

## CHAPTER 3 METHODS

## 3.1 FIELDWORK

Gina Koczberski (GK) and I carried out fieldwork in Miko 2 Village for 18 months between May 1988 and October 1989. Our reasons for choosing Miko as a fieldsite are outlined in Chapter 1.3. For the first few months of fieldwork we concentrated on building a house, during which time we lived in a small tradestore that two nights prior to our arrival in Miko was emptied by a gang armed with shotguns.<sup>1</sup> In this settling-in phase, our spare time from house building was spent familiarising ourselves with the layout of the village (mapping tracks, hamlets and main garden areas), recording genealogies, learning Melanesian Pidgin and getting to know people. Villagers immediately identified us with the people whose hamlet we settled in and who helped us build a house. This caused some problems at the beginning of fieldwork that were difficult to overcome. Our hosts could not comprehend my desire to include other patriline in my work, especially unrelated ones with whom they seldom interacted. Initially they tried to dissuade me from visiting the hamlets of other subclans/patrilines, believing that we might find another one more attractive and decide to move there. Some other patriline in turn were hesitant about cooperating with us as we were identified as part of the patriline with which we lived. Much of my time in those first few months was spent explaining my research objectives and the need to work with as

many different people as possible. Gradually, over a few months we became more accepted, and as our hosts became more trusting of us and aware of our research aims, their concerns subsided.

Being involved in communal events such as house thatchings and yam harvesting facilitated our acceptance by villagers.<sup>2</sup> My participation in thatching, especially in hamlets where I was less well known, helped foster many friendships and perhaps facilitated the high level of cooperation I received with the commencement of formal survey work. Also, the progress of our small garden plot of marka yams inter-planted with assorted greens, maize, pawpaw and tobacco was keenly followed by the entire village. Not only did the exercise of planting and harvesting yams under the direction of our experienced host provide me with many insights into their cultivation, but it seemed to engender better relations with the people of Miko. There is no question that we were ever fully accepted in the village, and we did not expect to be. We were outsiders when we arrived and we were still outsiders when we left. However, these small efforts in participating with villagers in many of their everyday activities (though largely token efforts and recognised as such by villagers) went a long way in developing good relations with Miko residents.

Travel to Maprik was a little troublesome at the beginning of fieldwork. I kept a small motorbike in a Miko 1 tradestore (the highway side of the Amogu River), which belonged to some relatives of our host. But because of the spate of highway

robberies, villagers were concerned for our safety and were reluctant to see us travel alone to Maprik.<sup>3</sup> After several months however, they suddenly announced that it was safe for us to travel between the village and Maprik. Through relatives and other contacts living in villages between Miko and Maprik, our hosts obtained assurance that we would not be a target of holdups.

### 3.2 DATA COLLECTION

During fieldwork I collected more data than required for the thesis, because the opportunity to conduct 18 months continuous fieldwork was unlikely to arise again. Over the 18 month period a very large amount of data were collected, about half of which are analysed for the thesis. Because the process of collecting these extra data provided many additional insights into Miko social and cultural life, their methods of investigation are also described below.

Techniques of data collection were developed in the field to suit local conditions and the time constraints under which GK and myself found ourselves (e.g., work patterns of villagers, flooded river crossings and sago groves, hamlet distance, etc.). We planned our fieldwork schedules together to minimise duplication and to maximise coverage of the sorts of data we were after. We agreed to assist each other with data collection especially in

our standardised surveys. Accordingly, GK assisted me regularly with my weekly surveys, and I in turn interviewed some HHs for her activity surveys. In this way we covered more HHs than each of us would have been able to do working alone. Also, if a male HH head was absent from the village, GK would interview his wife for the survey that week. This was more important in the early stages of the weekly surveys when women were hesitant to talk to me (see below).

Because of the broad subject area, data types and methodological approaches vary greatly. Much qualitative and quantitative data were gathered by participant observation, field observation, structured and unstructured interviews (see Hammersley and Atkinson 1983; Burgiss 1982; Gregory and Altman 1989), and while performing the weekly surveys, activity surveys and mapping work. Supplementary information was also gathered while visiting other villages, from government records and officials, and in conversations with past and present prominent individuals in the area.<sup>4, 5</sup>

The bulk of the data presented in the thesis was collected in three main ways that are not mutually exclusive: weekly surveys, mapping (including yield data) and informal interviews (social structure and kinship networks, belief systems and historical patterns of change). Each of these is discussed below together with any problems and shortcomings.

### 3.2.1 Weekly Surveys

Much of the data presented in this thesis were obtained by weekly HH surveys. The primary aim of these surveys was to obtain quantitative information on the subsistence/cash interface. To this end, 35 HHS (reduced to 32 HHS - see below) were interviewed over a 47-week period from late October 1988 to mid September 1989. In all 852 half-hour surveys were performed. Weekly surveys covered the following:

- \* access to sago palms and processing
- \* cash income and expenditure
- \* inter-HH labour allocations
- \* hunting activities
- \* gifts and exchanges between HHS (food and wealth items)
- \* illness episodes in family members

Only the first three items are analysed and discussed in this thesis (see section 3.2). Time constraints preclude the inclusion of the other items. Coding, checking, computer entry and analysis of each item is extremely time consuming. For example, collation and analysis of the large amount of data on gifts and exchanges of non-cash items would take at least 6 months to complete.

## SAMPLE SELECTION AND HH DEFINITION

Proportional coverage of the village was high with 76% of village households and 79% of the village population included in the sample. HH selection was not random. To facilitate cross-checking between HHS it was initially planned to survey as many HHS as possible, preferably the entire village (not an unreasonable aim given the size of Miko 2 Village - see Chapter 2.1). Because nothing was known about the frequency of mundane exchange activities, a high proportion of village HHS in the sample, would permit some check on recall accuracy (see below). HHS omitted from the survey include:

1. Older HHS consisting of a single individual (usually widows), Their productive and social relations are very different from younger HHS. They do not for example, participate to any great extent in the cash economy and nor are they active in the political and social arenas.
2. HHS whose members were frequently absent from the village. Two hamlets were not represented in the survey. One of these, a small hamlet headed by a young married man was omitted because of his frequent absence from the village. One HH in the second hamlet was initially in the survey but later had to be dropped because some hamlet members (consisting of one patriline) were continuously tied-up in court cases away from the village.

3. Lack of cooperation. One HH proved uncooperative when the surveys began. They later requested to rejoin the sample, but were unable to be accommodated without major disruption to the new schedule.

All, but two sample HHs (a newly married couple) have unmarried children or young adults residing with them, ranging in age from birth to 18 years old. Four HHs were lost from the sample while another was added in part way through the survey period. Two HHs migrated to West New Britain Province, the third was dropped because the HH head was frequently absent from the village, and the fourth was uncooperative (see above).

The main criteria for defining a HH are that members garden the same plots, and regularly eat together (see Gregory and Altman 1989, 48-60, for a review of techniques for defining social units). HHs typically consist of a husband, wife, their unmarried children, and sometimes an elderly parent of either the father or mother. Visitors (adults or children) residing with a HH for more than 2 weeks were recorded as members of that HH for the duration of their stay and were also interviewed. To be defined as a HH, people do not have to live in the same house. If they meet the other requirements (gardening and eating together) and reside close-by, they are designated as belonging to the same HH. There is one polygamous HH in the sample (two wives). But because co-wives normally manage separate garden plots and houses, they were interviewed separately and their

individual transactions recorded. In the presentation of data, the man and his two wives are treated as a single HH.

#### INTERVIEWS

Surveys were administered on Sundays through to Wednesdays late in the afternoon when all HH members were likely to have returned to their hamlets. Almost half the weekly surveys were performed on Sunday because villagers tend to work less on this day and return to their hamlets earlier. Sundays (because of church and a break in regular activities), also provide a good temporal marker for respondents when answering questions about the previous 7 days. Fridays and Saturdays were also 'marker' days as the main local markets are held on these days. For surveys on Wednesdays and Thursdays particular care was taken to ensure that double counting or under-reporting did not become a problem (see below). A routine was maintained of interviewing HHs on the same day each week so that they would know when to expect the interviewer. If a HH, or a key HH member was not present, they were interviewed later the same evening or early the following morning.

Daytime interviews were logistically not possible, as HH members would disperse throughout the village territory. Early morning interviews would have been disruptive to work schedules as HHs often leave their hamlets shortly after dawn, especially during periods of heavy work.



Interviews were conducted in Melanesian Pidgin (the lingua franca of PNG), but often the names of items were recorded in the Abelam language as pidgin terms were too generic (e.g., items of garden produce). Interview format was flexible to accommodate work tasks of HH members. Often mothers had to contend with screaming children, and so questions related specifically to their activities were postponed until later in the interview when they had an opportunity to answer them.

Questions related to the previous seven days (the intervening period between surveys), and responses were recorded on prepared data sheets. To avoid double counting, the previous week's data sheet was referred to during the interview and when double reporting appeared possible it was checked with informants.

All HH members were encouraged to participate in answering questions. As HH members became accustomed to the content of the interview, each identified with particular parts of the survey. With market income and sago processing for example, wives and daughters provided the information directly (selling at local markets and sago processing<sup>6</sup> are exclusively female tasks), whereas initially male HH heads dominated interviews.

Weekly surveys were physically demanding at times, particularly so in the early weeks when an interview could take up to 50 minutes to complete. But as people became familiar with

the interview format, the process speeded up so that each interview could be completed within 20-30 minutes. It was difficult to visit hamlets at times during the wet season. Village tracks sometimes became muddy quagmires (not helped by wallowing domestic pigs), sago gullies often flooded and when the Amogu River rose, the crossing was difficult. On many a night, I returned to my hamlet after ten o' clock exhausted, sodden, muddy and feeling like I'd been the evening meal for the ubiquitous mosquitoes. Generally though, once the routine of weekly surveys was established and the interview procedure became known to informants, few difficulties were encountered in physically performing them.

#### Problems with memory recall

The difficulties with surveys relying solely on memory recall have been recognised in the literature, particularly with regard to time allocation studies (e.g., Grossman 1984; Sexton 1986; Johnson 1975; 1978; see also Gregory and Altman 1989, 103-115). However, many of these problems are not relevant to this study because the emphasis is on exchange transactions and major work-tasks, rather than on tasks of short-term duration. Yet, the possibility of inaccurate recall, especially the under-reporting of mundane and routine events is real. In the Wosera gifts of cooked food are in this category because they occur so frequently and are considered such a normal part of daily living. To reduce the likelihood of such errors, all exchanges between HHs were cross-checked fortnightly on survey

answer sheets. Inconsistencies between HHs were clarified during interviews. Except for exchanges of cooked food,<sup>7</sup> most of these error types were due to HHs having surveys on different days, and/or the absence of a HH for a particular survey week. In addition, the three tradestore operators in the village (two of them closed during fieldwork), kept records of purchases from their stores (name and hamlet of buyer, date, item purchased and price - see below). This permitted a further check on the accuracy of recall data.

