

**Upland Development Programme in Southern  
Mindanao (UDP)**

**Project No ALA – 97/68**

**Exit report of TA Agri-business and Marketing  
Specialist**

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## **End of Mission Report of the Marketing and Enterprise Development TA**

The mission was undertaken from October 15<sup>th</sup> to December 23<sup>rd</sup> 2001. During this mission the consultant was asked, in particular, to make recommendations on assessing post harvest needs and the continued development of AMIS. This report deals with these activities and with the implications for the MED component of the report of the TA Tree Crop Specialist<sup>1</sup>. Some other issues are also dealt with.

### **Post harvest needs assessment.**

Nationally it is estimated that post harvest losses of grains averages 15% and losses for more perishable crops may be 30% or higher. Losses may be quantitative or qualitative. While lack of post harvest facilities and technology is always cited as a major constraint to improving farmer income, no accurate information is available for the UDP covered barangays. In order to address this situation it was decided to study the situation in the area more closely.

Initially it was proposed that this activity be conducted by the ATs in each municipality. Following discussions with management, other programme and LGU staff and referring also to the report of the Soil Conservation TA<sup>2</sup> it is obvious that ATs would not be the most appropriate people to conduct this assessment. As far as possible ATs should not be diverted from their primary role of extension work and in order to conduct the study effectively more specialized skills would be required.

The first step should be to establish what the current situation in the area is. The MED component has already initiated a "Raw Material and Skills inventory assessment" in the 1<sup>st</sup> and 2<sup>nd</sup> barangays. Although this has only been completed for two provinces it is recommended that this should be the basis for assessment of the current situation. As the information from the other provinces and the 3<sup>rd</sup> and 4<sup>th</sup> barangays becomes available it can be encoded and utilized.

**The collection of this data should be regarded as urgent as it is the basis for many activities including those of MED and RFS.**

When the current production is mapped UDP will contract out a study to report on the current post harvest practices. Annex 1 outlines the type of information to be gathered from farmers, traders and transport operators. After analysis of this report the programme will prepare a programme of action to address the issues identified.

### **Programme strategies**

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<sup>1</sup> Forest and Fruit Tree Crop Report. Jean-Paul Boulanger, Tree Crop Specialist, November 2001

<sup>2</sup> An Assessment on Soil and Water Conservation Practices. UDP TA Team December 2001

Without a detailed assessment of the current situation it is not possible to design specific programmes and strategies but some general principles can be applied. Any programme must be within the managerial, technical and financial resources of the individual or community. All these factors can be addressed to some degree or other. Money can be saved, donated or borrowed and training can be given. While management capability can also be strengthened to some degree, if sufficient ability is not there no amount of training can compensate.

Invariably when one speaks to a community the same list of requests keep coming up and usually finance, post harvest facilities including warehouses and farm to market roads are very near the top of everybody's list.

Any proposed interventions should be economically justifiable. This should be done through a proper feasibility study. One does come across PHH facilities and particularly solar dryers and warehouses constructed under other projects or special schemes of the government. Often these are loan financed rather than grant. These facilities are usually underutilized. Whether the loan recipients have any intention of ever repaying the loan is another question. In some cases at least the LGU IRA is reduced by an amount equivalent to the outstanding repayments, thus diverting funds from other and potentially more deserving uses. But even where there is grant funding there should be some relationship between benefits and costs.

The management capacity or the lack of it to operate post-harvest facilities and especially communally owned or operated ones is often a major problem. This is often compounded by poor discipline amongst the members and in particular the attitude towards payment of fees. Frequently operating costs are totally underestimated and usage is often overestimated. This usually leads to the expectation that the facility can operate on very low margins. In the case of facilities which have had degree of wear and tear there is frequently not enough cash generated for maintenance and repair and almost without exception never enough for replacement.

Technical constraints are usually the easiest to deal with as they can usually be easily identified and training programmes can be devised and implemented. Obviously the level of training will depend to some extent on the ability of the trainees to absorb their technology but the difficulties here are usually much less than organizational and management ones .

