional exports

The promotion of non-traditional exports as a development strategy falls short for two main reasons. First, it largely ignores the key role played by the social context in which producers, buyers and processors operate that determines under what conditions smallholders access non-traditional markets and can increase the value added to their primary production. Throughout much of the writings on NTAEs in the 1980s and early 1990s, the issue of market access was mainly a technical one: responding to a given opportunity in a final market required a package of inputs, including finance, know-how, and production inputs. Second, NTAE strategies do not address the issues related to rural livelihoods and poverty, despite that fact that most NTAE strategies required significant investments of household resources and implied increased levels of risk in production and marketing. These limitations provided the basis for many of the critiques of NTAE strategies. In light of these limitations, in the mid-1990s, discussions among researchers and development practitioners began to shift from a focus on NTAE promotion to value chain analysis and ('pro-poor') value chain development. In this section, we briefly review the main conceptual elements of the value chain framework, and examine how the framework has been applied to the design of development interventions.

The value chain framework

The emergence value chain analysis (VCA) as a coherent analytical framework can be traced to the volume 'Commodity Chains and Global Capitalism' edited by Gereffi et al. in 1994 (Bair 2005). Gereffi and collaborators were concerned with the links at the North-South nexus of international trade, and the resulting opportunities for Southern producers to move into higher value adding activities. VCA treats the global economy as system of chains within which successive transformations and final marketing of products take place. These chains connect distant buyers and processors (usually in the North) with producers (usually in the South). To export, producers must position themselves in the chain according to conditions imposed by buyers and processors. The ability to capture increased value for Southern producers implies upgrading skills, products, and processes, and making capital investments accordingly. It is assumed that learning and investments can be achieved, or at least facilitated, through intensified connections within value chains and definition of related 'rules of the game'. The notion that firms are connected through chains or networks is not new; since the 1980s, discussions of supply chains have been a major focus of international business. Thus, the conceptual innovation in VCA relates to 'governance' (i.e., ability to impose conditions on Southern firms) and its impact on the upgrading prospects of Southern producers.

Governance in the value chain literature refers to perceived power of Northern 'lead' firms to determine the division of labor and related benefits along the chain (Humphrey & Schmitz 2005). Lead firms acquire their status due to their cultural and geographic

proximity to final consumers and access to capital, information, and technology, rather than from production itself. The governance structures are considered to have important consequences for the access of Southern producers to Northern markets and the range of value adding activities they can undertake. Gereffi (1999) argues that participation in value chains provides Southern producers with lower-cost access to growing markets, as well as access to information and technical assistance that allow producers to upgrade and capture increased value adding. In this context, participation in value chains is considered a prerequisite for Southern producers to upgrade, and one that involves acceptance of the terms defined by lead firms, especially for those aiming to progress towards higher value added positions in the chain. Without accepting chain discipline, a firm cannot partake in the process of learning from links with agents in more advanced downstream segments of the chain, as precondition for moving into higher-skill and higher valued-added sections of the chain.

From a development perspective, the notion of 'upgrading' by Southern producers in a value chain is especially important. This refers to producers' options for capturing greater value-added, through, for example, increased processing, more equitable risk/benefit sharing, improved quality and productivity, and joint marketing. Northern buyers and processors can play an important role in the upgrading process, by facilitating information and resources and sharing strategies and technical know-how. But, as highlighted above, upgrading may also occur without explicit coordination with lead firms. The willingness and ability of Southern producers to invest in upgrading will depend on such factors as: degree of business consolidation, resource endowments at household, enterprise and community levels, access to information and technology, overall business environment, and role of NGOs and other service providers in reducing risk and costs, as well as covering resource gaps. Where chains are characterized by highly competitive market environments, such as those for undifferentiated agricultural products, upgrading may be limited to increased scale and efficiency (Gibbon and Ponte 2004). In these cases, smallholders are unlikely to perceive sufficient economic incentives for investing in enhanced quality (eg Lusby and Derks 2006), nor are buyers likely to have the willingness to support such investments in cases where quality is easily differentiated by the market (Panlibuton & Lusby 2006). On the other hand, more promising upgrading opportunities may exist where: 1) year round supply of raw material is relatively scarce (eg farm raised salmon), 2) quality and safety are especially important and difficult to detect (eg organic products, fresh fruit and vegetables), and 3) competition in Northern markets encourages outsourcing of activities (eg fresh fruit and vegetables).

Value chain approaches for development

In the late 1990s, the value chain conceptual framework was adopted for the design of development approaches. This was in response to structural changes in international food and forest product markets and the need for greater impact and sustainability of development interventions through increased private-sector involvement (based on the limitations of previous efforts in promoting NTAEs). Value chain approaches pursued by public sector agencies or civil society organizations have tended to focus on poverty reduction and, hence, target smallholders and rural communities as main beneficiaries. Related interventions involve development projects, government agencies, and NGOs who typically provide subsidized technical assistance and training and, to varying degrees, inputs and credit to a select group of smallholders. The overall aim is to upgrade their resources and capacities for their positioning in value chains of higher-value products. In some cases, interventions have focused on improving the overall competitiveness of a given sector, through improved services, infrastructure investments, financial incentives, and increased information sharing. In addition, the private sector, in particular lead firms that buy or process agricultural or forest products, have implemented value chain approaches to enhance sourcing of raw materials or inputs and to promote their environmental and social credentials.

Current examples of value chain approaches in the Caribbean include:

- The Inter-American Development Bank (IADB) has recently financed a project aimed at better understanding the challenges for small and medium firms to market integration: This project, titled: 'CARICOM: Value Chains, Regional Integration and Competitiveness in the CSME' (2007-2008), has two major lines of action: 1) provide recommendations for improving competitiveness in a more integrated regional (CARICOM) market for companies operating in the Caribbean food production and distribution, housing construction and sports and cultural tourism value chains and 2) facilitate networking opportunities for these companies and their interaction with relevant policy makers in the region (For more information see: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=916237>).
- DFID's Sustainable Value Chains approach for promoting income generating opportunities for small and medium size enterprises (SMEs) has been implemented in the agriculture, forest and tourism sectors of various countries in the Caribbean and Central America. The major elements of the approach are the provision by a lead firm (eg international buyers or hotels) of technology, finance, business skills, quality control and enhancement mechanisms, and support to exercise responsibilities for social and environmental management. DFID is linked with the International Finance Corporation (IFC) who own the 'Business Edge' concept for training managers which is delivered through franchisee partners and certified organizations to help managers in SMEs to overcome functional and operational deficiencies (DFID 2007).
- In addition, USAID has promoted value chain approaches in the Dominican Republic for promotion smallholder integration into coffee and cocoa chains and in Haiti for the regional tourism market and international home furnishing markets (see Box 2.5). The private sector, in particular medium and large-scale buyers and processors, have also implemented value chain approaches in an effort to enhance sourcing of raw materials and inputs, and to promote their environmental and social credentials
- Various US and European-based buyers have also invested in the development of value chain linkages. Box 2.6 provides an example of private-sector led value chain development in Jamaica in the fresh herb sector. In Belize, The UK-based chocolate marketer 'Green and Black's' has invested over several years in the promotion of smallholder cocoa production and the organization and development of the smallholder cocoa enterprise 'TCGA' (for details, see Case Study 1, Section 3).

Underlying these approaches is the assumption that investments in building stronger linkages with buyers and processors in higher-value markets will reduce poverty, directly through increased incomes or employment or indirectly through spillover effects in local economies. However, little quantitative evidence exists to support these claims. In their review of USAID's experiences in MSE upgrading in nine value chains, Dunn and colleagues (2006) offer little insight into the impacts on income levels, asset accumulation, and livelihood strategies, other than to suggest that these issues may be important for 'successful upgrading'. In their review of value chain analysis carried out by development practitioners in Central America, Jansen & Torero (2004) highlight the need for increased conceptual and methodological clarity: 'the organizations that carry out value chain research do so according to their own perspective, generally in an incomplete manner, and with little reference to other studies. ...The chain bottleneck most frequently identified is technology. However, little detail is given on the technical aspects that generate the bottleneck. ...There is no emphasis on small producers or how they can improve their value chains linked to more dynamic markets.' In the international conference 'Value Chains for Broad-based Development' held in Berlin in May 2007, one of the major outcomes was that few of those promoting value chains, if any, have evidence on their impact on poverty reduction.

Box 2.5 Value chain approach for promoting the handicrafts sector in Haiti

The handicrafts sector in Haiti comprises an estimated 400,000 producers. Evidence suggests that up to 80% of exports are destined for the US. The Caribbean islands are also an important market due to their geographic and cultural proximity and the large number of tourists which visit the region. However, one disadvantage of this market is the lack of distributors, which requires exporters to manage numerous buyer relations each one buying relatively small quantities. In 2006, USAID consultants, together with local producers and marketers, analyzed the constraints and opportunities for development of the handicrafts sector. Their analysis identified the following four constraints:

- *Limited capacity to identify and establish relations with buyers:* The political and economic instability of Haiti has kept some larger producers from seeking new business opportunities or investing in marketing. For small producers, the issue is mainly irregular and low production volumes.
- *Lack of regular access to affordable supplies of raw materials:* Small scale increases the resources spent on sourcing affordable materials. Producers are unlikely to import their own materials due to perceived risks (stolen cargo or detainment by authorities) and inability to coordinate among producers, who rarely receive orders requiring the same materials at the same
- *Restricted access to finance:* Financial constraints limit the ability to increase production capacity or improve productivity to satisfy large orders. As a result, craft factories are unable to consider orders for large unit quantities.
- *Insecure political environment:* Uncertainty and insecurity result in unwillingness to make major investments; reduction of tourists and visitors to the islands; and reluctance of buyers to visit Haiti or conduct business with local products.

While the objective of stimulating development of the Haitian handicraft sector, local market actors have identified the following goals: 1) increase communication among market actors through workshops, association, and networks, and 2) identify existing and potential agents to fill a market intermediation role between producers and buyers that would be a source of information on market trends and links to potential buyers. Following the workshop, the USAID assessment team proposed several following steps, one of which included technical assistance for 'new product development and design' and dealing with the issues of finance and access to productive inputs.

Source: Derks et al. (2006)

Box 2.6 Private-sector led value chain development: Sourcing fresh herbs from Jamaica

In the late 1980s two entrepreneurs recognized an opportunity for the development of a fresh-cut herb business operating out of the Caribbean to service the US market, resulting in the creation of Herbonics, Inc. Domestic culinary use of fresh herbs was novel and also consistent with a healthy and nutritious diet. While the range and quality of fresh produce was considered by retailers to be a major choice factor in supermarket shopping, the fresh cut herb sector was badly served through weak supplies and poor in-store merchandising. Quality and presentation were poor, packaging was messy, pricing was confusing, and regular quality supplies from reliable growers were problematic.

Herbonics Inc sourced produce from its own production facilities in Florida and set up supply agreements with producers in Jamaica, Mexico and Ecuador. Compared with competitors, Jamaica had logistical advantages, specifically those of geographical proximity to Florida, the target market, good air links, and production facilities close to the airport in Kingston. Moreover, there was a question of language and culture: English was a distinct advantage over Spanish-speaking suppliers. A product listing of more than twenty herbs and blends was envisaged. A single pricing structure was adopted with a retail price per pack of \$1.19, and a gross margin between producer and supermarket of 40%, and a retailer mark-up of 68%. Sales grew from less than \$100,000 in 1990 to over \$5 million by the end of the decade. Initially there were six Jamaican producers supplying Herbonics Inc. While each farm was only 1-2 ha in size, production was labor-intensive (25 full-time workers/ha). Details of revenues and wages are not available, but gross returns to the suppliers was in the region of 'several hundred thousand US\$', with multiplier effects throughout the local economy. However, over time the number of suppliers in Jamaica was reduced in favor of production in Florida, because of the greater ease of doing business locally and cost structures that were not markedly different. Those Jamaican suppliers remaining gained a larger level of business.

Principal lessons highlighted in this example of agricultural development included: a business approach to small agro-enterprise development that is driven by market opportunities, and the erosion of the basis for competitive advantage. A plausible sectoral strategy is intervention involving provision of small business services including information, management and marketing, development of human skills, and financial investment (eg business loans, or even micro equity). Small enterprise development such as Herbonics Inc in Jamaica has wider potential through outscaling by the replication and clustering of similar units which can create economies of scale in business services provision and agglomeration economies in the markets for management, labor, inputs and logistics.

Based on recent experiences in value chain development in Central America and the Caribbean, Junkin et al. (2003) provide a framework for the identification of 'pro-poor' value chain development opportunities that explicitly takes into account the resources and capacities available for investment by smallholder producers, as well as the potential tradeoffs between increased investment in value chains and current productive activities. Among the issues to be addressed in identifying pro-poor value chain development opportunities and establishing effective monitoring and evaluations systems are:

- Minimum capital endowments and asset building, including technical, business and financial capacities (see Table 2.2)
- The role of gender in setting up, developing and managing rural enterprises, including potential trade-offs between livelihood activities and goals when only males or females participate

- Internal relationships among members and first-tier producer groups, including rules, practices and customs governing benefit sharing, decision making, and information sharing
- Existing formal and informal relations with value chain partners (horizontal and vertical alliances and other commercial arrangements) and related opportunities and limitations for increased value adding by rural enterprises
- Costs and benefits of value chain participation, including non-economic benefits related to skills upgrading, strengthened cultural identity, and social infrastructure
- Access to externally-sourced technical, financial and business development services for household production and enterprise development
- Access to useful market information by smallholders and collective organizations and their ability to process the information for short and long-term strategy formulation.

Table 2.1 Analysis of household and community resources for value chain development

Household and community resources	Aspects to be considered
Natural	Land tenure systems, soils, water, annual and perennial crops, forest resources, livestock, genetic material
Human	Skills for production, processing and business administration, understanding of business and market conditions, health and nutrition
Social	Level of internal and external organization (networks, contacts, relations of confidence and reciprocity), leadership, participatory mechanisms, access to political decision makers
Physical	Road, electricity, and telecommunications networks, access to health and education services, transport, production facilities, irrigation systems, tools, equipment, and other inputs for production and processing
Financial	Remittances, non-farm income, access to credit (formal and informal), savings (cash and other liquid accounts)

In summary, the value chain framework is important for rural development because it orientates production, intervention and innovation towards the demands of downstream buyers and processors. However, little evidence exists that value chain promotion has the desired impact on pro-poor development. In addition to impact studies, a number of other critical issues have yet to be addressed. To understand the poverty reduction impacts, it is necessary to identify the equity effects of intervention strategies within the household by age and gender, as well as between households and communities. Development pathways are likely to vary among different social strata (Poole, Gauthier and Mizrahi 2007). Little is known about minimum levels of asset endowment required for value chain development at the household and community levels. While research has addressed asset endowments at the enterprise level, rural households and communities remain a 'black box' in value chain analysis. Recently, several organizations working in rural business development in the Central America and the Caribbean have joined forces to 1) generate new knowledge about value chain development and its impacts on the rural poor and 2) improve the capacities of organizations that provide services directly to smallholders and design rural development interventions. Some important on-going examples are:

- *Strengthening the regional offer of business development services:* The Diploma in Rural Enterprise Development in Latin America strengthens the capacities of business service providers to facilitate the organization and development of smallholder-owned enterprises. The Diploma, awarded jointly by CATIE and CIAT, addresses critical areas such as business development from a livelihoods perspective and value chain

approaches for linking with in international markets. To date, more than 150 professionals have participated in the program. For more information see: <www.catie.ca.cr/cecoeco/diplomado>.