Various recall periods were tested (three day and fortnightly), but the weekly survey proved most suitable as it maximised coverage of HHs without compromising data quality.<sup>7</sup> Villagers had little difficulty with a 7 day recall period, because all HH members participated in answering questions, and each individual is involved in only a small number of transactions in any given week. At the beginning of the survey, lists of items (particularly food and small expenditure items) that were originally intended as memory joggers, served another, unforeseen function: to demonstrate to respondents the importance of listing all items, not only those which they considered to be significant. For example, initially many thought a 5t purchase of newspaper for smoking, or a bowl of food given to another HH, as not worthy of mention.

Where some minor errors are possible, is in the amounts of money won and lost at cards (the question of whether gambling subsidised the Miko economy is addressed in Chapter 4.3.8).

Because some people (particularly males) play cards frequently, they may have difficulty in accurately remembering their wins and losses, even though attempts were made to record the outcomes of individual games. During the survey a new card game 'kago kad' was introduced to Miko from villages to the north. A tradestore operator organises the game and players pool money (usually 20t each) to make-up the price of a tin of fish (K0.80) or kilo bag of rice (K0.75). The tradestore operator replaces the pooled cash with either of these items which participants play for, the outright winner taking the prize. When this new game arrived in the village it was taken up enthusiastically by many adults and children. In the compilation of income and expenditure data, prizes are recorded as cash income from cards (less cash losses incurred in winning prizes), with a subsequent purchase of tinned fish or rice from the tradestore organising the game.

#### RECORDING THE DATA

##### Sago

Because sago holdings are extremely fragmented and dispersed (subdivided each generation - Chapter 2.5.1), individual HH holdings were not mapped: to do so would require several months of full-time work. A surrogate measure of HH sago resources was obtained by determining the source of sago palms processed and exchanged by HHs. During weekly surveys, HHs were questioned about palms felled and processed that week: who they belonged to, and their relationship to the HH giving or receiving the palm.

Two difficulties arose with the documentation of exchanges of sago palms. First, because sago palms or sections of palm trunk were not measured it is possible that there are some errors in these data. However, there is no evidence to suggest that there is systematic bias operating in the size of palm sections exchanged. HHs sharing a palm were recorded as processing equal proportions unless it was clear otherwise. For example, if three HHs shared a palm, each was noted as processing one-third. General observations of families processing sago confirm that HHs sharing palms are careful to apportion sections of palm trunk equally between them.

The second problem relates to the complexity of exchange and is perhaps best illustrated with a brief example. Suppose HH 'A' gives a full palm to a ZS who heads HH 'B'. 'B' fells the palm and allocates one third to a brother HH 'C' in his patriline. Another third is given to HH 'D' the ZS of 'B' and the remaining portion is processed by B's own HH. There are several ways of apportioning these transactions (Figure 3.1).

Option 3 in Figure 3.1 was chosen because HHs 'B' and 'C' being in the same patriline held their own patrilineal sago resources in common. To create a category for the exchange of palms between close agnates would be misleading. For instance, if 'B' fells one of his own patrilineal palms and shares it with 'C', there is no transfer of resources from 'B' to 'C' since the palm technically belongs to them both. Option 3 is therefore to

simplify the presentation of the data and to avoid creating the impression that palms are exchanged between close agnates. In this particular example, because 'B' felled the palm and invited HH 'D' to process a section, the transaction is between 'B' and 'D' and excludes 'C' even though HH 'D' is also related to 'C' as a wife-taker.

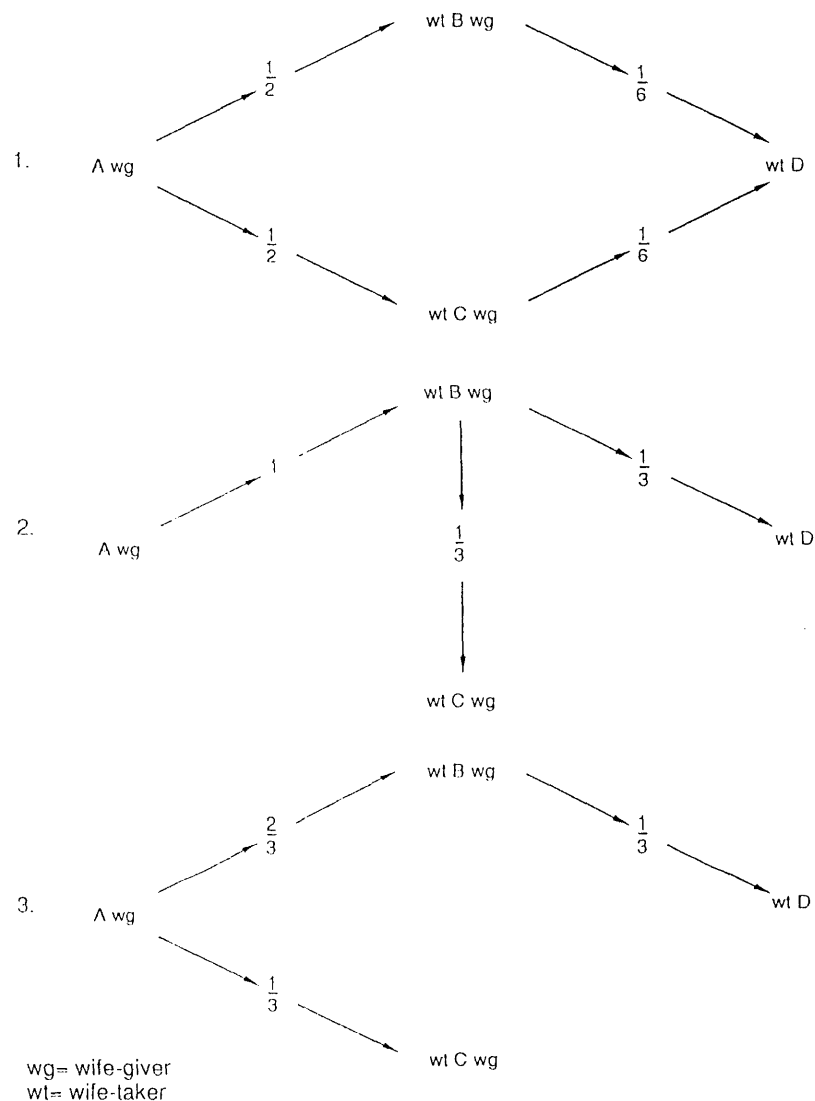


Figure 3.1 Three ways of apportioning sago palm transactions in the indigenous exchange economy.

## Income and expenditure

Areas of permanent cash crops were inappropriate indicators of HH participation in the cash economy because of the near abandonment of coffee production due to low prices. Therefore, weekly cash income was recorded for each HH member by date, item, and location and type of transaction (e.g., market, store, village or town). Cash expenditure data were collected in the same format. Cash transactions in non-market exchange networks were also included and the kin relationship between the parties to the transaction noted. Because non-market exchanges are often linked but separated temporally (e.g., a gift of labour later reciprocated with a gift of cash), informants were encouraged to report all incidences of these transactions over the survey period. The value of these transactions has been adjusted to the number of survey weeks for each HH (the problem of linking reciprocal transactions separated in time is discussed below). Only transactions with people outside the HH were recorded.<sup>8</sup>

## Inter-HH exchanges of labour.

Each HH was questioned about any labour exchanged with other HHs in the 7 days preceding the weekly interview. Garden labour, which dominated these exchanges, is analysed for the thesis. Other forms of inter-HH labour exchanges were surveyed (e.g., house building, thatching and sago processing), but were excluded from these analyses for several reasons. Houses for example, require replacement every three or four years. A 12-month survey

period is therefore too short to capture patterns of labour allocations associated with house construction.

Labour exchanged in sago processing was dropped from this section of the survey, because such labour exchanges are indirect being embodied in the parcels of processed sago exchanged between HHs. For example, if a woman 'A' is asked to help process a palm belonging to woman 'B', 'A' does not simply provide the labour leaving the processed sago with 'B'. Rather, 'B' allocates a section of palm trunk to 'A' which the latter then processes. 'A' may then subsequently present 'B' with a portion of the processed sago. The amount of labour expended in processing sago by 'A' does not equate with the quantity of processed sago received by 'B'. Therefore, quantities of processed sago exchanged between HHs provides a more accurate indication of inter-HH flows of labour associated with sago processing (see below).

Each garden labour exchange transaction was recorded by HH member, date, task type (e.g., garden clearing, weeding, harvesting), and the amount of labour exchanged in quarter day units - early to mid morning, mid morning to noon, noon to mid afternoon and mid afternoon to dusk. The kin relationships between HHs exchanging labour were also recorded.



## DATA ANALYSES - WEEKLY SURVEYS

There are several reasons why inferential statistics are not applied to between group differences in this thesis (see Summerfield 1983 for a discussion of the inappropriateness of inferential statistics for some areas of geographical enquiry). First, because sample HHs are not randomly selected, one of the fundamental assumptions of inferential statistics is not met. Moreover, an equally compelling reason is that because proportional coverage of the village was high (section 3.2.1), observed differences between groups are real differences in the village population, and therefore cannot be attributed to sampling error (Summerfield 1983). Why use inferential statistics when virtually the entire population is measured? A third argument might be that because Miko is part of the Wosera or Abelam population, statistics should be used to make inferences about the wider population. Again, such an argument cannot be sustained because the assumption of randomness does not hold. For these reasons descriptive statistics only are applied to between group differences (mostly Box and Whisker plots).

Minitab Box and Whisker plots showing the median and spread of scores are used to provide a visual impression of the differences between groups. Where possible outliers (marked with an '\*') or likely outliers (marked with a '0') are identified by the Minitab programme, the median is used as a measure of central tendency. Where no possible or likely outliers are present, the

mean is employed because it takes into account the magnitude of each score.

#### HH Size.

To enable comparisons to be made between HHs, the majority of data (unless specified otherwise) is expressed in adult equivalents. Criteria similar to those used by Crittenden (1982, 274) and Allen (1984, 90) are employed (see also Gregory and Altman 1989 for an overview of techniques of HH enumeration). Children under 2-years-old are assigned a value of zero, because they are predominately breastfed, with solids comprising a very small proportion of their dietary intakes (Koczberski 1989). Children ranging in age from 2 to 10, and the very old and infirm (only one case), are given a value of 0.5 adult equivalents. Persons over 10-years-old are assigned a value of 1.0 adult equivalents (see also Chapter 7.3.1).