Any programme interventions should therefore take account of the capacity of the beneficiaries to operate it successfully. Most interventions are likely to be in the area of training and capacity building.

### **Potential Partner Institutions**

The different government line agencies which include the Department of Agriculture and its various Bureau, the Department of Science and Technology, the Philippine Coconut Authority, the Department of Trade and Industry are a valuable source of information and technical assistance for problem-solving and training. In particular FIDA, the Bureau of Fisheries and the Bureau of Post Harvest Handling are amongst the most important of the DA bureaux. The

University of the Philippines, the University of Southern Mindanao, PICCARD and MinFruit are also important resource centres..

Good customers, including processors will have a vested interest in good quality and will often be prepared to assist with advice and training.

## **Market targeting**

Much is said and written about market matching and establishing market linkages. These are indeed very useful activities and are a necessary step in the marketing process. UDP is also playing a role here through its Agri-business profiling activity.

One aspect that the consultant believes is often not given enough attention in this activity is the capability of enterprises to fulfill commitments entered into.

There are two major considerations that an entrepreneur must take into account when deciding on which market segment to target.

1. the attractiveness of the market segment
2. the ability of the enterprise to compete in that segment

Often what appear to be attractive market opportunities are identified and it is always tempting to try and compete in these. Frequently though these markets may have requirements which are beyond the current capacity of an enterprise to meet. These may refer to quality, volumes, regularity of supply, delivery deadlines or payment policies (extended credit). **A realistic assessment of capacity should be made.** The entrepreneur should seek the opinion of a trusted advisor who has the necessary skills and experience to make such an assessment.

Having assessed different market outlets and the enterprises' capability to compete in each the entrepreneur should then target that outlet which best fits the business' capacity. The segment chosen may not be the one which was rated to be the most attractive but for one reason or another will be the one in which the enterprise can compete most effectively.

An example would be a market outlet which pays highest prices but which demands 60 days credit. If the enterprise does not have access to sufficient cash to fund this credit period then that particular outlet cannot be served.

## **Market linkages**

Through the agri-business profiling the MED will continue to promote market linkages. In addition more cross visits and attendance at conferences, exhibitions and other such events by enterprising farmers will be promoted more actively. Often notice of some of these activities is relatively short. To facilitate selection of attendees it is recommended that a list of suitable individuals and their particular interests be prepared in each province and when suitable opportunities arise they can be contacted quickly.

## **Enterprise development**

Sometimes a market can be identified but cannot be targeted immediately. An example here is the supply of peanuts for processing to the large processors in Cebu. It will take some time to develop the capacity to supply that market because of the volume requirements and the scheduling of deliveries. A number of technical questions also need to be answered. If that

market is to be served eventually there will be a development period when alternative markets will need to be found for a considerable volume of product.

When an enterprise is starting up unexpected problems will invariably crop up. This is perfectly normal and is no reflection on management. How management deals with them is another matter. When projections are being made the halve double rule is a useful guide. Halve the projected target and double the time it takes to achieve it. This is dealt with more fully in the Enterprise Development Manual, but is mentioned here for emphasis.

It is recognized that the gap between small upland enterprises and major retail outlets is vast in terms of trying to organize supply contracts. Institutional buyers usually prefer to deal with a limited number of suppliers who can guarantee season-long or even year round supply of the desired quality. In the case of processed products or even manufactured items such as crafts it is recommended that a strategy of linking small enterprises to larger ones which supply to retail outlets be pursued. This has a number of advantages. The partner enterprise would provide technical assistance on quality control, labeling and packaging and would provide access to otherwise unreachable markets. Such arrangements give small enterprises softer start-up options. Kablon Farms, Davao Food and other relatively small locally based processors who supply the larger local retail outlets should be targeted. Partner agencies such as DTI and local and national trade directories will be consulted to build up a list of potential partner enterprises.

