SMALLHOLDER PARTICIPATION IN THE TROPICAL SUPERFRUITS VALUE CHAIN: ENSURING EQUITABLE SHARE OF THE SUCCESS TO ENHANCE THEIR LIVELIHOOD

Smallholder participation in the tropical superfruits value chain: ensuring equitable share of the success to enhance their livelihood

by
Kaison Chang, Margarita Brattlof and Siranush Ghukasyan

Market and Policy Analyses of Raw Materials, Horticulture and Tropical (RAMHOT) Products Team
Trade and Markets Division

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2014

Contents

LIST OF FIGURES

ABSTRACT

The production and trade of tropical fruits generate income, improving the livelihoods and food security of producers, who are almost exclusively smallholders in developing countries. They also contribute positively to meeting daily nutritional requirements, underpinning the importance of these fruits from both a commercial and nutritional perspective. Regardless of whether they are "super" or not, value is added at each step of the value chain – from farm-gate, through intermediaries (wholesale and retail), to the consumer. Significant progress has been made to explore measures to ensure that smallholders gain fairly from value addition along the chain. However, inadequate post harvest and transport infrastructure, resource limitation, institutional support and compliance with market access requirements are some of the reasons that smallholder producers have not been fully integrated. Therefore, forming like-minded players into legal entities, such as cooperatives, would better facilitate their integration through achieving economies of scale and improving their bargaining position. In this report[1], supporting evidence to some of the arguments put forward will be drawn from successful projects on bananas, tropical fruits and tea which were implemented in the Dominican Republic, Mexico and Indonesia, respectively, and supervised by the RAMHOT[2] Team of the Trade and Markets Division of the Food and Agriculture Organization of the United Nations (FAO).

[1] This report was presented by the Secretariat at the International Symposium on Superfruits: Myth or Truth? which took place in Ho Chi Minh City, Viet Nam, 1 - 3 July 2013.

[2] The **RAMHOT Products Team** provides economic data and analyses on major agricultural raw materials and horticultural and tropical products. Commodities covered under the Team include: **bananas and tropical fruits, citrus fruits, cotton, hard fibres, hides and skins, jute, kenaf and allied fibres, sugar and tea**. The Team also undertakes market reviews, outlook appraisals and projections, and provides assistance to developing countries in designing and implementing national policies for those agricultural commodities which enter into international trade.

1. Introduction

This document was prepared by the authors[1] to initiate discussion on the role of smallholders in the tropical fruits sub-sector and how their effective participation in the value chain could enhance their food security. The document was written for the International Symposium on Superfruits: Myth or Truth? which was organized jointly by the Secretariat of the FAO Intergovernmental Group on Bananas and Tropical Fruits, the International Tropical Fruits Network (TFNet) and the Ministry of Agriculture of Viet Nam.

Although reference to smallholders is sometimes made because of the smallness of their farm land, for the purpose of this report, the main reason that this group of producers is classified as "smallholders" is because they lack economies of scale in their operation. In other words, their output is too small to spread fixed cost per unit more efficiently. In addition, their variable cost does not reach an optimum level, as well.

It is a widely accepted concept among development agencies and stakeholders that the strategic involvement of smallholders in rural development programmes would spread the benefits of development to a greater number of people, and in the process enhance their food security. However, a common occurrence often negates such aims: habitually, as value chains become more structured, smallholder participation is reduced. This document identifies some of the reasons smallholders are excluded from the value chain and examines ways to increase their participation to ensure an equitable share of the economic benefits to enhance their food security. In addition, possible strategies are suggested with accompanying enabling policies that could facilitate a more effective participation by smallholders. Finally, a selection of projects implemented or supervised by the Secretariat is summarized as evidence to highlight effective strategies and appropriate policies applied in the field to integrate smallholders in the tropical super fruits value chain.

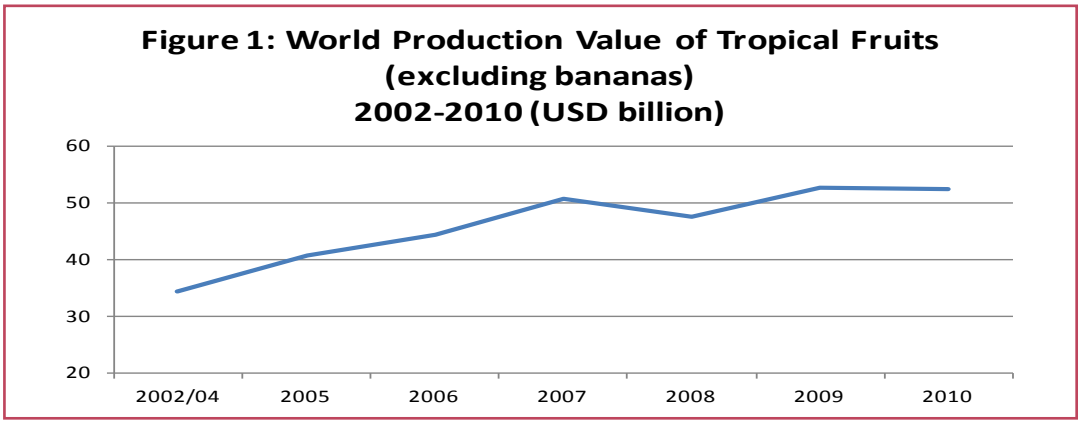
1.1 Background

Studies conducted by the authors lead to indisputable evidence of the importance of tropical fruits to producing countries from both a nutritional and commercial perspective. These fruits are cultivated widely in the tropics, almost exclusively in developing countries, at commercial and subsistence levels and, until the 1970s, were mostly utilized for domestic consumption.

