

CHAPTER NINE

CONCLUSION AND RECOMMENDATIONS

9.0 Conclusion

Over the last decade there have been large increases in smallholder production associated with the expansion of smallholder oil palm. However, improving smallholder productivity remains a major challenge for the industry. Smallholder productivity per hectare is much lower than that of the estate plantations, and VOP productivity is consistently lower than the LSSs. The lower productivity of smallholders is attributable to:

- under-harvesting;
- lack of fertiliser use;
- poor block maintenance;
- low replanting rates.

This research has shown that underlying these production issues are a complex set of socio-economic factors that interact to influence production and help explain the lower productivity of smallholders. The key factors identified as affecting smallholder productivity include:

Alternative economic and social activities of smallholders

A key finding of this study is that smallholders pursue a diverse range of livelihood strategies in addition to oil palm. The range of non-oil palm economic and social activities allows smallholders some flexibility and greater household economic and social security in the face of fluctuating commodity prices (Chapter 3). As the study revealed, smallholders, especially VOP smallholders, shift in and out of oil palm production depending on household needs and circumstances, relative returns on oil palm and alternative income

sources, and general level of commitment to oil palm. Non-oil palm activities, however, are only a problem for the industry when they constrain labour availability for oil palm harvesting or act as a disincentive to long-term investment in the block. On the more populated blocks, especially the multiple household rotation (*markim mun*) blocks, non-oil palm activities provide an essential supplementary income. Because of the larger numbers of people residing on these blocks, supplementary income sources are unlikely to lead to labour shortages for oil palm. Indeed, on the more populated blocks there is often under-employed labour despite diversification into non-oil palm income generating activities.

Under-harvesting resulting from alternative demands on labour is more likely to occur on single household blocks and VOP blocks. VOP landowners with an adequate subsistence base (more land) are under less economic pressure than LSS settlers to harvest oil palm. Moreover, their incentive to invest in oil palm (e.g., replanting and hiring labour) is also likely to be lower than that of LSS settlers, and non-oil palm labour demands probably have higher priority than on the LSS schemes.

Population and economic pressures on the LSSs

Chapter 4 revealed that population density is increasing steadily on the older LSS schemes as second generation settlers marry, have children and remain living on the block as their other residence options such as returning “home” or buying land become more constrained through time. Consequently, the single household block is being replaced by the multiple household block. Potential harvesting labour has increased with population growth, and on some multiple household blocks this has translated into consistently high levels of production. However, for other multiple household blocks, especially rotation (*markim mun*) blocks, population and economic stresses are adversely affecting oil palm productivity. On rotation (*markim mun*) blocks, there is a higher probability of inter-household disputes occurring which can disrupt harvesting and lead to the withdrawal of some harvesting labour. Also, there is an expectation on these blocks that labour remuneration should be commensurate with labour input,

and, compared with VOP and single household blocks, there is limited in-kind payment for labour. As discussed below, because of the excessive demands on cash on paydays, payments for labour on the more populated blocks are sometimes not made, leading to disputes and disruptions to oil palm production.

The populated rotation (*markim mun*) blocks, may be less productive than populated *wok bung* blocks because there are fewer block residents involved in each harvest round and there is a higher probability that block maintenance will be neglected and replanting delayed. The economic pressures on highly populated blocks work in several ways to affect production. For instance, the economic pressure to harvest may be driving regular harvesting on some populated blocks, but at the same time, the short-term need for cash may also be discouraging long-term investment such as replanting which would lower income in the short-term. As noted below, the short-term cash needs of smallholders have implications for how initiatives to improve grower productivity are designed and implemented.

Under-utilisation of available labour

As the discussion of the Mama Lus Frut Scheme illustrates (Chapter 8), low rates of loose fruit collection by women prior to the scheme were the result of limited and/or uncertain remuneration of their labour by their husbands. The reluctance or inability of men to pass on some of the income to their wives was mainly due to the numerous demands on the monthly oil palm cheque such as debt repayments, credit repayments at tradestores, money owing to hired labourers, the financial demands of immediate and extended family, and the social pressures on men to gamble and participate in beer drinking parties. Often these short-term cash demands greatly exceeded the value of the cheque with the result that women were often inadequately remunerated for their labour. This was a frequent cause of domestic disputes and led many women to withdraw their labour from oil palm production.

