



**CARE INTERNATIONAL IN PNG**

**BOUGAINVILLAE COCOA FAMILIES SUPPORT PROJECT (BECOMES)**



**Baseline Evaluation**

**June 2017**

**Data Analysis & Report by**

**Dr. V. Vinod Goud**

**CARE International in PNG**

**PO Box 1157, Goroka, EHP 441**

**PAPUA NEW GUINEA**

**Phone: +675 532 2766 | Fax: +675 532 2803**

<b>Contents</b> .....	<b>1</b>
<b>Acknowledgements</b> .....	<b>2</b>
<b>Acronyms</b> .....	<b>3</b>
<b>Tables</b> .....	<b>3</b>
<b>Figures</b> .....	<b>3</b>
<b>Figures</b> .....	<b>4</b>
<b>Executive Summary</b> .....	<b>5</b>
<b>Report</b>	
<b>1. Introduction and background</b>	
1.1 Project Context. ....	13
1.2 Project Partners.....	13
1.3 CARE BECOMES Project .....	14
<b>2. Survey design and methodology</b>	
2.1. Purpose of the Study.....	16
2.2. Study Objectives .....	16
2.3. Sample Selection.....	17
2.4. Research Design .....	18
2.5. Survey team and organization.....	18
2.6. Data Processing and Analysis.....	19
2.7. Constraints and challenges.....	19
<b>3. Findings and Discussion</b>	
3.1. Background characteristics of the Study population.....	20
3.2. Cocoa based Livelihood of Households.....	22
3.3. Cocoa farming, Roles and Responsibilities of Household members.....	24
3.4. Knowledge levels and access to Extension Services.....	31
3.5. Access to Value Chain Services in Cocoa.....	34
3.6. Access to Market and related Constraints.....	36
3.7. Productivity and Incomes from Cocoa farming.....	38

3.8. Gender relations and Perceptions in Cocoa farming .....42  
3.9. Entrepreneurship among women and youth ..... 45  
3.10. Collective action and Cooperatives .....46

**4. Conclusions and recommendations..... 49**

**APPENDICES**

**APPENDIX A:** Household Survey Questionnaires (Joint & Individual) .....52  
**APPENDIX B:** Checklist for Key Informant Interviews.....71  
**APPENDIX C:** Checklist for FGD questions.....73  
**APPENDIX D:** List of Documents Reviewed.....75  
**APPENDIX E:** ToR of the Consultant.....76  
**APPENDIX F:** Photos.....79

## **Acknowledgements**

---

The Consultant is thankful to Ms. Rekha Shenoy, BECOMES Programme Manager, CARE International in PNG for giving an opportunity to carry out data analysis and report writing of the Baseline evaluation study of its target group of cocoa farmers falling in 9 Communities of Tinputz district in ARB. He further expresses his appreciation and thanks to Mr. Velea Vagi, Monitoring, Evaluation and Learning Officer of BECOMES project for sharing the study methodology, survey outputs and his help in data scrutiny process.

The support and sincere efforts made by the Surveyors and BECOMES staff namely Mr. Lawrence Chicka (Project Coordinator), Ms. Gabriella Marimyas (CSIP-Communications Coordinator), Ms. Lawrencina Siriman (Training Officer), Mr. Dickson Lopis (Field Team Facilitator), Mr. Bertrand Hasunn (Junior Field Officer), Ms. Pamela Hasunn (Field Extension Officer) and Mr. Pewape Papureita (Field Extension Officer) during the entire survey process are gratefully acknowledged. The services of Ms. Rebecca Jinro, Casual Data Entry Operator, who have patiently entered the data of respondents in a consolidated sheet, are appreciated too with thanks. Last but not the least, the Consultant wishes to acknowledge the active participation, unconditional cooperation and generous sharing of information by the study sample respondents, which has made possible to assess and record the performance parameters as baseline for BECOMES project in this report.

**Dr. V. Vinod Goud**

**June 2017**

## Acronyms

ABG	Autonomous Bougainville Government
ARB	Autonomous Region of Bougainville
BECOMES	Bougainville Cocoa Farming Families Support Project
CARE	Cooperative for Assistance and Relief Everywhere
CCI	Cocoa and Coconut Institute
CPB	Cocoa Pod Borer
CSF	Commodity Support Facility
DAL	Department of Agriculture and Livestock
DPI	Department of Primary Industries
FGD	Focused Group Discussion
LTP	Long Term Programme
NA	Not Applicable
PMV	Public Motor Vehicle
PNG	Papua New Guinea
PPAP	Productive Partnerships in Agriculture Program

## Tables

Table 1: Number of households assessed for the study .....	17
Table 2: Quantitative & qualitative techniques in mixed design approach.....	18
Table 3: Registered households under BECOMES project till now.....	20
Table 4: Knowledge Levels of Households in Cocoa farming.....	32
Table 5: Gender roles in the household chores of cocoa families.....	43
Table 6: Gender perceptions in cocoa farming households.....	44
Table 7: Overview and comparison of existing Co-operatives.....	48

## Figures

Fig.1: Project logic to reinvigorate Cocoa sector in ARB.....	21
Fig. 2: Composition of household members.....	21
Fig. 3: Age of household respondents.....	21
Fig.4: Education level of respondents.....	22
Fig.5: Head of the household.....	22
Fig.6: Decision maker in the Household.....	22
Fig.7: No. of cocoa blocks owned by households.....	22
Fig.8: No. of Trees owned by households.....	23
Fig.9: Land ownership of cocoa trees.....	23
Fig.10: Persons who started cocoa farming.....	23
Fig.11: Number of years in cocoa farming.....	24
Fig.12: Percentage of farmers having own Fermenter.....	24
Fig. 13: Pruning in coca blocks.....	24
Fig. 14: Sanitation in coca blocks.....	24
Fig.15: Weed management in coca blocks.....	25
Fig.16: Fertiliser Application in coca blocks.....	25
Fig. 17: Shade tree management in coca blocks.....	26
Fig. 18: Awareness on Cocoa Pod Borer (CPB).....	26

Fig. 19 Persons handling chemicals in cocoa farming.....	26
Fig. 20: Tools used in harvesting cocoa pods.....	27
Fig.21: Nursery activity.....	27
Fig.22: Tree planting activity.....	27
Fig.23: Budding activity.....	28
Fig.24: Pruning operations.....	28
Fig.25: Weeding operations.....	28
Fig.26: Harvesting of pods.....	28
Fig. 27: Fermenting of wet beans .....	29
Fig.28: Loading of cocoa bags into trucks.....	29
Fig.29: Transportation of cocoa bags to the buyer.....	29
Fig.30: Sale of cocoa.....	29
Fig. 31: Trainings received during the last 6 months.....	30
Fig.32: No. of men & women received training.....	31
Fig.33: Main sources of information to farmers.....	33
Fig.34: Access to clonal seedlings procurement.....	34
Fig. 35: Common sources of fertilizers & chemicals.....	34
Fig. 36: Access to banks by households.....	34
Fig. 37: Name of banks where accounts are there.....	35
Fig.38: Sources of credit & financial services.....	35
Fig.39: Common sources of drying facilities.....	35
Fig. 40: Marketing person in households.....	36
Fig.41: Mode of marketing by households.....	36
Fig. 42: Percentage of farmers facing problems in marketing.....	37
Fig. 43: No. of cocoa bags produced last year.....	38
Fig.44: Type of cocoa beans produced.....	38
Fig.45: No. of wet bags produced.....	38
Fig. 46: Quality determinants of cocoa beans.....	39
Fig. 47: Differential payment for quality cocoa.....	39
Fig.48: Average price of dry cocoa bag .....	40
Fig 49: Annual Income from sale of cocoa in PGK.....	40
Fig.50: Persons handling Cocoa Incomes.....	40

## Executive Summary

### Introduction

Cocoa is a highly important export crop in PNG and the smallholder's dependent on cocoa farming for their livelihoods mainly contribute to about 80% of its total production. Despite the growing demand for cocoa beans, the cocoa production is not commensurate with the number of cocoa blocks available due to low productivity. Women play critical roles for ensuring productivity and quality in the cocoa value chain, yet they have poor access and control over the income received through cocoa bean sales, which may have negative bearing on the growth of cocoa sector. Growing disinterest of youth in cocoa farming is another serious concern that demands immediate attention.

CARE PNG launched BECOMES project funded by the Government of Australia and the Government of New Zealand under the Commodity Support Facility (CSF). The project is for four years starting from July 2016 to June 2020, which aims to *“improve the economic and social wellbeing of younger and older women and men in cocoa farming families in the Autonomous Region of Bougainville (ARB)”*. In order to achieve its goal, the project will implement the following three objectives:

1. Smallholder families have improved social and technical capacities to manage their cocoa farming
2. Targeted smallholder families are demonstrating increased cooperation and collective action to increase production efficiency as well as enable market opportunities
3. Cocoa industry stakeholders have increased capacity to address the specific needs of smallholder cocoa farming families

BECOMES project is initially launched in Tinputz district with 500 cocoa farming households drawn from nine targeted Communities of the district. In this context, BECOMES project conducted the baseline study to establish realistic performance benchmarks in cocoa farming before the start of BECOMES project interventions. BECOMES engaged an International Consultant to conduct analysis of the surveyed data and write the baseline evaluation report capturing the results and insights, which are presented below.

### Study Methodology

The study followed the random selection method to select households for the survey and the mixed research design for collection of the hard and soft data. The

household survey was carried out in 141 households, out of the total targeted population of 500 households. The quantitative part of survey was conducted by a team composed of eight male enumerators under the supervision of BECOMES project staff during April and May 2017. Quantitative data were processed, analyzed and organized into tables using Microsoft Excel; graphs developed to summarize the results. Qualitative information was used to provide in-depth analysis and compliment the quantitative data. In addition, the reports of the project were also referred.

## **Key Findings**

### **Background characteristics of the study population**

There are a total of 838 members in 141 cocoa households surveyed. The average male and female ratio in these households is 53% and 47% respectively consisting of 37% adults, 18% youth and 45% children. All the household members are educated and women received more or less equal opportunities on par with men in education and appeared to be not discriminated in accessing formal education. The households are predominantly male headed. However, in majority of the households the husband and wife collectively taken household decisions, which indicate that domestic environment is by and large conducive for addressing gender-equitable concerns related to cocoa farming.

### **Cocoa based Livelihood of Households**

Majority of the households are smallholder cocoa farmers possessing one to two blocks and doing cocoa farming for more than five years. In most of the households, the husband initiated cocoa farming. Some households the wives got the cocoa blocks on inheritance from their parents' side and some got from the father side as well. In some other households, both the husband and wife started it seeing the potential of income earning opportunity with the growing market demand for cocoa beans. In majority of the households, the land of cocoa blocks is owned by wives followed by husbands in one third of the households. More than half of the households depend upon on neighbors for Fermenter and drying of the beans.

### **Cocoa farming, Roles and Responsibilities family members**

All the households carry out pruning and sanitation in their cocoa blocks. Weeding is done either manually using grass cutting knives and hand weeding or spraying of chemicals. Majority of the households do not use the chemicals much. Shade tree management is being done to promote healthy growth of cocoa trees and improve the yield. Cocoa Pod Borer (CPB) became a devastating pest in cocoa blocks in PNG, ultimately affecting the yield badly. Everyone possessed some tools to harvest

cocoa pods. The most commonly used tools include the sharp hook on stick, bush knife and secateurs. Very few used hands too to spin off pods from the tree.

Cocoa nursery work mainly done by family members themselves, mostly the husband and wife, while tree planting activity mainly done by women. Budding activity is not reported by all households, which may be either they did not have skills or obtained the grafted plants from nurseries outside. The husbands did mainly the pruning activity. However, both husband and wife are equally involved in weeding and harvesting of the pods. The husbands played a key role in fermentation and drying activity while the wives provided support. Men mainly did the loading of cocoa bags onto the trucks, transported and marketed. Smallholder men carried cocoa bags on their backs and shoulders to the buyer's site nearby or to the main road.

The role of youth is lesser in cocoa farming despite their relatively higher strength in the households and owning cocoa blocks. Youth groups preferred to have trainings that are exclusively targeted for them on scientific methods to farm cocoa profitably, and motivational aspects to change their negative attitudes, behaviors and frustrations should also be included in the training for better life. In general, hiring external labour is minimal in cocoa farming, as the family mainly takes care of the farm themselves.

### **Knowledge levels and access to Extension Services**

Majority received training provided by CARE BECOMES project during the last six months, of which 77% were men and 67% were women. Some received training by other agencies as well like DPI, MONPI, World Vision, PPAP, ABG, etc., sporadically on different topics. By and large, most of the respondents had good knowledge of cocoa production methods. However, they seemed to be requiring further training on scientific methods of post-harvest handling of pods, wet beans extraction, fermentation methods and drying process with practical demos. Moreover, both men and women possessed more or less the same level of knowledge, which suggests that both men and women involved in cocoa farming equally. The major source of the information on cocoa farming related practices came through their friends or fellow cocoa farmers, followed by newspapers and radio; they are yet to access the mainstream information sources like local magazines, TV and internet.

### **Access to Value Chain Services in Cocoa**

Most of the farmers procured clonal seedlings from the village nurseries, and where there are no nurseries they obtained the planting stock from neighboring village nurseries. Majority procured fertilizers and chemicals from Agmark shops in Buka, Kokopau and Arawa towns and few others purchased locally in the village shop. Less

than 50% of households did not have bank accounts. Among the banks, BSP bank has more numbers of accounts followed by ANZ, PNG Micro bank and Wantok Bank. Majority did not have any access to credit and financial services, which reveals the status of poor investments going into cocoa farming by a considerable proportion of households due to lack of access to external credit support mechanism, one of the main reasons for poor productivity and returns in smallholder farms. Quite a large section of households did not have own Fermenter and depended on neighbors for drying.

### **Access to Market and related Constraints**

The husbands mainly did the marketing of cocoa beans. The distance and good price offered by the buyer determined the preference of a buyer. Majority sold cocoa beans to exporting agencies such as Agmark and Sankamap in Buka and Kokopau and Paradise Food Limited in Arawa, because they believed that these export agencies pay the better price. Some sold to the local middlemen, Fermenter owners and traders due to different reasons like cash purchase to meet immediate shopping and family needs, easy access, monopoly of one or two buyers locally, lack of other alternative sources, easy transport, buys at reasonable price, and so on.

Transport of cocoa beans is a formidable issue for many farmers. The transport system is very weak in ARB due to disruption of road network at most of the places during the civil war. Moreover, some of the project villages are located in remote and mountainous areas without any connecting roads to the main highways, which often require them to carry cocoa bags on their backs and shoulders from their farms to the buyer's site. Those farmers who wish to sell their beans in the town to export companies for better prices carry the bags on their backs up to the highway road for about 2-3 hours and then go by PMV to the town. This finding point out that development of road infrastructure is imperative in the cocoa growing areas by the ARB and PNG national government providing good interior road connectivity and mobility of cocoa produce from the farms to markets in order to strengthen the cocoa sector.

It was reported that cocoa farmers faced many constraints with regard to marketing of their cocoa beans. The beans were often rejected or offered lower prices by the buyers for low quality of cocoa due to issues like CPB attack, high or low fermentation or drying, cold, underweight, smoke smell, etc. The farmers are often helpless dealing with the market forces as individuals with poor negotiation power.

### **Productivity and Incomes from Cocoa farming**

Nearly 70% of the households produced less than 10 bags of beans. Low production is a major issue among the smallholders. Apart from CPB attack, the

production constrained mainly by lack of proper tools and trainings, shortage of man power, lack of access to drying and fermentation facilities, and so on. Mostly those farmers who possessed one to two cocoa blocks produced only wet beans due to lack of own Fermenter facility. The quality of dry beans is generally decided based on the parameters such as color, shape, aroma and texture. However, it was reported that in practice these quality parameters are not recognized by the buyers while deciding the price to be paid.

Average price per bag of 63.5 kilograms of dry cocoa beans is K300 to K400. Depending upon the number and age of cocoa trees owned by the households, including other factors like having own fermenting and drying facilities, the average annual income ranged between K4000 to K5000 per annum per household for both wet and dry bean sales. Both husband and wife handled the cocoa income in majority of the households. But in a sizable proportion of the household's husbands alone handled the income for reasons like husband is the head of the family, knows how to spend it better, do everything including handling of income, and so on. The income mainly used for food and clothes, followed by chemicals and garden tools, school fees, drugs and alcohol and other petty needs. Majority expressed willingness to part with some income as incentive towards the labour work provided by either family members or outside labour for motivation and recognizing their contribution.

### **Gender relations and Perceptions in Cocoa farming**

There was an acceptance and encouragement to women occupying the leadership positions in these predominantly male headed households. Men are the main workers in making the food garden (clearing, planting and harvesting) and hunting, while they did equally the main work along with women in fetching firewood and doing house shopping activities. Whereas, women are the main workers in selling the fresh garden food at the market and multiple domestic chores such as taking care of children, laundry, cleaning dishes, fetching water and firewood, and household shopping; the women are also equal main workers in some of the cocoa farm works. It shows that women bear more workload handling multifarious activities relating to the household and cocoa farms. However, it was found that there is gender sensitivity and awareness on the existing gender barriers and gender biased unequal opportunities among the men and women.

### **Entrepreneurship among women and youth**

Majority of women and youth expressed interest to venture into business enterprises. Majority of youth preferred to have a group business, while majority of

women desired having individual business at family level. Both women and youth have identified various small business opportunities down the cocoa value chain that are more or less similar such as selling of nursery plants, selling of poly and jute bags for nursery and packing of beans, selling of twine to sew up cocoa bags, selling of tools and chemicals, buying of wet beans to process and resell, selling of bud wood garden, and owning a Fermenter and drying cocoa for a fee. Poultry farming for using manure in cocoa blocks as well as to sell manure to other farmers and selling of peanuts planting as intercrops in cocoa blocks are identified by the women groups. They need working capital, training and handholding support to undertake enterprises such as the above, which can strengthen the cocoa value chain as well as improve livelihoods of individual of entrepreneurs.

### **Collective action and Cooperatives**

All respondents expressed willingness to work in co-operatives and aware of the benefits of being part of a co-operative. They believed that co-operative can provide training on better cocoa farming practices, inputs supply and sell beans at higher prices providing better returns by negotiating with bigger cocoa traders. Majority of women opined that they should be included in the leadership roles along with men for gender-equitable decision making practices in a co-operative. They wanted even ‘all women co-operatives’ to be formed helping them to address their needs effectively and realize their dreams.