Contribution to farm/rural household incomes is significant with the value of production of tropical fruits (excluding bananas) estimated at USD 50.8 billion in 2010 (Figure 1).

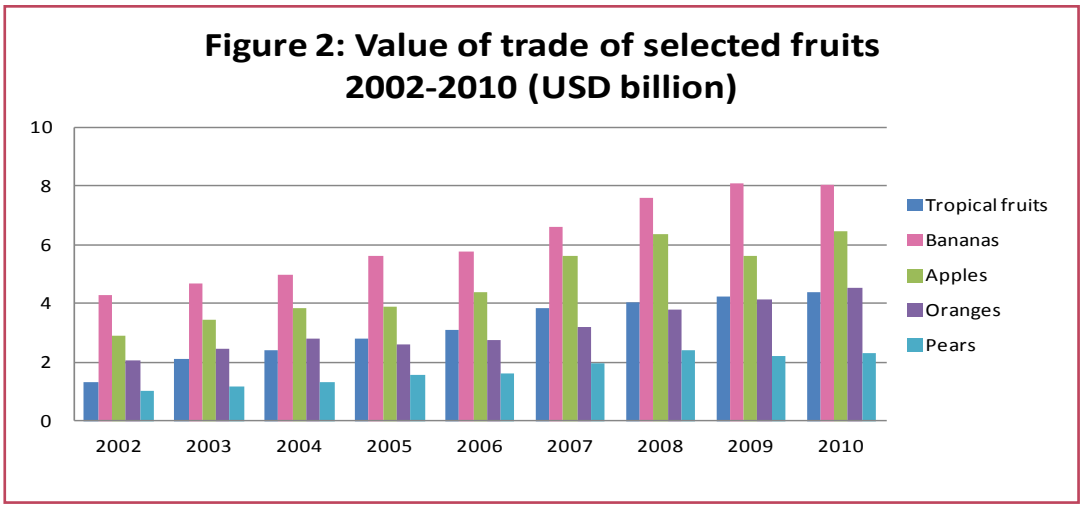
The steady growth in population and income and the rising awareness of the positive nutritional value of fruits are generating positive spin offs on world consumption

[1] Kaison Chang, Secretary, Intergovernmental Group on Bananas and Tropical Fruits (IGG/BATF); Margarita Brattlof, IGG/BATF Secretariat; and Siranush Ghukasyan, Consultant.



Source: FAOSTAT

of tropical fruits. Market opportunities are developing rapidly in China and other emerging markets as their economies continue to significantly expand, while demand in Europe and the United States remains strong for several tropical fruits. Although only ten percent of tropical fruit production is traded internationally, quantities are relatively large compared to other fruits, and earnings from these are significant. In 2010, the value of trade of fresh tropical fruits was USD 12.8 billion (USD 8.1 for bananas and USD 4.7 billion for other tropical fruits), and a further USD 1.5 billion was exported as processed tropical fruits (Figure 2). This compared to USD 6.5 billion for apples, USD 4.5 billion for oranges and USD 2.3 billion for pears (Figure 2).



Source: FAOSTAT

1.2 Relevant FAO Strategic Objectives

Before proceeding further into the specifics, it would be prudent to understand the development framework that FAO has in place through its Strategic Objectives to improve delivery of its work and meet the main developmental challenges.

FAO has six Strategic Objectives:

- Strategic Objective 1 – Contribute to the eradication of hunger, food insecurity and malnutrition

- Strategic Objective 2 –Increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner

- Strategic Objective 3 – Reduce poverty

- Strategic Objective 4 –Enable more inclusive and efficient agricultural and food systems at local, national and international levels

- Strategic Objective 5 – Increase the resilience of livelihoods to threats and crises

- Strategic Objective 6 – Technical quality, knowledge and services

Although the Symposium on Superfruits: Myth or Truth? touches on all the strategic objectives, the major thrust centres on Strategic Objective 3 (SO3), which addresses reducing rural poverty, and Strategic Objective 4 (SO4), which focuses on an integrated approach to agriculture.

The outcomes of SO3 are:

i) improving the enabling environment for rural male and female smallholders, family farmers and small rural entrepreneurs to move out of poverty;
ii) improving the enabling environment for agricultural growth to generate increased decent farm and non-farm rural employment opportunities for rural men, women and youth; and
iii) formulating and implementing policies and programmes by governments and their development partners that maximize positive impacts of social protection programmes on rural poverty reduction, food security and sustainable management of natural resources.