Non-compliance with a “labour contract” because of delayed, partial or non-payment of labour is often the cause of disputes which can lead to the

withdrawal of labour, disruptions to harvesting, or a shift in production strategies from shared (*wok bung*) harvesting to rotation (*markim mun*) harvesting. In the latter's case, if income disputes remain unresolved, then a household may harvest alone as members of co-resident households withdraw labour. This can lead to the paradoxical situation on highly populated blocks where there is under-employed labour while there are labour shortages for harvesting.

Land Disputes

Disputes over land tenure occur at a variety of scales: landowner claims for compensation for land alienated for LSSs and private plantations (and potential future conflicts between customary landowners and company development of mini-estates); the rising incidence of disputed ownership of oil palm blocks "purchased" by settlers from customary landowners; and, intra-family disputes over individual block titles, especially over inheritance. Land disputes lower smallholder productivity by removing oil palm stands from production, impeding long-term investment in oil palm (e.g., replanting), undermining smallholder confidence in and commitment to the industry, and creating social instability.

The maintenance of social stability in the smallholder sector is a crucial issue. Social instability whether in the form of landowner-settler conflicts or inter- and intra-household block disputes sometimes lead to major disruptions to oil palm production. Social instability is also a disincentive to smallholder investment thereby reducing long-term productivity. The social environment is therefore a critical production factor in that stable and cohesive families and communities help build an environment in which oil palm production can be maintained and increased. Hence, identifying ways to facilitate social stability in the smallholder sector is at least as equally important as more direct agronomic strategies to raise grower productivity.

9.1 Finding Solutions

The above discussion suggests that if extension efforts to raise smallholder productivity are to be successful, they must acknowledge that the smallholder sector is now comprised of complex social and economic units employing a range of strategies to maintain livelihoods, of which oil palm is one. The oil palm block managed by the single nuclear household is no longer common and is rapidly giving way to complex multiple household blocks on the older schemes. As a consequence of these socio-economic and demographic changes, economic diversification is occurring and new oil palm labour arrangements, harvesting practices and methods of distributing income are emerging.

What is also clear from this study is that smallholders are not passive acceptors of change, and nor are they conservative and resistant to change. Smallholders may be considered to be risk averse, for example, with regard to their reluctance to replant, but there is considerable evidence that smallholders are active agents of change. They are certainly innovators, keen to identify and develop opportunities and industry initiatives that they see as enhancing livelihood security (e.g., the Mama Lus Frut Scheme).

Before summarising the recommendations of this study and outlining possible future smallholder interventions for the industry it is worthwhile to explore briefly why and how smallholders adopt new extension services or farming practices. One way of analysing the success or otherwise of industry and OPIC initiatives is in terms of their compatibility with smallholder livelihood strategies. As described in Chapters 3 and 4, smallholders pursue a range of livelihood opportunities alongside oil palm production to enhance household economic and social security and ensure household well-being. Some extension interventions can be viewed as strengthening or adding to smallholder livelihood strategies, others may be judged by smallholders as incompatible or a threat to livelihood strategies, while some interventions may be perceived to have a neutral effect.

This study suggests that in a process of weighing up an intervention, smallholders are often focusing on how a potential intervention fits into and strengthens their existing livelihood strategies and objectives. This assessment can be in terms of how a potential intervention reduces risks (e.g., income, food and land insecurity) and how it expands opportunities (e.g., new mechanisms of income distribution, broader choices and promotes social harmony). For example, VOP expansion in Popondetta is eagerly embraced by villagers as most see the additional income and further diversification of their cash crop holdings as strengthening their economic well-being. Replanting at Hoskins and Popondetta, on the other hand, is viewed by many smallholders as undermining their income and food security in the short-term, and thus poses a difficult barrier for the industry to overcome.

