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*Mama Lus Frut* scheme:  
an assessment of poverty reduction





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# **MAMA LUS FRUT SCHEME: AN ASSESSMENT OF POVERTY REDUCTION**

**ACIAR Project ASEM/1999/084**

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Centre for International Economics  
October 2002*



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# I The *Mama Lus Frut* Scheme

The *Mama Lus Frut* scheme was established to increase the productivity of smallholder palm-oil plantations in Papua New Guinea. ACIAR project ASEM/1999/084, ‘Improving Productivity of the Smallholder Oil Palm Sector in Papua New Guinea: a Study of Biophysical and Socioeconomic Interactions’, included an assessment of the impact of the *Mama Lus Frut* scheme. The ACIAR project was also involved in refining and extending the scheme both geographically and demographically, including extending it from women family members to the community at large. This report describes the effect of the scheme (and therefore indirectly the effect of the ACIAR project) on reducing poverty for smallholder oil-palm producers. It draws upon information from a socioeconomic study of oil-palm schemes in Papua New Guinea (Koczberski et al. 2001) and figures provided by George Curry of Curtin University of Technology, Bentley, Western Australia.

A high rate of fruit wastage was endemic in the oil-palm industry before the scheme, as fruit that fell from the main bunches was left on the ground to rot. Collecting loose fruit is considered women’s work. The returns from the sale of the fruit collected would be recorded on the man of the household’s payment card (now known as the ‘papa card’); the woman of the house would often not receive any money from the fruit she harvested. Thus, women preferred to spend their time growing vegetables and selling these at the market, where they could keep the returns of their labour. The result of this is that there was no incentive for anyone to collect and sell the loose fruit.

It should be noted that there are two classifications of smallholders involved in the scheme: Land Settlement Scheme smallholders and Village Oil Palm smallholders. The region of Hoskins primarily consists of Land Settlement Scheme lots, while Popondetta contains mainly Village Oil Palm smallholders. The demographics of the two schemes tend to differ in some aspects. This report concentrates primarily on Land Settlement Scheme smallholders in the Hoskins area on the New Guinea Islands.

## I.1 Outline of the Scheme

The *Mama Lus Frut* scheme (MLFS) was introduced into the region of Hoskins in 1997. It involves the direct payment of women for the collection of loose fruit. Women were issued with harvest nets and a

payment card (referred to as the ‘mama card’), which allowed them to collect loose fruit, sell it and receive their own monthly payment cheque.

The scheme was fully installed in just two months, due to the overwhelming interest in it. By the end of 1997, 1612 women had joined the scheme. By August 2001, 3271 women had ‘mama cards’, representing 67% of all smallholder palm oil blocks in Hoskins.

In June 2000, the scheme was trialed in Popondetta under the auspices of the ACIAR project, and was welcomed by the women there. By January 2001, there were 1050 women with mama cards in Popondetta.

In 2002, the concept of the mama card was extended, on a trial basis, beyond smallholder family members to unemployed persons in the community at large.

## **I.2 MLFS Has Produced Many Benefits**

During 2000, approximately 60,000 tonnes of loose fruit were collected, valued at 4.5 million kina (K), and those amounts would have increased since then. Both men and women oil-palm producers have expressed satisfaction with the scheme. According to the figures from George Curry, since the introduction of the mama card, mean household income is estimated to have increased 18% on single household blocks and by 14% for families on multiple household blocks. The greater percentage of this increase in income goes to women. For example, before the mama card, women received around 16% of household income on a single household block; with the mama card, they receive around 29% of household income. In addition, the mama card has altered the way that households handle money.

- The average weekly income for women with a mama card is now 93% of the average weekly wage for low-skilled workers in formal employment (Koczberski et al. 2001).
- The increased financial independence gained by some women has allowed them to establish small businesses, such as raising poultry or selling secondhand clothing at markets.
- In the first two years of the scheme, local storekeepers noticed increased patronage from female customers, usually buying food and household durables. Storekeepers are now more likely to give credit to women who have their own source of money.