There are four co-operatives in Tinputz district, viz., 1) Opiuk Co-operative Society, 2) Kukurina Business Group, 3) Mate Farmers Group, and 4) Mate Women’s Club falling in the operational area of BECOMES project. All four co-operatives are in the nascent stage, including the Opiuk Co-operative Society, which is though almost seven years old by now. Though the members have by and large good understanding on the objectives and benefits of being part of the co-operatives, they are yet to see the vibrant co-operatives enlisting active participation of members through regular meetings and bringing better incomes to their members on cocoa sales.

In terms of benefits, the members received so far are few in case of Opiuk or none in case of Kukurina and Mate Women’s group. Women involvement in these co-operatives seems to have brought some positive outcomes in their households. However, a lot needs to be done to involve women and improve gender-equitable recognition of their services and incomes.

The management and operational procedures are ad hoc and yet to be developed rationally. Conflict resolution and management mechanisms lacked totally for all these

co-operatives. All the four need further capacity building, mentoring and handholding support to guide and assist them developing their governance, management and operational modalities to function as a co-operative in letter and spirit serving the interests of their members.

## **Conclusions and recommendations**

### **Cocoa farming households**

The baseline survey provides rich insights into the current situation and problems being faced by cocoa farmers in ARB. The productivity of cocoa is low due to simple farming practices and minimal use of fertilizers and pesticides. Productivity can be improved appreciably providing training to both men and women together on scientific methods of cocoa production. Lack of access to proper fermentation and drying facilities is affecting the quality of beans, thus reducing the price and leading to further low income returns, in addition to the lower productivity. Value addition by improving the fermentation and drying facilities either individually or centrally at group level (co-operative) can provide higher returns for many smallholder farmers.

The average income per year for a majority of cocoa farming households is below K5000, which means that an average income per day is as low as K14. Extremely low incomes inhibit the adoption of more advanced farming practices, including the use of fertilizers and pesticides, and inability to afford owning a Fermenter for better value addition of cocoa beans. Many a household are not yet linked to the banks and deprived of credit support services for critical investments on tools and chemicals to improve cocoa productivity. The markets are not farmer-friendly due to frequent price fluctuations, lack of differential pricing based on quality of beans, unscrupulous practices of buyers, and poor negotiation power of unorganized cocoa producers.

The role of youth is not perceptible in cocoa farming at present, though majority of the married youth own at least one cocoa block. This is an alarming issue that may affect the cocoa sector in the long run if neglected. There is good scope to introduce and nurture entrepreneurship among youth in the cocoa value chain services. Exclusive trainings targeting only youth need to be organized covering the technical and entrepreneurial topics to train them on scientific methods of cocoa farm maintenance and business opportunities related to the cocoa value chain.

There is no practice of monetary compensation (incentives) for women labour and freedom to spend the income for their personal needs and social purposes. More conscious efforts are required to recognize women's contribution by men in cocoa farming households and giving full dignity to the opinions of women through gender

sensitization workshops / awareness camps. However, there is good understanding and attitudes towards the gender-equality in these social–demographic settings and reasonably balanced gender perspectives on the roles and rights of either sex in a majority of the households, which however in practice have to be operationalized to address the gender-inequalities at the household level in terms of workload and income sharing in cocoa farming.

### **Co-operatives**

Nearly 50% of the cocoa farmers are not aware of the co-operatives. Such farmers should be organized into new co-operatives based on their homogeneity in terms of location or tribe, or inducted into the existing ones by increasing their membership. The co-operatives studied need a business vision and corresponding strategies, approaches, structures and governance policies to function more effectively providing the real benefits to the associated cocoa farmers. Strong farmer groups are pivotal for efficient and inclusive functioning of the co-operatives, therefore, more emphasis should be given on capacity building of the office bearers on leadership, management and governance systems and to improve the services in the cocoa value chain. These co-operatives must be made more democratic, participatory, gender-equitable to provide better services to its members and generate more profits to improve the livelihoods of cocoa farmers, and impact the cocoa industry positively in the long run.

# **REPORT**

## **1. Introduction and background**

### **1.1 Project Context**

Cocoa (*Theobroma cacao*) is a highly important export crop in Papua New Guinea (PNG), grown mostly on smallholder family-run farms. These smallholders, a majority of them having less than five hectares of land, are dependent on cocoa farming for their livelihoods and contributing to about 80% of the cocoa production in PNG. Despite the growing demand for cocoa beans, the cocoa production is not commensurate with the availability of ample coca blocks and the great potential to improve and expand the sector further. Many smallholders harvest cocoa opportunistically with little or no management inputs to improve the productive capacity of cocoa blocks, which is hence often referred to as “foraging” rather than farming.

Cocoa productivity of smallholder families has been low mainly due to four constraints, viz., 1) lack of agronomic knowledge and skills, including on pest and disease management, 2) limited access to high yielding planting material and inputs, 3) poor block condition and 4) weak linkages to premium markets. A fifth constraint, which is often ignored and dishonoured in cocoa production, is the role of women in the entire cocoa value chain. Both social and technical barriers constrain the women to play meaningful and remunerative roles in the cocoa value chain. Growing disinterest of youth in cocoa farming is another worthwhile issue that demands immediate attention and it may affect the medium and long-term growth of cocoa industry in PNG if ignored.

Women, particularly in the context of present project intervention, though play critical roles for ensuring productivity and quality in the cocoa value chain, yet they have poor access and control over the incomes through cocoa bean sales, which may act as a disincentive to their sustained interest and involvement in cocoa farming. They still remain at the bottom of the cocoa value chain providing labour for production without realizing their due share in the benefits for their labour work in processing, marketing and sale. In addition to the work in cocoa gardens, women bear a disproportionate burden of domestic work due to the gender biased roles, relations and social expectations institutionalized in the households and communities over a period of time.

### **1.2 Project Partners**

CARE is an international humanitarian aid organization that is striving towards eradication of global poverty with a special focus on empowering women and girls to bring lasting change to their communities. CARE has been working in PNG since 1989

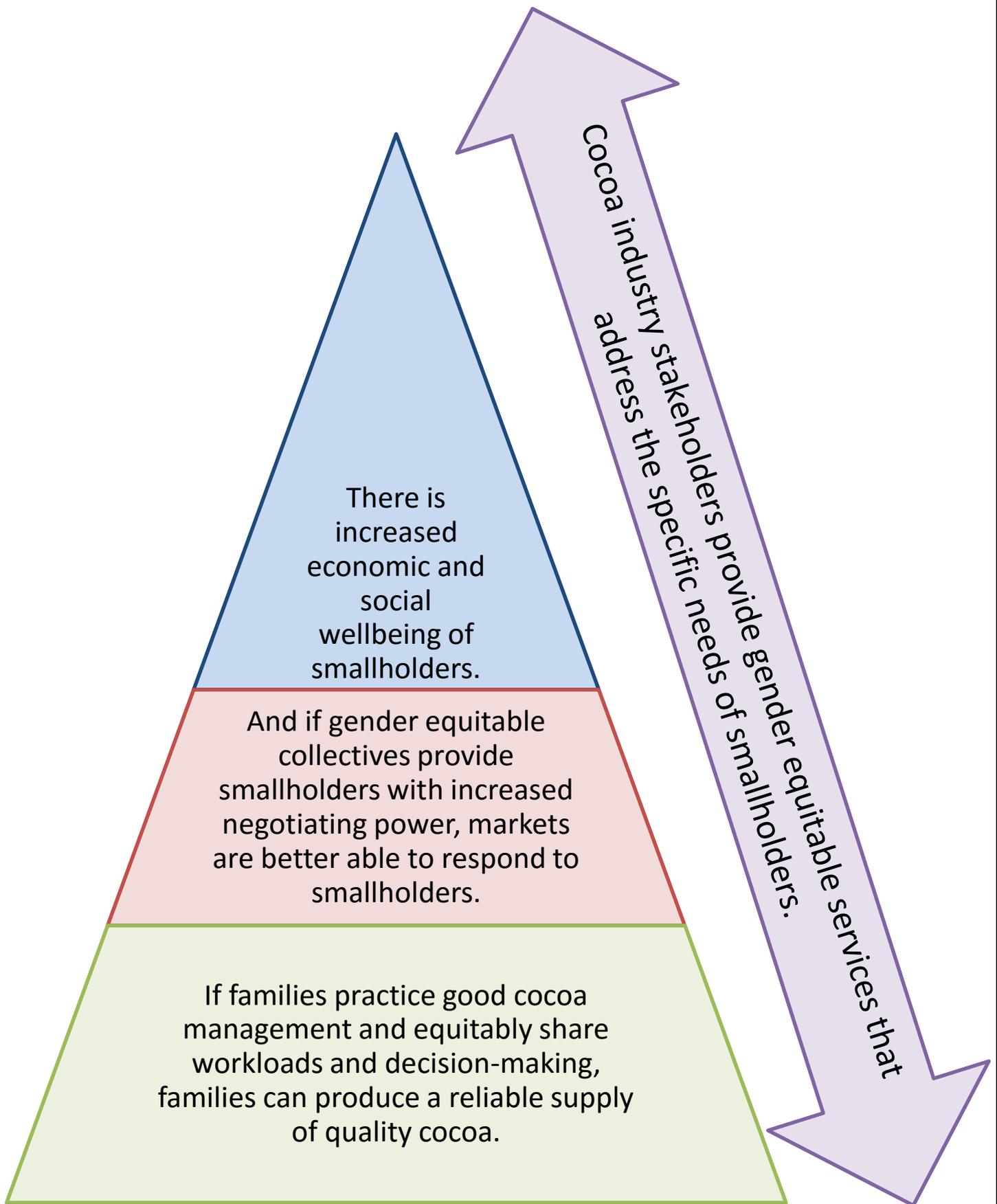
and established its operations in the Autonomous Region of Bougainville (ARB) in 2008. The Governments of Australia and New Zealand in collaboration with the Autonomous Bougainville Government (ABG) and the Department of Primary Industries (DPI) piloted a Commodity Support Facility (CSF) project with an initial budget of K7 million for the purpose of supporting Cocoa and Coconut production, processing, and marketing in ARB. In the context of cocoa, the main focus of CSF is to improve the productivity and profitability of smallholder cocoa farming in remote areas by establishing village-level enterprises, improve cocoa quality promoting good cultivation practices and access premium markets by engaging the multi-stakeholders including researchers, cocoa buyers and exporters in sustaining the role of cocoa in generating incomes and raising living standards in ARB.

In line with its vision, mission and strategic objectives, CARE PNG proposed a four-year project titled “Bougainville Cocoa Farming Families Support Project (BECOMES)” to address the gender-inequity, low productivity and disrupted market linkages in cocoa value chain. The project intends to address the constraints prevalent in cocoa industry relating to productivity, key value chain services and better markets establishing strong co-operatives run by gender-equitable governance and operating systems. It is part of CARE PNG’s Long Term Programme (LTP) for ARB with its impact group of women and adolescent girls.

### **1.3. CARE BECOMES Project**

CARE PNG launched BECOMES project, which is a four-year project starting from July 2016 to June 2020, and funded by the Government of Australia and the Government of New Zealand under the Commodity Support Facility (CSF). The project aims to *“improve the economic and social wellbeing of younger and older women and men in cocoa farming families in the Autonomous Region of Bougainville (ARB)”* and it will work with smallholder cocoa farmers of North, Central and South Bougainville. Tinputz district is selected initially and launched the project with 500 cocoa farming households drawn from all nine communities in the district to begin with. The project intends to revive the cocoa sector to improve the livelihoods of communities addressing both technical and social constraints plaguing the cocoa production using an integrated, evidence-based approach with relevant interventions and improvements in the cocoa value chain (Fig.1). Therefore, the proposed activities are designed to contribute towards making cocoa farming become more profitable and gender-equitable for the target communities through co-operatives and the neighboring villages.

**Fig.1: Project logic to reinvigorate Cocoa sector in ARB**



In order to achieve its goal, the project will implement the following three objectives:

1. Smallholder families have improved social and technical capacities to manage their cocoa farming
2. Targeted smallholder families are demonstrating increased cooperation and collective action to increase production efficiency as well as enable market opportunities
3. Cocoa industry stakeholders have increased capacity to address the specific needs of smallholder cocoa farming families

In pursuance of achieving the above objectives, the BECOMES project envisages a range of social and technical activities to address the issues identified to reinvigorate the cocoa farming in the project areas. In this context, BECOMES project conducted baseline study and assessed the key segments and services that fall within the scope of cocoa farming: status of the households and cocoa blocks, cocoa farming practices, extension services, gender roles and relations, cocoa based incomes, market, financial services and the co-operatives. BECOMES engaged an International Consultant to work from home and conduct analysis of surveyed data and write baseline evaluation report capturing the results. The subsequent sections will present the baseline study methodology, key findings, and the conclusions and recommendations in detail.

## **2. Survey design and methodology**

### **2.1 Purpose of the Study**

The purpose of the baseline study is to establish realistic performance benchmarks in the cocoa farming before the start of BECOMES project interventions so as to enable comparison of the relevance and effectiveness of the project activities implementation with the end line results and impacts later. Having a baseline beforehand allows the BECOMES project implementers to review and monitor the project performance periodically and to improve the accuracy of future estimates.

### **2.2. Study Objectives**

The specific objectives of the study are as follows:

1. To benchmark the data on productivity and quality of cocoa in the targeted project clusters
2. To inform project design through identifying priority areas in order to focus our work and help in designing the project activities and processes
3. To capture data on participation of women and youth, gender roles and relations in the cocoa farming community, including access to inputs, information, farming knowledge, division of labour, and incentives.

4. To map out the existing community groups and co-operatives relating to cocoa farming

### 2.3 Sample Selection

The study was conducted in the entire intervention Communities of Tinputz district in ARB where the programme would be implemented in the next three years. Based on the geographic area and population of the selected blocks, simple random sampling method was used to select the sample of cocoa farming households for data collection under the baseline study. Out of the total targeted population of 500 households, the sample size decided initially was around 160-170 (i.e., 32-34% of the total) cocoa farming households, but the survey could be done finally only in 141 households (28%) due to the paucity of time.

All the nine Communities or Villages have been further sub-divided into Clusters ranging from five to seven depending upon the number of households in the Community. Out of the nine Communities, Namatoa is the biggest Community having seven Clusters followed by six Clusters in Suangu, while the rest of them have five Clusters each. The sample households were selected from these Clusters picking up the household names randomly, who later participated and contributed to the baseline survey process (Table 1).

**Table 1: Number of households assessed for the study**

Community/ Village	No. of Clusters	No. of Respondents	
		Male	Female
Koikavuit	5	8	8
Pokapa	5	15	15
Matakrus	6	16	16
Teotop	5	15	15
Suangu	6	20	20
Kariapa	5	20	20
Unonovi	5	11	11
Hanatobin	5	13	13
Namatoa	7	23	23
<b>Total</b>	<b>49</b>	<b>141</b>	<b>141</b>

## 2.4 Research Design

A mixed research design of quantitative and qualitative techniques adopted to capture the hard and soft data for the study, which is summarized in the table 2.

**Table 2: Quantitative and Qualitative Techniques in Mixed Design Approach**

Quantitative Approach	Qualitative Approach
<p><b>A. Primary Survey</b> at household level:            a. <b>Data collection</b> through pre-tested structured questionnaires (<b>Appendix A</b>).</p> <p>There were two parts to this primary survey: in the first part the household head and spouse were spoken to at the same time (<b>joint survey</b>), in the second part the household head and spouse were split and spoken to separately (<b>individual survey</b>)</p> <p><b>B. Secondary Data</b> collected through – a) Historical information from related sources in ARB and Tinputz District            b) Reports -Value chain analysis report of David Anderson, etc. (<b>Appendix D</b>)</p>	<p><b>A. Key Informant Interviews</b> - in-depth discussions with co-operatives and community groups. (<b>Appendix B</b>)</p> <p><b>B. Focus Group Discussions (FGDs)</b> at village level with youth group and women’s groups. (<b>Appendix C</b>)</p> <p>a) To list out and assess issues related to the participation of women and youth in the cocoa farming and their access to trainings \ information</p> <p>b) To substantiate / validate quantitative information</p>

In each household, both male and female elders participated in the survey process, which means that there were equal numbers of both the genders answered the pre-designed questionnaires. The interview process consisted of two modes of eliciting data, viz., a joint session, wherein both the male and female of a household answered the questions together in a consultation mode, and individual session, wherein the male and female answered the same questions separately reflecting the gender perspectives, biases and concerns without any inhibitions and influence from their partners. In accordance with the mixed research design, the questions were varied and designed differently for the joint and individual interviews to capture a plethora of information and issues from the households related to cocoa farming and its value chain

## 2.5 Survey team and organization

The survey was conducted by a team composed of 8 male enumerators, who were all experienced in conducting and collecting the baseline or research data. After identification, they were asked to submit their CVs and recruited as casual surveyors. Followed by this, two-day training was held for them by CARE BECOMES project staff with an objective to prepare and guide them in study instruments and the process of data collection. They were explained the baseline questionnaires and conducted

practical exercises involving household interviews and data collection as part of the training. This ensured all the members sharing a common understanding of the scope of research, specific topics under the study and the methods to be used. The fieldwork was carried out during April and May 2017.

## **2.6. Data Processing and Analysis**

The survey teams recorded data and information in the data collection sheets (questionnaires) and the joint and individual survey questionnaires were then entered into a database sheet. Quantitative data were processed, analyzed and organized into tables using Microsoft Excel and the graphs were developed to summarize and display information in a manner that is easy to comprehend the results. Descriptive statistical values including frequency counts, percentage, minimum value, maximum value, and average, etc., were calculated to elicit meaningful insights from the data. Qualitative information was used to provide in-depth analysis and description for each output and to compliment the quantitative data. In addition, the reports of the project (the list given at the end) were also referred to and the relevant insights used to present the field level issues better and build a good baseline for effective implementation of the project.

## **2.7. Constraints and challenges**

The baseline study has faced the following constraints and challenges in the course of survey process and report writing.

**a. Survey process:** The survey process in the field faced mainly two constraints, which disrupted and delayed the data collection work. A chief in Namatoa Community passed away and all the Communities in Tinputz district observed one week of mourning leaving data collection activity almost to a standstill. The other major event was the Community Governance election (formerly known as Local Level Government). Both the events constrained catching hold of the respondents whose names were pulled out for interviews during the random selection, which affected the survey schedule plan, and hence entire target of the sample households could not be completed within the time period earmarked for it.