- *Multi-stakeholder platform for assessing the impacts of value chain approaches on poverty and the environment:* Under the auspices of the Ford Foundation, an international, multi-stakeholder program has been established (beginning June 2008) for advancing the design and testing of tools for assessing the impact of VCA on rural livelihoods, enterprise development, and natural resource management. Participants include: Ford Foundation, CATIE, CIAT, SOAS, Sustainability Institute, SNV, among others. For more information see: <www.catie.ca.cr/cecoeco>
- *Inter-organizational collaboration on value chain development:* the Learning Alliance for Rural Enterprise Development in Central America established under the leadership of CIAT (Cali, Colombia) in 2003, in which over 30 organizations participate, including CATIE, CRS, SNV, CARE, and Oxfam. The Alliance promotes systematic learning among researchers and development practitioners on issues related to rural enterprise organization and value chain development. For more information see: For more information see: <<http://www.alianzasdeaprendizaje.org/>>.
- *Formation of leaders in agribusiness management:* The masters program, titled 'International Agribusiness Management' (MIAM), is offered jointly by INCAE and CATIE. This program aims to build future leaders and facilitators for fostering sustainable business development with the rural sector of Latin America and the Caribbean. Program taught in English. For more information see: <<http://www.incae.ac.cr/EN/maestrias/mba/miam-bi-18m/>>.

Promoting smallholder linkages with the tourism sector

For some countries, agriculture remains important: Belize, Dominica, Guyana, Jamaica and St. Vincent and the Grenadines. But tourism has been a means of diversifying out of agriculture. For most Caribbean ACP countries the tourism industry represents a major, if not the most important, source of foreign exchange earnings¹⁴, and is estimated to have contributed 4.5 per cent to the GDP of Caribbean countries in 2004 (ECLAC 2005). However, the ACP share in regional and global tourism earnings has been declining, especially in relation to Spanish-speaking competitors, but for countries such as Antigua and Barbuda, the Bahamas, Barbados, Jamaica and Saint Lucia.

In the Caribbean, the tourism industry has traditionally relied on imported food due to lack of regular and high quality supply, among other factors. Considering that food represents approximately one-third of all tourist expenditures, the level of imports used can greatly affect the economic and social impacts of tourism (Bélisle 1983). One way to enhance the benefits of tourism on the local economy and promote rural development is to promote increased utilization of local food in the tourism industry. However, government agencies, donors, and NGOs have been reluctant to include tourism in their agendas, perhaps because of the widely-held belief that conventional tourism development is associated with negative social and environmental impacts, control by local elites or international corporations, and high levels of leakages and expatriation of profits. ECLAC (2005) sums up the extent to which the two sectors have been managed independently in the Caribbean: 'Growth and development in the agriculture and tourism industries have been pursued separate and apart from each other. Indeed, even within the agriculture sector development of export and domestic agriculture has been mutually exclusive. This is indicative of the traditional approach to development in Caribbean countries whereby most inputs for the productive process are imported and most of the output is exported. Few backward and forward linkages were therefore created as policy and institutions were not geared toward fostering such linkages. The recent focus on

¹⁴ Throughout the English-speaking Caribbean, the share of tourism in GDP ranges averages 43%, with a low of 13% in Trinidad, to high of 69% in St. Lucia (Dixon et al. 2001). With an average annual growth rate around 3.6%, tourism is growing, in most cases, higher than GDP as a whole.

increasing linkages between tourism and agriculture therefore poses significant challenges' (p.19).

Recently, the issue of agriculture and tourist development strategies in the Caribbean has surfaced in the context of 'pro-poor' tourism development (Ashley et al. 2006). This approach is based on the notion that effective linkages between local agriculture and the tourism sector can stimulate local agricultural production, channel tourism benefits to the rural sector, and reduce overall food import bills. Ashley et al. (2006) identify a number of small-scale initiatives from the Caribbean ACP countries where hotels have purchased directly from smallholders and handicraft producers, sometimes with the help of NGOs, and other cases have been identified by ECLAC (2005) (Box 2.5). In general, hotels can benefit from these linkages through: more distinctive products that differentiate the hotel environment and enhance the brand; cost-savings (to the extent that local goods are less expensive than imports), and establishment of local networks of collaboration. However, for such linkages to deepen or expand, a number of constraints must be addressed, including:

- Supply side: lack of sufficient, consistent and guaranteed quality local production; high prices of local produced foods; lack of capital, labor, investment and credit (technological limitations);
- Demand side: preference for processed and imported foods by foreign-owned and high-end hotels; tourists' preference for home-country foods; tourism industry's distrust of local food based on sanitation, hygiene, and health concerns. Food tours and food festivals are a means of exploiting local culture;
- Marketing system: failure to promote local foods; poor transportation, storage, processing and marketing infrastructure; and lack of communication and information between smallholders and tourism industry.

As highlighted in DFID (2007), the successful integration of smallholders into tourism value chains, either directly as suppliers to hotels or indirectly as raw-material suppliers to local processors, requires an appropriate investment climate. In several respects, the Caribbean is well positioned. For example, analysis of the FDI competitiveness of food processing and tourism sectors in Belize, the Dominican Republic, Jamaica and St Lucia by the Commonwealth Secretariat and the Multilateral Investment Guarantee Agency (MIGA) of the World Bank (MIGA 2007) highlights diverse factors of importance to investors:

- *Belize*: investment incentive programs, proximity to the US, language and cultural affinities and favorable cost structures
- *Dominican Republic*: investment incentive programs, political stability and a growing economy, a large well-trained labor force, geographical and internal market size
- *Jamaica*: a liberal FDI policy, English-speaking workforce, good infrastructure and telecommunications, and proximity to the US
- *St Lucia*: a liberal FDI policy, political stability, a good business environment with sound infrastructure and communications, and an educated workforce.

For the food processing sectors in the four countries, the principal factors attracting investors were: access to markets and supplies, the general business environment, potential to recruit local staff, and relatively low costs of wages, real estate and construction. Investment in food processing in the region has been stimulated by local and global market demand trends, such as growth in demand for organic foods and for ethnic and specialty foods. International trade has been boosted by the preferential trade agreements with the US and EU. The end of such privileges is expected to have a massive impact on export-oriented food processing firms. Additional threats arise from inadequate logistics and infrastructure facilities, weak food safety controls, and unreliable local sourcing.

Recent case studies in the Caribbean highlight the difficulties for overcoming structural and institutional constraints to integrating smallholders into tourism value chains. In their analysis of agriculture-tourism links in Quintana Roó, Torres & Momsen (2004) argue that the advanced state of tourism development in Cancún and the failure of tourist planners to incorporate any agricultural development strategies in the process – in essence, leaving them to occur spontaneously – has severely thwarted the development of linkages with smallholders. Given the need for intensive investment, coordination, and cooperation for promoting agriculture-tourism links, an important first step will be to develop coordinated tourism and agricultural development policies among government agencies, NGOs and the private sector in Quintana Roó. (See Box 2.6 for discussion of the challenges and opportunities for agricultural and tourism linkages in Quintana Roó). In St. Lucia, Timms (2006) concludes that, although strong domestic and regional markets exist, the major limiting factor has been the lack and unreliability of supply. In general, cooperatives have been ineffective in coordinating production or facilitating linkages with hotels. Moreover, communication and coordination between wholesalers (which supply the largest hotels) and smallholders on the demand and supply has not lead to changes in supply patterns by smallholders or purchasing patterns by wholesalers (use of imports to augment lack of local supply and seasonality). He suggests that by improving overall supply conditions of domestic agricultural production, hotel purchases would increase.

Clearly, more research is needed to better understand the nature of relationships between smallholders and the tourism industry, including issues related to power, culture, and history. Sheppard's review of the various approaches for linking producers to markets covers a wealth of experience of how farmer organizations can link effectively with the private sector actors in the market chain (Shepherd 2007). He draws attention to the identification of market opportunities and the need for sound management of collective organizations, the importance of securing financial resources to meet 'upscaled' business demands, and the means to develop trust between organizations and firms, which is the essential element of profitable and sustainable business linkages. FAO (2008c) draw attention to diverse cases of linkages that may be independent of intervening organizations but can be fostered by, for example, individual farmer-to-trader contacts, or led by a leading farmer, or linkages initiated by private sector firms. Therefore, donors and NGOs can play an important role; but they are not necessary always, and arguably are not sufficient without the individual and/or collective initiative of farmers and traders.

On the other hand, it has been shown elsewhere by Telfer and Wall (1996) that such barriers can be overcome when there is commitment by hotels to promoting local development and by smallholders to invest in increased production and quality control. In their case study, chief of the Sheraton Resort took time to investigate the potential use of locally-produced products, supply and purchase agreements were established. Through ongoing communication with local suppliers, quality standards, were established and maintained. Over time, the Sheraton rejected progressively fewer local products as the suppliers adapted to the high quality standards. However, a major challenge for the sustainability of these linkages is their institutionalization in hotel's sourcing policies that transcend the interest and involvement of specific individuals. At the time of Telfer and Wall's research, the Sheraton was purchasing food products from a variety of sources, including wholesalers and major agricultural markets. In this context, a critical role for development interventions relates to 1) reducing the costs for upgrading of quality, introducing new products, and adding value through processing, 2) facilitating smallholder organization for improved coordination and communication with the tourism industry, and 3) facilitating the elaboration of risk and benefit sharing agreements between hotels and smallholders and their organizations.

Box 2.7 Agriculture-tourism linkages in the Caribbean

Ashley et al. (2006) identify several examples of initiatives to link smallholders to the tourism sector in the Caribbean, including:

- In *St. Lucia*, Oxfam is working with smallholders to access markets of the hotel sector. In addition to helping smallholder increase production, the project is also supporting four smallholder-owned cooperatives to improve their marketing and act as intermediaries between the farmers and hotels.
- In *Tobago*, the Hilton Tobago has initiated an 'adopt a farmer' program with the Mt St Georges Farmers' Association. Once the farmers had consistent demand from hotels, there were able to sharply increase production.
- In *Jamaica*, the Sandals Resort Farmers Programme began in 1996 with 10 smallholders supplying two hotels. By 2004, there were 80 smallholders supplying various hotels. As a result of the programme, smallholders' sales increased over 55 times in three years, from US\$60,000 to US\$3.3 million. Benefits to hotels include a wider variety of good quality local produce and costs savings.

In addition to these initiatives, the Barbados-based Agro-Tourism Linkages Centre was inaugurated in 2004. It aims to facilitate trade in fresh and processed foods and non-food agro-industrial products between smallholders and hotel and restaurant sectors, as well as promote the development of agri-tourism and eco-tourism initiatives. These isolated initiatives highlight the interest in building agriculture-tourism linkages in the region among private and public sectors. They also highlight the need for a systematic, action-oriented research program to identify how best to design institutional arrangements for linkages, the impacts of these linkages on asset accumulation by smallholders, and the benefits and costs for the tourism sectors.

Other examples of exploiting tourism-agriculture linkages are cited by ECLAC (2005):

- 'A programme to link tourism to agriculture was initiated in 1990 in Nevis by the Nevis Department of Agriculture in collaboration with the Four Seasons Resort, a five-star hotel whereby farmers would supply local produce to the hotel... The Nevis Growers Association (NGA) was formed with 12 farmers in order to facilitate business relations with the hotel....

'Two locally owned all-inclusive hotel chains with home base in Jamaica have also developed linkages with agricultural producers in the Caribbean. The Sandals Group of hotels started their farmer's programme in Jamaica in 1996. Sandals works directly with farmers through a farmer extension officer that they fund to improve the production of the farmers. Management teams from the hotels hold workshops for the farmers in relation to quality of produce and marketing procedures. In turn, farmers visit the hotels to understand the specific requirements for their products... The project started with 10 farmers supplying two hotels but graduated to 80 farmers in 2004. Agricultural support is provided by the Rural Agricultural Development Agency (RADA) in terms of matching supply with demand. Sandals has replicated the programme in Saint Lucia where the average size of farmers' holding is less than two hectares... The advantage of the Sandals programme is the security it has afforded farmers who produce good quality products at competitive prices...' (pp.22-23).

Box 2.8 Linking smallholders with tourism: lessons from Quintana Roó

A variety of factors have been found to constrain the development of tourism and agriculture linkages in Quintana Roó, Mexico:

- Productive farmland is in the southern part of the state, far from Cancún, with the result that supply chains are long and hotel chefs and farmers do not know each other (in some cases, producers do not share a common language with hotel buyers)
- Inconsistent and poor quality of local supplies, resulting from: shortage of capital, credit, and appropriate technology, lack of technical services, absence of local processing facilities, and no point of tourism market entry for local farmers
- Poor coordination among smallholders, which remain primarily unorganized, limiting opportunities to benefit from economies of scale
- Tourism markets are dominated by a few suppliers, thus making it common for a supplier to pay 'kickbacks' to hotel chefs and food buyers.

On the other hand, opportunities do exist, which, if seized upon, may enable smallholders to overcome some of the constraints identified above. These include:

- Agro-climatic conditions for producing several varieties of fruits and vegetables gives access to growing markets in the tourism, urban, and export sectors
- Proximity to buyers represents a significant advantage: opportunity to provide superior quality products and specialized services such as vine-ripening, same-day harvesting and just-in-time delivery
- Diversification of the tourism industry: with strong demand for locally produced specialty foods
- Small-scale production is appropriate for the niche and indigenous specialty items, which are currently in demand by new tourism market segments (eg ecotourism and cultural tourism).

Given the present mature stage of development in Cancún, it is difficult for smallholders to break into already entrenched supply networks. Thus, responding to these opportunities requires the long-term investments in upgrading smallholders' capacities, as well as in the establishment of links between various tourism and agricultural stakeholders, including government agencies, NGOs, local hotels, and restaurants, local suppliers, regional producers (*ejidos*), and other entrepreneurs. Similar considerations are likely to apply to the advanced tourism economies in the Caribbean.

Source: Torres & Momsen (2004)

3 Case Studies

Overview of case studies

This section presents three case studies on agricultural development in the Caribbean. The case studies capture a considerable amount of the variation in strategies implemented in the Caribbean ACP and Central America. The three strategies examined here are: 1) niche market penetration, 2) value addition through large-scale processing, and 3) export of fresh fruits and vegetables. Table 3.1 outlines the salient features on these cases.