- Women who have their mama card as a source of income no longer need to worry about men going into town and spending all the papa cheque on pay day, as they have their own money. This is claimed to have reduced disputes and domestic violence.
- The mama card has the potential to be used flexibly. A woman may invite a struggling relative to help her collect fruit and share the proceeds of the mama card, or the card may be given to a child so he or she can earn money to pay for school fees.
- Collecting loose fruit on one woman's mama card appears to have an important social value, similar to that of women meeting in the marketplace to sell the vegetables they grow.
- Women tend to clear weeds from the oil-palm plantations, as these interfere with the collection of loose fruit. This has improved the productivity of oil-palm plantations, so the total oil-palm harvest is likely to increase.
- Since the program was implemented, women have purchased tools to harvest fruit from the small, young palms, increasing the returns from the mama cheque and slightly reducing the share of oil-palm fruit harvested by men.
- Most men will give their wives fruit to put on the mama card rather than a portion of the papa cheque. There are many claims on the papa cheque, including mortgages, store credit and a share of the cheque for other men who help with the harvest, and men seem to prefer not to have yet another claim on their money. However, men are happy to give their wives fruit to put on the mama card. The value of the fruit given to women is greater than the money they received before MLFS. According to the Koczberski et al. (2001), this practice recognises that the mama cheque primarily goes towards household upkeep.

### 1.3 Drawbacks to the Scheme Are Being Dealt With

In some circumstances, men who have mortgages or debts that are deducted from their papa card may put much or all of their fruit on the mama card to avoid the claims that banks have over mortgage repayments. Most men are opposed to this practice, fearing it may result in the withdrawal of mama cards. When there is regularly insufficient on the

papa card to pay the mortgage, banks may use the funds on the mama card for mortgage repayments.

This practice is particularly prevalent in the area of Popondetta, which historically has a high level of avoidance of debt repayment. The mama card provided another method of avoiding debt repayments, and was introduced when palm-oil prices were low. As a result of the mama card being used in this way, the scheme has received less support from industry in Popondetta than it has in Hoskins. In response to this problem, loan repayments are now deducted from the mama card if funds on the papa card are insufficient, but an upper limit of 1 tonne per pick-up on the mama card has been established.

Theft of the mama cheque by male household members, usually younger sons, has been a problem. To overcome this, women are encouraged to open bank accounts into which to pay mama money.

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## 2 Poverty in Papua New Guinea

The beneficiaries of MLFS appear to be pleased with the increase in living standards it provides. However, we must assess the extent to which MLFS participants were poor before the scheme, and any influence of MLFS in reducing that poverty. This report considers both those factors.

In 1996, around 30% of PNG's population, or about 1.3 million people, lived in poverty. Between 94 and 97% of these people lived in rural areas.

AusAID has defined the poor as those 'unable to meet minimum standards of well-being'. Well-being includes adequate supplies of food, water, shelter and clothing, access to health and education, accountable state institutions and freedom from excess vulnerability to adverse shocks. The impact of agricultural programs such as MLFS is primarily through the enhancement of net income.

The ACIAR poverty-alleviation framework (ACIAR 2002) uses seven criteria to assess specific projects:

1. improvement of poor producers' incomes;
2. provision of benefits for rural and urban consumers through reduced food prices;

3. provision of improved health benefits;
4. provision of environmental benefits which improve sustainability of income generation and enhanced quality of life;
5. promotion of pro-poor policies and institutional change;
6. empowerment of poor people, particularly women and children; and
7. reduction in the impact of unforeseen events.

Of these criteria, 1 and 6 are the most relevant to assessing the impact of MLFS.

## 2.1 World Bank Measures of Poverty Levels

A household survey was conducted in Papua New Guinea in 1996 to assess levels of poverty in different areas of the country. Food poverty lines were estimated for each region. The poverty line is a measure of the amount of money required in each region for minimum daily calorie requirements and other essential expenditures such as on clothing, shelter and transport. The average poverty line for Papua New Guinea was estimated at K399 per annum per adult equivalent<sup>1</sup>; for the New Guinea Islands, where Hoskins is located, the poverty line was K424. This includes an estimated value for own production, such as vegetables grown for household consumption. Based on these measures, around 30% of PNG's population lives below the poverty line.

