

ACS10004 v5

Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized

AGRICULTURE GLOBAL PRACTICE

THE FRUIT OF HER LABOR

PROMOTING GENDER-EQUITABLE AGRIBUSINESS IN PAPUA NEW GUINEA

POLICY NOTE

December 2014



WORLD BANK GROUP

THE FRUIT OF HER LABOR

PROMOTING GENDER-EQUITABLE AGRIBUSINESS IN PAPUA NEW GUINEA

I. BACKGROUND AND CONTEXT: GENDER IN PNG AGRICULTURE

The World Bank Group recently completed a study of gender issues in three agribusiness supply chains in Papua New Guinea (PNG) – coffee, cocoa, and fresh produce. It found women to be key to ensuring quality in PNG agriculture. Therefore, if PNG wants to export better quality coffee and cocoa, and to bring better quality fresh produce to market, it needs to focus on the contribution of women; to improve their skills and capacities, and to give women a bigger share of the benefits.

Agriculture accounts for approximately one-third of GDP in PNG, and the sector is dominated by smallholder farming systems. Coffee and cocoa are – along with oil palm – the main cash crops, with respectively over 30 percent and 20 percent of the total labor force involved in their production, processing and sale.

The **coffee** industry is a major contributor to national income and employment, as almost 3 million people depend directly or indirectly on coffee. Productivity is low, with yields on average 30-50 percent of their potential, and quality has also been deteriorating.

Cocoa is one of PNG's major agricultural exports, with an estimated 151,000 households, or about 1 million people, involved in the industry. The cocoa sector has been devastated by the emergence of cocoa pod borer (CPB). In East New Britain, production is estimated to have declined by 80 percent as a result of CPB.

The fresh **produce industry** has great potential in PNG. Market demand for fresh produce is likely to remain high in years to come, due largely to resource-led development, increased urbanization, and a general rise in standards of living.

Photos by Conor Ashleigh and World Bank



This policy note derives from the joint World Bank-IFC report *The Fruit of Her Labor: Promoting Gender-Equitable Agribusiness in Papua New Guinea*.

The report, policy note and sector summaries were prepared by consultants C. Mark Blackden (mblackden@comcast.net) and Maxie Makambo Dominic (makambo020368@gmail.com), under the overall guidance of Anuja Utz (autz@worldbank.org) and Amy Luinstra (aluinstra@ifc.org).

For more information visit www.worldbank.org/png.

II. PRINCIPAL FINDINGS

A) Women are Key to Quality

Women provide substantial labor in both coffee and cocoa cultivation, and they predominate in the fresh produce sectors. More important than the amount of labor women provide, analysis of these supply chains indicates that the specific tasks women undertake have a direct bearing on the quality of the final product. Women are directly engaged at critical stages of coffee and cocoa production and processing. In coffee they are involved in picking, pulping, fermenting, and drying. In cocoa, women harvest, break the pods, sort the beans, and transport wet beans for fermenting. All of these are time-critical tasks which must be undertaken promptly in relation to harvesting, and for a specific amount of time. In both sectors, these tasks substantially determine the quality of the coffee and cocoa delivered to the exporter.

The best quality is obtained from selective picking in which only red, ripe cherries are gathered by hand in successive picking rounds until most of the crop has been harvested. When coffee prices are low, this time and labor consuming method is expensive, whereas stripping allows individual pickers to harvest between three and four times more per day, thereby reducing the number of picking rounds quite considerably.

Like wet processing, drying is also of extreme importance. At this stage a coffee's quality can literally be destroyed. Correct harvesting, processing and drying require maximum management input: having spent an entire year tending to and investing in the crop, do not then entrust its harvest and handling to poorly trained, unsupervised labor. Many potential candidate coffees fail to make it to the specialty market, and certainly to the exemplary segment, because their green appearance shows shortcomings during drying and storage.

Source: ITC 2011:191, 194.

The 2014 IFC baseline study for the coffee growing areas supported by the World Bank's Productive Partnerships in Agriculture Project (PPAP) (Murray-Prior 2014) shows men's and women's perceptions of their role in various coffee-related and other tasks (Table 1). Of note is that women see themselves as having more of a role than men in weeding, picking, milling, and drying, and that they also see themselves as being involved in selling, albeit not to the same extent as men, and as having a substantial role in land clearing. These perceptions also bear out the disproportionate burden of domestic work that falls on women.