MED in conjunction with DVTI will screen the twenty identified off-farm enterprises for participation in the CEFE course.

### **Entre-Farm Training**

Entre farm re-echo training has been conducted in two provinces and a “modified” version in PPO1. I was very impressed with the capability of the team which consisted of the MED specialist, MPPS and 1 from the provincial LGU. The participation of the trainees was very enthusiastic. The trainees were community leaders.

Unfortunately PPO1 did not follow the recommended procedure where the trainers should conduct 2 supervised re-echo training sessions before they undertook training of trainers.

Entre farm training should continue as planned but it should be implemented as per the DVTI guidelines in **all** provinces.

There should be follow up of farmers who have received entre farm training and if the impact is positive the training should be extended to as many farmers as possible. If funds allow a target of at least one farmer per sitio is recommended.

### **MED points of interest from the report of the Tree Crop Specialist**

This writer concurs with the recommendations in general and would like to emphasise some of the recommendations and with perhaps one or two reservations concerning the promotion of some industrial crops.

#### **Banana**

There is a good market for banana in Luzon and particularly for the variety lakatan. Many of the traditional production areas in Luzon are no longer producing banana. Expansion of urban areas and the continued spread of virus disease and in particular bunchy top are the main reasons for this. Production in Luzon is also inhibited by typhoons. November and December usually see a drop in prices because of poor quality. Senorita is also in demand as is latundan variety but prices for the latter are not as high. The same is true for cardaba. One difficulty with the latter variety is the time taken to transport the product to Luzon results in the fruit often being over ripe when it arrives there. There is some fall-off in demand during school holidays. Demand on the local market is also strong and there are a number of banana chip factories in the area. There are also some small scale chip production enterprises. There are also a number of other processed products that can be produced from banana which could be suitable for small scale production .

A number of traders are now extending credit and supplying inputs to farmers in Mindanao to plant lakatan for the Manila market. They are also giving some technical advice. Traders are said to be looking for production areas at higher elevation as it is claimed that better flavoured fruit are produced.

Like Luzon there are a number of areas in Southern Mindanao which are badly affected by virus disease and areas that previously produced large volumes of banana are now experiencing very low production levels. The market efficiency study conducted for UDP showed that banana was becoming an increasingly marginal crop for many producers. Unless this situation is reversed production will cease in many areas. This small scale production tends to be extensive rather than intensive and generally with a low standard of crop husbandry and field hygiene. Very often diseased planting material is used. Many farmers and indeed staff in municipal agricultural offices have said that they are not familiar with the technology to control disease.

Banana is potentially a very profitable enterprise with a short gestation period and a well developed trading network. The technology for production and disease control is well-known in the country and the transfer of this technology to agricultural technicians and farmers should be treated as a matter of high priority. While a gene has been isolated which can confer resistance to bunchy top it is likely to be some time before this is commercially available. In the meantime farmers should be encouraged to secure disease free planting material and to cultivate the crop more intensively practicing good field sanitation, controlling the disease vector and disinfecting cutting knives and other tools to prevent spreading disease. One option would be for farmers to acquire some plants that have been produced using tissue culture and to plant these in isolation

using them as foundation stock to produce disease free suckers. A number of commercial farms now treat Cavendish banana as an annual crop. Other simple practices such as bagging of fruit should be promoted. On a recent visit to the bagsakan centre in Gen San lakatan fruit that had been bagged was fetching from one to two pesos per kilo higher price than un-bagged fruit. This is a very significant price differential. Some other problems which were encountered was fruit being harvested at the incorrect stage of maturity and fruit being damaged in transit.

### **Papaya**

Papaya is also a crop with a short gestation period and which is suitable for a production in most UDP areas. There is a good demand for papaya for processing with one processor in Cebu (Pro Food International) looking for at least four containers per month.