The outcomes of SO4 are:

i) enhancing inclusiveness and efficiency of food and agriculture systems through policies, regulatory frameworks and public good;
ii) enhancing public-private collaboration in addressing the challenges and risks faced by smaller and disadvantaged participants in food and agriculture systems; and
iii) promoting inclusive and efficient markets through international agreements and mechanisms.

2. Conceptual framework of the value chain

The concept of value chain which is in vogue today was first described and popularized by Michael Porter in his 1985 best seller: Competitive Advantage: Creating and Sustaining Superior Performance. According to Porter, the "value chain system" suggests that every firm's value chain is composed of two types of activities: primary

and support activities, where primary activities create value, and hence generate margin at each stage.

Other broader definitions of value chain include: "*an economic system which consists of all distribution and supply itineraries used by all producers who aim to sell a similar family of goods competing on the same consumer market*" – Attai and Fourcadet (2003); and "*Value chains describe the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services) delivery to final disposal after use*" – Kaplinsky and Morris (2000).

In terms of the methodologies used in analyzing value chains, the most popular ones are:

- *The French Systematic Method* utilizes the concept of the "Filière", which was made popular by French scholars in the 1960s. Although this method is largely descriptive, it is useful in "**chain mapping**" – Kaplinsky and Morris (2000).

- *The Structure-Conduct-Performance Paradigm* (or SCP model) was developed from industrial economics. The basic concept of this model was first established by Edward S. Mason of Harvard in the 1930s and further developed by other scholars. Scherer and Ross (1990) described the model as "*how productive activities are brought into harmony with the demand for goods and services through some organizing mechanism such as free market and how variations and imperfections in the organizing mechanism affect the success achieved in satisfying an economy's wants.*" A major departure in philosophy is that Harvard Business School recommended state intervention to regulate the chain, while the Chicago School endorsed the "laissez-faire" approach.

- *The Neo-Institutional Approach* is defined by Williamson (1996) as "*... the humanly devised constraints that structure political, economic and social interactions. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct) and formal rules (constitution, laws, property rights).*"

- *The Strategic Approach* is the method made popular by Porter (1980), which is based on competitive strategy and contains the 5 determinants of competition:

    - Rivalry among existing firms;
    - Bargaining power of suppliers;
    - Bargaining power of buyers;
    - Threat of new entrants; and
    - Threat of substitute products or services.

- Finally, the *Business Development Cycle* method focuses on the whole chain rather than the stages. Hence, the goals are the focus rather than the stages in the chain.

2.1 Reasons for exclusion of smallholders

Recent developments taking place in food markets around the world are driven by consumer demand and preferences, food safety concerns and the increased bargaining power of modern retail systems. With higher income and changing lifestyles, demand has increased for more variety, higher quality, year-round supply of fresh produce, "healthy" food and convenience. In addition, consumers require safe food, and they have increasing concerns about the social and environmental conditions under which food is produced.

Smallholder participation in the tropical fruits value chain is typically constrained by inadequate farm-level resources, farm-to-market logistical bottlenecks and more general transaction costs in matching and aggregating dispersed supplies to meet buyer and consumer demands. These constraints have been compounded by a new set of challenges associated with compliance with product and process standards set and enforced by governments as well as private supply-chain leaders. Some major weaknesses contributing to the exclusion of smallholders from the tropical fruit value chain include:

- **Lack of economies of scale**: Farm outputs are not large enough to optimise the spread of their fixed costs to reduce unit cost of production, nor is operational efficiency of the scale where variable cost is lowered to an optimum level as well. Therefore, smallholders need to be organized in a way that they do achieve economies of scale, at least at the point where they enter the value chain and thus are able to increase their bargaining position, particularly viz-à-viz the middlemen or wholesalers. In the tropical fruits sub-sector this is commonly achieved collectively through the formation of legal entities, such as cooperatives.

- **Difficulty in complying with market access requirements, poor linkages to market and inadequate market information and dissemination**. This refers less to quantitative and tariff restrictions in the context of international trade but more to the inability to meet market requirements in terms of quantities, quality and regulatory measures such as sanitary and phytosanitary measures (SPS). The remoteness to markets because of the location of smallholder producers and the absence or inadequacy of a market information system, as well as the inability of producers to access the information, even when a system exists, exacerbates their situation.

- **Lack of effective policies**. This is the main constraint to the development of the tropical fruit sub-sector and contributes to most of the exclusion problems associated with tropical fruit production such as:

    - Lack of access to credit. This is a major limitation that could be overcome through enabling policies that would encourage lending institutions, such as development banks, to provide appropriate finance – again, more effectively to the smallholder through a cooperative;

- Lack of infrastructure. For the smallholder tropical fruit producer, a major constraint to both obtaining inputs as well as transporting fruit to market while maintaining quality is down to the poor roads. To exacerbate matters for the producer, there is also a lack of post harvest infrastructure, particularly an appropriate processing and storage facility;

- Lack of appropriate quality standards and appropriate compliance mechanism;

- Lack of harmonization and regulatory mechanisms to rationalize certification issues and cost of compliance;

- Lack of risk management; and

- Lack of pre and post harvest technologies.