**b. Data analysis and report writing:** An external Consultant was engaged to conduct data analysis and report writing of the baseline study using the database supplied by the BECOMES project team, which posed the following challenges to the Consultant in executing the task.

(i). The Consultant had no control over the adequacy, accuracy and quality of the data given to him and the resultant likelihood of gaps in capturing the insights in totality, if not wrongly.

(ii). At times it was difficult to draw conclusions meaningfully merely based on the data figures and interpret the results coherently in line with the actual field situation.

### 3. Findings and Discussion

#### 3.1. Background characteristics of the study population

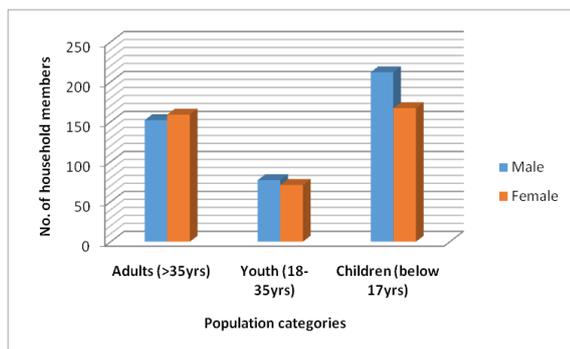
BECOMES project has so far registered 500 cocoa households selected from nine Communities or Villages falling in 49 Clusters, an average of ten households per Cluster, in Tinputz district for its project interventions. Out of 500 households, a sample of 141 households (28%) selected randomly for gathering data under the baseline study.

**Table 3: Registered households under BECOMES project till now**

Community / Village	No. of Clusters	No. of Households registered
Koikavuit	5	50
Pokapa	5	50
Matakrus	6	60
Teotop	5	51
Suangu	6	60
Kariapa	5	72
Unonovi	5	50
Hanatobin	5	40
Namatoa	7	67
<b>Total</b>	<b>49</b>	<b>500</b>

There are a total of 838 members in 141 cocoa households surveyed (Fig.2). The average male and female ratio in these households is 53% and 47% respectively consisting of 37% adults (>35 years), 18% youth (18-35 years) and 45% children (<17 years). Majority of the survey respondents were between the age group of 26 – 55 years, and within this range, the highest percentage being the male (35%) and female (36%) falling between the age group of 26-35 years followed by 48% and 51% respectively in the age group of 36-55 years (Fig.3).

**Fig. 2: Composition of household members**

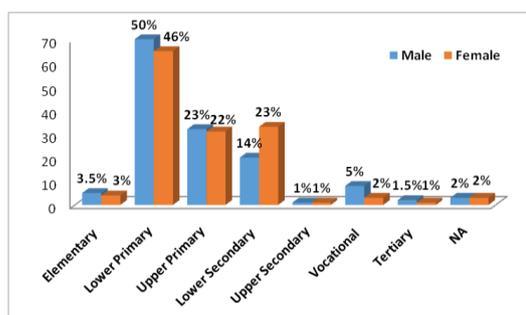


**Fig. 3: Age of the respondents**



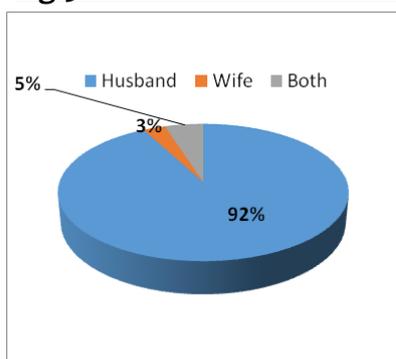
In some households, the older men (10%) and women (6%) falling in the age group of 56-65 years participated, while a very small percentage of male (2%) and female (1%) respondents belonged to the age group of 66 – 75 years. On the whole, the households have more young population, including youth and children, which can offer ample opportunities to train them on scientific methods of cocoa farming, skill development and entrepreneurship promotion in cocoa value chain services and develop leadership qualities to play active roles in the Cooperatives.

**Fig.4: Education level of respondents**

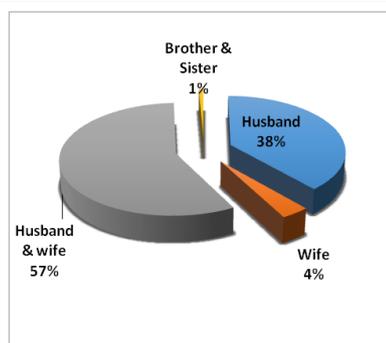


Almost the entire sample of households, both the respondents – males (97%) and females (95%) - had the formal education and is able to read and write. Majority of the males (50%) and females (46%) had lower primary education, and almost equal number of them (22%) had attended upper primary school, while 14% males and 23% females from 20 and 33 households respectively had the lower secondary education (Fig.4). Very few were found to be attended college and university education, while some males (5%) and females (2%) received vocational education. Overall, the figures indicate that all the household members are educated and women received more or less equal opportunities on par with men in education and appeared to be not discriminated in accessing formal education.

**Fig.5: Head of the household**



**Fig.6: Decision maker in the Household**

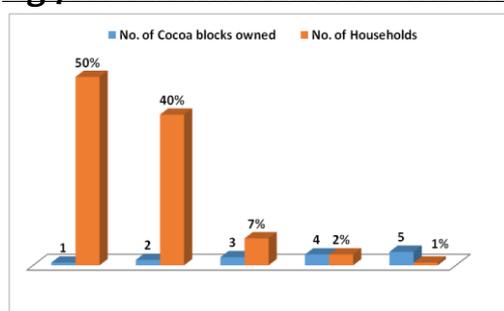


In majority (92%), husband is the head of households, followed by only 3% of households where women found to be heads, while about 5% of households have both husband and wife as heads (Fig.5). Based on this data, it can be concluded that the cocoa farming households are predominantly male headed. However, when it came to decision making, in 57% of households the respondents expressed that both husband and wife would jointly take decisions, while in 38% of households' husband alone takes the decisions excluding women involvement. However, in a miniscule of 4% of households' wife alone takes the decisions (Fig.6). Therefore, the data indicates that in majority of households there seems to be a process of consultation and concurrence between husband and wife to take any household decisions, which indicates that domestic environment is by and large conducive for addressing the gender concerns related to cocoa farming.

### 3.2. Cocoa based Livelihood of Households

Out of 141 households, about 50% have only one cocoa block with less than 300 cocoa trees followed by 40% with two blocks, 7% with three blocks, 2% with four blocks and 1% with five blocks (Fig.7). It indicates that a majority (90%) of households are smallholder cocoa farmers possessing one to two blocks of cocoa trees.

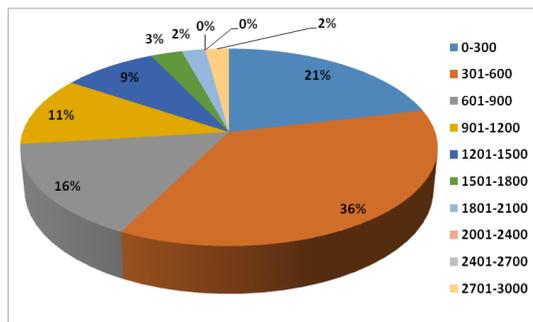
**Fig.7: No. of cocoa blocks owned by households**



The household wise number of trees data too corroborates this conclusion, wherein 57% of households have less than 600 cocoa trees followed by 16% with less than 900 trees

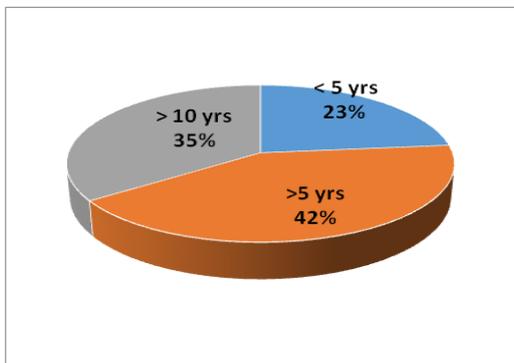
while only 2% of households have the highest number blocks i.e., ten blocks with a range of 2700 to 3000 cocoa trees (Fig.8).

**Fig.8: No. of Trees owned by households**

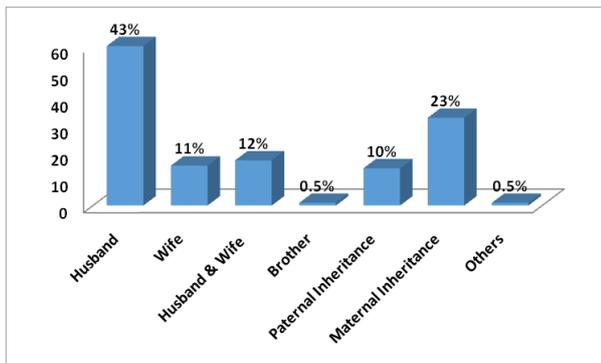


About 35% of households are involved in cocoa farming for more than ten years now followed by 42% of households doing it for more than five years, while 23% of households started in recent years not crossing over five years (Fig.9). In most of the households (43%), husband initiated cocoa farming. In about 23% of households' wives got the cocoa blocks on inheritance from their parents' side and continued farming. Some households (10%) got the cocoa blocks from their father's side as well, while in 11% of households' wives took initiative in starting cocoa farming and in case of 12% of households both husband and wife started it seeing the potential of income earning opportunity with the growing market demand for cocoa beans (Fig.10).

**Fig.9: No. of years in cocoa farming**

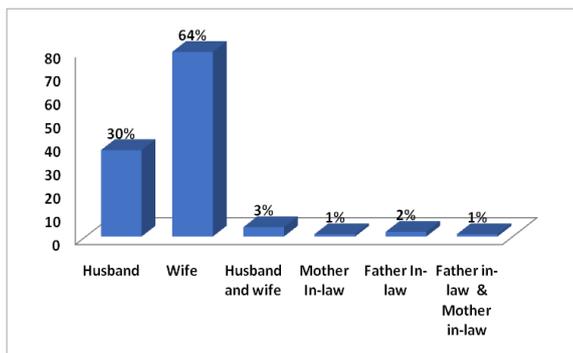


**Fig.10: Person who started cocoa farming**

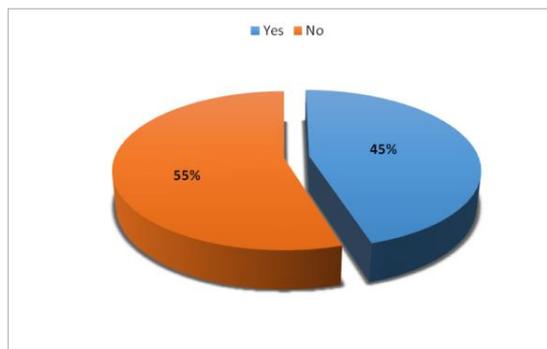


Interestingly, in majority of the households (64%) the land where cocoa blocks are located is owned by wives followed by husbands in 30% of households, while only in 3% of households both wife and husband are jointly owned the land. In a fraction of households, the land is owned by mother-in-law (1%), father-in-law (2%) and in 1% of households both together owned it (Fig.11). Of the 141 households, only 45% of them own a Fermenter to process their wet cocoa beans while 55% of them appear to be depending upon the neighbors and other sources for drying the beans (Fig.12).

**Fig.11: Land ownership of cocoa trees**



**Fig.12: Farmers having own Fermenter**

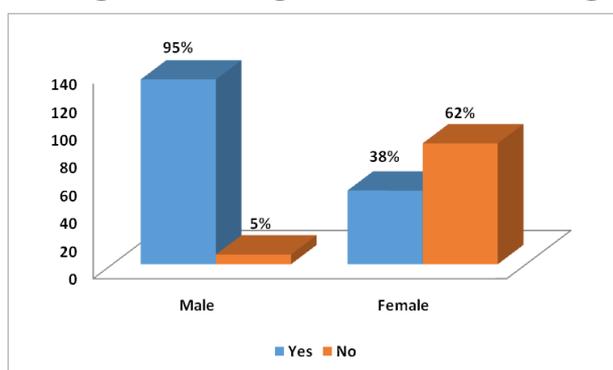


### 3.3. Cocoa farming practices, Roles and Responsibilities of household members Cocoa farming practices

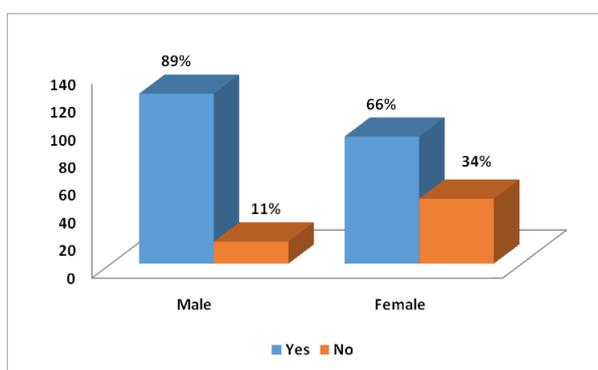
Pruning is an important operation in maintenance of cocoa blocks from the first year onwards. It involves cutting off sucker shoots in young trees to dead branches in older trees to maintain a single healthy straight bole to increase pods formation, and ensure even and open canopy to allow air and sunlight penetrate to reduce pests and diseases. It is found that all households have awareness about the importance of pruning and follow this practice in their cocoa blocks.

The data reveals that pruning is predominantly a man’s job, as shared by men respondents (95%), while 62% of women revealed their non-involvement in pruning of cocoa trees and 38% of them confirmed that men do this work (Fig.13). The men explained about the tools being used in pruning and the process involved in carrying out pruning operations, which showed their reasonably good knowledge and skills in carrying out pruning.

**Fig. 13: Pruning in cocoa blocks**



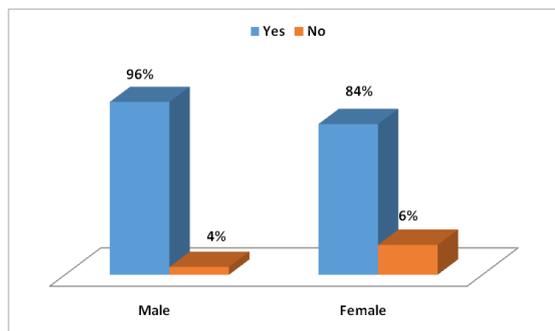
**Fig. 14: Sanitation in cocoa blocks**



Similarly, the sanitation practice ensuring cocoa tree cleanliness involving removing black pods, diseased and damaged parts of trees, infected spots / dark sores on branch barks on trunks and removal of leaf litter and mulch on the ground under the trees to improve hygiene and growth of trees is also mainly done by men as 89% of men and 66% of women respondents acknowledged it. They explained the process of doing

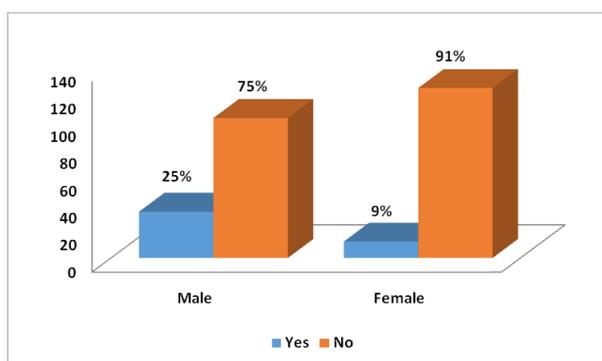
sanitation using the tools like knives, hooks, secateurs, including hands. Nevertheless, 34% of women reported that they did involve in sanitation work, while 11% of men as well shared that they did not involve in sanitation works, where women in those households seem to be doing it (Fig.14).

**Fig.15: Weed management in cocoa blocks**



Weed management is mostly important in young cocoa plantations to prevent weeds competing for nutrients, light, water and space with growing cocoa trees and restrict access and movement during harvesting, pruning and other activities amid the trees. Weeding is done either manually using grass cutting knives and hand weeding or spraying of chemicals, and in some cases both the methods are being used. Interestingly, a majority of men (96%) and women (84%) unequivocally responded expressing their involvement in weed management positively, which reveals that both men and women are actively involved in weeding of cocoa blocks (Fig. 15).

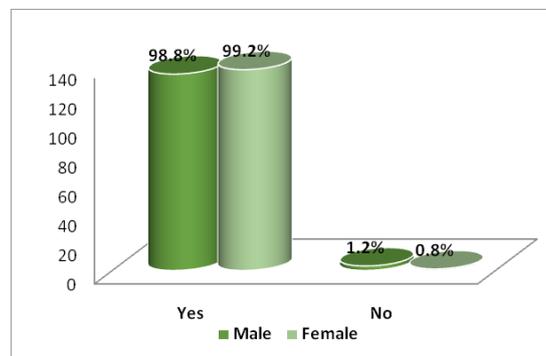
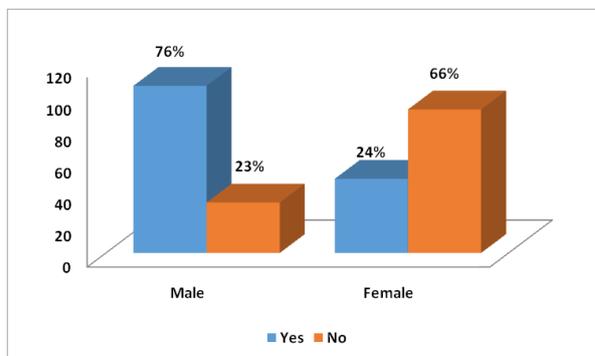
**Fig.16: Fertiliser Application in cocoa blocks**



However, fertilizers application is not done by a majority of households as reported by 75% of men and 91% of women interviewed, whilst 25% of men claimed to be performing fertilizer application although only 9% of women respondents confirmed applying fertilizers in cocoa blocks (Fig.16). Shade tree management is another crucial operation to promote healthy growth of cocoa trees and improve the yield. Most common shade trees in PNG are coconut and Gliricidia. Majority of men respondents (76%) agreed to be performing shade tree management, but 66% of women gave

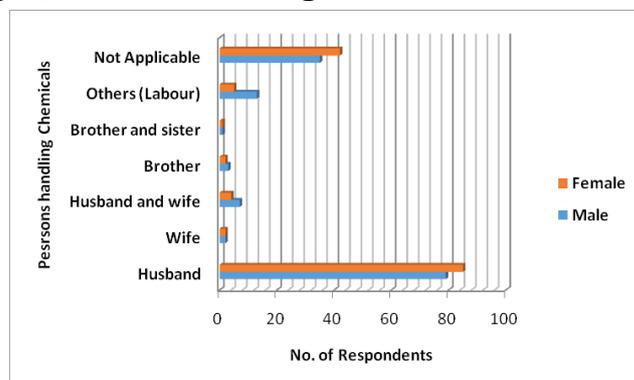
negative answers, which show their non-involvement in this operation. However, about 24% of women responded positively of their participation in shade tree management while more or less equal number of men replied negatively confirming participation of their women counterparts doing it in those households (Fig.17).