TABLE 1: PERCEPTIONS OF ROLES IN KEY
COFFEE AND DOMESTIC TASKS
(PERCENT)

Activity	Men	Women
Land Clearing	78	76
Planting	73	48
Weeding	61	77
Picking	53	83
Wet Milling	48	58
Drying	49	62
Selling	82	61
Domestic Chores	25	96

Source: Murray-Prior 2014, Tables A11 and A12.

In the case of fresh produce, women's role in determining quality is just as important. Women dominate production and processing activities. In this sector, quality is largely driven by product enhancement (washing, sorting, grading, trimming, packing) which begins on the farm once the produce is harvested. When and how these tasks are undertaken has a bearing both on the quality of the fresh produce that reaches the market, and on the extent of product loss and waste. Several factors contribute to product loss and diminished quality. These include:

- » women's lack of knowledge in post-harvest management practices;
- » inability to access, or to afford, recommended appropriate packaging materials for various crops;
- » lack of cool storage facilities at farms, markets, depots, and ports;
- » the use of inappropriate types of transport (including public motor vehicles—PMVs) on poor roads; and
- » weak communications and poor alignment of key actors along the supply chain.

Three inter-related issues affect the ability of women in PNG to contribute fully to improving the quality of coffee, cocoa, and fresh produce. These are:

- » **Incentives:** There is a substantial gap between the work done by women in the coffee and cocoa sectors and the benefit they obtain, since women do much (if not most) of the work, but have much less access to, or control of, the resulting income. The economic incentives for women

either to allocate sufficient labor to these tasks, or, equally importantly, to do them well, are low. Until women have the same motivation as men to engage fully in coffee and cocoa production, or have more of an opportunity to benefit from the resulting income, the critical quality-enhancing tasks for which women are responsible will not be done adequately, and quality will suffer.

As one study notes, although average returns to labor were found to be higher for coffee than in food production, women persevered with the heavy and less rewarding work of planting, harvesting, and carrying food crops because the incentives were better. They exercised more personal control over production, could intentionally produce a surplus over subsistence requirements for sale, and were able to control and spend most of the cash earned from selling food crops.

Source: World Bank n.d.

- » **Knowledge and Information:** Women's access to the knowledge and skills required to carry out these tasks is extremely limited, as important gaps in education, literacy, skills, and participation in extension and training activities persist. Key issues are: (i) extension services and training reach a very small number of farmers; (ii) extension efforts tend to focus more on social issues and less on agronomy; (iii) women are much less likely to benefit from extension and training than men; and (iv) neither men nor women fully appreciate the need for women to receive, and then be able to apply, the extension messages specifically related to the tasks for which they are primarily responsible. Moreover, generally low levels of education and literacy among women constitute a systemic barrier to unleashing women's productive potential in these sectors.
- » **Socio-Cultural Dynamics:** Wider socio-economic factors in PNG continue to exert a powerful influence on economic activity and on the performance of these supply chains. There

are important gender-specific dynamics at work in PNG society that differentially affect men’s and women’s capacity to exercise economic agency. PNG society is largely patriarchal, and, even in matrilineal regions, men are seen as household heads and primary decision-makers. As a result, women have less access to, and control of, the resources needed to function economically, notably land and capital (financial services). While the PPAP baseline survey indicates that 56 percent of women perceive themselves as primary receivers of income from coffee, what is less clear is the extent to which women have control over the use of that income. This is an area requiring further study.

Men face many of the same issues confronting women in the agricultural sectors, including poorly developed infrastructure, access to markets, pressure on land from population increases, and new pest and disease threats. However, women’s lack of access to land, assets, and extension services, their lack of financial autonomy, the absence of collective action and entrepreneurial opportunities, create significant additional barriers, which are legal, cultural and situational....The systemic and consistent discrimination experienced by women belies their potential and significantly hinders agricultural productivity and development opportunities. .

Source: WIA 2010.

