

## **CROP POST HARVEST PROGRAMME**

**Overcoming informational constraints:  
improving horticultural marketing and technical information flows to  
smallholders**

**R 7151 (ZB 0126)**

## **GHANA COUNTRY REPORT**

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R7151 Crop Post Harvest Research Programme

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# 1 INTRODUCTION

## 1.1 Background

This Country Report covers a study on horticultural market information constraints in Brong Ahafo Region, Ghana, which is part of a wider project in Sub-Saharan Africa conducted by Wye College, University of London together with other UK and overseas collaborators. Apart from Ghana, the project also covers Tanzania and Zimbabwe.

After the introductory section the report presents the results of the survey, insights from the case studies, and discussion and recommendations.

Other project documents have been produced<sup>1</sup>:

- an abbreviated version of this report is included in the separate project Summary Report;
- the background to the full project, containing the full literature review, concepts and methodological approach are contained in the Literature Review, also published separately;
- there are also separate extended Country Reports for Tanzania<sup>2</sup> and Zimbabwe<sup>3</sup>.

### 1.1.1 Informational imperfections in SSA vegetable markets

Smallholder farmers in SSA face a range of marketing and exchange problems, among which informational constraints are much cited but little researched. Producers experience a weak bargaining position vis-à-vis traders because often they do not have timely access

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to salient and accurate information on prices, locations of effective demand, preferred quality characteristics of horticultural produce, nor on alternative marketing channels.

Barriers to market access and information flows may be structural and behavioural. Those of a horizontal nature may be gender, family, educational levels, ethnicity and other social factors. Information that is available to rural communities may not be equally distributed, and smaller scale producers and those distanced further from the market are more disadvantaged. Vertical characteristics include personalised repeat dealing (clientisation), exclusivity, trust and reputation effects. The current significance of personalised relations in developing economies is receiving new research interest. Analysis of imperfect market coordination in developing economies, and the solutions proposed to the problems and imperfections identified, must take account of these fundamental structural features of markets and behavioural characteristics of individuals and firms.

The results of informational barriers are multiple: unexploited market opportunities, seasonal gluts and produce with inadequate quality specification and control, inequitable returns to producers, peri-harvest (in field pre-, and post-harvest) losses and fundamentally poor returns to the production and marketing system as a whole. In vegetable and fruit markets, the economic problems are magnified compared with other markets due to high product perishability and other technical aspects.

### **1.1.2 Research approach**

This project has concerned the organisation and performance of vegetable marketing in Ghana, Tanzania and Zimbabwe. The project aim was to find an appropriate balance between the coordinating role of the state and spontaneous private sector initiatives, in order to overcome informational imperfections in vegetable markets serving poor producers and other stakeholders.

The approach has been drawn from within the New Institutional Economics tradition (NIE). Solutions to informational problems conventionally have been sought through state provision. NIE theory suggests that market institutions will evolve to overcome the problems of uncertainty and the failures in the state provision of public goods. The research hypothesis was that reducing informational problems will be brought about through two mechanisms:

- private and voluntary responses to informational requirements: the development of longer term contractual relationships is a way of aligning the incentives faced by different market participants for the private provision of information; and
- improving the coordination functions of local (rather than national) government.

The field research in Ghana had three main elements of both a quantitative and qualitative nature. The research was designed to gather evidence of marketing problems and potential solutions in order to reduce poverty and enhance economic development in target populations who are stakeholders in the vegetable production and marketing system in Ghana. Therefore, the methodology employed for data collection used a purposive approach, rather than a quantitative approach permitting statistical inference in relation to the population:

- a formal survey to collect data on production and marketing strategies farmers in Brong Ahafo Region;



- case studies of farmer associations, focussing on marketing activities;
- structured interviews with traders.

## **1.2 Country overview**

### **1.2.1 Introduction**

After a post-independence period of relative prosperity during the 1960s, most economic indicators point to a progressive decline in Ghanaian living standards from 1976 to 1983. The macro Economic Recovery Programme (ERP) began in 1983 and a Structural Adjustment Programme including sectoral policies has been in place since 1986. As a result of the programme implemented in 1983, the economy grew at around 5% per annum from 1984-1992, but growth began to decline again in 1992. During this period, agricultural performance has varied, and the shift towards market management has continued.

The recent ESAF agreement with the IMF has provided a framework for good economic management and structural adjustment. Ghana still faces important development challenges. Incomes and life expectancy are low, agriculture contributes 40% of GDP and 70% of employment, rural services and resources are poor, market access opportunities are inequitable, there is gender inequality, age-inequity, environmental degradation and pollution (Department for International Development, 1998b).

