

## **Project**

***“Increasing incomes and food security of small farmers  
in West and Central Africa through exports of organic  
and fair-trade tropical products”***

**GCP/RAF/404/GER**

***Project impact study in Ghana***

***Mango***



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Project “Increasing incomes and food security of small farmers in West and Central Africa through exports of organic and fair-trade tropical products”  
GCP/RAF/404/GER

Project impact study in Ghana; Mango

Trade and Markets Division

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome, 2009

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## ***Introduction***

The project has supported the Volta Mango Growers Association (VOMAGA). This report presents the results of a survey among a sample of the mango farmers on the impact of the project.

The report first gives an introduction to the mango sector in Ghana and the project partners and activities. Subsequently the survey results are presented. This is followed by an analysis of the economic aspects of mango production, using data from the survey and external sources. Finally, overall conclusions about the impact of the project are drawn.

## ***Acknowledgements***

The questionnaire was developed by Léa Jenin, Associate Professional Officer at the FAO Trade and Markets Division (EST). The interviews were held in the local language by Marian Kwaku, consultant in Ghana. Project assistant Antonia Caggiani input the data in the database and the analysis was conducted by Léa Jenin and Cora Dankers, project technical officer, who also wrote the report. Final editing was done by Ellen Pay, consultant, and Pascal Liu, trade economist in EST. The project was funded by the German government.

## 1. PRESENTATION OF THE MANGO SECTOR

Although mango trees can be found all over Ghana, commercial production is mainly found in two distinctive agro-ecological zones: Northern Ghana around Tamale and Southern Ghana (Greater Accra, Eastern and Volta Regions). Production conditions in Northern Ghana are similar those in the major mango production zone of the SKBo triangle (Sikasso, Korhogo, Bobo Dioulasso), with a harvest season running from March (early varieties) to June (late varieties). Production in Ghana used to lag far behind that in neighbouring countries, but in 2000 the Integrated Tamale Fruit Company (ITFC) installed a nucleus plantation and started an outgrower scheme. The ITFC is certified organic and has already started exporting to the UK and South Africa.

Table 1. Fresh mango exports from Ghana, 2005-2008 (in tonnes)

2004*	2005*	2006*/**	2007**	2008**
227	772	366	1 071	2 000***

\* Source FAOSTAT.

\*\* Source: Ghana Export Promotion Council <sup>1</sup>.

\*\*\* Forecast.

In the south of Ghana, there are two rainy seasons, from March to July and from September to November, with a peak in May-June. As a result, there are two harvest seasons, the main season from half May to July, and the minor season in December and January. Because of the higher humidity, mango production suffers from higher pest and disease pressure than in Northern Ghana. Also, because the dry season is less outspoken, sometimes there is a lack of flushing at the onset of the rains, which later results in a lack of flowering and low production per tree.

The commercial mango production in the southern belt is mainly supplying Accra and other urban areas. Bomarts and Tacks Farms (see paragraph 4.1) export organic mangoes. WAD Ltd. exports dried mangoes, and more (organic) processors are venturing into mango products.

## 2. PROJECT PARTNERS AND ACTIVITIES

### 2.1. Introduction of VOMAGA

The Volta Mango Growers Association (VOMAGA) is located in the Volta Region, around Juapong and Fojuku, south of the Volta Lake. The first orchards were established in the period 1997-1999 with seedlings from a USAID funded nursery project executed by ADRA (Adventist Development and Relief Agency). Through these first farmers, other farmers obtained mango seedlings and mango cultivation continued to spread in the region. However, no follow-up technical or marketing assistance has been provided.

VOMAGA was formed at the end of 2005 upon the initiative of Mr Tackie of Tacks Farms, located in the same area. Both the membership and the executive committee

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<sup>1</sup> <http://www.ghanafreshproduce.org>

changed often during the first year, but the association consolidated with around 60 member farmers concentrated in the area around Fojuku and Juapong. With the agreement of Mr Tackie, it was decided that the project would pursue independent certification for VOMAGA. VOMAGA has been selling to various processors and exporters.