B) Broader Labor Dynamics Affect Outcomes

Labor issues cut across all the sectors, and have far-reaching implications for the performance of these agribusiness supply chains. Of particular importance are gender differences in labor allocation and in rewards to labor, and the ways in which social and economic factors intersect in determining labor use. The importance of focusing on labor activities undertaken by women to improve quality needs to be set against the broader socio-cultural dynamics of labor use in PNG, which are key to understanding the performance of these

agribusiness supply chains. This is the case for five principal reasons, outlined below.

1. Smallholders do not view their activity as a business.

In coffee, where earnings are seasonal, farmers see coffee as a “mechanism to facilitate livelihoods” and not as an enterprise seeking maximum output and return (in some instances leading smallholders to replace coffee with fresh produce). Decisions about what to cultivate, and what labor to allocate to it, are made largely without reference to market drivers, and linkages with markets are weak. The different stages of cocoa cultivation, reflecting the age and potential of the cocoa trees, are what gives rise to the distinction between “farming” and “foraging” (see Curry et al. 2007). This distinction reflects very different mind-sets on the part of farmers, where they tend to see their older blocks more as an “ATM” from which to obtain cash as and when needed. The labor and time requirements for cocoa harvesting differ in significant ways, as are the earnings that can be obtained (Table 2). If farmers are to become more business-focused, there need to be the business opportunities and market linkages to support the change.

TABLE 2: KEY CHARACTERISTICS OF WET AND DRY BEAN COCOA PRODUCTION STRATEGIES

Item	Wet Bean	Dry Bean
Duration of harvest round (days)	0.36	2.3
Laborers per harvest group (avg #)	1.78	4.4
Labor days spent on harvest (avg #)	0.68	10.46
Labor Allocation	More women	More men
Income earned per harvest round (PG Kina avg)	17.00	374.22
Control of income	Harvester	Male HH head
Transport costs	Nil/Low	High
Share of cocoa in HH income (percent)	40	77

HH = household

Source: Curry et al. 2007:59.

2. A lot of labor is allocated for social purposes.

Social factors and obligations are at least as important as economic ones in determining labor use. Church and community work absorbs a lot of people's time. Consequently, relationships along supply chains can be seen to have at least as much to do with clan and culture as with product characteristics and market dynamics. Notwithstanding, recent changes in labor dynamics, notably the evolution from a cooperative model (wok bung wantaim) to a more commercially-oriented model (makim mun), suggest that economic signals and market drivers are beginning to have a more important role in smallholder decisions about labor use (Curry and Koczberski 2009).

3. Farmers experience labor shortages.

Households do not have enough labor to do all the things they need to do, or to do the work at the right time and in the right way. Alongside social obligations, food production requirements are seen as more important than tree crop cultivation in determining labor allocation priorities. Given women's dominant role in food production, this directly affects their ability to allocate either sufficient or timely labor to key tree crop production and processing stages. Data from the 1990s suggest that rural labor is occupied for around 4.25 hours/day, and it might be tempting to interpret this as indicating that labor is abundant. Overfield (1998) warns against this interpretation by pointing out that the division of labor is unequal: data indicates that women work more than 3 times as much as men, especially when household work is included. Even in the area where there is the greatest parity between men and women in their labor allocation, the coffee sector, women still allocate nearly half as much time again as men do in this sector (Table 3). Moreover, seasonal peaks, and the time-critical nature of key tasks, further exacerbate labor constraints in all three sectors.

TABLE 3: LABOR ALLOCATION BY TASK AND SEX, 1993 (HOURS/WORKER/DAY)

Task	Male	Female	M=1; F=
Food	1.21	4.31	3.56
Coffee	0.67	0.96	1.43
Household	0.41	2.69	6.56
Total	2.29	7.96	3.48

Source: Overfield 1998, and authors' calculations.

Even before the advent of CPB, labor shortages were identified as a critical issue in the cocoa sector. CPB exacerbates the labor constraint by requiring an even more labor-intensive approach to cocoa block management and cultivation, while simultaneously reducing the output from these blocks. It is estimated that it takes 2-3 times as much labor to manage cocoa blocks effectively since the advent of CPB. However, this can be seen as a temporary situation, since, once CPB is under control, labor allocation to cocoa cultivation can return to normal, pre-CPB, levels.