**Fig. 17: Shade tree management in cocoa blocks**    **Fig. 18: Awareness on CPB attack**



Quite understandably, all the respondents expressed their awareness of Cocoa Pod Borer (CPB) menace on cocoa trees, as it proved to be a devastating pest in the cocoa blocks in PNG of late (Fig.18). The larvae of CPB moth burrow into the pods and eat pulp. The respondents are aware of the symptoms of CPB infestation like uneven ripening of pods and clumping of seeds inside, and the damages of CPB in spoiling the pods ultimately affecting the yield badly.

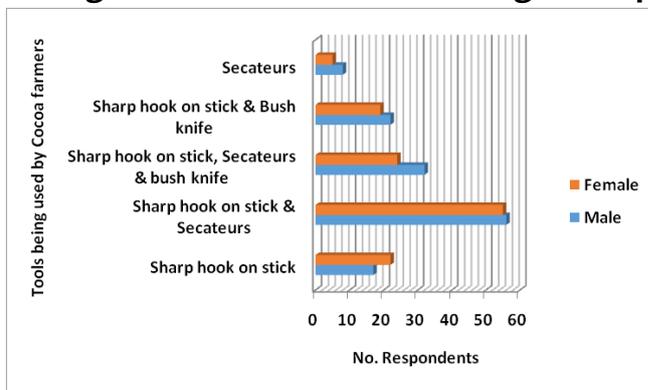
**Fig. 19 Persons handling chemicals in cocoa farming**



Men are mainly handling the chemicals like mixing and spraying of pesticides on cocoa trees to control the pest and diseases, as reported by men respondents from 79 households (56%) and women respondents from 85 households (60%) (Fig.19). There is a general perception among men and women that men alone are more capable of handling chemicals as they know about the chemicals better and better poised to handle this work. Most of the women respondents endorsed this view, while some women felt that they did not have any knowledge of chemicals or usage of sprayers due to lack of training and experience of doing such works. Concerns like unsafety for women and children were also voiced by many. Some other respondents felt that

women don't have time for it as they are busy with cooking food and taking care of children. Nonetheless, 25% of men and 30% of women were silent about the chemicals usage, therefore, it may be concluded that these households might not have used the chemicals much in their cocoa blocks.

**Fig. 20: Tools used in harvesting cocoa pods**

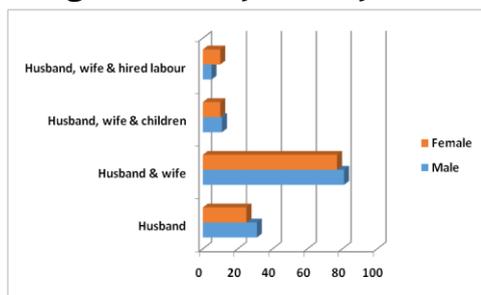


The most commonly used tools for harvesting cocoa pods include the sharp hook on stick, bush knife and secateurs, as reported by a majority of the men and women respondents (Fig.20). Very few use hands too to spin off pods from the tree, as reported by few women. Otherwise, everyone possesses some kind of tools and uses them to harvest the cocoa pods. However, majority of the households require improved tools and training on proper harvesting methods.

**Roles and responsibilities in cocoa farming**

An attempt has been made to assess the roles and responsibilities of men and women, including young members of the family, in carrying out various operations in cocoa farming. The family members took care of cocoa nursery work without hiring the external labour; mostly husband and wife did it together, as reported by more than 60% of households, followed by husband alone in nearly one-fourth of the households (Fig.21).

**Fig.21: Nursery activity**

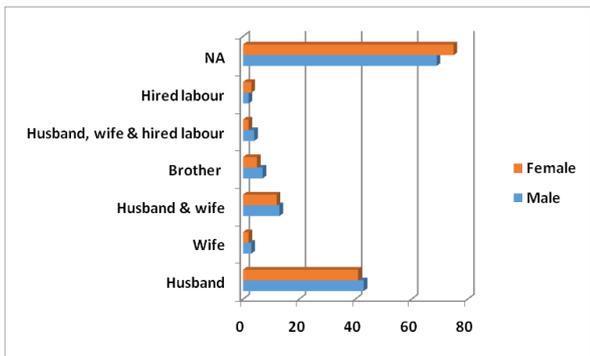


**Fig.22: Tree planting activity**

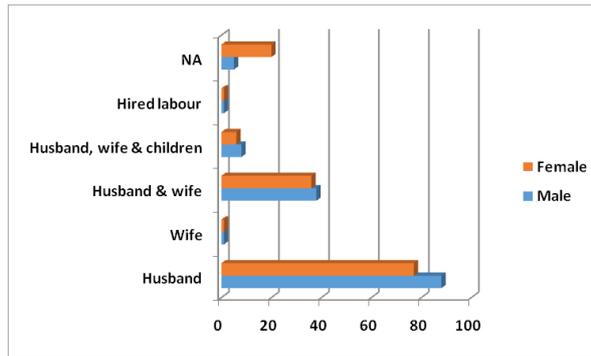


Nearly 10% of the households, the young members (son and daughter) helped their parents in handling and maintaining the nurseries. Hired labour involvement in nursery work is minimal. Whereas, the tree planting activity was mainly done by women as acknowledged by nearly 50% of male and 63% of female respondents, although husband too actively taken the lead in this activity either doing it alone or supporting his wife as reported by one-fourth of the male and female respondents (Fig.22).

**Fig.23: Budding activity**

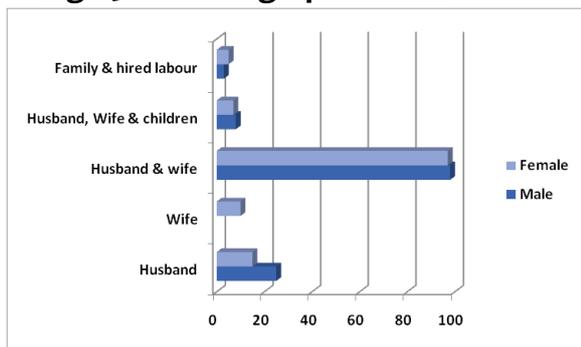


**Fig.24: Pruning operations**



About 50% of the sample households are not involved in budding activity, which may indicate that all cocoa households either do not have the skills to do it themselves or obtain the grafted plants from the nurseries outside (Fig.23). Where budding is done, husband mainly involved in doing it. In some households, husband and wife together did it as claimed by about 20% of the male and female respondents. Similarly, pruning activity seems to be the prerogative of husbands to perform, as shared by 63% of male and 54% of female respondents (Fig.24). However, wives also joined their husbands in one-fourth of the households.

**Fig.25: Weeding operations**

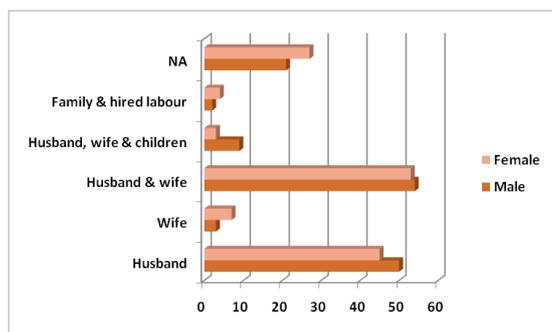


**Fig.26: Harvesting of pods**

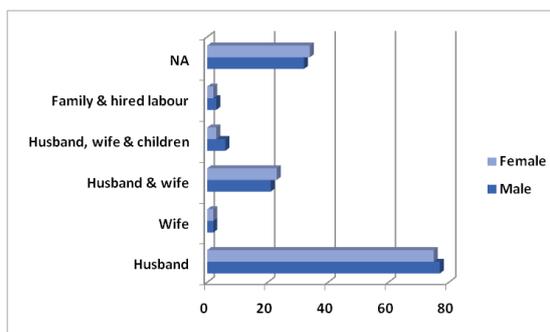


Both husband and wife are equally involved in weeding their cocoa blocks in a majority (>70%) of the households (Fig.25). In few households (8%), wife alone did the weeding, while in some households' young children and hired labour participated in weeding operations. Similarly, husband and wife are equally involved in harvesting the pods, while in 14% of households husbands took more responsibility of harvesting the pods over their female counterparts (Fig.26).

**Fig. 27: Fermenting of wet beans**

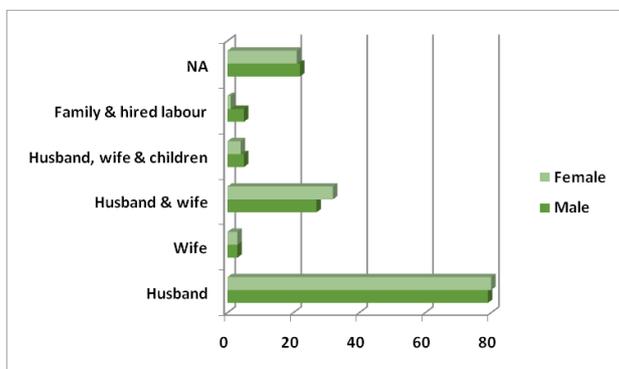


**Fig.28: Loading of cocoa bags into trucks**

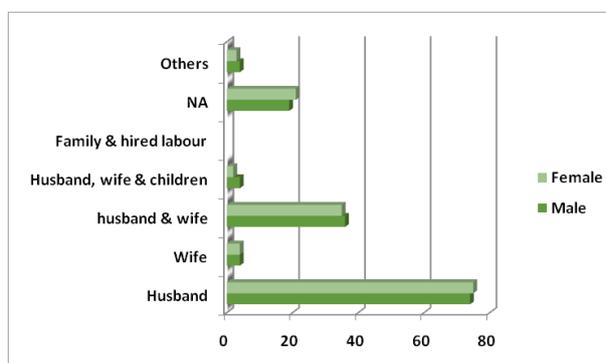


In about 20% of the households, fermentation activity is not reported because they sold the wet beans directly (Fig.27). In general, husbands played a key role in fermentation and drying activities in all households and their wives too provided support in majority (50%) of those households. Loading of cocoa beans into trucks demands physical strength and stamina. Therefore, husbands mainly did this activity in more than 50% of households, while nearly 25% of households did not answer it indicating that cocoa bags of these households were carried on their backs and shoulders to the buyer’s site, mostly in nearby places (Fig. 28). However, in about 15% of the households, wives helped their husbands in loading cocoa bags while wives handled it themselves in about 2% of households.

**Fig.29: Transportation of cocoa bags**



**Fig.30: Sale of cocoa beans**



Transportation of cocoa bags to the buyer was mainly done by husbands, as reported by 56% of male and female respondents, whereas in about 20% of households both husband and wife involved more or less equally (Fig.29). Similarly, in more than 50% of the households only husbands handled the markets in finding a buyer and selling the cocoa bags, while in one-fourth of the sample households both husband and wife were involved in marketing their cocoa bags (Fig.30).

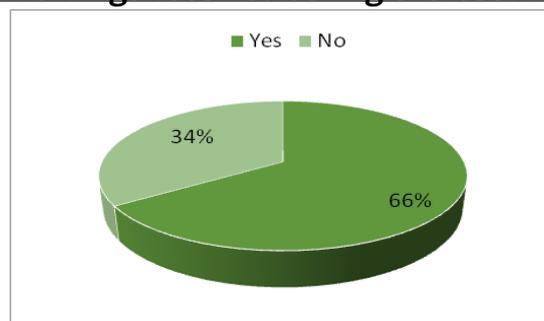
## Youth in Cocoa farming

Though a majority of married youth own a cocoa block, yet they are disillusioned about cocoa farming due to various constraints faced by them such as having no or proper tools to work, lack of any training and hence finding cocoa farming to be a challenge, serious CPB attack, not owning a Fermenter, no proper access to road from cocoa farm in order to market their cocoa, disputes over land ownership, shortage of land, and having no motivation to farm cocoa and hence engaged in other unproductive activities. Mostly female youth were found to be working in the cocoa farms compared to male youth; male youth would often spend most of their time in socializing like leisure time with friends, alcohol and drug/marijuana consumption and trafficking, etc.

To sum up, husbands played the lead roles assuming responsibility of executing the activities like budding, pruning, loading, transporting and selling of cocoa bags in the market, while wives did help their husbands in the above activities and played predominant roles in planting of cocoa seedlings and followed their husbands working on par with them in other activities such as nursery, weeding, harvest, fermentation and drying of cocoa bags. This finding clearly demonstrates that overall the women played, in terms of their involvement as well as undertaking diverse tasks, not only the major roles in cocoa production but also involved in multiple roles throughout the cocoa value chain.

Besides, it is found that in general the role of male and female youth is lesser in cocoa farming despite their relatively higher strength in the households due to lack awareness on better management practices of cocoa and growing disinterest with meager income returns. Some respondents remarked that while parents worked in their cocoa blocks the children idled around drinking home brewed beer! Youth groups preferred to have trainings that are exclusively targeted for them on scientific methods to farm cocoa profitably, and such trainings should also include topics on motivational aspects to change their negative attitudes, behaviors and frustrations, and to lead a better life.

**Fig.31: Trainings received during the last 6 months**

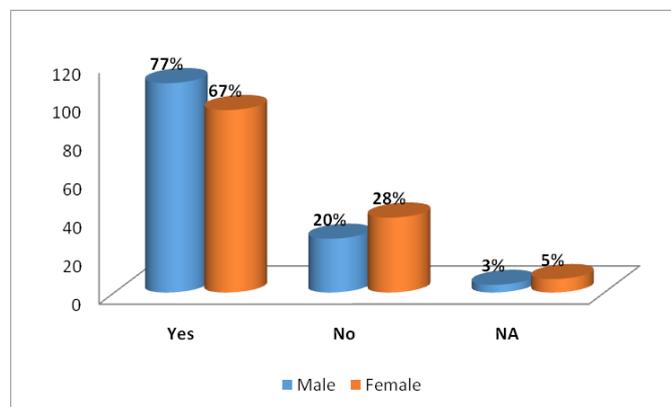


### 3.4. Knowledge levels and access to Extension Services

Of the 141 households, 66% of them received training during the last six months whilst 34% of households could not have access to any training (Fig.31). Among those who received the training, 77% of them were men and 67% were women (Fig.32). The training was mainly provided by CARE BECOMES project covering about 60% of the households. Some of the households received training by other agencies as well like DPI, MONPI, World Vision, PPAP, ABG, etc., on different topics of cocoa farming.

The trainings by those agencies covered varied topics such as managing the cocoa blocks, cocoa harvesting, cocoa nursery, chemical management, cocoa financial and business management, gender, cocoa fermentation and drying, pruning, and budding as per their mandate and the area of their focus in the cocoa value chain.

**Fig.32: No. of men & women received training**



The households were shared with a list of statements covering various aspects of the best management practices in cocoa farming during the interview to test their knowledge level inviting a simple answer as to whether it is ‘true’ or ‘false’, which are summarized in the table 4.

There were a total of eleven statements, of which, 45% were ‘false’ and the remaining 64% were ‘true’ statements formulated deliberately for this purpose. The respondents answered nine statements (88%) correctly, but there were mixed opinions with regard to two questions (18%) concerning about the processing of cocoa beans such as turning beans during fermentation and exposing them to sunlight. This finding indicates that the respondents have, by and large, good knowledge of cocoa production methods.

**Table 4: Knowledge Levels of Households in Cocoa farming**

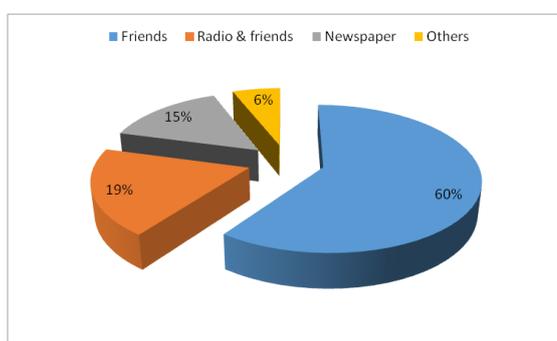
S. No.	Statements	Correct Answers	% of answers by the Respondents	
			Males	Females
1	Controlling disease is not a key part of efficient management of a cocoa farm	FALSE	84%	80%
2	Growers must always recognize the symptoms of the disease, understand its causes & know how it operates	TRUE	96%	96%
3	Harvesting of cocoa done every 2 weeks, if not many ripe pods, and every week during the peak periods	TRUE	96.50%	95%
4	It is okay to harvest unripe pods	FALSE	97%	94%
5	Pod breaking must be done in an appropriate manner & large quantities of pods must be broken just within a couple of days after harvesting for fear of contamination and disease	TRUE	96.50%	96.50%
6	Turning of beans (once a day) during the fermentation is not allowed	FALSE	51%	49%
			48%	50%
7	Cocoa beans must not be exposed to sunlight for drying after fermentation process	FALSE	45%	49%
			55%	49%
8	Proper bagging and storage of the processed beans is just as important as proper fermentation and drying	TRUE	93%	94%
9	Cocoa beans in the bags must be checked before cocoa is sold to the buyer	TRUE	94.50%	90%
10	Quality control is not the responsibility of the farmers	FALSE	79%	75%
11	Cocoa farmers should keep the up-to-date records of all their farming activities	TRUE	83%	94%

However, they seem to be requiring further training on scientific methods of post-harvest handling of pods, wet beans extraction, fermentation methods and drying process with practical demos. Moreover, it can be observed in the table 4 that the percentages of male and female answers are very close for the ‘true’ and ‘false’ statements, which suggests that both men and women possess by and large the same level of knowledge on cocoa farming practices. It further suggests that both men and women involve in cocoa farming more or less equally.

## Gender based constraints in accessing trainings

Discussion with women groups separately across the target villages revealed some of the constraints that they face in attending the trainings. Generally, it has become a normal practice to send only the men to such trainings while women are expected to focus on working in their food gardens, cleaning around their homes, cooking food for their school-going children and other child-care activities. A few women within the groups mentioned that their spouses did not allow them to attend because they thought cocoa was only the “men-business”, while few others stated that they did not feel motivated enough (uninterested) to attend such trainings due to domestic and farm workloads.