Figure 1. Ghana - VOMAGA mango supply chain



**2.2. Main project activities and results**

As in the case of the project on pineapples, Agro Eco was contracted to provide technical assistance. With project funds and upon the advice of Agro Eco, VOMAGA recruited Mr Clotley as external field officer to ensure regular training on production methods and to train their internal field officer. Mr Clotley’s work was in turn supervised by Agro Eco.

Table 2. Training received by VOMAGA in the framework of the project

Date	Topic	# members trained
2006 2007 2008	Training on organic farming practices by Agro Eco and Mr Clotley (recruited field officer): Farm assessment and creating buffer zones, sanitation – farm mapping – record keeping – pruning – compost preparation – insect pest and disease control management in organic mango production	46
15 and 22 Nov 2006	Training of executive committee on organization of meetings, executive officers’ responsibilities, running of the office	6
From March 2007	Memorandum of Understanding with the Department of Co-operatives of the Ministry of Manpower, Youth and Employment for training of executive committee	6

Until 2006, VOMAGA farmers sold part of their mango production individually to exporters, but the quantities sold are unknown. In 2008, a total of 12.19 tonnes of mangoes were sold: 4.6 tonnes to WAD (Switzerland) and 7.6 tonnes to Nature’s Best. VOMAGA was certified organic in 2009 under WAD but with an independent internal control system.

Table 3. Mango sales by VOMAGA, 2006-2008 (in tonnes)

2006	2007	2008
0	0.75	12.2

### 3. RESULTS OF THE FARMER SURVEY

At the time of the interviews, the group was not yet certified, but its members were trained in improved production methods (organic farming, etc.) and an internal control system was partly put in place since December 2007. For this reason, the interviews provide some information on the new production methods but could not lead to conclusions on changes in sales volumes or prices linked to certification.

#### 3.1. Characteristics of the sample

Six farmers, three female and three male, were interviewed. One of the female farmers was below 30, the rest of the interviewees were above 45. Three farmers were members of the executive committee of VOMAGA.

All VOMAGA farmers stated they had joined the group in 2006 or 2007, even when some were already in the founding group at the end of 2005. The group was registered formally in 2006, after the project's first visit in March 2006, which was a precondition for the project to work with the organization. All farmers had participated in training sessions and meetings linked to the FAO project.

The total size of the farms varies considerably, from 0,2 to 9 ha. All of the mango farmers have other sources of income, mainly from commercial activities (agent for latex/foam mattresses, a bookshop, trade in grocery products and vegetables, soap and bread making, storing and selling cassava) or by working for others (agricultural labourer, oil palm harvester). This explains why mango production is the major source of income for only 2 of the 6 farmers interviewed (both are women), and represents half of the income for 2 of the 6 farmers. However, 5 of the 6 members of VOMAGA interviewed (one was actually just starting to produce) declared that mango is their major crop. The other important crops are maize and cassava, mainly as staples.

#### 3.2. The results of the training and the impact of organic methods

Out of the six interviewed farmers, two were satisfied and four were very satisfied with the training. The interviewees declared having received the following types of training:

Topic	Received by
Production methods	6/6
Record keeping	6/6
Post harvest techniques	4/6
Association management	3/6
Marketing	1/6
Computer use	1/6

Regarding production methods, respondents spontaneously specified many sub-topics, and were even more specific when answering open questions about problems related to the application and future use of the new methods:

Specified (sub)topic	Problems encountered	Intend to continue using
Selective pruning	1/6	5/6
Use of manure and/or compost	(compost preparation) 2/6	3/6
Use of neem for spraying		3/6
Sanitation		3/6
Weeding often	2/6	1/6
Mulching	1/6	
Buffer zones		
Producing seedlings		
Record keeping	1/6	(by children) 1/6
Use of computer		1/6

One farmer observed that *he* was not able to harvest himself but he supervised the harvest, while another one stated that "*children run to play and do not do much work*".