This survey was conducted in 1996. Between then and 2001, when income data on MLFS were collected, consumer prices of food and clothing have increased 62% (Rosales et al. 2001). We have chosen the consumer price index (CPI) for these items as the deflator, as food and clothing are the main items of expenditure in the World Bank's poverty measure that are relevant to smallholders affected by MLFS. This sets the World Bank lower poverty line for Papua New Guinea in 2001 at K646; for the New Guinea Islands it is K687.

It should be noted that consumption patterns may have changed in response to price changes since 1996, in which case these figures would be a generous estimate. The CPIs provided may also not accurately reflect the change in the basket of goods from the Hoskins region. Such information

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<sup>1</sup> 'Adult equivalent' means that a child under six counts as half an adult.

is not available, so we will assume consumption patterns have not changed and that the average price movement for PNG captures price changes affecting people in the Hoskins region.

## 2.2 Poverty Characteristics of Palm-oil Producers

Proceeds from the sale of oil-palm fruit are often only one source of income for smallholders. Other export crops, wage employment, small businesses and subsistence farming provide important sources of income.

Many smallholders grow export crops other than palm oil. Some 72% of village oil-palm leaseholders and 26% of land settlement scheme leaseholders have cash crops other than oil palm, such as coffee, cocoa, copra and vanilla.

A few producers have established businesses such as trade stores and selling poultry and pigs, but these usually provide only a small part of total household income. Off-block income, from working on other people's farms or, less commonly, performing government, clerical or trade work, provides funds for substantial assets such as houses and water tanks, but due to the nature of the work and women's low education levels, little of this income is earned by women.

Food garden production is a very important activity for smallholders. Gardens provide most of the household's food requirements, with the remainder sold at the market. In many cases, more labour hours are spent gardening than in the oil-palm plantation.

Income from other sources is very important to those oil-palm producers who have the opportunity to earn it. The rural, largely subsistence lifestyle of oil-palm producers greatly increases their chances of being poor.

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## 3 Impact of the *Mama Lus Frut* Scheme on Poverty

In the previous chapter, the ACIAR criteria for reduction of poverty deemed to be relevant to the MLFS were the impact of MLFS on net income and on empowerment of the poor, especially women and children. These two criteria will be assessed separately. The former will be assessed quantitatively, the latter can be given only a qualitative analysis.

### 3.1 Impact of MLFS on Net Household Income

Estimates of the impact of the mama card on the Land Settlement Scheme smallholders' income have been provided for 2001, and are shown in Table 1.

**Table 1** *Mama Lus Frut scheme increases women's income and total household income*

	<i>Without mama card</i>		<i>With mama card</i>	
	Mama K <sup>a</sup> per year	Papa K per year	Mama K per year	Papa K per year
<b>Single household block</b>				
Market income	427.83		427.83	
Papa cheque income	360	4198		3786
Mama cheque income			1262.13	
Total	787.83	4198	1690	3786
Total household income	<b>4986</b>		<b>5476</b>	
<b>Two household block</b>				
Market income	427.83		427.83	
Papa cheque income	180	2099		1893
Mama cheque income			631	
Total	607.83	2066	1058.83	1893
Total household income	<b>2707</b>		<b>2952</b>	
<b>Average block (2.9 households)</b>				
Market income	427.83		427.83	
Papa cheque income	124	1448		1306
Mama cheque income			435	
Total	551.83	1448	862.83	1306
Total household income	<b>2000</b>		<b>2167</b>	

<sup>a</sup> \$A per kina at end of 2001: 0.5476

\$US per kina at end of 2001: 0.2976

Source: George Curry, Curtin University of Technology, personal communication

Total household income has increased for two reasons: reduced wastage of fruit, and increased block maintenance to aid in loose-fruit collection makes it easier for men to collect fruit bunches.

According to the Koczberski et al. (2001), women with a mama card do not appear to stop or substantially reduce their vegetable growing and selling. This is because vegetable marketing has an important social function — the market is a place for women to meet and socialise. Palm-

oil production does not appear to reduce the time spent growing vegetables for food, and so non-cash income does not reduce as a result of palm-oil production. Women may find the time to collect loose fruit by spending less time on leisure, church or domestic work, or by enlisting family to help with loose-fruit collection.

