Haiti Hope Project 2015 Annual Survey and Evaluation

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Written

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ACRONYMS

ASPVEFS	Association des Producteurs-Vendeurs de Fruits du Sud
ANEM	Association Nationale des Exportateurs de Mangues
ANAPROFOURMANG	Association Nationale des Producteurs et *Fournisseur*s de Mangues
COPACGM	Coopérative de Production agricole et de Commercialisation Gros Morne
FENAPCOM	Fédération Nationale des Associations de Producteurs pour la Commercialisation de la mangue
FAO	Food Agriculture Organisation
HH	Haiti Hope
IDB	Intenational Development Bank
MarChE	Market Chain Enhancement
MARNDR	Ministère de l'Agriculture des Ressources Naturelles et du Développement Rurale
MIF	Multilateral Investment Fund
ORE	Organisation for the Réhabilitation of the Environment
PBG	Producer Business Groups
WINNER	Watershed Initiative for National Natural Environmental Services
TNS	TechnoServe
TCCC	The Coca Cola Company
USAID	United States Agency for International Development

HAITI MANGO FACTS

- While Haiti tree crops coffee and cacao have gone from being world leaders to close to no exports at all, mangos have gone the other direction, first becoming a Haiti export crop only in 1954 and then rising to the 2015 record season of 2.48 million boxes (4.5 kg/box)
- After Vetiver, Mangos are Haiti's most important export crop in terms of value (US$12 million), volumes (11,150 Metric Tons), and number of smallholders in the sector (27,000 export market participants and 200,000 mango growers).
- In 1990 Haiti was the second largest importer of mangos to the USA
- Since that time Haiti has fallen to 6th place as a source of mangos for the US market. But the fall is not because of a deterioration of the industry—which has held steady since 1990—but because of a massive rise in US consumption of mangos, a demand met mostly by Mexico, Peru, Ecuador, Brazil, and Guatemala. Although 2015 was a record high season, only 5% more mangos were exported in that year than n 2006, or year 2000 or year 1990
- The only exportable mango in Haiti is the Madame Francique mango, also called the Madanm Francis, Francine, Fransik or simply Francique. The reason for its role as only exported Haitian mangos is because of the threat of the Mediterranean fruit fly and US requirement that mangos be dunked in hot water for 60 to 90 minutes, killing any fly larvae. The Francique is the only Haitian Mango that resists the heat.
- But the Francique is also a large fleshy, low fiber and tasty mango, factors that help make it the most expensive Mango in the United States, selling wholesale for as much as 3 times that of other imported mangos. A single mango sells for as much as US$4.00 in US specialty supermarkets.
- Yet, Francique mangos comprise only 20% of mangos in Haiti; and only 20% of these are exported: meaning that only 4% of Haiti's mangos are exported
- An estimated 200,000 Haitian households own at least one mango tree; about 40,000 of them have at least one Francique mango tree
- The Francique mango is best described not as a planted, cultivated and cared for perennial, but as a prolific and appreciated weed, sprouting up from discarded seeds in moist ravines hillsides and slopes.
- The Francique mango industry in Haiti is one of the few if not the only fruit export industries in the world where micro producers with an average of three trees per farmer produce 90% of the crop
- Export of mangos from Haiti to the US market is controlled by a cartel of 8 individuals and their families, something made possible through a pact with the Haitian Ministry of Agriculture and the USDA
- The proportion of the retail value of an exported Francique that goes to the small producers is far below the average and may be the lowest in the world
- Although not as indicative of profit margin so much as an indicator of costs and efficiency, average price paid for on exportable mango in 2015 was,
    - Small producers: 3-5 US cents per mango
    - Export intermediaries: 7 -12 US cents per mango
    - Export packing houses: 80 US cents per mango

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>
> Part III: Assessment of the Assumptions upon which the project was founded and the roles and interests of Stakeholders (Producers, Intermediaries, Exporters, and NGOs)

PART I: METHODOLOGY, BACKGROUND, AND OVERVIEW OF RESULTS

Haiti Hope was a $10 million mango project sponsored by Coca-Cola Company (TCCC), the Multilateral Investment Fund (MIF), the U.S. Agency for International Development (USAID); and the Soros Foundation.

> The Haiti Hope Project's primary objective is to raise the income of 25,000 mango farmers. The farmers will increase their income by over 100 percent on average after five years in the program. [TCCC and TechnoServe 2010]

The primary objective of this report is to respond to the question,

> How well attuned was the Haiti Hope project strategy to promoting an increase in present and future revenues for Mango farmers and other mango supply chain actors. [TOR]

The answer is that Haiti Hope made significant achievements overall but was limited by understanding and misleading assumptions inherent in the project design, specifically those regarding the value of mangos on the domestic economy, the interest that Haitian producers have in producing for the export market, and the unrealistic expectations regarding commitment and capacity of other stakeholders, most notably ANEM cartel.

PART II: IMPACT ON MANGO PRICES, PRODUCER VOLUMES, INCOME AND ADOPTION OF BEST PRACTICES

The achievement of the project can be summed up as followed

Organization

Plaudits

- Signed up and trained in at least one session 25,125 producers in best practices.
- Succeeded in making traditional associations more inclusive and member participatory through the formation of 262 new Producer Business Groups (PBGs)
- Raised sales of Organic and Fair Trade mangos through Haiti Hope from 26,446 dozen in 2010 to 136,458 in 2015 (peaked in 2014 with 156,282 dozen)
- Raised sales of conventional mangos through PBGs from 7,487 dozen in 2013 to 219,176 dozen in 2015
- Created a system of traceability and registered 6,122 mango producer plots
- Established 648 micro-orchards covering 763 hectares and comprising a total of 71,087 Francique trees
- Loaned 3.2 million USD to 9,352 farmers

Moderating observations

- Participation in the projects as measured in terms of attending trainings, adopting best practices and having sold at least once through a producer business group reduces true membership from 25,125 to a more realistic figure of 4,116 participants

Best Practices

Plaudits

- Better attention to all mango trees in the form of cleaning and pruning
- Better harvesting and post harvesting practices
- Planting more saplings and fencing trees as well as investment in orchards
- Significant reduction in factory field to packing house reject rate, from over 30% to 14% (baseline estimates from Haiti Hope intermediary survey: Haiti Hope 2014a: 24, 35; Haiti Hope 2014b:3)

Moderating observations

- No detectable impact on volumes produced, something that is in large part attributable to the short duration of the project.
- Questionable importance of some, if not most, best-practices with respect to sales on the local market.
- Purported achievements claimed by Haiti Hope are identical to those of multiple projects conducted before Haiti Hope as well as at least six other mango intervention initiatives that occurred concurrently with Haiti Hope, four of which are in the same areas as Haiti Hope. These achievements include, for example, teaching producers to effectively select

mangos for the export market (reducing rejects at the packing house to less than 14% of mangos), bringing up the prices of mangos to 36 HTG per dozen, and reducing the sale size of a dozen from as high as 20 to 14 mangos per dozen. It is difficult to understand how it is that projects working in the same areas, with the same associations and neighbors of association members can make the same claims. In the case of Haiti Hope and HAP, they have made nearly identical claims 10 years apart. This is not necessarily to impugn Haiti Hope. Indeed, the evidence suggests that in some cases it may be exaggeration on the part of these other projects. Just as significantly, it calls into question the durability of the interventions.

Size of Dozen

Plaudit

- Encouraged a reduction in the number of mangos that packing house agents define as one "dozen". Specifically, export dozen size varies according to how export intermediaries define it. Early on in the project the average size of one dozen was 15.2 mangos. The high number of mangos per dozen is linked to the large proportion of mangos that get rejected at the packing house and to manipulation by intermediaries seeking to earn higher profits. Over the life of the project the size of a dozen dropped to 14.3 units per dozen, translating to a 6% greater income per dozen when selling through the export market channel

Moderating observations

- Haitians do not measure in dozens. At least some project participants in all focus groups reported not knowing what a dozen was before Haiti Hope, albeit HAP also used the concept of dozens.
- The Haiti Hope official dozen is 14 mangos. This is two extra mangos, ostensibly to cover packing house losses. But the packing house only selects and pays for export quality mangos, making it unclear why there are an additional 20% internal packing house losses. Moreover, packing houses do not themselves sell in dozens; they sell boxes of ~9.8 mangos each, suggesting that if the dozen logic is applicable, they are taking not 2 but 4.2 "extra" mangos.
- Producers in the South of Haiti were selling dozens to the same Packing houses two years in the past and at a standardized dozen that Les Cayes cooperative leaders report to be 13 units per dozen, 1 less than the 2015 Haiti Hope dozen—the same packing houses.

Reject rates and Improved sorting of mangos for quality

Plaudit

- Bases on estimates from Haiti Hope intermediary surveys and subsequent PBG reject rates, Haiti Hope reduced field to packing house reject rates from over 30% to 14%

Moderating observations

- According to all exporters interviewed reject rates for intermediaries are not over 14% and most claim that *fournisseur* reject rates are lower than PBG rates

- Reject rates are flexible and subject to the discretion of the packing houses. Exporters admit that when reject rates are low and/or volumes high, the packing house raises its standards, meaning they reject mangos that would otherwise have been accepted. When done unexpectedly this unfairly increases the burden and costs to producers. It also reduces interest that producers have in selling to packing houses, a point especially poignant in view of the high prices paid for mangos on the local market.
- Haiti Hope encouraged packing houses to pay ½ of wholesale market price for rejects, something it contractually obligated producers to accept. This translates to a loss of income to producers, infuriated some PBG members, and reduces interest in providing to packing houses.
- Low reject rates are in the interest of the packing house. Lower reject rates means less work for the packing house when sorting mangos and higher returns on transport paid for by the packing house. However, it is not clear how this benefits those producers and suppliers who sell rejects for a high price on the local market. Indeed, high reject rates may benefit intermediaries because the packing house *de facto* subsidizes transport of rejects that are then sold for high prices on the urban informal market.

Change in Prices

Plaudits

- Measured in Haitian currency (HTG), and drawing on data from Haiti Hope commissioned surveys, the farm-gate prices for export market chain Fransique mangos rose 33% between year 2012 and 2013, the year when Haiti Hope began facilitating the sale of mangos, Between 2013 and 2015, the prices increased another 9% for an overall increase in the price of mangos--over the life and in HTG-- was 42%
- Project participants report that improved export prices encouraged competitively higher prices among all export housing intermediary purchasers.

Moderating observations

- If calculated in USD the *average* change in price over the life of the project disappears (there is no change); the *median* change in price is only significant for 2012 to 2013, the year of first sales through the PBGs
- A substantial body of evidence—including qualitative research and the three independent Haiti Hope surveys conducted over a period of 3 years –indicate that local market prices per dozen are consistently 20% to 40% higher than the farm-gate prices paid for mangos in the export market chain. Moreover, these mangos—those sold on the informal market—do not need to be sorted or selected, i.e. they are acceptable whether spotted, burned black from sap, or bruised from rough handling.

Change in Income

Plaudits

- In HTG, these changes in income show a dramatic trend toward increasing income over the life of the project, increasing for Inactive Members by 57%; for Non sellers

by 33% and for Sellers by 67%. Even survey Control groups increased income by an estimated 40% over the life of the project.

- If we add 7 HTG premiums paid to those who sold through the project, increased income from Haiti Hope sales of certified Organic and Fairtrade mangos is an additional 14 percent—for income specifically from those Haiti Hope sales
- For both 2011-2012 and 2015, the control groups —essentially the general population of producers who own Francique Mangos--have the highest income level of any group. In contrast, "New members" in 2011-2012 have the lowest income levels. The suggestion is that Haiti Hope participants tend to be among the poorest mango producers, somehow marginalized from the market but with a large number of trees and capable of increasing mango income

Moderating observations

- When the figures seen above are translated into constant US dollars, the increase in income over the life of the project decline by 28% to 33% for all groups. Specifically, the increases in USD being 27% for Inactive Members; 7% for Non sellers; and 33% for Sellers. For Control groups the increase in USD is 12% over the life of the project.
- Fair Trade and Organic mangos make up slightly less than 50% of mangos sold through Haiti Hope; project participants also sell through other channels, including the local market where there are no premiums
- At least part of the increase in income is a byproduct of subsequent stratification of the original sample populations—most importantly the higher number of trees owned by the most dedicated project participants (Sellers) vs. lower numbers owner by other participants (Inactive Members and Non-Sellers)[1]
- Even survey control groups—that 2015 controls taken from outside the project area--increased income in HTG by an estimated 34% over the life of the project, and if measured in USD the figure is a 12% increase in income over the life of the project. The suggestion is that increased income may, at least in part, be related to something external to the project

The lack of overall increase in farmer income from mangos is likely attributable to,

- The incapacity of export houses to significantly increase exports
- Higher prices and better local market opportunities at the outset of the project, something incidental in that the project began during 2011 and 2012, a period when massive influx of foreign aid presence of 10s of thousands of foreign aid workers initiated an economic boon unparalleled in Haitian history

[1] Specifically, the original 2011-12 baseline sample population are all classified in the population "new members." In 2013 and 2015 follow up surveys this population is broken into "inactive members", "Non Sellers" and "Sellers". The sellers have significantly more trees than the other two groups and hence we can conclude were essentially a sub-population of the original project participants who sold more mangos. By virtue of their being isolated in the follow up analysis we can expect that they would indeed have higher incomes. Meanwhile the other populations have lower income levels.

- Movement of new suppliers (small producers) into the export market, something for which Haiti Hope can anecdotally take much credit but that increased competition among those producers in the export market chain and that encouraged a flood of mangos such that the Haiti Hope's main partner, Perry Packing house, was forced to close for several days
- Pruning of trees for height, something that temporarily lowers production
- The elimination of non-Francique trees through the grafting process, something that temporarily removes the trees from production while waiting for the graft to take hold and the tree to start producing
- Initial refusal to participate in the project on the part of all but one exporter

PART III: PROJECT ASSUMPTIONS AND STAKEHOLDERS

(PRODUCERS, INTERMEDIARIES, EXPORTERS, AND NGOS)

A summary of critiques focusing on the assumptions underlying the project, that place the project in the context of other past and ongoing mango projects, and the general expectations and 'culture' of mango projects in Haiti include.

Lack of appreciation for the situation of the peasant producer. Specifically,

- Lack of appreciation for the fact that most Haitian small producers are first and foremost adapted *not* to profits, but ecological, political and economic hardship and crisis that puts a premium on risk management and diversity of crops, livestock, and other income generating activities
- Lack of appreciation for those alternative crops and risk management endeavors
- Lack of appreciation for the fact that Haitian small producers have extremely limited land resources to commit to long term tree crops
- Lack of appreciation for the fact that historically--and right up to the present--the international market has been unreliable and difficult to access for Haitian peasant farmers. International stakeholders have often made decisions that may make sense to an industry at an international scale but were destructive to Haitian livelihoods. The impact of strict international phytosanitary regulations is one notable example. [i]

Lack of appreciation for the situation of the exporters. Specifically,

- Lack of appreciation for the fact that ANEM cartel member capacity, resources, disposition and perhaps even competency to expand exports is weak
- Lack of appreciation for the fact that any endeavor on the part of ANEM cartel members to increase exports is currently difficult or impossible without first obtaining costly certifications, some of which are unobtainable given the challenge so providing traceability in a system of micro-producers (i.e. GAP).
- Lack of appreciation for the fact that to increase exports without such certifications and without the consequent expanded market access would crash prices on the currently available markets
- Lack of appreciation for the very short market season and the possibility of expanding that season
- Lack of appreciation for the fact that investment in post-production is risky. The last ANEM member to take such a risk and invest heavily in post-production processing and storage went out of business. At least one other exporter bitterly accuses the IDB of almost bankrupting them through loans and encouraging investment in increased production and costly but inefficient aggregation centers (similar to many other points in Part II of this report, the onus of this point rests less with Haiti Hope than presumptions of donors.

Specifically, Haiti Hope was not obligated to increase post production and processing but to assess the feasibility something it did and that it concluded were not profitable).

Under appreciation for the impact of the aid economy

- Manifest of the inimical side effects of a vigorous aid industry is the tendency of past project managers, evaluators, and even scholars to inflate successes and obscure failure, a good example of which is reporting local market prices as cost of trees when in fact it is export intermediaries who most commonly purchase trees, i.e. they *de facto* substitute export market chain prices for local market prices
- Also manifest of the inimical side effects of a vigorous aid industry is the tendency for mango cooperative leadership to be more interested in capturing aid assistance (that is arguably more profitable) than producing more mangos or establishing successful processing operations

Lack of appreciation for the local market. Specifically,

- Lack of appreciation for the fact that many "losses" in export chain mangos may not represent losses at all but rather mangos that will get sold on the local market and often for higher prices than the export channel (a point that Haiti Hope and Coca Cola recognized in the original project diagnostic)
- Lack of appreciation for the fact that Francique mangos sell for a 20% to 40% more on the local market than they do to intermediaries in the export market chain, something that raises many unanswered questions about why people sell through the project at all but helps explain why, in fact, many did not: ~50% of Haiti Hope project participants did not sell mangos through the project for two consecutive years and only 1 in 4 sold through the project all three years that it facilitated the sale of mangos to packing house
- Lack of appreciation for the underlying reasons why some *non-Francique* varieties sell for a higher price on the local market than Francique mangos sell to intermediaries in the export market chain
- Lack of the appreciation for the inapplicability of formal economy models, i.e. they do not readily apply and yield invalid insights to the mango economy in Haiti

Over-appreciation for export market value chain.

- A good example of which is that the original Donor Memorandum (IDB 2010) claims 60%-70% of all Francique mangos are "lost" between producer and export house. Yet, the consultant found no studies or reports of more than 35% of "losses"; and even these reports do not consider the fact that much of those "losses" are not losses to the producer but rather get sold on the local market for higher prices than can be obtained from intermediaries in the export chain
- A good example of which is that exporter purchasing intermediaries rely heavily on purchasing trees in advance of harvests at significantly discounted prices.

Gender

Gender too suffered from donor expectations and pre-conceived intervention models that may not be applicable to the rural Haiti context. Specifically,

- Haiti Hope researchers identified that using cooperatives and PBGs to enhance the export market chain "threatened" the hegemony of women as the primary vendors of mangos and custodians of household income. Specifically, largely male controlled cooperatives increase opportunity for those men who would like to exercise more control over household finances. At least a minority of those men do not prioritize needs of the household and children to the same extent as their wives and mothers and spend more of the money—than otherwise would get spent--on alcohol, chicken fights, and the seduction of women other than their wives.
- The project intended to mitigate the "threat" through gender quotas and gender sensitive training. It identified but gave less emphasis to mitigation strategies of all-female PBGs and the recruitment of professional marketing women as project participants. Evidence from the surveys and interviews suggests that the project is in fact associated with an increase in male sales of mangos and a degree of encroachment on traditional role of rural Haitian women as custodians of income from mangos and the household budget.

Conclusions

- For those who hope to see a Haiti mango export industry flourish, the past five years are not encouraging. Those five years may have been the greatest moment of investment and aid from the international community in the history of both Haiti and the mango sector. The total investment exceeds US$60 million. And yet no new processing facilities have opened nor have exports significantly increased.
- Additional problems loom in the very near future, specifically new US traceability procedural requirement; and it is unlikely that, in its current state, ANEM will be able to meet those requirements
- PBGs and reaching the overseas organic market are one flicker of 'hope' in this rather dismal outlook. Specifically, traceability systems, the PBG economy, and dramatic increase in volume of organically certified mangos offers promise and at least maintains the possibility of an expanded mango export sector. If the exporters built on opportunities such as the PBGs and the organic market in the US and Europe there is hope for increased exports.
- However, there is little hope that ANEM members will take on the burden of market expansion. Their reluctance is logical given the constraints related to the exports; specifically, declining prices the come with increased sales on limited markets, little available capital, and the very high risks to those exporters who to do invest in certification, post production and expanding markets
- A more likely means of overcoming the constraints of ANEM would be its elimination as a commission in control of mango exports and allowing more heavily capitalized entities, with greater technological and distributive capacity into the market
- In absence of significant changes-as per the preceding two points--increased investments in production made during Haiti Hope may backfire, at least for those who have invested with

the export sector in mind. A super-abundance of Francique mangos can be expected when orchards and trees that have been planted during the course of the project begin to produce. Considering only Haiti Hope mango trees and grafts we can expect that in 10 to 15 years those trees will produce a quantity close to the current total annual exports. Add to that other projects and ANEM exporter investments in private orchards and in the absence of significant increases in exports or new processing capacity for the domestic market the only question two decades from now will be who cuts down their trees first: agribusinesses or the peasants. Based on the high costs of imported staple foods and the value of the mangos on the domestic market, it will most probably be the agribusinesses.

- An additional and very real threat to Haiti's mango export industry is the juggernaut growth of the neighboring Dominican mango export industry. Massive new Dominican orchards that include Francique mango trees and intentions to enter more heavily in to the US market mean that Haiti may lose its unique position as the only US source for the Francique mango.
- If a change in ANEM marketing strategies come and significant investments are also made in processing facilities, traceability and cost efficient aggregation strategies, then most of the above critiques will become irrelevant. But in the likely case that change does not come, there are other corollary issues that should be considered regarding heavy investment in Francique mangos. We apparently do not know the adaptive value of other non-Francique trees, not in terms of local market, ecology, disease, pestilence, drought, nor their nutritional value vis a vis the Francique mango, frightening oversights in a fragile and food insecure country.

PART I

INTRODUCTION

METHODOLOGY AND PROJECT BACKGROUND

This section describes the objective of the report, the methodologies used in the research, the history of the project, and the major accomplishments in terms of sheer volumes of mango moved. It relies on data provided from the project.

INTRODUCTION

Objective of the Evaluation and Overview of Results

The primary objective of this report is to respond to the question,

> "How well attuned was the Haiti Hope project strategy to promoting an increase in present and future revenues for Mango farmers and other mango supply chain actors."

The answer is,

If assessed in HTG (Haitian Gourdes), income for all project participants and control groups increased over the life of the project. Income increased for Inactive Members by 57%; for Non sellers by 33% and for Sellers by 67%. If we add 7 HTG premiums paid to those who sold through the project, increased income from Haiti Hope sales of certified Organic and Fairtrade mangos is an additional 14 percent—for income specifically from those Haiti Hope sales for a total of 81%. Even survey control groups—that 2015 controls taken from outside the project area-- increased income in HTG by an estimated 40% over the life of the project.

If assessed in US dollars, then in the absence of 14% premiums paid after the sales as well as money that returns to the communities through Haiti Hope community development projects, the project was not associated with a significant income increase for the *average* of the 25,150 project participants. However, even in US dollars there was a 33% increase in income for the core group of most active project participants without premiums ("Sellers", i.e. those who sold at least once through the project).

There was no significant increase in the volumes produced by project participants, something expected given the time span of the project being too short to result in measureable increase in yield from new trees, grafting, and best practices

Any long term increase in income from mangos will come with unknown opportunity costs in terms of other crops that producers could have invested in and that may yield higher dividends and be more appropriate given the economic constraints that characterize the rural Haiti economy

While there was no contractual commitment on the part of the project, success of the design hinged in large part on unrealized expectations, specifically the belief that export packing houses could and would double exports and that new processing facilities would be established, a point elaborated on in Part II of this report.

Methods, Studies and Analysis

The research as based on,

1) All available reports and literature on mangos industry in Haiti extending back to 1975 (a full bibliography is provided at the end of the report)
2) Five focus groups on participants opinions of the project and experiences (a field report that includes a description of the focus group process, the focus group presentation and full English translations of transcripts for three of these focus groups are provided in the appendix)

3) An examination of data from TechnoServe's internal monitoring and accounting process. These included summaries of sales per member per year, participation in trainings and orchard program, trees planted, as well as original estimates from staff data collected from Haiti Hopes original 27,709 potential member list. This data was compared to the survey results discussed below.
4) Data bases from three TechnoServe surveys overseen by the consultant and conducted in 2012 (n=778), 2013 (n=768),) and 2015 (n=1,215). Descriptions of the methodologies for these surveys are provided in the appendix. One significant drawback is that the surveys were designed by different Haiti Hope leadership and are not entirely consistent. In particular the 2011-2012 survey did not include data on income for specific mango varieties but rather lumped all mangos together; the 2013 survey included data on mango Francique and mango Blan; and the 2015 survey focused only on income from Francique mangos. Only the 2011-2012 survey and the 2015 surveys included true control groups.
5) A year 2015 value chain study with *Fournisseur* and *Volitje* perspectives regarding evolution of the market, types of mangos, and opinions on tastiness and popularity (n=46).
6) A year 2015 non-Francique mango income telephone survey of Haiti Hope active and inactive PBG members (n=132).
7) Interviews with exporters, packing house employees, US importers, aid workers and *Fournisseur* (a full list of these contacts are provided in the appendix)
8) Interviews with producers, *madan sara*, cooperative leaders, agronomists, consumers, and NGO directors in the Haiti Hope activity region as well as Cape Haitian in the North of Haiti and Les Cayes in the South.

Haiti Hope Project and Project Data

With sponsors including the Coca-Cola Company (TCCC), the Multilateral Investment Fund (MIF), the U.S. Agency for International Development (USAID); and the Soros Foundation. The project began in October 2010. The implementing agency was TechnoServe (TNS); the activity area, Haiti's Departments of the Central Plateau and Artibonite; the objective, to double the income for 25,000 small farmers who, in addition to other economic activities, cultivate Francique mangos.

The assumption was that this increase in income could be accomplished through an increase in exports. There were a series of obvious and well documented points of proposed intervention that were expected to increase production, reduce losses and improve the quality of mangos. They are the same points cited in every report or Master's thesis going back at least to DAI manage HAP report (2000). Specifically, those interventions are to teach producers to,

- Prune to height
- Use Improved Harvesting poles
- Wash Mangos immediately after picking to reduce sap burn
- Sort mangos for different markets, thereby lowering reject rates
- Use Crates for Transport
- Graft highly marketable Francique mangos onto other hardy non-export mango stock
- Plant new trees
- Fence saplings

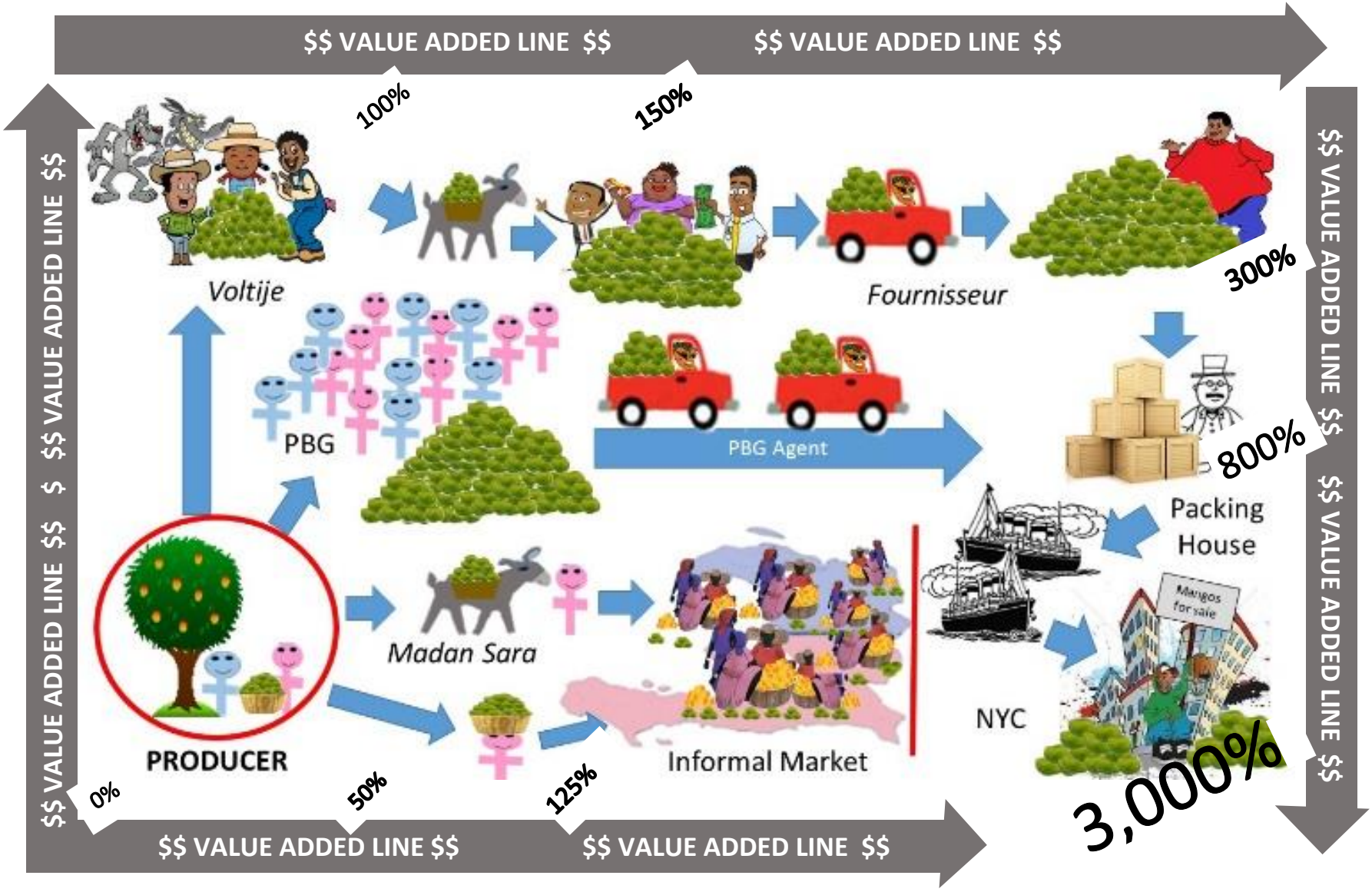
The project originally worked with existing producer associations/cooperatives to organize small producers into cells. The members of each cell were taught to recognize, prevent and treat mango diseases; shown improved methods of planting, maintenance, pruning, harvesting, and packaging mangos; assisted in accessing fertilizers, pesticides and tools; instructed in improved accounting methods, given access to credit and, very importantly, offered facilitated access to local and overseas markets. Assistance and training were embedded in gender sensitive instruction techniques

By June 2012 the project had capitalized on an existing base of 12 grower associations to reach 12,836 member farmers. However, in that same year only 511 of the growers purchased through the program. Moreover the associations declined to let new members vote, something that impeded conformance with Fair Trade certification. In effect, Haiti Hope found itself limited by a resistance from the existing local mango grower associations.

Haiti Hope implemented a new strategy, complementing the existing associations with small Producer Business Groups made of 60-100 farmers and receiving training, assistance with nursery and orchard development, and assistance in selling directly to a single Packing House with which Haiti Hope signed contracts, Ralph Perry Packing House. By year 2015 they had 262 Producers Business groups with a total membership of 25,125 producers.[ii]

Table 1.1: Haiti Hope Accomplishments According to Internal Management	
At least 1 training	25,125 producers
Producer Business Groups	262 groups with an average of 50 members each
Dozens of mangos sold by PBGs	from 59,237 dozen mangoes in 2013 to 325,147 in 2015
Organic Fair Trade	Certified (Organic and/or Fair Trade) mangos through Haiti Hope rose from 26,446 dozen in 2010 to 136,458 in 2015 (peaked in 2014 with 156,282 dozen), mangos purchased in the latter year from groups at 85 HTG per dozen (vs conventional price of 55-65 HTG)
Reject rate	14% or ½ the 30% industry average
Traceable	6,122 producer plots using F10/F12 System
Exporters Certifications	4 exporters better prepared for GMP HACCP
Micro-Orchards	648 orchards on covering 763 hectares comprising a total of 71,087 Francique trees
Microcredit	3.2 million USD loaned to 9,352 farmers
Training	27 business management, negotiation, and certification training modules

FIGURE 1.1: MANGO MARKET CHAINS



Conduit to the Packing House

The shift in strategy from working exclusively with associations to working also with newly formed PBGs led to an increase in the quantity of mangos passing through farmers groups, cooperatives and associations using the Haiti Hope marketing channel. Specifically, those PBG volumes went from 58,007 dozen in 2013, to 157,142 dozen in 2014 and then, nearly doubled again in the past year to 270,790 dozen. If opportune sellers are included, the figure reached a total of 322,310 dozen in 2015. In three years the volume of mangos passing through Haiti Hope underwent a 7-fold increase (Figure 1.2 & 1.4). In 2015, so many organic quality, exportable mangos reached Perry Packing House that the business was forced to shut its doors for 2 weeks.

Figure 1.2: Change In Absolute Volumes (Dozens) Sold Thru Haiti Hope (2013 To 2015)

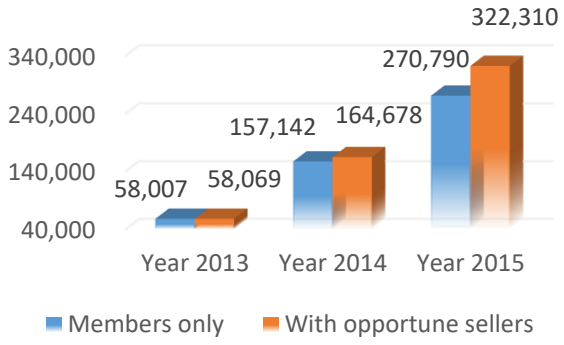


Figure 1.3: Change in Average Volumes (dozens) Sold thru PBGs per True Seller

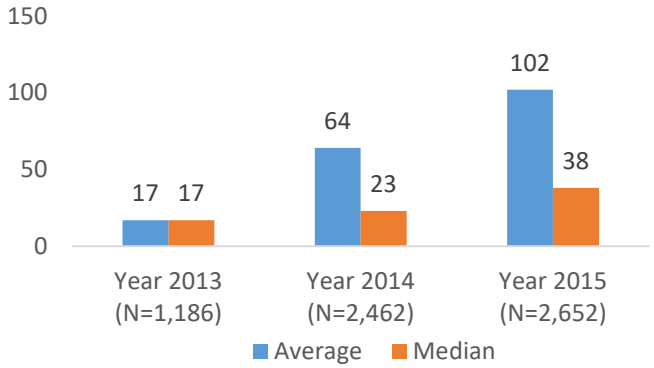


Figure 1.4: Growth In Proportion Of PBG Mangos To Total Exports (Dozens) 2013 To 2015

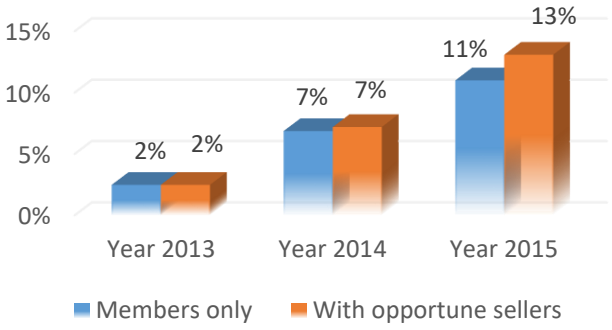


Table 1.2: Haiti Hope: Volume of Sales Through the Program: Averages and Medians for 2013-2015 (Source: Haiti Hope)						
Measures	2013		2014		2015	
	Dozens	Income	Dozens	Income	Dozens	Income
Average Seller Income	49	$37.09	64	$48.54	102	$72.98
Median Seller Income	17	$12.87	23	$17.45	38	$27.19
Average (no top 100 sellers)	22	$16.65	20	$15.17	49	$35.06
Median true sellers (no top 100 sellers)	14	$10.60	31	$23.51	32	$22.90

Regarding individual project participants, the average sold per member went from 49 dozen in 2013, to 64 in 2014, to 102 in 2015; the median went from 17 to 23 to 38 dozen (Figure 1.3). Congruent with increasing volumes, income from the project for those selling through Haiti Hope doubled (Table 1.2). This is true whether looking at averages or medians. Nevertheless, as seen, the total export volume out of Haiti has not exceeded the 2.5 million box ceiling.

