



# Women roadside sellers in Madang

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A survey of women roadside sellers in Madang Province of Papua New Guinea found that they earn a weighted average income of more than three times the national minimum wage. The relative economic success of these roadside vendors relies to a large extent on access to good-quality customary land and proximity to major roads.

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Several assumptions drive economic thinking about women in informal rural and agricultural sectors. The first is that the development of formal markets—while displacing informal activity—might create continuing employment or subcontracting opportunities (for example, Jarrett and Anderson 1989). A second suggests that exports must be a priority, because these expand accessible markets and, therefore, employment and livelihood possibilities (for example, Asian Development Bank 2002). A third assumption notes that informal economic activity is often marginal, using few skills, limited technology and capital. Its opportunities are often constrained by lack of land and credit and limited markets (International Labour Organization 2000; Sandaratne 2002:22). It is apparent that women are particularly marginalised and

vulnerable in informal agriculture, through traditional subordination (for example, Sachs 1997) as well as the displacement process of formal development. As well, the International Labour Organization (ILO) notes that ‘a general bias against women in formal employment, together with their typical preference for working closer to home’ results in their high numbers in the informal sector (ILO 2000:1–2). Here is a conundrum: while the informal sector appears to present limited economic opportunities for women, the opportunities presented by new formal-sector activities might be no better—or worse.

All such general notions, however, deserve re-examination in their particular institutional and cultural context. Not all informal activity is a dead end. Small domestic markets are often important



for local communities. They can provide rapid access to market income with few middlemen, allow exchanges of important domestic needs and create a home-grown and relatively autonomous social environment. This is particularly the case where—as in Papua New Guinea—rural women and their families retain fairly equitable access to good-quality productive land.

In the Madang Province of Papua New Guinea, the majority of vendors in rural and urban fruit and vegetable markets are women. If we exclude city and wholesale markets and look just at rural roadside markets, we find them populated overwhelmingly by women sellers. In Madang, however, there are pressures on families to give over some or all of their land to formal developments, including logging and oil-palm plantation. In other provinces—particularly Oro and West New Britain—the oil-palm companies have set up subcontracting schemes for rural women who collect scattered oil-palm fruit for the local mill (the Mama Lus Frut program). This program has been hailed a resounding success (Koczberski et al. 2001:193). In Madang, a foreign-owned fish cannery, RD Tuna, harvests local marine resources and offers low-paid employment to hundreds of women and a large oil-palm development has been proposed for inland Madang Province (Korugland and Santana 2007:4).

Questions arise, therefore, about the relative value of distinct livelihood or employment opportunities for rural women. In processes of agrarian change—where large monocultures such as oil-palm are introduced—there is competitive land use, displacement of some forms of domestic agriculture and transformation of domestic markets. If companion planting is not possible—as is the case with oil-palm—engagement with the new export crop will be at the expense of land for domestic food and other cash crops. Whether a particular

group will benefit depends not on some central economic logic but on specific social, institutional and distributional factors. The practical questions for those involved must be: what is being offered and what is being given up? And how important are the existing informal markets for women's livelihoods?

With these questions in mind, this paper sets out to measure the current income-generating activities of women rural roadside sellers in Madang Province, and to compare them with other economic opportunities for women. I first look, however, at the economic opportunities for women in rural Papua New Guinea, before turning to the survey of women roadside sellers in Madang. After this, some considered comments on women in domestic markets can be made.

### **Economic opportunities for women in rural Papua New Guinea**

PNG communities share with other traditional communities a strong reliance on subsistence activity and systems of exchange that are strongly embedded in their social context. As Gregory (1982) notes, this means that exchanges are more like mutual gifts than traded commodities, contributing to relationships by building obligation, alliances and friendship, rather than seeking an economic return.

Subsistence livelihoods include exchange—but it is a distinct type of exchange. PNG communities are distinguished also by their extraordinary cultural and linguistic diversity. More than 800 language groups have been identified. These communities are distinguished further by their near universal access to land.