#### Sago

On return to Australia, data on the number of sago palms processed and exchanged were collated by HH, date and group (established or immigrant patriline). Sago palms processed by each HH were tabulated by source: own resources, or if received through exchange networks, the type of kin relationship to the donor HH. Similarly, the number of palms given in exchange by each surveyed HH were tabulated by the type of kin relationship to the recipient HH.

Most sago palms are felled in the six months January to June when yams are in short supply (Chapter 2.6.2). For this reason, data presented in Chapter 7.4.2 on the actual numbers of palms exchanged and processed relate to this season only, when demand for sago is high. It would be erroneous to convert these figures to an annual basis because the resultant figures would be inflated. It is important to note that because some processed sago is sold at local markets and is also an important exchange item, the number of palms processed per HH does not necessarily equate with HH consumption. Processed sago enters exchange networks either as cooked food or as parcels of processed raw sago (Chapter 7.4.2). Although data were collected on exchanges of parcels of raw processed sago, time constraints prevent their analysis and inclusion in the thesis.

#### Income and Expenditure

Income and expenditure data were coded by HH member, group, date, item, location and price, and transcribed onto data sheets suitable for computer entry. Inter-HH transactions were again screened for double counting during this process. The data were entered on Dbase IV, and totalled about 7000 records representing upwards of 10,000 individual transactions. To enable comparisons between HHs, income and expenditure data for each HH were converted to annual figures. Tradestore profits for the two HHs that shared a tradestore were calculated from wholesale receipts

over the survey period. Profits for each HH were converted to annual figures and entered on the database.

Subsets of income and expenditure data were created and converted to Lotus 1.2.3 to produce the bar and pie charts presented in Chapter 4. Further data subsets were created by group (established or immigrant patriline) and 'dumped' into Minitab to produce the 'Box and Whisker' plots presented in Chapter 8.

#### Inter-HH allocations of Garden Labour

These data were coded by HH member, date, group, labour task, amount of labour given/received and kin relationship with HH to (from) whom labour was given (received). Again these data (almost 3000 records) were cross-checked between survey HHs and entered on Dbase IV and converted to an annual basis for each HH. Data subsets were also created by group to produce the tables and 'Box and Whisker' plots in Chapter 9.

#### 3.2.2 MAPPING OF RESOURCES AND YIELD DATA

Coffee blocks, yam gardens, peanut and sweet potato gardens belonging to survey HHs were mapped by chain and compass (peanuts and sweet potato are cash crops sold at local markets - Chapter 4.3.3). Some older coffee blocks established in the late 1950s or early 1960s have been subdivided between sons. Such

subdivisions are taken into account in the assessment of HH coffee holdings. Unlike coffee, plantings of cocoa are often dispersed (e.g., around hamlets) so no attempt was made to map them. As all cocoa was harvested, an index of cocoa resources for each HH was obtained from the cash income component of the weekly surveys.

Yam garden data were collected by area, yam type (asakwa or nyemka) and planting density,<sup>9</sup> age of garden (including any earlier crops in the same planting cycle), location (hill slope, river terrace or floodplain) and relationship of garden cultivator to 'owning' subclan. All yam gardens belonging to sample HHs in 1988/89 were surveyed.

Yield data were collected for the two main yam varieties nyemka and asakwa for both first and second year gardens. In most cases the complete harvest from a block was weighed using a Salter spring balance (weighed up to 25 Kg in 100 gram units). In a few of the larger blocks, a random sample was made of approximately 20 to 30 mounds. Most growers group their yams by size after harvesting. There are preferred sizes for planting stock, long-term storage, yam exchanges, and smaller or damaged yams are set aside for consumption over the short-term. Weighings of yams took account of these size classes, and the number of tubers in individual weighings were recorded to estimate mean size of yam in each size class. Yams ear-marked as gifts to other people were also weighed in the same way.

Because of the high social and cultural value placed on large yam tubers, problems can arise in obtaining representative data. If growers suspect tubers are going to be small, they are hesitant to invite investigators to assess their harvest (and hence invite public scrutiny of their 'inferior' yams). They would rather harvest them quietly away from public gaze. In contrast a grower with an exceptional crop of large yams invites public inspection (hence recognition of his prowess as a yam grower). In these cases growers are happy to have their yam harvest weighed. On several occasions growers failed to inform me when harvesting as previously arranged. When quizzed later, they said that they were embarrassed about their poor harvest, and thought I would not be interested in weighing such a paltry crop. In a couple of instances harvests were so poor that virtually the entire crop was kept for replanting. This occurred when gardens became choked with weeds when HHs were in mourning and unable to attend their gardens. As a result, yield data presented in Chapter 2.6.1 was said by growers and others to be average to good.

### 3.2.3 INFORMAL INTERVIEWS

A great deal of these data were collected informally when visiting people in their gardens or hamlets, conducting the weekly surveys, and when relaxing in the evenings with other hamlet residents and visitors. Important information collected in this way was cross-checked with other people (usually with

someone from a different subclan), which often resulted in additional information or clarification of some misunderstanding on the part of the investigator.

Historical data were assembled from informal interviews of both men and women in the village. For women most of the questions related to markets and trading, and their perceptions of change through time. Both sexes were interviewed about their work experiences outside the village, and their involvement in 'bisnis' activities (e.g., fish ponds, chicken coops, pig projects, tradestores, PMVs, cash crops and any small investments in other people's businesses). Each HH was also questioned about the number of coconut palms they own, as coconuts are an important cash crop sold at local markets. The histories of business groups were investigated with consideration of membership structure, capital formation, profit distribution, and the failures and difficulties of these business groups. Tradestores operating in Miko during fieldwork were also monitored. Store operators maintained records of all sales with name and hamlet of purchaser, item bought and amount paid recorded in notebooks provided by the investigator. This provided a check on expenditure data from weekly surveys. Operators also kept all invoices from wholesalers, together with notes on freight charges. Tradestores in some surrounding villages were visited and their operators interviewed. These included both functioning stores and others that had been closed for various lengths of time.

## Ethnography and Belief Systems

Genealogical records were assembled for all village HHs. The genealogical record in most cases extends back only 5 or 6 generations, and is incomplete. For patriline of the grandparent generation of older informants, only some of the brothers, but few, if any sisters are remembered. In a couple of exceptional cases, informants are able to recite the names of males of their patriline to about 7 or 8 ascending generations, but usually brothers of the ascending patriline are not remembered.

Part of the reason for poor genealogical knowledge relates to the way kinship relationships are conceptualised amongst the Abelam. Unlike the Western concept of a tree-like genealogical chart, people are classified according to how they are related in generational terms, or through marriage to their patriline. For example, ego's FFBSS would be referred to as 'brother' by ego; as 'son' by ego's father; and as 'father' by ego's son, even though the exact genealogical connections may be unknown. If ego's father refers to an individual as 'son', then ego knows to call that person 'brother'.

Collection of genealogical data commenced near the beginning of fieldwork, and data were added as the work progressed and my knowledge of the composition of various groups in the village increased. Considerable cross-checking was possible as most people in the village are related. Genealogical information was



collected together with bird totems (djambu), subclan and clan affiliations, and ritual organisations to which each individual belonged.

Belief systems associated with garden, sago and pig production, social organisation, Abelam cosmology, health, traditional medicines, birth, marriage and death were investigated, again mostly by informal interview. They were also examined with regard to the kinship system and the rights and obligations attached to particular relationships of kinship. They were not easy to investigate, mainly for two reasons. First, because villagers perceive their belief systems to be the norm and the natural way of thinking about things, some assume that the investigator possesses a similar set of beliefs. Secondly, as an outsider with little formal anthropological training, the process of coming to grips with the complexities of indigenous belief structures was difficult. The process was by no means completed during fieldwork, and much remains unexplained.

As the fieldwork progressed and I became aware of the complexity of the Miko socio-economy I realised that it would be fallacious to assess economic change without considering the belief structures, kin groups and associated obligations, and traditional exchange networks that shape villagers' perceptions and responses to change. My initial fieldwork plan was to collect 'hard' data through formal surveys of income and expenditure and subsistence production and then to use the

published anthropological literature to provide the cultural backdrop to the thesis. But, with the gradual realisation of the importance and complexity of the inter-relationships between physical environment, culture, social structure and economy, my research strategy broadened to accommodate these factors. During this process however, the weekly surveys remained the core area of data collection which provided an anchor to the many interesting research leads which emerged from the surveys and during the course of fieldwork.

## ENDNOTES TO CHAPTER 3

1. Crime levels were high in 1988/89. Tradestore robberies and house break-ins are common. Tradestores are a target of organised gangs, whereas robberies of homes are mostly attributed to teenage youth in the village. There were also numerous holdups of Wosera and Pagwi PMVs on the Hayfield-Pagwi Road. The situation in the province was judged so serious by the government that a special police squad ("Force 10") was despatched to the province on two occasions in 1988/89 - operation "Bagarapim Gawi". This police squad are known for their heavy-handed tactics and have a fearsome reputation amongst villagers. They raided various villages along the highway to round up suspects, and conducted two night-time raids into Miko. While in the area many families were too frightened to sleep in their hamlets, retiring instead to hidden shelters in the bush or isolated garden shelters. Families also carried all their belongings with them to the bush at night, fearing that the police would confiscate them.
2. House thatchings are half-day affairs sometimes involving up to 20 men. Older men direct the thatching operation from the ground paying particular attention to the more tricky jobs at the front and rear of the house. Younger men and boys, on a specially constructed framework inside the house, tie the sago thatch to the roof frame as it is passed to them. During thatching there is a great deal of practical joking and occasional mischief, but work proceeds, for the most part, at break-neck speed. On completion of the job the garamut (slit gong drum) is sounded to summon the women with food. Labour for thatching is reciprocal, and because houses must be replaced every 3-4 years, it is important for an individual to invest labour in the house thatchings of fellow villagers to ensure an adequate pool of labour when their own house needs replacement.
3. These fears were not unjustified. On several occasions during fieldwork, shots were fired at cars travelling between Miko and Maprik.
4. Searches were made of the files held at the Wosera Patrol Post, the District Office, Maprik, and the Provincial Government office in Wewak. Many files were either missing or incomplete. For example, reports on flood damage to floodplain gardens along the Amogu had been lost, even though the author of the reports submitted them to both the Maprik and Wewak offices. Lea (pers. comm.) saw many files burned at Maprik DHQ in 1971! The National Archives in Port Moresby was also visited on completion of fieldwork.