Table 3.1 Variations in NTAE strategies and their implications for development

Strategy	Institutional arrangements for production and marketing	Overall investment requirements	Major risks limitations from development perspective	Examples
Niche market penetration	Smallholders organized into RCEs (rural collective enterprises)	Low: upgrading production and business capacities of smallholders	Small market size, dependence on limited number of buyers, lack of production inputs	Organic and/or fair trade coffee, cocoa, and banana
Value addition through large-scale processing	Centralized processing, processing and marketing, production largely independent from processing	High: subsidies for production and investment in operation and maintenance of processing facility	Highly dependent on scale, large sunk costs, dominance of large producers in decision making & benefit distribution	Fruit juices, frozen vegetables, canned fruits
Export of high value fresh products	Exporter, which contracts part of production out to smallholders or smallholder organizations	Medium: storage facilities, inputs, quality control and assurance systems	Food safety, diseases/pests, logistics, protectionism in export markets	Fresh fruits, vegetables, fish, herbs

Case study 1 – Niche market penetration: organic cocoa in Belize

In Belize, agricultural exports make up roughly 85% of exports. The composition of agriculture is dominated by a few traditional commodities, especially sugar and bananas, which make up roughly 75% of agricultural exports¹⁵. Non-traditional agricultural exports (including cocoa) account for less than 25% of agricultural exports, the most important being citrus¹⁶. Belize’s agricultural exports generally face major difficulties to compete effectively in international markets, and their trade depends heavily on preferential market access agreements. This is largely due to high production and processing costs that result from insufficient and declining throughput. For example, the banana industry faces high labor costs (25% of production cost) and low yields (650 boxes per acre compared to 1,000 boxes per acre in other Central American countries). The Ministry of Agriculture and Fisheries of Belize (MAF) is convinced of the urgent need to diversify

¹⁵ According to the World Bank, the Belize banana industry contributes about 5% of GDP, 6,000 jobs (7% of the labour force), and 16% of foreign exchange earnings. Sugar contributes about 8% of GDP, 5,000 jobs in Corozal and Orange Walk, and 20% of foreign exchange earnings. The EU quota is 50,000 MT, while the US quota is 15,000 MT.

¹⁶ Citrus, mostly orange and grapefruit, is produced primarily for the US market and yields about 11% of foreign exchange earnings. It is cultivated in Stann Creek Valley close to processing facilities in Pomona and Alta Vista. The citrus industry in Belize is discussed in detail in Case Study 3 of this report.

agricultural exports and increase the overall competitiveness of the sector, focusing its attention on niche markets for agricultural products, such as gourmet, ethnic, organic, and fair trade, as an area of strategic importance (MAF 2003). These markets represent the fast growing segments of the food industry, with annual growth rates between 10-15% over the past decade.

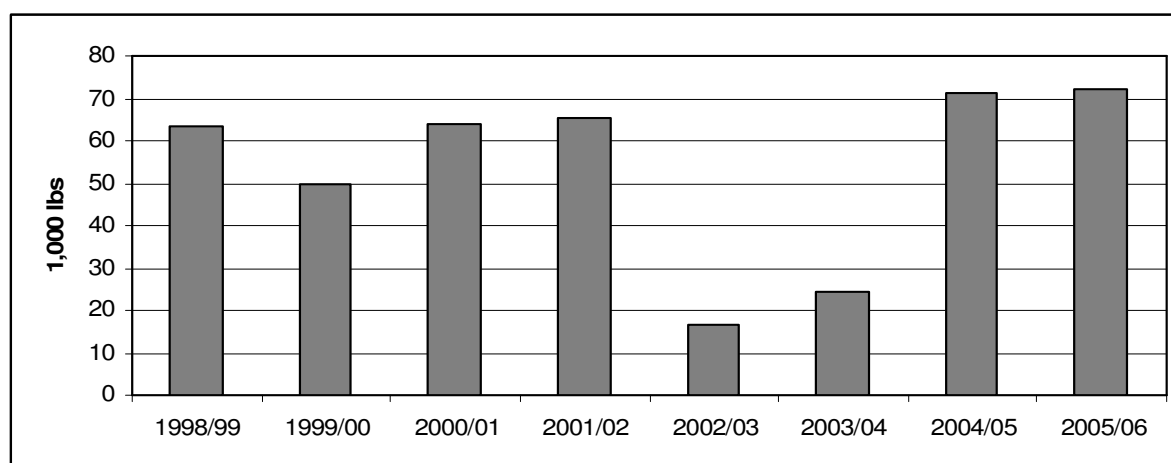
The development of the cocoa sector in Belize can play an important role in the efforts to promote the overall competitiveness of the export agricultural sector and sustainable rural development, including poverty reduction and livelihood security. However, for the nearly 5% of the rural population in Belize involved in the commercial production of cocoa, the economic benefits to date have been limited. For nearly 15 years, Belize has exported on average only 100,000 lbs. per year of conventional and certified organic and fair trade cocoa to the European market, of which roughly half was produced by smallholders. Cocoa production systems are characterized by low input usage, high labor costs, and low yields. Since the early 1990s, the smallholder cocoa enterprise 'Toledo Cocoa Growers Association' (TCGA) has commercialized the production of roughly 250 organic producers in the Toledo District. This case study examines the role of private and public actors in the development of the organic cocoa industry in Belize. It highlights the critical role played by development organizations and private sector (namely, the UK-based marketer 'Green and Blacks') in the organization and development of the smallholder organic cocoa production and marketing. To date, the MAF has played a limited role in the development of organic cocoa. This case shows the potential to develop niche export industries with relatively little investment, while also highlighting the long-term limitations which arise when interventions focus on a single crop and fail to address the underlying causes of rural poverty.

Cocoa production and marketing in Belize

International market trends in niche cocoa markets, including organic and fair trade, provide a relatively favorable investment climate for development of the Belize cocoa sector by smallholder producers. Annual growth rates for organic cocoa have averaged between 15% and 25% since 2000. Fair trade cocoa markets in Europe and US are also expanding rapidly. For example, U.K. fair trade cocoa imports increased by nearly 300% between 2000 and 2004. US fair trade cocoa imports, while small in comparison with European levels, expanded nearly 80% between 2003 and 2005. Throughout much of the late 1990s and early 2000s, prices for certified organic and fair trade cocoa were stable at US\$1,950 per MT, offering premiums of between 40% and 120% over prices for conventional cocoa sold in international markets. In contrast, international prices for conventional cocoa markets over the past several decades have exhibited sharp peaks and long, flat troughs. In general, conventional cocoa prices have been in a long-term downward trend in real terms since the last price peak in the mid-1970s.

On a regional scale, Belize is among the smallest organic cocoa producers in Central America and the Caribbean, producing less than 1% of the region's total production (Table 3.1). TCGA is the only producer and exporter of certified organic cocoa in Belize and one of only three smallholder cocoa enterprises in Central America and the Caribbean with both organic and fair trade certification. Nevertheless, since the early 1990s, organic production has made up a significant share (30%-50%) of total cocoa exports from Belize. Between 1998 and 2005, the volume of cocoa exported varied between roughly 50,000lbs and 70,000lbs per year (Figure 3.1). The sharp decline in production in between 2002/2003 and 2003/2004 cocoa years was the result of Hurricane Iris that struck the Toledo District in October 2001, damaging as much as 85% of the cocoa trees.

Figure 3.1 Belize organic cocoa bean exports, 1998/99-2005/06



Source: TCGA

Table 3.2 Salient features of organic cocoa production (certified and in transition) in Central America and the Dominican Republic

Country	Number of households	Cocoa enterprises	Certification	Output (000 lbs/yr)	Productivity (lbs/acre)
Dominican Republic	11,000	CONOCADO, YACAO, APROCACI	Organic, fair trade	15,400	469.5
Guatemala	3,000	APROCA	In transition	818	82.8
Nicaragua	6,500	COCOANICA	Organic	682	46.0
Panama	2,000	COCABO	Organic	546	36.8
Honduras	3,000	AHPROCOCOA	In transition	518	52.4
Belize	*900	TCGA	Organic, fair trade	72	124.0
Costa Rica	1,000	APPTA	Organic, fair trade	68	27.6
Total	27,400			18,103	

* Only 220 cocoa producing households were certified organic in 2007. The remaining producers are expected to complete the transition to organic production by 2008.

Although Belize has a high variability in productivity among producers, the average yield of the country is one of the highest in the region, with Guatemala (124 lbs/acre and 83 lbs/acre, respectively). This is mostly explained by the fact that Moniliasis has severely impacted production in Panama, Costa Rica, Nicaragua and Honduras. Moniliasis has recently appeared in Belize and Guatemala, but has not spread sufficiently yet to cause similar reductions in productivity as in the rest of Central America. In contrast, the Dominican Republic has the highest yields in the area (469 lbs/acre), due in large part to an absence of Moniliasis and adequate crop management (Siegel 2006). Clearly, there is urgent need to invest in measures for reducing the eventual impact of Moniliasis. TCGA members, although informed of the potential impact of Moniliasis and aware of the required management, are not taking the appropriate measures to control this disease. Without quick and decisive measures, Moniliasis could cause the collapse of the cocoa industry in Belize, with productivity losses of up to 80% (as in the case of cocoa production in the Talamanca region of Costa Rica). TCGA needs to develop a strong strategy to motivate producers to increase control management practices. If effectively managed, productivity losses may be reduced to around 15%.

A 2005 sample¹⁷ of TCGA members' production practices suggests that relatively little was invested in the management of plant nutrition: 94% of the producers do not apply fertilizer, 4% (2 producers) apply fertilizer but they do not indicate the type of fertilizer and 2% (1 producer) apply organic fertilizer (Donovan et al. 2007). When producers were asked why they do not apply fertilizers, most of the answers were: 'because they are organic producers', 'organic rules', 'because they are not suppose to use chemicals', 'does not have money to purchase inputs', 'their soil is fertile'. These responses may suggest that producers are confused with the organic principle which requires a sustainable management of the soil, and the restoration of nutrients removed at harvest. While there is a lack of investment in soil fertility improvement, there are alternatives to conventional techniques which require a lower financial investment, but will be more labor demanding, which is the use of leguminous shade trees.

Organic cocoa and rural livelihoods

Between 50-75% of cocoa production in Belize is carried out by small producers (average less than 3 acres per household) in the Toledo District. Endowments of livelihood assets (natural, human, social, physical and financial capitals) among TCGA members generally favor the small-scale production and commercialization of dried and fermented organic/fair trade cocoa beans. Human and social capital endowments for cocoa production and commercialization are among the strongest following years of investments and capital formation by cocoa producers, private investments, and government and donor interventions. Physical capital endowments are low, but the current form of cocoa production and commercialization does not require major physical capital endowments. With regards to income sources, non-agricultural, off-farm employment is a key component among organic cocoa producers (Table 3.2). Nearly 35% of the sampled households reported non-agricultural, off-farm employment as their most important income source. On-farm production is diverse, with households often combining several livelihood activities, particularly corn, cocoa, and banana production. In such a diverse production system, cocoa was not mentioned as an important source of income by about three quarters of the sampled households.

Table 3.3 identifies expected livelihood outcomes and the related vulnerability context for the three principal livelihood components of organic cocoa producers (cocoa production, on-farm production other than cocoa and off-farm employment). Cocoa provides a relatively low-input complementary source of income for most producers. The vulnerability context for cocoa production is characterized by several actual or potential shocks or adverse trends, such as a major spread of Moniliasis among organic plantations and the possibility that the one and only international buyer, Green & Blacks (G&B), reduces cocoa purchases. On-farm production other than cocoa provides an important source of income and, if diversified, increases resilience of producers vis-à-vis price fluctuations of certain products. Off-farm, in many cases non-agricultural, employment is a key element in the livelihood strategies of most producers, especially among newly-affiliated members, which also helps to buffer income shortages due to price reductions and/or off-season for the principal products. In many cases, it is the combination of various on-farm and off-farm income sources that helps reduce vulnerability of producers, and investments of human and financial resources in cocoa production and commercialization need to be carefully balanced against investments in other key livelihood components. In fact, cocoa production may become less attractive if its opportunity costs rise, for example when road construction towards Guatemala opens up new market outlets for alternative crops with potentially higher returns and/or higher livelihood compatibility.

¹⁷ Primary data was to be collected from a random, stratified sample of 10% of TCGA-affiliated households (approximately 90 households); the sample was to be stratified according to 2 types of TCGA members: those with 3 years or less of membership and those with 4 years or more. Information was collected in the Districts of Toledo, Stann Creek and Cayo by MAF and TCGA extensionists.

Table 3.3 Ranking of income sources by TCGA member households (n=52)

	Most important income source	Second most important income source	Third most important income source	Considered important, but not among top 3 sources	Not considered important
Off-farm employment	18	2		2	30
Corn	6	6	5	1	34
Cocoa	4	7	1	1	40
Banana	3	2		1	46
Citrus	2	1	1		50
Rice	2	3	3	2	44
Cattle	1	1			50
All spice	1	1	1		49
Beans		2	2	2	48
Coconut	1	1			50
On-farm day labor	1	1			50

Source: Donovan et al. (2007)

Table 3.4 Livelihood components, outcomes and vulnerability context for organic cocoa in Belize

Main livelihood components	Livelihood outcomes	Vulnerability context
Cocoa production and commercialization	<ul style="list-style-type: none"> • Relatively secure source of cash income for majority of producers (financial capital) • Income generated through self-employment (financial capital) • Reduced land insecurity (natural capital) • Sustainable management of natural resources (natural capital) 	<ul style="list-style-type: none"> • Price increase for conventional cocoa • Decrease in premium/price of organic/fair trade cocoa • G&B unable to purchase all cocoa • Price of other agricultural products of commercial importance • Increased opportunities for non-agricultural employment • Spread of Moniliasis • Natural disasters (fires)
On-farm production and commercialization other than cocoa	<ul style="list-style-type: none"> • Significant source of cash income for majority of producers (financial capital) • Household consumption (financial and human capital) • Sustainable management of natural resources (natural capital) 	<ul style="list-style-type: none"> • Increased opportunities for non-agricultural employment • No-fixed contracts – prices subject to market fluctuations • Soil degradation • Climate change • Natural disasters
Off-farm, non-agricultural employment	<ul style="list-style-type: none"> • Major source of cash income for majority of producers (financial capital) 	<ul style="list-style-type: none"> • Macroeconomic conditions • Employment policies of local firms

Source: Donovan et al. (2007)

Rural enterprise development by organic cocoa producers

Since 1993, TCGA has focused on the production and marketing of certified organic and fair trade cocoa in close partnership with the UK-based cocoa marketer G&B (Box 3.1).

The G&B-TCGA partnership has been important for branding of the Maya Gold chocolate bar and for positioning G&B as a socially responsible business¹⁸. With considerable backing from G&B and donor and government agencies, TCGA is currently in the processes of upgrading its businesses administration capacities and technical services for expanding organic production volumes.

TCGA is formally registered as an NGO and therefore unable to accumulate or distribute profits. TCGA is governed by a Board of Directors (BoD), made up of elected members which meets on a monthly basis. The BoD plays an active role in routine business operations, including the organization of cocoa purchases from members and the maintenance of infrastructure. Major issues and strategic decisions are put to the membership at the annual general meeting. The General Manager is charged with the daily operation of TCGA and supervision of the professional staff. An agronomist ensures that the organic inspections are completed according to UK Soil Association guidelines, conducts internal inspections and trains and manages the extension team and the nursery workers. The Compliance Officer manages the internal control systems and coordinates organic inspection and certification. All these paid positions began in 2006 with funding from the MAF-CARD project. (Previously G&B Project Manager had assumed the role of General Manager.) However, the CARD project expired in late 2007 and the sustainability of these positions is not known (as of 2007, no funding source had been identified). Over the short-term, however, donor and government may be needed to maintain current staffing levels.