PART II

ANALYSIS OF SURVEY DATA:

BEST PRACTICES, PRICES, VOUMES, AND INCOME

This part of the report focuses on the impact of the project in terms of best practices, changing prices and income. It relies on data from the three main Haiti Hope surveys and the suppliemental telephone income surveys conducted in this year, 2015.

Survey and Analysis

Units of Analysis and Stratification

Before beginning the analysis several clarifications regarding the surveys and the approach to stratifying respondents (breaking them into categories for comparison and analysis) is necessary. In the 2013 survey TechnoServe and IDB decided not to use a control group external to the program but rather to pre-stratify the sample according to,

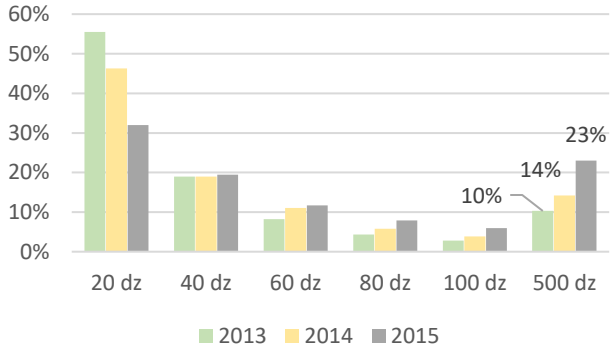
1. Inactive members: In former reports referred to as "non-members," in this report we define them as 'members who are inactive'—i.e. inactive members-- to avoid confusion with control groups. Moreover, they were in fact project participants who attended only one meeting, are otherwise inactive as PBG members and who did not sell through a PBG (total population (N = 7,089)
2. Non-Sellers: members who did *not* sell mangos through their cell/group during any of the three seasons that Haiti Hope assisted with mango sales, but who were otherwise active in the sense that they attended more than one meeting and adopted best practices (total population (N = 16,057)
3. Sellers: PBG (Producer Business Group) members who sold mangos through the group in at least one of the three years that the program assisted with mango sales to packing houses, 2013, 2014 or 2015 (N = 4,615)

The comparisons and analysis regarding these categories are only valid if they somehow reflect involvement in the project. Below we assess that involvement based on stability of membership, having sold through a PBG, consistency in sale through the group (labeled as "defectors," this is not meant to indicate failure only inconsistency in sales through the PBGs from year to year).

Stability of Membership and Changing Volume of Sales

There is a high degree of stability in the membership: 61% of current membership had joined the program by year 2013 (Table 2.1 on following page). However, there is a dramatic change both in year to year volumes sold through the project and between people who joined in different years, especially those who joined in 2015. The proportion of members selling more than 500 dozen mango through the program more than doubled from 10% of all members in 2013 to 23% in 2015 (Chart 2.1, right). This was not simply because of increasing member sales. The bulk of these big sellers are not long term but rather new members. In Table 2.2 on the following page it can be seen that members who joined in 2015 sell on average more than three times the quantities sold by members who joined in any other year, a trend that corresponds to deliberate attempt on the part of Haiti Hope staff to recruit "large" tree farmers—the definition being revised in early 2015 from over 100 trees to 35 trees.[iii]

Figure 2.1: Histogram of changing Volumes per Seller 2013 to 2015



Those who joined in 2013 followed by those who joined earlier not only sold the least amounts in 2015, they have consistently sold the least amount of mango throughout the program (Table 2.3). The implication, supported in the income section of this report, is that those members who joined the program earlier sell less mangos and also earn lower income. However, whether or not the relationship is causal, their sales through Haiti Hope significantly increased over the life of the projects, increasing for those who joined in 2012 by 60% (from 53 dozen in 2013 to 88 dozen in 2015), and increasing for those who joined in 2013 by 100% (from 38 to 76 dozen).

Table 2.1: The Proportion of Current Haiti Hope Membership by the Year they Joined					
	Year joined HH				
Measure	2015 (n=184)	2014 (n=465)	2013 (n=679)	2012 (n=1,327)	Total (n=2,655)
Total Volumes sold in 2015	58,678	43,663	51,836	116,548	270,725
Percent of Respondents in group	7%	18%	26%	50%	100%
Percent of Total Sales by group	22%	16%	19%	43%	100%
Cumulative percent of year joined	100%	77%	61%	43%	-

Table 2.2: Volume of Mangos Sold Thru Haiti Hope in Year 2015 by Year Joined Program					
	Year joined HH				
	2015 (n=184)	2014 (n=465)	2013 (n=679)	2012 (n=1,327)	Total (n=2,655)
Volumes sold in 2015	319	93	76	87	101
Count	184	465	679	1,327	2,655
Percent	7%	18%	26%	50%	100%

Table 2.3: Average Sale per Seller by Year of Sale and Year Joined HH					
	Year joined HH				
Year of Sale	2015 (n=184)	2014 (n=465)	2013 (n=679)	2012 (n=1,327)	Total
2015	319	94	76	88	102
2014	-	66	48	67	64
2013	-	-	38	53	49

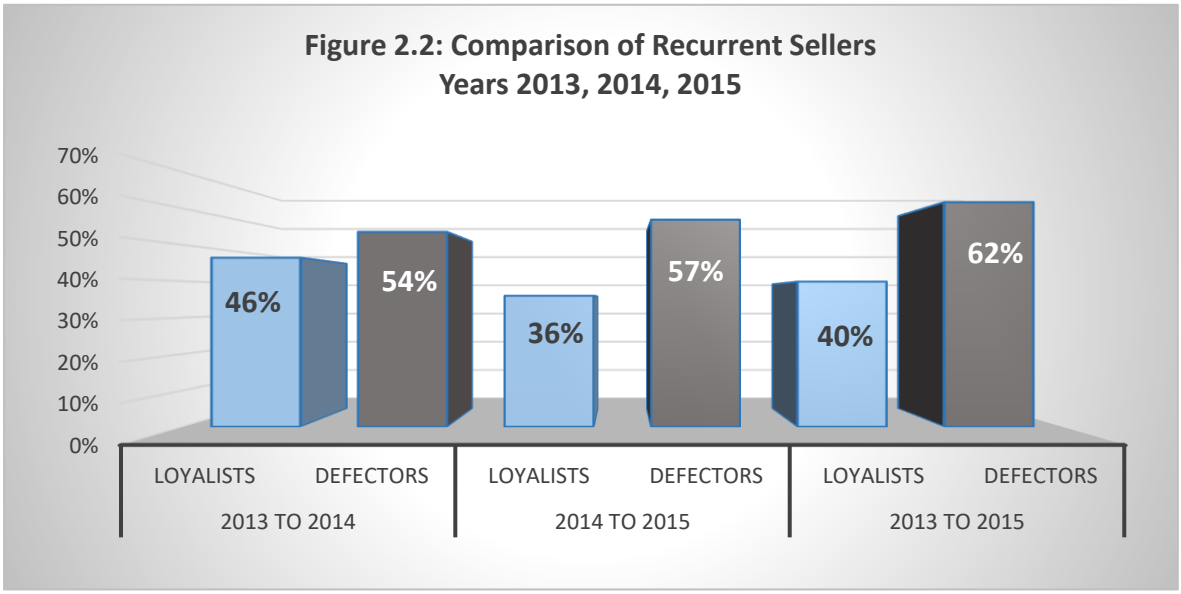
Proportion of Year to Year Program Sellers

The increase in volume, does not necessarily mean that income for the sellers changed. Not all members sell through PBGs. And those who do sell through the PBGs may also sell elsewhere. Nor are the PBGs capable of taking all the mangos. Harvest and delivery for the packing house must be planned. This means that the packing house must be notified and accept that a delivery will be coming. The PBG must then coordinate the harvesting and loading onto a truck, in many cases one of at least 800 dozen exportable mangos—the minimum that export intermediaries commonly cited as necessary to make the cost of transportable feasible. Moreover, sellers are not obliged to sell through the PBG. If they get better prices elsewhere they may sell through those other channels. Congruently, a large proportion of "sellers" have not consistently sold year to year through the group.[iv] [v]

Table 2.4: Members Who Sold thru a PBG				
Category	YEAR			Members ever selling through PBG
	2013	2014	2015	
Number of members who sold through a PBG	1,186	2,462	2,652	4,615[a]
Number of non-members who sold thru a PBG	2	125	673	833[b]

a: Excludes all "sellers" listed as selling 0 in 2013-2015 and excludes 16 "sellers" who sold less than 1 dozen for all three years.
b: Includes members with code but no name or address: opportunists = 691, no-names 143

Table 2.5: Members who Sold through a PBG one Year But who did not Sell the Next Year								
Members who Sold			2013 to 2014		2014 to 2015		2013 to 2015	
2013	2014	2015	Loyalists	Defectors	Loyalists	Defectors	Loyalists	Defectors
1,186	2,464	2,652	551 (46%)	635 (54%)	955 (36%)	1,509 (57%)	473 (40%)	732 (62%)



Summarizing the section to this point,

1. Despite there being high rates of defection, over the life of the project, the export market chain as an opportunity presented through the PBGs became increasingly attractive to those producers with many mangos to sell.
2. Moving mangos through the PBG or an existing association involves coordination of many growers, harvesting and sorting of at least 800 dozen exportable mangos—the number necessary to make the cost of a truck voyage to the packing house profitable. All this must be coordinated within 2 to 3 days lest the mango becomes too mature to allot for time in the packing house and shipping to the US. In effect, selling to the PBG or Association is not a ready or natural market in the sense that it exists independently or even without the intervention of international aid projects such as Haiti Hope, HAP, or WINNER. In the absence of such projects, the existing growers associations have supplied only 2% of the mangos that arrive at packing houses. Both Haiti Hope and HAP increased these volumes to 20% over the lifetime of each project. This suggests that with help from international agencies cooperatives/associations are capable of moving large quantities of mangos; but without that assistance they do not function well.

The fact that "sellers" are not consistently selling to the PBGs means that, based on its own criteria of full-fledged membership being a "seller," Haiti Hope can only claim a maximum of 4,615 members who ever sold through a PBG and, by corollary, only 4,615 true members. The importance of assessing income and seller categories by whether or not the person sold any mangos in a given year is elaborated on in the following section.[vi]

Validity of Inactive, Non-Seller and Seller Categories of Analysis

As seen in the previous section, sellers from any given year vary by as much as 60 percent. Without knowing why sellers vary, it may be misleading to use them as a category for evaluations of income. Moreover, it calls into question the analytic utility of the category itself. Are sellers somehow more involved in and dedicated to the Haiti Hope project than Non-Sellers? Are Non-Sellers more dedicated to the project than Inactive members? The answer based on the analysis of attendance and best practices is yes. To begin with, the majority of participants in all three categories signed up for the program two or more years in the past. This is most true for sellers, 77% of whom signed up for the program in 2011 to 2013 period versus Inactive Members, 70% of whom signed up during the 2011 to 2013 period and Non-Sellers, 68 percent of whom signed up during the 2011 to 2013 period. Moreover, a look at attendance to PBG meetings and best practices indicates that the categories are strongly correlated. To measure this correlation we formulated the aggregate indicator "Best Practices Score" that includes one point for adoption of each of eight best practices,

1) heavily pruning trees
2) fencing saplings
3) grafting
4) using improved cutting pole
5) sorting for specific markets and quality
6) plantings saplings
7) cleaning under trees
8) cleaning branches of dead foliage and parasitic plants

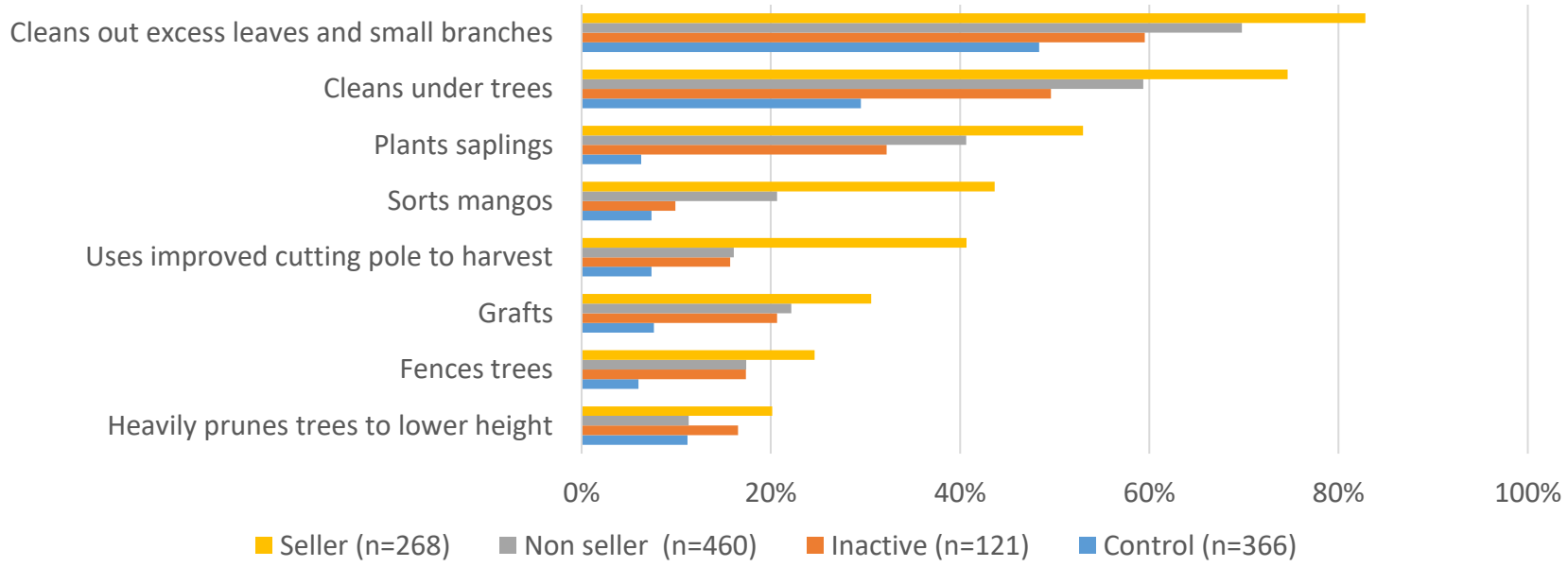
The Tables and Figures including explanations are given below and on the following four pages. Figure 2.6 also includes a ninth category of "years sold through the PBG", with a maximum of three years and three points--one point for each year.

The data suggests a strong relationship between being a "seller" and adopting best practices. In five categories this difference is dramatic and statistically significant. Specifically, these five categories are 1) use of improved cutting pole to harvest mangos, 2) sorting mangos, 3) planting samplings, 4) cleaning under trees and 5) cleaning the tree branches.

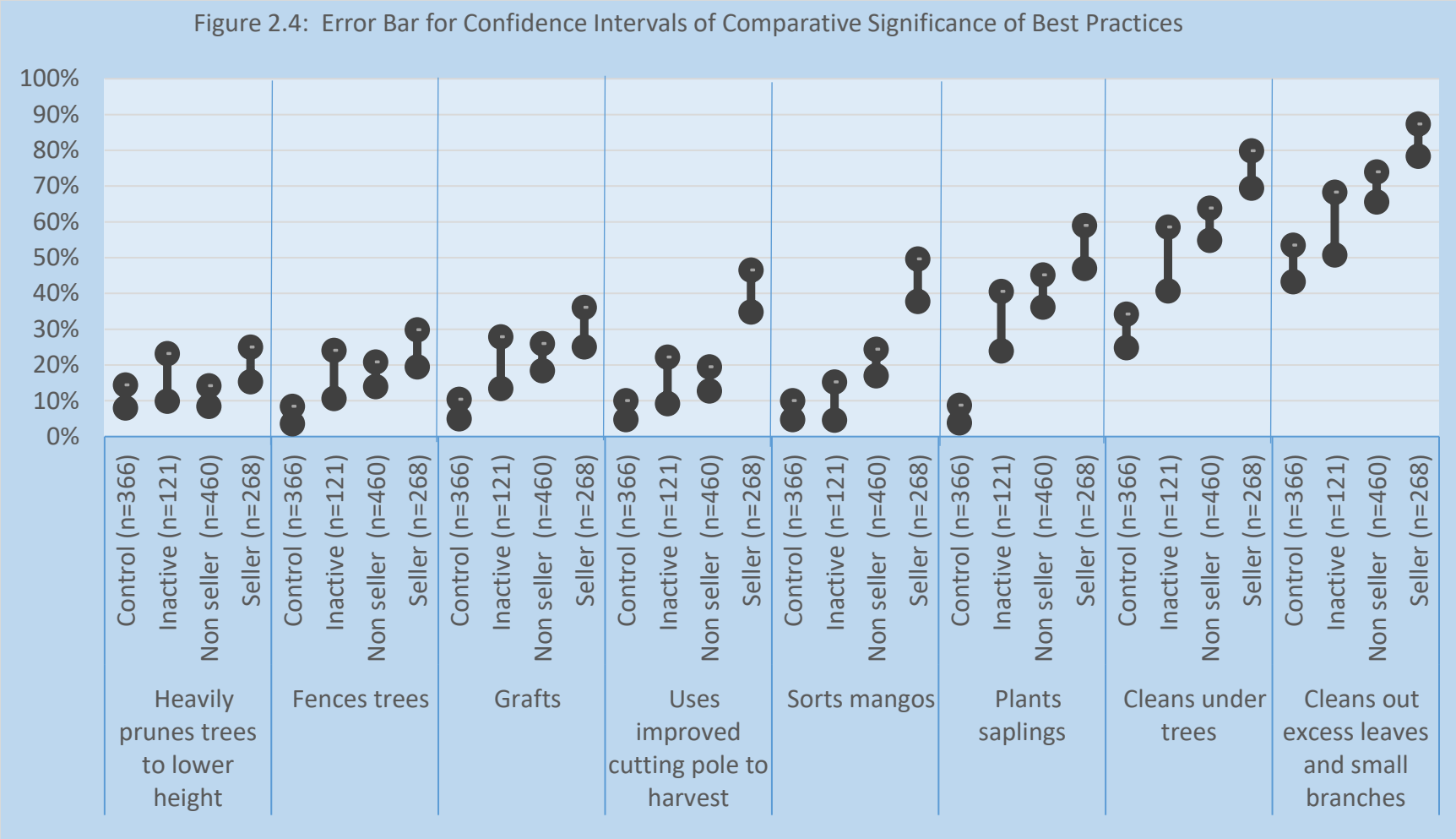
Table 2.6: Participation Score (with number of years sold)		
Pearson Correlation	Participation Score	Trainings
Correlation	1	.369
Sig.(2-tailed)	.000	.000
N	1215	849

Table 2.7: Best Practices by Haiti Hope Classification								
	Heavily prunes for height	Fences trees	Grafts	Improved cutting pole for harvest	Sorts mangos	Plants saplings	Cleans under trees	Cleans branches
Control (n=366)	11%	6%	8%	7%	7%	6%	30%	48%
Inactive (n=121)	17%	17%	21%	16%	10%	32%	50%	60%
Non seller (n=460)	11%	17%	22%	16%	21%	41%	59%	70%
Seller (n=268)	20%	25%	31%	41%	44%	53%	75%	83%

Figure 2.3: Best Practices



Explanation for Table 2.7 and figure 2.3: Proportion of respondents in each category who have adopted the listed best practices. The confidence intervals (measure of statistical significance for each estimate) are provided on the following page.



Explanation for Figure 2.4: An illustration of the confidence intervals for proportion of each Haiti Hope member group and the control group that has adopted the specific best practice. The five categories in which "Sellers" show a marked and statistically significant difference from all other groups are 1) use of improved cutting pole to harvest mangos, 2) sorting mangos, 3) planting saplings, 4) cleaning under trees, and 5) cleaning the tree branches.

Table 2.8: Classification of TNS Membership by Participation						
Categories		Scaled Participation				
		0	1 to 3	4 to 6	Over 6	Total
Classification of Respondent	Control (n = 366)	100%	0%	0%	0%	100%
	Inactive (n = 121)	40%	46%	9%	4%	100%
	Non seller (n = 460)	15%	26%	27%	32%	100%
	Seller (n = 268)	3%	12%	18%	67%	100%
	Total	40%	17%	15%	27%	100%

Pearson Chi-Square=270. df = 9, p <.000

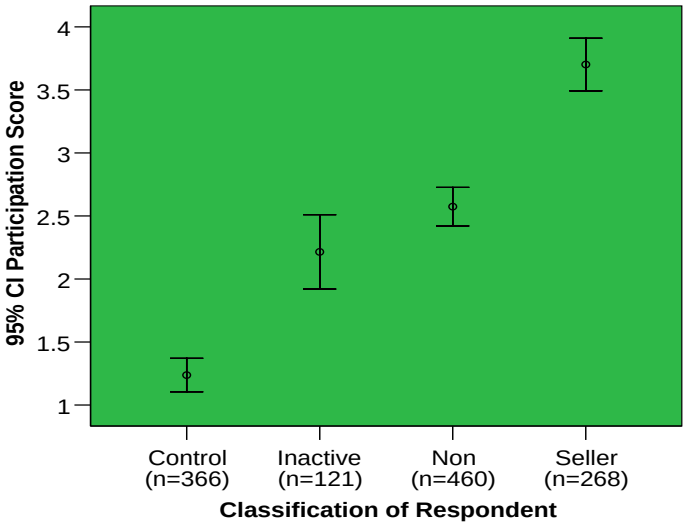
Table 2.9: Cross-Tabulation Trainings Scaled Best Practices Indicator (N=1,215)						
Categories		Aggregate Best Practices Index (8 best practices)				
		0	1 to 3	4 to 6	Over 6	Total
Trainings	0	64.9%	44.3%	13.7%	15.8%	40.5%
	1 to 3	13.5%	17.5%	18.9%	21.1%	17.0%
	4 to 6	10.8%	16.0%	17.3%	15.8%	15.2%
	Over 6	10.8%	22.2%	50.2%	47.4%	27.2%
	Total	100.0%	100.0%	100.0%	100.0%	100.0

Pearson Chi-Square=198, df = 9, p <.000

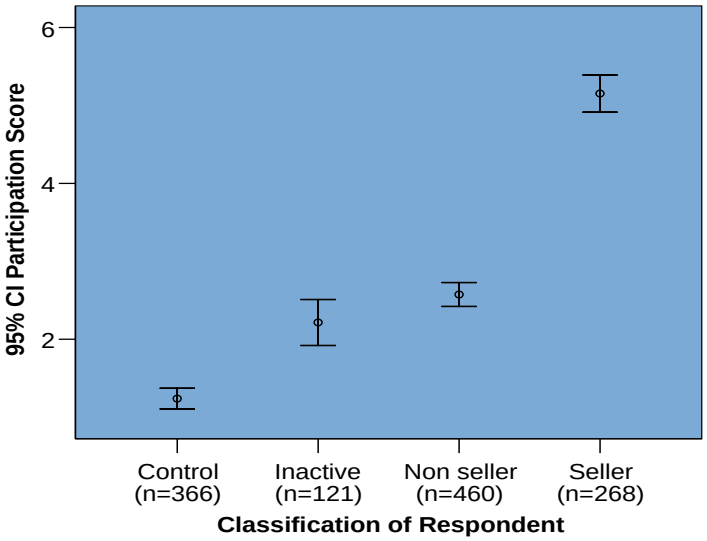
Explanation: Table 2.8 illustrates the attendance at Haiti Hope PBG trainings by different classificatory groups. On the one extreme, no control group members attended PBG trainings. On the other extreme 85% of Sellers attended at least 4 trainings. The attendance rate for Sellers is especially notable in contrast to Non Sellers: more than twice as many Sellers vs Non-Sellers attended more than 6 trainings (67% vs 32%) However, the table calls into question the definition of "Inactive member." Termed in prior Haiti Hope reports "non-members" The table indicates that an estimated 13% of them has attended 4 or more trainings. In effect, while it is clear in the subsequent analysis and tables that Inactive Members are indeed distinct from the other Haiti Hope categories, it is not clear what the basis placing them in the category of "inactive."

Table 2.9 illustrates the strong relationship between adoption of best practices and attendance to PBG meetings. Those respondents who have at least 6 or more trainings are 2 to 3 times more likely to have adopted 4 or more best practices. Interestingly, the relationship is strong only for those attending more than 6 trainings. For all other categories of attendance the adoption of best practices is approximately equal and even suggestive that those who only went to 4 to 6 trainings are less likely to have adopted best practices than those with even lower attendance.

Figures 2.5: Best Practices Score
(Without number of years sold
thru PBG or association/cooperative)

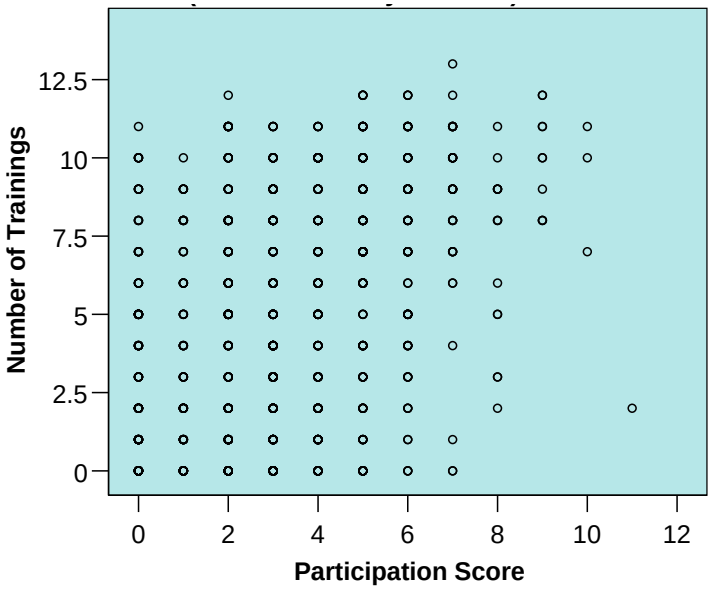


Figures 2.6: Best Practices Score
(Includes number of years sold
thru PBG or association/cooperative)



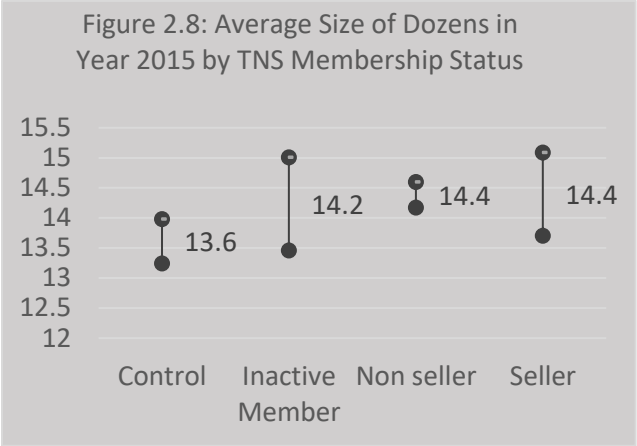
Explanation: Figures 2.5 illustrates the statistically significant difference in adoption of best practices between the Haiti Hope classificatory categories. All three Haiti Hope participant categories have a statistically significantly higher rate of adoption of best practices than the control group. Sellers have a statistically significantly higher rate of adoption of best practices than any group. Figure 2.6 shows the same relationship but with 'having sold through a PBG or association in any given year' added to the aggregate best practices score, something that for the obvious reason of being inherent in the definition of "Seller" increases the distinction between Sellers and all other categories. Figure 2.7 is a graph of the number of trainings by participation score. It echoes findings seen in the tables on the previous page, illustrating the strong relationship between attendance to trainings and adoption of best practices.

Figure 2.7: Best Practices Score
(Includes number of years sold thru PBG)



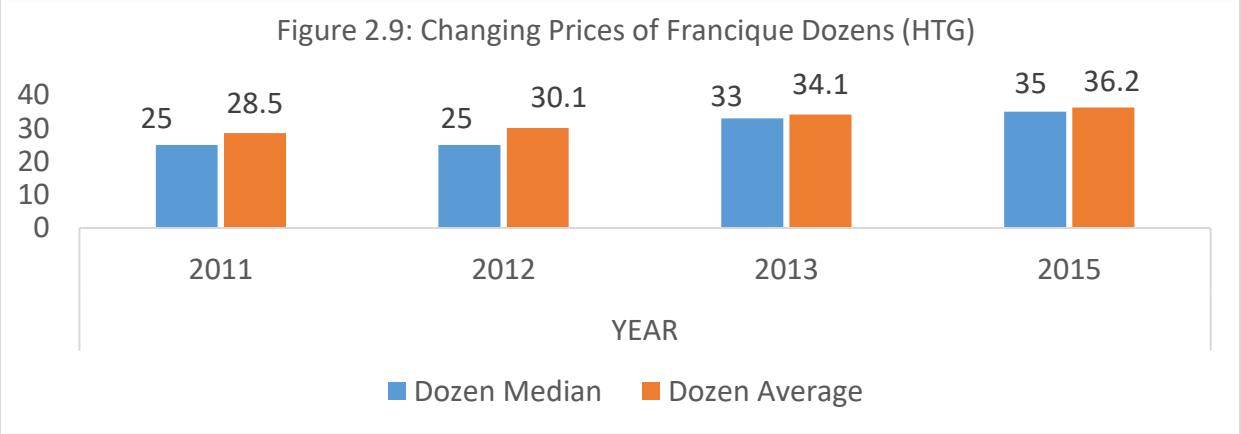
PRICE

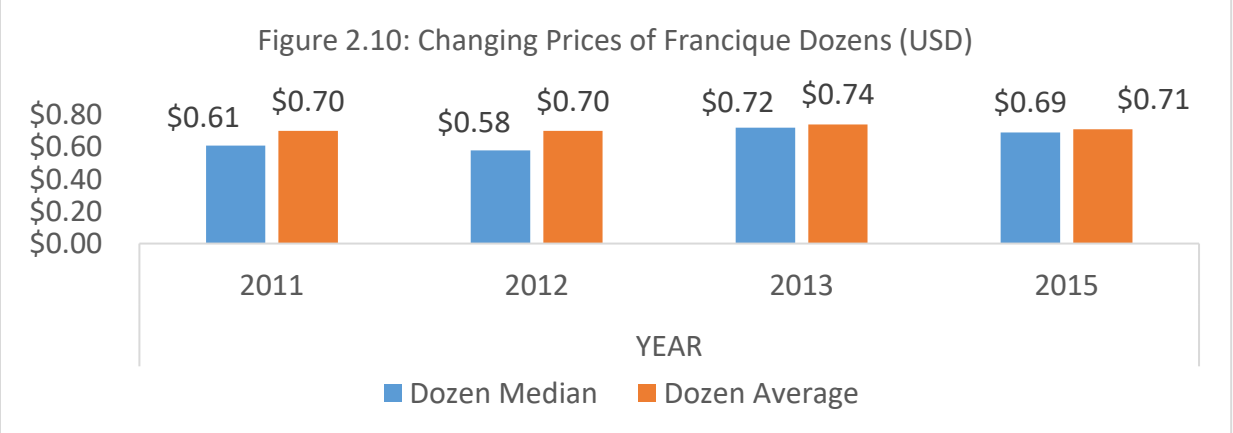
Data on price is the single most critical information for assessing income. The reason is that while reports on income are subject to a host of questions regarding accuracy and reliability, we can be confident that prices are accurate. Price is the single most reliable statistic and offers insights into the workings of the Haitian peasant economy that reinforce or discredit observations from the literature review as well as qualitative and quantitative data seen in previous sections, most importantly the hegemony of the local economy seen in Part III of this report. Regarding estimates of income in this section, data on price can be used to multiply by average number of trees and average yield per tree to corroborate the credibility of income data. All three surveys (2011-12, 2013, and 2015) gathered data on price of dozens



Changing Price of Francique

When measured in HTG, data from the surveys indicate a steady 33% rise in price per dozen for Francique over the course of the Haiti Hope project (Figure 2.9). However, when calculated dollars the rise levels out to ~10% increase (Figure 2.10).





TEXT BOX 2.1: FUDGING THE DATA TO MAKE OUR NGOs LOOK GOOD

- In 2000, at the onset of HAP (Hillside Agricultural Project), DAI wrote a baseline report on Francique Mangos in which it stated that farm gate prices for Francique in Jacmel, Leogane, or Cabaret were 12-17 HTG per dozen, translating to US$0.63 to $0.89 cents per "dozen" of 15 to 21 mangos. DAI reported that elsewhere prices varied from 5 to 17 HTG, translating to from US$0.26 to $0.89 per dozen with a mid-point of $0.58.
- In 2005, five years into the HAP project, DAI took credit for raising farm gate prices in the Artibonite Valley and Plateau Central by 17 percent. To do so they did a little revising, saying that the price rose from "3 – 4 HTG per dozen in 1997-1998" to 35 HTG per dozen in 2005. In effect, DAI claimed a new cooperative price of US$0.97. If true, they would have raised farm-gate prices not 17% but by a local currency factor of 10x, a USD currency factor of more than triple what they claimed in 1997-98, and almost double the claimed price in 2000
- Five years later, in 2010, when beginning the Haiti Hope project, TechnoServe used information from 3,299 farmers to estimate the price for export quality mangos at 20 HTG ($0.51) and conventional local Francique at 8 HTG ($0.20), an average of US $0.36. In local currency that's 57% of the price HAP report five years earlier (TNS). If we calculate in USD it's about half the price.
- In the same year, the USAID funded 2010 MarChE report (page 16) cited an average price paid to grower cooperatives for Francique mangos of 40 HTG per dozen or, at that time, US $0.98. That was for non-organic certified mangoes. In bother HTG and USD that's twice the price that TechnoServe was reporting at the same time. However, the same report noted that non-organic mangos were wholesaling on the local market for US$1.00-.$1.25 (40 -50 HTG), 25% more than the MarChE reported export chain price.[2]
- In 2014 USAID/WINNER joined the rhetoric telling interested visitors to their website that until "the mid-1990's, the Francique mango did not have much value in the marketplace and was sold for a very low price (between 3 and 9 gourdes a dozen)". The punch line—if there is one-- is that that the value of the gourde varied during the 1990s from 8 to 18 gourde to one US dollar. So the variation of 3 to 9 gourde would mean that, in US Dollars, a dozen mangos was fetching the same prices in the as they did in 2012, at the height of USAID/WINNERs own mango project.