These figures do not take into account money earned from other sources, such as other crops, small businesses or off-farm labour. For Land Settlement Scheme smallholders this is probably appropriate, as relatively few of these smallholders have diversified their income.

### 3.2 Issues Arising in the Calculation of Poverty Levels

There is a degree of difficulty in estimating poverty levels of MLFS participants by comparing Curry's data and the World Bank poverty levels. The cash incomes of MLFS participants cannot be directly compared with the income poverty levels provided by the World Bank for three reasons:

- *Income from other sources.* The estimates of income from smallholder farming provided do not estimate income from other crops, small businesses, or performing off-farm labour.
- *Food supplied from gardening.* Most oil-palm producers get most of their food requirements from their own gardens, which is not taken into account in the ACIAR data. This means that their monetary income from the figures provided is an understatement of their effective income. Home-grown foods make up the majority of calories consumed in rural areas.
- *The impact of the mortgage and other oil-palm farming expenses.* Income from oil-palm farming must pay for the mortgage on the oil-palm property, farming tools and a share given to workers. This can take a sizeable portion of household income.

For this assessment, we will assume that we are assessing an average household whose only cash income is from oil-palm farming.

An amount of money reflecting food grown for own consumption should be added to measures of women's income. The World Bank estimates that a basket of foods typically consumed in the Hoskins area representing the poverty line of 2200 calories per day would cost K326 per adult equivalent per year. This figure was estimated for 1996; adjusting this for 2001 kina,

values the food basket at K528. MLFS participants in the Kavui town in Hoskins tend to grow 80% of their food requirements, so we will assume that, in addition to income from oil palm and the market, producers produce K422 ( $0.8 \times K528$ ) worth of food for personal consumption per adult equivalent per year.

We can estimate a measure of *net* household income from the data supplied by the researchers. We are told that up to 50% of the papa cheque goes to meet mortgage payments on the block. The interest component of this payment should be treated as a cost of earning income, and deducted from the gross income represented by the papa cheque. Similarly, shares of the cheque paid to workers who are not members of the household should also be deducted, along with any amounts spent on fertiliser or other oil-palm farming inputs.

### 3.3 Calculating MLFS Effects on Household Poverty Levels

Given lack of solid data on the costs of running the oil-palm business, we will assume that a portion of the papa cheque is spent on resources contributing to the business of palm-oil farming; for example, mortgage and loan payments on the property and farming equipment, fertilisers, and wages for off-farm workers. The rest is spent on himself, his sons, and his family, and contributes to the family's net income. The total disposable income of men and women, plus an amount representative of garden produce for the family's consumption, is compared with World Bank poverty levels.

Palm-oil farming expenses, including costs of the mortgage, tools and labour, are likely to vary greatly among households and around different times of the year. For this reason, we have assessed net income levels of the average family, with farming expenses taking three different shares of the papa cheque before the introduction of MLFS; 25%, 50% and 75%. The average family shares a block with 1.9 other families, with a total of 13.3 people, on average, on the block. Because demographics are different across oil-palm regions, we will assume that they are Land Settlement Scheme smallholders from Kavui, Hoskins.

From these assumptions, World Bank figures and data, and estimates provided by ACIAR, we can estimate the effect of MLFS on poverty levels. The results are shown Figure 1.

**Figure 1.** Effect of *Mama Lus Frut* scheme on poverty levels. If half of men's income is disposable, households are not in absolute poverty.