It should be noted that all interviewees denied having received training on standards and certification, while the association was already implementing part of its internal control system (ICS). Even though the ICS was mainly implemented by Mr Clottey and the internal field officer, who was not among the interviewees, one would expect that at least the executive committee members had received training on the matter.

A farmer from VOMAGA said concerning the training received: "*the computer training has made me confident, I can use [a computer] and I intend to buy one*", "*I started keeping records even with my maize and it is good*".

Three out of the six members of VOMAGA interviewed expressed an interest in receiving (more) training on the following topics: processing mangoes (2), certification and standards (1), accounting (1), computer training and administration (1)<sup>2</sup>.

As far as the impact of the application of the new techniques on the quality of the fruits is concerned, the respondents noted the following improvements:

Change	# respondents
Appearance/beautiful, specifically:	6/6
- fruit size (bigger)	4/6
- colour	3/6
- less spots	2/6
Less fruit dropping	1/6
Less spoiling/rotting/over-ripening	3/6

### **3.3. Changes in production area, yields and production costs**

One farmer planted not long before the project started and has not yet harvested. The other five farmers mention an increase in the area cultivated because of new plantations. One farmer says that the quantity produced has not increased with the new methods; he explains that even if fruits are bigger, there are fewer fruits. The other four

<sup>2</sup> Accounting and computer training have been organized with the support of the project but they were limited to the executive committee.

farmers agree that the quantity produced has increased as the result of an increase in yields. There seem to be more fruits per tree (for 3 out of 4 respondents), while losses have been reduced as less fruits are destroyed and damaged, in particular due to the regular spraying of neem.

All respondents mention an increase in production costs with organic production methods, and the reasons for it are similar to those given by EAWOFA farmers:

Increased cost for:	# respondents	Decreased cost for:	# respondents
Seedlings	5/6		
Family labour (time spent)	5/6	Family labour	1/6
Hired labour	5/6	Transport costs to market	3/6
Phytosanitary products (neem, pheromone traps)	3/6	Fertilizer	3/6
Equipment: crates, pruners	2/6		
Association dues	1/6		

### **3.4. Marketing and group dynamics**

Before selling mango through VOMAGA, the producers interviewed sold through traders or on the local market. For 2007, four farmers declared they had sold through the group. This contradicts VOMAGA reports to Agro Eco for 2007 of a total of only 750 kg sold. Others sold individually on the local market, while one farmer has not yet harvested.

Interviews were held before the 2008 season. Data received from the group in 2008 compared to farmers' declaration for year 2007, show that the producers interviewed all increased the quantity of mango sold through the group: the quantity sold by individual members doubled or even tripled.

All farmers consider that the group helps them to improve the marketing of their product, providing them with good market opportunities (3 respondents out of 4 who already sold through VOMAGA), finding buyers interested in bulk quantities and providing access to export markets. Prices are good and stable (mentioned by 4 respondents) – one farmer attributed this to the crates used. Another major advantage of selling through the group is that transport costs are reduced, as some of the clients come with their own means of transportation and a farmer commented that if “buyers come regularly” she may not need to go to the market.

Almost all producers noticed positive changes within the association since they joined the group:

- An improvement in the management of the association: meetings are more regular, committees are set up for each activity and people are willing to participate;
- There are training and workshops;
- There is an office and a computer, a scale is available;
- It is possible to purchase pheromone traps.

The interviewees also mention that they get “help from other members” or that “everybody is happy and active on the farm and in the group”. A farmer mentioned that solidarity is important: group members will help him harvest, weigh and sell his product even if he is sick.

Other benefits derived from being a member of the group and participating in the project are:

- Linking up with more people, “*more exposure to outsiders and better relationships*”;
- Solidarity between group members;
- Access to training, education;
- “*Helping others with skills in group management, reducing conflicts*”.