[1]Jean (1998) put the farm-gate price of Francique mangos at 7 HTG per "dozen" of from 15 to 21 mangos and Krinac who put the price at 8 HTTG. That translates to an exchange rate, at that time, 17 years ago, of US$0.43 and US$0.50 (prices cited in Lidwine 2013)

[2] The very high 2011 price is surely associated the onset of the Great Haiti Aid Boon--the US$12 billion injected into the Haitian economy as a consequence of chartable and foreign governments contributions after the 2010 earthquake)

TEXT BOX 2.2: MYTH OF THE ROTTING MANGOS

There is a type of prevailing semi-official narrative about the Haitian mango as a "passive asset" that, if not channeled to the packing house, "rots on the ground" or "gets fed to pigs." This is not simply an assumption. It is the prevailing image presented in development reports and canonized in a referred academic article written by three University of Florida professors and a graduate student and published in Proceedings of the Florida State Horticultural Society (see Hyppolite et. al 2013).

In the article, while acknowledging that rejects get sold on the local market, the scholars nevertheless lapse into an extensive summary about "mango losses" for "both producers and suppliers" of 30%' (ORE 2002), and even "30% to 40%," (USAID 2010), finishing with a citation where "35% of mango harvested are left on the ground to decay and/or fed to animals" (Dieudonné 2007). The document goes on to cite the farm-gate price of a single Francique mango destined for the local market at exactly 1 US penny, the same price that Haiti Hope estimated at the beginning of the project (14 HTG per dozen of 14-18 mangos: see previous Text Box). The next level resale price for a mango destined for the local market is, according to the professors, 2 pennies. Putting this into perspective of today's prices, that would translate to a farm-gate price of 30 HTG per *panye*—less than the cost of picking those same mangos. At the next intermediary resale level—2 pennies per mango—that would translate to 60 HTG per *panye*.* Contrast these prices with those seen elsewhere in this report where Francique sell on the local market for farm-gate averages 5 to 7 times these prices and one has to wonder just what's going on.

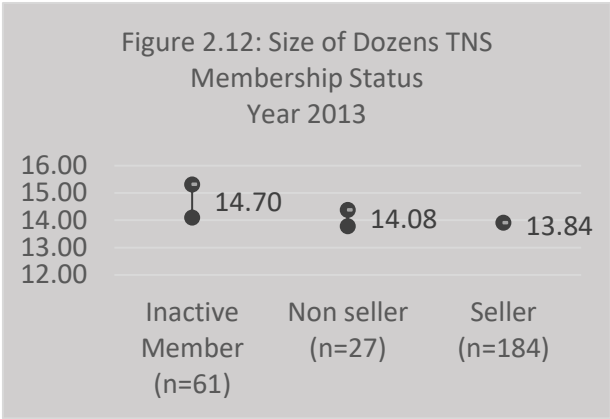
In contrast to the claim of near zero price on the local market for Francique, everything about the export market appears, in the University of Florida article, to be a bonanza. Just picking a mango destined for the export market costs 0.83 of a penny, almost as much as a local market mango itself. The cost of transporting an export market mango by truck is 2.5 US cents per mango, 2.5 times the Farm-gate price of a single Francique that gets left behind on the local market; 25% more costly than the first resale price. Could this be true? That depends how you count.

It is unlikely that the professors intended to deliberately misrepresent domestic market prices. More likely is that their focus on the export market caused them to overlook the vigorous local market where mangos sell for as much or more than the export market chain. Moreover, they quite likely based their price estimates on two different standards. Similar to the NGO mango specialists seen in the previous text box, they almost certainly calculated domestic farm-gate prices based, not on *panye* or *lo,* but on prices for trees sold. The trees are sometimes rented for as long 5 years, in other cases sold as long as 9 months in advance of the harvest. And they sell in this way for 1/3rd or less the harvest market value. But calculating export market prices the professors, as with the NGO specialists, did something very different. They based the export dozen price on actual dozens selected and sorted. The irony of doing this is that they have the process reversed. It is unlikely that anyone purchases the future harvest from a Francique tree 9 months in advance with the idea of selling the mangos on the local market. People who purchase Francique trees are thinking about the export market, i.e. it is *fournisseur* and *voltije* and they often have in hand money fronted to them by the export packing house. None of this is to say that exportable mangos do not have value to the micro producers. They do. But only if they can connect more directly with the packing houses and, perhaps more importantly than anything else, the producer gets a *ristourne* (premium rebate), as they've done through PBGs. As for the shell game of calculating prices in a way that makes the export market look good: had the professors calculated export prices based on costs to *fournisseur* who buy trees and had they calculated local market prices based on the *panye* prices that female traders buy and sell at, they would have arrived at the opposite conclusion: The export mango would have had a value of 1 penny and the local mango a value two to three times that figure.

*Hyppolite et al 2013 are calculating 60 Francique per *panye* vs the 70 used elsewhere in this report, making the local market value of Francique 17% greater than they given in this report

Change in Size of Dozens

Almost exactly corresponding to price is the change in the number of mangos per dozen paid to farmers. The average size of a dozen declined over the life of the project, dropping from 15.2 in 2011 to 14.0 in 2013 and then rising slightly in to 14.3 in 2015. The change in numbers of mangos per dozen should translate to an increase in value of 6% accruing to the producer.



TEXT BOX 2.3: DEJA VU

Puzzling regarding change in prices, size of dozens and reject rates is that HAP made claims in 2005 almost identical to those of Haiti Hope project claims in 2014 and 2015.

Quoting directly from the HAP 2005 evaluation,

> Field interviews indicated that ten years ago producers were paid four *gourdes* for a dozen mangos, and a "dozen" was defined as 18 to 20 fruits. Currently, producers have been receiving 35 *gourdes* per dozen with the dozen defined as 14 fruits. HAP technical assistance and training in producer harvest and handling significantly reduced export factory rejects, and therefore also reduced the exporter's need to "discount" the number in a dozen" (HAP 2005; p 6)

HAP and Haiti Hope are by no means alone. Organizations making very similar claims about recently changing percentage of rejects and size of dozens (and in much the same language) include,

- AVSF (Agronomist and veterinary without Borders; see AVSF, undated)
- ORE (http://www.oreworld.org/)
- Mercy Corps (see TaiwanICDF 2012)
- USAID/WINNER (2014a)
- OXFAM (2014; see Fuller-Wimbush, Danielle and Cardyn Fils-Aimé 2014)
- IICA, Concern and the EU (see EU 2014)
- ID (Initiative Developpment with ADEMA; see ID 2015)
- World Vision (undated but after 2010)

TEXT BOX 2.4: THE ELUSIVE DOZEN

It is not at all what NGOs or Haitians mean--any of them—when they say "dozen." First off, Haitians do not measure in weight and they seldom measure in number. They measure in volume. Hence when trading in mangos they do use the dozen but the *panye* (basket)—a volume of mangos-- and the *lo*, which Lidwine Hypolite (2012) explains in her Master's thesis is a measure that varies according to quantity, size, weight, freshness and quality of the fruit. "Dozen", on the other hand, is emphatically an export value chain measurement category.

Whenever someone in Haiti says "dozen" in reference to mangos one can be sure they are talking about Francique mangos and those mangos are headed to the packing house. And they are not dozens of 12. When *fournisseur* talk about a *douzen* they could be referring to anywhere from 9 to 22 mangos (see Hippolite 2012). But it's not clear if they ever even used the dozen measure when dealing with producers. Not that is to say, before HAP and Haiti Hope.

When asked about *douzen* during focus groups a common response was that they had never heard of a *douzen* before Haiti Hope. So it seems that in trying to bypass *fournisseur* and connect grower cooperatives directly to exporters, HAP and then Haiti Hope introduced the concept of dozen. And in doing so, somewhere along the line both HAP and Haiti Hope staff interpreted *lo* as a perversion of "dozen." And that meant, for many of them, that it was an example of *fournisseur* taking advantage of producers. And it may be so. But there also seems to have been a cultural or linguistic misunderstanding going on.

Not even the export houses and overseas receivers calculate in dozens of twelve. They calculate in boxes. Thirty to forty years ago, a box weighed 5.5 kilograms. And yes, that weight happened to correspond well to 12 Francique mangos. But then, at some point in the late 1980s there was a shift to a 4.5 kg box, which takes an average of not 12, but 10 mangos (9.8 to be exact). Yet, packing houses kept buying in "dozens" of 13 and 14 mangos. And *fournisseur* continued to calculate with the producers in "lot" (*lo*) of anywhere from 9 to 22 mangos.

The odyssey of the dozen has become so confusing that Haiti Hope, like HAP before it, takes credit for getting a "dozen" closer to twelve. To be exact Haiti Hope has standardized the dozen sold to the packing houses at fourteen. The extra two mangos, they explain, is to account for rejects and spoilage. But there are problems here as well. First off, the mangos get selected at the packing house and so any subsequent rejects have nothing to do with the producers. But even more to the point here, Haiti Hope uses packing house data on boxes as a proxy for dozens. But if when they get shipped out, they are not really dozens at all. At least not dozens of 12. A "box" is, as seen, a "dozen" of 9-10 mangos.

So forgetting about the official 14 per dozen that when the two super dozen extras meant to compensate for rejects and damaged fruit that have nothing to do with the producers but, so the producers are told, average out somehow to 12, where are the other two mangos?

TEXT BOX 2.5: INFORMAL SECTOR MEASUREMENTS TURNED FORMAL

The claims of both Haiti Hope and HAP before it can be in part understood with reference to the informal sector. Haitian producers do not calculate in dozens. They calculate and sell in *panye* (baskets) and *lo* (a small assortment)--both highly variable measurements--and they also sell and rent trees. These measures make formal economy models cumbersome. Or rather, formal economy models are cumbersome if these measures are ignored, as often occurs in formal analyses of the mango value chain. Yet, each of these measure have characteristics understandable and useful in applying formal-economy models.

- *Lo,* which literally means a small pile and can vary from 3 to 8 fruits, depending on the size of the mangos. For the purposes of the analysis of the impact of Haiti Hope what is most important about *lo* is that it is the retail measurement and hence useful for calculating profit margins at the final sale level in the domestic market. In effect, *lo* responds to the real market price of mangos, the consumer price, it is the real time price that consumers pay for a mango.

- *Panye* There are 3 to 4 sizes of *panye*, but they can and are standardized with reference to the largest, a ~60 pound basket that typically holds from 60 to 70 individual Francique mangos. For the purposes of the analysis of the impact of Haiti Hope what is important about the *panye* is that it is the primary wholesale intermediary measure for the informal sector trade in mangos. In terms of an indicator, *panye* responds to the anticipated resale price measured in days and weeks.
- Tree as used here are distinct from *panye*, lo and dozen in that it is not really a measure. Trees vary considerably in size, age, and yield. In 2010 Haiti Hope staff estimated that an average Francique tree yields 20 export quality dozen of mango and 30 non-export quality dozen (dozens of 14 mangos). They used this average to calculate producer income based on an average of mature trees per producer (based on information from 3,299 potential Haiti Hope participants). The income estimate was at that time US$10 per tree and US$30 per producer.

  But trees are definitively different than *panye*, lo or even dozen. *Fournisseur* and even some *Madan Sara* often purchase trees based on the anticipated price as long as 9 months before harvest. In some areas, such as Cabaret ad Archaie, trees are rented for as a long as five years. For producers, it means they can get money from their trees while averting the risk of losses from bad weather and disease, and without having to maintain the trees. For the purposes of the analysis of the impact of Haiti Hope, this means that trees are indicative of the anticipated value of mangos months before harvest. In this sense the market in trees can be thought as analogous to a commodity, land or stock market in a formal sector economy. It is speculative and indicative of stakeholder confidence in the future of the market.

(Gardens are not here included because they were infrequently cited as a unit of sales during the surveys. Moreover, they can be thought of as 'lots' of trees)

Informal vs. Formal Sector Prices (Measured in Dozens)

Looking at the tables of the flowing 5 pages the following conclusions can be made,

For export dozens in Haitian currency (HTG)

- From 2011 to 2012 the prices remained stable
- Between 2012 and 2013, the prices increased a substantial 33%
- Between 2013 and 2015, the prices increased by 9%

For *Panye* in Haitian currency (HTG),

- Between 2011 and 2012, the prices dropped 14%
- Between 2012 and 2013 prices rose 33%, same as the export dozens the price
- Between 2013 and 2015, the prices increased by 13%, 4% more than that of the price for export dozens

For trees the in Haitian currency (HTG),

- Between 2011 and 2012, the prices rose 17%, the only price category to rise in that period
- Between 2012 and 2013 prices rose 21%, more than 10% less that export dozens or *Panye* but still a substantial increase.
- Between 2013 and 2015, the prices increased by a remarkable 47%, something likely related to the high confidence in the future sale price of mangos as well as resistance of producers to sell trees at reduced prices in advance of harvests [vii]

If the prices changes over the life of the project are examined in constant US Dollars increases are significantly less impressive and the drops more dramatic (see Table 2.11). And we examine those changes in constant units of dozens-i.e. translating *Panye* and trees into dozens so they are comparable in volume to export dozen prices—we can make the following inferences, if calculated in USD

- The average change in price over the life of the project for export dozen disappears (there is no change because of a 22% depreciation in the USD)
- The median change in price for export dozen is of a significant amount only for 2012 to 2013, the year of first sales through the PBGs when it rose from $0.58 to $0.72
- For *Panye,* the price remained almost constant, changing a total of 3.5% over the life of the project (from 85 cents per dozen to 88 cents), but with a notable dip in 2012 of 18 percent.
- For trees, the increases were steady and geometrically greater each year, rising by 13% between 2011 and 2012, then rising another 12% in between 2012 and 2013 and then almost doubling with a 45% increase between 2013 and 2015.
- Notable in all of this is that consistently higher price per dozen in informal sector *Panye:* In 2011, *Panye* was 40% higher than the export dozen price—again, almost certainly related to the presence of aid workers and the high local demand. The *Panye* price then fell in 2012 to 21% higher than export , remained at 21% through 2013 and rose again to 27% higher than the export dozen price in 2015[viii]

As discussed in Text Box 2.5, the rental of trees and sale of trees can be thought as a speculative market. The increasing price of trees can be interpreted as a corresponding to an increasing reluctance of farmers to sell their Francique mangos on the tree; the number of people in the samples selling trees in 2015 was 1/4th of what it had been in 2011 and 2012 (see Table 2.12). This reluctance to sell trees and rising price of trees is logical in that it also corresponds to the increasing volumes being channeled toward the export houses as well as support from the Haiti Hope microcredit program that provides loans to farmers when they most need it, thus averting the sale of trees. The point is especially poignant with regard to the following section on income: Haiti Hope PBG members appear to have been drawn from among the poorest mango producers, precisely those who would be most inclined to sell their trees to *fournisseur*.

Table 2.10: Changes in Prices Dozen, *Panye*, Tree 2011-2015 (HTG)

		YEAR							
		HTG				USD			
Unit	Statistic	2011	2012	2013	2015	2011	2012	2013	2015
Dozen	Median	25	25	33	35	$0.61	$0.58	$0.72	$0.69
	Average	28.5	30.1	34.1	36.2	$0.70	$0.70	$0.74	$0.71
Panye	Median	175	150	200	225	$4.27	$3.49	$4.35	$4.41
	Average	196	145.4	202	251.4	$4.78	$3.38	$4.39	$4.93
Tree	Median	600	700	833	1250	$14.63	$16.28	$18.11	$24.51
	Average	812	888.4	1038	1565	$19.80	$20.66	$22.57	$30.69

Explanation for Figures 2.13 and 2.14: To make the measurements dozen, *panye* and tree comparable, both *panye* and trees are converted to dozen. Figure 2.13 illustrate changing price in these dozens based on the average of 50 14-until dozen per tree, and for *panye* five 14-unit dozen or 70 mangos per *panye*. The two most obvious inferences that can be made are that the price of a *panye* of Francique on the local market is consistently higher than the farm-gate export value chain price for dozens. The difference is especially pronounced for 2011, something likely related to the 10s of thousands of foreign aid workers. (Note also that this figure of 70 mangos per *panye* is the average quantity per *panye* according to 2015 survey respondents. Lidwine et. al. (2013) put the figure at 60 Francique mango per *panye*, a figure that would increase the *panye* price in constant dozens by 17% making the local price for Francique dramatically higher than we see here). The second most obvious inference is the dramatic increase in price of trees, something that should be understood in view of Table 2.12 on the following page that suggests an increasing reluctance of producers to sell trees (see 'explanation' on following page).

Figure 2.13: Price of Tree vs. Panye vs. Dozen in Constant Units of Dozens (HTG)

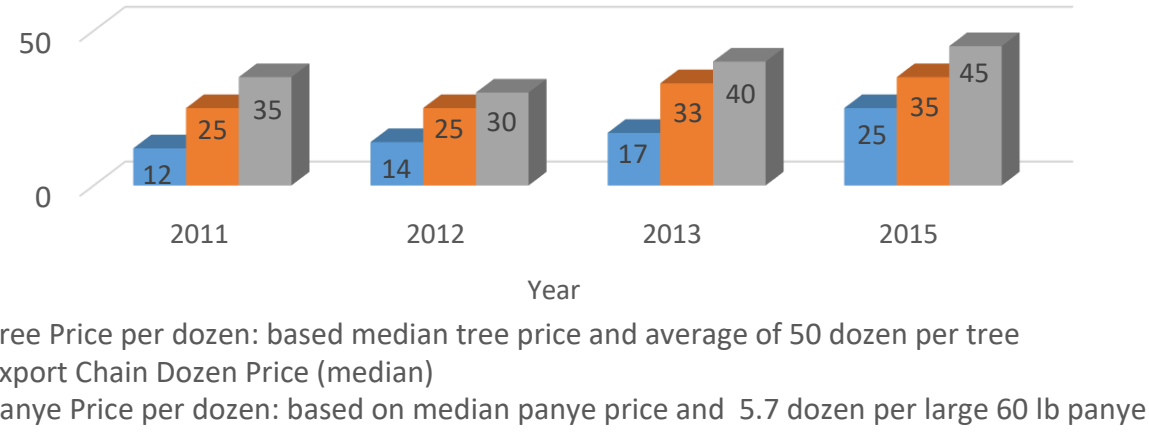


Figure 2.14: Price of Tree vs. Panye vs. Dozen in Constant Units of Dozens (USD)

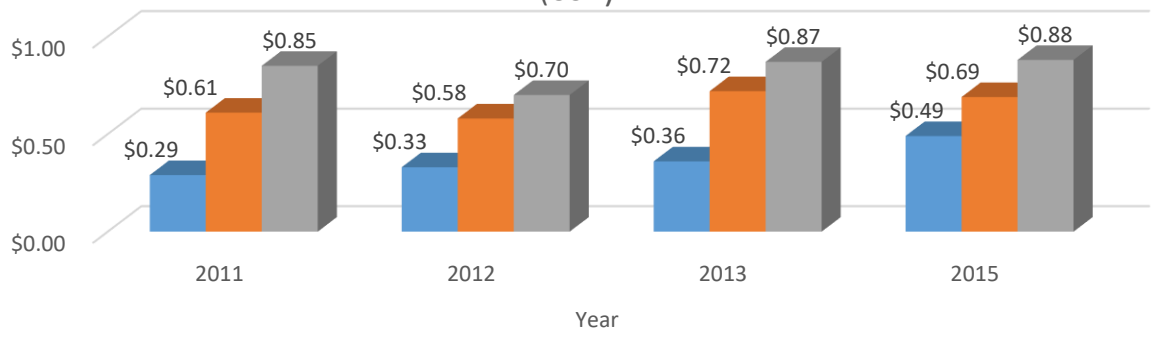
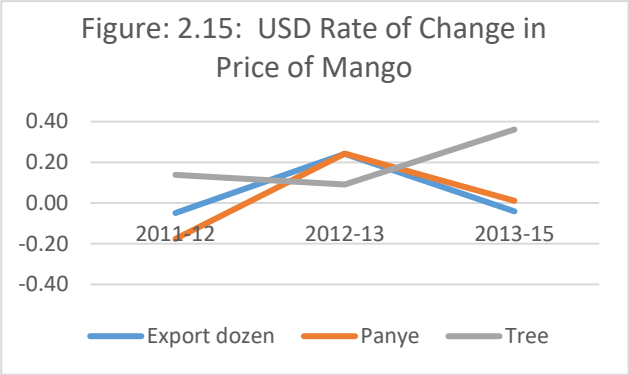
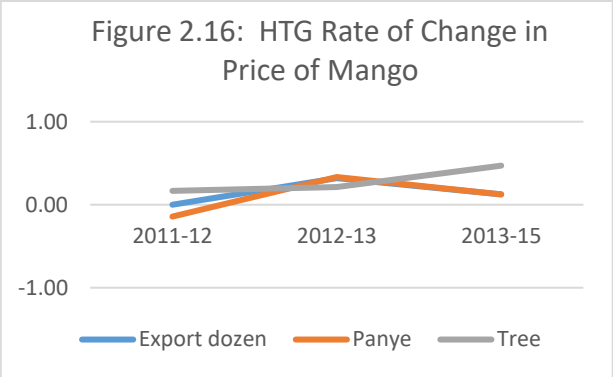


Table 2.11: Proportional Prices Changes for Year Intervals 2011-12, 2012- 13, 2013-15				
Currency	Measure	Years 2011-2012	Years 2012-2013	Years 2013-2015
HTG	Export dz.	0.00	0.32	0.13
	Panye dz.	-0.14	0.33	0.13
	Tree dz.	0.17	0.21	0.47
USD	Export dz	-0.05	0.24	-0.04
	Panye dz.	-0.18	0.24	0.01
	Tree dz.	0.14	0.09	0.36

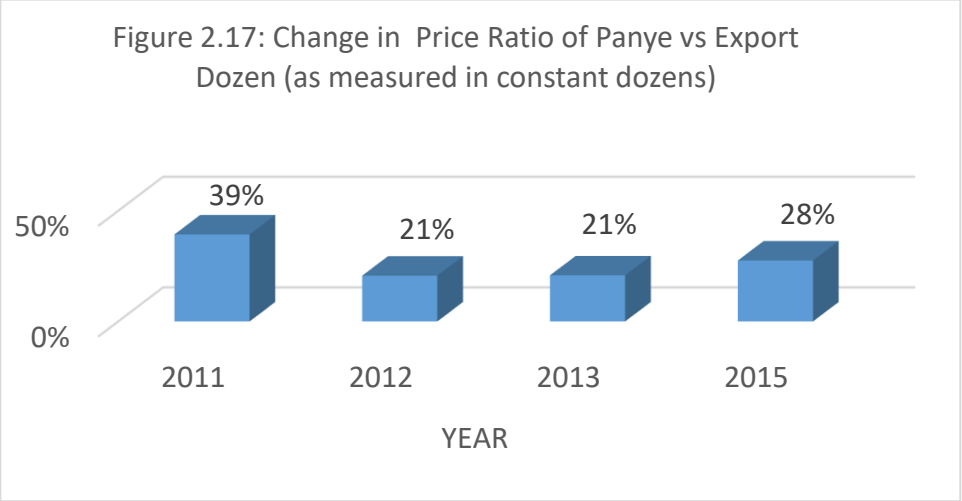
Table 2.12: Units Sold for True Sellers Only Year				
Unit	2011 (n=350)	2012 (n-436)	2013 (n=415)	2015 (n=523)
Dozen	38%	45%	65%	67%
Panye	7%	9%	13%	19%
Tree	56%	46%	22%	14%





Explanations: Table 11 & 12 and Figures 2.15 & 2.16 describe the proportional change in prices over time periods 2011- to 2012, 2012 to 2013, and 2013 to 2015. Calculations are given for mother HTG and USD. In HTG the prices show a steady increase over the life of the project for all but the 2011-2012 period where the price of *panye* dips. This is likely a consequence of the very high post-earthquake prices in 2010 and 2011, when the country was swamped with international aid workers. When the changes are calculated in USD, increased prices for export dozen and *panye* are only evident for 2012-2013. Trees show high rate of increase over the life of the project, something particularly dramatic in the past year. This high rate of increase for trees can be interpreted as increasing confidence in the future market manifest, on the one hand, by *volitje* and *fournisseur* paying more and on the other hand producers demanding more. However, more significant than the disposition the latter to pay higher prices is producer unwillingness to sell for low prices, a trend evident in the Table 2.12 showing a reduction in tree sales over life of the project a 2011 high of 56% of all respondents selling a tree to mere 14%. This can be interpreted as supplanting *fournisseur* and *volitje* market share—those who typically purchase trees—and encouraging competition between those intermediaries and the PBGs, something that focus groups participants mentioned often, i.e. *volitje* raising prices to out-bid the PBGs

Explanation: Figure 2.17 illustrates the proportional difference in farm-gate price between a dozen sold in the export market chain versus one sold in the domestic market chain. The significant implication is that local market prices are consistently high than export market prices, but a phenomenon that declined over the life of the project, from a high of 39% to 28% but with notable dip to 21% in years 2012-2013.

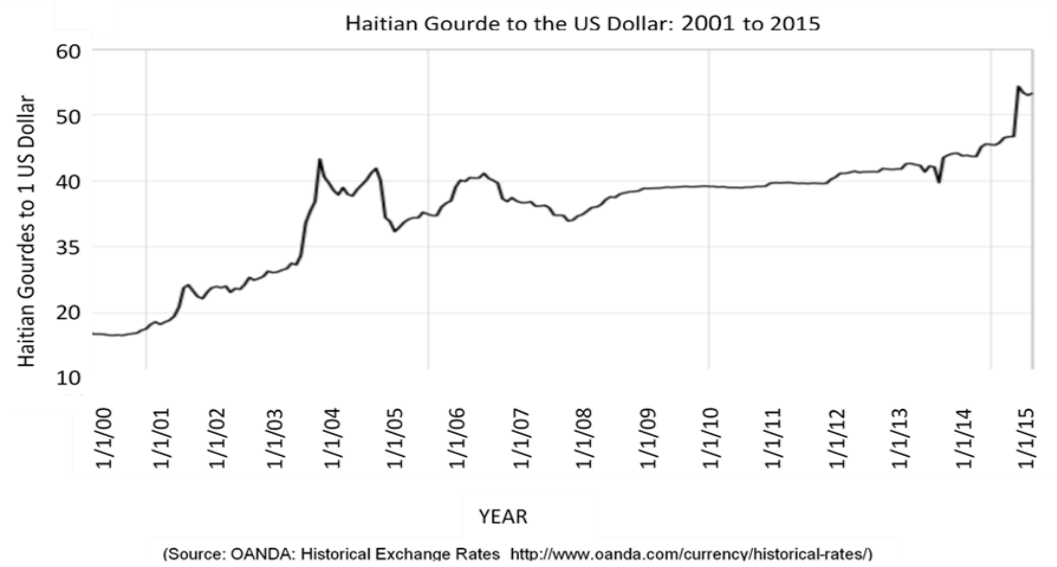


TEXT BOX 2.6: EVOLUTION OF HAITIAN GOURDE (HTG) TO THE US DOLLAR (USD), 2001 TO 2015

Beginning in 1912 the Haitian Gourde (HTG) was legally fixed to the US Dollar: 1 USD = 5 HTG. The standard was abrogated in 1989 and the HTG was allowed to float freely in value. And it has done a lot of floating. The value of the Haitian Gourde (HTG) in relation to the US Dollar (USD) went from 1 USD = 5 HTG in 1989 to a recent 2015 high of 1 USD = 57 HTG, a change by a factor of ten. Considering only the period since year 1999, the value of the HTG to the USD more than tripled, going from 16 to 57 HTG = 1 USD. And if we only considered the life of the Haiti Hope project, the value went from 41 HTG to 51 HTG, a depreciation in value of 25 percent.

The reason that it makes sense to look at this change in prices based on US currency is because the Haitian economy is closely linked to the US economy, its major trading partner, source of some 50% of food staples, such as rice, and many durable goods. Even in the case of cell phones and motorcycles imported from China, the goods must be purchased with foreign currency the value of which is best approximated in US dollars. When the Haiti Gourde depreciates in value vis a vis the US dollar, the cost of everything in Haiti is not far behind. First comes those items purchased overseas: imported foods, durable goods such as batteries and plastics, and quite literally anything manufactured or that has imported ingredients. The impact of increasing prices is softest for those who are fortunate enough to have family in North America.*

Those living on exclusively off the local economy are not so fortunate. Eventually most other prices catchup for everyone, but there is definitive lag, a lag at the very end of which are those Haitians who are the poorest, the most rural and the most entrenched in the local economy, such as many mango farmers. On the other side of the equation, that of exporters, such as these in the mango business, windows of opportunity where lags in that cost between the informal vs formal sector can translate to windfall profits as the entrepreneurs sell in US dollars and pay for labor and local products in the depreciated HTG value.*



*Source of more than 50% of its GDP in the form of ~US2 billion in annual remittance from expatriate Haitians living in the US.

* Note that United States is also the destination of all Mango Francique exports and hence assessing mango income based on USD gives a better estimate of the proportion of Francique sales prices that reaches the producers.

INCOME

In this section we arrive at the main point of this report: exactly what impact did Haiti Hope have on income. First we present the conclusion or reconstruction of income over the life of the projects for the various classificatory groups. And then, in the following pages we explain the logic upon which the income estimates are built and the multiple sources that allow us to corroborate them.

Total Mango Income

Points that stand out about the data and evident in the charts on the following pages are,

1) In HTG, these changes in income show a dramatic trend toward increasing income over the life of the project, increasing for Inactive Members by 57%; for Non sellers by 33% and for Sellers by 67%. Even survey Control groups increased income by an estimated 40% over the life of the project.

2) When the figures seen above are translated into constant US dollars, the increase in income over the life of the project decline by 28% to 33% for all groups. Specifically, the increases in USD being 27% for Inactive Members; 7% for Non sellers; and 33% for Sellers. For Control groups the increase in USD is 12% over the life of the project.

3) The Haiti Hope Treatment group show the most dramatic increases in income. Specifically, "new members" in 2011-2012 have the lowest income levels (US$96 in 2011 and US$81 in 2012) but in 2013 "Sellers" –60% of whom were former new members in 2011-2012—display a dramatically higher income level (US$133), a 64% increase, and then hold at US$128 in 2015, an overall member income increase of 33% over the life of the project.

4) For both 2011-2012 and 2015, the control groups —essentially the general population of producers who own Francique Mangos--have the highest income level of any group. In contrast, "New members" in 2011-2012 have the lowest income levels. The suggestion is that Haiti Hope participants tend to be among the poorest mango producers, somehow marginalized from the market but with a large number of trees and capable of increasing mango income

The validity of these observations are that supported by the facts that,

5) Despite these being completely independent surveys with different samples, most income estimates for all years are remarkably consistent, each group earning an estimated income close to the same figure for all three other years. For example, the control group for 2011 and 2012 and the control group for 2015 are essentially the same income.