<b>Household 1:</b> 25 percent of pre-MLFS oil palm revenue contributes to oil palm growing		
<b>Without MLFS</b> Market income: 427.83 Net oil palm income 1 209.83 Garden foods value: <u>2 110.00</u> = 3 747.66 Income per adult equivalent: 937	Income per household (four adult equivalents) Poverty line = K687	<b>With MLFS</b> Market income: 427.83 Net oil palm income: 1 378.84 Garden foods value: <u>2 110.00</u> = 3 916.67 Income per adult equivalent: 979
<b>Household 2:</b> 50 percent of pre-MLFS oil palm revenue contributes to oil palm growing		
<b>Without MLFS</b> Market income: 427.83 Net oil palm income 847.93 Garden foods value: <u>2 110.00</u> = 3 338.76 Income per adult equivalent: 846	Income per household (four adult equivalents)	<b>With MLFS</b> Market income: 427.83 Net oil palm income: 1 016.94 Garden foods value: <u>2 110.00</u> = 3 554.77 Income per adult equivalent: 889
<b>Household 3:</b> 75 percent of pre-MLFS oil palm revenue contributes to oil palm growing		
<b>Without MLFS</b> Market income: 427.83 Net oil palm income 486.03 Garden foods value: <u>2 110.00</u> = 3 023.86 Income per adult equivalent: 756	Income per household (four adult equivalents)	<b>With MLFS</b> Market income: 427.83 Net oil palm income: 655.04 Garden foods value: <u>2 110.00</u> = 3 192.88 Income per adult equivalent: 798



These results suggest that MLFS has slightly increased participants' incomes; up 4.5% for household 1, 5% for household 2, and 5.6% for household 3. Overall, MLFS has had a fairly small impact on net household income.

The representative households did not appear to be living in absolute poverty before the introduction of the scheme, but were not far above the poverty line. MLFS moved household 1 from 36% to 43% above the poverty line, household 2 from 23% to 29% above the poverty line, and household 3 from 10% to 16% above the poverty line.

There are some qualifications to these findings. A family whose oil-palm expenditures are greater than 75% of the papa cheque may find themselves in absolute poverty.

There are significant social pressures on men to spend a portion of their income on social activities, such as drinking beer and gambling, with other men. If, as Koczberski et al. (2001) suggest, men spend most of their disposable income on personal activities such as drinking and gambling, families may not be able to meet their basic food and clothing needs even though the family is technically above the poverty line.

Smallholder blocks shared by more than 3 families or with more than 13 people may find that palm-oil income does not spread far enough to keep all the families above the poverty line. The greater the number of households on a block, the greater the likelihood of poverty. Households with four or five families living on a block may experience far more severe poverty than shown in these assessments, with MLFS providing great relief. At the same time, such households are likely to have spare labour to divert to other income-generating activities, such as sending sons or daughters to town to find work.

From this assessment, we can see that most families on smallholder oil-palm blocks do not live in absolute poverty, but in many cases they are so little above the poverty line they could still be classified as poor. These families are very vulnerable to shocks in the region: a drop in the price of oil palm or a bad year for vegetable gardens could place many families in absolute poverty. MLFS marginally improves the incomes of these people, increasing to a small degree their ability to weather such shocks. Its most noticeable impact is on families who were close to the poverty line to start with.

### 3.4 The Effect of Men's Expenditure

The MLFS has noticeable effects on not only the level of household income, but also its distribution. Because of societal pressures on men and women to spend their money in different ways, it is important to consider this factor.

The socioeconomic study of MLFS made by Koczberski et al. (2001) would seem to show that women tend to spend their income in a manner that increases household wellbeing to a greater extent than men. This is not to say that the entirety of 'papa money' is spent frivolously, as mortgages and wages are paid by the papa cheque, but the social pressures on men to drink, smoke and gamble mean that extra income allocated to men is unlikely to be spent on the basics of life. Tradestore owners report that men usually purchase cigarettes in their stores, rather than food, clothing and household items. Women spoke of the tendency of men to go into town as soon as they received the papa cheque and spend money on gambling and drinking, activities which the women regard as frivolous. Nevertheless, Koczberski et al. (2001) note that the strong social pressure on men to drink and gamble is possibly as a means of forging bonds with other producers.

Social pressures on women require that they spend money on the necessities of life for their families. A woman who spends a lot of money on herself is likely to be labelled '*greedi*' (Koczberski et al., p. 175). The additional income provided to women through MLFS appears to be spent on food, clothing, education and household goods; this is seen in observations from local store owners who report that increasing numbers of women have been buying mattresses, pots, rice and tinned fish since the introduction of MLFS. Based on the gender divisions of income and expenditure outlined in the study, it is fair to surmise that extra income provided to women is more likely to be spent on improving the family's welfare than is extra income provided to men.