**Fig.33: Main sources of information to farmers**



Most of women groups expressed inclination towards the idea of exclusive training sessions for women stating the reasons such as customarily some men and women cannot be in the same area or space at the same time and or they cannot speak in front of each other, while others stated that they weren't confident enough speaking in front of their male partners who are by nature dominant during the conversations. However, few groups preferred mixed trainings stating that they would like to receive similar information such that they would not quarrel with each other while working in the farm. Some women expressed that they need women-friendly tools and training to handle hard tasks like pruning and harvesting of pods on older and taller trees, and usage of chemicals and sprayers.

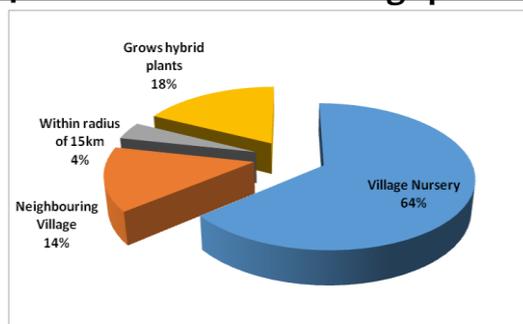
The major source (>60%) of the information regarding cocoa farming practices comes through their friends or fellow cocoa farmers followed by newspapers and radio for the cocoa households (Fig. 33). These households do not seem to have access yet to the mainstream information sources like local magazines, TV and internet.

### 3.5: Access to Value Chain Services in Cocoa

#### Clonal planting stock

Cocoa being predominantly the smallholder crop, access to good value chain services by the farmers locally determines the production and quality of cocoa beans. It is found that most of the farmers (64%) procured clonal seedlings from village nurseries and where there are no nurseries within the village they obtained planting stock from the neighboring village nurseries (16%), while some farmers (4%) went few kilometers away to procure the good planting stock. Some farmers (18%) preferred hybrid plants for planting (Fig.34).

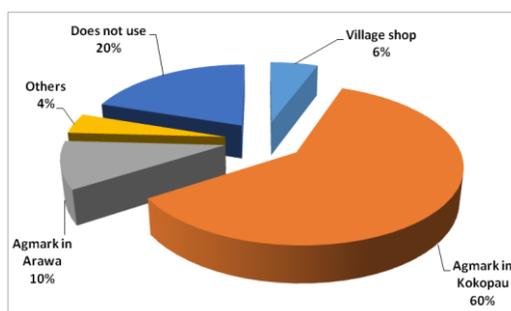
**Fig.34: Access to clonal seedlings procurement**



#### Access to chemical inputs

Majority of the households (60%) procured fertilizers and chemicals from Agmark shop in Kokopau town, followed 10% of households reported that they bought at Agmark shop in Arawa town while 6% of households procured locally in the village shop (Fig.35). However, about 20% of households reported that they did not buy any chemicals, which perhaps may be due to lack of access or awareness on chemicals usage in pest and disease control measures of cocoa trees.

**Fig. 35: Common sources of fertilizers & chemicals**

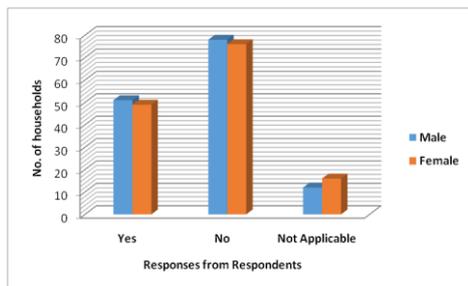


#### Access to Financial Linkages and Services

More than 50% of the households reported that they do not have bank accounts with 55% of men and 54% of women respondents giving negative answers. About 35% of households are only having bank accounts (Fig.36). Most of these households have bank accounts in BSP bank, as reported by more than 80% of male and female

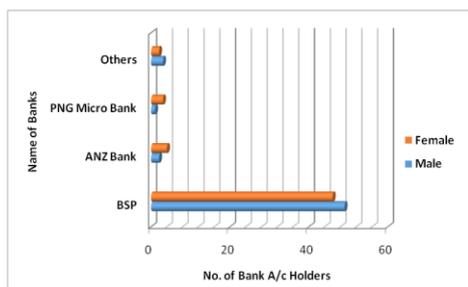
respondents followed by ANZ (5%) and PNG Micro banks (4%). Few have bank accounts in other banks like Wantok Bank (Fig.37).

**Fig. 36: Access to banks by households**

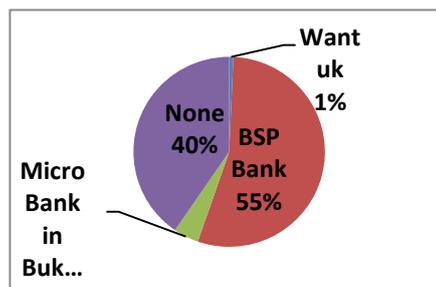


Therefore, most of the households (55%) reported that BSP Bank is the main source for credit and financial services, followed by Micro Bank in Buka where about 4% of households referred to it for meeting their credit requirements while a tiny section (1%) of households mentioned about Wantok Bank (Fig. 38).

**Fig. 37: Banks where the accounts exist**

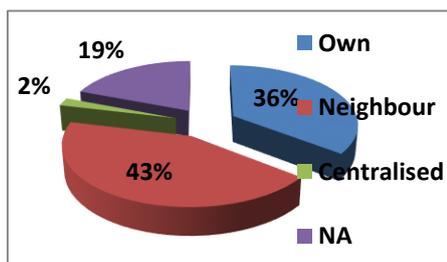


**Fig.38: Sources of credit & financial services**



These households reported that the banks can be reached by road after travelling about an hour to three hours depending upon the distance to banks from these remote villages. Notably, about 40% of households did not have any access to credit and financial services revealing the status of poor investments going into cocoa farming by a considerable proportion of households due to lack of access to external credit support mechanism, one of the main reasons for poor productivity and returns in smallholder farms.

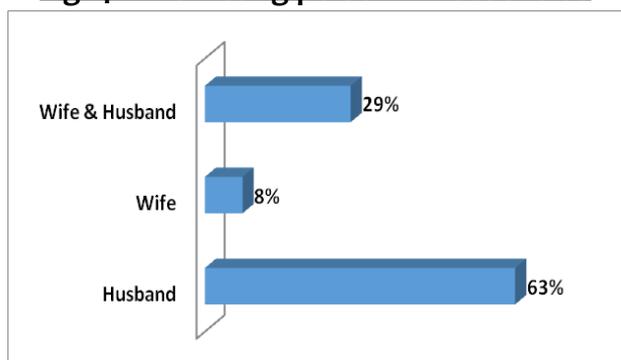
**Fig.39: Common sources of drying facilities**



## Drying facilities

The process of fermentation and drying of cocoa beans play an important role in determining their chocolate flavor and aroma. Hence, it is an essential value chain service that every cocoa farmer has to have an easy access post-harvest. A look at the accessibility of drying facilities to the sample households revealed that only 36% of households have their own Fermenters and quite a large section (43%) of households depend on their neighbors for the service (Fig.39). Only 2% of households have an access to centralized drying facilities where the co-operative is operating, while 19% of households seem to be not having access to the drying facilities.

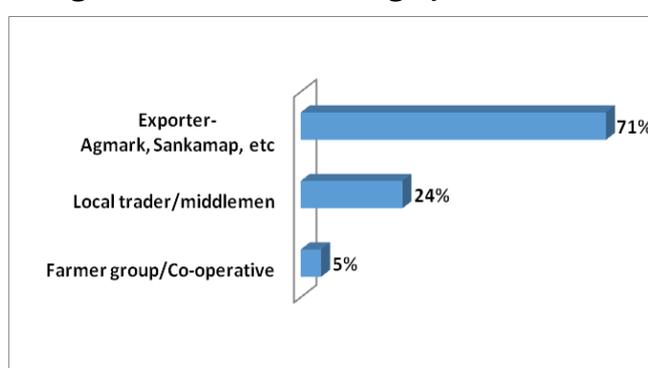
**Fig. 40: Marketing person in households**



### 3.6. Access to Market and related Constraints

Marketing of coca beans done mainly by husbands as reported by 63% of households, whereas in 29% of households both husband and wife handled the marketing. However, in 8% of households' wife alone handled the marketing of cocoa beans (Fig.40). The buyers are first identified based on the price offered and then goods are delivered to them later. Mostly men go to the selling point with goods, while women involvement ends generally with packing of cocoa beans in bags.

**Fig.41: Mode of marketing by households**

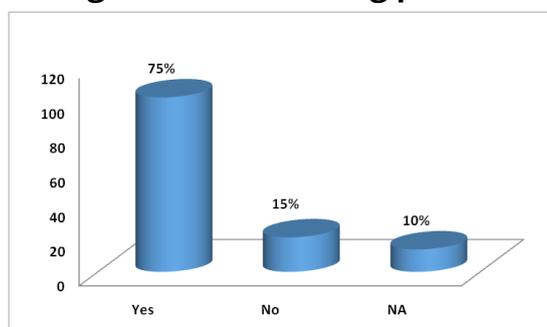


Generally, distance and good price determined the preference of a buyer. Majority of households (71%) sold cocoa beans to the exporting agencies such as Agmark and Sankamap in Buka and Kokopau, Paradise Food Limited in Arawa, etc.,

because they believed that these export agencies pay better price. However, 24% of households sold to the local middlemen, Fermenter owners and traders due to the reasons like easy access, monopoly of one or two buyers locally, lack of other alternative sources, easy transport to the local buyer, buys at reasonable price, cash purchase to meet immediate shopping and family needs, and so on. About 5% of households sold their cocoa beans through co-operatives where they are operating (Fig.41).

Transport of cocoa beans is a formidable issue for many farmers, which often determines the place and or person for cocoa beans sale, as transport system is very weak in ARB due to disruption of road network at most of the places during the civil war. Majority of farmers carry cocoa bags on their backs and shoulders. Therefore, they often prefer to sell locally to the known buyers or nearby locations. The outlets of the export agencies like Agmark, Sankamap, etc., are located in the towns and Public Motor Vehicles (PMVs) are the only mode of transport to go to towns. Those farmers who wish to sell their beans in the town to export companies for better prices carry the bags on their backs up to the road and then go by PMV to the town. Sometimes, it is three –five hours of walk to the main road and then one or two hours of drive to Buka by PMV due to remote location of villages.

**Fig. 42: Percentage of farmers facing problems in marketing**

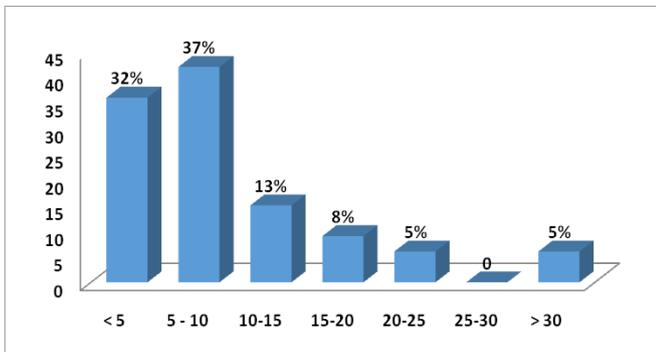


The cocoa farmers faced many constraints with regard to marketing of their beans, as shared by many households (75%) during the discussions (Fig.42). The beans are often rejected or offered lower prices by the buyers if beans are high or low fermented or dried, cold, underweight and smells of smoke. Like any other agricultural commodity, the prices of cocoa are also often affected by the demand and supply of beans in the market. Many a time cocoa incomes received on sale might not be much compared to the high transport and labour costs incurred and the low quality of cocoa due to CPB attack and other diseases. Last but not the least, the export companies like Agmark make payments through cheques, which sometimes becomes a big constraint in cashing it due to either not having a bank account or distance of the bank.

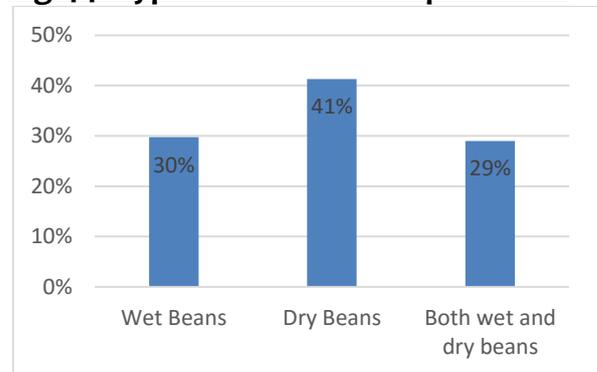
### 3.7. Cocoa Productivity and Incomes from cocoa farming

Last year majority of households (69%) produced less than 10 bags of beans, followed by 13% of households, who could produce about 15 bags. Only 5% of households produced more than 30 bags and the production of remaining households hovered between 15 – 25 bags (Fig.43).

**Fig. 43: No. of cocoa bags produced last year**

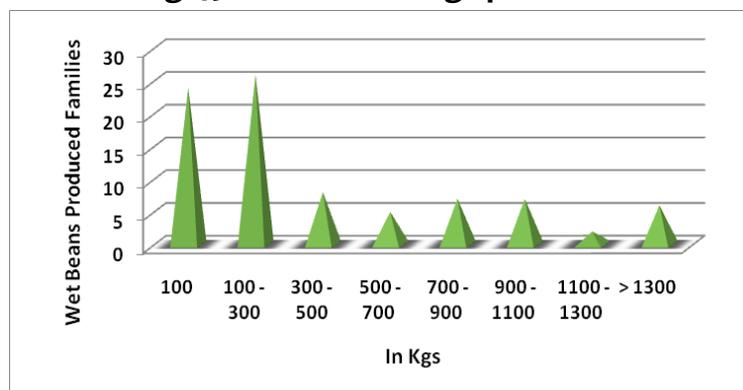


**Fig.44: Type of cocoa beans produced**



These production figures clearly indicate that a majority of cocoa producers are smallholders in the BECOMES project area, likewise elsewhere in PNG. The cocoa production is mainly constrained by CPB attack, which is reported by more than 90% of the respondents. Low production is a major issue among the smallholders due to various reasons, apart from CPB and diseases like black pod and others, which are comprised of lack of proper tools, not enough trainings, shortage of man power to work in cocoa blocks, maintenance difficulties like weeding, sanitation, etc., lack of physical strength to carry out various operations, low household manpower compared to number of trees, harvesting to be time consuming, lack of access to proper drying and fermentation facilities, firewood for Fermenter, filling in right bags, high cost of bags, and so on.

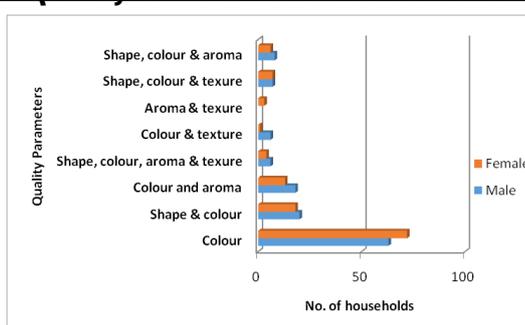
**Fig.45: No. of wet bags produced**



Out of 141 households, only 41% of the households produced dry beans, followed by 29% of households who produced both the wet and dry beans (Fig.44). Nonetheless, about 30% of households, who constituted mostly those farmers who possessed one to

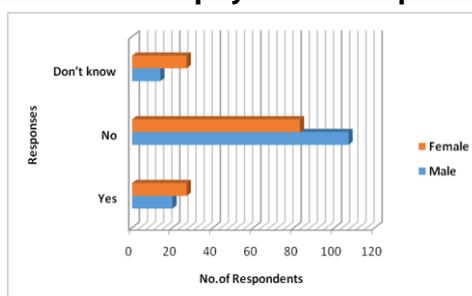
two cocoa blocks, produced only wet beans and did not attempt to ferment and dry them for value addition, mostly due to lack of own Fermenter facility. Other reasons include – insufficient quantities to go for drying due to few trees yielding in the block and in most of the cases it is a quick way of earning money to meet immediate cash needs of the households. Majority of these smallholders (60%) produced less than 300 kilograms of wet beans (Fig.45). About 30% of households produced wet beans in the range of 500 to 1000 kilograms with a very small proportion (7%) of households crossing over 1000 kilograms of production. There is scope to improve the returns to these wet beans producers by providing access to either own or centralized drying facilities for value addition, as good quality beans fetch the higher prices.

**Fig. 46: Quality determinants of cocoa beans**



The quality of dry beans is generally decided based on the parameters such as color, shape, aroma and texture (Fig.46). Of these, the highest preferred quality parameter was the color of the beans, as felt by 50% of men and 58% of women respondents, followed by 15% each of men and women respondents who suggested that the shape and color as the favored qualities. For 14% of men and 11% of women, the color and aroma determined the quality of beans, while 5% of men and 4% of women considered color, shape, aroma and texture are together as a set of important parameters that decide the quality of beans.

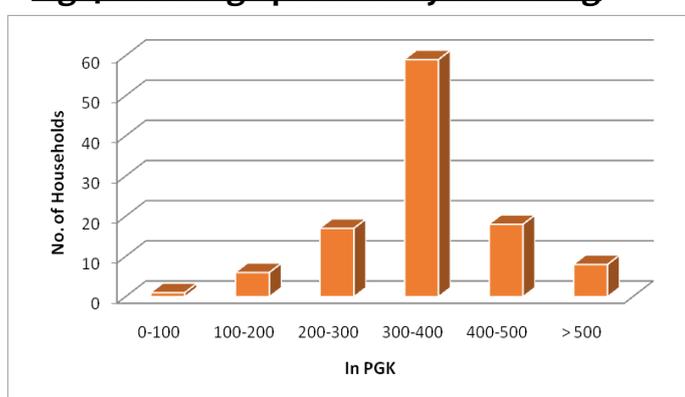
**Fig. 47: Differential payment for quality cocoa**



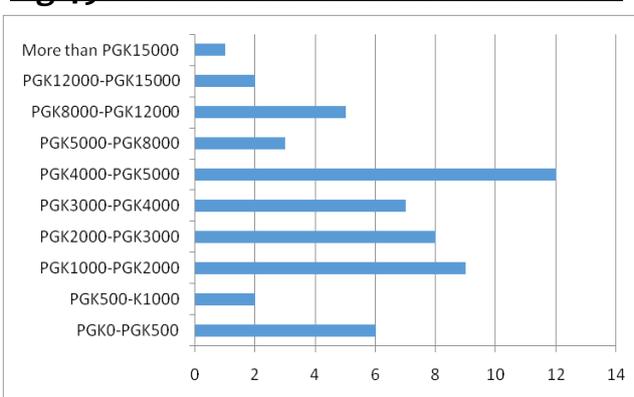
However, it appears that in practice these quality parameters of beans are not recognized by the buyers while deciding on the price to be paid, as 76% of men and 59% of women respondents said there was never an incident of differential pricing to the

beans that they sold till now (Fig.47). In fact, about 20% of women and 10% of men respondents replied that they were not even aware of this piece of information wherein beans having such qualities should deserve higher pricing over the poor quality of beans. However, 14% of men and 20% of women respondents agreed that the quality parameters did attract differential pricing in the market. Ignorance on the influence of quality parameters on better pricing by majority of male and female respondents suggests that most of them seem to be selling the inferior quality of beans due to various production related constraints (discussed already elsewhere in this report) and they are too used to regular lower prices over the years to raise such issues with the buyer.