6) There close congruence between the income change estimated from the data and the change that would be expected based on price changes seen in previous section [ix]

Explanation for Chart 2.18: Estimates of total mango income was extrapolated from multiple surveys. Specifically, in year 2013 the survey provided data for Francique and Blan mangos, the first and second most commonly sold mangos in the region. The 2015 main survey gathered data only for Francique mangos. Extrapolations for missing income for both years come from the 2015 telephone survey. Specifically, based on the findings from this survey, we added 15% more income for mangos that are neither Francique nor Blan to both the 2013 and 2015 survey income estimates. For 2015 field survey data, we also extrapolate the missing income for Blan mangos. Note that Blan mango income figures from both 2013 field survey and the 2015 telephone survey correspond closely (see 2.30 and 2.31 on page 41). No extrapolation was necessary for the 2011-2012 survey as it collected data for all mangos varieties. To summarize,

- the 2011-2012 survey did not include data on income for specific mango varieties but rather lumped all mangos together
- the 2013 survey included data on mango Francique and Blan
- the 2015 survey focused only on income from Francique mangos
- the 2011-2012 survey and the 2015 surveys included true control groups

Figure 2.18: Proportion Change in Income from Mangos over the Period 2011-15

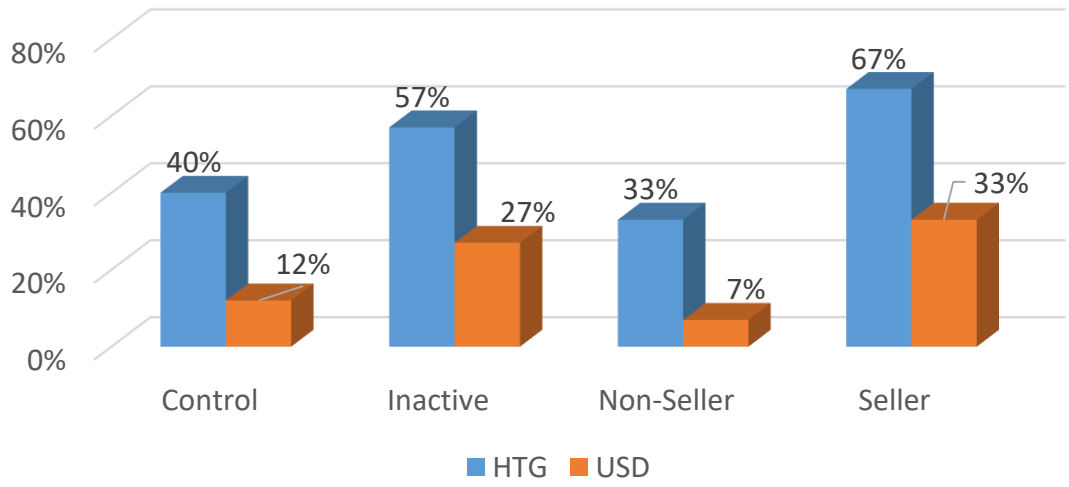
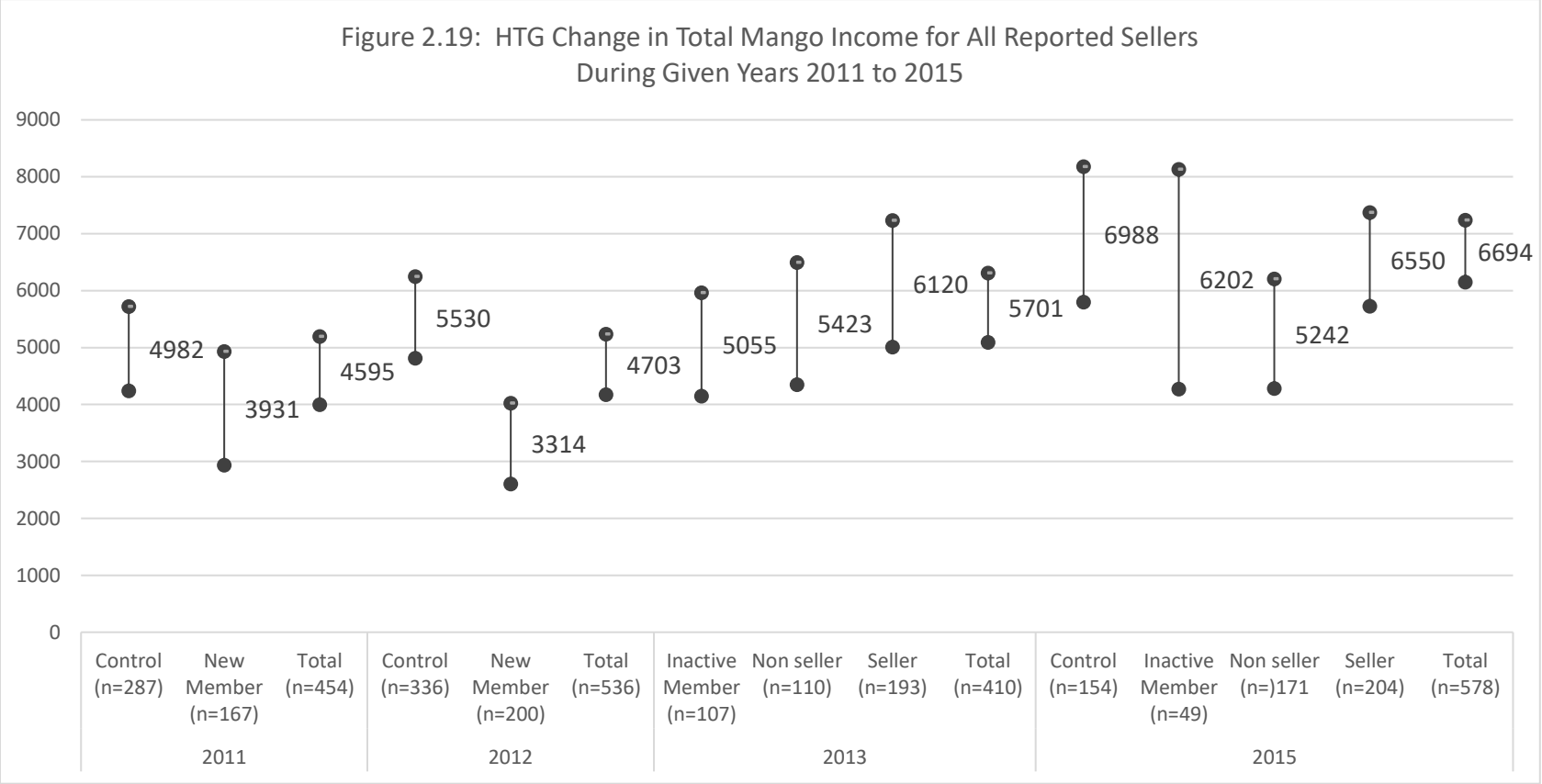


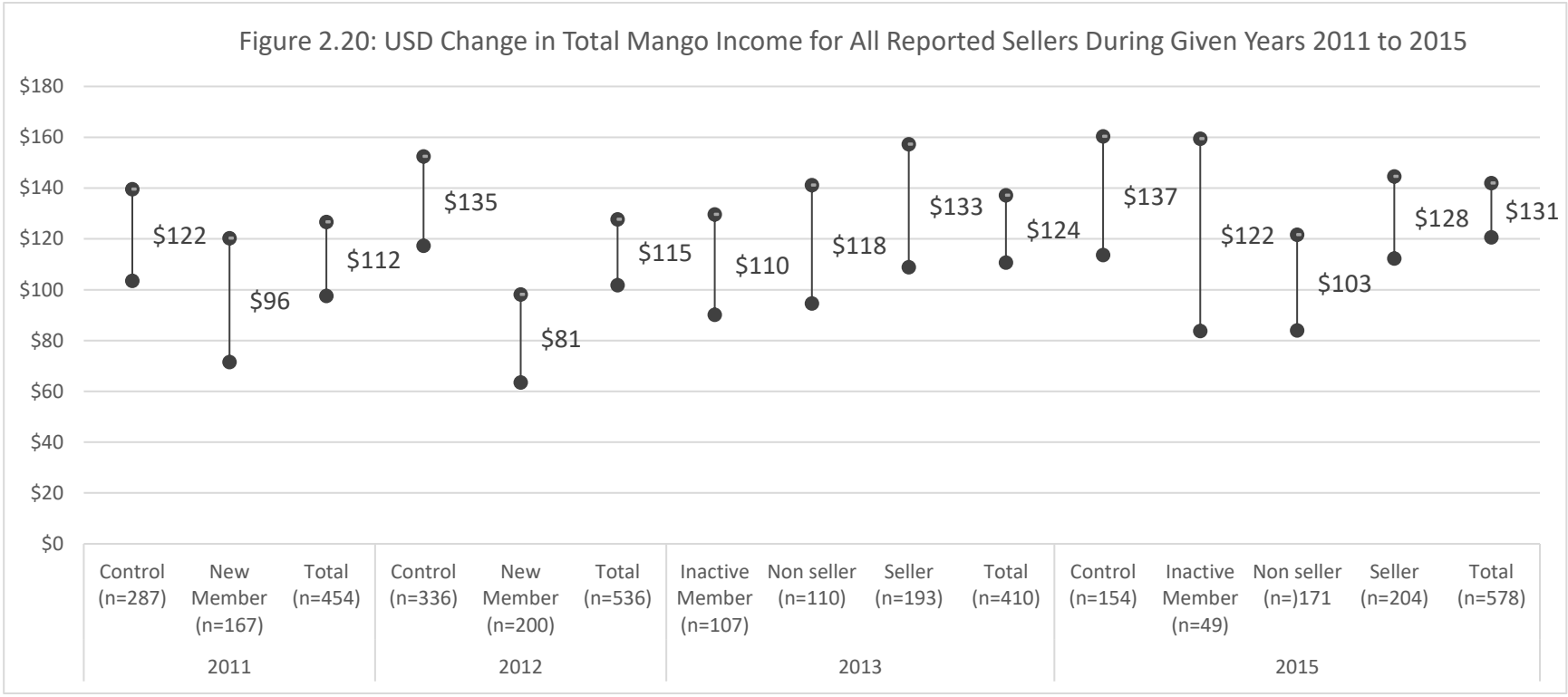
Table 2.13: Proportion Change in Income from Mangos over the Period 2011-15*									
		HTG				USD			
YEAR	Classification	Francique	Blan	Others	Total	Francique	Blan	Others	Total
2011	Control (n=287)	3537	1046	399	4982	$86	$26	$10	$122
	New Member (n=167)	2791	826	314	3931	$68	$20	$8	$96
2012	Control (n=336)	4258	885	387	5530	$104	$22	$9	$135
	New Member (n=200)	2353	696	265	3314	$57	$17	$6	$81
2013	Inactive member (n=107)	4122	966	460	5055	$90	$21	$10	$110
	Active Non seller (n=110)	4554	874	460	5423	$99	$19	$10	$118
	Active Seller (n=193)	3839	1748	782	6120	$83	$38	$17	$133
2015	Control (n=154)	5338	1122	510	6988	$105	$22	$10	$137
	Inactive member (n=49)	4551	1122	510	6202	$89	$22	$10	$122
	Active Non seller (n=171)	3592	1122	510	5242	$70	$22	$10	$103
	Active Seller (n=204)	3728	1938	867	6550	$73	$38	$17	$128

- 10 outliers over 50,000 HTG eliminated. Range was from 52,500 to 127,500

Explanation for Table 2.13: When measured in HTG, the most significant finding illustrated in Table 2.13 is that there was a 29% to 50% increase in mango income for all groups, However, when measured in US dollars these increases diminish to a 12% for Control groups and 7% for Non-Sellers. For the Seller group income measured in USD is still high, at 29%; and likewise at 24% for Inactive Members. We can attribute low Non-Seller income growth to high number of participants in the category who have no trees at all (>13%); we can attribute the higher increase in income for other Haiti Hope groups vs the lower increase for control groups to exposure to the project. However, also important to understand is the changing composition of the groups. In 2011-12 all members were New Members. But in the later analysis those categories are differentiated by Inactive Members, Non-Sellers and Sellers. And what we know from the data that Sellers have about 50% more trees as the other Haiti Hope member categories. Specifically, they have a median of 11.8 mature trees vs. 7.4 for Non-Sellers, 7.4 for Inactive Members (see Figure 3.7 on page 69). This means that when the groups are separated they have higher income and more trees. The phenomenon is also evident in the higher Non-Francique sales among sellers vs other groups. When the 2011-12 New Members become differentiated in three groups, the Sellers have higher Non-Francique sales, not because those sales have increased, but because the "Sellers" are precisely those with more trees.

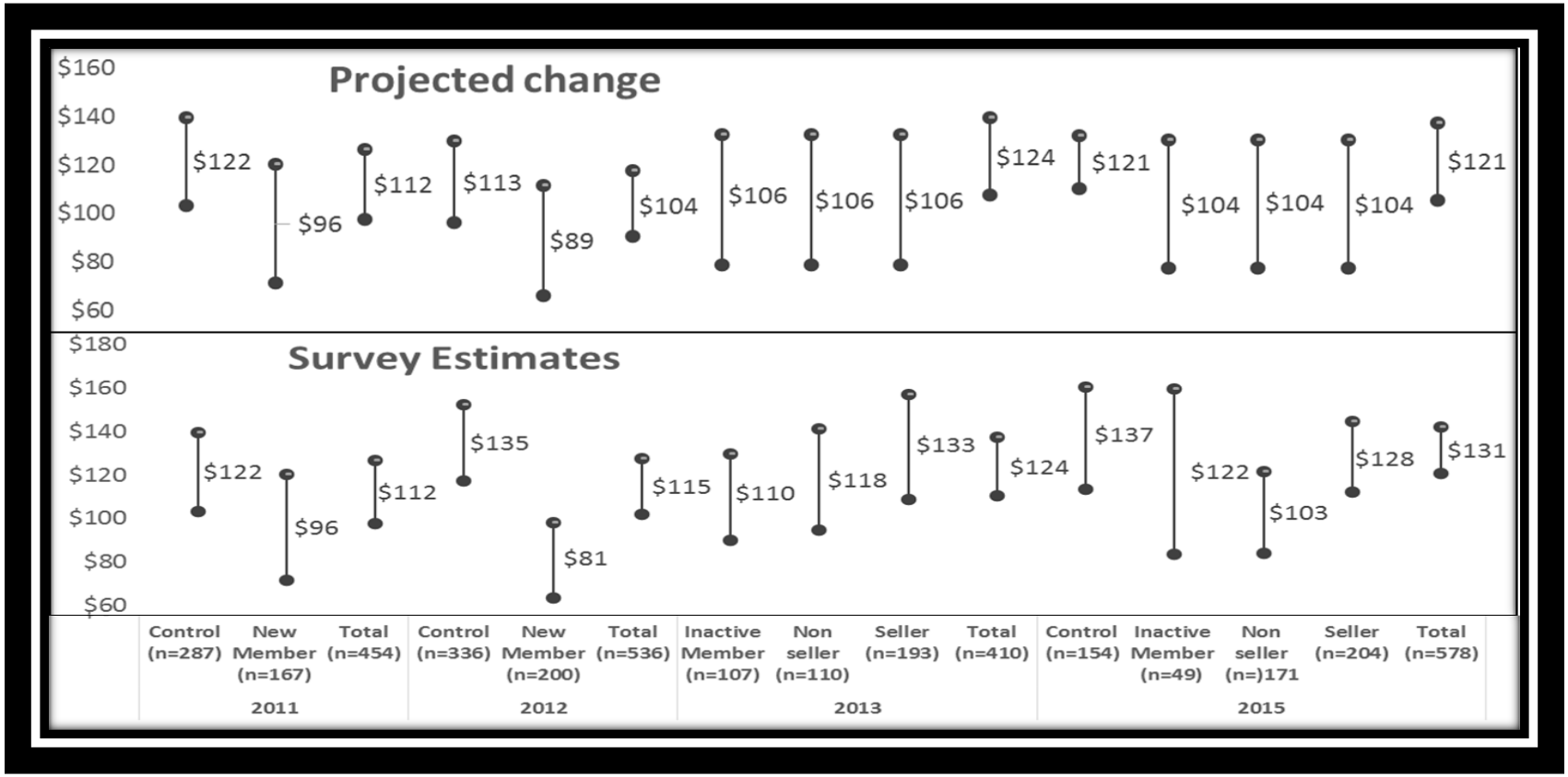


Explanation for Figure 2.19: The figures are in Haitian Gourdes (HTG). The lines are graphic illustrations of 95% confidence intervals for total mango income, as seen in the table on the previous page. Based on data from all four income surveys (that from the field surveys in 2011-2012, 2013, 2015, and the 2015 telephone survey) the only consistent and statistically significant patterns are a) Control group earned higher income than new members in 2012 (i.e. New members are poorer than the general population of mango growers) and b) increase in income of New Members who become "sellers" in 2013 and 2015.



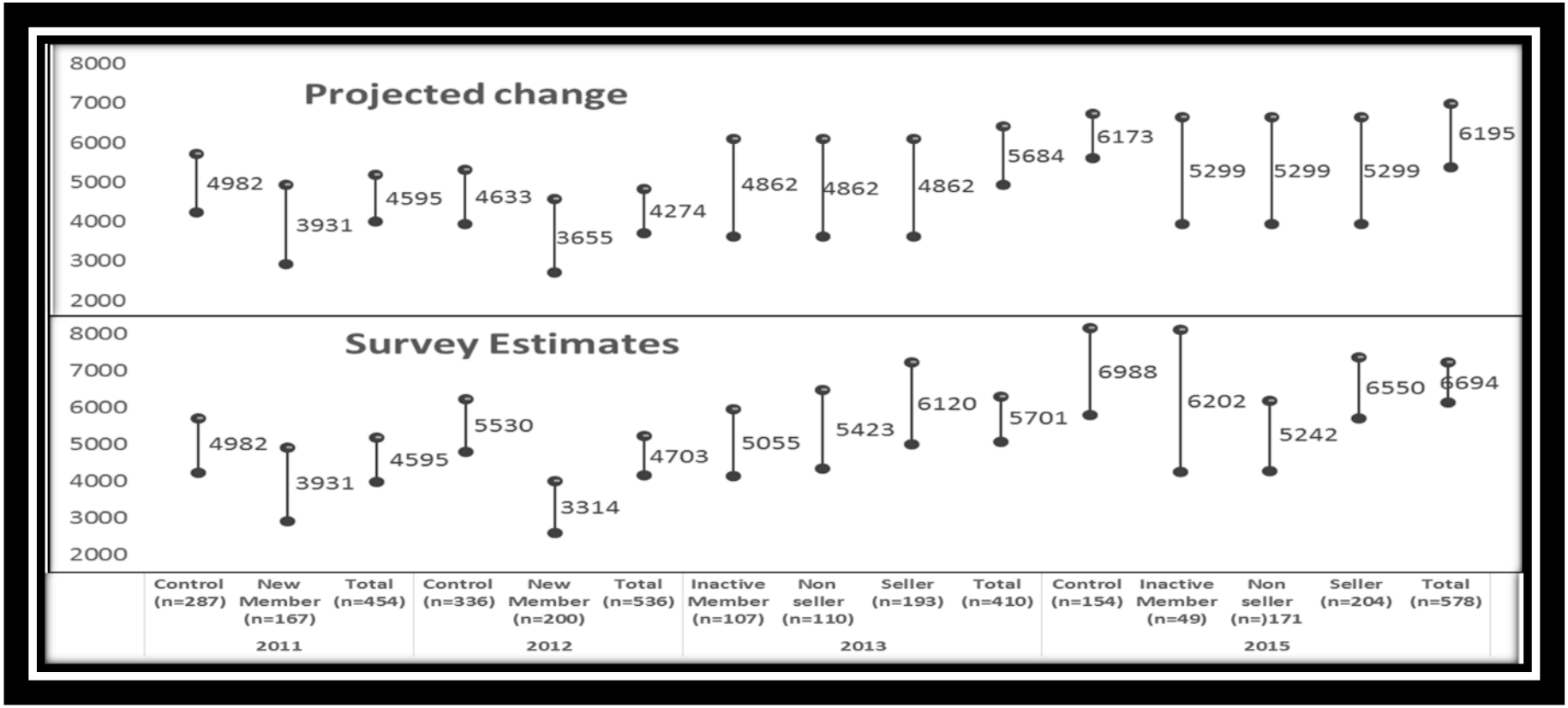
Explanation for Figure 2.20: The figures are the same as seen on the previous page but are in US dollars based on the exchange rates as explained in Text Box 2.6. The lines represent 95% confidence intervals for total mango income based on all data from all four income surveys (that from the field surveys in 2011-2012, 2013, 2015, and the 2015 telephone survey. What the comparison of confidence intervals tells us is that while increases in income over the course of the project have now almost completely disappeared (because there are now being measured in USD), still the consistent and statistically significant patterns that persist are a) Control group earned higher income than new members in 2012 (i.e. New members are poorer than the general population of mango growers) and b) increase in income of New Members who become "sellers" in 2013 and 2015.

Figure 2.21: HTG Comparison of Projected Income Change Based on Changes in Mango Price vs. Change in Income Based on Survey Estimates



Explanation for Figure 2.21: The lines represent 95% confidence intervals. The figures are in HTG. The top portion of the chart is the projected change in total income from all mangos types. The projections are based on changes in price of Francique Mangos. It uses the year 2011 as a baseline. To calculate the figures, the 2011 baseline income is multiplied by the ratio of price change (see in the previous section on Price). The bottom portion is the total income as reconstructed from all the surveys. It is the same confidence intervals seen in the Figures on the previous two pages. What the comparison of these two charts demonstrates is a close congruence between the income change that would be expected based on price changes and the real changes in income based on the surveys. There is an overall increase in income that exceeds the expectations based on price. However, the only statistically significant increases in income over the life of the project is for the Seller category ($p > .95$).

Figure 2.22: USD Comparison of Projected Income Change Based on Changes in Mango Price vs. Change in Income Based on Survey Estimates

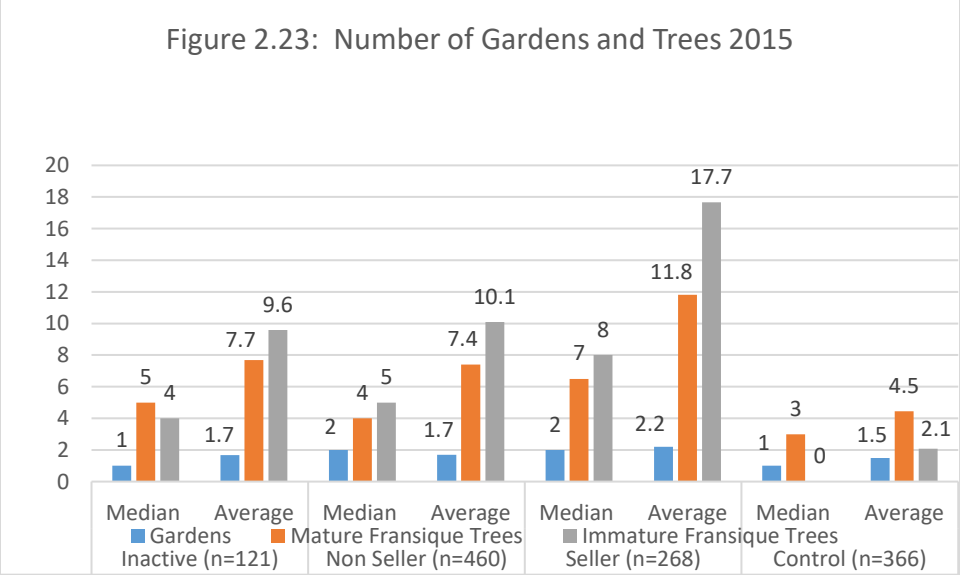


Explanation for Figure 2.22: This is the same charts seen on the previous page except in US Dollars adjusted for the variation in exchange rates over the life of the project (see Text Box 2.6). For the Seller groups there is still a strong increase in income over the life of the project. But only statistically significant changes are between 2012 and 2015 ($p < .95$).

Arriving at and Understanding Estimates of Mango Income

Averages and median incomes must be considered with caveats in mind. Logically, for example, to estimate average income all respondents who are members of the Haiti Hope program should be considered in calculations of income, including those who report 0 income for a given year. But reasons why doing so would obscure an accurate understanding of true income and change in income over the life of the Haiti Hope project include,

- Some own no *producing* Francique trees (13 % of inactive members and non-sellers and 3% of sellers report owning no mature Francique trees)
- Some respondents listed as Haiti Hope members own no trees *at all* (3% of, only having no Francique)
- Some members only joined the program in hopes of accessing credit (half of all 9,352 TNS borrowers never sold through a PBG).
- Some if not many members believe that Fair Labor contracts they signed with Haiti Hope bind them to sell mangos only to Haiti Hope. This means that if they have sold mangos elsewhere--and not with the PBG-- they have violated the contracts. There is also a strong sense that Haiti Hope is a patron and that they owe allegiance to the program through faithful sales to the PBG. This means that Haiti Hope participants who have sold mangos elsewhere are inclined not to report the fact to the surveyors.
- An unknown number of trees are rented out, some for as long as five years and in other cases are sold months ahead of the harvest and therefore the owner may not count present years as having any sale
- 8.5% (21 of 247) of those listed at Sellers report never having sold thru a PBG



What all this means is that the only way to get a fair approximation of income is to eliminate all true non-sellers for the year and accept as proxy for income change only those sellers who reported income from mangos for that year. In the charts provided on the following pages we have included data on both the averages for the entire samples and only for those who sold.[x]

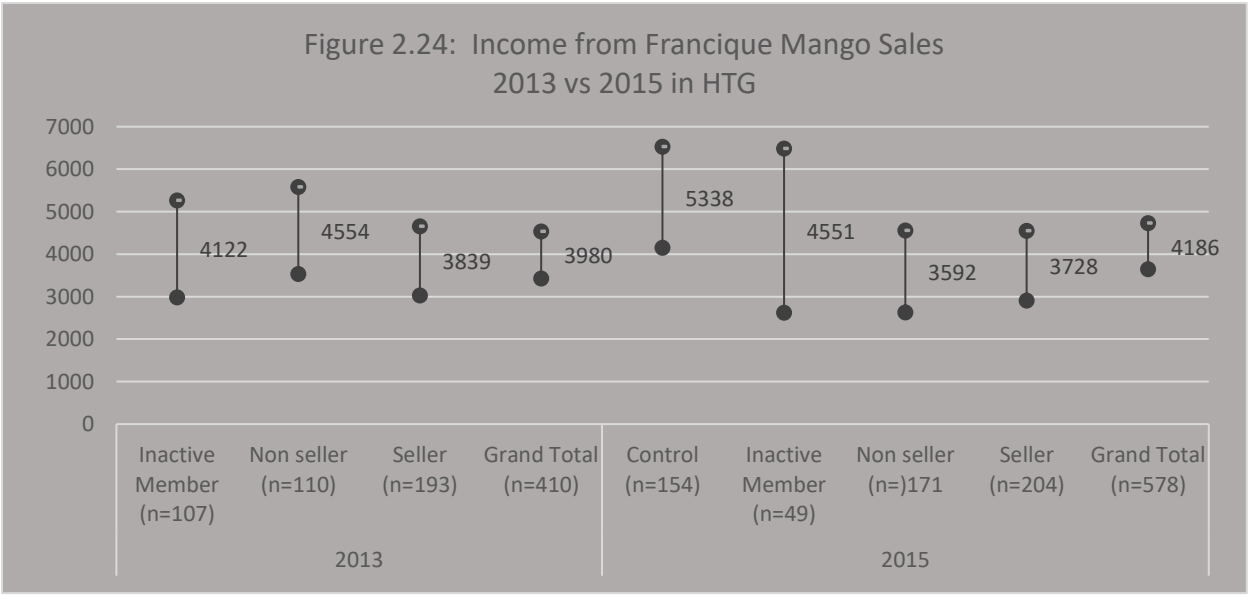
Moreover, to make these data bases comparable the consultant team conducted several subsample telephone surveys, the most useful of which was a 132 respondent survey of non-Francique mango sales. The averages for all respondents (not only those who sold non-Francique) were added to the totals where the data had not be gathered (2015 for all non-Francique and only non-Blan for 2013).

Income from Francique Mango for 2013 and 2015

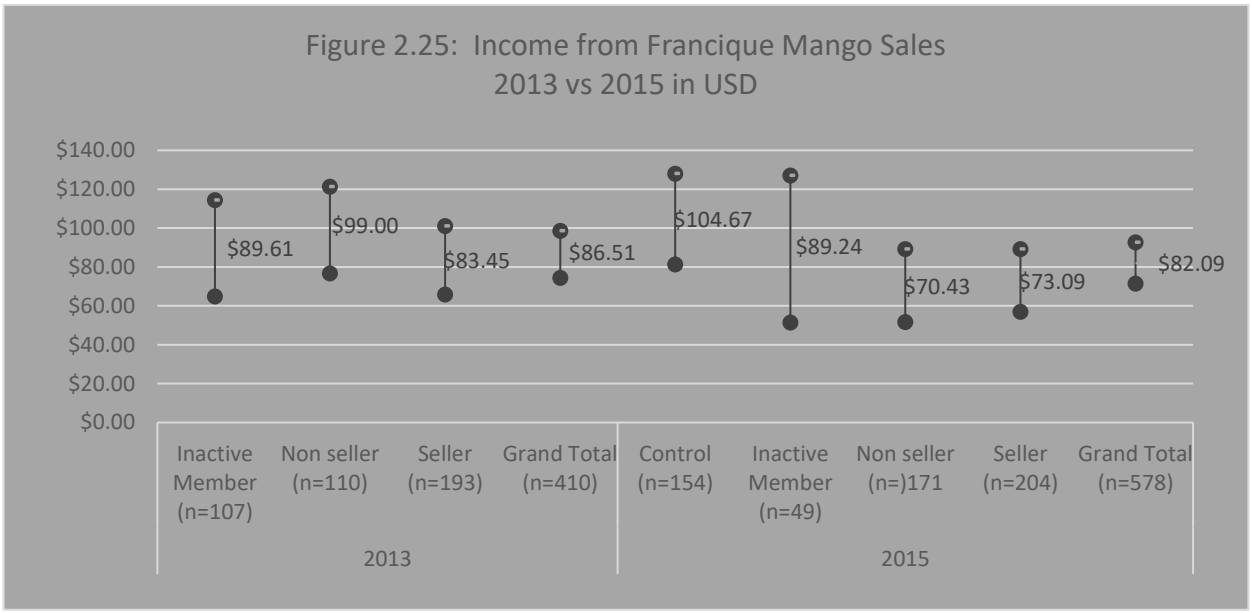
Figure 2.24 illustrates the change from the 2013 to 2015 samples for income only from Mango Francique sales (the figures exclude four outliers over 50,000 gourdes and exclude those who reported selling no Francique mangos for the year). The following features stand out,

1) There is no evident change in income from Francique mangos for any of the groups
2) Despite these being completely independent surveys with different samples, the income estimates for both years are remarkably consistent, each group earning an estimate income close to the same figure for both years
3) "Sellers" who, as seen own ~50% more productive trees than other Haiti Hope categories, earn less money than any other category. In contrast, the control group—which only has an average of 4.5 productive Francique trees--earn more money from Francique mangos more than any other category (probably because they have fewer young trees).

When we examine the data in HTG there appears to be no change in income levels. But when consider the change in the value of the Haitian Gourde in relation to the US dollar (a depreciation of 10%, from 46 to 51 gourde per US dollar), there is a clear drop in income that, although not statistically significant, is consistent across all the categories. In understanding why there is a decline, rather than an increase, a series of factors should be considered, notably the high rate of

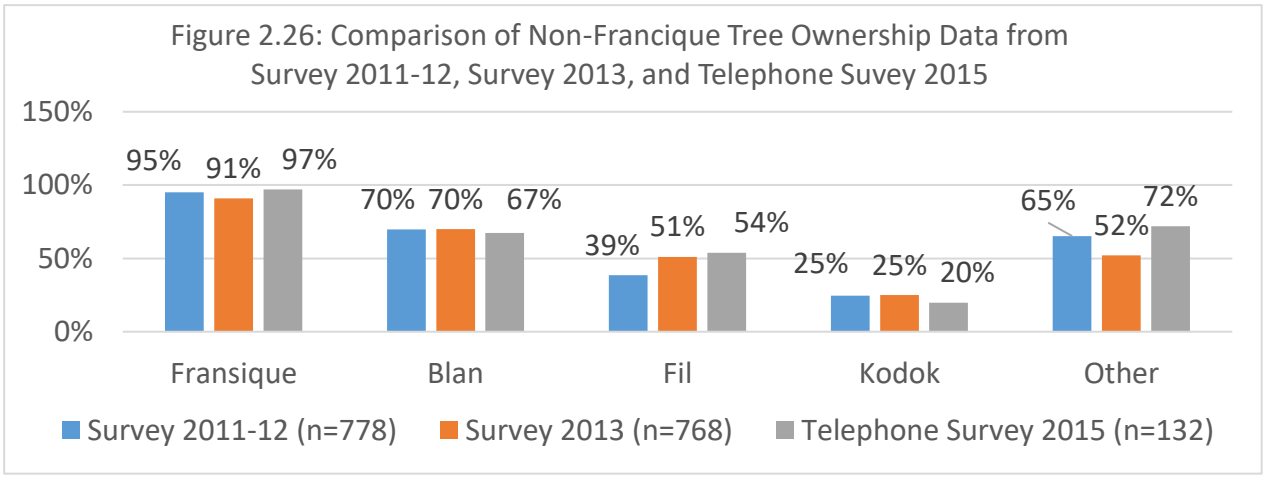


seller "defection" from selling through the PBG. And despite the doubling from 10% to 22% in the number of those who sold 500 dozen or more through the PBG, there seems to be a trend for the poorest mango growers to enter the TNS program. The trend is evident in the longer terms assessment of data and comparison with control groups on the following page.



Mango Blan and other Varieties

Mango Blan is a non-exported local variety of mango and following Francique the second most popular and frequently sold mango in the Haiti Hope activity area: 91% of respondents in the 2013 survey owned at least one mature Francique tree versus 70% owning a Blan mango tree, all figures highly consistent when comparing each of the three independent surveys that collected data on the types of trees over the course of the life of the project (see Figure 2.30 an 2.31 on page 41).



The significance of income from Blan mangos is evident in Figure 2.26, a comparison of income from Francique vs. Blan vs. other mango varieties in 2015, the only year for which we have specific data for all three categories (from the 132 respondent telephone survey). Somewhat surprisingly, the proportion of Blan to Francique income is higher among PBG members. One explanation may be that mango growers who enter the PBG are not heavily invested in the export market and see it as an opportunity to diversify, a priority arguably more important than profits for rural Haitian producers (discussed at length in the Part III).