Source: Curry et al. 2007.

4. Farming systems are highly diversified. With perhaps few exceptions, smallholder farmers are very diversified, producing a range of fresh produce/food crops, alongside their cash crops. Diversification makes sense, in that it is a risk management strategy, reducing dependence on one crop for cash income. However, it is also possible that some smallholder farmers are trying to do too much with the limited labor they have.

5. Women are mostly confined to, and can only benefit from, short supply chains. Lack of mobility – being more restricted to the homestead and not having access to transport services, compounded by persistent insecurity – means that women are largely excluded from key downstream activities along the supply chains, where cocoa and coffee is sold to exporters (done by men, who, according to many women interviewed, then pocket the cash). This, alongside heavy domestic workloads and cultural constraints, contributes to women being confined to, and largely only being able to benefit from, shorter supply chains in the fresh produce sector, where produce is sold in local markets close to the homestead.

C) Provision of Key Support Services is Limited

Several key services are either absent or insufficient. In addition to the limited reach, and focus, of extension services, other key services are often not available to smallholders. Input supply is weak and inconsistent. New varieties are not readily available to farmers, and need to be developed to take account of PNG's specific climate and agricultural requirements. This is especially important in the fresh produce sectors, and in further developing cocoa clonal varieties that are resistant to CPB. Having a consistent supply of reliable, quality and affordable agricultural inputs, in particular vegetable seeds for the fresh produce sectors, is key.

There is limited access to financial services. The inability of smallholder farmers to meet the lending criteria of microcredit and other financial institutions limits their access to credit. There are also important gender-specific barriers to accessing finance, as women tend not to own the land, fixed assets, or other resources that are needed to meet collateral requirements.

D) Systemic Issues Persist and Affect Supply Chain Performance

Insecurity (especially for women) is pervasive and remains a significant issue. Crime and violence persist at high levels in PNG, especially along transport corridors. Violence limits women's ability to serve in the field as researchers and extension agents. It has direct implications for extension services, in that key players indicate that pervasive insecurity essentially precludes them from deploying women to areas or communities unknown to them. Insecurity directly affects the transport of goods, especially on the Highland Highway, where transporters face losses from crime and violence, or are reluctant to provide the full range of services that might be needed. Moreover, insecurity is a major concern for those women selling produce in open urban markets.

Poor infrastructure limits the performance of all supply chains and substantially raises the cost of doing business in PNG. Key infrastructure issues include: (i) transport links are poor and costs are high; (ii) the absence of a cold chain and cold storage facilities is a significant problem for the fresh produce sectors, and leads to high product losses and waste; (iii) lack of electricity, and frequent power cuts, add to the operating costs for actors along the supply chains; and (iv) poor communication infrastructure and high costs are an obstacle limiting information flows along the chains. These infrastructure barriers, coupled with insecurity, lead to delays in transport of goods to markets and ports, non-use of refrigerated trucks along key highways, lack of communication between farmers, buyers, and exporters as to volumes of produce to ship, and timing of ship arrivals and departures, all of which lead to high levels of delay, uncertainty, and waste of product.

Lack of information, knowledge, communications, and services (including education and health) more generally, is a further systemic barrier to gender-equitable agribusiness. Specifically, weaknesses in communications and information services throughout the supply chains result in insufficient knowledge of market dynamics and requirements, poor coordination with transport and other services, lower productivity, and persistence of subsistence-focused, as opposed to business-oriented, farming. At the same time, poor education and health services, and lack of public expenditure prioritization also affect the performance of these supply chains.

In sum, the quality of the cocoa and coffee that is exported by PNG, and of the fresh produce that is sold in local and distant markets is determined by many factors in addition to the critical contribution of women. Larger issues of poor infrastructure have a significant bearing on the quality of produce reaching markets and exporters. These are in turn compounded by persistent violence and insecurity along transport routes, which are particularly damaging for women. In addition, expanding certification, and strengthening marketing systems and market linkages for farmers are

all key drivers of quality. All of these factors, alongside strengthening women's key role in quality-defining work, need to be in place if PNG is to maximize the quality of its agricultural products.