Box 3.1 Milestones in the development of TCGA

- 1984** – USDA project ACPP begins, offering training for cocoa cultivation
- 1986** – TCGA officially registered with the Government of Belize (GoB)
- 1988** – USAID project TAMP begins, providing training, inputs, and in-kind loans for the establishment of cocoa – 75,999 cocoa seedlings were distributed
- 1992** – Only buyer, Hummingbird-Hershey’s Ltd. stopped buying cocoa beans due to dramatic changes in world cocoa markets
- 1993** – UK-based chocolate marketer Green and Blacks (G&B) offers to buy all TCGA production for their new product ‘Maya Gold’
- 1994** – G&B’s Maya Gold chocolate bar launched in UK
- 2001** – Hurricane Iris hits the Toledo District, inflicting major damage on the cocoa crop – estimated 85% of the cocoa trees destroyed
- 2004** – With assistance from G&B, TCGA acquires US\$425,000 grant from DFID for expanding production (mainly through increased membership)
- 2005** – Membership increased to 897 members farming, producing 70,000 lbs per year
- 2006** – Financial support received from GoB-MAF’s CARD project for hiring of professional General Manager and agronomist, among others

The annual operational budget of TCGA is approximately US\$110,000. Major funding sources are grants and commissions from the sale of organic/fair trade cocoa (US\$0.16/lb.), and to a much lesser extent, proceeds from membership fees and sale of agricultural tools and supplies. Recently, a policy was implemented to increase the membership fee from a one-time lifetime payment of US\$5, to an annual payment of

¹⁸ G&B has received numerous awards and accolades from industry and consumer groups for its work with TCGA in establishing the Maya Gold chocolate brand, including the prestigious 1994 World-aware Business Award, www.worldaware.org.uk.

US\$5 per year. The fee has been considered necessary to cover the cost of organic certification. In return, TCGA provides the following services to its registered members:

- Links with international buyers in specialty cocoa markets
- Access to certification (organic and fair trade)
- Technical services on quality aspects and on farm diversification
- Guarantor for credit from credit union
- Political advocacy, especially as related to land tenure issues (see Box 2.3).

A rolling 5-year contract with G&B guarantees a market outlet for cocoa at organic and fair trade premium prices. All growing and primary processing activities are carried out on farm by grower-members with little or no investment in infrastructure or technology. In 2006, TCGA received from G&B US\$.89/lb. for fermented and dried cocoa delivered to the TCGA warehouse in Punta Gorda. TCGA withheld US\$0.16/lb. to cover social investments and operating expenses, translating into a price paid to its growers of US\$0.73/lb. By early 2008, G&B had raised the price paid to TCGA to US\$1.48/lb., which in turn allowed TCGA to pay its members US\$1.15/lb., while capturing US\$.33/lb. for social investments and operating expenses. Prices received by TCGA members compare favorably to prices received by members of other smallholder cocoa enterprises in Central America (see Table 3.4). Only organic and fair trade certified cocoa producers in Nicaragua receive higher prices, due principally to a special contract with the German chocolate manufacturer Ritter that currently pays more than US\$3,500 per ton. But G&B buys up all cocoa produced by TCGA members irrespective of its quality. Moreover, TCGA members benefit from technical and financial assistance provided directly through G&B or indirectly through projects facilitated by G&B.

Table 3.5 Cocoa prices paid to producers in Central America

Smallholder cocoa enterprise	Price paid to producers
APROCACAHO, Honduras	US\$1.15/lb. fermented US\$0.94/lb. conventional
CACAONICA, Nicaragua	US\$0.96/lb. conventional US\$1.07/lb. transition year 1 US\$1.21/lb. transition year 2 US\$1.46/lb. organic
APPTA, Costa Rica	US\$0.84/lb. dry organic
TCGA, Belize	US\$1.15/lb. organic/fair trade
COCABO, Panama	US\$0.90/lb. conventional US\$1.00/lb. second class US\$1.05/lb. first class

Source: PCC Project, CATIE

In 2003, the UK Department for International Development (DFID), through its Business Linkages Challenge Funds, awarded a 2-year project grant (US\$425,000) to G&B and TCGA. This project provided financial resources to increase production volumes through increased productivity of existing members and increased area under cocoa cultivation (addition of new members). Between 2004 and 2006, membership levels more than tripled: from 220 to 897. There are at least a further 95 producers who have not yet registered, but who have planted more than 100 acres and who should be harvesting and selling in about three years. All new members are required to comply with 3-year mandatory transition period for the conversion to organic production systems. Services are provided to TCGA members for facilitating the conversion process, including extension (training, field inspection, farmer consultation) and credit (provision for cocoa seedlings, materials for nursery establishment, and as a guarantee to members for loan procurement from other lending institutions). During this period, G&B has agreed to buy all cocoa in transition at organic/fair trade prices. This cocoa is passed along to G&B's parent company (Cadbury-Schweppes) for use in conventional chocolate production.

Investments in enhanced genetic material and more effective cocoa management are likely to result in increased on-farm productivity. A 25% increase in productivity, would translate into an increase in production from 72,000 lbs. to 347,500 lbs. and an increase in the average annual amount paid to producers from US\$2,300 to US\$2,800.

Lessons learned

Given the recent investments in expansion of organic cocoa production in Belize, combined with the overall favorable market environment for organic and fair trade cocoa, future investments in cocoa sector development should focus on TCGA and their members. The cocoa sector in Belize highlights both the opportunities and limitations promoting NTAEs under relatively favorable conditions. Among the success factors:

- Long-term partnership with UK-based cocoa importer and G&B has provided a low-risk environment for TCGA cocoa production expansion. TCGA has received access to such buyer-provided services as co-financing for projects, subsidies for certification and operating funds, and support for administration.
- Organic cocoa production systems practiced among TCGA members are compatible with livelihood strategies to the extent that they require relatively low labor inputs and infrastructure and imply low production risks.
- Political-legal framework with several favorable features: no taxes on income or exports, direct financial support through government-administered development projects, and preferential market access to US, European and Caribbean markets.
- Relatively high yields vis-à-vis other organic cocoa exporters in other Central America. This is due mostly to very low incidence of Moniliasis. However, organic cocoa yields in Belize are nearly 4 times less than those reported in the Dominican Republic.
- TCGA has been able to pass nearly 95% of the organic/fair trade price to members. Prices received by TCGA members are between 50-60% higher than prices perceived by conventional cocoa producers, and 15-20% higher than those received by members of other smallholder cocoa enterprises in Latin America.

Despite these achievements, the organic cocoa sector in Belize lacks long-term sustainability from both a technical and business perspective. Current TCGA production levels are among the region's lowest, and do not allow for covering fixed costs of TCGA administration and extension services. The sector is highly susceptible to significantly reduced productivity when the fungal disease Moniliasis takes hold in Belize. TCGA depends heavily on international buyers and development projects to subsidize administration costs and provide technical services to members. Compared to other long-established smallholder cocoa enterprises in Latin America (eg CONOCADO in the Dominican Republic, El Ceibo in Bolivia, CACVRA in Peru, and APPTA in Costa Rica), TCGA lags behind considerably in terms of value adding, market diversification, and overall level of business consolidation. There is need to increased production levels, enhance on-farm productivity, and focus resources on business development. Among the major challenges facing the development of a sustainable cocoa sector in Belize are:

- Increase on-farm productivity and quality through long-term investments in cocoa management (including disease cultural practices, shade and cacao pruning) and better genetic material.
- Moniliasis could cause the collapse of the cocoa industry in Belize, with productivity losses of up to 80% (cf cocoa production in the Talamanca region of Costa Rica). Similar impact could be expected in Toledo if new strategies are not considered.
- Identify viable opportunities for adding value to cocoa through processing for national (tourism) markets. Limited information exists on opportunities to add increased value to cocoa beans through production of semi-processed and processed cocoa-based products.
- Strengthen capacities of TCGA to provide effective business, marketing and technical services to its members. TCGA has been severely under capitalized, with

management and technical staff highly dependent on external funding to cover salaries and operating costs. The legal constitution of TCGA (association) limits future opportunities for business development that capital accumulation and payments of dividends. Major operational and strategic decisions are taken by Board of Directors, rather than by professional managers.

- Promote long-term investment in communication and coordination platforms to build trust between MAF and TCGA. To date, limited government attention has been focused on cocoa sector development as compared to import-substitution crops like rice and vegetables and major foreign exchanged earning export crops such as citrus. Access to business development and financial services is highly limited. There is urgent need to address the frustration over impasse on land tenure clarification, and disagreement about appropriate use of project funds (eg CARD) and management of natural resources (fire permits, logging concessions), among other issues.

Case study 2 – Value addition through processing: citrus juice in Belize

The citrus industry is the most significant agro-enterprise in Belize, earning more than US\$50.6 million in the 2003/2004 crop year (CGA 2004). Primary citrus production accounts for 13% of agricultural GDP, while the citrus processing sector accounts for a staggering 30% of manufacturing GDP. Moreover, the relative high-value of processed citrus products makes the industry a top earner of foreign exchange – second only to tourism. Like other export-oriented agriculture industries in Belize (eg bananas, cocoa), the citrus industry is relatively new, developing since the 1960s at various intensities, and dominated by smallholders. The Belize citrus industry originated with the investments of an expatriate entrepreneur who made small shipments of fresh grapefruit to U.K. in the 1920s (Moberg 1991). After World War II, the citrus industry expanded with the opening of two factories that processed the regions' citrus as juice and fruit. It was not till the 1970s that the industry began to take off, due to world market conditions and political mobilization among the district's citrus growers (Kroshus Medina 1987).

Box 3.2 Competition in the regional orange juice market

Orange juice is a high value product with markets mainly limited to countries such as the US, and competition is strong between producers. The orange crop in Brazil is much larger than the US crop but higher processed utilization combined with higher juice yields allows US juice production to rival that of Brazil. Most US imports are frozen concentrated orange juice (FCOJ) because it is relatively cheap to transport. Orange growers in the US face considerably higher costs of production compared to Brazil, Mexico, and Belize. One study estimates the US cost of oranges delivered to processors at US\$0.75 per pound solids versus US\$0.45-US\$0.49/pound solid in Brazil, Mexico and Belize. The costs faced by US producers generally reflect the prices for labor, land and machinery. Import tariffs raise the price of Brazilian juice. The current US tariff on FCOJ from Brazil is US\$0.32 per pound solids. Transportation costs and the Florida equalization tax add an additional US\$0.12/pound solid to the cost of product. Thus, the cost of Brazilian FCOJ delivered with all taxes and tariffs paid is around US\$0.96 per pound solids, which is slightly higher than comparable costs in the United States. Belize enjoys relatively low grower costs and preferential access to the US market. However, processing costs in Belize are roughly twice those of Brazil. The high processing costs result, in large part, from insufficient throughput of raw material. In addition, energy and labor costs in Belize are significantly higher.

Sources: Donovan & Krissoff (2004). Donovan (2002). Zabeneh (1999)

For the Belizean citrus industry, an early major challenge was reaching a balanced bargaining position with the processing firms. For decades the country's two processing companies – one the subsidiary of Nestlé and the other controlled by foreign investors

and a few of Stann Creek's largest citrus producers – were thought to be colluding in setting producer prices. By the mid-1970s, as sales of frozen concentrated orange juice (FCOJ) rapidly increased in export markets, producers had learned of the discrepancy between strong world demand and the low prices paid by the processors. While seeking elected positions in the Citrus Growers' Association (CGA), smaller-scale producer used the issue of pricing practices to push for enforcement of the Citrus Ordinance of 1967, which authorized government regulation of the citrus industry¹⁹. The two processors resisted CGA's efforts to enforce the Ordinance. In response, a broad-based movement among smaller-scale producers demanding contract prices that reflected the trends prevailing in world markets. During a 1975 'growers' strike' in which most producers withheld fruit from the processors, the production of FCOJ and its shipment for export were brought to a halt. The three-month stalemate forced government intervention to protect the country's second largest source of export earnings. The government's intervention resulted in: 1) the calculation of producer prices based on a pricing formula requiring public disclosure of processors' assets and profits²⁰ and 2) the requirements that processors purchased all of a growers' fruit. The pricing formula precluded any further collusion between the processors and insured that high world market prices are passed on to producers (Kroshus Medina 1987). Increased returns and a rapid expansion on citrus acreage followed the implementation of the price formula and the guaranteed purchase arrangement (Barham 1992).

In the early 1980s, a second wave of citrus expansion in Belize was wrought by two external events: 1) a series of severe freezes in Florida that transformed the US from a net exporter of citrus products into a net importer of FCOJ and 2) the elimination of tariffs on citrus into the US from Caribbean Basin countries under the Caribbean Basin Initiative. At the urging of the Florida citrus growers lobby, the US had imposed tariffs on imported FCOJ in the 1950s, amounting on average to 40% of Florida production costs (Barham 1992). Prior to this time, Belize had difficulty selling its citrus production in the US and had depended on protected marketing agreement to sell its FCOJ in Europe and the Caribbean. CBI opened the lucrative US market to citrus from Belize and other Caribbean producers. Now Belize was able to market FCOJ for just under the Brazilian price and still make a profit. As a result, the proportion of Belizean citrus production sold in the US jumped to 60%, though Belizean FCOJ imports still accounted for less than 1% of the FCOJ sold in the US (Barham 1992). Preferential access to the US market for Belizean oranges raised prices from Bz\$6.85 per box in 1982/1983 to Bz\$10.75 per box in 1983/1984.

The higher prices stimulated investment in citrus and many growers began to invest in expansion in acreage. The government facilitated the expansion of citrus production by providing state-owned land on lease to both large and small investors (Kroshus Medina 2004). According to Kroshus Medina (2004), a random sample of citrus growers in 1989 showed that 73% had expanded their citrus holdings. Moreover, in 1990, 22% of the workers included in random survey samples of the unionized labor force in the industry had also begun planting citrus. CGA membership rose from 361 in 1985 to over 600 in 1994.

¹⁹ The CGA was officially sanctioned in 1967 with the passage of the 'Citrus Ordinance,' which granted the state regulatory powers over the industry, including requiring all who delivered fruit for processing to become a member of the CGA and pay a cess to finance its operation (Krosus Medina 2004). In addition to political advocacy on the part of growers vis-à-vis processors and the government, the CGA facilitates the collection and transportation of oranges from farm gate to processor. It also operates a credit program for small farmers to purchase annual production inputs. Each farmer's forecasted citrus production, which is confirmed by the CGA, serves as the collateral for a loan. CGA's smallholder credit program has operated since 1995, and has disbursed US\$2.9 million, with a default rate of less than 1 percent (Donovan 2002).

²⁰ The pricing formula means that Belizean growers receive a price that is approximately linear function of the international futures' prices. As the FCOJ price rises above a certain threshold level, the growers' proportion of the price rises, subtracting transportation, marketing and processing costs. Similar price formulas, or participatory schemes, are the norm in both Brazil and Florida (Barham 1992).

Currently, the industry focuses on the production of bulk FCOJ for export to international markets and within the Caribbean. Belize accounts for between 5-10% of total US FCOJ imports and is the dominant supplier of FCOJ to the Caribbean market. The industry also produces and exports relatively small amounts of not-from-concentrate ('fresh') orange juice (NFC). Most NFC is currently sold in the regional market. At present, roughly 96% of the country's citrus crop is exported as orange or grapefruit juice concentrate to Caribbean, European, and US markets. During the 2003/2004 growing season, 559 citrus producers in Belize delivered citrus for processing, of which roughly 80% were smallholders²¹ delivering less than 5,000 boxes per year (Table 3.5). The vast majority of citrus processed in Belize, however, is supplied by a few medium and large scale producers: combined they accounted for roughly 93% of total citrus deliveries. In addition, the industry provides employment for 445 in the processing sector and over 4,000 seasonal workers (Donovan 2002).