Figure 2.27: Comparison of Mango Income by Types of Mangos for Year 2015 (USD: based on Field Survey, n=1,215 & Telephone Survey, n=132)

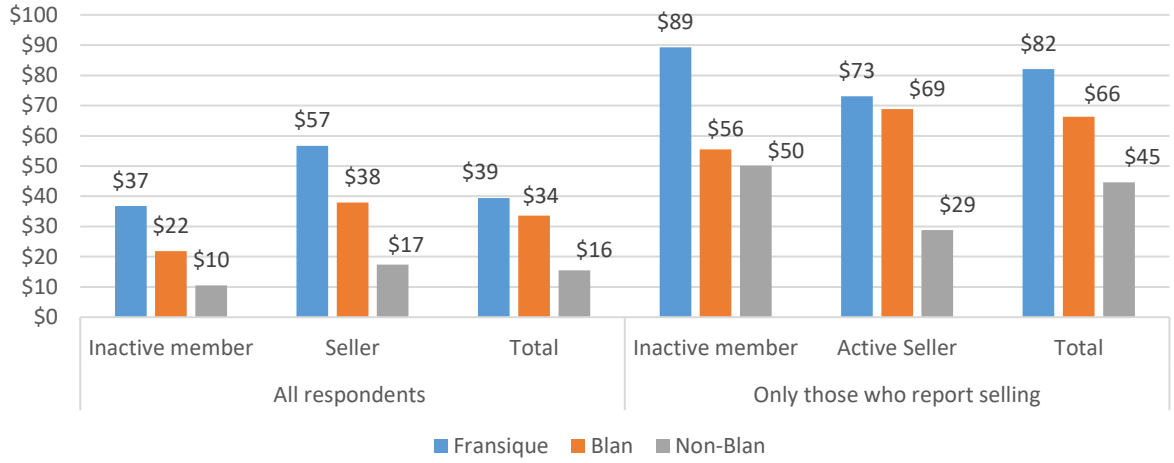
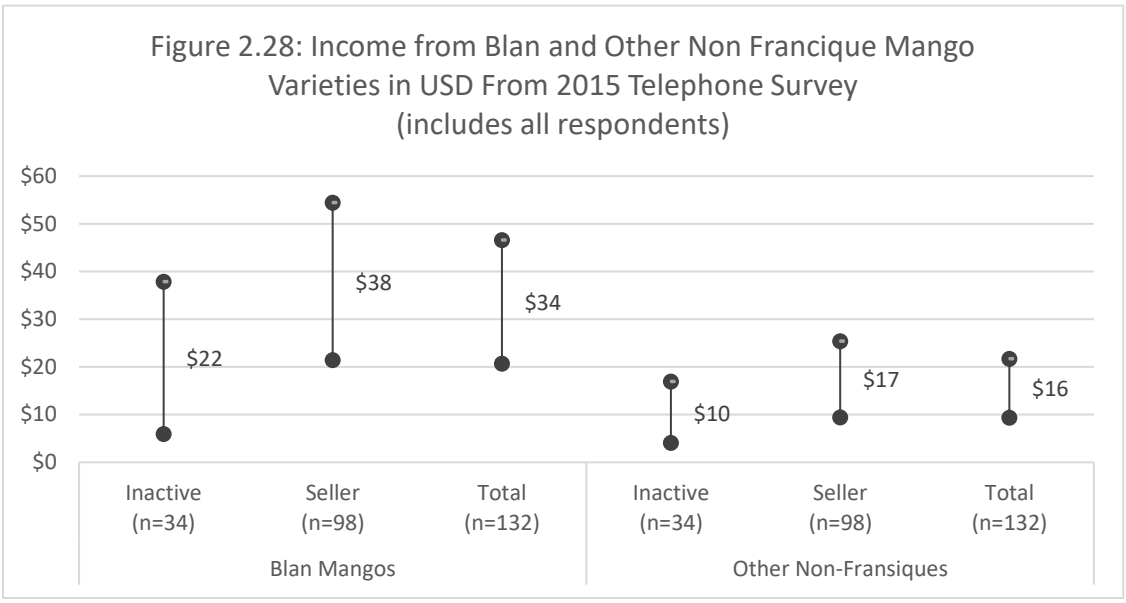
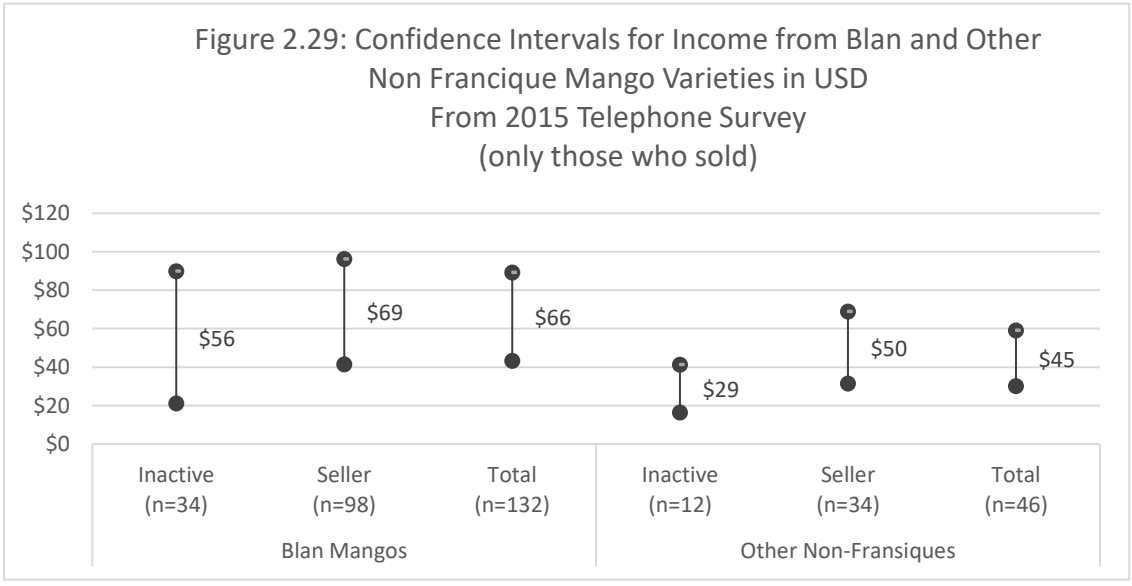


Table 2.14: Sample Sizes for 2015 Mango Income Estimates				
Super-Category	Sub-Category	Francique (Field Survey)	Blan (tel. survey)	All other non-Francique (tel. survey)
All respondents	Inactive member	121	34	34
	Seller	268	98	98
	Total	1215	132	132
Only those who report selling	Inactive member	121	13	12
	Active Seller	268	54	34
	Total	849	67	46

Explanation for Figures 2.28 & 2.29: Figure 2.28 provides an illustration of the confidence intervals for the 2015 telephone survey data, Figure 2.29 shows the same data but eliminates those respondents who reportedly selling no Blan mangos and, in the respective calculation, excludes those respondents who reportedly sold no other non-Francique variety of mangos. Once again, the importance of eliminating those who do not sell is to remove 'noise' of non-reporting from the data.





Explanations for Figures 2.30 & 2.31: The charts on this page compare data on Blan mango income from the 2013 survey (which collected income specific data on Blan and Francique mangos). Notable is that the midpoints of the estimates are greater than Haiti Hope's 2012 estimates of average income from Francique mangos. If we eliminate those individuals who did not sell, they are consistently twice the Haiti Hope estimated average Francique income in 2009. Once again notable is the consistency in the date from independent surveys conducted years apart.

Figure 2.30: Confidence Intervals for Comparison of Blan Mango Income Estimates from the 2013 Survey and the 2015 Telephone Survey (Includes all respondents)

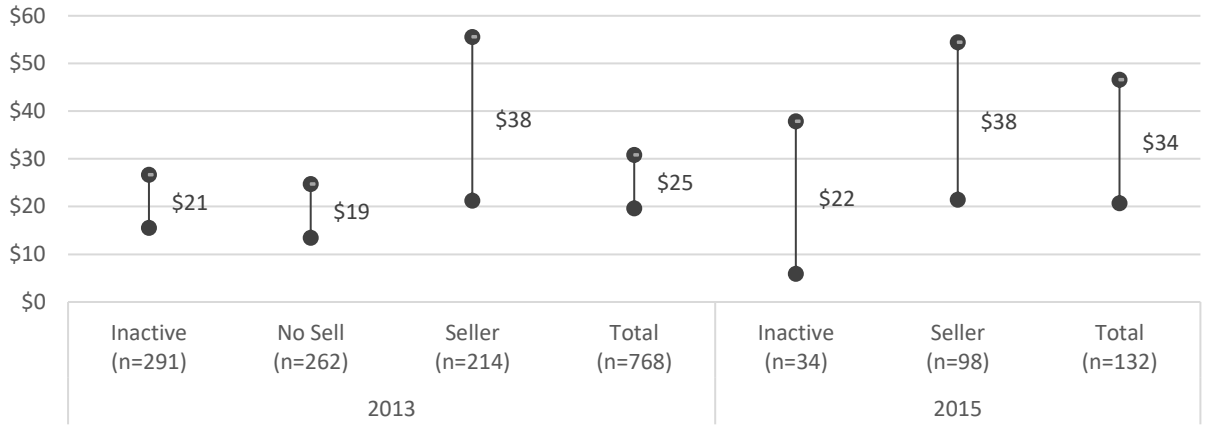
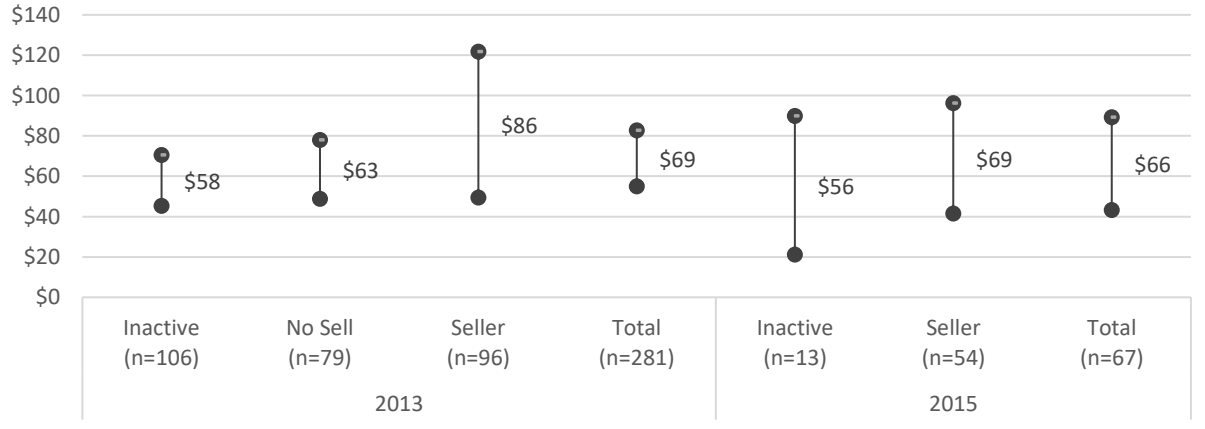


Figure 2.31: Confidence Intervals for Comparison of Blan Mango Income Estimates from the 2013 Survey and the 2015 Telephone Survey (includes only respondents who sold Blan mangos)



PART III

ASSUMPTIONS AND STAKEHOLERS:

DONORS, EXPORTERS, PRODUCERS, ASSOCIATIONS,

AND THE INFORMAL SECTOR

This section of the report focuses on the assumptions upon which the project was founded. Specifically, this is not a reference to TechnoServe, the implementing agency—which conducted diagnostic studies that identified most of the critiques made in this Part II of the report--but rather donor expectations to which TechnoServe responded. The donors assumed the export economy is the best means of increasing producer income and that small producers would find exporting Francique mangos highly appealing and would pursue project objectives. Underlying this expectation was claim that most Francique mangos go to waste. Related assumptions are that prices on the domestic market are ½ or less than that of the export market chain, that best practices will increase producer's income, that there would be a significant investment in processing infrastructure and that export packing houses could and would increase exports. As seen in the following pages, all these assumptions range from highly questionable to erroneous or wishful thinking and basing success on them handicapped the project. Indeed, the greatest accomplishments of Haiti Hope was arguably accomplishing anything at all despite the donor assumptions.

Limiting Assumptions [xi] [xii] [xiii]

If we want to understand the successes, challenges and shortfalls of Haiti Hope it behooves us to recognize that while Haiti Hope itself may have been an independent project, donor expectations and project design were heir of three decades of prior projects, reports, expectations and assumptions regarding the best way to promote mango production and sales. Quoting from the original 2010 IDB/MIF Donor's Memorandum, [2] the project proposed to help with Haiti's "journey out of poverty" through a focus on mangos. It recognized "that close to 200,000 farmers have some mango trees in production" and that mango "provides well-needed nutrition for local consumption in this food insecure country." However, the terms of reference to which Haiti Hope responded was emphatically focused on the export sector. Specifically, "The mango value chain, or industry, can serve as an engine for development through increased fresh exports and exports of processed mango." As a consequence of being the only exportable Haitian mango, the mango variety of choice was the Francique. Still quoting from the original Donor's memorandum,

1. Most of the Francique production does not meet the export markets quality standards.
2. There is a large waste of mango, between 70 and 80% of the fruit is lost from tree to exports, due to lack of technical expertise and resources that causes early mango picking and poor logistics (bad handling and domestic transportation) that damages the fruit. Remaining mango is either consumed locally or wasted.
3. There is currently limited local processing despite numerous previous and ongoing attempts to set up a local processing industry and local processing would ensure local value addition and complement exports by increasing the demand for export rejects.
4. Farmers' income could increase by improving productivity and the quality (reduced wastage) sold to exporters.

The implications of these assumptions were that the current system was economically inefficient if not dysfunctional and wasteful; that if this system could be improved then income for producers would increase; that local processing facilities would provide an additional outlet for mangos. All of this would lead to increased income. This line of reasoning rested on two other critical assumptions,

5. The ANEM mango export Cartel could export significantly more mangos than in the past
6. New processing facilities would in fact be built.

In retrospect, all the assumptions above were misleading, wrong, or wishful thinking. The latter two were fatally flawed, i.e. neither was realized. We begin with them and work backwards to the other assumptions and an understanding of the structural challenges underlying the project.

Mango processing

Haiti has no new mango processing facilities. A 2012 TNS feasibility study showed that a Coca Cola supported juice and pulp processing factory would be profitable only after 10 years, and even then contingent on a host of unlikely what-if's. A drying operation in Gros Morne closed in 2012 after the USDA-- citing hygiene concerns--blocked importation of dried mango from Haiti.[xiv] A drying operation that was begun in Mirebalais—started under US $127 million USAID funded and

[2] From the, IDB/MIF 2010 Mango As An Opportunity For Long-Term Economic Growth Document Of The Inter-American Development Bank Multilateral Investment Fund Ha-M1034). Donors Memorandum

Chemonics implemented Feed the Future program (USAID/WINNER) --closed its doors after several months of operation (see Textbox 3.2). The one drying operation that already existed—ORE's EU funded drying operation in Les Cayes area -- has declined in output almost to the point of closure (see Textbox 3.8). And no new juice factories. In fact, Haiti has only one mango juice factory, down from at least two that existed 15 years ago. No pulp factories. In short, when it comes to the processing of mangos, the situation has gotten worse.[xv]

TEXT BOX 3.1: THE "HOPE"

What made Haiti Hope different than all preceding projects is that it was founded on the "Hope" that there would be an immediate and dramatic increase in access to the world market. Four land mark events leading up to the project illustrate the extent of this point,

1) Stakeholders and donors who participated in The National Mango Forum held on April 20th and 21st 2010 in Port-au-Prince made strategic plan to "Export 5 million cases of USDA-certified mangoes by 2015."
2) At the same time Coca Cola announced the intention to use Haitian mangos in its Odwalla mango juice, raising the prospect of massive and potentially unlimited demand and processing facilities inside the country.
3) A large component of all the plans, those proposed at the National Mano Forum as well as subsequent plans, emphasized teaming up with "agribusinesses to build processing centers that will valorize mango rejects to make mango puree and concentrate" (USAID/WINNER p. 11).
4) For the 4 years 2011 to 2015 at least US $60 million was pledged toward these objectives (IICA/EU 2011), not least of all was $10 million Haiti Hope that was intended to supported the establishment of "at least three processing firms which would commence operations and would secure markets" MIF 2010).

In the end, none of the preceding. Haiti Hope was left with the challenge of realizing goals that were planned with the belief that these processing facilities would come into being and that exporters would handle twice the quantity of exports

TEST BOX 3.2:
MANGO DRYING: WHAT'S WRONG WITH THIS PICTURE?

Defunct mango drying operation on the cover of 2014 FEED THE FUTURE WEST / WINNER (report prepared by Chemonics International Inc. under WINNER)

Based on market analyses, Haiti Hope decided not to invest in processing enterprises. A good example of the problems that afflicted those processing enterprises that other projects invested in from Mirebalais. With support from USAID/WINNER's $127 million Feed the Future West project, the Mirebalais association ADAIM (Association pour le développement agro-industriel de Mirebalais) established l'Unité de Séchage de Fruits à Mirebalais.

At the cost of US$300,000 the operation was inaugurated with great fanfare on the 16 November 2012. The Minister of Commerce attended as did USAID directors and Chemonics head of the USAID/WINNER project, Jean Robert Estime.

Hopes ran high. The project was going to produce 18,000 pounds of dried mango per year (MCI 2012; USAID 2012). According to a project insider, problems that doomed the business before it ever started included,

- A stove instead of an industrial drier
- High cost of electricity
- Lack of business knowledge among association that ran the business
- Employers who expected USAID/WINNER-- not business profits-- to pay them

ADAIM dried some mangos. But the product never moved. It stayed in the cooler. And the fact that, according to the insider, they also had no effective means to control the quality of the producer or to determine when the sliced mangos were actually dry, meant that it was not good anyway. When USAID inspectors came to have a look they told ADAIM to burn their stock. The business subsequently shut the plant down. That was some two years before the picture on the upper right of this text box was published in the first page of a report heralding USAID/WINNER's successes.

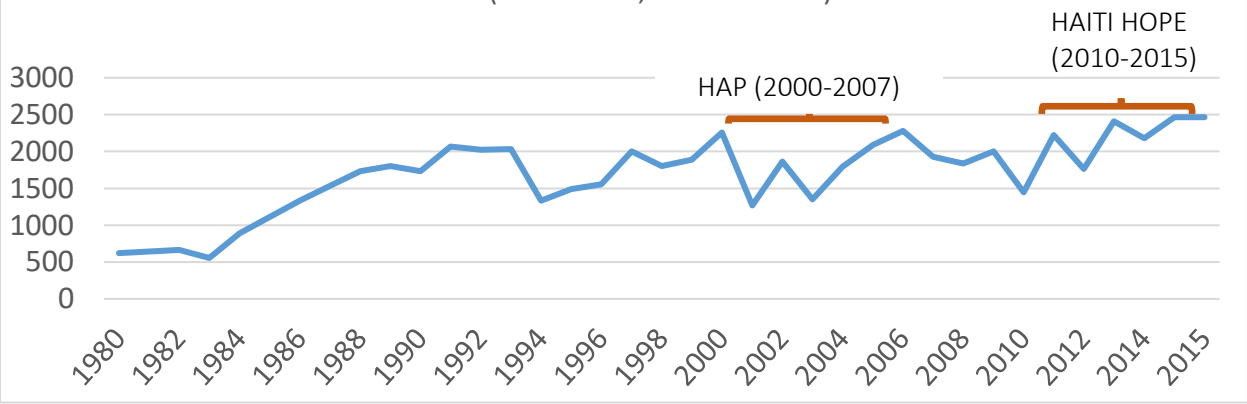
ANEM Mango Cartel

Ninety-five percent of all Haitian mango exports go to the US and they all must go through a cartel composed of eight export packing houses, ANEM (Association Nationale des Exportateurs de Mangues). The ANEM mango cartel is best described as a small group of bitter rivals incapable of making mutual decisions with long-term benefits to the industry and that, even if they could make a unified decision, is described by its own members as undercapitalized and dependent on inefficient technology with most members unwilling to make new investments.

ANEM exports increased over the life of the project by a mere 10 percent, or 8% more than the last high point in 2006, at the height of USAID funded HAP project. This failure to break the 2.5 million box export ceiling occurred despite a general consensus among industry expert that export demand outstrips country supply (TaiwanICDF 2012; USAID/MarChE 2011); despite the expectation from industry analysts that exports could be doubled, such that the MarChE report for the 2010 National Mango Forum was subtitled, "Export 5 million cases of USDA-certified mangoes by 2015"; and despite the fact that "less than 5 percent [of Haiti's mangos] reaches the profitable export market" because of "inefficient harvesting practices and transportation challenges" (see US Embassy Press Release, 2010).

Moreover, adding to this dismal picture, it was not only Haiti Hope that was supporting the mango industry. At the same time that Haiti Hope invested $10 million in the mango sector, Chemonics has had mango among its featured crops in a $127 million USAID project, ORE invested several million with support from multiple donors, as did CRS with USAID MYAP funds, and Merci Corp spent some $7.5 million enlisting some 15 associations and more than 37,500 growers to supply mangos directly to packing houses, the latter also in the Haiti Hope activity zone as was the 1.5 million Euros that IICA invested in Mangos between 2010-2012. Not to be forgotten is that in the 20 years leading up to the 2010 earthquake, NGOs and the international community have invested another US$60 million in Haiti's mango industry. Yet ANEM exported only 20% more boxes in 2015, at the end of a total $120 million in aid to the industry, as it did in 1990, when this $120 million investment spree began. It is interesting to note that in meantime, the neighboring Dominican Republic went from exporting 8,222 boxes in 1999 to 2.5 million in 2014. And they reportedly got more money for it, $12 million for Haiti's ~2.5 million boxes sold in 2015 vs a reported $17 million for the Dominicans ~2.5 million boxes sold in 2015 (see Text Box 3.3).

Figure 3.1: Boxes (4.5 kg) of Francique Mangos Exported from Haiti to the US per years
(shown in 1,000s of boxes)



TEXT BOX 3.3: MEANWHILE ON THE OTHER SIDE OF THE ISLAND, DOMINICAN MANGO INDUSTRY

While Haiti absorbed some US $120 million of investments in the mango sector and did not significantly increase mango exports, the Dominican Republic created a mango export industry. In 1989 they only had 1,250 hectares planted in orchards. By 2006 that figure had tripled to 4,400 hectares. As for exports, they went from 8,222 boxes in 1999 worth US $25,000 to some 1.5 million boxes in 2007 worth US$7 million to 2.5 million boxes this year, 2015, worth $17 million.

The Dominicans export Francique mangos. But they also export Keitt, Kent, Palmer, Tommy Atkins, and Haden mangos. They all go to the ethnic, gourmet and organic market. In 2008 there were already five Dominican companies making mango juice and others making chutneys, jellies and jams. Indeed, the only mango juice company in Haiti operates under the Dominican brand Famosa.

As for the mango exports, unlike Haiti, the US market has only a little to do with this success. Europe receives 70% of Dominican exports where the main clients, in order of importance, are the U.K, Netherlands, Germany, Canada, Spain, Belgium, France, Italy, Austria, Ukraine, Martinique, Poland, and Switzerland. The Dominican Republic even exports to Japan. And they export to other Caribbean islands, such as Guadeloupe, San Martin, Martinque and the Turks and Caicos (the USA is the third largest recipient of Dominican mango).

It is unlikely that Haiti will be able to keep up with the Dominicans, who in contrast to Haiti where the landscape is saturated with small peasant producers, have vast tracks of empty agricultural land available at much lower prices and with greater legal protection regarding land tenure. But more worrisome is that they may just knock the Haitian out of the market altogether. The Dominican mango industry is growing at a steady 15% per year. Last year they caught up to Haiti at 2.5 million boxes of mangoes. In the next 10 years they expect to hit 25 million (Dominican Today 2015; EFE 2014). With maturing orchards of Francique mangos and recent purchases of heat tanks to meet USDA requirements for mangos, the Dominicans have their set their sights on further expansion in the US market as well.

Newly planted Dominican mango orchards on 2015 website inviting foreigners to invest in the Dominican export sector (http://www/mangofarminvest.com)

TEXT BOX 3.4: HAITIAN MANGOS AND THE DOMINICAN MANGO INDUSTRY

A big part of the irony of the rocket like growth of the Dominican mango export industry is that this had not only happened while Haiti's exporters had failed to increase their own exports or to effectively organize the mango industry. It was arguably launched with the assistance of Haitian mangos.

According to Haitian Agronomist and Economist Alex Bellande who in 2006 conducted a study of cross-border mango trade with the Dominican-Haiti institute LAREHDO, the importation of Haitian mangos to the Dominican Republic began in earnest only in 1992. But by 2005, only 13 years later, 7,000 to 8,000 metric tons of mangos were going from the 15 Haitian border communes straight into the Dominican Republic. To put that in perspective, that's equivalent to 1.8 million boxes of mangos, or as much or more mangos than were being exported to the US in most years. The total retail value on the Dominican market was US $5 to $7 million, 2/3rds of which went to Dominican intermediaries and retailers.

The 15 Haitian border communes colored in yellow

This was precisely the period when the Dominican mango export economy really took off (see previous textbox). In the words of Bellande, "The Haitian mango contributed to the competitiveness of the Dominican mango on the international market" (Labady, 2008: 13). And it did so in two ways:

1) By helping meet domestic demand and the flourishing expat and tourist sector (pop 200,000) thereby freeing mangos up for export and encouraging the sector. (Indeed, in 2006 more than 20% of all mangos being consumed in the Dominican Republic were coming from Haiti.)
2) It helped supplement exports as at least some of the Haitian mangos were getting re-exported in chutney, jellies and jams made from the Francique.

Today, 10 years after the LAREHDO study, the flow of mangos out of Haiti and to the Dominican Republic has almost certainly increased. Indeed, if 1.8 million boxes were going to the Dominican Republic in 2006, there may today be more going to the Dominican Republic than being exported through Haitian packing houses, a point supported by the fact that the 15 communes on the Haitian border, the hills of which are heavily dotted with mango trees—do not send mangos to the packing houses and are ignored in Haiti Hope and other mango projects (AltePresse 2006).*

*For readers who think that recent import and exports conflicts between the DR and Haiti would have stymied the flow of mangos note that talk of border closings and import restrictions are urban and political rhetoric that have little to nothing to do with reality of the border. The point is especially poignant regarding Haitian restrictions on the entire 366 kilometers of border there are only 5 border posts where one finds any Haitian guards. Yes, five.

The Producers

Many of what in retrospect appear to be misleading project expectations appear to stem from a poor understanding of the most critical stakeholders in the entire project, the producers, and the informal economy in which they operate. A short review is here meant help clarify their livelihood strategies and priorities and provide an analytic basis for reference in the remainder of this report.

Haiti's 5 million farmers survive in one of Western hemisphere's purest and last remaining "peasant" economies (as used here, a non-pejorative technical term describing a particular type of economy based on subsistence oriented household livelihood strategies and restricted access to the world market). That peasant economy is part of an adaptation to survival in a harsh natural environment in which a hurricane or tropical storm strikes once in every three years and a severe drought strikes as often as 1 in every 8 years. More devastating than natural calamities are the manmade disasters that have plagued the country for more than two centuries. Haiti's colonial history involved 100 years of slavery ending with a 13-year struggle for independence that was arguably the deadliest conflict in world history: half of both the civilian and combatant population was killed, starved or, more than anything else, stricken dead by disease. Social upheaval and internecine warfare continued through the 19th century, with more than 25 wars and uprisings, and 60 years of international trade embargoes. The 20th century brought an equal number of violent conflagrations and embargoes.

For most of its history, and arguably still, the vast majority of Haitians have confronted the challenges described above with little to no support from the state or international institutions. To survive they have depended on risk management in the form of crop and livestock diversification. The average rural Haitian household having two goats and 4 chickens, and 1 hectare of land divided into 2 plots and on which they intercrop some of the world's hardiest and most drought resistant food plants such as manioc, sweet potatoes, yams, pigeon peas, sorghum, melon, and peanuts; all crops that provide not seasonal windfalls that are carted off to the granary as in historical North American or Europe, but slow and dependable year round yields that assure survival in a harsh natural, economic and political environment.

Haiti's "peasant" farmers also engage in what students of peasant studies call an "occupational multiplicity" of artisanal crafts and labor specialties such as porter, butcher, baker, tailor, basket maker, rope weaver, carpenter, mason, roof crafter, iron smith. There are craftspeople who make tin can lamps, bees wax candles, graters, bridles, nets, weirs, boats, beds, latrines. There are specialists who specialize in finding specific vines useful in other specialties and a host of traditional healing specialists that include leaf doctors, masseuses, midwifes, and various spiritual specialists from shaman to prayer reader.

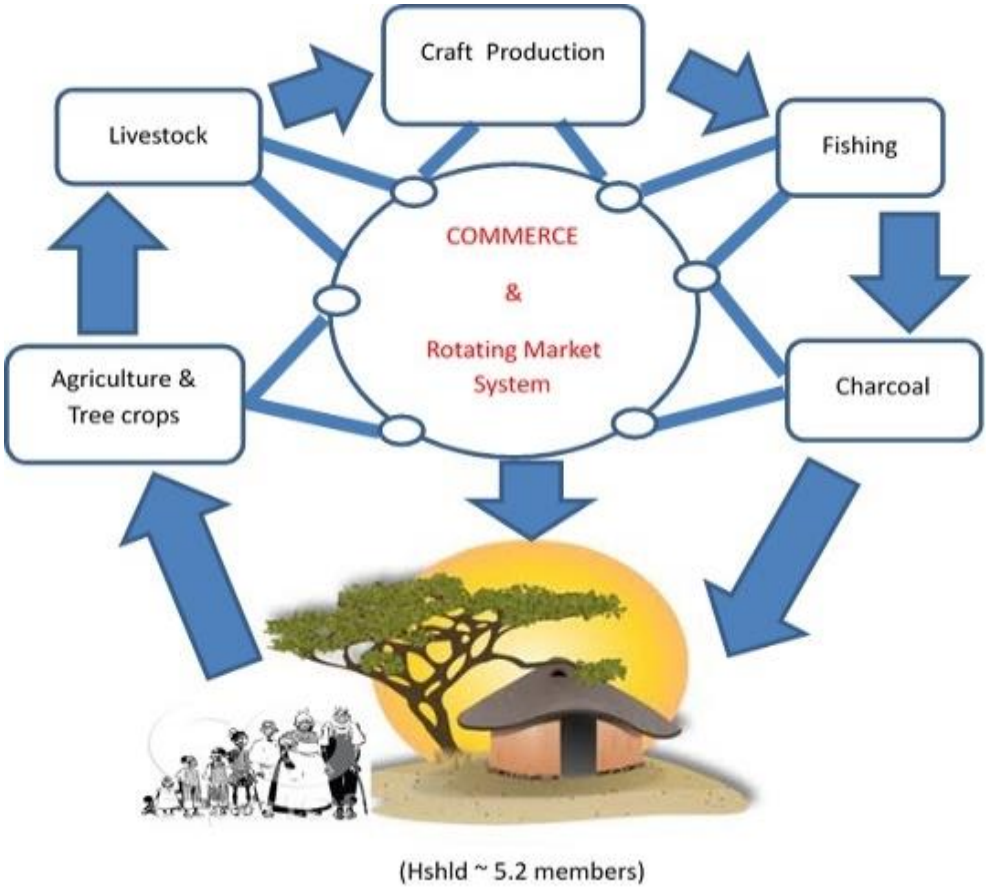
Haiti's vibrant internal rotating market system adds yet another level of livelihood security. Farm and craft products seen above are interchanged in a system of regional markets where on one or several days each week specific towns, villages, hamlets or even wide spots in the foot path become thronging open air markets, something that functions as a mechanism for redistribution of produce across micro-climates, making produce during the peak harvest season in one area available in other areas where crops are out of season or where drought or storms have devastated the crops.

To negotiate survival in this peasant economy Haiti's small farmers save, but not in banks or even under the mattress. They invest profits in social capital, i.e. spouses, children, and extended kinship relations. They invest it in micro agricultural production and livestock rearing seen above and,

very importantly, they roll their capital over in intensive female trading activities in the markets. When drought or storm does strike, most of these small producers, or "peasants," turn to production of charcoal for the urban market as a source of emergency income. Indeed, while a vector of ecological disaster, charcoal production has unquestionably done more to keep rural Haitians alive during crises than all the state and NGO interventions in its history.

In recent decades, NGOs and development intervention experts have increasingly encouraged the Haitian farmer to stop cutting trees for charcoal and to invest heavily in tree crops or intensive mono-cropping. The argument seems logical. Deforestation has precipitated ecological crisis and Haiti is currently dependent on imports for 57% of the country's food needs (IFAD 2014). But for the Haiti peasants to do anything different than depend on their tried and true diverse livelihood strategies would be to invite the ridicule of family, neighbors, friends and, far worse, set the stage for hunger, starvation, and death. For if Haitian small producers have learned anything in the past 200 years it is that they cannot not count on the international community and foreign markets to save them.

Figure 3.2: Integrated Household Subsistence Strategies and the Market



The past 30 years alone have been as discouraging in terms of access to the international market as epoch any in the country's history. During the late 1980s and early 1990s most Haitian exports were systematically eliminated either in response to increasingly strict US phytosanitary restrictions—such as with aloe and fish—or simply declining competitiveness in the face of industrializing agriculture elsewhere. Coffee for example was once Haiti's most important export but it has been declining ever since independence 211 years ago and between 2000 and 2010 freefell from $7 million to $1 million in value. While the US government maintained a ~$100 million sugar quota for producers in the neighboring Dominican Republic—then being accused of putting immigrant Haitians to work on the plantations in slave like conditions—Haiti lost all of her US sugar quota during the 1980s. The last Haitian sugar mill closed its doors in 1987. The past 25 years alone have included a 3-year international trade embargo during which 400,000 urban migrants returned to the countryside and dependency on stone-age agricultural livelihood strategies described above. In 2001 began a 2-year international aid embargo when development assistance and international loans were once again frozen followed by a governmental collapse and then a three-year breakdown in civil society. The 2008 global food crisis hit Haiti particularly hard with doubling in imported staple foods such as rice and wheat, giving way to riots in Port-au-Prince. In the same year, 2007, the USDA closed mango exports because of fruit fly infestation. A temporary embargo again sent jitters through the mango export houses in 2011 when fruit flies were discovered in three shipments to the US. In 2012 the US banned imports of dried mangos from Haiti.

The 2010 earthquake, considered a great tragedy by all, seemed to be a moment in history when everything might change for Haitian agriculture. It unleashed a flow of aid on the order unprecedented even in the history of Haiti, a country that has become as dependent on aid as any on earth. And it unleashed massive interest in business and increased agricultural production, not least of all the ~60 million invested in the mango sector. But the aid efforts did not crack Haiti's small-producer dependency on diversity and risk aversive livelihood strategies. As seen below, although not a failure itself, Haiti Hope is arguably a text book example of the complexities of developing rural Haitian agricultural and challenges that confronted post-earthquake efforts. At the base of these challenges is the need to survive the described harsh conditions under the authority of a State that barely exists and has never provided a welfare system to its citizenry. But also included in the very definition of what it means live in a peasant economy is obstructed or exploitatively intermediated access to the international market place. The point cannot be overstated. For those who study them, peasants are,

> …rural cultivators from whom an economic surplus is extracted, in one form or another, freely or coercively, by non-producing classes" (Kincaid 1993 p. 145). [xvi]

The ANEM Cartel Again

In the case of Mangos and Haiti that "dominant group of rulers" or "non-producing class" that brokers access to the world market is sharply defined by ANEM, the *Association Nationale des Exportateurs de Mangues*, the monoposonic cartel described earlier, composed of 8 exporters who quite literally determine the flow of mangos out of Haiti. Whether the existence of the cartel is a morally good or bad thing is a moot point. The taxes, transport costs and profits to the exporters make Haitian mangos the most expensive in the US. And the lack of competition and constrained markets mean that those exporters limit amount of mangos that get exported, something they sometimes do unintentionally, because of crashing the market and, in the rare moments they agree, intentionally, so that they do not crash the markets; but which, either way, constrains the access that Haitian producers have to the US market. Indeed, the access that Haitian producers have to the US market is entirely dependent on the disposition, competency and resources of those 8 exporters.[xvii] [xviii]

TEST BOX 3.5:
"HAITI, CLOSED TO BUSINESS"

CASE of ORE MANGO DRYING OPERATION

In 2006 the European Union funded ORE-USA (Organisation for the Réhabilitation of the Environment) to begin drying mangos with the ultimate goal of exporting them. The operation was successful, at least on the local market. CEO of ORE, Dr. Mousson Pierre Finnigan, reported that ORE has always sold all the dried mangos they produce on the local market. The demand even outside of Haiti is "huge." But ORE has never sold dried mangos outside of Haiti. One problem is to export mangos ORE has to get the proper licenses. Dr Finnigan--Haitian National, 2009 winner of Haiti's "Femmes de Mérite" award, founding CEO of an organization that has worked hand and hand with the Haitian State for 30 years spending in excess of $10 million of donor money, a woman who most people who have met her would agree "exudes honesty" (see Moodie 2010)--describes trying to get the Ministry of Commerce to explain the license export process as "frustrating." She's been trying for 9 years.