**Fig.48: Average price of dry cocoa bag**

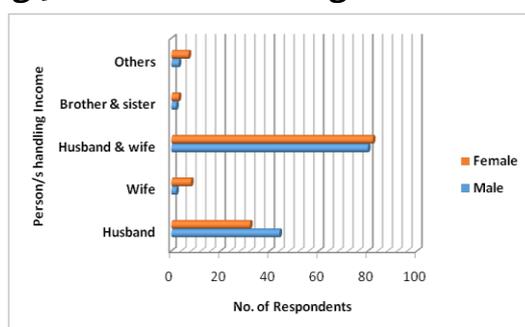


**Fig 49: Annual Income from sale of cocoa**



The price of dry cocoa beans varies from k100 to over K500 per bag of 63.5 kilograms depending upon the quality and the buyer (Fig.48). The average price is K300 to K400, as reported by a majority of the households (60%). Similarly, the annual income ranges from K500 to K15000 including both wet and dry bean sales depending upon the number and age of cocoa trees owned by the households and other factors like having own Fermenter and drying facilities. However, the average annual income is between K4000 to K5000 per annum per household (Fig.49).

**Fig.50: Persons handling Cocoa Incomes**



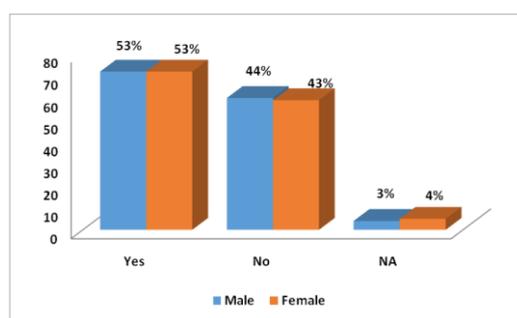
In majority of households, husband and wife handled the income received from the sales of cocoa beans, as reported by 61% of men and 63% of women respondents

(Fig.50). They had many reasons for this joint handling of income as shared by the respondents like they wish to have mutual trust, avoid any arguments between them and have peace within the family, recognized both as heads of the family, both work together to earn and bring home income for the family, both know the family needs and priorities, use the money wisely, family budgeting, make better decisions, because woman knows better to handle the money, and so on.

But, in a sizable proportion of the sample households the income is handled by husbands alone, as reported by 33% of men and 26% of women citing the common reasons like husband is the head of the family, he knows how to spend the money better, does everything including handling income, and so on. However, there are a tiny proportion of households where wives alone handled the income from cocoa sales, which is shared by 1% of men and 6% of the women respondents. Discussion with women groups revealed that in Kariapa and Koikavut villages the income is kept by whoever does the sale, while in Hanatobin 4, Namatoa, Unonovi, Suangu, Matakurus and Pokapa villages mostly men keep income received from the cocoa sales. However, in Hanatobin 1 and Teotop villages women keep the cocoa income.

Scanning through the purposes for which the households spent their income revealed a long list of needs like food, clothes, alcohol, drugs, chemicals (including pesticides and fertilizers), garden tools, school fees, relatives, investment and savings. However, food and clothes received the highest ranking amongst the list of items followed by chemicals and garden tools in the second lead; school fees, drugs and alcohol stand in the third ranking and a small portion of incomes goes to the rest of the needs occasionally.

**Fig.51: Sharing income to those providing labour**



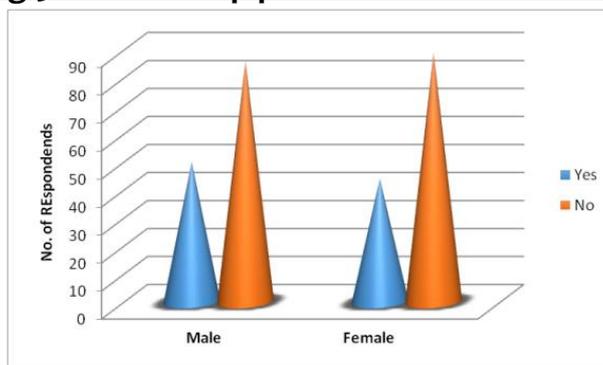
There is a mixed opinion among the male and female respondents on sharing of income as incentives to those who provided labour in the cocoa production (Fig.51). However, a majority of male and female respondents expressed willingness to part with some income as incentive for the labour work provided by either the outside labour or

their own children. Most of the youth stated that their parents would give them money or new clothes in lieu of their services on the farm. All respondents appreciated the concept of compensating the services received and felt that it would motivate the persons provided labour to come forward to work again, including their children. Similarly, it was found that all male and female respondents had fairly good understanding of what do the budget mean to them and the necessity for keeping a budget plan to distribute the income according to the needs and wants of the family.

### 3.8. Gender relations and perceptions in Cocoa farming

About one-third of male and female respondents are holding leadership positions in social, political, religious and sports groups in the ratio of 56% of men and 44% of women, which demonstrates that there is an acceptance and encouragement to women occupying the leadership positions in these predominantly male headed households (Fig 52).

**Fig.52: Leadership positions in the community**



Assessment of gender roles in domestic chores across the sample households revealed that men were the main workers only in hunting which included fishing. Women turned out to be the main workers in in Making food garden which included activities like cleaning in and around food gardens, planting and harvesting, caring for children, doing laundry, cleaning dishes after meals, fetching water, fetching firewood, selling of vegetables in markets, Sewing clothes and house-shopping. The only activity which both men and women engaged equally was building fences (around homes and gardens (Table 5).

**Table 5: Gender roles in the household chores of cocoa families**

List of household chores	Male/ Female	Main Worker	Equal Main Worker	Main Support Worker	Provide Some Support	Don't do this work	Not Applicable
Making of food garden	Male	45%	30%	16%	5%	2%	1%
	Female	63%	27%	7%	1%	0%	1%
Caring for children	Male	22%	29%	23%	17%	9%	0%
	Female	60%	27%	4%	3%	4%	1%
Laundry	Male	14%	10%	17%	18%	38%	2%
	Female	78%	8%	5%	2%	6%	1%
Hunting (including fishing)	Male	64%	8%	8%	4%	12%	3%
	Female	17%	13%	12%	6%	46%	6%
Cleaning dishes after meals	Male	21%	16%	21%	20%	22%	1%
	Female	63%	24%	5%	1%	6%	1%
Fetching water	Male	25%	27%	22%	18%	7%	1%
	Female	53%	35%	10%	1%	1%	1%
Fetching firewood	Male	30%	30%	17%	12%	9%	1%
	Female	48%	37%	8%	2%	4%	1%
Selling vegetables or garden food at the market	Male	12%	10%	7%	5%	62%	4%
	Female	58%	7%	4%	3%	21%	8%
Building fences (around homes and garden)	Male	9%	4%	4%	1%	52%	30%
	Female	9%	9%	3%	1%	49%	29%
Sewing clothes	Male	8%	12%	6%	3%	64%	7%
	Female	41%	15%	4%	4%	31%	4%
House shopping	Male	29%	33%	16%	11%	10%	1%
	Female	36%	38%	12%	2%	9%	4%

Nonetheless, as the table 6 shows, there is gender sensitivity and awareness on gender-barriers and gender-unbiased equal opportunities for men and women since there is minimum variation and disagreement on the responses from the male and female respondents on gender-based differences and perceptions. Majority disagreed that the man should take most of the household decisions and opined that there is not any exclusive division of works between the men and women as such. Similarly, a majority of them agreed that men should share the workload of women in taking care

of their children and domestic chores when women go out for work in the farm or outside. They were also strongly against towards any discrimination on education between the sons and daughters and averred that men do not have all rights to use coca income without consulting women.

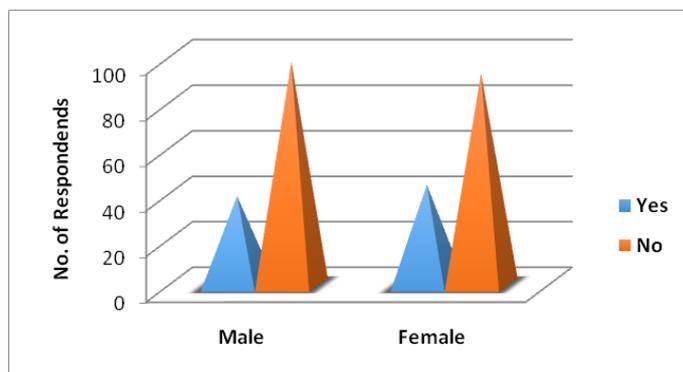
**Table 6: Gender perceptions in cocoa farming households**

S. No	Statement	Agree		Strongly Agree		Disagree		Strongly Disagree	
		Male	Female	Male	Female	Male	Female	Male	Female
1	Most household decisions should be made by men	24%	20%	9%	6%	51%	51%	17%	23%
2	There is men's work & women's work; one shouldn't do the work of the other	15%	15%	13%	11%	55%	55%	18%	18%
3	If a women works outside (home or farm) husband should help with child care & domestic chores	37%	34%	39%	51%	14%	8%	10%	7%
4	It is always right for parents to encourage & support the education of sons and not their daughters	7%	4%	6%	4%	20%	21%	68%	70%
5	Women should humbly accept if men asserts all rights to use cocoa income	6%	5%	4%	2%	34%	33%	57%	59%
6	Cocoa farming should only be for men & not women	5%	4%	5%	3%	49%	44%	41%	49%

By and large, there seem to be clear concurrence and consensus on the gender – equality among men and women in cocoa farming. However, there seem to be disagreement on women ownership of coco blocks despite their major share in the

workload related to cocoa farming activities (Fig.53). About one-third of the male and female respondents welcomed this idea, but 70% of male respondents opposed it. A majority of male respondents felt that women cannot manage it herself without the help of men for works like pruning, harvesting, etc., due to lack of physical strength and cited reasons like labour costs increase, relations strain, inability to spare more time as already busy with domestic chores, which is her primary responsibility, and so on.

**Fig. 53 Perceptions on women ownership of cocoa blocks**



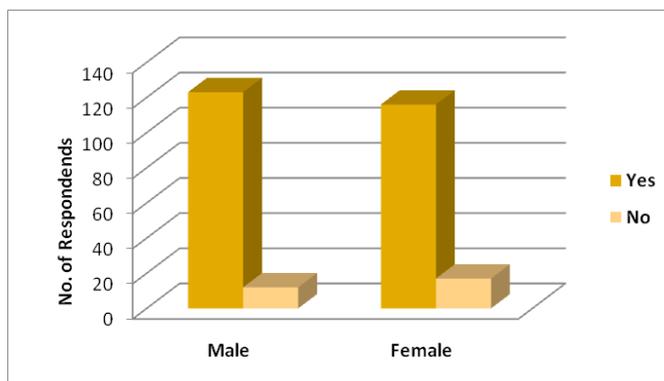
However, some gender-sensitive males felt that women should own the blocks as they owned the land customarily and it would help the family with additional income. Interestingly, 66% of female respondents too opposed it citing more or less similar reasons like lack of physical strength, additional burden over the domestic chores and inability to manage it alone without the help from male members in the family. Some women, while appreciating the freedom to make some extra money to spend for them and help their maternal side of relatives, felt that they required training, ownership of land, and cooperation from men to manage the blocks themselves. Therefore, they felt that it is better to work together than owning the individual blocks by them.

### 3.9. Entrepreneurship among women and youth

Cocoa value chain services can offer ample small business opportunities for women and youth to provide additional employment to supplement their incomes from cocoa farming. Majority of women expressed interest to venture into business enterprises. Some preferred to have a group business, while majority of them desired having individual businesses at family level, depending upon their past experiences and or having knowledge of the business types that worked well. The women identified various small business opportunities down the cocoa value chain such as selling of nursery plants, selling of poly and jute bags for nursery and packing of beans, selling of twine to sew up cocoa bags, selling of tools and chemicals, buying of wet beans to process and resell, poultry farming for using manure in cocoa blocks as well as to sell manure to other farmers, selling of bud wood garden, owning a Fermenter and drying cocoa for a fee, and selling of peanuts planting as intercrops in cocoa blocks.

Likewise, the youth groups too desired to have business enterprises for better income opportunities. Youth groups identified the business enterprises that are more or less similar to that of women groups like selling of nursery / budding plants, chemicals, copra bags, poly bags, tools, and buying of wet beans for processing and reselling. However, the youth groups mostly preferred to run businesses as a group helping each other and boosting morale to work together effectively.

**Fig.54: Respondents willing to work in Cooperatives**

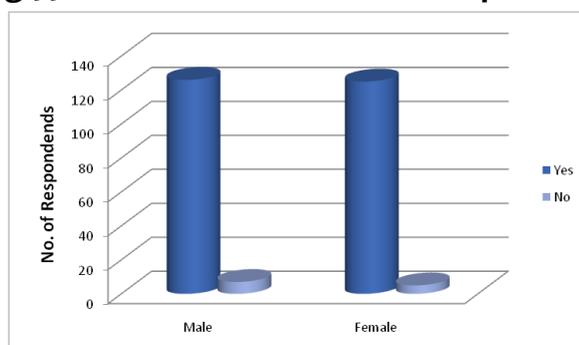


### 3.10 Collective action and Cooperatives

#### Collective action

Though cocoa is a worldwide business, but direct access to international markets is very challenging for cocoa growers, especially for the smallholders. Therefore, collective action through farmer organizations is a key factor in enhancing farmers' access to emerging market opportunities excluding intermediaries for sales. The co-operatives of farmers essentially perform these functions meeting the members' aspirations. More than 80% of male and female respondents expressed willingness to work in co-operatives, which shows that they are aware of the benefits of collective action in a co-operative structure (Fig.54).

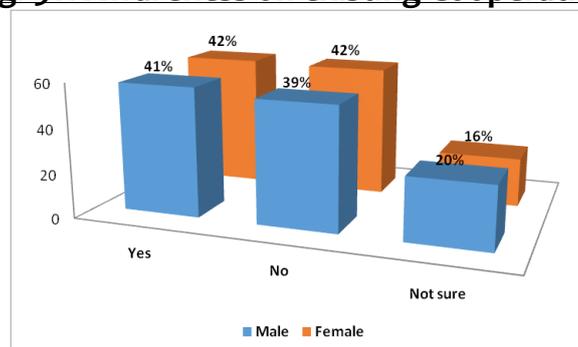
**Fig.55: Those who believed in Cooperatives**



All of them unambiguously agreed and expressed conviction on the potential contribution of co-operatives to improve the cocoa value chain services by accessing better markets, and offering beneficial services to the members (Fig.55). Majority of them believed that co-operative would bring “development and unity” to their community, and provide capacity building on better cocoa farming practices, inputs supply and sell beans at higher prices providing better returns by negotiating with the bigger cocoa traders

The respondents suggested several ideas to strengthen the co-operatives and their effective functioning. More emphasis was placed on capable, effective leadership skills with transparent and accountable team of executives. Good team work, awareness, trust, unity, good behavior, intercommunication, adequate financial resources and sound training on providing strong leadership and management of the co-operative are identified as some of the virtues of a good co-operative. All women groups opined that women should be included at the decision making level in co-operatives along with men for gender-equitable decisions addressing the perceptions and needs of both the genders. Some further preferred having only ‘all women co-operatives’ to realize their aspirations and dreams.

**Fig. 56: Awareness on existing Cooperatives**



However, more than 50% of male and female respondents are not aware of the existence of a co-operative in their area, which may mean that most of the sample households are not covered under any co-operative, and there is scope to either induct them into an existing co-operative nearby or form a new one for extending the benefits of a co-operative structure to improve the cocoa farming viability and profitability to individual farmer members (Fig.56).

### Cooperatives

There are four co-operatives in Tinputz district, viz., 1) Opiuk Co-operative Society, 2) Kukurina Business Group, 3) Mate Farmers Group, and 4) Mate Women’s Club, which fall in the operational area of BECOMES project. An assessment of these co-operatives

has been done to understand their current state of affairs in terms of their profile, management and governance systems, operational modalities, membership benefits, women participation and conflict management mechanisms (Table 7).

As it can be observed in the table below, all four cooperatives are in the nascent stage, including the Opiuk Co-operative Society, which is though almost seven years old by now. Though the members have by and large good understanding on the objectives and benefits of being part of the co-operatives, they are yet to see the vibrant co-operatives enlisting active participation of members through regular meetings and bringing better incomes to their members on cocoa sales. The management and operational procedures, which are very volatile to non-existent, are yet to be developed. All the four need capacity building, mentoring and handholding support to guide and assist them developing their governance, management and operational modalities to function as a co-operative in letter and spirit.

**Table 7: Overview and comparison of existing Co-operatives**

<b>Cooperatives</b>	<b>Opiuk</b>	<b>Kukurina</b>	<b>Mate Farmers</b>	<b>Mate Women's Group</b>
<b>Date of Formation</b>	May 5 <sup>th</sup> , 2010	October 11, 2016	Started in 2016	22nd of Feb 2016
<b>Registered Members</b>	53	40	40	38
<b>Stage</b>	Nascent	Nascent	Nascent	Nascent
<b>Capacity building</b>	Not received	Not received	Not received	Not received
<b>Functions</b>				
<b>Management/ Operations</b>	Need support	Need support	Need support	Need support
<b>Leadership Mechanisms</b>	Need support	Need support	Need support	Need support
<b>Services &amp; benefits distribution</b>	Very few	Not yet	Very few	Not yet
<b>Women Participation</b>	Below average	Below average	Somewhat better	Somewhat better
<b>Financial linkages</b>	No	No	No	No
<b>Conflict Resolution mechanisms</b>	No	No	No	No

Source: Inputs from the BECOMES Co-operative Assessment report, 2017

The leaders of the co-operatives are in need of building their capacities to manage the affairs of co-operatives effectively. Though they have good enthusiasm and spirit to

work and make the co-operatives successful, but they lacked the skills and abilities to muster full participation and cooperation of the members. Essentially, they should be trained in business plan development, accounts and book keeping, governance procedures, standard contracts, easy-to-use forms and supporting software, group management, conflict resolution, and resource mobilization. In terms of benefits, the members received so far are few in case of Opiuk or none in case of Kukurina and Mate Women's group. However, Mate Business group seemed to have received some incidental benefits, which are though short term supports to meet emergencies like school fees, cocoa transportation fees, family members' deaths, etc., of members.