### **Cashew**

Occasionally locally produced cashew nuts are seen for sale in Davao. They are usually stained and broken but still command high prices per kilo. Yields of cashew are generally low and the crop does not give a high return per hectare. The pulp of the fruit however can be used for animal feed and it would appear that it is a relatively low input enterprise. In certain circumstances it could be a very useful crop. The extraction of the kernels to avoid staining and breaking into small pieces and proper drying are important post-harvest activities which have a major effect on market quality. This is well dealt with in "The Philippines Recommends for Cashew".

The main producing countries are India, Brazil, Tanzania, Mozambique, Vietnam and some West African countries. There is also some production and export from Indonesia. The biggest consumption in Asia is in India. China also imports cashew.

One big advantage of crops like cashew and other nuts such as pili is their low perishability when harvested and dried properly. They also have a relatively high value per kilo. This makes them particularly suitable for production in remote areas. They also usually require a good deal of hand labour at harvest time. This can give a comparative advantage for production in areas where there is abundant family labour.

### **Other Species**

A number of other tree species including passion fruit, mandarin, oranges, pili, macadamia, Indian jujube, santol, avocado need some further study on the marketing side.

### **Industrial tree species**

#### **Coconut**

The world price for copra is at its lowest level for some time. While it is not possible to predict when or if prices will recover it is likely that copra will continue to face very strong competition in world markets. The present administration is considering introducing a price support mechanism for copra but what effect this may have is not clear yet.

Under these circumstances it is not easy to justify new coconut plantations for the production of copra. The PCA is now promoting coconut based farming systems which use other crops inter-planted with coconut. Invariably the other plants give higher returns than coconut and it is difficult to see in such circumstances the why coconut should be planted at all. Conversion of copra oil to fuel for use in internal combustion engines is also being promoted but this is only viable when oil prices stay above a certain level and copra prices stay below certain levels. The production of other chemicals from copra is also being promoted. How successful this will be remains to be seen but there is considerable scope for diverting current production to this purpose.

Many farmers do like producing coconut for a variety of reasons. One of the main ones being that when a plantation comes into production there are a number of harvests per year. Another reason given is that the crop takes little or no maintenance. This is not really a very good reason as yields will be much lower and this is especially true with the modern varieties. Coconut is also such a traditional crop that many people want to continue producing it.

The coconut can of course be used for the production of a variety of processed products. Any promotion of new plantings should really be linked to identified opportunities for adding value rather than for copra oil production. The PCA have a number of schemes to promote coconut and Davao Oriental is one of their main target areas. The regional director is very interested in any possible cooperation with UDP to promote coconut production in UDP areas and particularly in Davao Oriental. A group of coconut farmers in Davao del Sur have with the help of the Davao Vocational Training Institute diversified from copra production to processing and their product is marketed by a larger processor in Davao which also helps with quality control and other technical inputs.

There is considerable scope for inter-cropping existing plantations and perhaps this is the area that UDP should concentrate on.

## **Rubber**

The world market price for natural rubber is currently depressed and although rubber is being promoted by the present administration as a key commodity and at least one commentator has predicted that world consumption of natural rubber will almost double over the next two years this consultant can see nothing to justify that assumption. Rubber is also now being promoted as part of rubber based farming systems. Under this system double rows of rubber trees are planted at 24 metre centers with the rows being two metres apart. The alleyways are then planted with annual or perennial crops. These other crops are usually of much higher value than the rubber and again it is difficult to see why rubber should be included in the cropping system at all.

Rubber is popular with some people because when it starts cropping it is a regular monthly income. At present prices however it is difficult to justify the investment in new plantations.

Adding value by producing sheet rubber rather than cup lumps will increase the returns but this is difficult to do on scattered small plantations.

In areas visited several people spoken to and particularly in the LGUs spoke about attracting companies to set up rubber processing facilities in their area. To the best of the consultants knowledge no feasibility study has been done on this and no investors have been identified.

UDP should not discourage people from planting rubber if they so desire but at the same time it is difficult to justify promoting it.