### **3.5. Impact on income**

One respondent did not know whether his income resulting from the production of mangoes had changed. For two farmers the income did not change; one of them had not yet harvested any fruits. The other three producers declared that the income they derived from this crop had increased since they joined the group. First, because the quantity produced has increased (partly because losses have been reduced) and fruits are prettier, but also because buyers now buy in bulk (higher quantities) and prices are better.

Income from mango was usually spent on (open question):

- medical bills/health: 3/5;
- household: 3/5;
- school fees: 2/5;
- labour and agrochemicals: 1/5.

Additional income was being used for (probed question):

- health expenses: 3/3;
- paying debts or taxes: 2/3;
- household improvements: 2/3;
- schooling fees: 1/3;
- phytosanitary products: 1/3.

### **3.6. Other impacts**

#### ***Other crops***

All farmers said that being part of the group had a positive impact on their food purchases. Most of them (4/6) also use the new methods on other crops (intercrops and cocoa): for instance, farm sanitation and regular weeding, or pruning of the cocoa plantation.

#### ***Health***

Respondents also consider that there is a positive impact on their own health or on the health situation of their family:

- They are more aware of the effect of nutrition on health (3/6) (for example, more careful what they eat or they grow their vegetables organically);
- They can now afford better health care (2/6) (one respondent even registered for a health insurance);
- One respondent has improved relationships with other members, less stress;
- One respondent reports the home is better kept (improved hygiene).

## **Women**

They all agree on the fact that there was an impact on women. According to female respondents, the impacts are:

- Women can get assistance from the group in pruning, spraying, and harvesting. Even some women who are quite old can generate income from mango production thanks to the assistance received from the group;
- Women now have a voice and are listened to in the group;
- They have more interactions with visitors to the group;
- There is more money to help the husband financially, taking care of the health of the children, etc.

The perception of male farmers is quite similar:

- "My wife is a member of the executive [committee] and the training she received has greatly improved her. Management even at home is better. She also learnt how to use a computer";
- Women get support on the farm more easily;
- "They work with the visitors of the group and the exposure is very good".

## **Community**

All respondents know people who are interested in joining the group or in growing mangoes.

Some people outside the group are adopting organic/improved production methods: "*Some people are trying to prune their mango trees*". They also report that some are also "*planting at the right depth and in line, one man at Frankadua is using these new techniques*", others are using improved planting materials or grafting seedlings. Another change is that "*farms are neater, fields are weeded regularly*".

Three farmers mentioned that mango production and sales through the group provide labour for young people (and other farmers); in weeding the farm, harvesting, slashing and pruning.

### **3.7. Problems and suggestions**

One respondent observed that "*sometimes meetings are difficult to attend when I have to go and work as a labourer*".

According to two members still more marketing outlets are needed. Two said they need more money to expand the farm or to weed.

Two members suggested having a processing facility, to process and sell when exporters do not buy (a juicer). Two respondents suggested that all members should be trained in group management (not only the executive committee). Another suggestion, by two members was that the "*group should get tractors before computers*" to weed frequently and even plough, for slashing and harvesting.

## 4. ECONOMIC ASPECTS OF ORGANIC MANGO PRODUCTION AND SALES

### 4.1. Prices

Table 4. Overview of mango prices collected during the interviews and from other sources

	Before joining the group <sup>1</sup>	2007 <sup>1</sup>	2008
Price on local market	0.02 - 0.06 GH¢/fruit or 0.05 - 0.1 GH¢/kg	0.025 GH¢/fruit 0.062 GH¢/kg (only 2 respondents)	farm gate: 0.02 - 0.1 GH¢/kg <sup>4</sup> at the market: 0.08 - 0.1 GH¢/kg <sup>4</sup> 0.15 GH¢/kg <sup>2</sup>
Conventional farm gate prices for export			0.18 – 0.35 GH¢/kg <sup>4</sup>
Conventional (for drying)			0.20-0.25 GH¢/kg <sup>3</sup>
Price selling through VOMAGA to processors for export		0.2 - 0.35 GH¢/kg <sup>1</sup>	0.30 - 0.32 GH¢/kg <sup>2,3</sup>