Unlike the case in most former colonies, in Papua New Guinea colonisation did not substantially alter traditional tenure



patterns. About 97 per cent of land is held under customary title (Lakau 1991). The fact that almost every family has access to land has substantial implications for food security and the character of rural markets. More than 90 per cent of Papua New Guinea's families live sustainable rural lifestyles, meeting 'most of their needs through the techniques of subsistence agriculture that sustained their ancestors for thousands of years' (UNDP 1999:54). There is, however, also substantial rural poverty, due largely to lack of access to infrastructure (Gibson et al. 2005) and essential services, in particular education and health.

Women have access to land, either in a primary or a secondary sense. In most parts of Papua New Guinea, custodianship of land is patrilineal, within the clan; the senior male clan leader allocates land to families. On some islands and in the east, for example Milne Bay, there is, however, a matrilineal system. Men in these societies, including those who marry into the clan, must access land through their mothers, sisters or wives.

In rural areas, food markets are numerous in every province, although these markets are said to be 'a relatively recent institution' in Papua New Guinea (Bourke et al. 2004:2). They play a particularly important role for women, including women engaged in formal-sector activities, as in the oil-palm areas. For example, PNG women are said to have 'identified more closely with marketing than with oil palm...[this is] a historical legacy of women's marginal status in the oil palm industry...[but also] reflects the immense social significance women attach to marketing and the marketplace' (Koczberski et al. 2001:63).

Food markets—sometimes combined with craft and clothing markets, particularly in the urban areas—are a place of women's social interaction outside the home, and it is clear that many women enjoy the company

and the social environment. These markets are important for large rural populations and deserve 'special attention because [women's] activities are crucial to the survival of the family, especially children' (Adedokun et al. 2000:197).

Comparing the economic opportunities offered by traditional and new forms of production and exchange is difficult, chiefly because subsistence production can be highly productive but is often underestimated. Shaw argued that subsistence food production in Papua New Guinea was 'far in excess of national human requirements' and that subsistence production had considerable overlap with the cash economy. Food productivity was high, and in the 1980s rural families were said to be able to 'produce sufficient food within 20 hours or less labour per adult per week for humans, pigs and commercial purposes and still probably have a surplus for insurance or sale' (Shaw 1985:15, 18, 23). Other studies have shown that national accounts greatly underestimate the contribution of farming (Gibson 2000:41–2), and Papua New Guinea's staple food production amounts to 'a little more than one tonne a year for every rural villager' (Bourke 2005:7). Subsistence food production is therefore substantial and central in PNG livelihoods and links with the cash economy.

What then of these cash opportunities? An important rural informal-sector survey by the National Research Institute looked at a range of activities across four PNG provinces: Central, East New Britain, Morobe and Western Highlands (Sowei et al. 2003). No sampling error was noted, but the detailed results were at least indicative of economic possibilities. Important findings were that

- the informal sector was 'the main source of livelihood [and income] for many rural households', despite the increase in paid workers in some areas



- 21 per cent of those sampled in informal activities had no formal education, 50 per cent had a primary level and only 14 per cent had some secondary education
- incomes were constrained heavily by transport, infrastructure and location problems
- most participants used small amounts of money from their own savings for start-up capital and received no outside help from extension services
- average incomes for the four provinces across all informal activities ranged between K248 and K315 a fortnight (Sowei et al. 2003:xi–xiii).

Table 1 notes the average incomes and highest income activities from this survey.

This average informal income is considerably higher than minimum and common rural wages. As of June 2006, the minimum wage was K37.20 a week (Bank of Papua New Guinea 2006:S50). Workers at Madang's RD Tuna factory—who are

overwhelmingly women—are paid at or below this minimum: just 0.85 toea an hour, which, in a 46 to 47-hour working week could amount to K40 (Sindana 2007). The mainly male labourers at Ramu Sugar's new oil-palm plantations were paid more: K1.05 an hour, though planting work was paid at piece rates (Sindana 2007). Even in the mining sector, in early 2007, 50 male workers at the Ramu Nickel site went on strike over wages of K10 a day (Albaniel 2007:9).