### **Forest tree crops**

Gmelina has been widely promoted in the past but as pointed out in the report of the tree crops specialist the market is now somewhat depressed. There are at least two enterprises in the UDP area which are exporting gmelina lumber for the manufacture of pallets. The domestic demand for use in pallets has declined as pallets now tend to be used several times rather than just once as was happening in many cases before. It is also used in medium quality furniture such as school desks.

One of the reasons given by DENR for the refusal to issue logging permits is that farmers will not repay DENR for the seedlings as originally agreed.

Falcata and Acacia mangium would appear to be more commercial and falcata is particularly valued by the furniture industry.

Bamboo is reported to be in deficit.

### **Communal versus individual nurseries**

The tree Crops Specialist has expressed reservations concerning the viability of communal nurseries and more alarmingly about the quality of the material being produced.

As quality of planting material is so important if the material they produce is of doubtful quality maybe it should not be distributed. Perhaps no new communal nurseries should be approved until some of these issues are clarified. If these nurseries can be transferred from communal to individual ownership there is no need to wait until the end of the project (but maybe they will have to fail first).

This writer agrees that in general agricultural production enterprises should be individually owned and operated where possible. There is also a danger that UDP may be promoting communal projects which compete with individual enterprises. This should be avoided .

Alternative strategies that might be tried for producing planting material and for maintaining fruit trees could be:

- Grafting is done in municipal or other nursery and when graft has taken hold the seedlings could be transferred to farmers who would look after them in a backyard nursery for 1 to 2 years before planting out.
- Enterprising individuals who may not own or have access to land, or even landowners could be trained in grafting and other nursery techniques and would then contract their services to farmers who wanted to establish their own small nurseries. Training a large number of farmers who may only want to produce 50 or so trees might be a bit unwieldy. If good “contractors” can be identified and trained, quality may also be better.
- These individuals could also be trained in pruning and pest and disease control techniques and be assisted to set up as small scale contractors in an area. Good ones could monitor pest and disease levels etc. They would receive a fee from the owner for their services.

## **AMIS**

Following the recommendations of the earlier study for the operation of AMIS there were some modifications proposed by BAS. These were particularly in the area of number and types of respondents. Following a test collection at the market in Gen San these issues were resolved. After further discussions with the various participants it was also agreed that price range be disseminated rather than average price. For trend series analysis etc. average price will be used.

Training has been conducted for the price collectors. The training was facilitated by UDP but the major resource persons were from BAS, including a representative from central office in Manila and DA. The training was attended by representatives from the markets, the communities and LGUs. Following discussions between all parties present there is now a clear understanding of methodology and roles.

The software development is substantially completed and is currently being installed on the MED computer at the PMO for testing. Rather than using e-mail for price transmission it is now proposed to test the use of modem to modem connection. One possible disadvantage is additional cost if information is to be transmitted over long distances.

The material for the price boards is on site and the computers have been delivered to PPO5.

Some difficulties were encountered regarding licences for the radio operators but this is now resolved and should be accomplished in January.

Contact persons have been identified in the wholesale market in Davao for possible extension of the service.

## **Inventory of existing enterprises with potential for UDP areas.**

UDP has already identified a number of enterprises which are targeted for project assistance. There are other enterprises operating in the UDP provinces which may have potential for expansion into or replication in UDP barangays or as a customer for raw materials from UDP

areas. As far as can be established there is no comprehensive inventory of these enterprises. It is recommended that UDP support a study to make such an inventory.

**Operation of MED component at PMO**

To assist the MED component staff at the PMO and to ease the burden of routine office work and data encoding it is recommended that an administrative assistant be recruited on a full time basis.