Women involvement in these co-operatives seems to have some positive outcomes in their households, though there is huge potential to increase this impact manifold in all the member households. Opiuk and Kukurina, although at nascent stage, had some good experiences in gender relations at home manifested in a change in how their husbands behaved. Notably, the husbands of women leaders are willing to share the work load and benefits from the cocoa income with the latter to save some money. Comparatively, Mate Farmers and Mate Women's' Group have a more perceptible women involvement and participation. The women groups manage the rent house at Teotop for the Mate Business Group and they have a schedule to sell their market produce and meet with some form of contributions for their meetings, which indicates the existence of some form of systems and procedures in them.

Conflict resolution and management mechanisms are important to support the groups to function smoothly solving the problematic issues and safeguarding the interests of members. But, they are lacked totally for these co-operatives, which may make them susceptible to their malfunctioning if any conflicting issues are erupted among such volatile binding group membership. In the absence of such conflict mitigating and management skills and systems, there is a potential danger to lose the confidence of members and finally inevitable dismantling of the groups in the short run.

## **4. Conclusions and Recommendations**

### **Cocoa farming households**

The baseline survey provides rich insights into the current situation and problems being faced by cocoa farmers in ARB. Firstly, the productivity of cocoa is low due to simple farming practices and minimal use of fertilizers and pesticides. Incomes from cocoa farming can be improved appreciably providing training to both men and women together, and handholding on scientific methods of cocoa production, mainly controlling the CPB and other diseases. Secondly, lack of access to and/or improper fermentation and drying facilities is affecting the quality of beans, thus reducing the price and further low income returns for cocoa farming households' in addition to the

lower production. Value addition by improving the fermentation and drying facilities either individually or centrally at group level (co-operative) can provide higher returns for many smallholder farmers.

Thirdly, the average income per year for a majority of cocoa farming households is below 5000 K with an average income of K14 per day. This situation describes a kind of poverty trap by the cocoa households, in which extremely low incomes inhibit the adoption of more advanced farming practices, including the use of fertilizers and pesticides, and inability to afford owning a Fermenter for better value addition of cocoa beans.

Fourthly, many a household are not yet linked to the banks and deprived of credit support services for critical investments on tools and chemicals to improve cocoa productivity. Fifthly, the markets are not farmer-friendly due to frequent price fluctuations, lack of differential pricing based on quality of beans, unscrupulous practices of buyers and poor negotiation power of unorganized cocoa producers. The practice of differential pricing mechanism based on quality parameters of dry beans can encourage farmers to take an extra care in production and processing.

Sixthly, it appeared that the role of youth is not perceptible in cocoa farming at present despite their considerable strength, except some sporadic sharing of labor works in few farm operations. This is an alarming issue that may affect the cocoa sector in the long run if neglected with new generation slowly giving up cocoa blocks maintenance and venturing into other sectors for alternate livelihoods. No respondent shared about doing any enterprising activity relating to cocoa value chain such as nursery, bud wood grafting, drying and fermented unit, service providers, etc., which seems to have good scope to introduce and nurture entrepreneurship among the women and youth to involve in cocoa farming more seriously by undertaking income generating opportunities in the value chain of cocoa.

Finally, there exists in general poor recognition and appreciation for the multifarious roles and more workload borne by women in the households. Besides, monetary compensation (incentives) is lacked for their labour services in cocoa farming and freedom to spend the income for their personal needs and social purposes. More conscious efforts are required to recognize women's contribution by men in cocoa farming households and giving full dignity to the opinions of women through gender sensitization workshops/awareness camps for men as part of the gender-equality process.

However, in majority of households there is good understanding and attitudes towards the gender-equality in these social–demographic settings and reasonably balanced gender perspectives on the roles and rights of either sex in a majority of the households, which however in practice have to be operationalized with gender sensitization and appropriate interventions to address the gender-inequalities at the household level in terms of workload and income sharing in the cocoa farming.

### **Co-operatives**

Many cocoa farmers are not organized to face their similar problems collectively as a group. Nearly 50% of the farmers reported not knowing about the co-operatives, though felt the need to have such a collective mechanism for better services and benefits. All those farmers should be organized into co-operatives by forming new ones based on their homogeneity in terms of location or tribe, or inducted into the existing ones by increasing their membership. Women should be included at the decision making level along with men for gender-equitable decisions in the management and governance of co-operatives, and where feasible exclusive women co-operatives can be formed for realizing their aspirations and dreams, as felt by many women.

The existing four co-operatives studied need a business vision and corresponding strategies, approaches, structures and governance policies to function more effectively providing the real benefits to the associated cocoa farmers. Strong farmer groups are pivotal for efficient and inclusive functioning of the co-operatives, which necessitates more emphasis on capacity building of the office bearers on leadership, management and governance systems and to improve the services in the cocoa value chain. These co-operatives must be made more democratic, participatory, gender-equitable and provide better services to its members soon. They should start generating more profits to their members in order to be effective and sustainable while serving their objectives of improving the livelihoods of cocoa farmers in particular and the cocoa sector on the whole in ARB in general.

## APPENDICES

### APPENDIX A: Household Survey Questionnaires (Joint & Individual)

#### a. JOINT SURVEY - MARCH 2017

##### Part 1: Interview Information

##### A. Information on interview

- A1 Date of Interview \_\_\_\_\_/\_\_\_\_\_/2017
- A2 Name of Interviewer 1 \_\_\_\_\_ [Person asking]
- A3 Name of Interviewer 2 \_\_\_\_\_ [Person recording]
- A4 Reviewed by \_\_\_\_\_ Date \_\_\_/\_\_\_/2017
- A5 Data entry by \_\_\_\_\_ Date \_\_\_/\_\_\_/2017
- A6 Date entry checked by \_\_\_\_\_ Date \_\_\_/\_\_\_/2017

##### B. Area Identification

- B1 Household identity # \_\_\_\_\_ [BECOMES Code]
- B2 Village \_\_\_\_\_
- B3 Cluster \_\_\_\_\_

##### Survey Preamble

Very good morning / afternoon to you! We hope you are well. Firstly, what would be your most preferred language of communication, the English Language or the local language (Tok Pisin)

We work with BECOMES Project. BECOMES Project working under CARE International in PNG aims to improve the economic and the social well-being of cocoa farming families in ARB. The project currently is working only in the Tinputz area with work to be extended to other ARB areas in future.

BECOMES Project is currently conducting a baseline survey through which information collected from this survey once analyzed and reported will guide future directions of the BECOMES Project. The survey results will also be used as a determinant of the overall BECOMES Project impact in the targeted population of ARB.

We have chosen you to take part in this survey since you live in Tinputz and therefore is an important member to the BECOMES Project.

If you are happy to take part in this baseline survey, we will go ahead.....

While we appreciate your participation in this survey, your responses to every questions asked are deemed important as they do not represent only your personal views but also the views of all the people living in Tinputz area especially in BECOMES targeted locations.

Please also note that every information given to the interviewers will be kept with highest confidentiality and no information specifically relating to any participating individual in this survey should be shared or given out to outside sources either by Care International or anyone participating without consent from either parties involved. The findings of the survey will also be shared amongst all stakeholders and especially ABG through its DPI Division.

The interview time should be between the maximum time of 1 hour and 30 minutes and should not be more than 2 hours.

There are two parts to this baseline survey: the first part we would like to speak to you both at the same time, in the second part we will split and speak to you separately.

We are currently doing the introduction to the baseline survey part. In the first part of the baseline survey there are five parts:

1. Interview Information
2. Respondent Personal Information
3. Household and Cocoa Block Information
4. Household Cocoa Production and Income
5. Cocoa support (trainings) received and cocoa relationships

In the second part of the baseline survey there will be three parts:

1. Household Cocoa Farming Practices
2. Cocoa support (trainings) received and cocoa relationships
3. Gender Specific Questions

Should you still wish to take part in this survey by answering the following questions, please include your signature below where it says “Signature” indicating your willingness to participate.

**Signature of Participant – Male**

\_\_\_\_\_

**Signature of Participant - Female**

\_\_\_\_\_

**Witnessed by** \_\_\_\_\_

## Part 2: Respondent Personal Information

Questions 1-4 refers to personal information of the respondent [Interviewee]

**Q1. Sex** [mark “X” for which respondent is present for interview]

Male [ ] Female [ ]

**Q2. Age of respondent (Years):** [Insert age in years below]

Male [ ] Female [ ]

**Q3. Have you had a formal education?** Insert ‘A’ for Yes or ‘B’ for No [If No, skip Q4 and go to the next section]

Male [ ] Female [ ]

**Q4. [If Yes] What is your highest level of education received?** [Insert letter of relevant option in the space provided]

- A. Elementary (Prep-Elementary 2)
- B. Lower Primary (Grade 3-6)
- C. Upper Primary (Grade 7-8)
- D. Lower Secondary (Grade 9-10)
- E. Upper Secondary (Grade 11-12)
- F. Vocational (PETT Courses)
- G. Tertiary (Colleges and Universities)
- H. Others: \_\_\_\_\_

Male [ ] Female [ ]

## Part 3: Household and Cocoa Block Information

### A. Household Information

Questions 1-3 requires finding out information on the household. Please give your answer accordingly.

*[Circle suitable response from options provided below]*

**Q1. Who is the head of the household?**

- A. Husband
- B. Wife
- C. Brother
- D. Sister
- E. Both the husband and wife
- F. Both the brother and the sister
- G. Others: \_\_\_\_\_

**Q2. Who makes most of the household decisions?**

- A. Husband
- B. Wife
- C. Brother
- D. Sister
- E. Both the husband and wife
- F. Both the brother and sister
- G. Others: \_\_\_\_\_

**Q3. How many people are there in your household?**

*[Please refer to the table below and insert a number in the spaces where suitable.] [May need to PROBE here to differentiate age groupings]*

A) Adults (including yourself)	Male	
	Female	
B) Youths (18-35 years)	Male	
	Female	
C) Children	Male	
	Female	

**B. Cocoa Block Information**

Questions 1-6 requires finding out information regarding your cocoa block. Please give your answer accordingly. *[Insert response in space provided]*

**Q1. How many cocoa blocks do you own? \_\_\_\_\_ blocks**

**Q2. What is the total number of cocoa trees from all those cocoa blocks? \_\_\_\_\_ trees**

**Q3. Please tell us in whose land are those cocoa blocks or trees grown on. [Circle response]**

- A. Husband
- B. Wife
- C. Father in-law
- D. Mother in-law
- E. Both the husband and wife
- F. Both the father and mother in-laws
- G. Others: \_\_\_\_\_

**Q4. Can you please tell us whose decision was it for you to go into cocoa farming? [Circle response]**

- A. Husband
- B. Wife
- C. Brother

- D. Sister
- E. Inherited from husband's family
- F. Inherited from wife's family
- G. Purchased through sale of land
- H. Others: \_\_\_\_\_

**Q5. How long ago, if you can remember the year when you started farming cocoa** [Circle response] [PROBE – ask what year they planted their first cocoa tree and work out how long ago]

- A. Less than 5 years
- B. More than 5 years but less than 10 years
- C. More than 10 years

**Q6. Does your family have your own cocoa fermenter?** [Circle response]

- A. Yes
- B. No

### **Part 4: Household Cocoa Production and Income**

#### **A. Household Cocoa Production and Income**

Questions 1-7 requires finding out information regarding cocoa production and income received from your cocoa block(s). Please give your answer accordingly.

**Q1. How many bags of cocoa have you produced in the past year?** \_\_\_\_\_ bags

**Q2. What type of cocoa did the family produce in the past year?** [Circle response]

- A. Wet Beans
- B. Dry Beans
- C. Wet and Dry Beans

**Q3. If the family produced Wet Beans, how many of those bags produced in the past year came in the form of wet beans?** \_\_\_\_\_ bags

**Q4. Can you please tell us the reason why you had to sell wet cocoa beans?**

---



---

**Q5. Please indicate the total amount of money made from cocoa for both the dry and the wet beans respectively.**

- A. Dry beans    PGK \_\_\_\_\_
- B. Wet beans    PGK \_\_\_\_\_

**Q6. Please indicate the average price per bag of the dry cocoa beans you have sold out in the past year (referring to Q1). PGK \_\_\_\_\_/bag**

**Q7. What was one key challenge you faced during the whole production period that you would like to share.**

## **Part 5: Cocoa Support and Cocoa Relationships**

### **A. Cocoa Support**

Questions 1&2 requires finding out information on the kind of cocoa support received especially in areas of training. Please give your answer accordingly.

**Q1. In the past 6 months, were you being visited by DAL/DPI staff regarding cocoa? [Circle response]**

- A. Yes
- B. No

**Q2. What is the information source that you use to get information regarding cocoa?**

*[You may circle more than one answer]*

- A. Newspaper
- B. Radio
- C. TV
- D. Local Magazines
- E. Friends
- F. Internet
- G. Others: \_\_\_\_\_

### **B. Value chain services**

Questions 1-5 requires information on access to value chain services

*[Circle suitable response from options provided below]*

**Q 1. Where do you get your clonal seedlings from?**

- A. Village Nursery
- B. Nursery from neighbouring village
- C. Within radius of 15km's

**Q2. What are the common sources of fertilizers and chemicals?**

- A. Village Shop
- B. Agmark in Kokopo
- C. Agmark in Arawa

**Q3. What are the most common sources of credit and financial services for women and men?**

- A. Wantok
- B. BSP Bank
- C. Micro bank in Buka
- D. None

Q4. [Refer back to Q3] How far are these from the community?

---

**Q5. What are the most common sources of cocoa drying facilities? [Circle response]**

- A. Own fermenters
- B. Fermenter of a neighbor
- C. Centralized drying system in a co-operative

### **C. Market Access**

Questions from 1-4 requires information regarding access to markets

**Q1. (a) What are the most common markets accessed by your family?**

---

---

**(b) Why?**

---

---

**c. How do women and men transport their cocoa bags to these market?**

---

**a. Are there any constraints faced while marketing these cocoa bags? [Circle suitable response] A. Yes B. No**

**b. [If YES] What constraints do they face while marketing the cocoa bags?**

---

---

**Q3. What modes of marketing do they use while marketing their cocoa bags?**

- A. Husband
- B. Wife
- C. Wife and husband
- D. Through farmer group/co-operative
- E. Local trader/middlemen

F. Exporter-Agmark, Sankamap

G. Others:

## **End of Joint Survey**

Now we will separate, the next few questions will be asked of you separately. All questions asked are the similar questions about how the household works in the cocoa block/s and also within in the household. We are only separating to get your individual thoughts.

## INDIVIDUAL SURVEY - MARCH 2017

Household identity #: \_\_\_\_\_ [BECOMES Code]

Participant being interviewed: Male [       ] Female [       ]

### Part 1: Household Cocoa Farming Practices, Cocoa Quality and Income

#### A. Current Household Cocoa Farming Practices

**Q1. The table below shows 5 IPDM Cocoa inputs or practices.**

Please state if you do the kind of work. If you do the kind of work below, please describe in your own words how this work is done.

Cocoa Practice or Input	Participant response	
	Q1. A. Does this work? Yes / No	Q1. B. If response is YES, insert description of how work is done in this column
A)Cocoa tree pruning		
B)Sanitation practices ( <i>ensuring Tree Cleanliness (removing black pods, diseased and damaged parts of trees, infected spots/dark sores on branch barks and trunks) and Ground Cleanliness (leaf litter and mulch) to improve hygiene and growth of tree</i> )		
C) Weed management		
D) Fertilizer application		
E)Shade tree management		

#### B. Household Cocoa Quality and Income

Questions from 1-18 requires finding out information regarding the quality of cocoa produced and how to cocoa income is handled in the family.