The National Research Institute study included a wide variety of informal activities, which were gender analysed. Men dominated, with 80 per cent or more in passenger motor vehicle transport, coconut and cocoa production and sales, coffee cultivation, construction, fishing, small-scale mining, and forestry/logging. The women-dominant activities (80 per cent or more) were noted as betel-nut cultivation, collection of shellfish, manufacture of baked products, and manufacture of handbags. Women were also dominant in sugarcane cultivation (67 per cent) and fruit and nut

**Table 1 Informal-sector incomes in four PNG provinces**

	Highest income activities (and range of income)	Most common activities (and range of income)	Average informal sector income (kina/ fortnight)	AWE equiv.
Central	Fish buyer, PMV, trade store (K350–1,800)	Food crops, fish, betel, coconut (K50–250)	K315	K158
East New Britain	PMV, trade store (K500–1,200)	Cocoa, copra, food crops (K100–300)	K248	K124
Morobe	PMV, cattle, trade store, fish buyer (K500–4,000)	Coffee, food crops, fish (K30–160)	K260	K130
Western Highlands	Potatoes, kaukau, coffee, trade store, PMV (K400–1,500)	Potatoes, kaukau, coffee (K20–1,500)	K275	K138

**Notes:** PMV passenger motor vehicle (mini-bus); AWE average weekly earnings.

**Source:** Adapted from Sowei, J.W., Lahari, W. and Vatnabar, M., 2003. *Rural Informal Sector Survey Report*, January, Social and Environmental Studies Division, National Research Institute, Port Moresby:11–39.



cultivation (63 per cent), and were more regular informal sellers than men (69 per cent compared with 58 per cent) (Sowei et al. 2003). The major problems noted by women in the informal sector in this survey were high operating costs, 13 per cent (though this was less than for men); transport, 13 per cent (the same as for men); knowledge and skills, 9 per cent; law and order, 9 per cent (more than for men); and the demands of *wantoks* (relatives) for credit, 5 per cent (a little more than for men) (Sowei et al. 2003:App. Table 16). There is, however, great variation in rural incomes, as well as in poverty levels within provinces (Gibson et al. 2005) and this has much to do with access to schools and to roads (Gibson and Rozelle 2002:9).

It was shown in the National Research Institute study that while men held most of the higher-income informal roles, some women's informal-sector incomes were above minimum and real wage levels. They could also be above the *family* incomes of those participating in formal-sector village oil-palm schemes. Data published by Warner and Bauer (2002:10) for Land Settlement Scheme (LSS) oil-palm farmers in Oro Province put average annual single household income from oil-palm (including Mama Lus Frut income) at K5,476 a block, K2,952 for two household blocks and K2,167 for the average LSS block of 2.9 households.

In August 2005, I carried out a pilot survey of 21 small village oil-palm (VOP) and LSS farmers from a range of village areas on the Popondetta Plains in Oro Province. No sampling error was calculated for this small survey, but the results were consistent with Warner and Bauer's. Average oil-palm income was K3,045 a family per annum (Anderson 2006a). Oil-palm farmers on

customary land remain heavily dependent on their gardens for subsistence food as well as market income (Koczberski et al. 2001:50), and their cash incomes seem to be less than average informal-sector incomes (Table 5). Others have noted that women farmers rely on diverse cropping (Jenkins 1996). A limiting factor in oil-palm cultivation, however, is that it does not allow for companion planting, as this palm tree draws so heavily on the soil (CELCOR 2005; Koja 2005).

Women have not done very well in the Mama Lus Frut scheme, which was set up as a means of including women in the major oil-palm growing provinces of West New Britain and Oro. Women-only accounts—'Mama Cards'—were set up for women collectors of the palm fruit scattered by hasty roadside collection. This system was said to deliver an independent source of income to women, who typically spent money according to family needs. The average weekly income for those with a Mama Card at Hoskins in 2000 was, however, only K28 per woman. Koczberski et al. (2001) say that 'only a few women' complained of the strain from bending over and collecting loose fruit and none complained about competition for their time from other activities. In 2000, there were more than 3,000 women with a Mama Card in West New Britain, earning an average of K1,440 a year, which represented 26 per cent of total smallholder oil-palm revenues in that area (Koczberski et al. 2001:173–4, 178, 193). Although the program has been hailed a resounding success, income from the Mama Card compares poorly with all other income-generating possibilities (Table 5). The Mama Lus scheme is literally picking up the crumbs of an otherwise very lucrative industry.