5. Mr. Maurice Hovey and his wife are retired missionaries (Assemblies of God) who worked in the area since the early 1950s. They witnessed many of the changes in the area, and Mr Hovey was able to recount the introduction of new crops and other innovations, as well as provide information on local cargo cults which had emerged previously in the study area.
6. Although the processing of sago palms is purported to be an exclusively female task, I documented three instances of men assisting their wives to process sago. This pattern of labour division does not apply throughout Abelam territory. For example, in western Wosera villages, men process the sago trunk to a state where it can be 'washed' by the women to produce sago flour.
7. Although data on food exchanges are not presented in this thesis, they occur so frequently that they are likely to be under-reported. Omissions were commonly detected during cross-checking of data sheets in the village. People could simply not remember all the cooked food that they had given or received each week. At best the data may provide an indication of the links between HHs. For an accurate picture of these exchanges, interviews on a daily basis are recommended.
8. Intra-HH transactions may have yielded interesting insights into for example, intra-family control over cash income. But this was not logistically possible as interview periods would have been intolerably long for both interviewee and interviewer.
9. While mapping yam gardens, children who accompanied me placed a card on each yam mound in a block, collecting them afterwards for a measure of planting density.

## CHAPTER 4 THE PROCESS OF INCORPORATION AND THE EMERGENCE OF A CASH ECONOMY

### 4.1 INTRODUCTION

By examining the historical process of incorporation some insights can be gained into the events that have shaped contemporary Wosera society. Generally speaking, incorporation has not been easy for the Wosera. Their first widespread and intense exposure to the outside world and its wealth and technology, was during the Second World War when the fighting between the Japanese and the Allies raged through their villages. Since then, economic development has been very slow and erratic. Their experiences with export cash cropping seems to be one of rising hope alternating with dashed expectations as prices crash for each new crop. The recent collapse of coffee and cocoa prices is the latest blow in a series of such failures. It appears that the only real successes have been where the Wosera have developed their own local markets, and where they have built-upon and developed pre-existing trade networks. These are areas of success in an otherwise disappointing experience with 'development'.

## 4.2 INCORPORATION: THE HISTORICAL CONTEXT

### 4.2.1 THE PRE-SECOND WORLD WAR PERIOD

Because accounts of early contacts with the outside world and of the colonial and postcolonial experiences of the Sepik people have been reported elsewhere, only a brief chronology of events is presented here. For more detailed expositions of Sepik experiences with outsiders, and the social, cultural and economic ramifications see Lea 1964; Townsend 1968; Allen 1976; 1990; Scaglione 1976; 1990; Curtain 1980; Herlihy 1981; Gewertz 1983; May 1990; and the collection of papers from the 1984 Wenner-Gren Symposium, edited by Lutkehaus *et al.* (1990).

The earliest contact with foreigners was probably with Malay bird-of-paradise hunters in the early years of the twentieth century or latter part of the nineteenth century (Lea 1964; Allen 1976; 1990; Scaglione 1976; 1983; 1990; May 1990).<sup>1</sup> Chinese, then German labour recruiters followed, with sometimes forced recruitment of young men for the coastal and island plantations (Allen 1976; see also Lea 1964; Curtain 1980; Scaglione 1985; Allen 1990; May 1990). There was some oil exploration in the Sepik Plains in the 1920s (Townsend 1968). A minor goldrush in the Maprik area in the 1930s (Lea 1964; Townsend 1968; Scaglione 1985; May 1990), led to the establishment of a patrol post there in 1937 (Oxer 1965, 4; Townsend 1968, 234). In 1938, Roman Catholic mission stations were established at Kunjingini and Ulupu (Oxer 1965, 4). In the same year an agricultural station

was set-up at Bainyik (Oxer 1965, 4; May 1990, 178). By 1938/39 a vehicular track was open between Pagwi and Bainyik, but few vehicles were in the area until after the war (Townsend 1968, 208).

#### 4.2.2 THE SECOND WORLD WAR

European consolidation of control over the area was interrupted between 1942 and 1945 when the Japanese invaded and occupied the area (see Dexter 1961 and Long 1963 for details of the military campaign). At first, relationships between the Japanese and their village hosts were generally good. In Miko, each Japanese soldier was billeted with a separate family. Villagers say the Japanese claimed to be returned ancestors, and promised them wealth when the war was over (see Allen 1976, 87). Towards the end of the war fighting intensified and food was short. The Allies established a base and airstrip at Hayfield, and from there launched aerial bombardments and raids into Japanese occupied villages.<sup>2</sup> Villagers began to desert their Japanese 'guests' when food became scarce (especially when rumours of cannibalism by the Japanese began to circulate), and many from Miko and nearby villages moved to Hayfield where they were fed by the Allies.

The fighting was bitter, and many houses (sometimes complete villages), gardens, and livestock were destroyed. Patrol Officer Herkes in a patrol of the eastern Wosera in June 1946 listed the

following losses from 32 villages with a total population of 3,441:

Natives killed or died as a result of the war 70  
 Pigs destroyed 527  
 Fowls destroyed 276  
 Coconut palms destroyed 844  
 Dwellings burnt 374  
 Food storage houses destroyed 146  
 Mens club houses burnt 6

(Source:Patrol Report WKM 2-45/46, p8).

A year later Patrol Officer Zweck reported 74 villagers killed in the fighting. He attributed half the deaths to shootings by the Japanese and half to Allied air raids (Patrol Report WKM 3-47/48). On the earlier patrol, Herkes reported an "almost complete lack of domestic animals" in the area. But Zweck noted some improvement in livestock numbers, although numbers were still below prewar levels. Evidence of the war is still visible in villages: bomb craters and old coconut palms pock-marked with bullet holes.

#### 4.2.3 THE POSTWAR PERIOD

There can be no doubt that the impact of the war was traumatic for villagers. It changed forever the way villagers viewed the world and their place in it. They witnessed at first-hand the awesome power of the foreigners, and with it, a sense of inferiority relative to the newcomers (see Allen 1976). The war was perhaps a watershed for the Wosera people. In the postwar period new innovations, new ideas and rapid incorporation into the wider world took place. Change was not only externally



directed. Men who had been involved in the war in various capacities returned to their villages with new ideas and expectations and were one of the main instruments of change (see Allen 1976 for a discussion of the role of indigenous entrepreneurs in the diffusion of new innovations).

Administrative control was fully re-established by 1948. Some villagers had earned cash as carriers for both sides in the conflict.<sup>3</sup> In the early years after the war, cash compensation for war damage became the main source of cash income. Total compensation paid for war damage in the Maprik sub-district amounted to 127,978 pounds (Lea 1964, 34). Patrol Officer Zweck reported that of 1537 claims for war damage most were in the range 5-10 pounds with some as high as 20 pounds (Patrol Report WKM 3-47/48). However, not all villagers at this time understood the utility of money. Patrol Officer Wakefield noted that recipients of war compensation in some Wosera villages left the cash (shillings) on the ground or gave it to young children to play with (Patrol Report WKM 1-46/47).

The missions followed quickly on the heels of the administration. The Roman Catholics returned and in 1949 built a new mission in Maprik, and began to extend their influence. The Assemblies of God (AOG) established a mission station in Maprik the previous year, and other denominations followed quickly into the area: South Seas Evangelical Mission, the Seventh Day Adventists, and since the early 1970s, the Summer Institute of Linguistics, New Tribes Mission and New Apostolic Mission (M.

Hovey pers. comm.). By 1974 there were 36 religious denominations operating in the East Sepik (Losche 1990, 398). Their impact on the social and cultural fabric of village society has been significant. Some early missionaries burnt male initiation houses and encouraged the destruction of ritual objects, especially in the Wosera (Lea 1964, 62; Oxeer 1965, 5). Presently, the AOG are making inroads into the largely Catholic Wosera and villagers are confused about the conflict in teachings of the two denominations. Most AOG converts are less than 40-years-old, as older practising Roman Catholics are more resistant to the AOG intrusion. Over the years village Catholics have been able to reach some sort of compromise between their indigenous beliefs and practices and the teachings of the Roman Catholic Mission. However, adoption of AOG teachings requires additional sacrifices including abstention from betel nut and tobacco. The AOG are also opposed to their members participating in exchanges such as brideprices and mortuary exchanges of food.

#### 4.2.4 TRADITIONAL TRADING LINKS

Prior to colonialism there was some trade with the Sepik River Villages, but informants maintain that it was infrequent and punctiform. Individual men established trading links with men from particular villages on the Sepik River and periodically would take a load of starch (tubers and bananas) and tobacco to their partner, a two-day walk away. At a later stage the Sepik River partner would make the return trip with a bilum of smoked fish (see also Townsend 1968 and Gewertz 1983, 18-21). According

to villagers this form of trade flourished shortly after the introduction of PMVs (Passenger Motor Vehicles) to the region, but declined with the development of local markets and the widespread acceptance of cash.

Pigs were traditionally traded to the north and east for shell rings. The trade lapsed in Miko for a period in the late 1970s early 1980s when free-ranging pigs were banned by consensus from the village (section 4.3.4). Pigs have recently been reintroduced to the village, perhaps in response to plummeting prices for export cash crops (section 4.3.5).

#### 4.2.5 CASH CROPS

With the completion of the road to the provincial capital of Wewak on the coast in the early to mid 1960s (a two-lane highway by 1972 - Losche 1990, 398), the stimulus for cash crop production increased. Prior to the Second World War some men from Miko had worked as indentured labourers on the coastal plantations or in the goldfields of Wau and Bulolo, but it was not until after the war that villagers gained sustained exposure to the monetary sector.

Rice was one of the first cash crops to be introduced and was planted at Bainyik Agricultural Station in 1947 (Allen 1976, 190), but for various reasons did not 'take-off' at this time (see Allen 1976 for an account of the diffusion of rice growing). To encourage rice production agricultural extension officers

installed a rice huller at Yambi. By 1961 a new rice huller had been located at Bainyik (Lea 1964).

Peanuts were promoted as a cash crop in the area in the late 1950's by an astute extension officer who realized that the Kingaroy peanut crop in Queensland was failing (M. Hovey pers. comm.). In the first year, villagers had a good harvest and obtained good prices for their crop (5.5d/lb - Lea 1964, 130). The crop was marketed through the Rural Progress Societies (RPS), an early forerunner of the Sepik Coffee Producers. In the second year in anticipation of lower prices because of increased production in Queensland and the Northern Territory, agricultural extension officers attempted to discourage peanut planting. To begin with, the RPSs bought the peanuts but had to pay heavy dumping fees in the protected Australian market and lost money. The price fell to 1.5d per pound (Lea et al. 1988), and villagers, not used to the mechanics of supply and demand, believed that payments were being held down deliberately (a belief currently held about the low prices for coffee and cocoa). Small growers however, found a ready outlet in some of the local markets.