Table 9.1 uses the concept of compatibility with livelihood strategies to assess the acceptance and success of three smallholder interventions: the Mama Lus Frut Scheme, replanting and the LSS six hectare infill policy. As outlined in the previous chapter, the mama card was eagerly adopted because it widened the range of options and choices available to households and therefore was perceived to be adding to or enhancing household livelihood strategies. Replanting is more difficult to promote because in the short-term it is considered by smallholders to undermine livelihood strategies by increasing short-term risks and vulnerability. The six hectare infill policy, although being taken up by some leaseholders of the larger LSS blocks (> 6 hectares), is not an attractive option for many LSS smallholders.

Table 9.1. Acceptance and resistance of smallholder interventions

MAMA LUS FRUIT	REPLANTING	6 HECTARE INFILL POLICY
<ul style="list-style-type: none"> • increases income and economic security • increases range of production and income strategies for households • promotes a harmonious social environment 	<p><u>short-term</u></p> <ul style="list-style-type: none"> • reduces income • increases economic insecurity through higher debt levels • can increase insecurity of tenure 	<ul style="list-style-type: none"> • reduces options and choices available to some households • reduces food security • reduces access to gardening land and increases reliance on off-block garden land

<ul style="list-style-type: none"> • increases options and choices available to families • strengthens people's capacity to meet their needs • compatible with overall livelihood strategies 	<ul style="list-style-type: none"> • increases risks, therefore incompatible with livelihood strategies • reduces options and choices to households 	<ul style="list-style-type: none"> • undermines people's capacity to meet their daily needs • incompatible with livelihood strategies • more vulnerable to impacts of falling oil palm prices
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Industry initiatives perceived to conflict with or undermine livelihood security are therefore much less likely to be adopted by smallholders. For the oil palm industry seeking to increase smallholder productivity, it would be worthwhile to evaluate the potential of new smallholder initiatives in terms of their short and long-term impacts on existing livelihood strategies. This means adopting a broader perspective on smallholders rather than focusing solely on oil palm. Understanding how the range of smallholder livelihood strategies interact to enhance household economic and social security will provide insights into how particular interventions are likely to be received by growers. Where a potential conflict is identified between livelihood security and a new initiative, steps could be taken to address this conflict so that smallholders' adoption rate of new initiatives is increased. Finally, by recognising the diverse circumstances of block residents (e.g., single and multiple household blocks and caretakers), and therefore that smallholders pursue different combinations of livelihood strategies, extension efforts in the smallholder sector could be better tailored to meet the individual circumstances of smallholder households.

Using the concept of compatibility with livelihood strategies as a means to assess the appropriateness of industry and OPIC interventions is not to suggest that some initiatives such as replanting should be abandoned. For a household's long-term economic and social security replanting is necessary. Rather, the concept of livelihood compatibility, enables the identification of likely difficulties and obstacles to the introduction of potential interventions, and therefore allows extension efforts to incorporate these considerations into the design of extension strategies. At another level, companies can build on households' livelihood strategies to facilitate the introduction of smallholder interventions. For example, encouraging VOP smallholders to replant during

high prices of other commodity cash crops they control, or encouraging the cultivation of profitable garden crops such as tobacco, peanuts or pineapples as income substitutes may improve the uptake rate of replanting packages.

Finally, the concept of livelihood compatibility for designing smallholder interventions draws attention to some key issues that should be considered in the planning of any company or OPIC initiative in the smallholder sector. Apart from maintaining a high level of participation of smallholders in the design and development of new initiatives, as far as possible, initiatives should seek to:

- increase incomes and well-being;
- promote sustainable livelihoods through increasing household choices and food and income security;
- strengthen people's capacities to meet their basic needs;
- contribute to a stable social environment;
- facilitate the distribution of income within and between households;
- not undermine security of land tenure and access to gardening land;
- avoid creating inequitable access to income or resources (e.g., land); and
- be compatible with household livelihood strategies aimed at maintaining economic and social well-being.