ANEM did not create the mango industry nor introduce the Francique mango to Haiti. According to mango export Tom Davenport (2000), the Francique has been in Haiti for almost as long as mangos have been here, about 250 years. Exporting began in 1954 when shipments first went to the Bahamas and the United States. It became a vigorous industry that was quickly regulated (some might say 'captured') through the circa 1970 creation of ANEM (formerly called ASDEM). The international community subsequently poured an estimated 120 million in "development" assistance to the industry (IICA 2012). Unquestionably the greatest impact of that assistance has been in helping exporters to reach the US market, destination today for more than 95% of Haitian mango exports.

Although HAP and Haiti Hope have managed to increase the flow of mangos toward the export houses, ANEM has not yet broken through the 2.5 million box export ceiling lamented in MIF project proposal. One reason they did not increase exports is for the simple fact that, as Lidwine Hyppolite noted in her 2012 graduate thesis, the exporters do not have the capacity or inclination to increase exports,

> The combined capacity of current packing houses is insufficient to absorb all the export quality mangos harvested during peak harvest periods. During these periods exporters

> cannot accept all available mangos, and second-level suppliers (*fournisseur*) are obliged to sell them to *madan sara*…

Important to understand is that the reason for the lack of increased exports is not, as so commonly assumed among observers, the deliberate collusion among the mango exporters. On the contrary, just as with the small producers, Haiti's export cartel suffers from limitations of Haiti's closed economy. The exporters themselves identify the following complications and obstacles inherent in the cartel,

- They sell in the same markets, Miami, Atlanta and Hunts Point in New York City where quite literally a single extra container of mangos can bring prices down
- Inability or unwillingness to pay for certifications and reach beyond these markets[3]
- Not coordinated in such a manner that they can effectively make decisions in the best interest of the industry, something that, perhaps ironically, those exporters interviewed during the course of the research were the most emphatic and articulate in describing
- At the peak of each season, typically in June, when exports exceed 200,000 boxes per week (boxes of ~10 mangos), the price begins to fall. At 250,000 boxes per week it crashes below what the exporters claim is breakeven point ($4 per box, still the highest prices mango in the US, two to three times the price of the Kent and Tommy Atkins mangos and consistently 25% more expensive than the Ataulfo mango from Mexico; see the National Mango Board 2015)
- Seasonal peaks that coincide with leading mango export countries Mexico, Brazil, Ecuador and Guatemala
- Short harvest and official market season
- Refusal of some ANEM members to open the season earlier
- Poor internal structuring that includes seasonal layoffs, and inefficient and under-mechanized processing
- High sales price on the local market, i.e. the export houses must compete with the local market

Moreover, associated with these limitations, if not a consequences of them, the exporters are best described as engaged in a bitter and intense economic struggle with one another such that most would—and have—enthusiastically pushed members from their ranks and taken more market share for themselves. Indeed, the history of Haiti's mango cartel is one that has gone from 17 in 1974 to 13 in 2008 to 10 in 2010 to 8 in 2015 with—according to its own members-- little to no possibility of those numbers ever reversing direction, not so long as ANEM decides whether or not new members are allowed. The extent of the rivalry and bitterness within ANEM should not be gainsaid. It is marked by real and imagined destroying of orchards with fire, machetes and goats; undercutting markets; and in a classic case of prisoners dilemma, entering agreements with co-members of ANEM to reduce shipments—so as not to crash the market--but then increasing them instead.

[3] Yet, despite the obvious failures of the system a glaring oversight in the strengths and weakness established during the 2010 National Mango Forum was that it made no recognition nor recommendations regarding diminishing ANEM control of the market.

Intermediaries: *Fournisseur* and *Voltije*

The bitterness among the members of ANEM is aggravated by rivalry at lower rungs of the value chain, most notable among and against the *fournisseurs* (field purchasers or intermediaries) who collude to maintain control over their own portion of the export market chain, and who exploit their trade position vis a vis both producers and the exporters. The exporters must work through *fournisseurs*, many of them independents who try to leverage their position, paying farmers as little as possible and setting the prices for packing houses as high as possible. The past year for example, *fournisseur* tried to open season prices 70 HTG per dozen, 33 HTG higher than the 37 HTG average high for the season. Many *fournisseur* are also speculators who rent trees for as long as five years and who annually speculate on trees, purchasing the harvest 6 to 9 months in advance for prices that translate to about ½ of the market price ~15 to 20 HTG. This is not necessarily unfavorable to the producers who avoid risk and otherwise must pay interest rates that range from 36% to over 100% for a similar time period. However, by limiting income from mango it also it limits the interest that producers have in investing in the industry and improving the quality of their fruit.

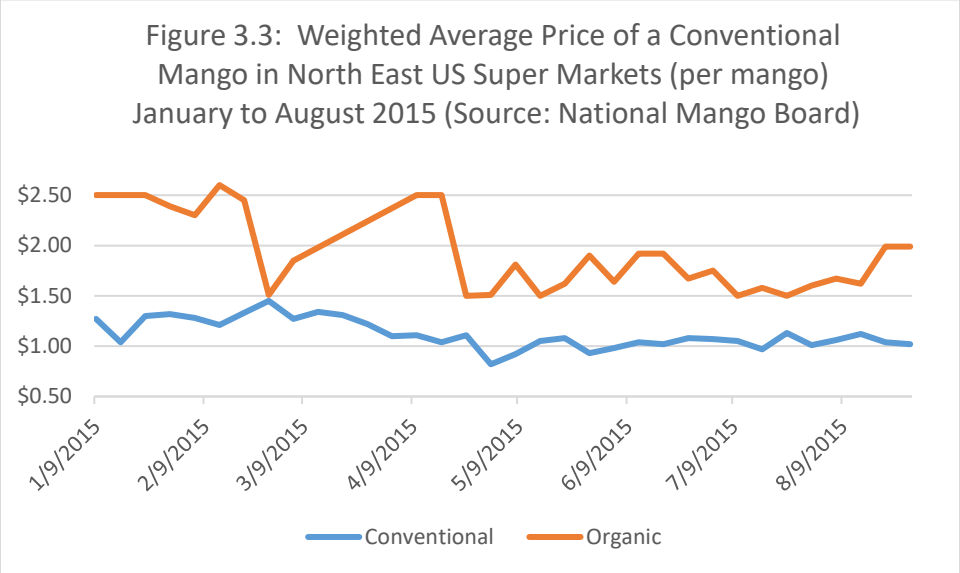
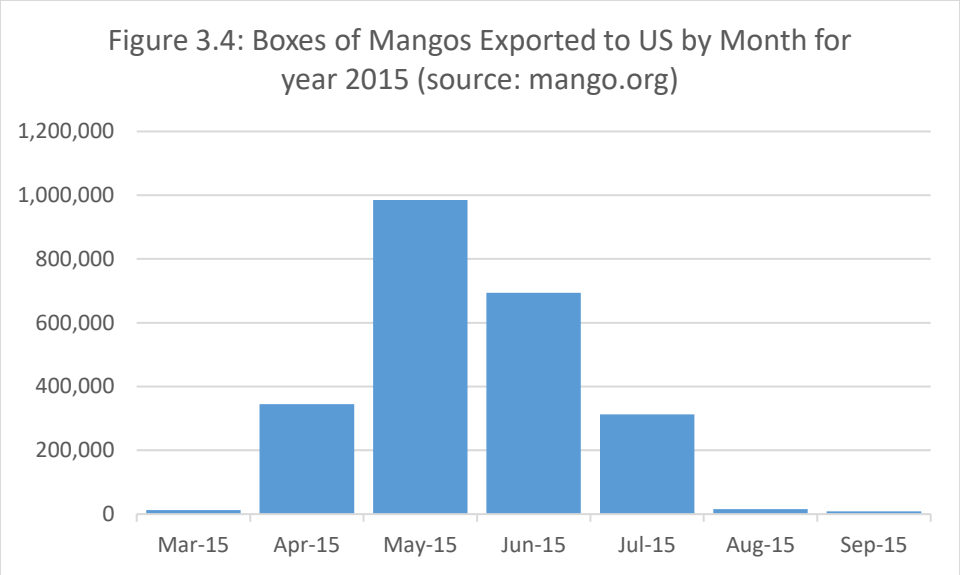


Figure 3.3: Weighted Average Price of a Conventional Mango in North East US Super Markets (per mango) January to August 2015 (Source: National Mango Board)



TEXT BOX 3.6: ANEM MANGO CARTEL

A cartel is a group of sellers or buyers that have been granted government sanctioned authority to organize themselves to behave like a monopoly or, as in the case of mangos in Haiti, a monopsony (a single buyer, rather than seller, that completely dominates a market).

In the case of ANEM the authority of the cartel is sanctioned by two governments: the government of Haiti through the authority of MARNDR (the Ministry of Agriculture), and the government of the USA, through the authority of the USDA (United States Department of Agriculture).

Because of the small number of members of the ANEM cartel (8) and the fact that they represent a tiny proportion of total growers (8 versus ~200,000) its existence, if in the United States, would almost certainly draw the attention of specialists in the Sherman Antitrust Law, a cornerstone to the competitive US economy.

The bottom line under the Sherman Antitrust Law would be, not how many competitors there are, but how the competition or lack of it impacts consumers.

In the case of Haiti's mango growers we can think of those consumers as the producers. They are consumers of a service provided by the exporters and it is in the best interest of those producers and Haiti as a country for that service to be as efficient as possible. Is it efficient? At least some of the exporters think it is not. Some quotes from exporters,

> "The biggest problem with us exporters is big egos and shallow pockets"
>
> "We meet as infrequently as possible because we can't stand to see one another."
>
> "It would be a great service to us if someone else made the decisions…. Professional consultants or a technical team…."

Associations/Cooperatives

> PBGs are registered businesses owned by 50-100 small-scale farmers • Coordinate bulk produce sales • Provide crop productivity training • Facilitate access to inputs, credit, and market information • Enforce produce grading (TechnoServe 2010)
>
> Association is a member-governed organizations registered with the State and that has a charter and board of directors including President, Vice President and Treasurer. In practice most Associations in Haiti are not registered and they have been often seen as a mechanism to capture aid for leaders rather than members

In terms of reaching the small producers with assistance in production, helping them get the fruits to the packing houses and raising their income levels, the challenge is made complex by the extent to which many associations depend on outside assistance, i.e. aid. There are at least 12 associations working with mangos in the Haiti Hope project area. The project worked with 12 of them. But at the time Haiti Hope began, only 2% of packing house mangos were coming from associations, down from 20% at the end of HAP in 2007. Indeed, HAP had the exact same experience as Haiti Hope. Working with 14 associations their share went from 2% of total export volume at the beginning of the HAP project to 20% at the end (see USAID/Haiti 2005:17). But when HAP was phased out, the volumes of mangos moving through the associations fell again.

Underscoring the apparent weakness of the associations is that when asked if they were a member of an association that works with mango producers, only 8% of the 2015 control group said yes (Figure 3.5). At 17%, for Inactive Members, 24% for Non-sellers, and 40% for Sellers, the figures were much higher for Haiti Hope members. But the majority of respondents were clearly talking about Haiti Hope itself. Similarly, when asked if there were any such organizations operant in the area, 91% of the control group said there were none or that they did not know of any (Table 3.1 on the following page). We can surmise that the majority of those mentioning at least one were referring to Haiti Hope PBGs, a supposition borne out by the fact that the overwhelming majority of those who said that there was an International organization working with mangos in their area were talking specifically about Haiti Hope/TNS (see Figure 3.6 on the following page).

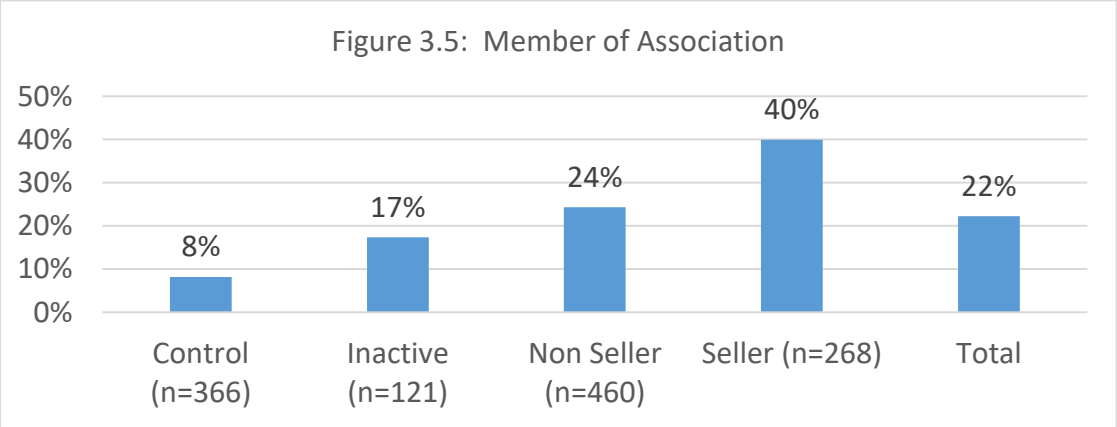
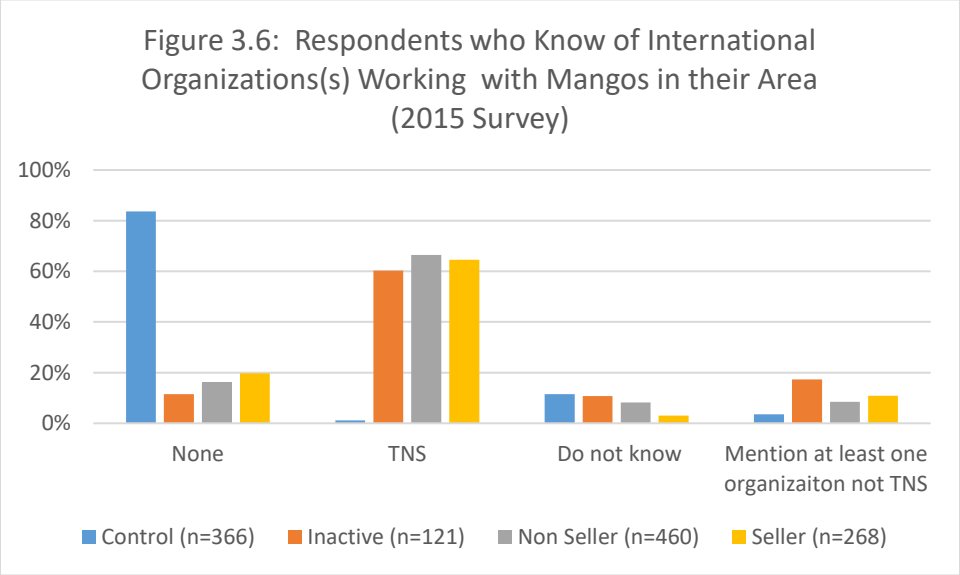


Table 3.1: Responses for Number of International Organizations in the area that work with mango			
	None	Only one	Two or more
Control (n=366)	91%	8%	1%
Inactive (n=121)	16%	63%	10%
Non Seller (n=460)	22%	55%	11%
Seller (n=268)	15%	56%	15%
Total (n=1,125)	37%	45%	9%



TEXT BOX 3.7: THE ASSOCIATIONS AND THE AID ECONOMY

The challenge of assisting a peasantry that is politically and economically isolated behind a tiny elite class that has no personal gain or interest in granting others business entities access to those peasants, indeed, whose hegemony would arguably shrivel in the presence of a highly capitalized, market and technology savvy competitors--is aggravated by an economy that has shifted from one where upper level entrepreneurs are engaged principally in farming, commerce, and exports to one almost entirely dependent on foreign aid. The shift is massive, a virtual transformation is such that the rural leadership during the 1950s and 1960s who were big land and livestock owners, and exporters were supplanted during the 1970s, 1980s and 1990s by evangelical preachers, orphanage owners and school directors, all supported by charitable funds from overseas and vying to be custodians of food aid, free medicines and used cloths, most of which wind up getting sold on the local market. With that shift in aid came a culture of aid entrepreneurism. Among the purest and most common embodiments of that aid entrepreneurism is the *asosyasyon*. As early as 1986 White and Smucker (1986: 109) described them as "project oriented" and trying to "capture" aid. Kaufman (1996:10) concluded that they "frequently are formed in response to community development programs and remain, to a significant extent, 'groups of symbolic participation'". And while trying to defend them, Jennie Smith (2001) admitted that they are "plagued with corruption, mismanagement and other problems." Even HAP evaluators highlighted the tendency to monopolize fund for the benefit of the leadership.

> Associations were scheduled to meet once a year to distribute *ristournes* and discuss costs and operations. The team found some who did this, but others had not met in two years, apparently to avoid criticism of association officers and managers unable to distribute *ristourne*. [USAID 2005:14]

HAP criticisms were mild. The situation is such that many association leaders develop a sense of territorialism. In any given commune in Haiti one can gather accounts of associations fighting for aid, as in the case of the Jean Rabel Massacre or the current intense conflict in the SE Department, one that goes all the way to the level of senate and presidential associates and is focused –for better or worse--on control of aid throughout the department. Reports of the conflicts seldom if ever get committed to writing lest someone get offended or the image of aid be smeared. Yet, there are many cases of association leadership or beneficiaries threatening and even attacking non-compliant NGO directors who try to end access to a corrupted channel of aid. The consultant has documented a series of such incidents in the North West (Schwartz 2000). The house the consultant is sitting in as he writes was home to a colleague and Haitian national NGO director who cut off food aid to a particular local association. The leaders of which, he believes, subsequently tried to kidnap his children, an attempt thwarted by a quick witted chauffeur (but not before a gun was discharged inside the vehicle in which the children were riding). Any Haitian national or foreigner one in the country for any length of time could recount plenty of other stories, such as one recent incident involving one the World's largest federations of humanitarian workers whose "beneficiaries" threatened to burn down the houses of new beneficiaries who they interpreted as intercepting aid they had come to come to see as their own. As for Haiti Hope and the associations, a heuristic commentary came from the supervisor of one of largest 2015 exporters, a business that doubled its mango exports from ~200,000 boxes in 2014 to over 400,000 in year 2015,

> Consultant: How would you sum up Haiti Hope's overall impact?
>
> Manager: I like Haiti Hope… I like TechnoServe. But the biggest criticism that I would make is that they destroyed the associations. They broke their membership. Such as the cooperative in [*beep*]….
>
> Consultant: The associations were helping the producers?
>
> Manager: Well, no, not really. The leaders tend to keep things for themselves…

The Local Market

In Part II of this report it was seen that data from all three Haiti Hope surveys, conducted over a period of three years, consistently demonstrate that local market price for dozens—as derived from 1 *Panye* – is higher than the export price for 1 dozen of mangos. The point is especially poignant given that the domestic market will accept almost any quality mango—green, spotted or burned black from sap-- without impacting the price. A closer look at anecdotal evidence and trends in the market corroborates this finding and suggests that, if the objective is to assist producers in obtaining higher income from mango production, overlooking the importance of the domestic market might not have been in the best interest of producers. Examples include the following.[xix]

- A vigorous local market is evident in Les Cayes region in the south where ASPVEFS, a cooperative originally created to support Francique production for the export sector has come to trade most in non-Francique mangos, especially Blan and Zilot mango. They sell to local female traders for 50 HTG per dozen, a price comparable to packing house prices for Francique. Market women turn them over in small lots of 2 to 5 mangos at a profit margin as high as 100%.

- The situation is such that the Les Cayes region has over the course of the Haiti Hope project ceased to supply mangos to the Port-au-Prince exporters. One explanation offered is that this as a consequence of reduced harvests, changes in climatic patterns brought about by global warming (Finnigan 2015 personal communication). But in the period 1985 to 2011 ORE received over US$10 million for tree grafting and maintenance programs, with Francique Mangos as central focus of all the those projects.[4] ORE and the South Mango producers are currently benefitting from part of a 20 year $200 million sustainable development initiative for 10 Communes in the southwest of Haiti. With this in mind, there should have been a surfeit of mangos in the south. And there may well be. But there is also good reason to believe that those mangos are staying in the Sought because significantly greater price than offered in the export market chain. In 2010 CRS reported the price of Francique mangos in the ASPVEFS cooperative near Les Cayes at 20 HTG per dozen (or USD $0.50). In 2015, the cooperative was paying 25 HTG, (50 cents). Voltije were paying 25 to 30 HTG. As seen, neither of them were sending mangos to Port-au-Prince, where they would have sold to JMB or Ralph Perry Packing House for 40 to 42 gourdes per dozen of 13 mangos. Instead they were selling them to local traders at 50 HTG per dozen.

- We also know anecdotally from exporters that competition from the local market is a major challenge. As seen earlier, to be successful *fournisseur* speculate months in advance harvests by purchasing trees at below market prices. One exporter reported that he distributes US$100,000 to *fournisseur* in the month of September, six months before the onset of the export season. The exporter explained this as helping the peasants get the money to pay for their children's school. But the advantage to the exporter and *fournisseur* is that, once again, they get the mangos at a significantly reduced price. One suggestion is that without buying

[4] Funds and support came EU. CRS-MYAP, USAID, VSF-CICDA/STABEX. ICCO, UCG/IDB, USAID HGRP – PADF/USAID FAO, MARNDR.

trees at 50% discount before harvests, exporters may not get enough mangos for their market. The implication is that one reason for the incapacity of exports not to meet demand is in fact high prices on the local market.[xx]

Table 3.2: Informal Sector Mango Prices in Camp Perrin and Okay (*Panye*)				
	Farm-gate		Resale Price in Les Cayes Informal Market	
Variety	HTG	US$	HTG	US$
Blan	200	$3.92	400	$7.84
Konn	150	$2.94	250	$4.90
Batis	150	$2.94	250	$4.90
Ti Fifin	125	$2.45	200	$3.92
Sik	125	$2.45	200	$3.92
Francique	100	$1.96	250	$4.90
La Bich	100	$1.96	150	$2.94
Fil	100	$1.96	150	$2.94
Sonn	75	$1.47	100	$1.96
Miska	60	$1.18	100	$1.96
Misket	60	$1.18	100	$1.96
Net	60	$1.18	100	$1.96

- Even non-export quality mangos sell on the local market, some at competitive and even higher prices than Francique. Rosalie in Cape Haiti are a small, easily bruised mango with a large pit. Yet they sell at the farm gate for 150 HTG (US$2.95) per *Panye* (600 HTG per *makout*; see Table 3.3).[5] They have significant enough retail value on the Haitian domestic market for traders to ship from Cape Haitian to Port-au-Prince. The Batis mango is even more highly prized in Cape Haitian, selling for an average of 175 HTG (US$3.43) per ~60 lb *Panye* (700 HTG per *makout*). To put these prices in perspective, one *Panye* can hold five dozen Francique mangos (14 fruits per dozen) that sell farm-gate on the export market chain for 36 HTG per dozen. If we calculate what the export market price in terms of *Panye*, this translates to 180 HTG per *Panye* of export quality Francique mangos. Comparing volume for volume (measured in *Panye*) this farm-gate export market price for the very best Francique with the farm-gate prices for Batis Mangos in Cape Haitian: the values are identical. Similarly, data gather for Les Cayes, indicate that local market Francique prices exceed the 180 HTG per *Panye* by 70 HTG but that Francique are only mid-range in value when compared to other varieties (Tablet 3.2).

Whatever the real prices were in the past, mangos are today a commodity, one that has entered vigorously into the local market system and, as evidenced by the informal vs. export market chain prices differentials seen in the previous section may have done so on a level comparable or greater than that offered in the export market. This point is somewhat surprising given that that development reports consistently rate domestic

Table 3.3: Informal Sector Mango Prices Cape Haitian Area (*Panye*)		
	Farm-gate	
Variety	HTG	US$
Rosalie	150	$2.94
Batis	175	$3.33

[5] *Makout* is a two pocket saddle bag woven from green royal palm fronds. One full *makout* (both pockets), holds 4 *panye*

prices far below the mango export value chain. Yet, as Oxfam (2014) and TechnoServe (2010) recognized, there is a vigorous local market. The prices paid by *fournisseur* for export quality mangos appear to be exceeded by those that local market traders pay to producers for mangos destined for the local market. This may explain why *fournisseur* rent trees for 5 year stints and buy trees as long as 9 months before the harvest, i.e. it is the only way they can get enough mangos and at a price that would yield profits. This would also explain the powerful impact of credit on availability of mangos. Indeed, the Haiti Hope credit program may also empower producers to holdout, not just against the *fournisseur*, but also against the PBG, thereby explaining why the defection rate of PBG sellers from one year to the next varies as high as 60 percent (see Part II).[xxi]

TEXT BOX 3.8:
A GLIMPSE INTO THE MANGO PAST

Despite a tendency among both development practitioners and peasants alike to present the vigorous Haitian domestic trade in mangos as something recent, a 1975 study estimated that more Mangos entered Port-au-Prince each year than any other fruit (See Table 12).

Table 3.4: Fruits Arriving In Port-Au-Prince: Mar 1974 – Mar. 1975

Type of Fruit	Pounds (lb.)
Mangos	19,567,488
Shaddocks	14,120,052
Avocados	12,565,691
Coconut	10,668,218
Oranges	7,006,828
Limes	4,051,112
Bananas	877,569
Others	3,544,892
TOTAL	72,546,024

Source: Blemur 1987

TEXT BOX 3.9: PROBLEMS WITH TRYING TO ESTIMATE MANGO INCOME IN THE INFORMAL SECTOR

There are more complications in coming up with income estimates than just analyzing the data.

- Multi ownership of 30% of trees, i.e., more than one person may be harvesting from the same tree
- Household rather than individual management of income means that a respondent may have allowed a spouse to sell mangos and reported no individual sales for the year
- And very importantly, because of the "defection" rates seen earlier on in the report (as high as 60%) and the fact the categories that Haiti Hope used in its stratification for "sellers" was anyone who sold since 2013, there are significantly more Haiti Hope members who did not sell in 2015 than there were in 2012 (67% more).

Reasons that multiplying trees by average harvests will not yield accurate income include,

- Mangos have traditionally been a type of free food within kinship networks. Anyone might stop at a tree and take mangos, especially children and kin.
- In a given season trees may got rained on during the flowering stage and subsequently be lost to anthracnose (a fungus), i.e. they yield no fruit for the year.
- Yields per tree are obscured by those planters with young trees. This is most notable among the category "Sellers" who have significantly more trees but ½ the per tree yield that other groups have. Knowing that sellers are the most committed PBG members, have more productive age trees and they have more saplings (at a rate of 17.7 for Sellers, 19.1 for Non-Sellers and 9.6 for Inactive Member). We can also infer that many of their producing trees are also young and have low yields.

Logic of the Local Market

The logic of formal economy models do not readily apply to the mango economy in Haiti. But it is not because they do not both operate according to the same laws of costs and benefits, so much as that so many factors are unknown or ignored in most analyses—as was the case at the onset of this study. Here we provide short cost benefit analysis of formal vs. informal sector prices and income.

Table 3.5: Procurement costs of a *Panye* vs. Sale Price

Market chain	HTG/*Panye*	Payout to trader for trip to local market or attention to PBG sale	Total cost of procurement and time spent selling	Sale price of a *Panye* (5 dozen)	Income left for production costs
Local	50	100	150	225	75
Haiti Hope	77.5	-	77.5	180	2.5

Informal Sector Cost and Benefits

The main targets of Haiti Hope post-production interventions were to reduce losses in the export chain. These losses come from poor harvesting techniques that cause mechanical bruising, latex burn from the sap, premature ripening or not ripening at all because the mangos have been harvested too early. The way to avoid these "losses" are through harvesting mangos at the proper ripeness, use of improved cutting poles with catch bags, washing mangos immediately after harvesting, and then proper transport, preferably in plastic crates. These target interventions are so common as to be main objectives also of HAP and current Chemonics project as well as the topics of at least two recent University of Florida thesis (both scholarship paid for by the USAID funded Chemonics program). Bonicet (2012) for example estimated that when cutting poles are used latex burns were reduced by as much as 340%, use of plastic field crates could reduce "losses" by at least 5 percent. But these are losses to the packing houses. Higher quality fruit

TEXT BOX 3.10:
PANYE, THE INFORMAL SECTOR CRATE

The informal sector answer to crates: the *panye* cost = 50 HTG. In the absent of return transport they can be readily resold in any market place. Note the above picture are tiny and fibrous *Wosalie* mangos packed in *panye* that cost 50 HTG each (versus US$6 -9), cushioned with banana leaves (free) and shipped from Cape Haitian to Port-au-Prince for sale on the local market

from the producers and more of it means they can be more selective and they can sell their fruit for a higher profit. The burden of doing that work falls on the producer. The producers have to trim the trees, select the mangos at just the right time, they have to oversee multiple harvests, they have to give the mangos on credit—essentially underwriting the market chain--and they have to coordinate all this in such a way that they can harvest enough to fill a 800 dozen truck load—the minimum necessary for the packing house to pay for transport. Other issues are crates. They cost US$9 each. Someone has to buy them and then someone has to bring them back from the packing house. You cannot even resell the crates. All these issues are resolved in the informal economy, where no one cares about latex burns, or if the mangos are green, or spotted, and where they are packed in bamboo *Panye* that cost 50 HTG (US$1) and can be resold in any market.

Export Market Mangos at collection center being packed into crates for shipping to the packing house. Source: Hyppolite et. al. 2013

Export Market Mangos packed into crates and headed for the packing house. Source: Hyppolite et. al. 2013

Informal Market Mangos being packing into *panye* for shipment to urban street and market vendors Source: Hyppolite et. al. 2013

Informal Market Mangos in *panye* and loaded on truck headed for Port-au-Prince street and market venders. Source: Hyppolite et. al. 2013

TEXT BOX 3.11: ASSUMING THAT THE INFORMAL SECTOR DOESN'T EXIST

A good example of formal sector model miscalculation is Bonicet's finding that,

Scenario A

- a regular truck load of freely pack fruit carries 21,000 fruits.
- the number of fruits rejected at the packing house in that truck was 4,620, 22% of the load, leaving 16,380 exportable fruits.

Scenario B

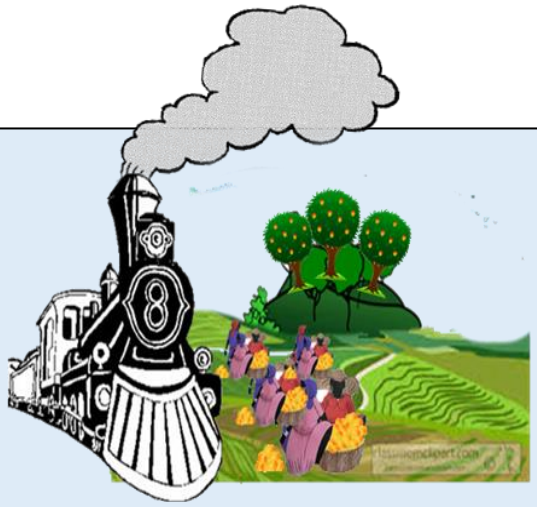
- the same truck loaded in crates carried only 18,200 fruits, 20% fewer fruits than if freely loaded
- of the 18,200 fruits, only 1,729 or 9.5% were rejected, leaving 16,471 marketable fruits.

The conclusion, according to Bonicet's formal-economic model, is that transporting the fruits in crates reduced losses by more than half, from 22 to 9.5 percent. The problem with the conclusion is that reducing those losses is arguably not in the interest of whoever owns the mangos. Shipping is the same cost for both truck loads; whether crates or no crates, the same amount of acceptable mangos reached the packing house. But the owner of the freely packed shipment had an additional 20% of mangos that could be sold on the local market and, as seen in earlier sections, for a price competitive or exceeding that of the exported mango—especially now that the mangos were in Port-au-Prince.

Truck load of freely packed mango (source: Lidwine 2012)

At the top of Haitian market, in fruit stands in upper class Petion Ville, market women peddle three *Francique* packing house rejects for from 10 HTG to 30 HTG (US$0,20-US$0.60) per fruit. This is without the intense selection process, without having been boiled for 90 minutes (to meet USDA phytosanitary regulations), and in many cases whether green, burned with sap, or bruised.

To the credit of Haiti Hope, the inefficiencies of using crates for bulk transport was recognized and promotion of crates dropped from the project. But the lesson from crates is a useful example of how what is rational formal-economy models, is not rational in the informal economy. Totally forgotten in the original calculations were that while *Francique* mangos make up only an estimated 20% of all mangos in Haiti and only some 20% of *Francique* get exported, those that do get exported must be the very best, unblemished or unbruised fruit. Once they arrive in top US supermarkets or organic food outlets they may sell for as high as US2.00. But it's the packing house exporter and international transport and the tax collector who wound up with, 90% of that sale price. Producers and especially *fournisseur* and *volitje* may be more focused on the "rejects." Indeed, they may be using the trip to packing house to subsidize the movement of mangos in the informal sector, an especially attractive undertaking as it is the packing house that pays the transport but the *fournisseur* gets to keep the rejects.



TEXT BOX 3.12: MARKET BOUND TRAIN

Haiti was born when 500,000 slaves engaged in a 13-year struggle for freedom and independence that was arguably the deadliest conflict in world history. About half of both the civilian and combatant populations were killed. Many violently, but many also starved and, more than anything else, fell ill from yellow fever and dysentery and died.

However, in the end it was the victory not of one, but two revolutions. It was the victory of the 250,000 surviving former slaves. Most were illiterate. Their skin was black. They spoke languages of Africa, where more than half of them had been born, and a French patois (Kreyol) they had learned from their masters and creole house slaves and overseers. They knew little to nothing of French and religiously honored a pantheon of *voudou* spirits.