In the case of the renewable natural resources (RNR) sector it is argued that 'There is a widely held view that the missing link in realising sustained growth is the weak integration of the production-marketing system' sector (Overseas Development Administration, 1995: 7). The constraints facing the public sector institutions are also a factor reducing their efficiency and effectiveness. Increasing reliance on the private sector, and decentralisation of public sector functions to District level are relevant parts of the response to the weaknesses of the state.

### **1.2.2 The agricultural sector in Ghana**

Agriculture is mainly traditional, with the structure of production dominated by smallholders using low levels of technology. Women play an essential role in agriculture and in the general economic life of the country. They constitute about 47% of the labour force and are reputed to account for about 70% of total food crop production. There are increasing indications of land scarcity, such as reduced fallows and rotations, a shift to low input crops, migration to high potential areas such as Brong Ahafo Region. Most agricultural products are sold not on a basis of agreed weights, volumes or grades. Among the disadvantages of the non-use of weights and grades is the increase in transaction costs, inability to enter international markets and depression of market prices by inferior produce.

Among the national constraints to developing the rural sector, the rural transport system is considered grossly inadequate, inflicting high costs for transport, trading and processing. Regarding telecommunications infrastructure, lack of access to telephones raises costs for accessing market information and for transport. The existing market information gathering and dissemination process of the PPMED of MOFA is weak and small in terms of coverage.



## **AGSSIP**

The institutional environment within which any project recommendations will be discussed and taken up is conditioned by political and social feasibility. 'Ghana: Vision 2020' is a major policy document directed towards the transformation of Ghana to a medium income economy by the year 2020 (National Development Planning Committee, 1997). The basic themes include macroeconomic, sectoral and human development objectives. Major emphasis will be placed on agriculture, which accounts for more than 40% of GDP and more than 50% of employment. The UK Ghana Country Strategy Paper 1998-2001 supports this vision (Department for International Development, 1998b).

AGSSIP will be the main instrument for implementing the Accelerated Agricultural Growth Strategy (AAGS). AAGS is designed to increase the sector's annual growth rate to the level of 5-6% which is necessary to achieve the goals of Vision 2020: the transformation of Ghana into a prosperous middle-income country by the year 2020.

Further details of the proposal are given in section 1.2.4.

### **1.2.3 Horticultural marketing**

#### ***Overview***

Vegetable production is the latest in a series of commercial agricultural enterprises, following rubber, cocoa and maize, that have been practised in the Brong Ahafo Region. Brong Ahafo is now an important source of vegetables for urban centres and the Region has the potential to supply larger quantities of a greater range of vegetables to markets such as Accra. Approximately 60% of the local population is said to be engaged in vegetable production in one way or another. The participation rate of women is high both in production and trade.

In terms of production and consumption, the two most important vegetables are tomato and garden egg. Other important crops are pepper and okra. A major feature of horticultural marketing is seasonal gluts, wildly fluctuating prices and considerable physical losses. However, vegetables should not be regarded as a homogeneous sector. Crops differ in production systems, perishability, and marketing systems, with implications for the research design and policy recommendations.

Latterly, horticultural marketing in central Ghana has been the subject of a number of studies connected with the Integrated Food Crop Systems Project in Sunyani, an adaptive research initiative begun in 1994, which identified vegetable production as an important and increasing part of Ghana's farming systems, providing both income and food security (Orchard and IFCSP Team, 1997). The crop post-harvest element includes analysis of the marketing system. There has been a strong focus on tomato, the major vegetable in terms of commercial production, with substantial work on garden egg, and less on okra and pepper. These four crops constitute the major traded vegetables produced in Brong Ahafo. There are considerable data resources already available within the reports of the IFCSP (Ashitey, Baker, Suglo and Warburton, 1994; Schippers, Suglo, Bruce and Kuffour, 1994; Sherington and Suglo, 1994; Warburton and Lyon, 1995; Floyd, Warburton and Gray, 1996; Lyon, 1997; Lyon and IFCSP Team, 1997; Lyon, 1998; Lyon, undated).

### *Farmer-trader relationships*

Farmers do not generally 'market' their produce, but traders go to farmers, except rarely when a buyer does not turn up or they cannot agree a price. At times, and in some villages, producers are able to form bargaining associations that also have negotiating, monitoring and enforcement functions.

The role of traders in the system is of paramount significance. Traders' associations or commodity-specific groups are the major channels between producers and retailers and exert considerable control over the urban market place in each town or city. Clark (1994) spent some years conducting an economic anthropological study of the lives of traders in Kumasi Central Market. In Kumasi the locus of power lies with the large wholesalers from among whom is elected an *ohemma*, commonly translated as market queen or queen mother.