With the failure of peanuts, rice once more became the focus of extension efforts until the introduction of Robusta coffee in 1957 (Lea 1964, 131). Coffee quickly supplanted rice as the main cash crop, though rice production continued to be important in some villages (see Lea 1964, 131-2). Cocoa was introduced to the Wosera in the early 1980s and is expanding rapidly in the western

Wosera with encouragement from the Division of Primary Industry (DPI). By contrast, plantings of cocoa in the eastern Wosera are small. Cocoa is at the end of a long line of introduced cash crops, and like previous introductions (including coffee - section 4.3.5), is likely to have a disappointing future (Figure 4.1).

Since contact, the transition towards economic incorporation within the global economy has not been a painless experience for the Wosera people. In the early years of this century, they were sometimes forcibly recruited to work on the coastal and island plantations; during the Second World War the conflict was brought into their villages; and, their attempts to participate in export cash cropping have met with limited success. Today, as the next section shows, with collapsed prices for export cash crops, the goal of 'development' remains as elusive as ever. However, there are some successes, but these seem to be confined to local and regional economies where villagers have developed their own trading networks, sometimes building upon pre-existing trade.

### **4.3 MIKO'S CONTEMPORARY CASH ECONOMY**

#### **4.3.1 INTRODUCTION**

The data presented below on Miko's contemporary cash economy are from income and expenditure surveys of 32 HHs over a 47-week period in 1988/89 (see Chapter 3 for methodology). Sources of

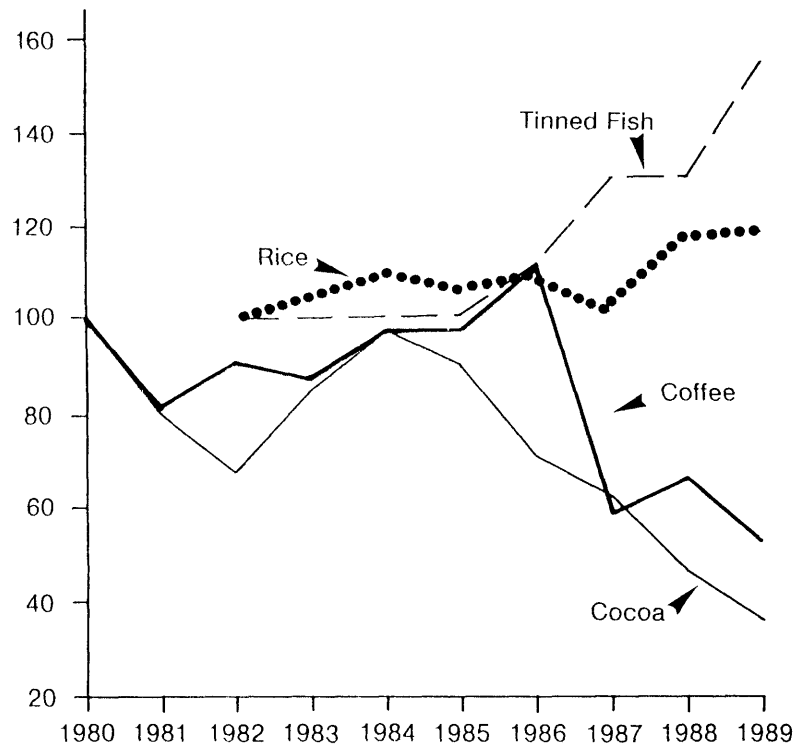


Figure 4.1 Price movements for export cash crops (base year 1980) and tinned fish and rice (base year 1982). (Source for export cash crop prices: Stein 1991, 7; price inflation for store foods calculated from wholesale receipts held by Miko tradestores.)

cash income and their relative importance in the Miko economy are described first, followed by a discussion of the main areas of cash expenditure. The final part of this section assesses the extent to which cash has become 'traditionalised' by its incorporation as a valuable into networks of indigenous non-market exchange. It is clear that cash has become an "inescapable need" (Howlett 1973) and is of central importance in indigenous networks of exchange and prestation. This cross-over of cash between the non-market exchange sector and the market economy is important for understanding, in subsequent chapters, the emergence of inequalities in Miko society. Indigenous exchange relationships provide the mechanism by which systematic inequalities arise in relation to disposable cash incomes.

#### 4.3.2 CASH INCOME AND EXPENDITURE TOTALS

Figures 4.2 and 4.3 show mean annual HH cash income and expenditure grouped by category. Leaving aside exchange networks and gambling for the moment to focus on more conventional indicators of income and expenditure, a number of general points can be made that put the Miko cash economy into perspective. First, mean annual HH income from local markets (columns 1, 2 and 4), pig sales (column 3), export cash crops (column 5) and wage labour/store profits amounted to K222 (Figure 4.2). This figure has been inflated considerably by the income of the only full-time wage earner in the village. His annual wage (K3120) was enormous relative to the cash incomes of his fellow

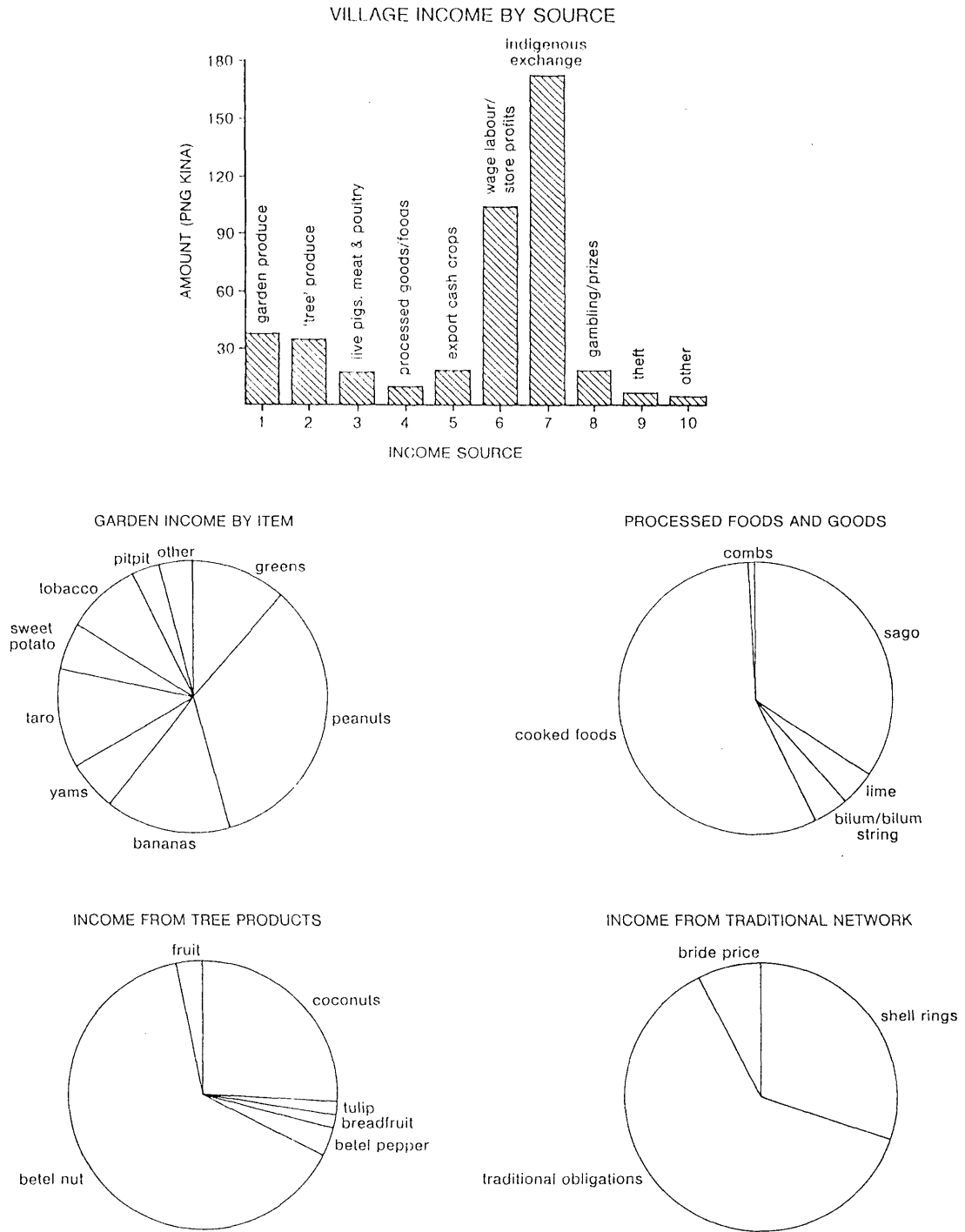


Figure 4.2 Mean annual HH income by source (components of some of the main income categories shown in pie charts).