Sources: <sup>1</sup> farmer survey, <sup>2</sup> Agro Eco, <sup>3</sup> Nature's Best, <sup>4</sup> survey by consultant

In 2008 VOMAGA charged a levy of 760 GH¢ for every 100 000 GH¢ received from the buyer. This amounts to only 0.76% of the farm gate price.

There is a clear difference between the prices received by selling on the local market or to local traders and the price received selling through the group to a processor/exporter. Compared with prices paid by conventional exporters (for fresh or drying), the price received through VOMAGA was at the higher end of the reported price ranges. It should be noted this was before VOMAGA obtained organic certification<sup>3</sup>.

The consultant was not able to obtain mango export prices at FOB level, except for the indication of 0.4 GH¢/kg from a cost-revenue analysis by the Horticulture Export Investment Initiative (HEII) for which the year is not known.

### 4.2. Cost of production and margins

Based on data from HEII/MOFA, an analysis of the cost of production and revenues for conventional mango has been made, which is presented in the annex to this chapter. The year of origin of the HEII/MOFA data is unknown, but before 2008. It is unclear to what extent these costs still conform to reality.

This results in a net margin of around 6 000 US\$/ha/yr, without considering administration and management overheads and without irrigation. Note that export prices are set at an equivalent of 0.4GH¢/kg. These are higher than the farm gate prices reported above. Based on a conventional farm gate price of 0.25 GH, a lower percentage of exportable yield (more realistic) and a lower total yield, the net margin is

<sup>3</sup> At the time of writing it was already known that WAD would increase the price in 2009, as VOMAGA was now certified.

still around 2 500 US\$/ha/yr, and investment costs will have been earned back after two years' harvest.

It is estimated that maintaining the organic certification would cost VOMAGA around 10 000 US\$ per year. This includes the certification fee, but also the cost of the internal control system and retaining Mr Clotey as ICS manager. With an organic price premium of 50 percent, this would mean VOMAGA would need to sell a minimum volume of 70 tonnes per year. Production volume was forecasted at 80 tonnes for 2009 and is set to increase with the maturing of the young plantations. However, whether VOMAGA is able to sell these quantities for the 50 percent price premium remains to be seen.

## **5. CONCLUSIONS**

In the case of VOMAGA, the project's activities started from scratch. Considering this, results have been promising. The association has been certified organic and has sold its first 12 tonnes to processors as an association in 2008. By selling through VOMAGA, farmers have received considerably higher prices than when selling to local traders or on the local market.

The majority of the surveyed farmers declared that the quantity sold has increased as a result of higher yields. Half of the surveyed farmers reported a higher income since they joined VOMAGA. How VOMAGA will develop in terms of sales volumes by its members and the impact on food security is unclear at this moment.

## ANNEXES

### Annex 1. Cost-benefit analysis of conventional mango production based on MOFA/HEII data, in old cedis

*Year unknown (before 2008).*

Plantation establishment			Operational costs 5th-15th yr
	1st yr	2 <sup>nd</sup> -4th yr costs/yr	
Land rent	250 000	250 000	250 000
Land preparation	3 650 000		
Seedlings	2 500 000		
Fertilizers	800 000	800 000	800 000
Pesticides	800 000	800 000	800 000
Labour	3 000 000	3 000 000	3 000 000
Subtotals/yr	<b>11 000 000</b>	4 850 000	<b>4 850 000</b>
Number of yrs		3	
Subtotals		<b>14 550 000</b>	
Total investment costs	<b>25 550 000</b>		
<b>Revenue</b>			<b>HEII/MOFA data</b>
			<b>project data*</b>
Average yield /ha			25 tonnes
			20 tonnes
60% = 15 tonnes export at 4 000 cedis/kg			(40%@2500c/kg) 20 000 000
40% = 10 tonnes local market at 1 000 cedis/kg			(60%@1000c/kg) 12 000 000
Total revenue/yr			70 000 000
Gross margin/yr			65 150 000
Amortisation investment costs over 15 years			1 700 000
			1 70 000
<b>Net margin (excluding overheads)</b>			<b>63 450 000</b>
			<b>25 450 000</b>