## Roadside sellers in Madang

Observing the poor returns from the Mama Lus scheme, the problems of diversification under oil-palm and the relative lack of diversity in domestic markets in the Popondetta area of Oro Province, it seemed that oil-palm cultivation might be competing with crops grown for domestic markets and income-generating opportunities for women. In Madang Province, a pilot study suggested a greater diversity of crops, with income-generating possibilities as great or greater than family income from oil-palm (Anderson 2006a). With this in mind, I carried out a representative survey of women rural roadside vendors in significant markets (of more than 10 vendors) along the major highways of Madang Province.

This survey of rural roadside sellers was conducted on the road north from Madang to Alexishafen and south from Madang through Usino to Watta Rais, at the junction of the Okuk (Highlands) Highway.

The northern road includes traffic from Madang to Bogia (south of the Ramu River), while the southern road links Madang to Papua New Guinea's second city, Lae, as well as to the highly populated Highlands region. The markets sampled ranged in size from 10 to 200 sellers. Sellers were selected randomly, from the front and back of the larger markets, and with five to eight sellers chosen in the larger markets and two to four sellers chosen in the smaller markets.

The samples in each market therefore ranged between 5 and 25 per cent of all sellers. No markets with less than 10 sellers (micro-markets) were surveyed, as these were considered to have less than a 'critical mass' to attract buyers. Two PNG research assistants—a man and a woman, both trained community development workers—conducted self-reporting-style interviews in Tok Pisin. The interviewers collected information on items sold, daily and weekly incomes, days per week at market, items providing best returns and some other

Table 2 Questions asked of Madang roadside sellers

- 1 Which items do you sell?
- 2 How many hectares of gardens does your family have?
- 3 How many days a week are you at market?
- 4 What is your average income per week OR per day from market sales?
- 5 Which item gives you the best income?
- 6 How many people in your family share this income?
- 7 Do you grow other crops that you do not sell at this market (cocoa, vanilla, coconut, etc.)?
- 8 How does income from those crops differ from your income at this market?
- 9 Could you estimate annual income from those other crops?
- 10 Do you get any outside help for your farming (such as extension services)?
- 11 Does your family have any other sources of income (shop, employment, business)?
- 12 What are: i) your main problems and ii) your main expenses for market selling?

Source: Author's survey.



matters including costs and problems faced (Table 2). Along these two stretches of road, all but one of the larger markets (those with more than 50 sellers) were sampled, and about one-quarter of the smaller markets (10–40 sellers) were sampled. The markets sampled contained about 550 sellers, and it is estimated these constitute a little more than half of all roadside sellers—estimated to be about 1,000 vendors—on those two stretches of road. The sample was 44 of these 1,000 vendors. Sampling error was estimated at plus or minus 7.4 per cent, that is, a relative standard error of 15 per cent.<sup>1</sup>

Women were not singled out but rather were observed to form 95 to 100 per cent of sellers in most of these markets. Only in two markets surveyed did the proportion of women sellers drop to 85 or 90 per cent. Two men were interviewed in all, and they were not in the higher-income group. Almost all sellers were growers of the produce they sold. Items that attracted the highest returns were *buai* (betel-nut) and peanut, followed by fruit such as melons and mangoes. As others have observed (Koczberski et al. 2001:63), as well as providing economic opportunities, local markets form significant spaces for women's social interaction.

Putting these markets in seasonal and geographical context, we can observe that betel-nut and peanut are less seasonal in Madang than in Lae (the capital of Morobe Province) or in Goroka (the capital of the Eastern Highlands Province), the two regional centres to which traffic heads from Madang town. Coastal betel-nut (*Areca catechu*) is also valued more highly than the highland betel-nut (*Areca macrocalyx*) (Bourke et al. 2004).