The other successful revolution were the 20,000 surviving 'free coloreds,' mostly sons and daughters of French plantation owners and slave or manumitted mothers. Many were educated in France, they spoke French. Their leaders were former French officers. Up unto the revolution they all thought of themselves as French citizens. Most of them were light-skinned. They honored Catholic Saints. They were not slaves and most never had been. In fact, Royal decree made them the *marechaussee*, the militia, responsible for putting down slave rebellions and hunting runaways. Before the revolution they owned one quarter of the colony's plantations, and one third of its slaves. Indeed, they spent most of the 13 years of the revolution trying to subdue the rebelling slaves and drive them back to the plantations. Two revolutions and two victors. In many ways they have been fighting each other ever since independence.*

Almost like clockwork the country has experienced 15 to 30 year political reversals. For 15 to 30 years the black rural-oriented "Nationals" on top then for the next 20 years or so the mulatto urban "Liberal" elites. Those reversals have, as often as not, been associated with massacres and bloodshed. But in the broad sweep of history, the mulattos, with their connections and support from the international community have managed to politically and militarily dominate. However, the same cannot be said for the economy they adhered to. The informal economy prevailed. Indeed, not only did it keep both classes alive through embargoes, wars, revolutions and natural disasters, but the elite politicians, officers and merchants found themselves living off of it too. Murray (1977) describes the juggernaut success of the peasant informal economy in the decades following the revolution and the only reaction the ruling class could have had after failing to drive the peasants back to the plantations,

> Without the government's assistance, without its assent, a market-bound train had begun rolling, a train whose motion the government could not stop, whose direction it could not change. As a last resort, the leaders themselves simply jumped onto the train, reminded the passengers of their presence, and started collecting fares.

Haiti continues to be the site of a vigorous system of bustling open air produce, livestock and craft markets. These markets differ so little today from what they were 150 years in the past that a peasant from 1865 would have little trouble recognizing the products, the roles of the *machann* (local traders), and *madan sara* (itinerate traders). He or she would know exactly what to do, how to buy and sell. She would feel very much at home.

* The division was such that 136 years later, Yale sociologist James G. Leyburn (1941) would write that the only terminological concept adequate to describe the extremity of economic, religious, cultural, and color divisions between Haiti's masses and its elite was "caste."

TEXT BOX 3.13: AGGRESSIVE LAND MARKET

The most cited explanations for the "failure" of Haitian peasants to invest in improving the land they live on-- such as planting mango trees—are often the weakest explanations. And perhaps the most cited reason of all—and the most mistaken-- is land insecurity, or what 30 years ago one of Haiti's most consulted consultants, Gerald F. Murray (1985:323) called, "the whipping boy to deflect blame for project failure."

As the argument goes, lack of land title makes peasants fearful of improving the value of their land lest someone take it away. For Haiti, scholars have debunked the myth of peasant land insecurity over and over again (Murray 1977, 1978a, 1978b, 1979; Locher 1988; Bloch et al. 1988; McClain et al. 1988; White and Runge 1994, 1995; Smucker et. al. 2000). Haitian peasants are not insecure about their land. They've been buying and selling it for 211 years, ever since they defeated the last of the Napoleon's armies and drove off the plantation owners. In contrast to assumptions of state officials (see; CIAT 2012), and some if not most foreign aid specialists (see for IDB 2014), they would rather not formalize ownership, at least not in a "legal" sense. To do so would draw them into a system where the title and contracts cost more than the land itself. It's also a system they do not understand and that would expose them to predation from unscrupulous city lawyers and urban land grabbers. The rural Haitian cultivator is more comfortable in the "informal" land tenure system where today 95% of all land transactions in Haiti occur. It's a system complete with scrawled contracts, recognition from neighbors and even recognition from the local-level legal authorities who are physically present in the community, connected to others through kinship, and who the peasants can hold accountable through such old fashioned and dependable mechanisms as insulting in song, shunning or, if nothing else works, burning down their house. It's a system that the elites do not understand, something that reverses the educated city slicker vs ignorant hick syndrome that has been at the heart of land controversies throughout Western history, i.e. it gives the peasants a measure of protection.

Indeed, perhaps ironically, it's not the Haitian peasants who are insecure about land. Those who suffer land insecurity in Haiti are predominantly the wealthy, largely absentee landowners who for 200 years have, as with the informal economy in general, watched the peasant informal system swallow their formal system. The peasantry or, perhaps more accurately, the popular class masses, have been on a steady 230 year march, first taking the land from the French colonists, then from mulatto plantations class that survived the revolution.

To this day, elite Haitian land owners often watch helplessly as peasants and urban immigrants move onto the land, break it into small parcels and incorporate it into their vigorous informal trade in garden and house plots. When those elites have showed up shaking a title in hand and demanding their property back they have far more often than not found themselves confronted by 100s of rock hurling and machete wielding peasants. And they emphatically lose 90% or more of those battles. Go to a lawyer in Haiti today and complain about having lost your land to peasants or poor slum dwellers and the most likely advice you will get will be for free: "you want the land or your life."

TEXT BOX 3.14: MYTH OF THE INDISCRIMINATE HAITIAN CHARCOAL MAKER

Another common myth is that the mango industry suffers because peasants cut their mangos trees for charcoal (see MIF 2010; USAID/WINNER 2015; TNS 2014; Davenport 2000:1). And they do. But what's mythical is the implication that they are indiscriminately felling healthy and productive mango trees, particularly Francique trees. After seven years of researching factors that drive Haitian farmers to cut trees, Andrew Tarter, PhD, concludes that,

> Rural Haitians are extremely reluctant to cut their fruit trees. … Cutting a productive tree with edible fruit is a last resort, and other trees will be targeted for charcoal production long before machetes touch the branches and trunks of fruit trees.

Charcoal vendor in the Aribonite (source: Raphy Favre)

> The exception to this general rule are trees that are unproductive, no longer productive, or produce a fruit of low quality. For example, the blight that has plagued many citrus trees throughout rural Haiti…
>
> However, there is a trend regarding mango, that trend is that when aged and unproductive mango trees are cut they are increasingly replaced with trees that produce starchy fruit, such as breadfruit, plantains, and in many cases avocados. Such trees are replacing not only the mango trees, but also the coffee that was previously grown underneath mango trees. And the reasons they are replacing mangos and coffee are for the obvious market forces. To be exact,
>
> a) the export market for coffee has tanked,
> b) the local market reigns
> c) the local market wants starchy staple foods, things you can eat for dinner and, in the absence of anything else, can survive on.

Andrew Tarter, PhD anthropology, author of "Trees in Vodou: An Arbori-cultural Exploration" (article) and book manuscript entitled, "Adaptive Arboreal Practices: Haitian Farmer Responses to On-going Deforestation

Local Market Impacts

None of this is to say that Haiti Hope has had or will have no impact on the informal sector. Indeed, the informal sector may be where Haiti Hope has had the greatest impact. As seen, Francique have high value in the informal sector, something almost certainly related to erratic rates of sales through the program, i.e. participants prefer to sell on the local market where the point of sale price is higher and remuneration more immediate. Indeed, a common complaint in focus groups was that PBGs do not pay for mangos until after they are shipped and accepted at the packing house. Moreover, best practices learned from the program with respect to Francique trees are being applied to other mango varieties. In the 2015 telephone survey, active member "sellers" reported cleaning branches, cleaning under trees and sorting non-Francique varieties almost as frequently as they reported doing with Francique mangos (see Table 3.6)

Table 3.6: Best Practice with Non-Francique vs. Francique

	Non Francique		Francique			
Best Practice	Seller (n=98))	Inactive or Non-Seller (n=34)	Control (n=366)	Inactive (n=121)	Non seller (n=460)	Seller (n=268)
Cleans branches	71%	68%	48%	60%	70%	83%
Cleans under tree	72%	68%	30%	50%	59%	75%
Sorts mangos for sale	37%	18%	7%	10%	21%	44%

Another area where Haiti Hope will have a long term impact on the local market is in sheer production of Francique mangos. Benefits of most project interventions cannot be expected to occur within the short life of the project. Even pruning trees do not yield benefits for 1 to 2 years. A grafted tree takes 2 to 3 years to yield and the full benefits take closer to 5 to 15 years to be realized. But if response from those interviewed are accurate, the significance of the benefits from best practices, grafting and planting new trees cannot be gainsaid. PBG "sellers" reported having almost twice the number of Francique saplings as non-sellers and inactive members. This was true for both the average and the median. And they had more than 8 times the number of saplings than control group respondents reported--most of which came from Haiti Hope nurseries. Again, true for both the average and medians (Chart 3.7 on the following page) [6] [xxii]

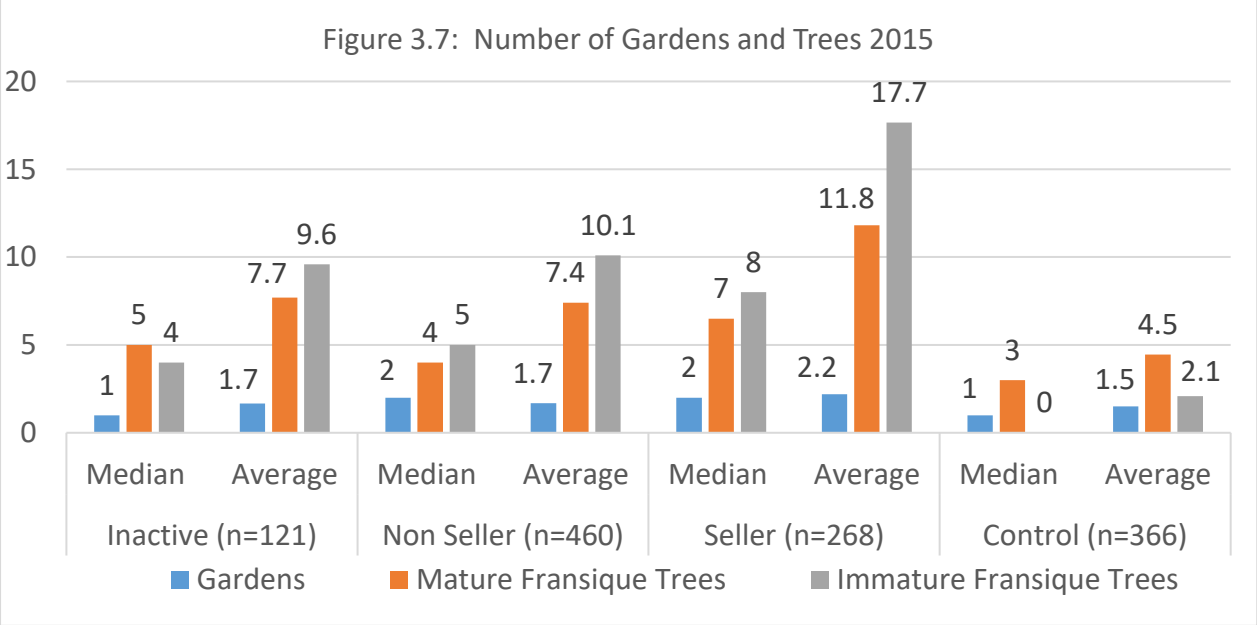
Table 3.7: Grafting Non-Francique vs. Francique

PBG Classification	Grafts (n=132)	Only Francique (=54)
Seller (n=98))	37%	83%
Inactive or Non-Seller (n=34)	52%	59%
Grand Total	41%	74%

What this means is that in another decade or two the 71,087 trees on the 648 Haiti Hope micro orchards will alone produce 1.4 million exportable dozen of mangos per year (20 exportable dozen per tree). That is more than ½ the total volume of the 2015 mango Francique exports. Add to that

[6] The fact that a grown tree, typically a non-Francique, has to be taken out of production translates to a temporary reduction of income from non-Francique trees. Pruning to increase sunlight and reduce whitefly infestation also results in short term reduction in harvest. Planted trees do not yield for 5 to 7 year and will not yield significant quantities for closer to 10 to 15 years. No matter whether or not the mangos get exported Haiti Hope is associated with significant boost in production, most of which will come over the next 5 to 20 years.

the fact that most exporters have planted groves--a single one, Société d'Exportation de Fruits et Légumes claims to have 100,000 trees—and in 10 to 15 years the volume of Francique mangos coming from agro-businesses will far outstrip the volumes currently being exported. In the next 10 to 20 years we may see a doubling, tripling and even quadrupling of the Francique mango yields in Haiti. The basic laws of supply and demand suggest that the price of Francique mangos will decline, indeed, crash. And while the producers may suffer lower prices, the food hungry local economy will almost surely absorb them. But it is unlikely that small agribusinesses and orchard owners can or will endure such a market crash. And hence it will most likely be them, the agribusinesses and orchard owners, and not the peasants, who are cutting down their mango trees to make way for other crops.



TEXT BOX 3.15: THE ROCK BOTTOM OF THE PRICE *PANYE*

If we consider the value of a *panye* is terms of a poor market woman selling mangos in the local market, where 95% or more of all Haiti's mangos get sold, there is clearly a price floor at which point it makes no sense to harvest and sell mangos. There is a point where the cost of simply getting them off the tree and moving them to market exceeds the benefits.

Table 3.8 give gives the cost of each task in the harvest and post-harvest process as defined by Lidwine for the local market and Table 3.9 gives the cost to Haiti Hope PBGs. Translating this to a 5 dozen *panye*, the procurement costs of that *panye* in the Haiti Hope market chain is 77.5 HTG and in the local chain 37.5 HTG. If we then add the cost of the woman taking the *panye* to market and waiting around to sell it a minimum 100 HTG—the going rate throughout Haiti for a 6 hour work day-- then the cost of procuring and selling the *panye* is 137.5 HTG. This does not include the cost of growing the mango.

Table 3.8: Cost Harvesting a Dozen Mangos for Local Market (source: Hypolite 2012)

PBG laborers	HTG/dz
Harvesters	2.5
Local transport	5
Total	7.5

Table 3.9: Haiti Hope PBG Cost of Harvesting a Dozen Mangos for the Export Sector

PBG laborers	HTG/dz
Harvesters	5
Catcher	2
Stacker	1
Local transport	3
Washer	1
Drier	1
Control	1.5
Expeditor	1
Total	15.5

What is the cost of having the tree? Lidwine et al (2012) put it at the cost of picking the mangos (see Text Box 2.2). In other words, nothing. Alternatively, the cost of the tree could be calculated as the opportunity lost to planting other crops on the same land. While not provided here, the significant point is that cost is in fact limited.

Mango trees are not a "passive" or "cost free" resource as so commonly assumed by those who purchase or study them with the export sector in mind. The point is especially poignant when one considers that the average peasant household only has access to ~1 hectare of land (1,000 square meters), room for about 100 adult mango trees. Moreover, evidence seen elsewhere in this report indicates that they are in fact often getting sold and that they have a value equal to or in excess of the export market chain.

In the case of Haiti Hope, while there is a greater amount of 'profit' because the woman has not had to devote a day to the market, this is once again a point where the logic of the formal economic models and the logic the informal rural Haitian economy may diverge. That prevailing livelihood strategy in Haiti means that the woman wants and even needs to go sell in the market. That is what she does. That is her career, what she has prepared for since she was a child. As an adult, it is her main economic activity, selling the produce from the household, trying to get the best price it and then taking that money and buying mangos and produce from other women and selling them for a profit too. When someone else does it, not only has she lost an important opportunity to earn income in an economy were income is extremely scarce, so have the women who would buy the mangos from her.

The Unknown Costs of Committing Haitian Producers to Franciques

A final and critical caveat regarding the non-Francique Mangos and commitment to Francique trees are that it is not clear why non-Francique mangos are popular at all. The consultant found no comparative studies on the health benefits or ecological adaptability of the some 50 to 100 mango varieties in Haiti. However, we can surmise from the popularity of non-Fransique and the fact that this multitude of varieties has gone through 250 years of evolution in Haiti, that they are somehow adapted to both the environment and the people who have acted as an additional force of natural selection (if not through deliberate cultivation, then at least through preferential consumption and trade). When discussing these issues with producers interviewed during the course of the research the producers reported the following reasons for appreciating specifica non-Fransique varieties: seasonal variety, resistance to high rainfall, resistance to pests, resistance to bruising, resistance to the fungus anthracnose, adaptation to altitude, and variation in shelf life. Nor is it clear from any reports if committing to single mango variety--the Francique—increases the probability that an epidemic could wipe out an important source of food security for the poorest and most vulnerable populations in Haiti, rural farmers and their families.

Figure 3.8: Haiti Mango Varieties (source: Jean-Pierre 2013)

GENDER

Household, Gender, Ownership & Overlapping Pbg Membership

Woman selling 5 different varieties of mangos, Ennery, Artibonite

Seller, Non-Seller, Inactive Member are, based on program attendance and best practices seen earlier on in the report. They useful proxies for involvement in the project. But it is also necessary clarify some of the behavior of Sellers and how factors in the informal peasant economy obscure an assessment of reports on income. Most important issue here is that we are using as units of analysis individuals when it may be that income is not best assessed on the level of individual. Specifically, the issue may be obscured by a) who is actually getting the income (wife, husband), b) how many people own a particular tree, and c) overlap in household membership in PBGs. It is useful to reiterate that this section of the report is not focused on Haiti Hope gender accomplishments but rather an how presumptions of the project and project strategy impact estimates of income.

The Household and Gender

Complications regarding income and who owns or is tagged with owning that income has to be understood in the context of the Haitian peasant economy and livelihood strategies. People living in rural Haiti organize production around the household. The household is the single most important structure around which labor is organized in rural Haiti, it is also the single most important and arguably the only true social security mechanism in Haiti, and with only the rarest of exceptions, every person in rural Haiti belongs to a household..[7]

Household labor tasks and responsibility are partitioned along the axis of gender. Women may work and even exclusively own a garden but the prevailing pattern is that, when present, men work gardens and tend livestock. Men are often thought of as the owner of a garden, but only in the sense that they dominate that stage of production. They plant the garden in the name of a woman, her children and the household. It is the woman who is thought of as the owner of the produce from that garden, but, in the name of the household. And it is overwhelmingly the woman's responsibility to sell that produce, unless it gets sold directly to a cooperative, PBG, *fournisseur* or packing house in which case a man may become involved—indeed, may dominate. After the produce is sold the woman typically manages the money in the name of the household, rolling the

[7] There are only two notable trends in supra-household organizational unit in rural Haiti,

- Cooperatives and associations—the organization of which is almost entirely induced by the opportunity to capture donor funds, i.e. are the consequence of intervention from international organizations
- Reciprocal labor groups--teams composed of men and sometimes women who work on one another gardens and sometimes sell their agricultural labor services to other farmers.

money over in marketing activities and spending it on household food to make meals and other expenses as they arise.

This issue of woman and control of household income cannot be gainsaid. The pattern of female management of funds are so strong that single male headed households essentially do not exist. Surveys—including the 2015 study-- typically find about 8% of households are single male headed households vs. 27% of single female headed households. The single male headed households tend to be anomalies comprised of older widowers and, even more commonly, young pre-wed bachelors. Congruently, they have an average of only 3 members, in contrast to the single female headed households have an average of 5.4 members, higher even than the overall population average of 5.2 members per household.

Illustrating the importance of household labor, Figure 3.9 from the 2015 survey shows that household members—respondent, spouse, or other family—were the principal source of labor during harvest. Second were the *madan sara* and *volitje*. Only in the case of PBG members (Sellers and Non-Sellers) was this challenged with 50% of Sellers reporting dependence on the PBG for harvesting. But even here, 24% of Sellers reported that family harvested the mangos. In no case did paid labor comprise more than 16% of harvesters.

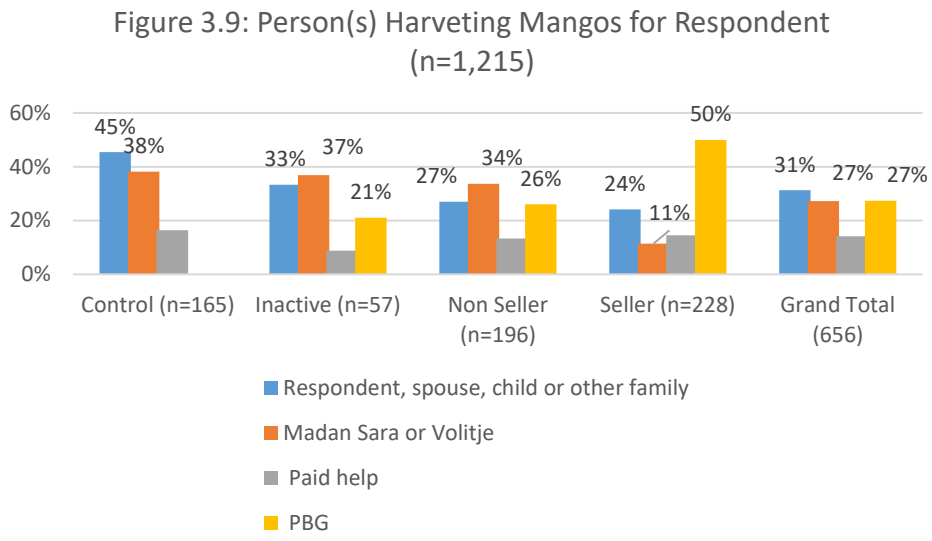
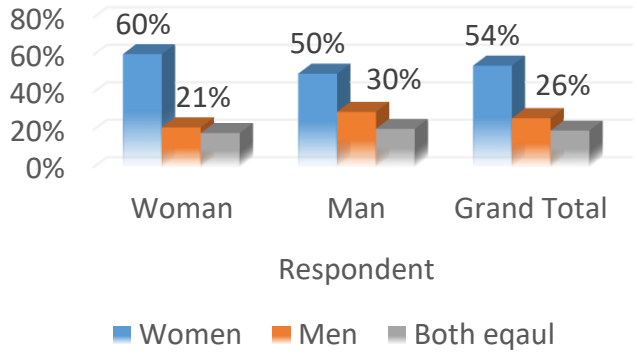


Figure 3.10 highlights the significance of income being earned and managed in the name of the household. When asked about who is most competent at managing a household budget, more than 50% of both men and women said that women were most competent. In contrast, the maximum proportion of respondents in any category that thought that men were more competent than women at managing the household budget was 30%--all male respondents We found similar results when we asked who actually manages the budget (see Table 3.10).[xxiii]

FIGURE 3.10: WHO BEST MANAGES THE BUDGET (N=1,215)



As for male domination of gardens and trees, women owned an average of 5.7 productive trees vs males 10.6 trees. But it is women who are the ones overwhelming selling all the mangos. At least, those being sold on the local market. For example, Table 3.11 regarding the sale of rejects, shows that more than 90% were sold by women and the remainder to unknown or unclassified purchasers, such as associations, neighbor, and packing house.

Table 3.10: Person Report as Responsible for Managing the Household Budget (n = 2,115)			
	female	male	Total
Respondent	59%	38%	46%
Spouse of respondent	6%	22%	15%
Both	31%	36%	34%
Other	5%	5%	5%
Grand Total	100%	100%	100%

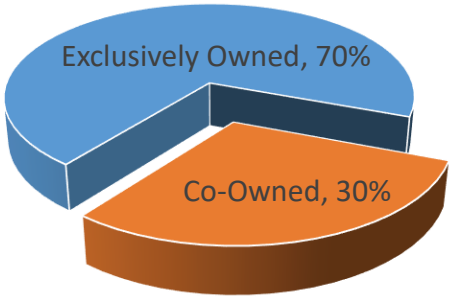
In summary, income earned through household coordinated productive activities is thought of as belonging not so much to a single individual but the household itself, and it is typically managed by a woman. What this means for analysis of income is that using specific Haiti Hope participants as measures of income change may obscure or be obscured by who is really producing the income and, as seen in the following section, who really owns the mango trees.

Table 3.11: Purchaser of Rejects		
Purchaser	Percent	Proportion female
Woman of house sold on local Madan Sara	33% 50%	100% women
Voltije	6%	40% women
PBG Other	6% 5%	N/A & unknown

Ownership

A single mango tree may and often does have more than one owner. Out of the 2,119 gardens cited, 632 (30%) were not the exclusive property of the respondent but owned with at least one other person, 265 of them (13%) with more than one other person; 1,487 (70%) where the exclusive property of the respondent. [xxiv] [xxv]

Figure 3.11: Proportion of Gardens Co-Owned
(N = 2,119, units of analysis are gardens)



Overlapping Membership

Yet, another issue that obscures or at least must be at least acknowledged regarding income is PBG membership of more than one household member. In the 2015 survey, 252 of 849 members—including inactive members—have a spouse who is also a member. And if we consider sellers, in fully 47% of cases of men who have a spouse, that spouse is also a member of a PBG. For women, in 43% of those cases where the woman has a spouse that spouse is also a PBG member. We can infer from the discussion of Household income that this means that many Haiti Hope sales lists attributed a sale to one member of a household when in fact it belongs to two or more members, indeed, to the household in general.

Figure 3.12: Proportion of all TNS Members who Have a Spouse who is also a Member (n = 849)

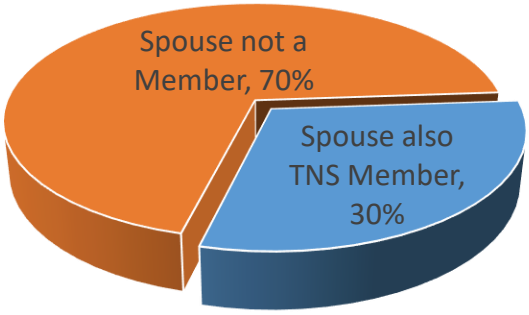


Figure 3.13: Proportion of all TNS "Seller" Members who Have a Spouse who is also a Member (n = 268)

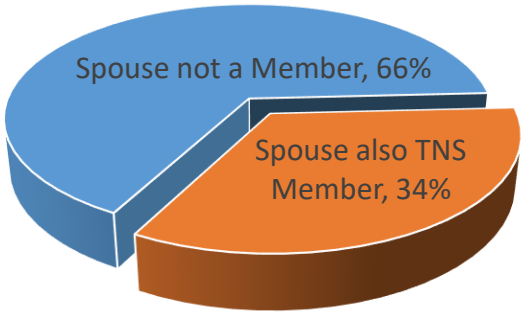
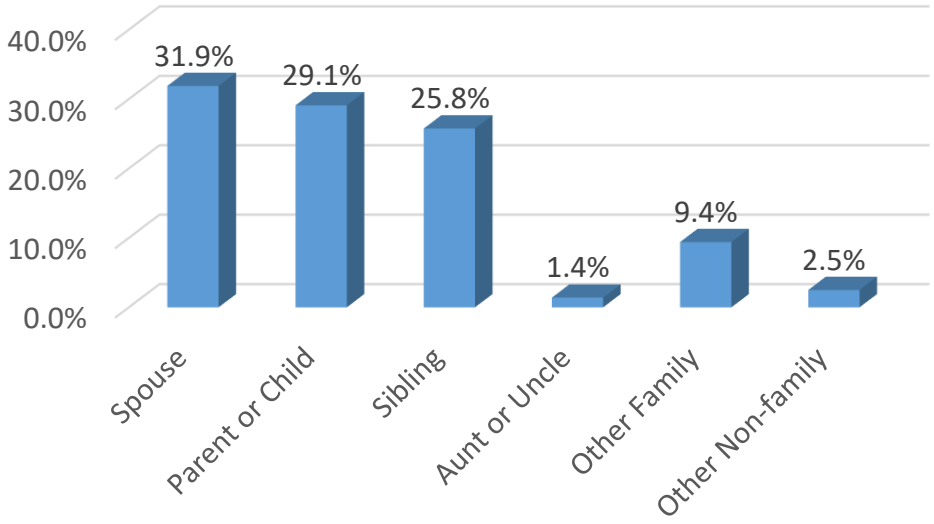


Figure 3.14: Co-Owners of Francique Gardens
(n = 897, units of analysis are gardens)



Addressing Gender

The Haiti Hope gender strategy (see Haiti Hope 2012) includes insightful discussion of gender in Haiti. It recognizes that "men farm, women market," that "men rarely infiltrate the informal markets that characterize domestic trade, which is unquestionably dominated by women" and that this "gives them [women] effective control of not only their household budgets, but of the household's broader economic prospects." The document also recognizes an "under representation of women in producer organization leadership." This meant that the project posed a "threat" to female economic status and, by extension, female control over the household budget,

> …by operating through producer groups in which women are under-represented in leadership and decision making, and promoting certification and export marketing channels more accessible to men, the Haiti Hope program threatens to reduce women's control of mango incomes. [Haiti Hope 2012: 3]

And,

> …. More specifically, by encouraging the formalization and certification of the mango value chain, the program aims to link cells to export markets, which may diminish the importance of women's local marketing activities. This could in turn shift the marketing of mango from women-led to men-led, thereby diminishing women's earning power from mango. [Haiti Hope 2012: 5]

However, while Haiti Hope recognized that the power of rural Haitian women was grounded in the *economic* and *concrete material* control of informal sector commerce and that the project might threaten that power, Haiti Hope program strategies for preserving that power were *ideational*. They had little real capacity to offset the consequences of the structural changes to the market that would ensue. Specifically, all Haiti Hope's high impact activities were focused on training. Haiti Hope ranked as "high impact"

- animator gender training
- training in numeracy and financial management
- training in leadership
- member gender training
- animator capacity to promote gender roles
- program of gender culture

Meanwhile, almost as if the project was meant to protect men against competition with commerce savvy female professional traders, "recruitment of market women" was assumed to be "low impact"

In short, Haiti Hope recognized that because it was embarking on a program that would alter the market chain in favor of men, it could negatively impact the economic power of women. It then concluded that it could mitigate that impact, not by structuring its activities in a manner that would allow women to preserve their power (i.e. "recruiting market women"), but by talking to people (i.e. training).

Perhaps equally disturbing is not simply that Haiti Hope recognized the danger to women of the program and failed to do anything substantial about it, but that it identified a mechanism that could have done something about it. Haiti Hope identified that, "A critical objective of this training will be to encourage the creation women-only cells." Yet it did not follow through with this "critical objective." There are no functioning Haiti Hope all-women PBGs.

Moreover, even if there were functioning all female PBGs, their existence would be handicapped by apparent prioritizing them as vehicles, not for the preservation of women's concrete control over their traditional commercial domain, but rather condescendingly to,

> …create a safe space for women to voice their opinions freely, raise challenges specific to women producers, and build the confidence required to contribute actively to discussion in mixed-sex settings. [Haiti Hope 2012: 5]

In the end Haiti Hope did apparently open the way for men to increase male control over mango sales. Women almost completely rule mango sales on the informal market, controlling 95% to 100% of sales. Yet, women comprise only 42% to 43% of PBG sellers. Moreover, the proportion of mangos that women sold through the PBGs versus those that their male counterparts sold declined over the life of the project. Specifically, the median declined over the life of the project by 7% and the average by almost 20%. The possibility should not be dismissed that the increase in income seen among Sellers over the course of Haiti Hope (see Figure 3.16), has in part been coming out of the pockets of women and the household budget. [xxvi] [xxvii]

Figure 3.15: Gender Comparison of Haiti Hope Members Income from Francique Mangos

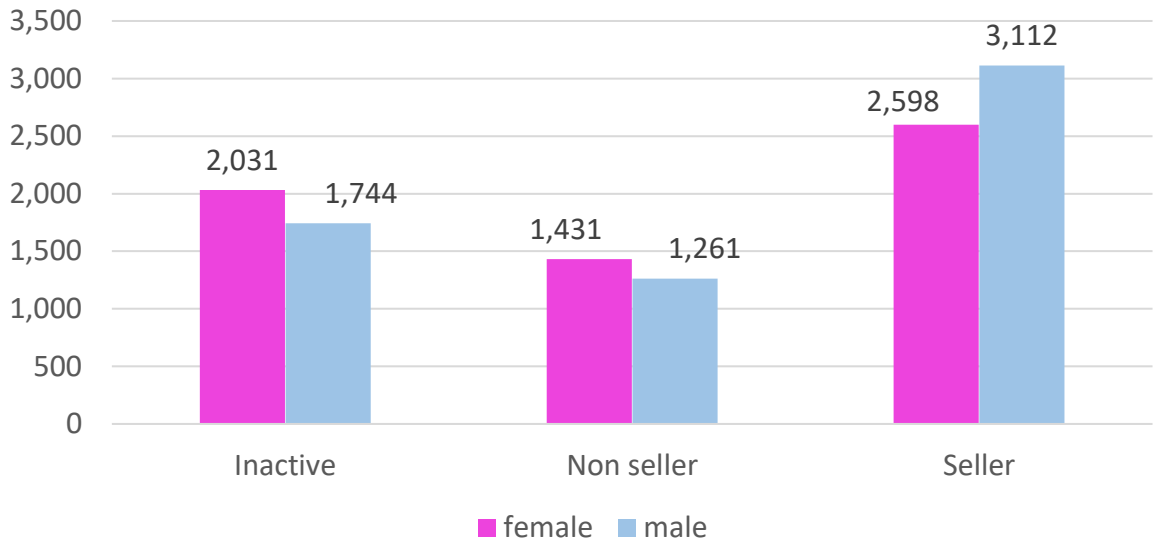
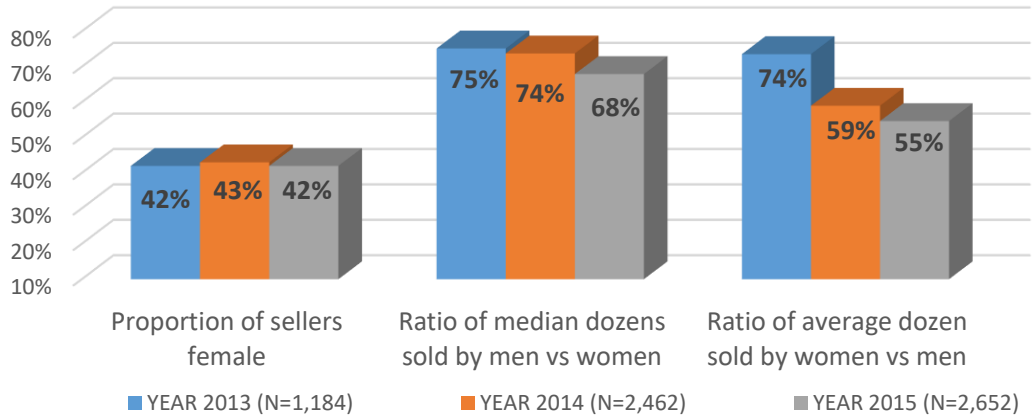


Figure 3.16: Comparative Changes in Ratios of Women to Men PBG Members and Sales
2013, 2014, 2015
(Haiti Hope Data Base, N=)



As for the impact of the Training: any changes that might have occurred only appear as slight and statistically insignificant residuals (see Table 3.13). Indeed, the most apparent change evident in Table 3.13 summarizing gender attitudes is that while there was only a slight decline in the proportion of participants who see women as better at *Trading in General* (going from 78% to 76%) those who see men as better at *Trading Mangos* rose from 42% to 48 percent.