3. Strategies to integrate smallholders in the tropical superfruits value chain

3.1 Inclusion of smallholders: determinants for inclusion

International trade volumes of tropical fruits have expanded dramatically since the late 1990s, following record price declines of traditional tree crops such as cocoa and coffee. Developing countries diversified from these export crops and developed specialised tropical fruit orchards specifically targeting export markets, which in 2010 earned exporters USD 12.8 billion.

Therefore, given this evidence, it is prudent that smallholders become more involved in the tropical fruit economy as this would contribute significantly to enhancing their food security. The question is how do we promote the participation of smallholders in the value chain? Like most development objectives, this is easier said than done. However, it is commonly agreed that several determinants are critical to the involvement of smallholders in the value chain and these include:

- Geographical location. Their proximity to buyers/processors and adequacy of infrastructure to facilitate efficient logistics;

- Their skills and know how in growing tropical fruits. This usually involves their understanding and ability to carry out recommended good agricultural practices (GAP) as well as post harvest handling skills;

- Representation, which could include membership to a producer organization or cooperative to strengthen the smallholder's bargaining power;

- Access to information, including market information, quality requirements, certification and SPS measures;

- Access to credit; and
- Access to institutional support including extension and technology transfer.

The literature review carried out by the authors concluded that there seem to be several common objectives which are essential for ensuring smallholder participation in the value chain. These include:

- Increasing productivity;
- Improving technology and good agricultural practices;
- Strengthen smallholder linkages to markets, though most commentators conveniently avoid pragmatic advice as to "how" these may be achieved; and
- Policy support. Again the "how" is pretty vague in most literature that has been reviewed. At least the benefit of the doubt could be given in this instance as policy recommendations are usually specific to each case. In other words there is no solution to all problems or "one size fits all".

In relation to supply response of smallholders, there are 3 factors that influence their propensity to increase production for sale in markets, namely:

- Access to natural resources, labour and capital to satisfy their subsistence needs will determine their ability and willingness to increase production;
- The geographical proximity, knowledge of asymmetries, power relationships, and the cost of commerce; and
- The fundamentals of the markets, such as seasonal price volatility due to supply levels and access to regional and international markets. Volatility can affect risk levels and lack of access to regional and international markets would discourage production and significantly affect participation.

3.2 Appropriate policies

Smallholder participation in markets is constrained by choices available to them. Their participation is usually dependent on the determinants discussed in the previous section, i.e. geographical location, farming knowledge, representation and access to information, credit and institutional support. Therefore, policy support must be targeted at ensuring these determinants are available to smallholders to the best extent possible in order to facilitate their participation in the value chain.

A well functioning market will give smallholders appropriate incentives to participate effectively in the value chain. However, if one of the determinants is missing, they cannot or will not be willing to participate to the same extent.

4. Project evidence

This part of the paper contains a selection of projects that were supervised by the FAO Secretariats responsible for the various intergovernmental groups (IGGs). These projects utilized some of the strategies discussed above to integrate smallholders in the tropical fruits value chain and, in the broader context, the social and economic development in commodity-dependent developing countries by following these criteria:

- Involving policy makers;
- Establishing baseline indicators to measure the project's impact;
- Building alliances with the private sector; and
- Taking into account measures and interventions to ensure smallholder participation.

To improve the livelihood of targeted beneficiaries, emphasis should be put on removing the notion that projects provide free resources and offer free financial support to the beneficiaries. Therefore, the success of a project is its ability to continue to generate income after completion, leaving a legacy of a sustainable source of income which contributes to food security and poverty reduction of the beneficiaries.

4.1 Establishing baseline indicators to measure the project's impact

To assess the success of a project, it is important that baseline indicators be put in place to measure a project's impact. Specific indicators measuring fair and sustainable economic and social benefits to smallholders – including increase in income and building of assets – could be used to demonstrate the level of a project's impact. The following project describes how this could be achieved.

The IGG/Tea Secretariat supervised a project on *Capacity building and re-juvenation of tea smallholdings by adopting eco-friendly management practices and strengthening marketing links for enhanced income generation of poor farming communities* in Indonesia and Bangladesh.

In order to re-vitalize the tea smallholdings, the restraints needed to be assessed through baseline studies. Physical (i.e. soils, landscapes, soil erosion, etc.), biological (i.e. pests, diseases, etc.) and environmental constraints, as well as socio-economic issues needed to be identified as indicators for the baseline. Once the limitations were identified, an integrated agricultural management approach needed to be implemented, through applying good agricultural practices and consolidating the holdings using region-specific cultivars that were resistant to prevailing pests and diseases. Improved nutrient retention capability of soils, control of pests and diseases

with minimal use of pesticides, regular pruning as per location-specific growth cycles and harvesting leaf of high quality needed to be cost-effective.