The survey was conducted in December 2006, a month when betel-nut prices typically reach their peak in Goroka. It is also the watermelon and mango season in many parts of Madang and Morobe Provinces (Bourke et al. 2004).

While the retail growers and sellers of betel-nut were almost entirely Madang women, the wholesale buyers were mainly Highlands men—family groups from Chimbu and the Eastern Highlands, and by observation about 90 per cent men. This is a similar pattern to that observed in West Java, where rural women dominate local vegetable and fruit sales, but trans-shipment to the urban centres is controlled by groups of mostly male middlemen (Hayami et al. 1991:55). The Highlands men at two of these markets—Four Mile and Mambu—were engaged in continuous bargaining with the entirely female betel-nut sellers. Retail buyers were a mixture of men and women. No seller refused to answer questions about items sold or incomes, but two women declined to mention problems they were having. Given the other responses given (see below) these most likely included domestic problems and/or theft of betel-nut.

Apart from being overwhelmingly women, the sellers were a heterogeneous group. There was wide variation in their incomes, depending on the product sold, the location of the market and the frequency of their participation. The more lucrative markets therefore deserve some interpretation. Further, due to wide income variations, it is useful to speak of the income strata of sellers, as well as the average weekly income. Weighting of the data, to allow for consideration of each market as a separate cluster, modifies the calculation of mean average weekly earnings (AWE) for the entire sample.<sup>2</sup> Table 3 sets out the findings of this survey regarding vendors' self-reported average income, days per week at market and items providing the highest returns. Table 4 groups these data by market and income strata. Table 5 compares the weighted average income from this group with a range of other economic opportunities, including the National Research Institute



Table 3 Madang rural roadside market survey, average weekly earnings (AWE)

Market (no. of sellers)	Real AWE	Daily rate	H.M. days per week	Market weight	Weighted seller AWE	Main items sold (AWE > K100)
Watta Rais (30)	300	100	3	0.26*	78	P, B
Watta Rais	200	100	2	..	52	B, CO
Watta Rais	1,975	282	7	..	514	P, B
Watta Rais	1,250	500	2.5	..	325	P, M
Watta Rais	1,125	225	5	..	293	P
Watta Rais	2,250	321	7	..	n.a.*	P, B
Sausi (40)	60	30	2	0.43	26	P
Sausi	45	15	3	..	19	P
Sausi	70	23	3	..	30	P
Sausi	50	17	3	..	22	P
Yakumbu (20)	35	23	1.5	0.43	15	
Yakumbu	25	10	2.5	..	11	
Usino (50)	50	17	3	0.53	27	
Usino	150	75	2	..	80	P
Usino	450	150	3	..	239	M, P
Usino	60	20	3	..	32	
Mambu (70)	60	15	4	0.75	45	
Mambu	120	60	2	..	90	B
Mambu	450	180	2.5	..	338	B, DA
Mambu	210	84	2.5	..	158	B, DA
Four Mile (200)	210	70	3	1.08	227	B
Four Mile	500	250	2	..	540	B
Four Mile	150	30	5	..	162	B
Four Mile	280	112	2.5	..	302	B, DA
Four Mile	225	75	3	..	243	B, DA
Four Mile	270	180	1.5	..	292	B, DA
Four Mile	640	142	4.5	..	691	CI
Four Mile	250	100	2.5	..	270	B, DA
Maiwara (13)	55	22	2.5	0.14	8	
Maiwara	25	13	2	..	4	
Maiwara	60	15	4	..	8	
Maiwara	50	20	2.5	..	7	
Pau (120)	35	35	1	1.03	36	
Pau	300	75	4	..	309	M, MA
Pau	60	30	2	..	62	
Pau	45	15	3	..	46	
Pau	70	18	4	..	72	
Selon (40)	125	50	2.5	0.57	71	B, BR
Selon	180	60	3	..	103	B
Selon	50	17	3	..	29	
Nagada (10)	50	25	2	0.21	11	
Nagada	60	20	3	..	13	
Baitabag (20)	40	27	1.5	0.43	17	
Baitabag	40	27	1.5	..	17	
AVERAGE	289		2.93	1	138	

**Notes:** B *buai* (betel-nut); P peanut; M melons; CI cordial/ice-blocks; CO coconut; MA mango; BR *brus* (tobacco)  
The exceptionally high income earner in Watta Rais was removed in the weighting process, which reduced the number interviewed to five.