*\* Average yield and farm gate prices for conventional export based on experiences in the Volta Region by the project.*

## Annex 2. Individual farmer questionnaire

Questionnaire number: \_\_\_\_\_ Country: Ghana

Code questionnaire (do not fill):

1. Date of the interview (dd/mm/yy): \_\_\_\_\_

2. Name of the interviewer: \_\_\_\_\_

2a. Interview start time: \_\_\_\_\_

2b. Interview end time: \_\_\_\_\_

3. Name of the farmer: \_\_\_\_\_

4. Sex: Female (1) Male (2) (circle number)

5. Age: (Circle number in the first column)

1	Below 25
2	26-30
3	31-35
4	36-40
5	41-45
6	46-50
7	51-55
8	56-60
9	Over 60

6. Village: \_\_\_\_\_

7. Group: \_\_\_\_\_

8. Responsibility in the group: \_\_\_\_\_

9. Date joined group: \_\_\_\_\_

10. Export product concerned (Circle): **Pineapple / mango**

**11. Have you heard of the project with FAO and Agro Eco on export of organic products?**

(Circle number)

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

→ If no, please briefly describe the project

→ If yes, proceed to the next question

**12. If yes, in which project activity did you take part?**

Type of activity	Fill with Yes....1 or No....2
1. Training	
2. Meeting	
3. Other, please specify:	

⇒ If **NO** is the only answer to Question 11 and 12, the interview cannot continue.

Please select another farmer from the list that was given to you.

**SECTION 1 – TRAINING & CAPACITY BUILDING**

**13. If you received one or more training organized by FAO, please specify the type of training received:**

Type of training	<i>Fill with</i> Yes...1 or No.....2
1. Production methods	
2. Record keeping	
3. Post harvest	
4. <i>Collect of organic shea nut</i>	<i>Not applicable</i>
5. <i>Production of organic shea butter</i>	<i>Not applicable</i>
6. Marketing	
7. Standards and certification	
8. Association management	
9. Other, <u>please specify</u>	

⇒ If answer is No to all, go to Question 26

**14. If yes, to what extent were you satisfied with the training received?**

*(Circle number)*

1	Very unsatisfied
2	Unsatisfied
3	Neutral
4	Satisfied
5	Very satisfied
6	Don't know

**15. If Unsatisfied/Very unsatisfied, please explain why:**

**16. Did you already receive this type of training before attending the training organised by FAO? *(that is: before this project)***

*(Circle number)*

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

**17. What are the new methods that you learnt in the training organised by FAO?**

**18. If you started using these methods, did you face some specific difficulties?**

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

**19. If yes, could you please explain?**

**20. After the project is completed, do you think you will continue to use the new skills or methods you learned with the project?**

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

**21. If Yes, what are they? List example(s)**

**22. If No, why not?**

23. Has the training/assistance you received from this project helped in improving “quality” of the crop produced?

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

24. If not, why not?

25. If Yes, what aspect of product “quality” has changed most?

26. Is there a subject on which you think you need training, but that was not included in the training organized by FAO? (Answer should be related to the export crop targeted by the project)

## **SECTION 2 – PRODUCTION, MARKETING, COST OF PRODUCTION**

27. What are the major crops that you grow on your farm? (Indicate the 3 most important)

1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_

28. What is the total area of land that you own or work?

\_\_\_\_\_ (Specify unit:  hectare  acre   
other:.....)