Table 3.6 Citrus deliveries to juice processing plants in Belize according to size

Boxes delivered (03/04 growing season)	Number of growers	% of all growers	Total deliveries ('000 boxes)	% of total deliveries
101,000 and over	15	2.7	3,280	52.1
5,001-100,000	95	17.0	2,647	41.2
1-5,000	449	80.3	490	7.6
Total	559		6,417	

Source: Belize Citrus Growers Association

Orange production increased rapidly during the late 1990s, as trees planted earlier in the decade – in response to unusually high prices following freezes in Florida – came into full production (Table 3.6). During the 1990s, fruit delivered for processing increased by 50%. Production leveled off around 2000 as the trees reached maturity. Oranges made up the bulk of the increase, as grapefruit deliveries remained roughly the same. The 1990s, however, were also a period of declining fruit prices: orange prices fell by 22% and grapefruit prices by 36%. According to industry sources, the break-even point for orange production in Belize is around Bz\$5.75 per box, indicating that during the latter half of the 1990s growers were unable to cover all of their production costs (Donovan 2002). The drop in prices reflects the general decline in world orange juice prices resulting from increased competition and changes in consumer preferences away from FCOJ towards NFC, which consumers generally perceive as being of higher quality (Donovan & Krissoff 2003). Since the 2000/2001 season, the overall trend in boxes delivered has been declining. This has resulted from the insufficient application of production inputs, and a decline in grove maintenance. This is true especially for small and medium sized citrus operations who tend to be more vulnerable to price downturns and thus more likely to forego investments in citrus and seek alternative livelihood strategies, such as shifting production to another crop or migrating to urban centers. In an effort to provide incentives for increased quality, a pound-solids payment system was introduced in the 2002/2003 growing season, which bases payment on the sugar content in fruit. Previously, payments to growers were based solely on box weight.

Since its beginnings, the Belizean citrus industry has been entirely focused on regional and export markets. Competition in the major international orange juice markets is based on low price, which means that Belize industry can compete only where it has preferential access. The average yield for Belizean citrus plantations ranges from 175 to 250 boxes per acre, well below the world's standards production rate of 400 boxes per

²¹ Smallholders, in general, are important for the Caribbean citrus industry. In Jamaica, smallholders (those delivering 5,000 boxes or less per year) make up 98 percent of all citrus farms and supply 42 percent of citrus for processing. In Trinidad there are only 150 growers that currently supply citrus to the processing industry, cultivating groves from 5-100 acres. Citrus production and processing is also carried out in Cuba, the Dominican Republic, and Guyana. Central American producers of FCOJ are Costa Rica, and to a lesser extent, Honduras.

acre (Kroshus Medina 1997). In the case of smallholders, low yields may be due to failure to apply recommended quantities of fertilizer. In general, however, yields are low in Belize due to agro-climatic conditions, as large producers that apply the prescribed dosages of agro-chemicals achieve yields of only 350 boxes per acre. Due to the lower-priced Brazilian product in Europe, as compared to the US, producers in Belize have faced difficulties unable to expand in the European market in either the FCOJ or NFC segments. Faced with increased competition in Europe, Belize has turned to the US. Between 1999 and 2001 Belizean FCOJ exports to the US increased 40%. The US tariff on Brazilian FCOJ is between 40-50% ad valorem. Belize processors enjoy duty free access to the US market through the CBI.²² Donovan (2002) addresses the hypothetical case of complete removal of the US tariff of Brazilian FCOJ and its impacts on citrus production in the Caribbean. His estimates suggest that the local industry's share of the Caribbean FCOJ market would fall by nearly 75% due to increased competition from lower-priced imports from the US and Brazil. In the US market, the reduced US tariffs on Brazilian FCOJ would nearly drive out CARICOM from the market. Complete trade liberalization nearly puts an end to FCOJ production in CARICOM. The relatively high transportation costs for NFC allow NFC production to continue in the region, albeit at significantly reduced levels. Roughly 70% of shipments are destined for the US, while the rest are sent to Caribbean and European markets.

Table 3.7 Volume and price for citrus delivered to processing plants in Belize

Season	Orange		Grapefruit	
	Boxes delivered (000 boxes)*	Price/box (Bz\$)**	Boxes delivered (000 boxes)	Price/box (Bz\$)
90/91	1,203	10.58	792	5.84
91/92	2,408	9.12	1,228	6.24
92/93	1,793	4.62	1,015	5.34
93/94	2,020	6.15	833	4.73
94/95	3,133	8.03	1,214	5.70
95/96	3,166	8.07	1,159	4.80
96/97	4,555	4.82	1,418	3.30
97/98	3,898	5.65	1,236	2.10
98/99	4,438	5.67	1,328	2.38
99/00	5,590	5.03	1,391	4.13
00/01	5,734	4.37	1,461	4.05
01/02	4,123	5.88	1,231	4.74
02/03	4,046	1.14/ps	1,078	4.23
03/04	4,947	0.94/ps	1,479	3.84

* 1 box grapefruit=80 lb., 1 box oranges=90 lb.

** Exchange rate (March 12, 2008): 1.00 \$US = 2.00 Bz\$

Source: Belize Citrus Growers Association

As international markets have become more competitive, the Caribbean market has become increasingly important to Belize. A Common External Tariff (CET) of 40% ad valorem protects the Caribbean industry from lower-priced fresh and processed citrus products. The CET allows the industry to capture prices 20-30% over global prices (Donovan 2002). The majority of regional exports are destined for Jamaica, Barbados

²² The CBI went into effect on January 1, 1984. It was extended in 1990, 2000, and 2002. It is currently set to expire on September 30, 2008, or the date, if sooner, 'on which the FTAA or another free trade agreement as described in legislation enters into force between the United States and a (CBI) beneficiary country'. In the case of CBI countries included in the recently-negotiated CAFTA-DR agreement (eg Honduras, Dominican Republic, and Costa Rica), CBI benefits will become permanent. The US Embassy in Belize has recently expressed 'its commitment to seeking out an extension of this framework.' For more information, see: http://belize.usembassy.gov/july_19.html.

and Trinidad. Trade with Jamaica has increased significantly in recent years, as the Jamaican citrus industry has been heavily damaged by the citrus disease Tristeza (Box 3.3), which is threatening the entire Caribbean region. However, the small size of the regional market and relatively high costs for ocean transport may limit the possibilities for further significant gains in this market.

Box 3.3 The Jamaican citrus industry struggles with Tristeza

The citrus industry is one of the most economically important agricultural industries in Jamaica, behind sugar, bananas and coffee. The citrus industry involves a large number of small-scale growers cultivating between 1 to 4 hectares of citrus. These growers account for an estimated 95% of the approximately 3,800 growers and 30% of the estimated 25,000 acres in citrus. Oranges represent about 84% of total Jamaican citrus production, with grapefruit making up the majority of the remainder. The key market for Jamaican fresh citrus is domestic. The domestic market is controlled by a large number of informal traders that operate throughout the year. Most smallholders participate in this market. Domestic fresh prices are 2-3 times higher than prices offered by the citrus processors. During the main harvesting period, juice processors are the primary purchasers of citrus either for export as fresh fruit or for processing into FCOJ, NFC or other drinks for domestic and regional markets. There are 2 plants that process FCOJ, 4 plants that process NFC, 5 fresh fruit packaging houses, and a host of cottage industries that process oranges into freshly-squeezed orange juice for sale directly to consumers and the tourist industry. Processors purchase between 30%-35% of total annual orange production.

Since the early 2000s, citrus production has been in sharp decline due to the impacts of the Citrus Tristeza Virus (CTV). In 1992, the disease confirmed as being present. Nearly all of commercial citrus is planted on CTV-susceptible sour orange rootstock. The Jamaican Citrus Growers Association (JCGA) estimates that 80% of citrus is infected with CTV. According to the Agriculture Ministry, production fell from 183,184 MT in 1999 to a low of 136,738 MT in 2002. More recent figures indicate there was a further decline to less than 126,000 MT in 2005. Decline in orange production and a vibrant fresh fruit market have reduced the supply of fruit available for processors. Processors have compensated for the shortfall in domestic supply by importing FCOJ, usually from Belize. Imported concentrate is reconstituted, packaged and sold in domestic and regional markets. In 2001, the Agriculture Ministry, with US\$ 10 million from the Caribbean Development Bank, promoted the replanting of 6,000 acres of citrus using certified CTV resistant planting material. However, the project's impacts on future production levels may not be as high as expected: according to the president of the JCGA only 2,000 acres of citrus had been resuscitated under rehabilitation programme which ended in 2007. In 2008, the (JCGA) presented a proposal for the further citrus resuscitation and replanting for roughly US\$23 million. (*Jamaica Gleaner 2008*).

Cooperation and conflict among citrus stakeholders

The development of the citrus industry in Belize is, in part, a story of cooperation and conflict between and among producers, processors, and the government (labor has largely been on the sidelines). Among producers, large variations in financial and natural resource endowments have emerged as a source of conflict. Citrus producers classify themselves as either small or large growers, using 50 acres as a boundary between the categories (Kroshus Medina 1997). Although the acreages and incomes of smallholders vary widely, they tend to share a sense of being disadvantaged vis-à-vis large citrus growers (ibid.):

- *Access to land:* Most available land is held by the government in forest reserves that can be leased and later purchased at below market prices. Although both large and small growers may apply for government-owned land, large growers are more likely to benefit from political connections (often the result of making significant contributions to election campaigns) to obtain choice parcels of fertile land close to roads, while small growers frequently settle for land on hillsides a half-mile or more from a road.
- *Access to mechanization:* Large scale growers clear the forest with bulldozers, while smallholders use axes and machetes. Stumps left behind manual clearing prevent the use of machinery to clean the groves, while orchards cleared with bulldozers can be cleaned mechanically. Small growers often plant a short-term cash crop to recover some of the costs of clearing land before they plant citrus. The high costs of clearing land, planting, and maintaining the trees for five years until they reach maturity force most small growers to plant parcels of less than one acre at a time. Smallholders whose plantations can accommodate a tractor with a mechanical mower must often wait their turn for the CGA's services.
- *Access to processing services:* Smallholders may be held to higher standards for fruit maturity requirements than large growers. The longer growers wait to begin to harvest, the more fruit they lose to birds or to premature fruit drop, but the processors argue that growers profit more from selling a smaller amount of mature fruit at a high price than they would from selling a larger quantity of green fruit at a lower price. Farmers accept this argument in principle; smallholders, however, believe that the maturity requirements are not applied equally to all growers because large growers use their high volume of production to pressure the companies to accepting green fruit.

Increased efficiency in production could be best achieved through the promotion of large growers over smallholders²³. Kroshus Medina (1998) chronicles the critical role played by the Belizean government in promoting the participation of smallholders in the citrus industry at key moments in the industry's development process. In 1979, one of the two Belizean processing companies and the largest private citrus grower together contacted the UK's Commonwealth Development Corporation (CDC) to request funds to rehabilitate their orchards. A CDC team dispatched to evaluate the Belizean industry recommended that citrus production be increased as rapidly as possible by giving top priority to rehabilitating neglected groves, thus directing most of the funds toward large producers, and establishing a new large-scale citrus estate. In 1980, the Belizean government was asked to guarantee a loan from the CDC that made rehabilitation its top priority. When news of the proposed program was leaked to smallholders, they convened a special meeting of the CGA at which they accused the government of favoring the large-grower minority. A resolution was passed that the loan funds be directed toward smallholders to finance expansion of their citrus holdings. Concerned about potential biases towards smallholders, the government agreed to incorporate the CGA into negotiations with the CDC. During negotiations that stretched over more than a year, small growers made repeated attempts to limit large growers' access to the loan funds, while the CDC opposed such exclusions, arguing that they would slow the program and jeopardize its goal of strengthening the citrus industry. Ultimately, the government resolved the conflict by siding with the majority: It agreed to guarantee the loans only on condition that expansion be given priority over rehabilitation and that funds be directed toward small growers rather than a new citrus estate.

A second loan program, with expansion as its priority, was initiated with a 1988 World Bank offer of a US\$1 million loan to develop 1,000 acres of new citrus in Belize. The

²³ The average yield for Belizean citrus plantations ranges from 175 to 250 boxes per acre, well below the world's standards production rate of 400 boxes per acre (Kroshus Medina 1997). In the case of smallholders, yields are relatively lower due to failure to apply recommended quantities of fertilizer. In the case of large producers that apply the prescribed dosages of agro-chemicals yields may reach 350 boxes per acre.

World Bank's priority was further diversification of the national economy away from dependence on sugar. The Belizean government negotiated an agreement with the World Bank that would direct the funds toward smallholders; the government proposed funding 500 acres of new citrus holdings in 20-acre blocks and 500 acres in 5-acre blocks to encourage small growers to expand up to the 20-acre level designated as economically viable. However, officials at the Development Finance Corporation (DFC) – a quasi-government development bank – which was to administer the loan, recommended that the funds be lent to one or two large growers to expand several hundred acres each, asserting that it would be much more efficient to fund a couple of large projects that would have the same overall effect. Through several years of negotiations leading up to the program's implementation, the government, concerned with both increasing production and maintaining the political support of small growers, insisted that the program be directed toward smallholders. The final agreement allocated funds to both small and large producers, and, again, the government made land available to both small and large growers to facilitate expansion.

However, the highly strategic nature of the citrus industry, both at home and abroad, requires that governments be fully informed of potential responses by various stakeholders (producers, processors, government, and certain international producers and processors) and be prepared to coordinate among them for the best possible outcome²⁴. Barham (1992) describes how an opportunity to dramatically increase citrus production in Belize was lost due to conflicting objectives and the inability of the Belizean and US governments to effectively intervene. In 1984, Belizean producers initially heard of news of plans by Coca-Cola Foods (CCF) to invest more than US\$100 million in establishing 25,000 acres of citrus plantations in north-west Belize (equivalent of CCF's holdings in Florida) and citrus processing capacities. The deal was important for the Government of Belize (GoB) (increased foreign exchange earnings), as well as the US, which sought a success story for its newly implicated CBI (ibid.). Reactions among Belizean producers were mixed: on one hand, the investment increased the likelihoods on an extension of CBI – vital for the survival of the industry, on the other hand, exceptions granted to CCF from the Citrus Ordinance and taxes that fund the CGA threatened the delicate relations between processors and producers in the Stann Creek district. In particular, producers feared that processors would be in a prime position to demand their own exemption from the Ordinance on the basis on the precedent and the unfair competitive advantages provided to CCF. Upon protests by the CGA, the GoB withdrew the exemption from the Ordinance and CCF responded by seeking further negotiations on the exemption. Complicating matters further, was the Florida growers' effort to squash the deal by highlighting the negative environmental consequences of citrus planting for tropical forest conservation and lobbying the US congress to limit government-supported insurance for international investments in citrus production. In 1987, CCF withdrew from negotiations with the GoB. Barham (1992) argues that the responses by both the Belize and US governments were ill-prepared for promoting the CCF investments in such a strategic industry as the citrus: in the case of strategic industries 'a more refined approach should help avoid the naive pursuit of liberalization policies in sectors where laissez-faire outcomes will be counterproductive'.