III. PRINCIPAL RECOMMENDATIONS

A) Focus on Women as Key to Quality

Incentives:

- » Improve the capacity of women to benefit directly from the income earned in the cocoa, coffee, and fresh produce sectors, through a series of interconnected measures:
 - (i) facilitate the establishment of direct payment systems, where women are supported in opening bank accounts, accessing financial services, and obtaining electronic payment for their produce directly from the buyer, or, in the case of fresh produce, the aggregator;
 - (ii) support the aggregation of production by cooperatives or associations and groups in which women are represented, thereby taking decision-making outside the household, and promoting greater transparency between men and women in the income received and how it is used; and
 - (iii) support training and sensitization efforts (including through personal viability–PV–training) aimed at shifting cultural norms and mind-sets relating to women's economic contribution.
- » Examine the extent to which certification schemes in the coffee and cocoa sectors (Rainforest Alliance, 4C, UTZ, Fair Trade, Organic) include gender equality provisions in capturing “social” co-benefits, including how these provisions are being implemented, and how compliance is monitored. Strengthen the gender focus of these certification schemes, notably as they

relate to narrowing the gap between work done and benefit obtained, and how they support or facilitate greater female participation in family decision-making over use of income. As this issue goes beyond PNG and these agribusiness supply chains, the WBG, and notably the IFC, could play a catalytic role in promoting gender equity in certification criteria and validation processes.

It is estimated that around 5 percent of PNG coffee exports are “specialty” coffees, including organic, Fair Trade, Rainforest Alliance, and Utz certified. Certification schemes pursue a range of social and environmental sustainability goals.

For the most part, gender issues are not especially prominent in certification schemes, though opportunities exist to promote more gender-responsive schemes. The PPAP baseline survey indicates that 13 percent of households claim to have any knowledge of certification (2 percent “strong” knowledge). This is highly concentrated in provinces where exporters work. Around 8 percent reported having certification for their coffee, and, of these, 1/2 expressed little or no interest in continuing.

Half of the households surveyed were not interested in paying for certification, a finding which suggests, according to the baseline survey, that the benefits of certification are not sufficient to justify paying for it.

Source: Murray-Prior and Padarath 2013

- » Use planned data collection and analysis, notably in the coffee and cocoa sectors – including farmer profiling, time use surveys, and analysis of economic opportunity in these sectors – to strengthen the business case for women's involvement in these supply chains. This in turn should help to underpin prioritization of critical infrastructure investments (roads, transport, storage, cold chain) aimed at raising quality and reducing losses in these sectors.



- » In parallel, support measures to ease women's overall labor burdens in the household, and measures to facilitate direct sale by women of produce to buyers, and direct payment (non-cash) to women for produce sold.

Knowledge and Information:

- » Support commodity exporters and others in their initiatives to structure the design and delivery of extension and training services in ways that maximize women's inclusion. Consider adoption of a specific target (of 30 or 40 percent) of female participation. Stakeholders suggested establishing farmer field schools in cocoa and coffee areas, setting up a coffee college for women extension agents, developing women-friendly curricula, and using new technologies to communicate knowledge and to facilitate women's access to training opportunities. Concurrently, re-focus extension and training messages specifically toward the quality-enhancing tasks for which women are responsible.
- » In the cocoa sector, focus on developing women's technical skills and capacities to work in nurseries and bud gardens, and develop this as a possible career path for women toward training and employment as extension agents in the sector. Concurrently, it is important to focus on the

economic viability of cocoa nurseries.

- » Assess the impact and effectiveness of the "social" components of extension messages to provide a baseline and targets against which to measure changes in the "socio-cultural" factors that affect agricultural performance and productivity. Key areas to explore would be changes in the benefits women obtain for work done (i.e., having a larger share of income from farming activities) and changes in burden-sharing for domestic tasks within the household.
- » Put in place measures to enable more female extension agents to be deployed in the field. This could be undertaken through:
 - (i) improving the overall climate of security and safety, by reducing community violence, and violence against women specifically;
 - (ii) expanding the numbers of female extension agents and technicians, including through support to a scholarship/training scheme to build the pipeline of female graduates in the agricultural sciences for careers in both extension and research; and
 - (iii) designing extension schemes in ways that enable people (especially women) to serve as extension agents in their own communities,

where, it is argued, they are more likely to be safe from random violence.