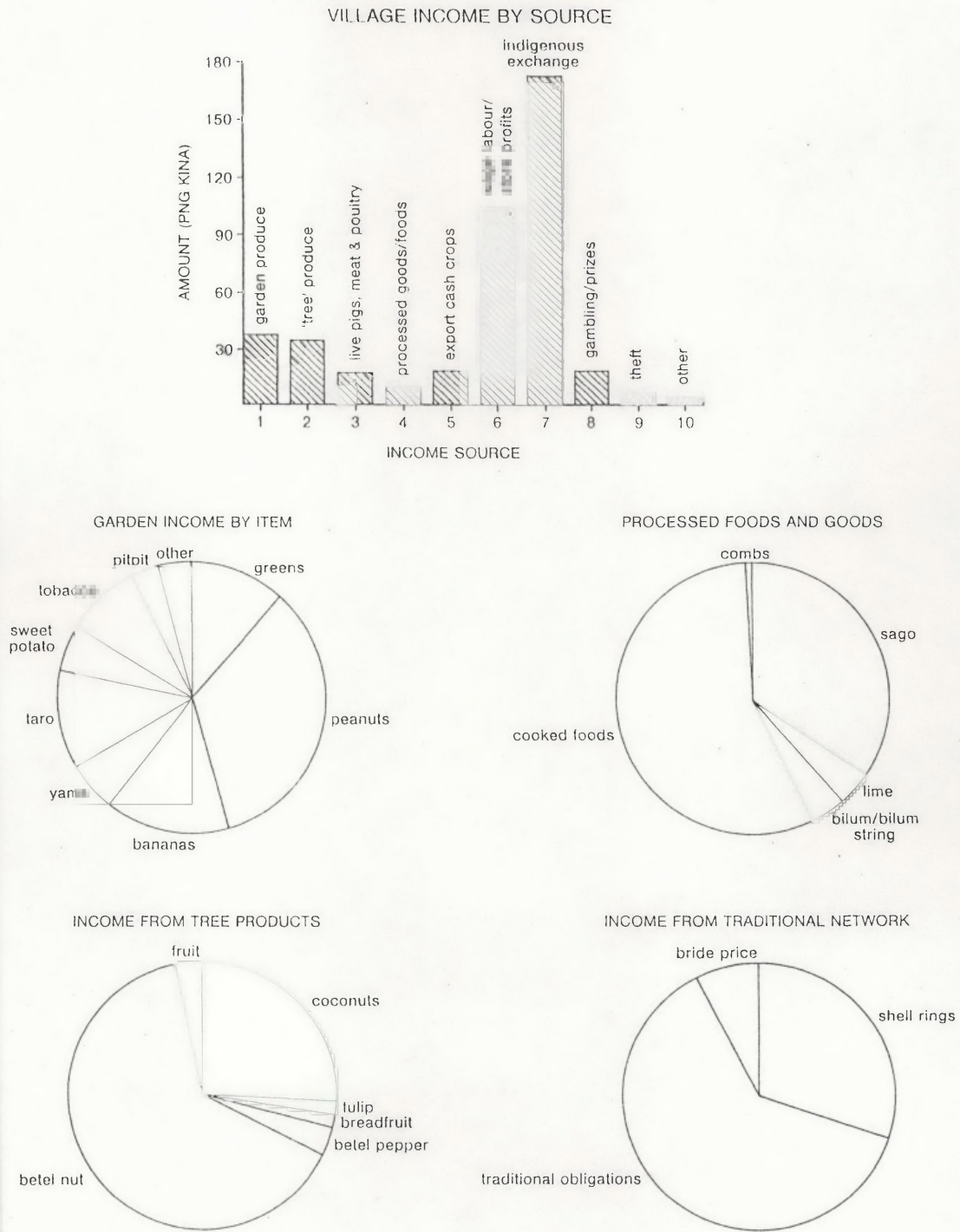


Figure 4.2 Mean annual HH income by source (components of some of the main income categories shown in pie charts).

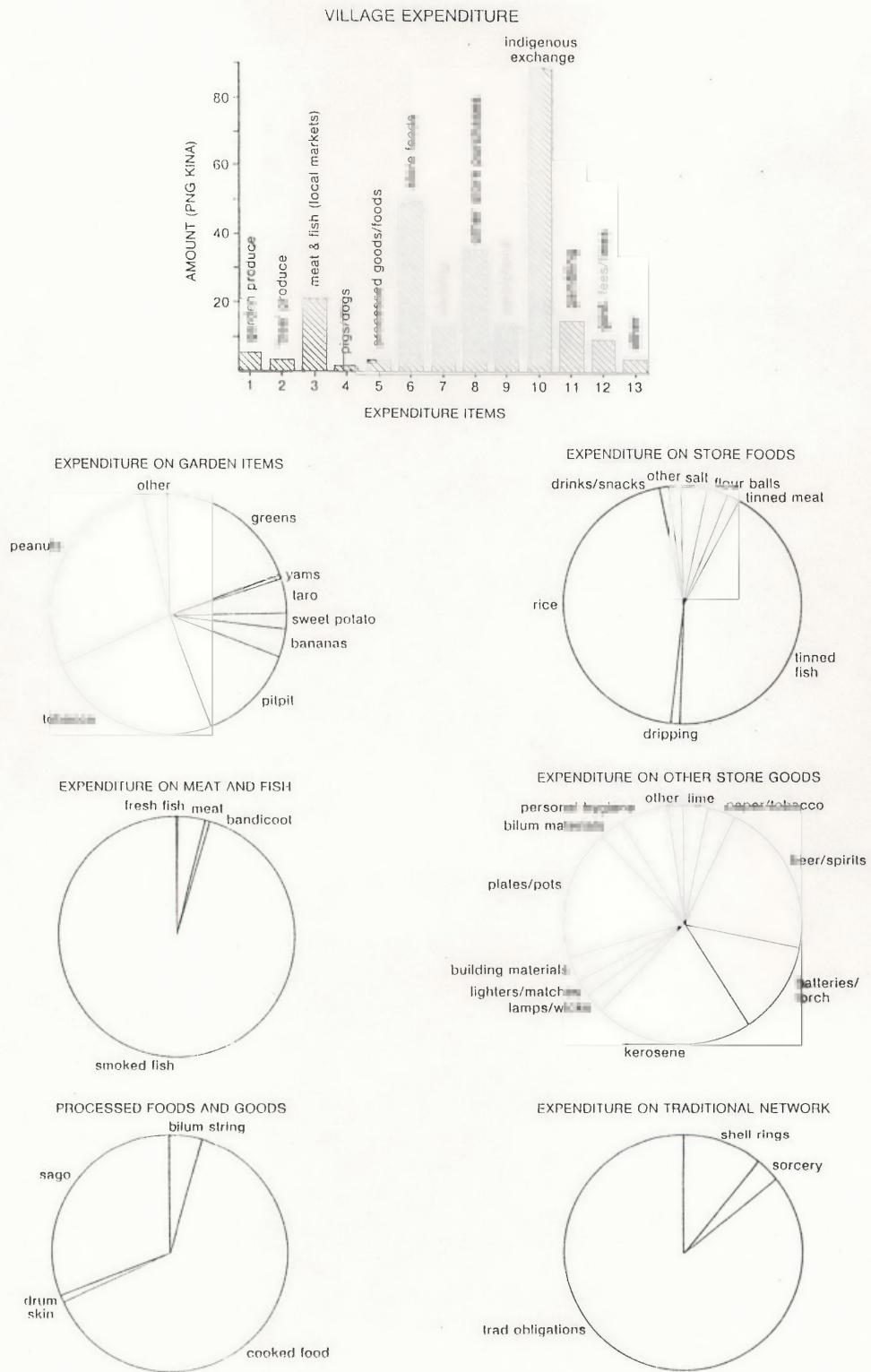


Figure 4.3 Mean annual HH expenditure by category (components of some of the main expenditure categories shown in pie charts).

villagers. Omitting his wages from the analysis yields a mean annual HH income of K124.50, or a per capita income for Miko of K24. This is comparable to the PNGIMR's (1986, 19) estimate of Wosera per capita incomes of K30.00 (they also included Provincial Government salaries in their total). Relative to other areas of PNG, the Wosera are very poor. In 1983 (the latest available figures) per capita income for PNG was K520, and K320 for the East Sepik Province (Stein 1991, 63).

Mean annual HH expenditures on market goods (columns 1-5), store goods (columns 6-8) and transport (column 9) totalled K146 (Figure 4.3). This excess of expenditure over income is attributable to some HHs using cash received in exchange networks to supplement their disposable cash incomes to make purchases in the market economy - a crossover from the non-market exchange sector to the market economy (see Chapter 8.3). Of the K146, 67.2% is spent on imported store goods, 23.6% on locally produced market products, and 9.2% on PMVs (Figure 4.3) (Miko does not have its own PMV). The breakdown of income and expenditure is outlined in more detail below.

Cash circulating in the indigenous exchange sector overwhelmingly dominates the cash economy (Figures 4.2 and 4.3). With the wages of the sole full-time worker deleted, money received in exchange networks and through gambling constitutes 58.6% of total income (Figure 4.2), and 39.4% of total expenditure (Figure 4.3). The interaction of cash between the non-market exchange economy and market economy is considered at

the end of this section and in Chapter 8, where the interaction is discussed in relation to the disposable cash incomes of different groups within village society.

#### 4.3.3 LOCAL MARKETS

Columns 1, 2 and 4 (Figure 4.2) represent cash income from sales of produce at local markets. Excluding cash received in exchange networks and from gambling, market income represents 35% of total income (60.7% if the wages of the sole wage earner are omitted). Most Miko women market in the Wosera within an hour's walk of the village, with lesser amounts sold at Maprik and Pagwi (a PMV trip) (Table 4.1).

Table 4.1. Proportion of market income and expenditure at different market sites.

MARKET LOCATION	PERCENT OF MARKET INCOME	PERCENT OF MARKET PURCHASES
Guiningi & Miko	62.5	44.2
Other Wosera markets	4.4	37.0
Hayfield and		
Maprik High School	6.7	1.5
Maprik	24.3	12.4
Pagwi	2.2	1.8
Wewak	0.0	0.2
Other (outside Wosera)	0.0	2.9
TOTAL	100.0	100.0

Guiningi is the main market for Miko 2 women, with 62% of market sales<sup>4</sup> (Table 4.1). It is about a half-hour's walk from the village and serves mainly PMV passengers and government employees. None of the women in the survey marketed at Wewak

because of the risk of holdups along the Maprik-Wewak Road. Likewise, sales at Pagwi were reportedly below normal because of armed holdups along that stretch of the highway (Figure 2.1).

In the category of 'garden produce' ranked in descending order of their contribution to income are: peanuts, bananas, taro, green vegetables, tobacco, yams, sweet potato and pitpit (Figure 4.2). Making a minor contribution to total garden income and also ranked (called 'other' in Figure 4.2) are: cucumber, corn, water melon, pineapple, pumpkin, tomato, sugar cane and beans. Peanuts make up approximately 35% of garden income (Figure 4.2). With poor coffee and cocoa prices (section 4.3.5) many villagers are placing more emphasis on peanut production. They grow well on the flood terraces of the Amogu and Amuk Rivers on the eastern side of the Wosera.<sup>5</sup> <sup>6</sup> Most peanuts grown in Miko are sold at either Guiningi or Kunjingini markets (74t/Kg). If a Miko producer harvests a large quantity (15 Kg plus), they often pay the K1.20 return PMV fare to market at the larger centre of Maprik where they can obtain better prices. In villages where peanuts have become the focus of cash cropping (e.g., Kwimbu), much is sold at the Wewak markets.

Figure 4.2 shows cash income from 'tree' products.<sup>7</sup> In this category, and in descending order of importance are: betel nut, coconut, betel pepper (Piper betel), Gnetum gnemon, pawpaw, breadfruit, taun (Pometia pinnata), citrus fruits, Malay Apples and wild figs (Figure 4.2). These products are almost as important cash earners as garden produce. Betel nut and coconut

dominate and between them account for 90% of income earned from this source (Figure 4.2).<sup>8</sup> Because of the marked seasonal pattern in gardens and 'tree' products, HHs with plentiful supplies of betel nut and coconut palms are subject to less intense fluctuations in cash income than HHs relying solely on garden production for generating cash incomes. Also, HHs possessing few of these palms, may be more dependent on labour intensive methods like gardening to earn cash (Chapter 8). This may be particularly important now because of low coffee prices when alternative sources of cash income assume greater importance.