29. What is the acreage presently dedicated to pineapple/mango production?

\_\_\_\_\_ (Specify unit:  hectare  acre   
other:.....)

***\*\* The questions that follow focus exclusively on sugarloaf pineapple or mango production \*\*\****

- for EAWOFA farmers BEFORE CERTIFICATION
- for VOMAGA farmers BEFORE BECOMING A MEMBER

30. EAWOFA farmers: Before starting to sell certified pineapple through the group, what was the quantity of pineapple that you used to sell every year?  
Vomaga farmers: Before becoming member of VOMAGA, what was the quantity of mango that you used to sell every year?

\_\_\_\_\_ (Specify unit:  kilo  tonne   
other:.....)

**31. How did you usually market your products before certification/group membership?**

*(Circle number (s))*

1	State/marketing board
2	Local market
3	Private firm
4	Producers' group without certification
5	Trader
6	Other, specify.....

**32. What was the price that you did usually get before being certified in organic agriculture / being a group member (in local currency)?**

\_\_\_\_\_ (Specify unit:  kilo  tonne   
other:.....)

➤ **HANGES OCCURED WITH CERTIFICATION/the project**

**33. Since you joined the project, the area dedicated to pineapple/mango production has:**

*(Circle number)*

1	Decreased
2	Not changed
3	Increased

**34. How do you explain this change?**

1	Bought new land
2	New planting
3	Sold land
4	pineapple/mango replaced by other crops
5	Other, specify:

**35. Since you started producing organic pineapple/mango, the quantity you produce annually has:**

*(Circle number)*

1	Decreased
2	Not changed ⇒Q37
3	Increased
4	Don't know

**36. How do you explain this change?** (Only if answer 1 or 3 to Q35)  
(Specify it is linked to a change in yields, area under cultivation, etc.)

**37. Do you think that with organic production methods, the yield has:**

*(Circle number)*

1	Decreased
2	Not changed
3	Increased
4	Don't know

*(If necessary explain: Yield = production per unit of land or per tree, expressed in ton/ha, kg/tree, etc...)*

**38. The cost of producing pineapple/mango has changed with organic production methods?**

*(Circle number)*

1	Decreased
2	Not changed    ⇨ Q40
3	Increased
4	Don't know

**39. If there had been a change in production costs, what has changed exactly?**

Review the different types of cost of production and for each line write in the right column the number corresponding to the answer (1,2,3, or 4):

**Increase...1      Decrease...2      No change...3      Don't know... 4**

		<b>Select one answer per line</b>			
		<input checked="" type="checkbox"/>			
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Purchase of seeds and young trees				
2	Time spent: weeding, harvesting, etc. (only family labour)				
3	Cost of hiring external labour				
4	Purchase of specific equipment				
5	Fertiliser purchase				
6	Purchase of phytosanitary products				
7	Transportation costs to the market				
8	Interests on loans				
9	Other, specify :				

**40. MARKETING:**

**EAWOFA: What has changed for you in the marketing of pineapple when you started selling a certified product with the support of the group (EAWOFA/WAD)?**

**VOMAGA: What has changed for you in the marketing of mango since you joined VOMAGA?**

*(for instance: less time spent selling on the spot market, transporting products to the market easier, negotiating prices, price stability, etc.)*

➤ **HARVEST 2007**

**41. EAWOFA: What was the quantity of pineapple sold to WAD in 2007?  
 VOMAGA: What was the quantity of mango sold to exporters in 2007/08 (= 2007 large season + dec07/jan08 small season)**

\_\_\_\_\_ (Specify unit:  kilo  ton  other  
 :.....)

**42. During 2007 campaign, did you also sell pineapples to other buyers or on local market?**

1	No	2	Yes	3	Don't know
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**43. EAWOFA: What was the price paid by WAD for organic pineapple in 2007 (in local currency)?**

**VOMAGA: What was the price paid by the exporter for your mangos in 2007?**

\_\_\_\_\_ (Specify unit:  kilo  ton  other  
 :.....)