Table 4 Average weekly earnings distribution, per market and main item sold

Kina/wk	No. of sellers	Main items	Watta Rais	Four Mile	Usino	Mambu	Pau	Selon	Sausi	Yakumbu	Maiwara	Nagada	Baitabag
0-49	8					2			1	2	1		2
50-99	14				2	1	2	1	3		3	2	
100-99	5	peanut betel-nut tobacco	1	1	1			2					
200-99	7	betel-nut coconut	1	5	1								
300-99	2	peanut betel-nut melons mango	1			1							
400-99	2	peanut melons			1								
500-99	2	betel-nut betel-nut cordial/ice blocks		2									
1,000+	4	peanut betel-nut melons	4										
Total	44												

Note: The national minimum wage (urban and rural) is K37.20.

Source: Bank of Papua New Guinea, 2006. *Quarterly Economic Bulletin*, XXXIV(2), June, Bank of Papua New Guinea, Port Moresby.



Table 5 Comparison of informal and formal sector incomes (kina)

	AWE (kina)	High income per week (kina)	Low income per week (kina)
Informal sector incomes, average, 2003 <sup>a</sup>			
Central	158	900	25
East New Britain	124	600	50
Morobe	130	2,000	15
Western Highlands	138	750	10
Weighted Madang rural roadside sellers (women) 2006 <sup>b</sup>	138	2,250	25
National minimum wage <sup>c</sup>	37.20		
Ramu Sugar basic wage (40 hrs) <sup>d</sup>	42		
RD Tuna basic wage (mainly women) (40 hrs) <sup>d</sup>	34		
Ramu Nickel construction workers' wage (men) <sup>e</sup>	50	75	50
Mama Lus Frut income (WNB) (women), 2000	28	32	15
VOP/LSS growers (Oro) 2005 <sup>f</sup>	61	198	
LSS growers (Oro) 2002 <sup>g</sup>	43	110	

**Sources:** <sup>a</sup>Sowei, J.W., Lahari, W. and Vatnabar, M., 2003. *Rural Informal Sector Survey Report*, January, National Research Institute (Social and Environmental Studies Division), Port Moresby; <sup>b</sup>author survey. <sup>c</sup>Bank of Papua New Guinea, 2006. *Quarterly Economic Bulletin*, XXXIV(2), June, Bank of Papua New Guinea, Port Moresby; <sup>d</sup>Sindana, H., 2007. Personal communication, 20 March (based on interviews with workers at RD Tuna and Ramu Oil Palm); <sup>e</sup>Albaniel, R., 2007. 'Ramu workers stage protest', *Post Courier*, 9 January:9; <sup>f</sup>Anderson, T., 2006a. *Oil palm and small farmers in Papua New Guinea*, Report for the Centre for Environmental Law and Community Rights on the economic prospects for small farmers in PNG's oil palm industry, May, University of Sydney, Sydney; <sup>g</sup>Warner, R. and Bauer, M., 2002. *Mama Lus Frut Scheme: an assessment of poverty reduction*, ACIAR Impact Assessment Series No. 20, Canberra.

survey averages and some formal-sector opportunities for women.

The AWE for these roadside sellers was K286—higher than the National Research Institute's informal-sector averages in four other provinces. To allow for distinct samples from the various markets, however, incomes have been weighted according to market size to produce a more reliable average figure.<sup>3</sup> The weighted AWE was therefore K138—almost identical to the National Research Institute's informal-sector average. My survey was, however, of women only, and was only for food vendors in significant roadside markets.