Expenditure on garden items, though greater than expenditure on 'tree' products, is still low relative to other categories and to income earned from this source. This indicates that HHs are able to meet most of their requirements in this area from their own resources. The major items of expenditure on garden produce ranked in descending order are: peanuts, tobacco, green vegetables and pitpit (Figure 4.3). Expenditure on peanuts (26% of expenditure on garden items) is mostly investment in planting stock (Figure 4.3). Only small amounts were bought for home consumption by villagers.

By selling surplus garden items at local markets during peak production periods, villagers are able to extend their temporal supply of these items by purchasing them from local markets when production falls-off in their own gardens. With green vegetables, tobacco and pitpit for example, production is very much tied to the seasonal garden cycle. Supplies of green

vegetables and tobacco peak in the early stages of new gardens before yam vines are fully developed. Similarly, pitpit has a short season at the end of the garden cycle. Local markets thus extend the temporal supply of a range of garden produce than would otherwise be available from a villager's own gardens. This does not of course reflect a purely subsistence strategy where incidental surplus production is diverted to local markets. People plan for a surplus in garden production to generate a cash income. Some items such as peanuts, corn, tobacco, tomatoes, cucumber, and sweet potato are grown primarily as cash crops with perhaps only a small proportion retained for domestic consumption.

Sales of processed foods and goods make up only a small proportion of total income (Figure 4.2). Cooked food is increasing in importance and comprises 56% of this type of income (Figure 4.2). Corn in coconut milk, and a sago and banana 'pudding' (labu-nang) are the most popular. They serve as a light snack for PMV travellers, government employees, men socialising at the market and are occasionally purchased by other sellers or their young children (Figure 4.3). Processed (but uncooked) sago is the second largest item in this category on both income and expenditure (Figures 4.2 and 4.3). It is frequently sold to the wives of government employees, and traded for smoked fish with women from Sepik River villages. Also, village HHs with limited access to sago, or those able to afford to forgo the high labour demands of sago processing, may purchase sago from local markets (Figure 4.3) (Chapter 8.4.3). Overall,

expenditure on processed foods and goods is low and is similar to expenditure levels on garden produce and 'tree' products (Figure 4.3).

Market purchases of fish and meat greatly exceed the combined purchases of all other market categories (columns 1, 2, 4 and 5 - Figure 4.3). The total is nearly all smoked fish (95%), with minor purchases of pork - pigs butchered for habitually raiding food gardens. Although smoked fish is considered to be less prestigious than tinned fish, it is popular nonetheless and a highly valued food in the Wosera. Sepik River women regularly bring smoked fish by PMV to trade at Wosera markets along the highway and at Maprik. Guiningi market is a major trading spot. It is a seller's market and bartering as well as cash sales take place. During bartering few words are spoken. The Wosera women present items for exchange (usually garden produce and betel nut), and a Sepik River woman allocates what she considers an equal value in smoked fish. Rarely is the quantity of fish disputed by the Wosera trader.<sup>9</sup>

#### 4.3.4 INCOME FROM PIGS, MEAT AND POULTRY PRODUCTS

Pig production is becoming increasingly important in Miko. For many years free-ranging pigs were banned by consensus from the village because of garden damage and health warnings from officials. Several villagers tried unsuccessfully to raise them in fenced enclosures. Pigs failed to put on weight or became ill and died, perhaps because of worm infestations. The ban on



foraging pigs was lifted when Miko people saw neighbouring villages earning cash and shell rings by trading them with northern Abelam villages - villages with which they traditionally traded pigs for shell rings<sup>10</sup>. One of the main opponents of free-ranging pigs was the 'kaunsil' (councillor), a man who had considerable influence in the village and was a driving force in the adoption of cash cropping and other forms of business. With his death in the early 1980s there was no longer any serious opposition to the re-introduction of free-foraging pigs.

The steady decline in export cash crop prices also probably added to pressure for their re-introduction (see below). Pigs provide cash in lump sums and because there are fewer demands on the wealth raised through pig production, they are recognised as one of the best ways of accumulating shell rings.<sup>11</sup> Proceeds from pig sales are often invested in tradestore stock or 'string ban resis' (M.P. band competition and dance).<sup>12</sup>

This category of income consists mainly of sales of live pigs with a very small amount earned from the sale of pork, bandicoot and the eggs of Megapodes (Figure 4.2). Purchases of pigs and dogs (Figure 4.3) is entirely investment expenditure in piglets (K25 each) and young hunting dogs (K5 or K6 each). The latter investment is of high risk because few puppies survive into adulthood.

#### 4.3.5 EXPORT CASH CROPS

Over the past few years coffee and cocoa prices have plummeted (Figure 4.1). In 1989 the Miko 'farm-gate' price for parchment coffee hovered between 30t and 40t per Kg. Ten years earlier in 1979, Miko villagers received an average nominal price of 84t/Kg (the real price was much higher). In 1986 the world price of coffee was K3,927 per tonne, but by 1990 had fallen to K1,500 per tonne (Stein 1991, 42). Long-term prospects for coffee growers are bleak. Global production is estimated to be increasing at 2% per annum and outstripping growth in demand (Stein 1991, 42). Cocoa is not faring much better. In 1989 Miko growers received 20t per Kg wet bean. The world price fell from K2,022 per tonne in 1985 to K850 per tonne in 1990 (Stein 1991, 43). The people of Miko (and other villages bordering the Hayfield-Pagwi Road) have largely abandoned coffee production in response to low prices. Cocoa production has increased in recent years but plantings are small.

Meanwhile a national government funded "Smallholder Market Access and Food Supply Project" (SMAFSP) began in the Wosera in 1988. The 1989 project objectives included establishing 20 ha of cocoa and 10 ha of new coffee in the Wosera in addition to promoting coffee rehabilitation of some 500 established coffee blocks (SMAFSP Internal Evaluation Report 1989, 63 and 72). With continuing low prices for both coffee and cocoa, disillusionment amongst growers is increasing, and may become particularly acute in the western Wosera where expectations seem to be high. The

eastern Wosera's proximity to the highway provides marketing opportunities not available to Wosera villages further west. Western Wosera villages have only limited opportunities to earn cash and they are expanding cocoa production despite low and falling prices. SMAFSP's efforts to encourage coffee rehabilitation are meeting with success. Generally well maintained coffee and cocoa blocks on the western side of the Wosera are in stark contrast to the poorly maintained blocks on the eastern side.

Export cash crops (coffee and cocoa) make up only a small proportion of total cash income, and much below that earned in local markets (Figure 4.2). With the near abandonment of coffee production, cocoa dominates sales of export cash crops. Coffee blocks are completely overgrown and choked with coffee saplings despite DPI efforts to encourage coffee rehabilitation. Harvesting, hulling and drying are laborious time-consuming tasks usually undertaken by women (see Koczberski 1989). There are no hullers in the village, so coffee skins are removed by hand. Despite low prices, villagers still consider it worthwhile to harvest cocoa, because less labour is involved in processing prior to sale to roadside buyers, but blocks are also poorly maintained.<sup>13</sup>

#### 4.3.6 WAGE LABOUR AND TRADESTORES

As indicated earlier, only one person in the village is in full-time paid employment (government employee) and his wages inflated the mean considerably for this income source (94% of the total) (Figure 4.2). He resided in the village only on weekends, and very little of his income was actually spent in the village.

A very small amount in the total are payments to two young women for labour contributions to a subclan's youth group - labouring in the youth group's business enterprises such as peanut and sweet potato gardens, and picking and processing the youth group's coffee garden.<sup>14</sup> The policy of the group was to use the labour of single women (the daughters and sisters of youth group members) at the rate of K0.50/day, to be paid to them when they married.<sup>15</sup> One young woman in the survey received K13.30 several months after her marriage - the first to do so. The remaining single women demanded their share which was eventually agreed to by male youth group members after much heated debate. Payments ranged from K8 to K11, and a second girl belonging to a survey HH received K11.

The remaining small amount in the total is tradestore profits (see Chapter 3.2.1 for methods of calculation). Two survey HHs operated a tradestore between them. Profit margins are typically small and tradestores can easily become insolvent. Many sales are on credit so restocking can be a problem. A budget is shown in Table 4.2 for a small tradestore operator who

purchases supplies of tinned fish and rice from the nearest wholesaler in Maprik. Often operators have insufficient cash to buy a full carton of tinned fish, so margins may be even more squeezed than those shown in the table. To reduce costs, trips to Maprik for tradestore supplies are often combined with journeys for other purposes, or a relative may be asked to purchase stock while at Maprik. Larger tradestores in the local area are the price setters (none in Miko) though there appears to be a degree of customer loyalty to tradestores along subclan lines. Large tradestores usually have access to PMVs and are able to purchase supplies direct from Wewak at lower prices and do not pay full commercial freight rates for goods.

Table 4.2. Profit margins on tinned fish and rice for a small village tradestore in 1989.\*

	TINNED FISH	RICE
Cost @ Maprik	35.15	12.97
PMV fare	0.60	0.60
Freight	0.50	0.50
Landed cost @ Miko	36.25	14.07
Selling price	38.40	15.00
Net profit	2.15	0.93
Percent mark-up	5.9%	6.2%

\* Assumes the tradestore operator makes the a return PMV trip to Maprik (K1.20) to buy one carton of tinned fish (48 X 15oz cans) and one bale of rice (20 X 1kg bags).

#### 4.3.7 STORE EXPENDITURE

Store food is the second largest category of expenditure next to outlays in exchange networks (Figure 4.3). Tinned fish and rice dominate this category (Figure 4.3). Although not quantified, a proportion of tinned fish and rice purchases is channeled into exchange activities (Chapter 9.3.3). These new prestigious food items, have to an extent, supplanted indigenous foods in certain exchange contexts (e.g., ceremonial feasts associated with yam production, mortuary feasts, and special meals shared between kin to cure illnesses and resolve conflicts - see Case 6.1).

The main components of 'other store purchases' are beer/spirits, batteries/torches, kerosene (for lamps), and plates/pots. In relation to total expenditure, none is large. Very few people in Miko bought beer during the fieldwork period, the majority being purchased by the one person in paid employment (see Chapter 8.5.3). Alcohol consumption in Miko is much below the levels recorded in some other studies in PNG (e.g., Tyson 1987 and Grossman 1991). In an Eastern Highlands village, Grossman (1991, 239) found 35% of the 1977 village cash income was spent on alcohol. In August 1984 a one week income and expenditure survey of an Abelam village just to the north of the Wosera, revealed that 47% of income was spent on beer compared with only 17% on rice, tinned fish and tinned meat (Tyson 1987, 44, 264, 267). Tyson's survey was carried out at peak of the coffee season when incomes are highest, and when the first yam

harvests are completed: the period of traditional festivities. Annual figures may therefore be considerably lower. However, the very low figures for Miko may reflect the current depressed state of the local economy resulting from collapsed commodity prices.