- » Consider establishing quality protocols at each step of the three supply chains, outlining the critical steps (and who does them) involved in maximizing quality. Ensure that these protocols are integrated into extension and training packages, to improve farmer knowledge of quality issues at all stages of production and processing, and of the impact of quality on the prices they obtain for their produce.

Socio-Cultural Dynamics:

- » Assess the impact of PV training, specifically as this relates to improving women's income-earning and participation in decision-making. If warranted, support continued PV, or related forms of training, aimed at strengthening women's voice in the household and the community.
- » Identify, and work with, existing rural-based networks, such the PV network, or other farmer cooperatives and associations who have advocated for women's greater participation in development, and support ways (including through PV training) to facilitate greater burden-sharing between men and women of domestic work.
- » Support measures aimed at reducing family and sexual violence (FSV) in agricultural communities. Specifically, develop and put in place relevant measures (e.g., phone banking) that allow women and girls not to have to carry cash. Other measures include fostering and maintaining strong partnerships with concerned parties such as village councillors, village magistrates, the police and the churches, to work jointly to put in place prevention, treatment, social, and justice services aimed at reducing FSV incidence and risk in the community.

B) Tackle Gender Differences in Labor Dynamics

- » Gather baseline data on women's and men's involvement in each stage of the agricultural cycle, including shared and separate tasks, to provide a basis for examining changes over time in the division of labor.
- » Implement a program to analyze the dynamics of labor allocation at the smallholder level, and in different regions of the country, including addressing evolving market-based and paid vs. community and family support mechanisms.
 - » Commission time use surveys and research to generate new and updated data on the gender division of labor in each of these sectors to inform policy-making and program design. Such surveys need to include data collection and analysis of all tasks undertaken by men and women, including domestic work, so that a more complete picture of the labor uses of men and women can be obtained.
 - » Identify, and incorporate into program design, crop-, task-, and season-specific labor shortages and constraints, disaggregated by sex, in each of these sectors.
 - » Identify, and incorporate into program design, region- and farming-system specific differences in the dynamics of labor allocation.
- » Address what has been described as "absurd demands on women's time" through provision of key household-level infrastructure services (water supply and sanitation, expanding access to energy at the household level, especially for cooking), and labor-saving technologies to women to alleviate domestic workloads.

C) Improve Gender-Responsiveness of Key Services

- » Build and strengthen market analysis and research capacity in key institutions (notably Cocoa and Coconut Institute, Coffee Industry Corporation

and Fresh Produce Development Agency).

- » Identify and develop market opportunities of particular interest for, and benefit to, women.
- » Identify economically productive activities that women could engage in, where priors about male control are either absent or much weaker.
- » Improve the supply of agricultural inputs (notably seeds, fertilizer, pesticides), in a manner that is consistent and reliable, and that incorporates the development of new varieties of key products. Establish seed production, storage, and distribution facilities in the fresh produce sector in key provincial and regional centers. Put in place measures to enable National Agricultural Research Institute and FPDA to work collaboratively with the private sector in both identifying and meeting the needs of farmers for seeds and inputs that are appropriate and accessible. Explore agribusiness dealer approaches, which would bring retail outlets for inputs closer to farmers.
- » Assess the current organizational capacities of Women's Groups (including PNG Women in Agriculture, PNG Women in Coffee, and other NGOs/community-based organizations who are directly involved in promoting gender-inclusive agricultural development). On the basis of the assessment, develop and implement relevant strategies to improve their overall capacities.

D) Address Systemic Barriers Affecting Supply Chain Performance

Transport system/roads need building/upgrading:

- » Of particular importance for the fresh produce sectors will be upgrading and maintaining existing major roads as well as key secondary roads to improve linkages between producers and markets.
- » Bring infrastructure development and prioritization into greater alignment with the productive potential in these three agribusiness sectors. To do this will require:
 - (i) better data collection and analysis of farming activities;

- (ii) using these data to strengthen the business case for farming and for building associated infrastructure, as a means of expanding the productive potential of these sectors; and
- (iii) prioritizing infrastructure investments, in ways that support and strengthen the productive potential of these sectors.