An important factor in these figures is the inclusion of several very high-earning

peanut and betel-nut sellers in Watta Rais, at the junction of the Madang–Lae and Lae–Highlands highways. These incomes were exceptional; but there were other high-income earners. The unweighted median income for this survey was K125–50, much the same as the National Research Institute averages and this survey's weighted average. Those who earned K50 or more a week—higher than the minimum wage of K37.20—totalled 36 of the 44, or 82 per cent. Those who earned K100 or more a week—almost three times the minimum wage—numbered 22 of 44, or 50 per cent. The number of relatively high-income earners among the roadside sellers is particularly significant because most of them report



attending market significantly fewer than five days a week (the average was 2.93 days a week; Table 3) and most also reported that they had other sources of income.

The Watta Rais sellers—two of whom worked seven days a week—made their money mainly from peanut and *buai* (betel-nut), as well as coconut and melons. Five of these six sellers were women. As this small market was so well located—from the point of view of travellers—most of the vendors (earning between K1,000 and K2,000 a week) had given over large tracts of land (between 0.5 and 1 hectares) to cultivating peanuts, which were then sold retail and wholesale. Their income therefore depended on the availability of good-quality land, strategically located. Their major cost had become feeding the relatives who were enlisted to help them work the peanut fields. Coconut and watermelon were also sold at Watta Rais. In-season watermelon is so popular—being very refreshing in the tropical heat—it can command up to K8 a melon.

Almost all other higher-income earners had their success through some combination of betel-nut, peanut, melons and mangoes. Twenty of the 21 sellers who earned more than K50 a day were selling one or more products: betel-nut, peanut, melons and mangoes. One of these 20 was also selling coconut, and another *brus* (tobacco). The other higher-income seller was earning more than K140 a day selling ice-blocks and cordial. Location remained important as, apart from Watta Rais, most of the other higher-income earners were clustered in the popular betel-nut markets of Four Mile and Mambu, or the other well-located market at Usino Junction. At the Four Mile and Mambu markets, groups of Highland men could be seen bargaining down the (already low) prices with Madang's women grower/sellers. Women sold the betel-nuts for less than 10 toea retail; the Highlanders paid lower prices, buying whole branches,

stripping them down and bagging them. From anecdotal evidence, they expected to make 300–400 per cent on sales of these bags in the Highlands towns.

Vendors were asked about the main problems or costs associated with their market operations (Table 2). The main source of complaint was theft—particularly of betel-nut—by relatives, settlers and sometimes police. Twelve of the 44 sellers surveyed complained of theft of their goods. Other significant complaints were high school fees (five), lack of support from or wasting of money by their husbands (three) and strong bargaining pressure coming from the Highlands wholesale *buai* buyers (three). Costs were not noted as a major problem. Transport and market fees were mostly quite small. Of course, most of those with a serious transport problem simply did not come to market. Most of the market sellers had the advantage of living near the province's major roads. Only the very successful peanut vendors at Watta Rais noted significant costs in feeding the relatives who helped plant their peanut fields. This minimal financial constraint on market sellers is consistent with the findings of Shand and Straatmans. In a study in the 1960s and 1970s of communities in four PNG provinces, they noted that neither labour nor finance appeared to be particular problems for PNG families participating in cash cropping (Shand and Straatmans 1974). This outcome seems due mainly to the availability of good-quality land and the communities' capacity for work cooperation.

Finally, a majority of these sellers (28 of 44 or 64 per cent) had sources of income—and sometimes multiple sources—other than the local markets. The additional income sources were

- trade store or sale of other items (meat, eggs, cooked food, kava, prawns, cigarettes, dresses, second-hand clothes): 16 vendors



- chicken rearing and sale: nine vendors
- manufacture and sale of cooked food (bread, buns, doughnuts): five vendors
- pig rearing and sales: three vendors
- employment (self or husband): five vendors
- timber royalties and/or sales: two vendors
- transport business (husband): two vendors.

Interviewees were not asked the amount of income from these other sources.