Koczberski et al. (2001) suggest that once a man has paid for mortgages, wages and other palm-oil farming expenses, and has given his wife money or oil-palm fruit, he feels he has discharged his obligation to provide for his family, and any money left over is for him to spend on what he chooses. These families would have only the woman's income, and the portion her husband allocates to her, to buy food and clothing, which is often insufficient for basic needs. Women complained that before MLFS they received little money from their husbands for food, clothing and household items while their husbands found money for social activities.

In these circumstances, the direction of additional household income to women would have a greater positive impact on family wellbeing than if the money were given to men.

### 3.5 Impact of MLFS on Empowerment of Women and Children

The assessment of the performance of MLFS in relation to this poverty criterion will be more qualitative than quantitative due to the nature of the information available. Most information is from Koczberski et al. (2001), who use anecdotal evidence rather than surveys and data analysis. This evidence, though somewhat sketchy, does suggest that MLFS empowers women and children, through rewarding women directly for their palm-oil labours and providing them with income of their own.

#### 3.5.1 *Women Have Achieved Many Financial and Social Benefits*

Women who participate in the scheme have spoken of the economic independence experienced, since they no longer must rely on their husband's generosity for cash income. One participant commented that women now simply concentrate on the mama card and no longer have to bother the men with requests for money. Well-defined notions that 'mama moni' must be spent on family members, mean that women do not feel they can spend much on themselves. Women nevertheless feel empowered because they can satisfy their financial responsibilities to their families without having to negotiate with their husbands for a small amount of money.

The introduction of the scheme has brought out enterprising tendencies in women. Some women have used the extra income from MLFS to start small businesses, such as selling secondhand clothing or raising poultry, further increasing their income. An increasing number of women are using chisels to harvest fruit from smaller palms, a practice that women seem to have developed independently and which has gone unchallenged by husbands.

The mama card has been used creatively by women to support extended family and social networks. It is often given to a relative to earn money for large expenses such as school fees and brideprices, or women invite female relatives to collect fruit on the mama card and share the proceeds. This allows women who do not have their own mama card to earn extra money when needed, promotes kin networks and gives women an opportunity to socialise.

The collection of loose fruit has always been seen as women's work, so no major shift in gender work structures was required to take up in the scheme. Koczberski et al. (2001) suggest that some men are challenging women's new economic independence, but does not go into detail. They are possibly referring to thefts of the mama cheque by some younger men in households. It is possible that men may resent the increase in women's independence and make demands for a portion of a woman's income. However, it is also possible that men may appreciate not being bothered by their wives for cash on payday.

### 3.5.2 *MLFS Is Likely to Increase Levels of Schooling*

There are no statistics available on whether school attendance among the children of MLFS participants has increased since the introduction of the scheme, but AusAID suggests this is a likely outcome. Children can use the mama card to earn money to pay school fees, and women are more likely to contribute to school fees than men, so there is a very high likelihood that school attendance rates have increased as a result of MLFS.

MLFS has substantially empowered women through granting them a greater degree of financial independence and control over their incomes. A detriment may arise if men express resentment of this increased independence, but on all accounts it appears that the purely social benefits of MLFS outweigh the costs.

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## 4 Conclusions

The Mama Lus Frut scheme has increased the incomes of oil-palm producers, many of who were barely above the poverty line. It also appears to have improved welfare among oil-palm producers in PNG, beyond that attributable to income increase. It has done this in two ways:

- increasing total expenditure on items such as food, clothing, household items and education by channelling a greater percentage of household income to women; and
- empowering women through granting them a greater degree of economic independence, and empowering children by increasing the household's inclination and ability to find money for school fees.

The ACIAR project dealing with the *Mama Lus Frut* scheme was not responsible for introducing the scheme, but has been involved in its evaluation, modification and extension to new geographic areas and to new participants, with a particular focus on unemployed youth.

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## IMPACT ASSESSMENT SERIES

No.	Author and year of publication	Title	ACIAR project numbers
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