Cold chain/storage facilities accessible to small-scale producers:

- » In the fresh produce sector, support establishment of cool storage facilities at key provincial and central locations, which would be managed by a private sector company. This company would provide key support services to farmers, and would be responsible for managing the cool storage facilities and managing all transportation and distribution requirements, thus enabling farmers to sell their produce at the farm gate. This approach would have the additional advantage of considerably shortening the supply chain, from the farmer's perspective, thus enabling women farmers to reap direct benefits from their labor.

Improved security along transport corridors and in markets:

- » Strengthen existing initiatives that are currently in place to address insecurity, for instance, working with UN Women in the open urban markets in Port Moresby. Key measures to consider include provision of banking and financial access services within market spaces; providing toilet and child care facilities for women inside markets; substantially strengthening market security through adequate policing and provision of security services; and facilitating women's greater participation in market management, oversight, and decision-making.
- » Coordinate transporting and marketing activities on behalf of women—working with established groups including cooperatives or associations, coordinate the marketing and transporting of women's produce. This will allow women to remain where they are, but still sell their produce and earn cash incomes.
- » Work with existing networks to reduce FSV. To

this effect, work closely with relevant parties (police, elected Village Councillors, Magistrates and Churches) to reduce men's access to alcohol and drugs.

- » Strengthen community-level capacity to deal with theft of coffee and cocoa. Specifically, ensure that communities and local-level government agencies take ownership of this issue, and implement locally-appropriate solutions, including strengthening village courts, building community-level government, and providing sufficient manpower and resources (policing) commensurate with the need in the communities concerned.

Broader knowledge and information systems need strengthening:

- » Modern communications technology (notably internet and mobile telephony) can be used proactively to improve women's access to critical information and services.
- » Establish a Communications Initiative in each of the three supply chains, in partnership:
 - (a) with private sector providers of mobile phone and internet services; and
 - (b) with input suppliers traders, aggregators, shippers, and buyers.

This will facilitate information flows between producers and these other actors in the supply chains on input requirements, production schedules, weather and related issues, security conditions, prices, market conditions, transport links, shipping schedules, and emerging market opportunities (for example food provisioning for LNG and other mining sites), to strengthen both the operating efficiency ("push" factors) and market responsiveness ("pull" factors) of the supply chain. In so doing, proactively facilitate the access of women farmers, groups, and associations to these communications services, and provide training and capacity-building in their use. This could involve building further on existing collaboration with Digicel in the context of the IFC Agribusiness Project.

References

- Curry, George N., Gina Koczberski, E. Omuru, and R.S. Nailina, 2007. *Foraging or Farming: Household Labor and Livelihood Strategies Amongst Smallholder Cocoa Growers in Papua New Guinea*, Black Swan Press, Curtin University of Technology, Perth, Western Australia.
- Curry, George N., and Gina Koczberski, 2009. "Relational Economies: Social Embeddedness and Valuing Labor in Agrarian Change: An Example from the Developing World," *Geographical Research* 50 (4) 377-392.
- ITC [International Trade Center], 2011. *The Coffee Exporter's Guide*, Third Edition, Geneva.
- Murray-Prior, Roy, 2014. *IFC Agribusiness PNG: Monpi Coffee Exports and Monpi Cocoa Exports Baseline Study, Draft Final Report*, Prepared for International Finance Corporation, AgriBiz RD&E Services, (mimeo).
- Murray-Prior, Roy, and Anna Padarath, 2013. *Evaluation of the Structure and Performance of the CIC Extension Service*, Report prepared for the PNG Coffee Industry Corporation and the Productive Partnerships in Agriculture Project Coffee Component, Final Report, [Port Moresby], August.
- Overfield, Duncan, 1998. "An Investigation of the Household Economy: Coffee Production and Gender Relations in Papua New Guinea," *Journal of Development Studies* 38 (5) 52-70.
- WIA [Women in Agriculture], 2010. *Women in Agriculture Report*, Document prepared for the Productive Partnerships in Agriculture Project (PPAP), World Bank, Washington, D.C.
- World Bank, n.d. *Gender Issues in Smallholder Cocoa and Coffee Production*, Productive Partnerships in Agriculture Project (mimeo).