Vendors were, however, asked to estimate their annual income from cash crops not sold at the roadside markets. These items were mainly export crops such as cocoa, coconut and vanilla. A majority of vendors—38 of 44, or 86 per cent—were engaged in export cash cropping. In no case, however, did their income from export crops exceed their income from the roadside markets, and in only three cases did export incomes—of about K2,000 a year—come close to the vendors' incomes from roadside markets. Supplemental export-crop income was declared by 19 of the 44 roadside vendors and the estimates ranged from K400 to K2,500 a year. In almost as many cases (18 of 44) there was cropping but no income from these crops—especially vanilla—either because they had just started growing or there were no local buyers. In recent years, the vanilla market had collapsed.

### Women and local markets

This small survey confirms that domestic, informal-sector markets can play an important role in the livelihoods of rural women in Papua New Guinea. The relative economic success of these roadside vendors had a lot to do with access to good-quality customary land and proximity to main

roads. Barriers to participation were low and the main immediate constraint was location.

Women in the informal sector are not always at the 'bottom of the heap'. This survey of women food vendors in significant roadside markets shows a weighted average income of more than three times the minimum wage—or real formal-sector wages for women—and more than four times the income of the Mama Lus Frut schemes for women in Papua New Guinea's oil-palm areas. The roadside sellers achieve this while attending market an average of three days a week, cultivating some export crops (not as lucrative as domestic markets) and pursuing other sources of income (mainly other small businesses).

Women did not identify finance as a significant constraint on selling at market. They identified their major problems as theft of goods, high school fees, domestic problems and bargaining pressure from Highlands wholesale betel-nut buyers. Apart from the last pressure, the women vendors benefited from the short value chain of their local markets, by selling directly and avoiding middlemen. This could help explain their apparent preference for domestic markets over export crops.

These themes of relative success also define real and potential constraints. Processes of land leases or diversion of land into oil-palm operations could threaten access to good-quality customary land. The rich diversity of local crops could be compromised—as in Popondetta—by the introduction of large monocultures. Madang's acting governor recently proposed a large oil-palm project between the Transgogol, Naru and Sogeram areas (Korugland and Santana 2007:4), in the middle of the area surveyed. Maintaining diversity of crops is an environmental and a livelihood concern. In their study, Shand and Straatmans noted that many families did



not participate in new cash-crop initiatives (1974:184). This seems to underline the need to maintain access to customary land and varied options for women's economic participation.

The advantages women experience through use of their own land and direct control of their own enterprises could be compromised by relegation to lower-paid formal employment or subordinate engagement in schemes such as the Mama Lus Frut scheme, associated with oil-palm. Economic success for women in the informal sector in rural Nigeria has similarly been linked to their access to 'critical resources' and 'direct access to the benefits of their own enterprises' (Adedokun et al. 2000:197).

Conversely, problems of location could be alleviated by investment in better roads. Gibson and Rozelle (2002) have pointed out that poverty in Papua New Guinea 'is primarily rural' and is associated strongly with lack of access to services, markets and transportation. Sowe et al. (2003: xi–xiii) reinforce this point. This survey—by highlighting the opportunities of roadside markets along main roads—provides support for the point that poverty increases strongly with distance from roads and education levels (Gibson and Rozelle 2002:9). On this basis, it could be that economic opportunities for women—if that is to be considered of importance in policy—would be better enhanced by investment in widespread rural roads, rather than industry-specific subsidies, such as to the commercial oil-palm schemes.

Theft of goods might be lessened by improved support systems for women at the major markets. Finally and importantly, in rural Papua New Guinea, where most families had land and food and the demand for credit was not pronounced, the pressing demand often seemed to be for improved access to education and health services—that is, relief from high education and health

fees—as well as for basic infrastructure, including roads. With these, rural women in Papua New Guinea should be able to make even better use of their own resources.

## Notes

- <sup>1</sup> If, however, this survey is considered as a cluster of surveys with separate and compound sampling errors, as my later weighting of the data allows, the variation could reach plus or minus 70 per cent.
- <sup>2</sup> I have also excluded the highest income earner at Watta Rais, as an exception or outlier, to add further caution to the calculation of an average weekly income for all vendors.
- <sup>3</sup> Weight of market equals percentage of total population/percentage of total interviews.

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