A surprisingly large proportion (45%) of store purchases are made locally considering that Miko is near the highway and only a short PMV trip from Maprik (Table 4.3). Store purchases at Maprik tend to be incidental to journeys there for other reasons (e.g., visiting relatives in hospital, trips to market, court cases, posting letters etc.). Most villagers buy locally, unless they intend to purchase a larger than normal quantity of tinned fish and rice such as for a mortuary feast.

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 Table 4.3. Proportion of store expenditure at different locations.  
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LOCATION	PERCENT OF STORE EXPENDITURE
Miko 2 Village	32.4
Other Wosera stores	12.6
Maprik	38.6
Hayfield	2.8
Wewak	12.0
Other (outside Wosera)	1.6
TOTAL	100.0

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#### 4.3.8 GAMBLING

Most males (and some females) in Miko play cards. Amounts won and lost are usually small, but on occasions a few individuals won or lost up to K60 at a sitting (the proceeds of

pig sales are sometimes frittered away in gambling). Sunday is the favoured day for card playing, often after church in the adjacent village where large crowds gather to play or watch cards. Generally an upsurge in gambling occurs during mourning periods when people are unable to go to their gardens. On these occasions, card sessions often last from dawn to late into the night. Bets are typically small, and certain individuals gain reputations for winning consistently. There may be a tendency for losses to be under reported. However, the proportional difference in the amounts won and lost is small, and can therefore be taken as a fairly accurate reflection of the importance of cards in the village cash economy (Figures 4.2 and 4.3).

#### 4.3.9 INDIGENOUS EXCHANGE NETWORKS

Indigenous exchange networks are the largest source of cash income in the village (Figure 4.2). Bride prices, mortuary payments, and the exchange of shell rings for cash are specific types of non-market exchange. Less well documented from the study area are 'mundane' exchanges determined by specific kinship relationships. They are termed mundane because they are not associated with major life events and because they are not public exchanges of wealth. They tend to be private affairs and involve exchanges of wealth items between, for example, agnates, and kin related by marriage (discussed in Chapter 6.2). A high proportion of cash income is received through mundane exchanges between kin. Payments are ongoing and typically involve smaller



amounts than the more ritualized exchanges associated with major life events. However, cumulatively they are important, and for certain HHs, greatly raise their levels of disposable income (see below).

Similar to cash income, outlays in indigenous exchange networks are the largest component of cash expenditure. About 86% of these outlays are channeled into traditional kinship obligations, 11% for the acquisition of shell rings for exchange purposes, and approximately 3% on efforts to combat sorcery induced illnesses (Figure 4.3).

The extent to which money has become incorporated into the non-market sector can be gauged by the proportions of total income and total expenditure channelled into this area (Figures 4.2 and 4.3). It should also be kept in mind, that some tinned fish and rice purchases are also fed into exchange networks, particularly those associated with mortuary feasts. Cash has penetrated all areas of non-market networks of exchange to the extent that it has become indispensable for fulfilling exchange obligations and satisfying indigenously defined socio-political goals (see Chapter 1.5).

Cash has not totally replaced traditional items of exchange such as yams, pig meat, bilums, and shell rings. Indeed, villagers use cash to buy shell rings for use in exchanges (Figure 4.3). These items are still necessary for mundane and ceremonial exchanges, and for inter-village conflict resolutions.

Yet, even in these situations, cash may form a significant proportion of payments.

The indigenous non-market exchange sector is basically a system of debt with the amount of debt being some function of total wealth. It allows the non-market economy to operate at a level above that which would be possible if all transactions were 'paid' for at the time they took place. In pre-cash days there were two sets of regulatory mechanisms that constrained inflationary pressures. The first, which has some parallels in modern banking, included bride prices, mortuary payments, and the like, where a proportion of the total outstanding debt had to be realised periodically. This in effect set an upper limit of debt for an individual based on some perceived proportion of their total debt likely to be called in at any one time, and the number of debtors that they themselves could call upon when required to service or create new debt obligations. The second set, which could be termed productive constraints, were based on the opportunity cost of labour to produce wealth items such as bilums and pigs (used to obtain shell rings). In pre-cash times, cultural and productive barriers acted to constrain inflationary pressures in the traditional sector.

After the Second World War with the expansion of cash cropping and new ways of earning cash becoming available, the amount of money entering village economies increased. Although local area imbalances are likely to have occurred because of spatial inequalities in cash earning opportunities, the initial

impact was probably an increase in traditional sector activities, at least in those villages which forged ahead with cash cropping (see Allen 1976 and Chapter 1.5). However, much of the cash was fed into indigenous exchange networks, leading inevitably to inflation in this sector. A similar pattern occurred in the highlands, with the European import of shell valuables (Brown 1972, 91; Hughes 1978; Feil 1982, 302; Healey 1989b, 57), and later with cash as coffee production expanded (Meggitt 1969, 7; Feil 1982, 302; 1987, 283; Newton 1989, 40; see also Chapter 1.5). But unlike the non-market exchange economy, incomes from export cash crops fluctuate. In recent years, coffee and cocoa prices have plummeted (Figure 4.1), but the demand for cash (partly determined in the exchange sector during periods of higher cash income) remains unchanged.

Indigenous socio-political structures do not readily allow a downward adjustment (deflation) in the non-market exchange sector, in line with declining cash crop prices. Brideprices, mortuary payments, and levels of payments established as standards for kinship obligations must be maintained if the integrity, and normal functioning of the social system is to continue. Herein lies part of the problem that will be the focus of later chapters. Exchange networks do not provide an equitable distribution of cash income in village society. Some privileged lineages (established lineages) are able to 'exploit' the exchange system so that they are net receivers in exchange and have relatively high disposable cash incomes. Others, by contrast (immigrant lineages), are more poorly placed in exchange

networks, and as a result have very much lower levels of disposable cash income. These are the people likely to be under greatest pressure when export cash incomes fall while the level of demand for cash in the non-market exchange sector remains unchanged or responds slowly.

#### 4.4 SUMMARY

Generally, the picture which emerges from this account of the historical process of incorporation and the current cash economy in Miko, is one of a series of rising expectations punctuated with disappointment when cash crop prices drop. Each new cash crop has been seen as the key to wealth, but inevitably prices fall and frustration sets in. Local markets are important, and provide an alternative income source for Miko residents. Villagers may be responding to depressed coffee and cocoa prices by expanding production for local markets. Miko villagers are able to partially withdraw from export cash cropping (coffee) when prices are low. It is unlikely however, they would be able to make a complete withdrawal from the cash economy, because of the importance of cash in meeting indigenous exchange obligations.

In the next chapter, this historical theme is continued, but shifts to examine how changes in the Wosera socio-cultural environment have facilitated the emergence of inherited inequalities within Miko society.

## ENDNOTES TO CHAPTER 4

1. A man from Miko 1 Village was allegedly shot dead for attempting to steal bird-of-paradise plumes. The plumes had been left to dry in the sun by a hunting party who villagers claimed to be German. It is not clear whether the hunters were also labour recruiters.
2. Towards the end of the war when fighting was intense, villagers cooked at night. Smoke from daytime cooking fires frequently drew fire from the Allies.
3. Patrol Officer Zweck recorded how villagers approached him for compensation for Japanese currency which they had been paid during the Japanese occupation. He was told by villagers that the Japanese had promised to return when the war was over and open tradestores for them (Patrol Report WKM 3-47/48).
4. Guiningi market is recognised by 'outsiders' to be a good market with reasonable prices. Government employees at Maprik sometimes drive to Guiningi to purchase food rather than buy at the more expensive Maprik market - especially if they plan to purchase large quantities (e.g., for a party).
5. Peanuts cannot be grown in some villages in the western parts of the Wosera because the growing plants are damaged by ants.
6. Peanuts have fitted well into the gardening cycle in Miko, and all are cultivated in river terrace gardens. Often they are planted first in a new garden before the yam crop, but never following a yam crop. Some HHs were observed cultivating peanuts on the lowest flood prone terraces, occasionally followed by a sweet potato crop. The lowest river terraces are rarely planted with yams or taro, but are frequently planted with bananas, which require less labour inputs, and are less prone to flood damage.
7. It is recognised that some of these items are palms, not trees. The label 'trees' is used as a simple collective term to highlight that these items form a group distinct from garden produce and groves of sago palms. Unlike gardens and sago, 'trees' are planted singly, or grow in old fallows and do not lock land out of production for other uses (see Chapter 7.4.3).
8. Betel nut and coconut palms mature within 8 and 10 years respectively (Twohig 1986).

9. Gewertz (1983, 18-36) commented on the trade dealings between fish (the Iatmul people) and sago producers (the Sawos people) in the Sepik River region. She argued that the aggressiveness of the Iatmul (and submissiveness of the Sawos) is a "culturally prescribed behavior pattern expressing the military and organizational superiority of the Iatmul." (1983, 31). Thus Gewertz, interprets the superior trading position of fish producers as being culturally driven, whereas I (for trade in the Wosera) believe it to be more of a market driven phenomenon.
10. Live pigs purchased by the northern Abelam are used in yam exchange ceremonies, mortuary feasts and less commonly, for dispute settlements.
11. People have more control over the disbursement of shell rings earned from trading pigs. Shell rings obtained in other ways (e.g., through brideprices) are more likely to be channelled into predetermined networks of exchange. For example, a brideprice received by a man for his sister will have claims outstanding from the bride's mother's brothers and other kin who are agnatically related to the bride (see Appendix 6.2). This is not ubiquitous in PNG. Among the Orokaiva of Oro Province for example, the bride's brother or father is able to retain a large share of the brideprice for investment in business (Newton 1989, 44).
12. String band competitions are risky investments because if insufficient numbers of visitors attend (reduced gate fees and food sales) to cover expenses (cooked food and prize money for the bands), losses can be high.
13. Cocoa growers sometimes have problems marketing their wet bean. Occasionally buyers failed to arrive on prearranged days (at a point on the main highway), and many growers complained of not receiving payment for their cocoa. Buyers sometimes said that they had insufficient funds to make payments, promising to pay later. Presumably these problems are worse in the more isolated western Wosera villages.
14. This was the only youth group in the village. Its members were drawn almost entirely from one subclan. The group ran a tradestore but abandoned it indefinitely after it was burgled. They also established a peanut garden during fieldwork and in previous years had cultivated sweet potato gardens as cash crops. Previous village youth groups collapsed because of internal bickering.
15. The wives of youth group members do not receive payment for their labour. There is an understanding that should a woman or her child fall ill and require transport to the Maprik District Hospital, the youth group will assist with expenses. This fund was not drawn upon for this purpose during fieldwork.