## **Recommendations**

### **Recommendations**

- the raw materials and skills Inventory assessment which is completed for the first and second barangays in 2 Provinces should be completed in all five Provinces as a matter of urgency and extended to the third and fourth barangays
- this data should be validated with the sitio profiles
- this data should be analysed to produce a map of the production areas for commodities where surplus is available for sale
- based on the results of this activity a study be commissioned to investigate current post-harvest practices and make recommendations for project interventions
- based on the findings of this study a programme of action be prepared to address the identified post-harvest needs
- programme strategies should take into account the capacity of individuals or communities to implement the recommendations
- any proposed interventions which require capital investment should be subject to a rigorous feasibility study and cost benefit analysis
- partner institutions from the public and private sector be tapped for the implementation of this programme
- when Enterprise Development, market linkage or market targeting interventions are being considered, particular attention should be paid to assessment of the capability of the enterprise to operate in the proposed environment. Where appropriate outside agencies should be enlisted to help in this capability assessment
- a strategy of linking small processing or manufacturing enterprises with larger established enterprises should be pursued. A directory of potential partner enterprises should be prepared
- identified off-farm enterprises should be screened for participation in the CEFÉ training programme conducted by DVTI
- the entre-farm training be continued and a follow-up study done to assess its impact on the farming enterprises of those trained. If the impact is positive the training should be extended to as many beneficiaries as possible
- LGUs and farmers should be trained in the production of bananas in order to exploit the considerable market opportunities which are there for this commodity. Training should focus particularly on the control of virus diseases.

- the major fruit tree crops identified in the study of the tree Crops Specialist should be promoted
- project support for the industrial tree crops identified in the same study should concentrate more on improving existing plantations which will include the promotion of inter cropping with other higher-value species
- minor tree crops identified in the same study would need some further investigation of market potential but some species such as Cashew, pili and macadamia would be particularly suitable for planting in areas with difficult access
- the performance of existing communal nurseries should be assessed before development of any new communal nurseries be supported. As a general principle the promotion of individual production enterprises is favoured over communal ones
- one or two enterprising individuals should be identified for further training in tree crop propagation and husbandry techniques in areas where there are existing tree crops planted or where a volume of new plantations are being undertaken. These people would perform services such as grafting, pruning and spraying of fruit trees and receive a fee for their services from the tree owners. This could help to improve the apparent lack of maintenance observed in a number of areas where trees have been newly planted
- DTI be enlisted to prepare an inventory of enterprises which would be suitable for development in UDP areas
- and administrative assistant the hired to assist the MED Component at PMO with the administration and data encoding activities
- the initiative taken in PPO five to promote peanut growing should be encouraged and supported. In order to conduct a detailed feasibility study and prepare a business plan an experienced business consultant should be hired with programme support.
- MED continue to institutionalize its activities in partner organizations in order to help sustainability
- Piloting and development of the AMIS be continued and priority now be given to ensuring that price data is being displayed on price boards in the barangays before the end of January 2002

## **Annex 1**

### **Methodology for the assessment of post harvest handling needs of UDP supported communities**

Traditionally and by definition PHH is considered to concern those activities which take place after produce is harvested. For many commodities it is not possible or indeed correct to treat harvesting as something separate from PHH. The post harvest characteristics of many commodities are directly affected by what happens during the harvesting operation and very often other post-harvest activities are combined with harvesting into what is essentially one operation.

The principal activities which can be included in post harvest handling are:

- harvesting
- produce preparation
- packaging
- transporting
- storage
- processing

Apart from harvesting the other activities can be performed in or near the production area or at some distance away on the premises of a trader or processor. Transport of course is a little different but can be performed by the farmer or the buyer and very often there are a number of transport operations performed by different people.

Different commodities will have different characteristics and PHH requirements. This can also be affected by the final destination of the commodity and its eventual use.

In any assessment of PHH requirements the first activity that the AT should do is to conduct an audit of the current situation in the area. This audit should first try to establish the following:

- which commodities are being currently produced
- how is the product used, home consumption or sold
- who are the customers
- what are the customer requirements, particularly in terms of quality
- what is the current situation
- what post-harvest activities are currently being carried out by the farmer
- how is the product transported and who is responsible

It would be useful at this stage to prepare a flow diagram for each commodity of interest showing the various operations that are conducted starting with harvesting and ending when the product is transferred from the farmer to the buyer. Later on it may be necessary to extend this

diagram to include other downstream members of the market chain. The reasons for this will be explained later.