9.2 Recommendations

The main recommendations of the study have been discussed in detail in the relevant chapters of this report (Chapters 4.3, 6.4, 7.7 and 8.5). The recommendations aim to increase smallholder productivity, engender smallholder support for the companies, OPIC and the industry more generally, and thus contribute to the long-term social and economic sustainability of the smallholder sector. The key recommendations are to:

1. introduce a more flexible payment system to increase the participation rate in the industry of under-employed youth – mobile card (Chapter 8.5.1);

2. develop supplementary income sources that do not lessen the viability of oil palm production (Chapters 4.3, 7.7);
3. maintain and enhance food security (Chapters 4.3, 7.7);
4. address land tenure issues (Chapter 6.4);
5. provide incentives for replanting (Chapter 7.7);
6. broaden the focus of field days to include family planning and advice on banking and budgeting (Chapter 4.3);
7. evaluate new industry initiatives in the smallholder sector in terms of their impacts on livelihood strategies.

9.2.1 Introduce a more flexible payment system – the mobile card

Smallholder productivity and total production would be increased significantly with the introduction of a new harvesting card (the “mobile” card) designed to facilitate labour mobility between blocks (Chapter 8.5.1). Rather than being tied to a particular block like the papa and mama cards, the mobile card would be used as a payment mechanism for hired labour on any LSS or VOP block requiring labour. Because the blockowner hiring labour would pay in fruit (a share of the harvest), the reluctance or inability of blockowners to fulfil the labour contract by paying cash for labour is overcome.

The target of such an initiative would be the large group of presently under-employed young men, many of whom are settlers’ sons residing on highly populated blocks. Youth groups of three to eight young men would be encouraged to form. Each group would be headed by a team leader in whose name the mobile card would be issued and who would be responsible for the card’s use. Payment for labour would be in FFB by weight or proportion of the crop harvested agreed with the blockowner. Thus, youth groups would be guaranteed payment for their labour, unlike the present situation where uncertainty of payment is a major disincentive to labour mobility.

Discussion with VOP and LSS smallholders at Hoskins reveal considerable interest and support for such an initiative. Indications of support were from both young men and blockowners who would be likely to employ such groups.

A mobile card has the potential to lead to significant productivity increases in the smallholder sector. The financial rewards for the company and smallholders are therefore likely to be substantial. There are also likely to be considerable social benefits for the scheme more generally as an increasingly under-employed and alienated group of young men are brought into production.

9.2.2 Develop supplementary income sources

With population growth smallholders are diversifying their income sources in the pursuit of livelihood opportunities to ameliorate the impacts of declining per capita incomes from oil palm. Income diversification is therefore likely to continue with population growth.

Income diversification is positively associated with population density which suggests that the development of supplementary income sources is not drawing labour away from oil palm production. Therefore, the industry should not view these developments as a threat to labour supply in the smallholder sector, but as a new stage in the evolution of these schemes. As generational changes lead to more complex social and economic units, there are opportunities for the industry to capitalise on these changes if social stability can be maintained and new ways are sought to tap under-utilised labour to raise smallholder productivity. The proposed introduction of a mobile card is an example of the latter (Section 9.2.1).

Further, we recommend that the industry as a whole encourage and promote successful initiatives that emerge from smallholders themselves. Diversification through cash cropping (e.g., vanilla, betel nut), small businesses, profitable market garden crops and animal husbandry are potential supplementary sources of income that would be most helpful for highly populated blocks and those undertaking replanting (Chapter 3.1). As outlined in Chapter 7.7, the development of supplementary incomes would increase the propensity of smallholders to replant and allow them to develop a long-term perspective on oil palm production. Further income diversification through the promotion of small business development would also add to household income security.

Income diversification has a positive influence on the social sustainability of the schemes by lessening the social and economic pressures that lead to conflict and social instability. This was clearly an outcome of the Mama Lus Frut scheme where many women (and men) reported significant improvements in social relationships within the household, particularly between husbands and wives.