Following the selection of the project area, baseline surveys were carried at the onset of the project to provide indicators to measure progress made and to assess alleviation of poverty. The baseline surveys were to:

- Verify the existing yield levels and limitations, including soil limitations, existing vacancies, pest and disease incidence, nutrient supplies, frequency of harvesting; and

- Assess the prevailing economic condition and life style of smallholder families in project areas, which would also serve as indicators to assess alleviation of poverty.

The results of the baseline study laid down the foundations for the expected outcome of the project. Regarding tea farm conditions, the survey showed that the selling price of green leaf at the beginning of the project was Rp. 1 200-1 600 (approximately USD 0.10-0.13) per kg. By increasing the quality of the green leaf, building self-help groups among the tea smallholders and establishing partnerships with black and/or green tea processors, the expected outcome of the project was to increase the selling price to Rp. 2 000-2 500 (approximately USD 0.16-0.21) per kg. The survey also found that the income level of 56 percent of tea smallholders was less than Rp. 10 million (USD 820) per year, while 44 percent were earning more than Rp. 10 million per year. By improving tea productivity and quality, tea prices would increase, and the project aimed at decreasing the number of smallholders who earned less than Rp. 10 million per year to 40 percent, and increasing those who earned more than Rp. 10 million per year to 60 percent.

Finally, the baseline survey identified setbacks in business institutions and partnerships. In order to establish partnerships between the tea smallholders and the tea factories and private plantation companies, individual *ad hoc* farmers needed to set up self-help groups, which in turn could organize into cooperatives, with the final aim that the cooperatives became the apex body that is responsible for marketing smallholder tea from Indonesia, namely the Indonesia Tea Inc.

4.2 Building alliances with the private sector

In terms of building alliances with the private sector, the following project illustrates the effectiveness of this strategy. The Secretariat of the IGG on Bananas and Tropical Fruits (IGG/BATF) implemented a project on *The markets for organic and fair trade bananas from the Dominican Republic: recent developments and prospects*. As part of the project's objectives, the IGG/BATF Secretariat recommended mechanisms towards a sustainable market strategy. The lack of trust between producers and exporters was found to weaken the banana industry of the Dominican Republic. Mutual understanding and trust between producer organizations and exporters needed to be built. Providing transparent information in a timely manner could trigger economic benefits and decrease transaction costs and risks. Long lasting partnerships between

exporters and importers could increase the willingness for each party to assist one another when emergencies arise.

In order to achieve the objectives of the project, an effective public and private sector partnership was required. Government intervention was necessary to:

- Increase access to credit at reduced rates for producers and producer organizations;
- Improve product quality and reduce the costs of production;
- Introduce "trust funds" based on contributions from the Government, the banks and the producers providing the bank system with an additional guarantee for the reimbursement of the credit provided;
- Promote and invest in agronomic research and development;
- Improve effective agricultural extension services;
- Improve road and rail networks, logistics and telecommunications;
- Promote the producer organizations so that they could provide increasingly effective services to their members; and
- Introduce risk management incentives for producers and producer organizations to use, such as insurance, to ease the economic impacts producers endure due to adverse climatic conditions.

5. Smallholder success story: the case of Chiapas

From a pragmatic approach undertaken by the Intergovernmental Sub-Group on Tropical Fruits (SG/TF), the FAO-CFC pilot project *Diversification of Agriculture in Guatemala and Mexico (Chiapas), through the Production and Exports of Fruit* was a successful implementation of converting a smallholder based, traditional cropping system of coffee and maize, to high value horticulture based on tropical fruit and vegetables. The project financed pilot initiatives that improved income and food security of smallholders through diversification from traditional crops to crops that provided higher returns to smallholders, such as limes, avocados and litchis, utilizing new technologies. Smallholders were organized into cooperatives to establish shade houses that would produce high value vegetables to meet the immediate income needs of the smallholder household. In parallel with this development, the cooperatives established tropical fruit orchards that would provide sustainable incomes to their members in the longer term.