In order to establish this information interviews will need to be conducted with the producer, the buyer and if transport is undertaken by a third party the transport operator should also be interviewed.

### **Farmer interview**

This interview should try to answer the following questions:

- how is the crop harvested
- what post-harvest activities does the farmer undertake
- what are the minimum post-harvest activities that must be undertaken
- how much time does each activity take. Here the interviewer should try to establish how much time the product spends in the field before it is transferred to the packing area, or the dryer or whatever
- is the product for home consumption or for sale
- are there losses at harvesting or between harvesting and sale and if so what are the main causes
- can the farmer estimate what these losses are and are they losses in quantity or in quality or both
- is there any storage
- what are the quality requirements of the buyer
- does the farmer understand these requirements
- does the farmer know how to produce this quality
- in the farmers opinion what are the constraints to improving quality
- is there any premium for quality
- does the trader make a standard deduction to cover future losses
- if the farmer undertakes any extra post-harvest activities does it result in an increase in price and if so how much
- can the farmer estimate how much these additional post harvest activities cost, in addition to direct costs any loss of weight as a result of drying for storing should also be accounted for
- is the farmer aware of any different way to conduct the post-harvest activities which would reduce losses

### **Trader interview**

Having gained as much information as possible at the producer level the AT should then interview the trader. This interview should concentrate on collecting information about the trader's requirements, the condition of the commodity when the trader collects or takes delivery, what post harvest activities are undertaken by the trader and the next link in the marketing chain (where the trader disposes of his produce). The main questions here should relate to quality and packaging and transport.

Quality should be looked at from two aspects:

- how does the quality compare with market requirements in terms of product specification
- Is the product damaged in transit
  
- what are the main problems as regards post-harvest handling
- who transports the product
- is packaging adequate to provide protection and to help preserve freshness
- does the trader offer any premium for quality
- does the trader give any training or other advice to producers on quality or other aspect and if so do the farmers follow the advice
- what activities does the trader undertake on receipt of produce
- would the trader trust farmers to grade produce
- how does the trader think quality could be improved

A word of warning here. Traders frequently complain about quality but very often traders may have little or no interest in quality. At the recent Coconut Congress there were a number of criticisms of poor quality copra and the coconut producers are invariably always blamed for this. When one examines the copra trading practices here there does not appear to be any mechanism for keeping good and poor quality separate before delivering to the oil mill, and farmers receive no premium for white copra.

Sometimes indeed traders are guilty of practices which reduce quality and which penalise the farmer and not the trader. This is one reason why downstream participants in the market chain may need to be interviewed also. One example of a practice encountered by the consultant in some areas involves banana traders compelling farmers to harvest bananas that are not fully mature. These fruits are automatically down graded with a consequent significant price reduction. The traders do this when they cannot get sufficient volume of mature fruits to fill their load. This information was elicited by interviewing traders in the wholesale market, and it appears to be more common in some areas than others. The trader will usually take the same mark up on prices. This is part of the marketing margin paradox where margins increase as prices decline. Generally many of the participants in the marketing chain will have the same absolute mark up, thus leaving less to be returned to the producer.

The conclusion of this is that traders responses cannot always be trusted and should be treated with a degree of caution. Generally speaking traders in the wholesale markets or even retailers may be less biased in their responses.

### **Transport operation**

The next part of the audit is to look at the transport of product. This is an area where a lot of damage can be and is done, especially to the more perishable products.

Frequently two or three different modes of transport may be used to bring product from the field to a local trader. Produce may be carried by people or by pack animals in sacks or in baskets to a collection point where it may be then loaded on to a jeepney or weapons carrier for transport to a local trader. The A T should look at the different transport operations and try and assess the level of damage due to each one.