*[Circle suitable response from options provided below]*

**Q1: How do you determine the quality of the cocoa?**

- A. Shape of the beans
- B. Color
- C. Aroma
- D. Texture
- E. Others: \_\_\_\_\_

**Q2: Have you been paid more price because of the quality of cocoa?**

- A. Yes
- B. No
- C. Don't Know

**Q3. For each of the statement list in the table below, please indicate whether each statement is 'true' or 'false'. [Insert responses in spaces provided in the table below]**

	Statements	True/ False
A	Controlling disease is not a key part of efficient management of a cocoa farm	
B	Growers must always recognize the symptoms of the disease, understand the causes and know how it operates	
C	Harvesting of cocoa should be done every two weeks if not many ripe pods and every week during peak periods	
D	It is okay to harvest unripe pods	
E	Pod breaking must be done in an appropriate manner and large quantities of pods must be broken just within a couple of days after harvesting for fear of contamination and disease	
F	Turning of beans (once a day) during fermentation is not allowed	
G	Cocoa beans must not be exposed to sunlight for drying after fermentation process	
H	Proper bagging and storage of the processed beans is just as important as proper fermentation and drying	
I	Cocoa beans in the bags must be checked before cocoa is sold to the buyer	
J	Quality control is not the responsible of the farmer	
K	Cocoa families should keep up to date records of all their farming activities	

**Q4. Cocoa harvesting must be carried out using specific techniques and tools so as to produce high quality beans. Circle the recommended practice (s) farmers should use when harvesting cocoa pods. [Circle suitable response from options provided below. You may circle more than one response from the participant]**

- A. Sharp cocoa hook on stick
- B. Secateurs
- C. Bush knife
- D. Axe
- E. Any piece of wood
- F. Hack-saw
- G. Using one's hands to spin it off from the tree

**Q5. Have you heard of Cocoa Pod Borer (CPB)? Please skip to Q8 if you haven't heard about CPB. [Circle response]**

- A. Yes
- B. No

**Q6. If you have answered YES to Q5. Please explain what CPB means to you in your own words.**

---



---

**Q7. The table below show activities in cocoa farming.** Please indicate roles performed by each member of the family through an indication of an (x) sign beside each activity in the paces provided. *[Circle response]*

Activity	Husband (A)	Wife (B)	Brother (C)	Sister (D)	Hired Labour (E)	Other (F)
Nursery						
Tree planting (nursery to transplant)						
Budding						
Pruning						
Weeding						
Harvesting						
Fermenting (unpacking of beans for drying and packing of beans into bags)						
Loading of cocoa bags into trucks						
Transportation of cocoa bags to the buyer						
Sale of cocoa						

**Q8. Who is responsible for handling chemicals, fertilizers and pesticides in your cocoa farm?**

- A. Husband
- B. Wife
- C. Brother
- D. Sister
- E. Both the husband and wife
- F. Both the brother and the sister

Others: \_\_\_\_\_

**Q9. *[Please refer to Q8]* What is the reason why the above person(s) is responsible for handling chemicals?**

---

---

---

**Q10. After the sale of cocoa, who handles the income received (i.e. to decides on how the money should be used).**

- A. Husband
- B. Wife
- C. Brother
- D. Sister
- E. Both the husband and wife
- F. Both the brother and the sister
- G. Others: \_\_\_\_\_

**Q11. [Please refer to Q10] Please give a reason why this person (s) is responsible for handling cocoa income?**

---

---

**Q12. How do you use the income received from the sale of cocoa?**

*[You may circle more than one option]*

- A. Food
- B. Clothes
- C. Alcohol
- D. Drug
- E. Chemicals (including fertilizers and pesticides)
- F. Garden tools
- G. School fees
- H. Relatives
- I. Discos
- J. Investment
- K. Savings
- L. Others: \_\_\_\_\_

**Q13. From the sale of cocoa, do you think it would be fair if payment (especially in the form of cash) be given to anyone who has provided labour during the whole process of cocoa production particularly after the sale of cocoa?**

- A. Yes
- B. No

**Q14. Please state your reason why you answered YES or NO in Q13.**

---

---

**Q15. What is a budget and why is it important for families to keep a budget?**

---

---

**Q16. Do you have a family bank account? [Circle response]**

- A. Yes
- B. No
- C. Have applied for one just recently

**Q17. If you have answered YES above [including having applied for a bank account], who is the account holder? [Circle response]**

- A. Husband
- B. Wife
- C. Joint account between husband and wife
- D. Children
- E. Brother
- F. Sister
- G. Joint account between brother and sister
- H. Father in-law
- I. Mother in-law
- J. Joint account between father and mother in-law
- K. Others: \_\_\_\_\_

**Q18. Please state the name of the bank? [Circle response]**

- A. Bank of South Pacific (BSP)
- B. Australia and New Zealand (ANZ)
- C. Westpac
- D. PNG Micro Bank
- E. Others: \_\_\_\_\_

## **Part 2: Cocoa Support and Cocoa Relationships**

### **A. Cocoa Support**

Questions 1-5 requires finding out information on the kind of cocoa support received especially in areas of training. Please give your answer accordingly.

**Q1. In the past 6 months, did you or any member of your family receive training on cocoa?**

[Please skip to Q5 if you haven't had any training]

- A. Yes
- B. No

**Q2 If YES, who attended this training?** [Insert an (X) sign to indicate response]

Male [    ]    Female    [    ]    Both [    ]    Other [    ]

**Q3. Please state the organization who gave you the training?** [Circle response]

- A. DAL/DPI
- B. ABG
- C. MOMPI
- D. PPAP
- E. World Vision
- F. CARE BECOMES Project
- G. CCI

**Q4. What were some of the topics covered during the training?**

[You may circle more than one answer]

- A. Managing Cocoa Blocks
- B. Cocoa Harvesting
- C. Cocoa Nursery
- D. Chemical management including handling of pesticides and fertilizers
- E. Cocoa Business
- F. Cocoa Financial or Business Management
- G. Gender
- H. Cocoa Fermentation
- I. Pruning
- J. Budding
- K. Others: \_\_\_\_\_

**Q5. What is the information source that you use to get information regarding cocoa?**

[You may circle more than one answer]

- A. Newspaper
- B. Radio
- C. TV
- D. Local Magazines
- E. Friends
- F. Internet
- G. Others: \_\_\_\_\_

## B. Cocoa Relationships

Presented below are views on relationship (either internal or external) and for each suggested views please circle whether you A) Agree, B) Strongly Agree, C) Disagree and D) Strongly Disagree.

Q#	Views/Suggestions	Responses
1	Family members including community members are always right and we must always believe what they say	
2	Community leaders alone cannot bring change needed in communities instead it requires greater community support	
3	Individuals who steal cocoa beans makes families discontinue from cocoa activities	
4	Village elders and leaders had to be sought their decision and or views before collective action is taken	
5	You believe that the current leadership in your village can be able to bring change in the cocoa economics	
6	Through cocoa farming families can live happily and harmoniously with each other and in unity	
7	Forming cocoa cooperatives are a greater advantage to families	
8	Cocoa families feel discouraged when no or insufficient support is received from stakeholders (development partners)	

### C. Co-operatives

Questions 1-6 requires information regarding your view on collective action

*[Circle suitable response from options provided below]*

**Q1. Are you willing to work in a collective manner through Cooperatives?**

- A. Yes
- B. No

**Q2. Do you think Cooperatives are useful for the cocoa value chain?**

- A. Yes
- B. No

**Q3. If your answer above is YES, please telling me why? *[Circle response]***

- A. To access training and inputs
- B. To negotiate with traders
- C. To negotiate and sell at higher prices
- D. Others: \_\_\_\_\_

**Q4. If your answer to Q2 is No, please tell me why? *[Circle response]***

- A. Lack of trust within the community
- B. Based on past experiences and failures
- C. Lack of knowledge
- D. Others: \_\_\_\_\_

**Q5. What should be done to strengthen the Cooperatives?**

\_\_\_\_\_  
\_\_\_\_\_

**Q6. Is there any co-operative in your village or nearby? *[Circle response]***

- A. Yes
- B. No
- C. Not sure
- D. Market Access

Questions from 1-2 requires information regarding

**Q2. What constraints do they face while marketing the cocoa bags?**

---

---

**Q3. What modes of marketing do they use while marketing their cocoa bags?**

- A. Sales by self
- B. Through farmer group/co-operative
- C. Local trader/middlemen
- D. Exporter-Agmark, Sankamap
- E. Others:

### **Part 3: Gender Specific Questions**

#### **A. Roles and Responsibilities in Cocoa Families**

Questions from 1-2 requires finding out information regarding roles and responsibilities within cocoa families.

*[Circle suitable response from options provided below]*

**Q1. Do you perform any leadership roles in your community?**

- A. Yes
- B. No

**Q2. If you have answered YES to Q1. What kind of role do you play?**

- A. Community Leader/Representative
- B. Church Leader/Representative
- C. Youth Leader/Representative
- D. Sports Leader/Representative
- C. Village Councilor
- D. Pastor
- E. Teacher
- F. Others: \_\_\_\_\_

#### **B. Decision Making in Families**

Questions 1-4 requires finding out information regarding decision making within cocoa families. Please give your answer accordingly.

**Q1. The table below represents activities in which family members may take part in as individuals or as a group.**

Please for every activity state whether the respondent is the: A) Main Worker, B) Equal main worker, C) Main support worker, D) Provide some support, E) Don't do this work Person and or F) Not applicable-probe where necessary.

*[Insert response in space provided in table below]*

<b>Activity</b>	<b>Response</b>
Making food garden (Clearing, planting and harvesting)	
Caring for children	
Laundry	
Hunting including fishing	
Cleaning dishes (after meals)	
Fetching water	
Fetching firewood	
Selling vegetables or garden food at the market	
Building fences (around homes and gardens)	
Sewing clothes and bilums	
House shopping	

**Q2. The table below show some statements of which you are asked to read and state whether you A) Agree, B) Strongly Agree, C) Disagree or D) Strongly Disagree.**

<b>Statements</b>	<b>Responses</b>
Personally, I think that most household decisions should be made by the man;	
Personally, I think that there is men's work and women's work and the one shouldn't ever do the work of the other	
Personally, I think that if a woman works outside the home or on the family farm, her husband should help with child care and household chores	
Personally, It is always right for parents to encourage and support the education of their sons and not their daughters	
Personally I think Women should just humbly accept when husband decide its them who will have every right to use income from cocoa as they wish	
Personally Cocoa farming should only be for men and not women	

**Q3. Do you think it is fair for women to be allowed to have their own cocoa farms?**

A. Yes

B. No

**Q4. Please state your reasoning for Q3.**

---

---

### **End of Individual Survey**

Thank you for taking part in our survey!

## **APPENDIX B: Key Informant Interviews**

### **Profiling of Community Institutions \ Co-operatives:**

**Name of the Village:**

**Place of meeting:**

**Date of FGD:**

**Number of participants:**

**List of Questions:**

1. What/who are you all? (Write down their spontaneous answers about what they think of themselves, the concept of Cooperatives, their purpose, etc.)
2. What is the role of cooperatives in the cocoa value chain? (As they understand/see – encourage everyone to share their feedback on this & write down)
3. Do they think that the Cooperatives are required to support the cocoa activities in the region? (Record what they think about it)
4. Have you received any training on Cooperatives? Where?
5. No of days of training received? (See if all members in the group gathered attended all days/phases of training, any family\gender constraints to attend training, about the place, timings, methodology, etc.)
6. What topics were covered? (Ask all of them narrate the topics as they recall for assessing how much they internalized)
7. Collect their impressions on the training topics covered – are they satisfied with training, what they liked, what more needed, their suggestions to improve the training, etc.
8. What additional topics do they think further training required?
9. What services Cooperatives provided to member producers so far (try to collect the info from the group to assess the need and demand for Cooperatives)?
10. What governance systems and internal operating procedures do they have formulated for Cooperatives by now? (Explain clearly and seek their feedback)
11. What is the volume of cocoa business done by the Cooperatives so far?
12. What is the membership fees paid?
13. Ask them their suggestions for mobilizing financial resources for Cooperatives to carry out the roles visualize for it in cocoa aggregation, marketing and input supply, etc.
14. Have they received any profits so far from cocoa marketing? (Encourage everyone to answer it).
15. Pose questions to focus on discussion to assess their perceptions on - if they think that they can continue as Cooperatives in the village/region to support cocoa value chain? (Want to know if they see Cooperatives as a potential institution to support cocoa activity – need to assess this as part of sustainability of the concept/cadre)
17. Ask them on what they think about the area of their operation – like how many villages, producers, etc. (to assess the viable size of Cooperative, area of operation, clientele strength, etc., in their own words)
18. What constraints they are facing in working as Cooperatives?

19. How many women farmers are there in the governing board and as members
20. Do you think women should be included at the decision making level?
19. What suggestions do they have for shaping/improving the performance of Cooperatives in a better manner to provide services effectively for members?

-----

## APPENDIX C: Checklists of FGD questions

### Women's groups:

1. What are the activities women do and men do in the cocoa farming?  
Probe for the entire production process including –
  - Site Selection
  - Nursery Garden
  - Bud wood Garden
  - Planting
  - Pruning
  - Cocoa Pod Collection
  - Drying
  - Fermentation
2. What are some of the improved farm management practices of cocoa production and who mainly uses these? a) Pruning b) Weed management c) Chemical \ Fertilizer application
3. 3. Have there been organizations providing training on production practices? If yes, which ones and what type of training (s) have women received?
4. 4. What are the main constraints to accessing training and information by women?
5. 5. Who in the household mainly sells the cocoa? Why? Are there different roles for men and women in the selling process? If yes, what are they? Why?
6. Who keeps the income received from Cocoa?
  - i. Self [ ]
  - ii. Husband [ ]
  - iii. Self-Bank Account [ ]
  - iv. Husband Bank Account [ ]
  - v. Joint Bank Account [ ]
7. Who takes the decision regarding family expenditure?
  - vi. Self [ ]
  - vii. Husband [ ]
  - viii. Jointly [ ]
8. Would you like to set up your own business? If yes- Individual or Group
9. What are the small businesses one can think of in the cocoa value chain?
10. Is it hard for women to carry heavy tasks such as pruning? Do women friendly tools help?
11. Would you prefer mixed training or women only training?
12. Have you heard of co-operative? Would you like to work in a co-operative manner?
13. Do you think women should be included at the decision making level in co-operatives? If yes, why?

## **Youth Groups:**

1. Do you all have your own cocoa blocks? (please note the percentage in the group)
  2. If not, do you work in your parent's cocoa blocks? Do you get incentives from the parents for the labour you have provided?
  3. Would you like to have your own blocks? Have you discussed with your parents on transferring some blocks to you?
  4. What are the main constraints for youth to engage in cocoa farming?
  5. What are some of the improved farm management practices on cocoa production?
  6. Have you participated in any of the training related to cocoa?
  7. Would you prefer training specifically targeted to youth?
  8. Does the idea of having your own business excites you? If yes, what are the small businesses you can think of in the cocoa value chain?
  9. Would you like to set up individual enterprise or group enterprise?
-

## **APPENDIX D: List of Documents Reviewed**

1. *Situational analysis for CARE International in PNG: Women's Economic Empowerment in Bougainville Cocoa*, Supported by the Coffee Industry Support Project, Dec.2014 – Feb. 2015
2. Inception and Final Report for *The Bougainville Cocoa Value Chain Diagnosis* by David J. Anderson, Value Chain Diagnostic Advisor, Coffey International Development Ltd., PLGP Project, Feb.2016
3. Agricultural Global Practice, *The Fruit of Her Labour: Promoting Gender-Equitable Agribusiness in Papua New Guinea*, Cocoa Sector, Dece.2014, World Bank Group
4. *Assessment study of Existing Cocoa Co-operatives\Community Groups*, CARE BECOMES Assessment Report, 2017

## APPENDIX E: ToR of the Consultant

CARE INTERNATIONAL IN PNG

### BOUGAINVILLAE COCOA FAMILIES SUPPORT PROJECT (BECOMES) Terms of Reference: Data Analysis Consultant



#### PROJECT BACKGROUND

CARE International in PNG (CARE PNG) is a not-for-profit, international non-governmental humanitarian organization. CARE International has been working in Papua New Guinea since 1989. In 2006, CARE International established a country office in Goroka in the Eastern Highlands Province, and in 2008 extended operations through a sub-office in Buka, in the Autonomous Region of Bougainville.

The strategic goal of CARE PNG is to achieve significant, positive and lasting impact on poverty and social injustice in remote rural areas through the empowerment of women and their communities, and through effective partnerships. The current program focal areas for CARE PNG include: gender equity, livelihoods, governance, and emergency preparedness and response.

Launched by CARE PNG in 2016, BECOMES is a four-year project funded by the Government of Australia and the Government of New Zealand under the Commodity Support Facility Project. The goal of the project is to *improve the economic and social wellbeing of younger and older women and men in cocoa farming families in the Autonomous Region of Bougainville*. The project seeks to address both the technical and social constraints to cocoa production towards **reinvigorating the cocoa industry** – using an integrated, evidence-based approach with relevant interventions and improving the efficiency of the value chain. All activities contribute towards the aim that cocoa farming becomes more profitable for all members of the cocoa farming family.

#### OBJECTIVE

CARE PNG seeks a short-term consultant to conduct the analysis of the data collected from the baseline. The baseline evaluation will collect data from smallholder farmers in the project area and will focus on: cocoa farming practices, cocoa income and productivity, participation of women and youth in the cocoa farming, division of labour in the household, and other gender norms (attitudes and practices) around household livelihoods strategies, with a focus on cocoa.

The baseline evaluation will also provide a basis for measuring project impact in the final year of the project through an end line survey. The baseline survey will benchmark the data on productivity and quality. It will also capture data on participation of women and youth; gender roles; and relations in the farming community, including access to inputs, information, farming knowledge, division of labour, and incentives. The purpose is to establish realistic performance benchmarks (or targets), and update indicators with end-line data. Baseline data can also be used for broader comparative analysis across the sector.

#### SCOPE OF WORK

CARE PNG is procuring a consultant to lead the analysis of the data collected from the baseline evaluation. The roles of each party are outlined below:

##### **Role of CARE PNG**

CARE PNG staff will be responsible for:

1. Conducting the baseline study
2. Data entry of data collected during baseline study

3. Sharing database with consultant
4. Supervising the consultant's work
5. Providing feedback to consultant on draft analysis results and report
6. Approving final report written by consultant

### ***Role of Consultant***

With supervision from the BECOMES Project Manager, the consultant will perform the following tasks:

1. Provide feedback to CARE on tools, sampling method and methodology
2. Perform statistical analysis on data collected from baseline survey
3. Write a report summarizing results of analysis

### **Deliverables**

The consultant should provide the following deliverables:

1. Written summary of data analysis methods to be used
2. Draft data analysis results (graphs, tables)
3. Report of results from baseline evaluation

## **MANAGEMENT AND TIMEFRAME**

The consultancy will be undertaken at the consultant's home-base and the report will be sent in an electronic format. The consultant will be managed by the BECOMES Project Manager and all outputs will be submitted to the BECOMES Project Manager for approval.

The consultant will work in close collaboration with the BECOMES Project Manager and Monitoring, Evaluation and Learning Officer for all the work related to consultancy.

The consultancy is planned for the period 1<sup>st</sup> March to 30<sup>th</sup> June 2017. The number of days required to complete the consultancy is expected to be 12 days across the period mentioned.

Deadlines and timeframes for key tasks will be discussed with the consultant prior to confirmation of final arrangements. CARE PNG will manage transport, accommodation and logistical arrangements for all work undertaken in PNG.

## **CONSULTANT SELECTION CRITERIA**

The consultant shall have the following skills and experience:

- A Master's Degree or equivalent experience in international development, community development; agricultural value chains; social sciences; gender studies or a related field;
- Proven experience of conducting baseline studies, research studies and end line reports
- Experience working in complex development contexts is a must; experience in PNG or the Pacific is highly desirable;
- Strong time management skills; ability to work with limited supervision; and a consultative approach that is open to feedback; and
- Understanding of CARE's vision, mission and values, and commitment to uphold the CARE PNG Code of Conduct and Child Protection Policy throughout the consultancy.

## **EXPRESSIONS OF INTEREST**

Expressions of Interest and enquiries for further information should be submitted to Rekha Shenoy, BECOMES Project Manager, CARE International in PNG (Rekha.Shenoy@careint.org), by 11pm PNG time on February 21<sup>st</sup>, 2017.

All expressions of interest should include:

- Up to date CV with details of three relevant referees;
- Up to two-page statement of capability addressing the selection criteria;
- A sample of previous work undertaking analyses and/or designing interventions;
- Quotation of daily rate;
- Confirmation of availability to complete the evaluation within the period specified; and
- Specific point of departure/return (home-base) to complete the consultancy.

-----

## APPENDIX F: Photos