Towards increased efficiency in processing

In the late 1990s, the former Commonwealth Development Corporation (CDC) offered to purchase majority shares in the two juice processing plants in Belize. Given the

²⁴ Barham (1992) suggests that on three levels competition in the citrus industry is strategic: At the local level, the efforts of citrus growers' associations in Florida, Brazil, and Belize seek to establish contractual norms or industry-wide participation schemes that govern relations between producers and processors and reduce the potential bargaining imbalance of a few processors versus numerous producers. At the national level, citrus growers' associations, especially in Florida and Brazil, push trade and subsidy policies aimed at influencing investment and production decisions especially in the other country. At all levels, but especially at the international level, existing growers have a strong interest in acting pre-emptively to prevent new citrus groves investment that expands industry capacity.

difficulties faced by Belize and its citrus industry at the time, citrus growers voiced few complaints about the purchase of the companies by foreigners or the imposition of a monopoly in processing (Kroshus Medina 2004). CGA officials hoped that the CDC's experience in managing citrus operations in Costa Rica and selling its products in global markets would enable it to operate the new consolidated company with greater efficiency, which, in turn, would lead to higher fruit prices. However, the CDC's purchase and consolidation of the processing companies yielded mixed results. The CDC won new loan funds from the European Investment Bank in 2001 to rehabilitate orchards and update processing. Some of these funds were invested in processing – namely, in a system to recover citrus pulp. However, world market prices for citrus products continued very low, as did the fruit prices received by Belizean producers.

As a result of the partial privatization of CDC and resulting policy shifts, CDC looked to divest its holding in citrus processing in Belize and elsewhere. CDC engaged the CGA in negotiations for the sale of the newly consolidated processing company. The CGA established the Belize Citrus Growers Association Investment Company, Ltd. to acquire the processing company on its behalf, and in late 2002, after two years of negotiations, the CGA signed an agreement to acquire 99% of the company's shares (Kroshus Medina 2004). At the same time, however, the CGA assumed the company's US\$19 million debt. The new processing company was named Citrus Products of Belize, Ltd. (CPBL). In 2002, CPBL announced plans to increase efficiency in the face of low prices and high debt by terminating workers at both factories, with severance payments, thus allowing for a 'restructuring' of the workforce. In 2006, CPBL sold 46% of its equity to Banks Holdings Ltd. of Barbados and Blue Waters Ltd. of Trinidad for US\$25 million, with the growers retaining 51%. The sale of equity may have been aimed at providing financing, as well as know-know in branding and marketing, for diversifying CPBL's products into higher value added products, such as fruit drinks, aimed at regional markets.

Lessons learned

The development of the citrus industry in Belize stands out as unique among Caribbean ACP countries (relatively large scale and focus on processing) and internationally (active participation of smallholders in all aspects of the industry). The government has played a major role in ensuring the incorporation of smallholders into the expansion process (provision of land and credit). Efforts to increase efficiency of citrus production and processing in Belize are clearly necessary to ensure the industry's survival in the face of potential free trade in FCOJ between Brazil and the U.S, as well as from the threat of regional producers, such as Cuba (see Box 3.4). Key lessons from this case include:

- The effective incorporation of smallholders in a highly strategic industry where scale in production and processing is critical was possible, in large part, to due 1) grower organization in the CGA, 2) political legal framework that favored smallholder production (Citrus Ordinance), and 3) long-term government commitment to smallholder development
- However, protecting smallholders' interests came at the cost of increased efficiency in production and processing. In strategic industries such as citrus, this have been viable given preferential access to the US market and high levels of tariff production in the Caribbean market.
- The organization of smallholders into the CGA for political advocacy, research, and provision of services to smallholders, played an especially important role in facilitating dialogue between the Government and citrus growers, between small and large citrus growers, and between citrus growers and processors.
- The role of labor has largely been ignored in the development of the Belizean industry by the government, CGA, and processors. This is most recently reflected in the restructuring of labor agreements at the processing plant. In general, citrus labor, much of which comes from Guatemala and other parts of Central America, has been less organized than growers.

The key stakeholders in Belize citrus have been ill-prepared to deal with the complex strategic interactions at the local, national and international levels for promoting the long-term development of the industry. The industry is especially vulnerable to changes in market and political environments. Only recently has attention been focused on innovation and diversification. Central American juice markets have been ignored over the past decade, despite their rapid growth.

Box 3.4 Role of foreign investment in promoting the Cuban citrus industry

Following the revolution, Cuba's government promoted citrus production as part of a program to diversify the country's sugar-dominated economy. Citrus plantings and production grew throughout the 1960s and 1970s, with production reaching a million MT in 1990, making Cuba the world's 14th largest citrus producer. However, the industry faced a major downturn with the collapse of Eastern European economies. Citrus production fell by about 45% in the early 1990s. In response, emphasis was placed on expansion of processing. Efforts were also made to increase foreign investment in the industry. Israel reinitiated investments in 1991 that increased productivity and product quality for a joint Cuban-Israeli production enterprise. By 1997, this joint venture produced over a third of Cuba's total citrus production. Other investments in citrus have come from Greece, Great Britain, Chile, and Italy. Cooperative investments, along with improved-technology processing equipment imported from Europe, have also benefited the citrus processing industry. As a result of these changes and improved incentives, citrus yields and production have rebounded to 1980s levels. Cuba's infrastructure, however, remains in poor condition, investment resources and production inputs continue in short supply, foreign exchange remains limited, the trade deficit continues, and foreign debt remains high. In 2001, Cuba entered into a free trade agreement with the Caribbean Community and Common Market (CARICOM) – whose members include most of the Caribbean ACP countries. An initial version of the agreement allowed for free trade in citrus. However, subsequent negotiations between CARICOM and Cuba resulted in citrus being included on the list of sensitive commodities exempt from tariff reduction.

Source: Kost (2004)

Case study 3 – Fresh produce exports: vegetables from Guatemala

Long-term, effective participation in the fresh fruit and vegetable markets depends, in large part, on the ability of producers and exporters to address a series of issues related to logistics, scale, and capital endowments. Specific issues include: 1) need for relatively large amounts of production inputs and services; 2) advanced managerial and marketing skills; 3) certification and quantification requirements; 4) vertical coordination to deliver perishable products to markets or processing facilities in time; 5) long 'product gestation periods,' especially for fruit crops; 6) access to future markets or insurance to withstand the price and supply fluctuations associated with many high value crops; and 7) requirements for high 'quality' of labor (Carter et al. 1995). Most of these issues tend to work against smallholders, due to low capital endowments, limited information, and lack of services. However, the last one, quality of labor, can favor smallholders. This refers to the fact that many high-value vegetable and fruit crops are highly responsive to constant and careful monitoring of plant health; careful weeding, pruning and irrigation; harvesting based on assessments of when individual pieces of fruit and vegetables are ripe; and careful, efficient handling (Collins 1995). Since many of these activities (i.e., pruning and trellising) cannot be mechanized, there may be very limited economies of scale in production of crops that require high quality labor. While large-scale producers can, theoretically, monitor and supervise workers in ways that ensure a high quality of labor, Carter et al. (1995) argue that such supervision will often be prohibitively costly.

In general, fresh vegetable export is much more capital intensive than both traditional and subsistence crops. Several studies find that fresh vegetable production and marketing is increasingly being carried out by large-scale producers and processors, and smallholders are being excluded (Reardon et al. 1999, Dolan & Humphrey 2000, McCulloch & Ota 2002). Dolan and Humphrey report that by 1998 the share of smallholder production in the export of fresh vegetables from Kenya to Europe fell to less than 30%. Recent research indicates that fewer than 2% of smallholders in Kenya are directly engaged in the sub-sector (Bawden et al. 2002). In Costa Rica, Mannon (2005) describes how fresh chayote exports during the 1990s became increasingly dominated by larger-scale producers, as smallholders were ill-prepared to deal with quality and safety issues and have low bargaining power with buyers (see Box 3.5).

Box 3.5 Declining smallholder shares in chayote exports from Costa Rica

Beginning in 1983, the US Agency for International Development (USAID) provided Costa Rica with considerable financial resources for agricultural diversification and export promotion. As a direct result of this funding, NTAEs from Costa Rica skyrocketed, with chayote exports alone increasing from 5.2 million pounds in 1980 to 13.5 million pounds in 1988. Because chayote is also produced for local markets, exporters were easily able to identify producers willing to produce for export. Exporters were not prone to establish contracts with smallholders, as they needed neither protection from lost investments nor incentives to get smallholders to establish (expand) production. Due to the limited size of the US chayote market, exporters preferred a 'looser' relationship with producers where they were not committed to buying produce on a regular basis. Smallholders benefited in their access to the US market, which fetched far higher prices than in local markets. On the other hand, they were perceived by exporters as being reluctant to adopt increasingly strict US quality standards. Given the limited resources of smallholders and the withdrawal of USAID and government support in the early 1990s, these standards were difficult to meet and smallholders began to face higher levels of product rejection. Lacking contracts, exporters passed any losses from produce rejection directly to smallholders. To complicate matters, international demand for ethnic foods is unstable and the competition intense. When demand fell, chayote exporters simply did not buy from smallholders. Most smallholders responded to these risks by making increased use of local markets for their produce, in combination with the export market. However, the response of smallholders to export market risks conflicted with the need of exports for a consistency, quality assurance, and produce traceability. Exporters began relying less on smallholders in their supply networks and more on larger-scale producers with more stable resources to weather international market fluctuations and a better reputation for quality assurance. Quality concerns were becoming increasingly important in Costa Rica in the late 1990s with respect to the US markets, to which 50% of all exports were destined. In Costa Rica, 102 detentions were reported from 1984-1994, costing approximately US\$ 411,000 in lost revenue.

Source: Mannon (2005)

A major constraint for smallholder participation in vegetable export markets is related to quality and safety, coupled with an expansion in the number of non-tariff measures that developed countries apply to agricultural products. Fruits and vegetables are among the agriculture products more frequently affected by sanitary and phytosanitary (SPS) measures (Unnevehr 2000). Box 3.6 details the decline of smallholder participation in melon exports from Honduras due to limitations in addressing pesticide toxicity issues.

One exception to this trend is the smallholder-dominated fresh winter vegetable sector (eg cauliflower, broccoli, snow peas) of highland Guatemala. Smallholders began growing fresh vegetables in the mid-1970s, starting with snow peas, cauliflower, and broccoli and later expanding to French beans, mini-squashes, berries, and other exotic crops. During the 1980s, the share of agricultural exports coming from fresh fruits and vegetables grew from less than 6% in 1980 to more than 22% in 1992. Snow pea export grew from 1,678 MT in 1986 to 16,511 MT in 1995. Ninety-percent of Guatemalan snow peas are produced on farms of less than 1 ha by 20,000 indigenous growers (Hamilton & Fischer 2005). In response to structural adjustment and trade liberalization programs, Guatemala introduced policies in favor of fruit and vegetable production, such as export facilitation procedures, subsidy programs, and fiscal reforms. Trade agreements such as CBI also played a critical role in promoting fruit and vegetable exports. In the early 2000s, an initial decline was recorded as growers and exporters suffered losses from high rates of product detention and rejection due to SPS violations. The market then rebounded; exports reached 18,236 MT in 2003. About half of the exported snow peas are marketed through exporters that contract with smallholders, the remaining volume is sold by smallholders independently through local intermediaries. One study estimates that the low entry costs for both producers and exporters of fresh snow peas resulted in a highly competitive market in which growers captured \$40 of the destination priced for snow peas in the mid-1990s – a high proportion for a perishable export crop (Gulliver 2001). Despite the technical difficulties of meeting SPS export standards, 13,000 small-scale snow-pea producers are currently affiliated with exporters, cooperatives, or community groups that provide training and technical assistance in meeting food safety and other production quality standards (Hamilton & Fischer 2005).

Box 3.6 Decline in smallholder participation in melon exports from Honduras

In the mid-1980s, producers in western Honduras invested in the production of fresh melons for export to the US with the help of USAID and multi-national corporations. By 1989, there were 3 cooperatives farming 520 ha, 3 transnationals farming nearly 2,760 ha and 4 Honduran companies farming 1,200 ha. Honduras became the leading melon exporter in Central America. However, reliance on pesticides in the production of fresh melons generated significant ecological disruption, as well as reduced involvement of smallholders. The overall lack of understanding of the impact of pesticides and their implications for sustainable development, even among trained technicians, generated pesticide resistance pests, secondary pest outbreaks, and widespread plant diseases, with major repercussions for many melon producers. Smallholders suffered the worst effects of the ecological disruption. The dramatic decrease in the number of smallholders, the increase in average farm size and the shift by some companies away from contracts into estate production, all suggest that the opportunities for smallholders are limited when quality control is weak.

Development strategies that call for the introduction of NTAEs that are heavily dependent on pesticides, and encourage smallholders to participate in these development efforts, can seriously jeopardize smallholder production, while risking the health of smallholders and farm workers and degrading the environment. Under the conditions commonly found in the developing countries, the pesticide technology often appears to accelerate the negative redistribution of wealth and resources within and between countries, while undermining the socioeconomic and ecological foundation for future efforts to achieve more sustainable and equitable development. The volatile connections between the ecological, economic, social, and political dimensions of technology-induced problems suggest that economic growth and political stability may only be sustainable when questions of social equity and ecological viability are brought to the very forefront of the development process.

Source: Murray (1991)

Factors facilitating smallholder's participation in the vegetable exports

As previously suggested, where production is highly labor-intensive and where products must meet strict quality standards, smallholders can have advantages vis-à-vis larger producers based on lower wage bills and their ability to ensure 'quality' labor. However, savings in labor alone are unlikely to fully overcome the effects of smallness and low capital endowments. In this context, the conversion of smallholder organizations into rural community enterprises (RCEs) becomes vital for increasing efficiency in production and marketing, accessing external services and inputs, and providing critical services, such as credit. Overall, experiences in RCE development in Guatemala, and elsewhere in Central America and the Caribbean, have been mixed. However, one RCE in highland Guatemala has stood out in the literature. The Cuatro Pinos cooperative provides technical assistance in export quality standards, purchases the crops, packs the produce and sells it directly in Miami. Profits are returned to cooperative members as annual dividends. The cooperative also provides members with access to credit, reduces risk through management of a price-band systems and insurance through limited liability on loans. There are local collection centers in each of the eight communities that participate in the cooperative. Members pre-select, weigh and store their produce at the collection centers and the amounts received are registered. The cooperative headquarters has a central collection center and a plant for post-harvest operations, including pre-freezing, grading, cleaning and storage. According to Santacoloma and Riveros (2004), the cooperative has built business relationships around trust by providing credit, hiring producer family members to work in the packing plant, and offering maternity leave benefits and health care. By 1987, Cuatro Pinos had expanded to 1,150 members, compared with 177 members in 1979. Cooperative members grew nearly 300 ha of export vegetables in 1985 (von Braun et al. 1998), on plot sizes ranging from 0.3 ha to around 2.25 ha. Vegetables processed and marketed by the cooperative come from members (80-90%) and local intermediaries (10-20%) (Santacoloma & Riveros 2004).