If produce is being transported by a third party the A T should try and establish if the transport operator is aware of quality and how it can be affected by the type of handling it gets during transport. Often transport operators are only concerned with packing as much material as possible into a given space with no regard of how quality may be affected. The interviewer should try and establish if the transport operators are concerned with quality and if they would be prepared to change some of their practices in order to minimise damage. This would include allowing produce to be packed into different containers even though this might mean a reduction in the quantity that can be carried in any one load.

## **Principal Post Harvest Operations**

### **Produce harvesting**

Product must be harvested at the correct stage of maturity for the purpose for which it is intended. The time of day or the weather conditions when harvesting is done can also affect produce. Rough handling when produce is being picked can cause bruising, as can the use of unsuitable containers during harvesting.

### **Produce Preparation**

When the product is harvested it must be further prepared for market.

Typical produce preparation activities include:

- drying – reducing the moisture content of palay or corn
- cleaning, such as removing soil and foreign matter
- trimming, to remove unwanted leaves, stems or roots
- sorting, to remove rejects and non-marketable produce
- curing, for example as with onions, garlic or potatoes
- grading, to separate produce into similar sizes and qualities before packaging
- disease control, e.g. hot water treatment of mango to control anthracnose

Different market outlets will often require different preparation standards. The increased value of the produce after preparation should compensate for the extra cost and work involved. In some cases of course product may be virtually totally unmarketable if there is not some preparation done.

### **Packaging**

The next operation is usually *packaging*. Types of packaging used may range from a simple jute bag which may account for less than one percent of the marketing cost to sophisticated plastic packaging which would account for much more.

Packaging serves three basic purposes:

**convenience:** it provides a convenient way of handling and transporting produce. Costs would certainly be much higher if everything had to be carried and moved without any form of packaging.

**protection:** it provides protection for the produce.

**promotion:** packaging can be used to divide the produce into convenient units for retail sale and the package may carry a distinctive brand label or logo to promote the product and make it more easily identifiable.

From the producers point of view protection and convenience are the most important.

### **Transport**

Once packed, produce is then *transported*. In many countries the initial transportation may be done by the farmer or his labourer, carrying the produce themselves or using animals. Alternatively, traders may send agents around to farmers to collect produce for assembly in one central area. Sometimes the interests of the transporter and the farmer do not coincide. The farmer will want produce transported in such a way that damage will be minimised. The transporter will want to carry as much product as possible and use containers that may offer little protection to their contents.

### **Storage**

**Storage** is an important operation for many products. Most produce undergoes some form of storage. Farmers generally will be interested in storing product in anticipation of higher prices in the future. In many cases this is not an option for the farmers as cash flow constraints often force them to sell at harvest. Sometimes they may have to store product for a period if weather conditions make the road impassable. The condition of product going into store usually has a major bearing on how well it stores and for how long. In many parts of the world losses arise as a result of pest damage while the product is in storage.

### **Processing**

The ultimate form of post harvest handling is processing which is the transformation of a product from one form to another. Produce can sometimes go through a number of processes. Grain is milled to produce meal. It can then be combined with other ingredients in different proportions to produce different animal feeds. This is known as primary and secondary processing. Sometimes there are also by-products from processing.

### **Handling**

At all stages in the marketing chain produce will have to be sorted, graded, packed and unpacked, loaded and unloaded, put into store and taken out again. Each *individual handling* is also an opportunity for produce to be damaged.

It would not be uncommon for to have the following individual handlings:

- farmer or labourer loads produce on to ox- cart;
- product is loaded onto a jeepney
- product is unloaded at municipal traders bodega
- municipal trader transfers product to wholesaler
- wholesaler or his employee repackages the produce in wholesaler's containers;
- produce is carried to and loaded on wholesaler's truck;
- produce is unloaded at wholesale market and taken to premises occupied by wholesaler or his agent, unpacked and sorted or graded and weighed;
- produce is repacked in retailer's containers;
- produce is carried to retailer's transport;
- produce is unloaded at retailer's store;
- produce is repackaged into plastic bags.