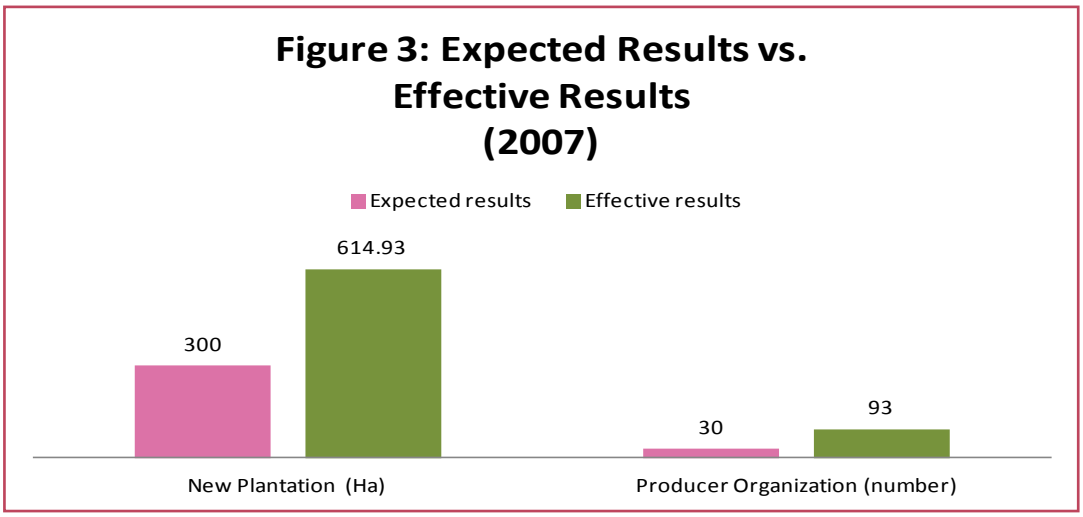
The project was designed to contribute towards alleviating rural poverty through a productive re-conversion model, combining a tropical fruit supply chain with intensive vegetable production systems. The model involved establishing technically,

environmentally and financially sustainable plantations, nurseries and vegetable greenhouses which would generate sufficient income to growers in six selected communities. The socio-economic conditions in the selected areas were made worse by excessive deforestation, erosion and general environmental deterioration. Therefore, it was necessary that the re-conversion programmes adopted sustainable strategies, not only to alleviate poverty, but to attain income levels that would provide food security and dignity to the rural population.

The project was based on two major principals: to build the capacity of the communities in order to execute the implementation programme effectively and with greater efficacy; and secondly, to add value to the products. It was implemented in the Boca Costa and Peten regions in Guatemala and in Chiapas, Mexico. By and large, the objective was to endow smallholders communities with remunerative and sustainable economic opportunities by integrating them in the value chain, from production to marketing, through the creation of a profitable tropical fruits industry.

Pilot farms were identified and set up and financial and technical support was provided through the project with the aim of showing the indigenous communities the sustainable socio-economic benefits of production and marketing systems. Irrigation systems were built; good agricultural practices were disseminated; and smallholders were trained in capacity building, in improving their marketing competence and in horticultural agriculture systems.

Tropical fruit orchards with domestic and export potential were established in rural communities as pilot units to demonstrate the feasibility of the re-conversion programme to the communities the project touched. These communities were selected in areas with similar characteristics and intensive training programmes were carried out to sensitize the communities to appropriate technologies and good agricultural practices. Nurseries were established and neighbouring communities were encouraged to purchase planting material to implement their own re-conversion programmes.

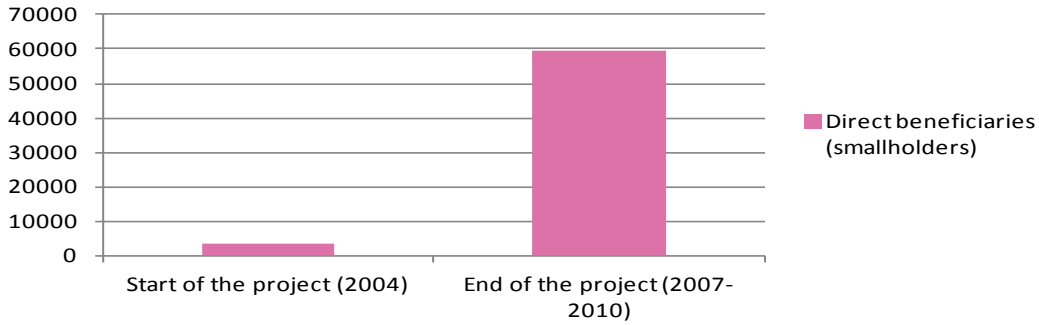


Source: IRBIO (2011)

The project also contributed towards investing in improved planting material and inputs. Employment was generated through the project. Overall, the project improved the livelihood of over 3 500 smallholders who were organized into 75 cooperatives. Over 100 000 fruit plants were supplied to the smallholders. With the significant improvement of the livelihoods of the Chiapas smallholders who participated in the project, the State of the Government of Chiapas further invested USD 60 million to replicate the successful organization and production models developed under the project elsewhere throughout the State. The project executing agency (PEA) was the Instituto para el Desarrollo Regional (IDEAR), while the Instituto para la Reconversión Productiva y Bioenergética (IRBIO) was the entity that spread the model throughout Chiapas after the project's finalization in 2007.