There has been little critical discussion of the economic and social performance of Cuatro Pinos or of its development process over the past three decades. One exception is work by Carletto and colleagues (1999). They argue that the ability of Cuatro Pinos to assist production with credit and technical assistance has suffered from discontinuity in management and high default rates on pending debts as a consequence of extensive adverse selection during years of easy credit and low prices. Based on statistical analysis, they found that cooperative membership, once corrected for selectivity bias, and did not have a positive impact on the household's decision to continue growing fresh fruits or vegetables. This disappointing role of the cooperative is due to its increasing managerial and financial difficulties. This has had a substantial impact on the cooperative's ability to respond to members' increasing demands for credit, insurance, and information. The shift in priorities by international donors who had so enthusiastically promoted NTAEs in the 1980s, and the consequent withdrawal of financial support to NTAE activities, contributed to weakening the cooperative. At a time when the importance of access to credit, insurance, and information grew as a consequence of increasing capital requirements, higher risk, and lower productivity of NTAEs, the role of the cooperative as a source of liquidity, insurance, and technical assistance was reduced, weakening its mitigating role precisely when it was most needed to overcome anti-smallholder biases in the production of NTAEs. The result was a vicious cycle that smallholders found difficult to overcome. Achieving sustainable and equitable rural development via promotion of NTAEs thus requires addressing the issues of effective institutional support for credit, insurance, technical assistance, infrastructure investments, and control of accumulation of toxicity.

Government and non-government organizations played a catalytic role in the beginning for the rapid use of potential economic benefits from NTAE production. In Guatemala the promotion of NTAE exports, including fresh fruit and vegetable exports, has been an integral part of US economic assistance policy since the early 1980s. PROEXAG, a USAID

financed NTAE promotion agency, has provided essential services like production and market research and contacts with US buyers. USAID was also instrumental in opening up the export channel by providing seed capital to the company, Alimentos Congelados, S.A. (ALCOSA). USAID, along with other development agencies, stimulated the formation of the Cuatro Pinos cooperative, implemented its programs, and assisted in securing access to exporters. Among the actors working with USAID and other development organizations in the development of fresh vegetables export sector during the 1980s and 1990s were (von Braun et al. 1998):

- A private company (ALCOSA) provided the technical know-how and the export channel to the US market, including infrastructure facilities as cold storage.
- Guatemalan public-sector agencies facilitated agricultural technology (Instituto de Ciencias y Tecnologías Agrícolas) and credit directly to smallholders (Banco Nacional de Desarrollo Agrícola).
- Smallholders invested in the formation of Cuatro Pinos, which organized export vegetable production and provides field level extension, input supply produce collection, selection, and storage.

In addition to external investments by government and non-government organizations, local endowments of social assets have played a critical role in the development of the Guatemalan fresh vegetable sector. Hamilton and Fischer (2005) discuss how smallholders were able to deploy social assets to strengthen their market position and ways in which market participation can strengthen community, including household labor availability, parallel market experience outside the nontraditional sector, commitment to maintaining traditional production practices, and high levels of social capital:

- Household labor: The availability of low cost household labor and the requirement of high field and supervisory labor inputs figured centrally in most early calculations of the comparative advantage for smallholders. Hamilton and Fischer find that household members are unlikely to forgo alternative income opportunities or schooling to work in household production. And the presence of local employment opportunities in fruit and vegetable production and processing appears to offer a positive local alternative to the deployment of unskilled labor to wage labor on distant plantations. However, the low opportunity cost of family labor also reflects that relatively low levels of education and of well-paying nonagricultural employment in the highlands.
- Parallel market experience: Smallholders have been able to leverage previous marketing experience in the textile and regional agricultural markets to maintain control of their means of production while participating in export markets. Women, in particular, have transferred skills and social capital gained through selling agricultural and non-agricultural products in regional bulking centers and other markets to the commercialization of new NTAEs. Moreover, maintaining their visibility in marketing activities has helped to protect women's control of household productive assets and incomes despite men's greater access to NTAE market structures.
- Commitment to traditional production practices: Highland smallholder producers have been able to retain effective as well as nominal control of their land and labor. Most continue to produce traditional milpa (maize and beans) crops for households consumption and because traditional agricultural practice is an important component of identity. Hamilton and Fischer document the diverse crop management strategies employed in several highland communities, including a willingness to incorporate alternative pest management practices rather than simply applying chemical practised at the non-sustainable levels.
- Social capital: In the highlands of Guatemala, Hamilton & Fischer argue that relatively high endowments of social capital facilitated the exploitation of new market opportunities, with its melding of traditional and non-traditional economic and cultural relations. The overall experience of cooperatives and producer associations has been mixed in highland Guatemala, and access to membership is uneven among

and within communities. A few RCEs in Guatemala have been able to capitalize on generations of normalized economic reciprocity and high levels of trust (eg Cuatro Pinos). Positive results achieved by NTAE strategies elsewhere in the region (eg CONACADO in the Dominican Republic) suggest that social capital does facilitate organizing to achieve better crop management, market opportunities, and environmental sustainability in export sectors.

Challenges for future development of fresh vegetable exports by smallholders

In the late 1980s, issues related to food safety and pesticides began to weaken Guatemala's position in the US market for fresh fruits and vegetables (Julian et al. 2000). In 1992, Guatemala was ranked fifth among countries supplying fresh vegetables in the United States. However, in 1998, Guatemala was ranked 13th. The fresh vegetable sector appears to have taken a more casual approach to SPS concerns, thus leaving their economic fate in the hands of the importing country's inspection personnel and regulatory policies (Box 3.7 describes a similar situation related to raspberry exports from Guatemala). According to Murray and Hoppin (1992), by the mid-1980s, some Guatemalan exporters had begun to encounter increasing problems associated with the use of pesticides. A wide range of pesticides were readily available to Guatemalan producers and pesticide use was largely uncontrolled. The increasing rate of pesticide application was becoming a serious concern among exporters and producers. Pesticide costs were becoming a major part of production expenses in some crops, exceeding US\$2,206 per hectare in snow peas. These difficulties contributed to the escalation of production costs and to the reduction of NTAE profitability over time, affecting most particularly the small farmers who have weaker access to credit and higher risk aversion. Furthermore, increasing price uncertainty, import bans due to pesticide residues for Guatemalan snow peas in the United States and the prohibitive cost of pesticide residue spot checks have also had an impact on the profitability of NTAE production in the 1990s. The consequence was a gradual shift back to the production of traditional crops for the domestic markets, which had been partially abandoned in the early stages of NTAE adoption.

Export shipments were being rejected by the FDA upon entry into the US due to illegal pesticide residues. Rejections were relatively infrequent during 1985-1987, with a rate of only 4.1%. But detention rates jumped as the FDA began increasing surveillance in the latter part of the decade. By 1990, rejection of Guatemalan produce was an alarming 27.3%. As in the case of Costa Rica (see Box 3.5), some exporters responded by reducing or abandoning the purchase of fresh vegetables from independent smallholders and began taking greater control over producer pesticide use and other farming practices. By reducing the number of growers they worked with, providing increased technical assistance, and in most cases, directly providing pesticides to producers, exporters were better equipped to meet US residue standard and other regulatory or market requirements. According to Hoppin (1991), growers associated with companies with better resources and extensive US contacts used pesticides in ways less likely to result in violations of US residue limits than did members of cooperatives or the more independent growers under the satellite farming structure.

Box 3.7 Impacts of a food safety on the Guatemalan raspberry industry

The Guatemalan raspberry industry began exporting to the US in the late 1980s, filling a market niche in the spring and fall when supplies were low. By 1996, Guatemalan raspberry exports were increasing rapidly, up 113% from the previous season. That spring and early summer, the US Center for Disease Control and Prevention (CDC) and Health Canada received reports of more than 1,465 cases of food-borne illness from *Cyclospora*, a protozoan parasite. Although no one died, the large number of cases generated substantial adverse publicity. Initially, investigators linked the outbreak to California strawberries, but they finally decided that it was associated with Guatemalan raspberries.

By 1997, the Guatemala Berry Commission (GBC), a grower's organization, had developed a system to characterize a farm's risk potential: only low-risk farms could export in the following season. However, the plan had no enforcement mechanism or traceability system. That spring there was another large outbreak of food-borne illness in the US and Canada that implicated Guatemalan raspberries. After consulting with the US-FDA, the GBC voluntarily stopped exporting raspberries to the US in May 1997. In November 1997, the Guatemalan government created a commission with enforcement power to lead the effort to improve food safety. But in December, the US-FDA, not yet convinced the problem was resolved, issued an import alert, denying all Guatemalan raspberries entry into the US. An import alert for a specific product from an entire country, rather than from specific firms, was an unusual response, and one used only after all other means of resolving the problem were exhausted.

In 1999, the US allowed entry of raspberries produced under a mandatory joint program of the GBC and the government of Guatemala. The program requires export growers to comply with a detailed program of safety practices and to pass frequent inspections by the Integral Program for Agricultural and Environmental Protection, a Guatemalan public-private organization, as well as undergo FDA audits. A code is applied to each container of raspberries, which allows it to be traced back to an individual grower. In 2000 there were two outbreaks traced back to one Guatemalan farm, which was removed from the MPE program. No outbreaks have been associated with Guatemalan raspberries since 2000. To help meet the cost of the MPE program and public relations work, the GBC charges producers a fee per box of exported berries. While Guatemala worked to increase food safety, other competitors, such as Mexico, made inroads into the US market. Prior to the 1996 outbreaks, the size and growth of Guatemalan and Mexican exports to the US were similar. Currently, Mexico supplies about half of US raspberry imports.

Source: *Calvin et al. (2003)*

Impacts of fresh vegetable export promotion

Considerable analysis has been carried out on the impacts of fresh vegetable production and marketing on smallholders and rural communities. Carletto et al. (1999) examine smallholders' adoption of fresh fruit and vegetables in the early 1980s. They claim that contrary to previous agro-export boom in the region (eg cattle, pineapple, cotton), the Guatemala fresh fruit and vegetable sector has been accessible to farmers regardless of the size of their land holdings. However, while initially accessible to all farmers, over time, the better endowed households were more land owned and better quality land tended to persist in growing NTAEs as toxicity increased, implying higher capital costs and higher risks. The extent to which smallholders can position themselves in fresh fruit and vegetable markets depends greatly on the characteristics of the production and marketing systems for a given product. For example, in the case of snow peas, Murray and Hoppin (1992) highlight that smallholders appear to have remained the dominant

suppliers due to their organization into collective enterprises and the especially high labor requirements for snow pea production.

Hamilton & Fischer (2005) also consider that, in general, the production of vegetables for export has brought some real gains for smallholders in the Guatemala highlands. A majority of smallholder vegetable producers been able to remain in the volatile export market; employment in the sector is well-regarded and widespread among non-producers and has contributed to a modest reduction on ethnically biased land concentration. Although gender relations of production remain asymmetrical, they find modest gains in women's control over household resources. Smallholders and farm workers themselves largely perceive that production of these crops as a positive addition to the economic strategies currently available to them, viewing it as both a means for self-advancement and as an opportunity to use their land and labor in ways that preserve affective ties to community and reinforce key elements of their cultural heritage. Total farm and non-farm employment in the fresh fruit and vegetable sector have varied from some 40,000 to over 110,000. Recent estimates for field labor in snow peas range from 1.5 to 2.5 million person-days per four-month growing and harvesting cycle. For broccoli, less field labor is required per hectare: 435,500 person-days for an area slightly smaller than for snow peas. In 2001, wages in the sector averaged around US\$154 per month, while wages in traditional agricultural sectors averaged only US\$92 per month. A majority of smallholders have been able to market and more than one-third have been able to increase their landholdings. Both inter-households and intra-household distributions of benefits proved less asymmetrical than anticipated.

Von Braun et al. (1980) address two issues in the context of fresh vegetable production in Highland Guatemala: 1) does fresh vegetable promotion lead to equitable distribution of benefits and 2) does it promote better articulation of the poor (i.e., creation of employment, demand for services, infrastructure, education, and participation in decision making and priority setting in the development process). Regarding the first issue, von Braun and colleagues conclude that the promotion of fresh vegetable for export has indeed worked in the right direction. Some peculiarities of the crops and the conditions at the location have produced this outcome. Because of their diseconomies of scale, fresh vegetable production was adopted by smallholders in the poorest area of the country, creating employment for the smallholders and local landless, substantially increasing rural income and increasing food security and consumption. The favorable effect of the NTAE strategy for smallholders largely depends upon vegetable crop characteristics, which are very different from those of other products such as cotton, conventional coffee, and beef. These products have apparently positive returns to scale in production and are produced more efficiently by large-scale producers. Regarding the second issue, they find that institutional changes combined with the expansion of export crop production in a cooperative scheme are forces leading toward social articulation. Noteworthy results are the strengthening of cooperation among smallholders, increased interaction between village communities, development of local trading and entrepreneurship, and related build-up on economic power in the rural areas by the smallholder-based growth. Central to the conditions that allowed for positive relationship between growth and 'social articulation' of the poor are: diseconomies to scale in producing the export vegetables and the ecological conditions in the Western Highlands along with the labor market situation.

Strengthening research & development for fresh fruit and vegetable promotion

The Guatemala case shows long-term poverty reduction and rural development can be achieved through the promotion of fresh fruits and vegetables when the conditions are right. However, replication of the Guatemala experience presents a challenge in the Caribbean and elsewhere, given the overall complexity of fresh horticultural production and marketing systems and the related need for long-term external investments in production and marketing by the private and public sectors. In general, there is urgent

need to identify viable options for reducing the investments required for the positioning of smallholders in these markets. However, investments in research and development related to fresh fruits and vegetables at the national, regional and international levels are woefully inadequate²⁵. On the technical side, research and development gaps related to fresh horticultural production systems include (Weinberger & Lumpkin 2007):

- *Genetic improvement*: Yield improvements in fruits and vegetables have been lower than in cereals. More emphasis will have to be placed on the development of hybrid varieties, using the natural vigor of hybrids to fight stresses of disease, heat and drought. Nutritional content, product quality and safety are also important aspects of breeding efforts.
- *Safe and environmentally friendly production*: Fruits and vegetables together account for the major share of the global pesticide market. Pesticide residues are often attributed to the failure of producers to restrain application before harvesting and use of prohibited pesticides. Several studies have reported high heavy metal contamination in fruits and vegetables.
- *Seed sector development*: A major limitation to fruit and vegetable production in many developing countries is the unavailability of quality seeds. Smallholders themselves often produce seeds of locally preferred or traditional varieties. Without proper seed production, processing technology, and quality assurance, seeds are often contaminated by seed transmitted pests/diseases and are genetically diverse.
- *Post-harvest management*: Horticultural production, particularly in tropical environments, often suffers from post-harvest losses of up to 25% depending on the crop and season. The high perishability of horticultural crops restricts the ability of producers to store them to cope with price fluctuations. Export revenues are also reduced owing to quality reductions due to poor storage and post-harvest technologies.