**44. How much did you receive in total from pineapple/mango sold in 2007 (local currency)?**

\_\_\_\_\_

**45. Do you know the price of “non-organic” pineapple/mango on local market in 2007?**

\_\_\_\_\_ (Specify unit:  kilo  ton  other  
 :.....)

**46. Do you have any other commercial activity (apart from pineapple/mango sales)?**

1	No	2	Yes
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**47. If yes, could you please specify what are these activities?**

**48. The income that you earn from selling pineapple/mango represents what share of your total income:** *(Circle number)*

1	A small part (<50%)
2	About half (50%)
3	The major part of my total income (>50%)
4	Don't know

**49. EAWOFA: Has the income you obtain from selling pineapple changed since you got certified as an organic producer?**

**VOMAGA: Has the income you obtain from selling mango changed since you joined VOMAGA?**

*(Circle number)*

1	Decreased
2	Not changed ⇒ Q51
3	Increased
4	Don't know

**50. How would you explain the difference?**

**51. How do you usually spend the money you receive from selling pineapple/mango (specifically before certification)?**

**52. What are the additional expenses that you managed to afford since you started producing organic pineapple/mango?**

*(Select number(s))*

1	Purchase of agricultural equipment
2	Purchase of fertilisers and phytosanitary products
3	Purchase of land
4	Household improvements
5	Other investments, specify .....
6	Health expenses
7	Schooling fees
8	Clothing items
9	Food purchase
10	Paying debt or taxes
11	Funeral expenses
12	Other, specify:

**53. Has the project had any impact on your food purchases?**

1	No	2	Yes	3	Don't know
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**54. Has the project had any impact on the production of other food crops?**

*(For instance if organic production methods are used to grow food crops or if you managed to buy fertilisers, etc.)*

1	No	2	Yes	3	Don't know
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**55. If yes, please explain**

**56. Do you feel that the training/new production methods have had an effect on your or your family's health?**

1	No	2	Yes	3	Don't know
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**57. If yes, please explain**

### SECTION 3 – GROUP development

58. Have you noticed any change in your group since you joined it?  
(if possible try to see if these changes are specifically linked to project activities)

1	No	2	Yes	3	Don't know
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59. If yes, what are these changes?

60. Being a member of the group, does it help you in selling your products?

1	No	2	Yes	3	Don't know
---	----	---	-----	---	------------

61. Could you please explain?

### SECTION 4 - IMPACT

62. Does organic certification/being member of the group bring you some other benefits that were not mentioned before? (We already talked about changes in production, marketing, prices, and income)

1	No	2	Yes	3	Don't know
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63. If the answer is yes, could you explain what other benefits?

64. Are there negative impacts, problems, difficulties?

1	No	2	Yes	3	Don't know
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65. If the answer is yes, could you explain which one(s)?

66. EAWOFA: Do you think that organic certification has had any impact(s) on your community/village?

VOMAGA: Do you think that VOMAGA has had any impact on your community/village?

1	No	2	Yes	3	Don't know
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67. If Yes, what are they? List example(s)

68. Can you think of any ways that women could have specifically benefited from the project?

1	No	2	Yes	3	Don't know
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69. If yes, how? List example(s)

70. Has the project created new job opportunities in your community?

1	No	2	Yes	3	Don't know
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71. If yes, for whom and doing what exactly?

**72. Have you noticed if some new people are interested in joining the group?**

1 No	2 Yes	3 Don't know
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**73. Do you know if some people who are not members of the group and do not participate in the project have also adopted these new techniques (organic production methods in particular)?**

1 No	2 Yes	3 Don't know
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**74. If yes, which technique(s)?**

**75. Is there anything else that you would like to add to help improve project implementation?**