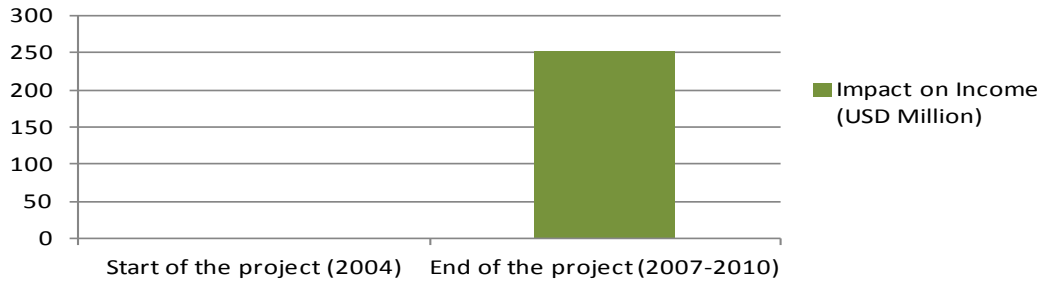
According to IRBIO, a total of 59 572 farmers (Figure 4) were directly linked to the reconversion programme, and almost 33 000 jobs were created, benefiting approximately 240 000 people. In 2007-2010, an estimated Mex$ 1 200 million (approximately USD 91 million) were invested in the reconversion programme, while returns are estimated at Mex$ 3 300 million (approximately USD 251 million), which translates into Mex$ 2 100 million (approximately USD 16 million) net gain for the population who participated in the programme (Figure 5 and Annex Table 1 and Table 2).

Figure 4: Project Impact
Direct beneficiaries (smallholders)



Source: IRBIO (2011)

Figure 5: Project Impact
Impact on Income (USD Million)



Source: IRBIO (2011).
Note: Before the project implementation there was no income from tropical fruit commercial production and the income from coffee harvesting was minimum due to abundance of coffee plantations and price crisis in coffee market.

6. Concluding Remarks

After examining the contribution of the tropical fruit sub-sector in addressing the core mandate of FAO of enhancing food security of the rural poor, it is apparent that some major obstacles need to be overcome to promote the effective participation of smallholders in the value chain. From a strategic point of view, the effective involvement of smallholders in the production and trade of tropical fruits would amplify the development benefits to a greater number of people and in the process enhance their food security. In addition, evidence supports the fact that the contribution of the tropical fruit sub-sector to generating income and enhancing food security of smallholders underpin their importance to producing countries, 90 percent of which are developing countries and many are food insecure.

Market forecasts carried out by the Secretariat suggest that ample opportunities exist for the commercial development of tropical fruits, as demand for tropical fruits should continue to grow strongly, albeit at a slower rate than the last decade. Major challenges for future market growth appear to be associated with a coordinated approach to managing the field-to-market-supply chain, for both fresh and processed products.

However, a common occurrence in agriculture value chains is that, as the value chains become more structured, smallholder participation is significantly reduced. In the case of tropical fruits, the markets for these fruit have evolved significantly since the 1980s, and with increasing maturity, price premiums based on novelty have virtually disappeared, to be replaced by quality based premiums. The importance of quality in an increasingly crowded international fruit market has led to major initiatives by several multinationals to establish orchards with the necessary post harvest infrastructure to produce and pack fruit for specific export markets.

In spite of the significant progress made to ensure that smallholders gain fairly from value addition along the value chain, restricted market access, the lack of infrastructures, resources and institutional support are some of the reasons that smallholders have not been fully integrated in the value chain.

Hence, strategies need to be put in place with enabling policies to fully integrate smallholders in the value chain. Some examples of these strategies include:

- Organizing smallholders into legal entities such as farmer organizations or cooperatives. These entities would ensure that smallholder members received the necessary technology to produce efficiently, increase their productivity by obtaining inputs collectively and reducing their unit cost of production, improve quality assurance through appropriate extension and grading, achieve economies of scale in the marketing of their produce as well as improve their bargaining power viz. traders along the value chain. Rising production costs has raised concerns over the potential increase of market power in the hand of a small number of players such as multinational producers, supermarkets, and large trading firms. The recent hikes in oil prices and their subsequent effects on inputs and freight rates have eroded profit margins, along the value chain. Some of the costs have

been passed on to consumers. However, because of the intense competition in the fruit trade, and the relatively higher price elasticity of tropical fruits in some developed markets, sudden increases in prices could result in tropical fruits being substituted by other fruits;

- Government should also promote policies that encourage smallholder cooperatives, to empower small holders at both the production and processing stages;

- Access to credit. This is a major limitation that could be overcome through enabling policies that would encourage lending institutions, such as development banks, to provide appropriate finance - again, more effectively to the smallholder through a cooperative;

- Infrastructure development to facilitate marketing of quality fruit through appropriate post harvest infrastructure - processing and storage facilities and roads to transport fruit to market;

- Provision of an appropriate regulatory framework and compliance mechanism, including harmonization of the relevant regulations to rationalize certification issues and reduce cost of compliance; and

- Assistance in strengthening risk management.