9.2.3 Maintain and enhance food security

A key finding of this study is that garden food production is very important to LSS and VOP smallholders in terms of labour demands and food consumption (Chapter 4.3). Garden produce is also an important supplementary income for women and residents of highly populated blocks. Access to food gardens reduces smallholders' vulnerability to fluctuating oil palm prices and increases food security. The importance of gardens for food security is reflected by the dominance of garden foods in diets, especially for LSS settlers. More than three-quarters of all meals at Kavui LSS consist entirely of food garden ingredients, and store food consumption among LSS settlers is concentrated within the first week of the monthly oil palm cheque. Thus, a reassessment of OPIC's 6 hectare infill policy is strongly recommended. Moreover, after 20 years of intensive cultivation of the rear 2 hectares of garden land on LSS blocks, the industry should consider new initiatives to improve the soil fertility of garden land. Several suggestions for raising soil fertility are described in Chapter 4.3.2.

9.2.4 Land tenure issues

Land disputes and insecure land tenure are critical production issues as they reduce smallholder productivity by removing disputed stands of oil palm from production, disrupting oil palm work, undermining growers' confidence and commitment to the industry and discouraging long-term investment such as replanting.

As discussed in Chapter 6.4, devising effective strategies to address these issues will be a major challenge for the industry, particularly disputes between landowners and settlers. However, disputed block “ownership” arising from contested inheritance claims, or disputes between caretakers and leaseholders, could be resolved more quickly than they are currently by maintaining an up-to-date register of block “ownership”. Hoskins OPIC has commenced this process and we recommend that other schemes follow suit.

Much more problematic for the industry are the macro-level disputes between customary landowners and settlers when whole subdivisions are locked out of production during conflicts. An added risk here is that intimidation of settlers by landowners will become institutionalised as is almost the case in Popondetta where settlers are unable to diversify their incomes or invest in their blocks for fear of violent harassment by customary landowners. Landowner-settler disputes are ultimately dependent for their resolution on a political solution, which appears unlikely in the foreseeable future. In the short-term, however, OPIC and the companies may have a role in bringing together leaders from both communities for mediation/resolution of localised incidences of conflict before they erupt in widespread communal violence.

9.2.5 Provide incentives for replanting

Smallholders’ propensity to replant is influenced by tenure security, existing and projected debt levels, income foregone, quality of road infrastructure and the reliability of harvest pickups (Chapter 7.7). The relative importance of these factors varies between Popondetta and Hoskins and between the larger LSS holdings of oil palm and two hectare VOP holdings. Amongst the more important recommendations discussed in Chapter 7.7 are:

- extending credit for replanting to Popondetta smallholders beyond 2001;
- lowering rates of loan repayments during periods of depressed oil palm prices;
- promoting income diversification;

- encouraging smallholders to cultivate profitable market crops on newly replanted blocks to provide income until new palms come into production; and
- investigate replanting strategies that do not take a full 2 ha of oil palm out of production at the same time.

9.2.6 Banking/budgeting

The companies at both Hoskins and Popondetta are switching from cheque payments to smallholders to direct credit of smallholders' bank accounts. OPIC is assisting smallholders to open bank accounts in preparation for this change, but many smallholders, particularly women, have little or no experience of banking or budgeting using bank accounts (Chapter 4.3). Bank staff should be encouraged to participate in OPIC organised field days to advise on bank services and budgeting, given that a large and growing number of their customers are smallholders.

9.2.7 Family planning

Finally, much of the change in the smallholder sector documented in this study is either directly or indirectly a consequence of population growth (Chapter 4.2.2). The available evidence suggests that population growth rates are increasing on the LSSs as the option of returning "home" is becoming more constrained by time and distance, and as population pressure at "home" makes village relatives less willing to accept the return of long-term absentees.

It must be stressed that in the light of continued population growth the recommendations contained in this report do not provide permanent solutions; at most, they offer some breathing space. Without broader regional and national development to absorb the expanding numbers of people on the LSS schemes (and from many other densely populated regions of PNG), this breathing space will be very short. Therefore, in the absence of any significant level of national development to generate sufficient employment for the rural under-employed, effective family planning strategies are urgently required for the longer term

social and economic sustainability of the smallholder oil palm sector. Family planning in the smallholder sector should be a priority of all stakeholders in the industry. Family planning officers from the Health department should participate routinely in industry field days.