Not even in focus groups—participants of which were chosen by Haiti Hope staff-- was there any evidence of significantly increased role played by women. In all focus groups men outnumbered women (the exact total was 59 men to 30 women). In all but two of six focus groups those women who were present sat demure throughout the discussion only speaking when coaxed by the animators. And in the two focus groups where women were outspoken: in one case the woman was a female leader whose status and disposition to speak out clearly had nothing to do with Haiti Hope (she is a community leader); in the other focus group there were two outspoken female participants, one leader of an existing association and the other woman was not even a member of Haiti Hope.

In short, it is very difficult to conclude from the survey data or focus groups that Haiti Hope had a positive impact on gender. On the contrary, there is more data to suggest that they made progress fulfilling precisely those "dangers" they warned against, decreasing female control over household income, in this case, income from mangos.

A big part of this crippling approach to gender strategy is the same problem that infects other aspects of the program: the need (perceived or otherwise) to meet politically correct donor agendas. Specifically, although Haiti Hope's implementing partner is clearly staffed with individuals experienced in working in developing regions and sensitive to cultural nuances—such that it recognized the gender characteristics of rural Haiti, something that very few other organizations recognize—it interjected in its "objectives" clear attempts to appear to meet gender sensitive quotas, as evidence by "a program culture" one of two core principals of which is "Promoting respect to reduce discrimination and violence against all people."

Picture of a Haitian Woman selling mangos in the informal sector (source: TechnoServe website)

To promote respect and deplore violence is an imminently noble objective—one that most Haitians probably certainly agree with-- but one has to wonder how simply writing it down and repeating it to producers became more important than preserving the female economic power from which derives their their existing capacity to resist violence and discrimination.

TEXT BOX 3.16: GENDER AND INCOME

Gender quotas in cooperatives are considered especially important in view of the fact that in rural Haiti men have traditionally dominated peasant organizations. The extent of the male domination of associations and political leadership is evident in 2015 survey responses to questions about which gender is more adept at specific activities.

Political leadership comes just behind driving a vehicle as that activity that both men and women in the target communities believe men are the most competent at, and women the least competent (see Table 3.12). But it is precisely here, in the male domination of associations and politics, that there may be a catch-22 in the program gender quotas, one that is common with NGO-cooperative initiatives and that arguably encourages male encroachment on traditional female domains of economic activity, in this case the sale of mangos.

Table 3.12: Male Specialties
"Who is more adept at the following tasks?"

Task	Who is more adept	Respondent female (n=498)	Respondent male (n=717)
Driving	Women	1%	2%
	Men	86%	85%
	Both	13%	13%
Political leadership	Women	2%	3%
	Men	78%	81%
	Both	20%	17%

Haiti Hope, like projects before it, made a deliberate attempt to include a balanced gender ratio. By proactively including women in the project, they succeeded in attaining 47% female enrollment, 52% of loans to women, and 35% female leadership (see Haiti Hope 2012). But because the associations are still male dominated—in both numbers and governance—and one of their main activities intrudes on a completely female economic domain—sale of mangos—they perform, not as quotas in the favor of women, but as quotas *de facto* in the favor of men. Indeed, one could argue that they invite men to increase their participation in a female domain from 0% to over 50%.

The point is so critical that it warrants elaborating: it was seen in the main text that production in rural Haiti is organized around the household and highly stratified by gender. Men, whose task it is to work gardens and care for livestock, report owning more mango trees than women (10.6 trees for men vs 5.7 productive trees for women), but as with all produce, it is women who overwhelming sell the mangos. This is true to the extent that it can be said that the local mango trade is 100% female with men only playing a minority role occasionally selling trees in the garden to female traders (Madan Sara). The export market, on the other hand, is more masculine than feminine. In the 2015 survey (N=1,215) the average number of *voltije* that respondents estimated to be men are six out of ten. For *fournisseur* the figure is closer to eight to nine out of ten. We also saw in 3.14 on page 76, that 30% of gardens are co-owned, meaning that many trees that belong to men are also thought of as partially the property of women and vice versa. Moreover, fully 34% of all members who sold through a PBG have a spouse who is also a member of a PBG (see 3.12 on page 75). Thus, if, a) women own 1/2 of the trees, b) 30% of all members are either a woman with a husbands who is also member or a man whose wife is a member, c) women monopolize domestic trade in of mangos, selling women market 90% or more of all mangos, then d) we would expect that if the status quo was preserved, women would be listed on the PBG lists as selling 90% or more of mangos. But the countervailing fact is that, as mentioned, men dominate the export chain and the associations. On average, in 2015 women sold only 55% of the quantity of mangos through the PBG that men sold, down from 74% at the beginning of the project.

Table 3.13: Gender and "Who is more adept at the following tasks?"										
		2013				2015				
Task	Sex	Inactive (n=247)	No Sell (n=239)	Seller (n=204)	**Total** (n=690)	Inactive (n=121)	Non Seller (n=460)	Seller (n=268)	Control (n=366)	**Total** (n=690)
Managing the household budget	Women	49%	51%	47%	49%	55%	57%	54%	51%	54%
	Men	40%	35%	40%	38%	21%	21%	24%	36%	26%
	Equal	11%	14%	14%	13%	24%	22%	22%	13%	20%
Trading	Women	83%	81%	78%	81%	79%	77%	77%	82%	79%
	Men	9%	6%	4%	7%	6%	4%	6%	7%	6%
	Equal	9%	13%	17%	12%	15%	19%	17%	11%	16%
Business	Women	33%	40%	34%	36%	40%	36%	42%	30%	36%
	Men	50%	50%	49%	50%	34%	36%	33%	46%	38%
	Equal	17%	10%	17%	15%	26%	28%	25%	24%	26%
Driving	Women	0%	3%	1%	1%	2%	2%	1%	1%	1%
	Men	97%	94%	91%	94%	77%	83%	84%	92%	86%
	Equal	3%	4%	8%	5%	21%	15%	14%	7%	13%
School learning	Women	5%	12%	11%	9%	4%	5%	7%	5%	6%
	Men	45%	47%	42%	45%	34%	34%	29%	31%	32%
	Equal	50%	41%	47%	46%	62%	60%	63%	64%	62%
Teaching school	Women	4%	10%	5%	7%	6%	5%	4%	7%	5%
	Men	58%	48%	51%	52%	34%	38%	37%	33%	36%
	Equal	38%	42%	44%	41%	60%	57%	59%	60%	59%
Political leadership	Women	1%	1%	1%	1%	2%	2%	3%	1%	2%
	Men	94%	97%	88%	93%	70%	78%	75%	89%	80%
	Equal	5%	2%	10%	6%	27%	20%	22%	10%	18%
Trustworthy	Women	52%	56%	40%	50%	45%	47%	49%	50%	48%
	Men	44%	35%	47%	42%	30%	35%	32%	30%	33%
	Equal	4%	9%	13%	9%	26%	18%	19%	20%	20%

Table 3.13: Gender and "Who is more adept at the following tasks?"										
		2013				2015				
Task	Sex	Inactive (n=247)	No Sell (n=239)	Seller (n=204)	**Total** (n=690)	Inactive (n=121)	Non Seller (n=460)	Seller (n=268)	Control (n=366)	**Total** (n=690)
Mango selling	Women	57%	42%	40%	47%	49%	45%	39%	70%	52%
	Men	35%	46%	42%	41%	39%	38%	48%	20%	35%
	Equal	9%	11%	19%	12%	12%	17%	13%	9%	13%
Mango harvesting	Women	15%	13%	9%	13%	23%	16%	16%	34%	22%
	Men	73%	79%	77%	76%	60%	70%	71%	57%	65%
	Equal	12%	8%	14%	11%	17%	14%	13%	9%	12%
Mango Transport	Women	14%	12%	14%	11%	17%	13%	19%	16%	16%
	Men	72%	77%	72%	75%	60%	60%	59%	70%	63%
	Equal	14%	11%	14%	14%	22%	27%	22%	14%	21%
'FE TWALET' Mango trees	Women	2%	2%	4%	3%	8%	10%	7%	13%	10%
	Men	98%	98%	94%	95%	84%	81%	85%	80%	82%
	Equal	0%	0%	2%	1%	7%	9%	7%	7%	8%
Knowledgeable about Mangos	Women	6%	3%	3%	4%	6%	4%	4%	5%	4%
	Men	88%	92%	87%	89%	78%	85%	78%	83%	82%
	Equal	6%	4%	10%	7%	17%	11%	17%	12%	13%
Grafting	Women	-	-	-	-	0%	1%	2%	1%	1%
	Men	-	-	-	-	90%	94%	90%	96%	93%
	Equal	-	-	-	-	10%	5%	8%	4%	6%

Conclusion and Recommendations

Haiti Hope made significant achievements. These achievements were made despite the fact that initially only one exporter was willing to work with the project. Today *all but one* exporter wants to work with the project. The achievements were made despite resistance from associations that did not want to conform to Fair Trade requirements and that, two years into the project, only presented 511 of more than 27,000 members willing to sell through the project. And these accomplishments were made despite no new successful processing facilities established in the country and despite the incapacity of the packing houses to export significantly greater quantities of mangos. Indeed, Haiti Hope moved so many mango in 2015 that Perry Packing House was forced to close its doors for three days.

Clearly, the direction is to preserve the PBG structures, help build the organic markets and what are essentially a new PBG economy. All this is expedient and necessary for a formal export sector. Indeed, despite the challenges inherent in an industry overwhelmingly dependent on micro producers, recent technologies have made those challenges surmountable. GPS devices, cell phones, access to up-to-date satellite imagery and user friendly GIS have already made managing a system of micro-producers and meeting modern US traceability systems possible. The continuing rapid evolution of all these technologies in the near future are certain to make management of such a system even easier.

Nevertheless, we should not lose sight of built in limitations of the project and shortfalls in what it was intended to accomplish. To begin with, development projects such as Haiti Hope and HAP before it have been predicated on a macro-formal-economy maxim that increasing exports is the most expedient means of increasing revenues to producers. The first and most ominous pitfall in that reasoning is that when we look at even recent history one can only conclude that no sane Haitian producer—of anything-- would put faith in the international market or in those entities promoting production for overseas markets. The fickleness of NGOs and the institutions that assure access to those markets, the embargoes and political instability that always, sooner or later, cuts access off, make dependence on the international market simply bad business. Even among exporters one encounters frustration and resentment. One exporter claimed, very seriously, that cooperating with one of the donors of Haiti Hope almost bankrupted them.

Putting the historical unreliability of the international market access aside, there are still good major miscalculations regarding the presumptions on which these projects are founded. Haiti Hope and HAP before it are predicated on a misreading of the rationality and competency of peasant farmers. The assumption is that peasants just do not “get it.” They rarely plant trees, and when they do plant them they do not properly maintain and cultivate them, they do not trim the trees, they savagely harvest them, and they poorly pack and transport the produce, all of which causes waste and spoilage, something which they cannot assess the impact of because they do not keep a record of their inputs and yields. All of which is in part very true and gives way to the conclusion that, if we could just get them to listen they could double or triple their income.

Haiti Hope was targeted to address all these issues and to get more and better quality mangos to the export packing houses. But if we are thinking about the producers, if the objective is to raise the income and improve their living conditions and food security, then there is good reason to believe that many of these improvements are irrelevant or at least secondary. Consider that the average of Haiti’s 5 million rural farm families-- those who produce 90% of the mango-- has only 1 hectare of land, that a mature mango tree covers 1/100th of that land; that once grown, nothing

can be planted underneath that tree for the next fifty years—unless they cut it down; and that assiduously maintaining and harvesting the tree so that the fruits are acceptable to export purchasers who up until 2015 paid less for the fruits than local buyers—local buyers who will buy the fruit irrespective of quality; consider all the preceding and one has to wonder, *not* why the peasants don't "get it", but why we, the NGO and international community do not "get it." Why can't we understand *their* economy.

This is not intended to be consultant finger wagging at the obtuse NGO staff and donors. As mentioned elsewhere, the consultant too, after 20 years of working in Haiti and studying the peasantry, fully expected that export mango sector to be more attractive and lucrative for peasants vis a vis the informal domestic economy. It is not. And the lesson is, in part, that apparently we all do not get it—none of us. And the reason is because we are not thinking about the peasant economy. We are thinking about our own economies, the export economy, and we are operating on the assumption that exports are best for everyone.

Part of the problem lies with the export cartel, lack of capital or as one of the exporters themselves colloquially summed up, "the problem of big egos and shallow pockets." But in defense of the exporters, they do not control the production. They only control access to the US market. It is their one leverage point. No matter what they say about increasing exports and capacity, they are neither interested nor, given the constraints seen at the beginning of this reports, does it make good business sense for them to risk heavy investments. The last exporter who did that-- JM Buteau—went out of business in 2012. Buteau took a chance and invested heavily in post-production and processing and he lamented to the consultant that he should have never done it. And the reason is because while the system may be stuck in a bottle neck, the system works. "You can make money in exporting mangos." But you cannot make money increasing exports. And, changing the point of view, it is the *exporters* who of ANEM who make money exporting mangos. Moreover, as seen in this report, the small producers can make more money on the local market. And as seen, most of them—including most Haiti Hope project participants--opt to do just that, i.e. sell on the local rather than the export market.

At an even more basic level there is a deep and erroneous expectation regarding the appeal of such export oriented projects. Most producers are arguably more interested in credit than anything else the project has to offer. Fully half of all those who received credit from the project never sold a mango through a PBG. Part of the reason that we have arrived at this point is that misleading us in our understanding of how producers feel about such projects are.

1) The enthusiastic search among reviewers and project implementers for "stories" and positive "narratives" that make the implementing agencies and donors look like heroes and invite more funds, something aided by,

2) A beneficiary culture of expressing false enthusiasm and appreciation for projects such as Haiti Hope with the motive of getting something out of it-- be it a job, loan, or gift. In focus groups, for example, respondents enthusiastically lauded the project for higher mango prices and nurseries. But mango vendors interviewed outside of focus groups were quick to point out that the project was not so interesting. And the reason was precisely because the local market prices were as or higher than those offered by the project, points supported by the large number of participants who never sold through the project or the majority who sold only once in three years. All respondents, even focus group participants who were otherwise full of praise, lamented that the project did not pay for mangos on the spot but, instead, took the mangos on

credit. Tree nurseries is another dubious point upon which NGO workers and donors tend to have nearly euphoric faith. Yet, there is not a producer in Haiti unaware of how to germinate a mango seed.

Gros Morne, Haiti

Photo by James Arbaugh http://www.missionaryjames.com/2012_06_01_archive.html

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END NOTES

[i] Other examples of projects that have had an impact on the way rural Haitian view international development interventions are the infamous eradication of the Creole Pig in the early 1980s, something associated with an outbreak of Swine Fever, the widespread belief that food aid crashes local markets and more recently the vociferous reactions among some peasant groups to Monsanto seed giveaways seen in 2012 (they burned the seeds). Such incidences have left Haiti's small producers suspicious of projects purporting to "help" and of dependency on producing for the international market.

[ii]

Table N1: Haiti Hope Summary of Sales

		Sum OG	Sum FT	Sum CV	Total Dz Livre	Sum OG2	Sum FT2	Sum CV2	Total Dz Aksepte	Reject rate	# Of Aggregator Sold	# of commune sold	# of farmer sold
2013	Grower Association	26,074	42,691	13,769	113,105	29,776	48,752	15,724	94,252	17%	18	11	
	Producer Business Group	-	45,317	6,556	68,987	-	51,750	7,487	59,237	14%	82	9	
2013 Total		**26,074**	**88,008**	**20,326**	**182,092**	**29,776**	**100,502**	**23,211**	**153,489**	**16%**	**100**	**13**	**1754**
2014	Grower Association	44,814	9,805	4,305	58,924	33,974	12,962	2,292	49,228	16%	12	9	
	Independent Aggregator	122	13	130,906	131,041		89	98,824	98,913	25%	7	3	
	Producer Business Group	72,383	60,136	7,155	192,318	54,557	54,700	8,872	170,773	11%	203	14	
2014 Total		**117,319**	**69,954**	**142,366**	**382,283**	**88,531**	**67,751**	**109,988**	**318,914**	**12%**	**222**	**16**	**3474**
2015	Grower Association	34,912		16,676	51,588	30,488		14,675	45,163	22%	9	7	
	Independent Aggregator			101,272	101,272			78,568	78,568	11%	7	4	
	Producer Business Group	121,028		244,900	365,927	105,970		219,176	325,147	13%	213	19	
2015 Total		**155,940**		**362,848**	**518,787**	**136,458**		**312,419**	**448,877**	**13%**	**229**	**19**	**3742**
Grand Total		**299,333**	**157,962**	**525,539**	**1,083,162**	**254,765**	**168,253**	**445,618**	**921,280**	**14.9%**	**291**	**20**	**6663**

[iii] Specifically, in the words of the Field Manger, "…the increase in 'big sellers' joining/selling in 2015 was directly in line with a slight shift in project focus to sign up larger landholders in an attempt to boost total volumes moving through PBGs. …. Large landholders were defined as 100-tree farmers which was revised down to 35+. At the time, we were rapidly approaching the 25k farmer benchmark and therefore any further recruiting was only permissible through this caveat."

[iv]

Table N2: Total Sales thru Haiti Hope (Source: Haiti Hope)					
		YEAR			
Category	Measure	2013	2014	2015	Total
Grower with HH Record ID	Dozen accepted	58,023	162,179	275,638	495,840
	Average	49	64	102	104
	Median	17	23	39	34
	Standard deviation	113	184	262	310
	Max	1,477	4,449	4,910	8,413
	Min	-	1	1	-
Opportunist Growers selling thru PBGs	Dozen accepted	29	2,482	46,607	49,118
	Average	15	44	75	71
	Median	15	29	28	27
	Standard deviation	21	49	139	133
	Max	29	211	1,609	1,609
	Min	-	2	1	-
All growers who sold through the PBGs	Dozen accepted	58,162	164,829	322,578	545,569
	Average	48	64	97	100
	Median	17	23	37	33
	Standard deviation	112	182	244	293
	Max	1,477	4,449	4,910	8,413
	Min	-	1	1	-

[v] A qualification from the Haiti Hope field manage: "Many PBGs utilize pick-up trucks to deliver mangos….Each packinghouse takes a different approach to transportation. … Typically, packinghouses use quality as leverage for transportation reimbursement. Thus we see a propensity to fully reimburse PBGs upon delivery as packinghouses are not accustomed to receiving such high quality product."

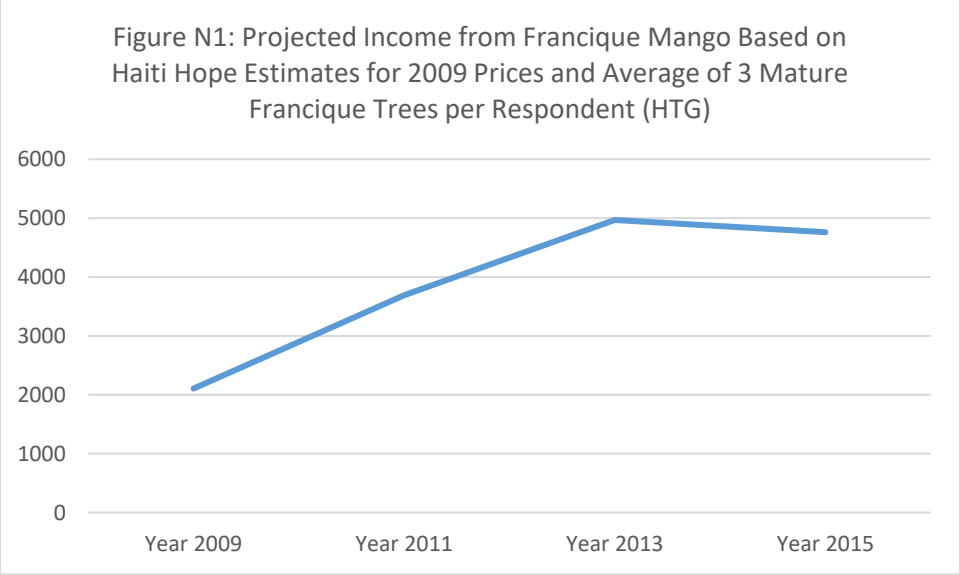
[vi] As seen in Part III of this report, Haiti has a vigorous informal market system that is often as or more attractive than the export market chain as an outlet for selling mangos.

[vii] I support of the rising confidence in the export market, the Haiti Hope filed manager observed that, "…there is a strong case to be made that a tree price increase of 47% can be, at least in part, attributable to the strategies of 2/8 exporters who coincidentally excel compared to their counterparts in field operations. HH field staff repeatedly received reports of exorbitant purchase prices (by tree) offered by agents (eg, voltigeurs/sous*fournisseur*s) of these exporters, especially in the Bas l'Artibonite and Saut-d'Eau regions. Likewise, I agree with the author's speculation that producers exposed to HH interventions (ie, negotiation, farming as a business, and KBS trx) may have shown resistnace to selling trees at reduced prices in advance of harvests."

viii

Table N3: Prices in HTG								
	2011		2012		2013		2015	
Dozen (n=129)	Median	25	Dozen (n=193)	25	Dozen (n=272)	33	Dozen (n=350)	35
	Average	28.5		30.1		34.1		36.2
Panye (n=27)	Median	175	Panye (n=38)	150	Panye (n=57)	200	Panye (n=98)	225
	Average	196.0		145.4		202.7		251.4
Tree (n=197)	Median	600	Tree (n=201)	700	Tree (n = 89)	833	Tree (n=78)	1250
	Average	811.8		888.4		1038		1565

[ix] Figure N1 and N2 uses Haiti Hope estimate of 3 trees per member and a yield of 50 dozen mango per tree, and the 2009 baseline estimate of 14.6 gourde per dozen (translating to US$0.37). The other figures come from the survey derived price data discussed in the previous section,



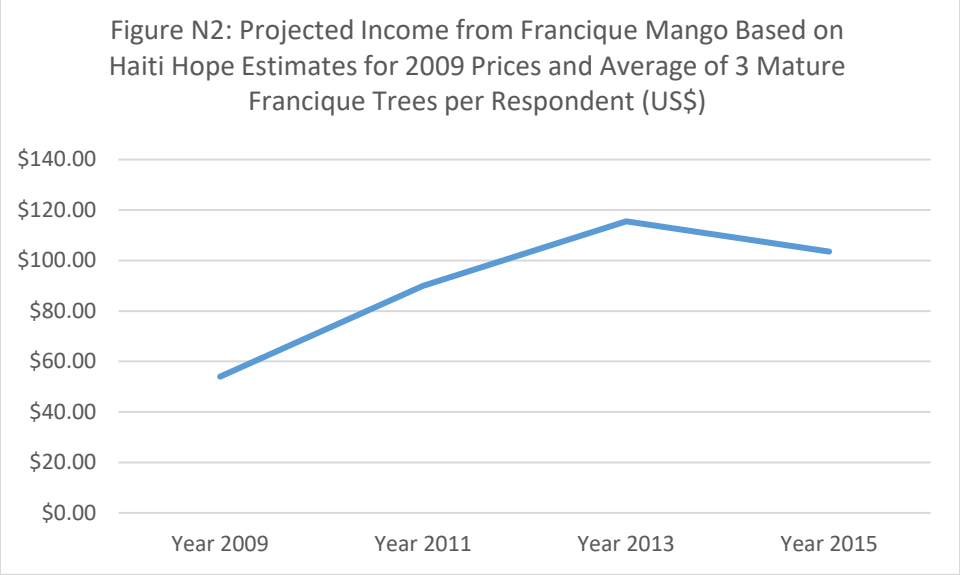


Table N4: Only those who sold mangos					
Type Mango	Haiti Hope Classification	Survey 2013		Survey 2015	
		N	HTG	N	HTG
Francique	Seller	193	3839	204	3728
	Inactive& non Seller	217	4341	220	3806
	Control	-	-	154	5338
	Total	410	4150	578	4186
Type Mango	Haiti Hope Classification	Survey 2013		Telephone 2015	
		N	HTG	N	HTG
Blan	Seller	95	3168	54	3511
	Inactive& non Seller	185	2591	13	2833
	Total	280	2787	67	3380

Table N5: Mango Blan Income		
Source	Seller	Non-active and non seller
Telephone Survey 2015	1,935	1116
Survey 2013	1,652	870
Average	1793	993

[x] Actual reporting is certainly influenced by existence of contracts between Haiti Hope and the PBG members. All PBG members sign a contract with Haiti Hope and the packing house. The contract is necessary to qualify for Organic and Fair Trade Premiums. The contracts are not binding in the sense that producers do not have a right to sell elsewhere. However, a minority of members believe they are binding, that they do not have right to sell to other packing houses, *fournisseur* or Madan Sara and are therefore reluctant to report the figures to the interviewers, seen as representing Haiti Hope.

[xi] Another issue that could or should be considered is that Haiti Hope did not apply a strict participant targeting criteria. A direct quote from the original IDB/MIF Donor Memorandum,

The project participants must meet at least the following preliminary tentative eligibility criteria:"

(i) have at least an average of five mango trees;
(ii) utilize between 0.5-5 Has of land;
(iii) have average yearly income of less than US$1,000;
(iv) be willing to monitor and keep records of accounting and operations management of mango production,
(v) be willing to receive technical assistance, attend training activities, and share knowledge with other mango producers.
(vi) As PBGs mature, they will evolve into business units that reach greater economies of scale and provide additional services to the community called Market Service Centers (MSCs), associations of multiple PBGs that come together and serve as a hub for the region. MSCs will improve farmer income by increasing purchasing power, strengthening negotiating power, and providing additional services beyond the PBGs.

[xii] Also directly from the IDB/MIF Donor Memorandum was the directive that the project would enjoy symbiotic benefits from working with the following partners,

- USAID's WINNER a broad-based program that acts in many agricultural value chains including mango
- "Rural chains Enhancement" four applied agronomical research centers, (loan 1794/SF-HA, 2007-2012).
- Complement activities that will be implemented through the Social Entrepreneurship Program Project ATN/SF-12024-HA, "Job Creation for SmallScale Agricultural Producers through the Carifresh Fruit Value Chain" approved in December 2009.

Despite these good intentions, Haiti Hope coordinated with WINNER supported cooperatives in Cabaret, but only after WINNER no longer worked with them. Otherwise coordination between the two projects is invisible. The "applied research centers" are unknown to current (2015) Haiti Hope directors. The IDB supported Carfresh project ended before Haiti Hope ever really began. And it ended with bitterness among the parties and accusations that IDB enticed Carifresh into heavy financial commitments that almost bankrupted them.

Another inaccurate or subsequently altered intention was that,

> Funds that TCCC will invest in this project would be generated by sales of the Odwalla Haiti Hope promotional beverages in the United States. ….One hundred percent of TCCC profits from the sale of the Odwalla Haiti Hope beverages will be designated to fund this Project.

It was not 100% of the profits, but 10 US cents per bottle up to total of US$500,000 (see the TCCC website at http://www.coca-colacompany.com/stories/hope-in-haiti-why-job-creation-and-economic-development-will-drive-nations-recovery

[xiii] Also from the IDB/MIF 2010 document, is something else that never happened, an overture to the peasant farmer's interest in diversified livelihood strategies and risk management.

> The mango industry should be accompanied by a diversification into other crops to make better use of capacity over the year (mango is a highly seasonal crop) and to reduce the vulnerability of smallholder farmers to variations in mango production and marketing.

[xiv] Whether the Gros Morne drying operation would have succeeded or not, the assistant mayor of Gros Morne, Rubin Beauger, complained to Nouvelliste journalists that, "The problem of hygiene as raised by the United States to prevent the sale and consumption of dried mango from Haiti is non-existent. It's a slap in the face to the Haitian people."

[xv] Assumptions relevant to processing that were in the IDB/MIF (2010) document

- The technology required for large scale processing of mango is not available in Haiti today.
- Investment in mango processing is hampered by limited access to finance and logistical services, unpredictable supply and lack of market linkages.
- Several exporters are interested in investing in such technology but lack access to credit.
- TCCC strong potential for TCCC and its Latin Center Business Unit to be able to purchase a portion of the mango fruit juice
- Company would make in-kind investments including juice processing knowledge, capital investments and research and development expertise.

Elsewhere in the MIF design:

Component 2: Foster competitive local processing businesses (MIF: US$398,824; Counterpart: US$326,311) 3.8 Local processing could increase the economic value of Haiti's mango industry significantly. It would provide an alternative market channel for mango rejects and clear incentives to producers to increase their production. The objective of this component is to provide support to local entrepreneurs in establishing new processing factories – including helping them with business planning and capital raising, per their needs. TCCC's local and international supply chains and markets will provide support in this effort and will help identifying the currently available varieties best suited for processing into fruit juice both for the domestic market and for export. The lead entrepreneurial investors would be most likely local traders or processors of other goods. 3.9 Support to local institutions, organizations and entrepreneurs will be given through technical assistance to: (i) establishing new processing factories – including feasibility studies, business planning and capital-raising assistance, per their needs – and design the right mechanism to include local ownership; and (ii) explore the viability of introducing new mango varieties for processing.

3.10 Expected outcomes include: (a) at least one processing plant operating with local participation; (b) PBGs selling directly to processing plant(s); and (c) processing plants fully compliant with international environmental standards.

[xvi] A couple classic quotes from the late and great professors of peasant studies, Eric R.Wolf, author of Peasants (Prentice-Hall, 1966), Peasant Wars of the Twentieth Century (Harper & Row, 1969), Europe and the People Without History (University of California Press, 1982)

> "…rural cultivators whose surpluses are transferred to a dominant group of rulers"
> (*Peasants*, 1966, pp. 3–4).

> "rural cultivators whose surpluses are transferred to a dominant group of rulers"
> (*Peasants*, 1966, pp. 3–4).

[xvii] In the case of Haiti that "non producing" class controls the government and the ports. Geographically access is constrained by the Caribbean Sea in the South, the Atlantic Ocean in the North, a heavily militarized and staunchly anti-Haiti Dominican Republic to the east.

[xviii] From Enmarcolda S.A website at http://enmarcolda.com/case-studies/mango-crop-export/

"Today 80% of the mangos exported from Haiti are handled by Enmarcolda S.A. logistics organization. Providing trucking, terminal handling and ocean freight services to the mango industry for more than 20 years, Enmarcolda S.A.'s experience and expertise is now part of the fabric of the Haitian mango industry's future growth plans.

The management team of Enmarcolda S.A. has been working closely with Association Nationale des Exportateurs de Mangues (ANEM) for more than 20 years. Today, in addition to trucking, terminal handling and maritime logistics, Enmarcolda S.A. is directly involved in creating the future strategies with the mango industry in Haiti."

[xix] A point in elaborating on the fact that Part of the confusion over market prices is an apparent expectation on the part of international stakeholders mangos sold on the domestic market are selling for prices far below export prices or rotting on the ground (admittedly, the consultant thought the same). For example, in 2010, Haiti Hope estimated export quality mangos at 26 HTG ($0.51) and local quality at 14 HTG ($0.20), less than half that price, In 2015 they made a similar claim, reporting that non-PBG producers were receiving 20 HTG ($0.39) per "dozen" for Francique mangos vs. the PBG price to growers of 42 HTG ($0.82). Yet three years earlier, in 2012, Lidwine reported that in the same area producers were selling at the farm gate and to local-market reseller at 26 HTG per dozen. One more step down the value chain "rural retailers will purchase domestic quality mangos in bulk at $1.25 per dozen of from 14 to 20 mangos," which is considerably more than the packing houses were paying in 2015 (Hyppolite 2012).

[xx] More important, however, is that as seen earlier on, there is no incentive for ANEM to export more mangos because of the short season, selling in only two to three outlets, and crashed prices that come at the height of mango season. In other words, there is no incentive for exporter to outbid the local market beyond supplying the limitations of their market. Indeed, there is powerful incentive not to.

[xxi] Yet, prices are the most dependable and unambiguous data that can be gathered. There is little doubt that the data in the tables approximates real market prices. It is based on random samples, includes the medians and within the data base is tightly clustered around those medians. Regarding dozens and panye they are publicly known prices and, with the exception of the beginning and end of the mango season, consistent within any given year. Thus, considering all the data in surveys, we can have the most confidence in data on price, particularly medians.

[xxii]

Table N6: Best Practices by Classificatory Group						
Best Practice	Seller (n=98))	Inactive or Non-Seller 9n=34)	Control (n=366)	Inactive (n=121)	Non seller (n=460)	Seller (n=268)
Cleans branhes	71%	68%	48%	60%	70%	83%
Prunes	72%	38%	11%	17%	11%	20%
Cleans under tree	72%	68%	30%	50%	59%	75%
Uses improved picking pole	54%	44%	7%	16%	16%	41%
Plants saplings	59%	56%	6%	32%	41%	53%
Fences Saplings	58%	53%	6%	17%	17%	25%
Sorts mangos for sale	37%	18%	7%	10%	21%	44%

[xxiii]

Table N7: Female Specialties "Who is more adept at the following tasks?"			
		Repondent	
Task	Who is more adept	female (n=498)	male (n=717)
Household budget	Women	60%	50%
	Men	21%	30%
	Both	18%	21%
Trade	Women	84%	75%
	Men	4%	7%
	Both	12%	18%
Most mature	Women	60%	39%
	Men	19%	42%
	Both	21%	19%

[xxiv] The impact of co-ownership is not fully assessed in this report. Questions remain, such as does this mean that 30% of income from mangos is also for people other than the respondent? How many of these co-owners are members and how many are non-Haiti Hope Members?

xxv

Table N8: Garden Co-Owners	
Co-owner of Garden	Percentage of Co-Owned Gardens
Husband	18.2%
Parent	14.9%
Child	14.2%
Wife	13.7%
Brother	13.6%
Sister	12.2%
Other Family	9.4%
Other non-family	2.5%
Uncle	1.0%
Aunt	0.4%
Total	100.0%

xxvi

Table N9: Male vs Female HH Sellers by Year (source HH)				
		YEAR		
Sex	Measure	2013 (N=1,184)	2014 (N=2,462)	2015 (N=2,652)
Female	Mean	401	46	69
	N	501	1075	1114
	Median	14	19.91489	30.95763
		42%	43%	42%
Male	Mean	55	78	126
	N	683	1387	1538
	Median	19	27	46
		57%	56%	58%

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Table N10: Male and Female Specialties: "Who is more adept at the following tasks?"			
Task	Who is more adept	Repondent female (n=498)	Repondent male (n=717)
Studying	Women	6%	5%
	Men	30%	34%
	Both	64%	61%
Teaching school	Women	6%	5%
	Men	34%	38%
	Both	61%	57%
Business	Women	44%	30%
	Men	33%	42%
	Both	23%	28%