Market & institutional issues fresh fruit and vegetable promotion

- *Access to business development and financial services*: Government and civil society, together with exporters and processors, play key roles in the development of fresh fruit and vegetable production and marketing by smallholders. Capital and risk constraints for smallholders, as well as for their business organizations, are key factors that limit the adoption of fresh vegetable crops by smallholders because these crops generally are much more costly to produce per hectare than traditional crops, and most growers require credit to finance their production. RCEs in the fresh fruit and vegetable sector require relatively large endowments of financial, physical, human and social assets. Success for growers will depend on their ability to access diverse markets and respond promptly to changes in market conditions. Improving market information systems for horticultural crops and facilitating smallholders' access to credit are essential components of a strategy. In addition, targeted subsidies may be crucial in promoting decisions to invest in fresh fruits and vegetable production and to persist in growing them. For example, improved access to irrigation can help smallholders increased adoption and sustain cultivation of NTAEs.
- *Growth of Supermarkets*: The proliferation of supermarkets *in the Caribbean basin and elsewhere* creates both challenges and opportunities for smallholders. Supermarkets may contribute to a higher demand for horticultural products and increase expectations for quality, safety, and presentation, while simultaneously excluding smallholders from participating in supermarket procurements and contracts.

²⁵ In 2002, the CGIAR system (including CIAT, Colombia) invested \$118 million in cereals, compared to 15.7 million in fruits and vegetables (Weinberger & Lumpkin 2007). At CATIE (Costa Rica), only 2 of the 12 thematic groups relates to fresh fruits and vegetables and overall funds available for related R&D remain far below those available for coffee, cocoa, and bananas. Not a single upcoming project listed by the Caribbean Development Bank (Barbados) relates to fresh fruits or vegetables (see <http://www.caribank.org/>). While IICA (Costa Rica) has invested in market intelligence and production technologies for fresh fruits or vegetables in the Caribbean, a review of their website suggests that the importance of fresh fruits and vegetables vis-à-vis other programs may be small (see www.iica.int/Eng/).

As highlighted previously, relatively little is known about how to facilitate viable institutional arrangements between smallholder fruits and vegetable producers with the tourism industry. Successful production and marketing of horticultural crops requires an understanding of the fundamentals of market structure, conduct and performance.

- *Health and safety conditions*: An integrated food safety system for production and public health is necessary to manage supply chain quality and safety and to require exporters to coordinate more closely with producers in each country. A model based on the implementation of effective and demonstrable quality control systems (i.e., HACCP-based or alternative food safety risk management systems) is the most effective means of reducing food safety hazards and sustaining a presence in demanding export markets. In most cases public sector intervention from national governments will be necessary, with support from bilateral and multilateral organizations such as the EU (García Martínez & Poole 2004). The new EU-ACP EPA makes mention of SPS issues but no commitment to provide assistance to upgrade Caribbean capacity to comply with food safety and standards environmental and socially quality management (CTA 2008).

Conclusions

Based on this review of literature and three case studies a picture emerges regarding the conditions under which agricultural development strategies in the Caribbean region have succeeded or failed, as well as what changes should be made in the future to ensure increased likelihood of success from social, economic, and environmental perspectives. Factors which have led to successful integration of smallholders into globalizing markets for agricultural products include:

- *Small-scale advantages*: Identification of markets where smallholders have a competitive advantage vis-à-vis larger scale producers is critical, as highlighted in the cases of organic and fair trade cocoa from Belize and the Dominican Republic, fresh herbs from Jamaica, fair trade bananas from St. Lucia and the Dominican Republic, and fresh vegetable exports from Guatemala, among others. In all these cases, production systems demanded relative large labor inputs, careful attention to processing and product standards, and formation of new institutional arrangements with buyers and processors. Under these circumstances, smallholders may develop a sustainable competitive advantage, provided other conditions are met. Elsewhere, large scale production is an advantage.
- *Small-scale disadvantages*: In cases where production is not inherently favorable to smallholders, such as in the case of the plantation crops, due mainly to issues of scale in production and processing (such as the case of citrus in Belize), smallholders can still be effectively incorporated into production and marketing systems provided that complex and demanding institutional conditions can be satisfied. These involve collective organization and enterprise, contracting mechanisms and sophisticated management systems. Opportunities exist for smallholders in such markets when 1) government and non-government organizations have made a clear commitment to promoting smallholders' interests; and 2) there is preferential access to a given market, for example, tariff-free access to US markets for frozen concentrated orange juice (FCOJ) under the Caribbean Basin Initiative (CBI). As the experience in Belize demonstrates, development under these circumstances can result in large benefits for smallholders; however, the process itself is one of several years or more and especially risky in nature, due to large fixed investments and dependence on political and market conditions in major producing countries.
- *Buyer-provided services (embedded services)*: As highlighted in the case of cocoa in Belize, the provision of external support services may come through the private sector. A desirable strategy is to involve a 'lead firm' in building inclusive supply systems and providing business support, as in DFID's 'lead firm approach' to building sustainable value chains. The Belize case also shows that public-private partnerships

can facilitate the upgrading process, providing funds for long-term, high risk upgrading investment by smallholders and their private sector partners.

- *Government/project provided services:* Private sector provision of business services and quality control and enhancement systems is a necessary but insufficient mechanism to overcome market development and penetration barriers: physical and institutional infrastructure and capacity building are also a public sector responsibility. Long-term accompaniment provided by government and NGOs was critical in the three cases examined in this report. This is especially true for the case of fresh vegetables in Guatemala and citrus production and processing in Belize. Without such assistance, the Guatemalan fresh vegetable sector or the Belizean citrus sector would most likely not have emerged at all. In this respect, external services were critical for linking with markets, improving quality, obtaining certification, building social capital among smallholders, developing technical capacities for primary production and processing, and developing effective administration and export procedures. Capacity building and development of an entrepreneurial culture may begin at school, and consideration needs to be given to adapting educational curricula to include vocational content appropriate to the local rural context (Poole and Alvarez Simán 2006; Poole *et al* 2006).
- *Innovative financing models:* IFAD and other organizations have experience in delivering financial support to projects through competitive tendering by intermediary organizations and beneficiaries. An appropriate balance of loans and grants may need to be considered. Also, by providing investment finance in the form of equity, a financial institution provides capital in return for a share in ownership and profits, and some level of management, of a new venture. Various advantages might be expected, including fostering innovation within donor and support organisations (Poole and Penrose-Buckley 2006).
- *Training and capacity building:* High endowments of social and human capital among smallholders are critical for the effective organization of smallholders into rural community enterprises. The development of TCGA and Cuatro Pinos in Belize and Guatemala, respectively, provide illustrative examples, as well as the organization of smallholder citrus growers in the Citrus Growers Association (with direct support from the Government of Belize). In some cases, NGOs or international buyers have been able to promote human capital development over time where initial endowments are especially low, such as the case of TCGA in Belize. Where social and human capital for RCE development are especially lacking, such as the case of chayote and melon exports from Costa Rica and Honduras, respectively, smallholder participation declined over time in response to changes in price, increased production costs, and increased quality and safety requirements.

In the context of this report, several factors were also identified which have effectively slowed or blocked the incorporation of smallholders into non-traditional agricultural markets, both at home and abroad. These include:

- *Development of an entrepreneurial culture:* Business organization by smallholders and their participation in value chain development have not been taken seriously by most governments or donors. Enterprise development can be divided into three phases: incipient or start-up, consolidation, and maturity, whereby the first two phases may take anything between 10-25 years each, depending on the local capacities available at the onset, availability of direct support services, and overall enabling conditions. In the context of this report, no single RCE can be considered mature. The organic cocoa enterprise TCGA in Belize can be considered in the start-up phase after roughly 10 years of existence, while other RCEs, such as BANELINO (organic banana from the Dominican Republic) and Cuatro Pinos (fresh vegetables from Guatemala), can be considered in the consolidation phase. The long duration until maturity of smallholder-led enterprise development represents a major obstacle to increasing the benefits to NTAEs for smallholders in the Caribbean.

- *Investment in transformation and knowledge systems:* The general lack of investment in production and processing technologies for agricultural products for which smallholders may have a competitive advantage continues to be a major constraint to promoting NTAEs among smallholders. This is a major constraint in the overall development of the fresh fruits and vegetable sector in Jamaica, for example, and affects the region as a whole. Moreover, the negative impacts of insufficient production and pest management technologies tend to be hardest felt by smallholders. Regional research centers such as CARDI, CATIE, CIAT, IICA can play an important role in this area, but research on fresh fruits and vegetables, as opposed to traditional export commodities, has not been a priority in their funding programs. In the case of organic production, there is need to access to low-cost technologies to increase productivity at the farm level and deal with the threat of plant diseases, as illustrated in the case of cocoa production in Belize.
- *Systems strategies:* Approaches to NTAE development in the Caribbean tend to be carried out with little attention to 1) local resources and capacities for production and marketing, 2) relations along the value chains and 3) need for specialized technical, business development and financial services for smallholders and their collective enterprises. Overall, the private sector has not featured prominently in strategies for NTAE development. There is considerable evidence to suggest that traditional approaches to NTAE development based on mobilization of supply in response to a given 'market opportunity' (identified on the basis of national, regional or international supply and demand conditions) holds little promise for long-term development involving smallholders. A more balanced approach is required whereby the definition of market opportunities takes into account the resources and capacities available for production and marketing at the household and community levels, as well as the possible tradeoffs at the household level for increased investments in new production and marketing efforts.
- *Cohesive policies:* The political-legal framework for the development of NTAEs in the Caribbean requires attention. The case of Belize highlights the positive impacts of government policies when a given NTAE is of strategic importance, both politically and economically. The Government of Belize played a key role in ensuring the incorporation of smallholders into citrus production and processing. However, the GoB has been much less attentive to the development of organic cocoa production, which is carried out in a remote section of Belize by mainly indigenous producers. For example, there has been an unwillingness to tackle the difficult issue of land tenure among the Mayan communities. The development of effective agriculture-tourism links in the small island states of the Caribbean requires active involvement of government in reducing costs of production and marketing, providing incentives for local procurement, and stimulating dialogue between the tourism industry and RCEs. In general, there is need for much greater dialogue among stakeholders in the Caribbean for the development of smallholder-based agriculture. Integration of policies of different public sector bodies – agriculture with education and with information and telecommunications – are examples of other necessary cross-sectoral linkages.
- *Inter-organizational coordination:* While development projects have provided critical stimulus for the development of NTAE sectors, the support has often been discontinuous and poorly focused. The typical situation enterprises face is that there is chiefly one service provider – typically an NGO or development project – that provides a more or less complete service offer as long as funding is available. This implies that there is no continuity in service delivery for more than three to four years, if that long. Moreover, service providers may compete among each other or, worse, pursue conflicting objectives and approaches, rather than complementing their service offer. At the same time, enterprises do not receive all the services needed, as their providers may be specialized in certain services without being capable of providing the mix of technical, business development and financial services that enterprises typically need during both the start-up and consolidation phases.

What do these findings imply for the design-phase of the 'EU-ACP All Agricultural Commodities Programme'? We offer the following recommendations:

- *Selection of chains requires attention to supply, as well as demand, factors:* The selection of products should be based as much on the resources and capacities of a given community or communities, as on the overall supply and demand conditions in a given market. *Focusing on a single product in a given community is unlikely to have major impact on poverty*, as clearly demonstrated by the complex livelihood strategies pursued by cocoa producers in southern Belize. Rather, a '*multi-chain approach*' is called for, whereby a range of products and services are identified which are complementary to existing resources and capacities of smallholders, and respond to existing market opportunities at the local, regional and international levels. CATIE has recently published a methodology on multi-chain approaches for the design for rural development interventions (see Junkin et al. 2005), which could serve as a basis for discussion. The methodology calls for extensive dialogue between development projects, smallholders, and downstream value chain actors in the identification of potentially viable market opportunities.
- *Value chain approaches are essential, but caution is required:* As highlighted in this report and elsewhere, there have been undoubted successes in the upgrading of smallholders' capacities for positioning in higher value markets. However, little is known about the long-term sustainability of such efforts or the returns when measured against the costs of support provided by external agencies. Efforts to link smallholders with higher value chains (eg tourism, niche markets), should examine closely the costs and benefits, especially the likely sustainability after Programme support is withdrawn. In general, there is an urgent need for a better understanding of the potential tradeoffs associated with value chain approaches at the household and community level. At the household level, tradeoffs may arise when upgrading investments require rural households to reduce current investments in activities for income generation or household maintenance. At community level, tradeoffs may arise when upgrading comes at the expense of sustainable resource management. In addition, little is known about minimum levels of asset endowments required for value chain development at the household, enterprise and community levels.
- *Directly address the constraints related to the political-legal framework:* Given the strong presence of international development agencies participating in the Programme, and working in close collaboration the national and regional organizations, it may have a unique opportunity to influence with design of institutions that can support value chain development (at national, regional and international levels) by smallholders in the Caribbean. Areas that should be addressed include market information, access to technical, business and financial services, export quality certification, agricultural research and development, laws and regulations concerning smallholder business organization and development, and risk mitigation.
- *Invest in improving the quality and coverage of external services:* The overall service environment for NTAE promotion among smallholders does not exist in the Caribbean: services are incomplete, insufficiently focused, rarely coordinated among different service providers, and usually without clear entry and exit strategy. The EU-ACP could play a role in improving the impact of technical, business development and financial services of smallholder and RCE development, as well as fostering better coordination among different service providers to ensure long-term strategies and commitment, and avoid duplication and service gaps. The Diploma in Rural Enterprise Development, a joint initiative between CATIE and CIAT, as well as the INCAE-CATIE Masters in International Agribusiness Management (MAIM) can help to address the need for upgrading the services of BDS providers through innovation contexts and tools for RCE development.

- *Extensive dialogue and coordination is required to improve potential for scaling up:* There is urgent need to identify through multi-stakeholder platforms (smallholders, businesses, national and regional research and development centers, government agencies, donors, NGOs, etc.) the opportunities and constraints for:
 - improving trust between smallholders and buyers and processors by addressing misunderstanding and suspicion and opportunities for synergies through frequent contact and dialogue
 - increasing the impacts of technical, business development and financial services and promoting performance-based remuneration mechanisms for service delivery through innovative payment mechanisms (eg vouchers or co-funded measures)
 - supporting research for increased understanding of successful cases and sound practices of rural enterprise development by smallholders, the underlying critical success factors, and the potential for scaling up
 - addressing existing potential conflicts in resource management, value chain development, access to services, political-legal framework
 - building a common understanding for the identification of successful cases and sound practices of RCE development in the Caribbean, including the underlying critical success factors and the potential for scaling up.
- *Linking with regional initiatives for increased scaling up:* The 'Jagdeo Initiative' is one regional agricultural development initiative and under the leadership of the President of Guyana (supported by IICA and CTA) aims to 'build on past efforts in a more coherent, comprehensive and long-term development framework that takes into consideration the changed global environment and creates an enabling economic and business environment for competitive and sustainable agriculture and rural development' (CARICOM 2006). It aims to overcome major binding constraints that are consistent with the substance of this report, including: limited financing and inadequate new investments, outdated and inefficient agricultural health and food safety systems, inadequate research and development, fragmented and disorganized private sector, weak integrated information systems, and lack of skilled and quality human resources. In addition, tapping into ongoing work by regional organizations, such as Centre for Technical Cooperation and Caribbean Agribusiness Association, as well as Central American-based organizations with considerable experience in production systems, rural enterprise development, and value chain integration by smallholders (eg CATIE, CIAT, and IICA) offers potential synergies.

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