ANNEX

Table 1 – Productive Reconversion by IRBIO - Advances 2007 -2010

Region	Palm Oil	Rubber	Cocoa	Jatropha	Fruits	Green-houses	Total Area	Producers	Investment (Mex$) (USD$)	Impact (Mex$) (USD$)
	Hectares									
Planicie Costera del Pacífico	24 099		6 544		3 062	7.2	33 712	14 618	318 165 353 23 528 647	856 943 713 63 371 845
Sierra Madre de Chiapas					4 747	2.3	4751	5 259	51 647 335 3 819 373	200 235 730 14 807 633
Depresión Central				10 638	5 374	19.2	16030	9 756	163 892 085 12 119 984	354 569 475 26 220 768
Meseta Central					9 875	36.9	9910	9 147	157 325 625 11 634 388	458 101 493 33 877 064
Montañas del Norte, Oriente y Llanura Costera del Golfo	18 113	10 766	73 030		11 994	23.5	48195	20 792	468 375 145 34 636 811	1 407 301 188 104 071 331
	42 212	10 766	13 847	10 638	35 052	82.0	112597		1 159 405 543 85 739 200	3 277 151 600 242 348 638

Source: IRBIO (2011).

Table 2. Productive Reconversion by IRBIO – Impacts 2007 – May 2011

Crop	Area (Has)	Projected Area to 2012 (Has)	Annual Income (Mex$) (USD$)	Incorporated Added Value (Mex$) (USD$)	New employment	Beneficiary Producers	Beneficiary Population
Fruits	35 052	60 000	1 086 612 000 80 356 045	1 412 595 600 104 462 858	9 500	28 000	112 000
Palm Oil	42 212	100 000	1 025 751 600 75 855 357	1 641 202 560 121 368 571	8 970	7 187	28 700
Rubber	10 766	20 000	430 640 000 31 846 259	559 832 000 41 400 137	4 350	4 600	18 400
Cocoa	13 847	19 566	276 940 000 20 479 990	360 022 000 26 623 987	5 800	11 000	44 000
Jatropha	10 638	20 000	170 208 000 12 587 052	221 270 400 16 363 168	2 500	3 000	12 000
Greenhouses	82	561	287 000 000 21 223 937	373 100 000 27 591 119	1 700	5 985	23 940
	112 597	220 127	3 277 151 600 242 348 638	4 568 022 560 337 809 837	32 820	59 572	239 040

Source: IRBIO (2011).

References

Arias, Enrique (2010) Report of the Workshop on Strategies to enhance smallholder participation in the bananas and tropical fruits value chain, San Cristóbal de las Casas.

Attai, H. and Fourcadet O. (2003) Guidelines for Value Chain Analysis in the Agri-Food Sector of Transitional and Developing Economies, FAO, Rome.

Baumann, P. (2000) Equity and efficiency in contract farming schemes: the experience of agricultural treecrops. Overseas Development Institute London. *Working Paper no. 139* [http://www.odi.org.uk/publications/wp139.pdf].

Common Fund for Commodities Diversification of Agriculture in Guatemala and Mexico (Chiapas) through the Production of Export Fruits. http://www.common-fund.org/projects/project/diversification-of-agriculture-in-guatemala-and-mexico-chiapas-through-the-production-of-export-fr/.

FAO (2012) Council document CL 145/4, Reviewed Strategic Framework and Outline of the Medium Term Plan 2014-2017, FAO, Rome.

Indonesia Tea Board (2010) Baseline Survey Report – Tea Smallholder Farmers Participant of the CFC Project in Indonesia – Cooperation between Indonesia Tea Board and CFC – Capacity Building and Rejuvenation of Tea Smallholdings by Adopting Eco-friendly management Practices and Strengthening Marketing Links for Enhanced Income Generation of Poor Farming Communities, Bandung.

Jahir Lombana (2011) Territorial Development Model with a Productive Diversification Strategy – Assessment of the CFC/FAO project "Diversification of Agriculture in Guatemala and Mexico through the Production and Exports of Fruits", FAO, Rome.

Kaison Chang, Ekaterina Krivonos, Siranush Ghukasyan and Margarita Brattlof (2013) The markets for organic and fair trade bananas from the Dominican Republic: recent developments and prospects – Recommendations towards the development of a sustainable market strategy, FAO, Rome.

Kaplinsky, R. and Morris, M. (2000) A Handbook for Value Chain Research, IDRC.

Masawe, Peter (2010) Regional Cashew Improvement Network for Eastern and Southern Africa (RECINESA), Workshop on Strategies to enhance smallholder participation in the bananas and tropical fruits value chain, San Cristóbal de las Casas.

Porter, M.E. (1985) Competitive Advantage – Creating and Sustaining Superior Performance. The Free Press. New York.

Porter, M.E. (1980) Competitive Strategy – Techniques for Analyzing Industries and Competitors. The Free Press. New York.

Rodriguez, Salim (2010): Presentation on Reconversión productiva 2007-2012 Workshop on Strategies to enhance smallholder participation in the bananas and tropical fruits value chain San Cristóbal de las Casas.

Scherer, F.M. and Ross, D. (1990) Industrial Market Structure and Economic Performance. Hoghton Mifflin Company, Boston.

Williamson, O.E. (1996) The Mechanisms of Governance. Oxford University Press. New York.

I3673E/1/03.14