Village markets tend to be open to anyone. The structure of marketing drives the production characteristics, and imposes important rigidities on the vegetable sector. Such specialisation has at least short term economic advantages. However, it also encourages monocropping and agronomic practices that are likely to be unsustainable in the long term. Specialisation from traders also limits the economies of scope in marketing and increases the transaction costs (search, negotiation and enforcement) and transformation costs (particularly transport) of assembly and bulking from many dispersed small-scale producers. For farmers wishing to sell more than one vegetable crop, transaction costs of searching and monitoring are also increased. Equally, traders face higher transaction costs in commodity-specific marketing systems.

There is some evidence that trading relationships become 'clientised': wholesalers, retailers and even consumers tend to engage in repeat dealings; individual producers or villages also gain a reputation for producing large quantities of good quality of a specific vegetable. Lyon (1998) commented on the role of trust between buyers and sellers.

Clientisation serves as a market strategy to reduce the impact of informational imperfections. Clientisation will reduce uncertainty about buyer and seller market conduct (opportunism) and may reduce the risk of price uncertainty, thereby obviating the need for better current market price information. Clientisation will also provide farmers with the long-term (historic) market information and broader market knowledge concerning varietal choice and consumer preferences. Both effects result in reduced transaction costs and more efficient marketing. Clientisation may make trading more predictable, thereby reducing post-harvest losses and moderating market disequilibria.

Traders (and commission agents in the urban markets) do more than assemble and distribute physical produce. While the physical product flows in one direction, traders provide payment, credit, information, seeds, agrochemicals, extension, and packaging materials (boxes and sacks) to farmers.

Because traders travel more, they are better informed than farmers, and farmers' strategies to overcome the asymmetry include detailed bargaining to extract information. The withholding of price information is regarded by farmers as cheating. The most important source of information is neighbouring villages or key production locations within the producing area, to where farmers send for information. Kumasi serves as a major relay market, urban consumption centre and information centre for traders.



The tenor of the IFCSP reports is that there is the expected imbalance in power between producers and traders, due to their smaller economic scale, passive marketing strategy and on-farm sales, lower level of information, constrained access to transport, seasonality of production and dependence on credit. However, Clark (1994) is at pains to note that there is a dynamic interdependency between producers and traders and that these same factors operate to the advantage of producers at different times of the year. Traders need a supply of an assured quality and quantity of produce, a good reputation, and from time to time, credit. A commercial relationship with farmers of an exploitative nature would be only a short term strategy. It has been noted by both Lyon and Clark that price and margin fluctuations vary throughout the year and that at times, traders have negative margins, and themselves can sustain losses.

### **Prices**

Marketing and price issues have been widely identified as important. This appears to be because of seasonal gluts in supply due to simultaneous production and ripening of produce rather than changes in demand. Another factor may be the impact of the weather on transport to market: off-road transport is curtailed by rain, and supplies will be reduced.

The value of price analysis in Ghanaian fresh produce markets must be seriously questioned. Prices fluctuate considerably even within a day, quality is not standardised, and quantities traded are affected by the practice of the 'dash':

'Retail prices are usually fixed for the day for a given quantity but retailers try to attract customers by changing the quality of the produce, the size of the piles and gifts (dash) given after the sale has taken place..... The size and quality of the dash depends on the relationship between the retailers and the buyer and it is important in retaining the customer. It is often as much as 50% extra although it may be of lower quality ..... this creates serious problems for the collection of retail prices and any such data should be treated with caution' (Lyon and IFCSP Team, 1997: 53).

The implications about the reliability of price analysis are clear and are relevant not only to market analysis but also to the provision of information. Market price information based on such data is unlikely to meet producer requirements for relevance, reliability and impartiality, and timeliness. Moreover, the response by producers of perishable crops to even good quality price information is constrained. In the short term, supply is highly inelastic: they must harvest when produce is ripe and sell once the produce has been harvested. Any increase in bargaining power by means of access to knowledge of (current) market prices is attenuated by the need to sell.

### **Demand**

Market destination has an influence on quality requirements and losses. Is it for salad or soup? Accra markets are reported to be more demanding with respect to quality, and greater losses have been found. Ga people in Accra prefer the white garden egg which is diced. Akan-speaking peoples prefer the riper varieties, which they grind. In the local markets in Brong Ahafo and in Kumasi, even poorest quality produce is marketed. Quality grades vary with season and supply. If unsold, drying is an option, seed extraction, and home consumption.

### *Research needs*

Lyon (1997) is the major source, a résumé of most of the work to date on the structure and strategy of the marketing system. He raised various questions for further analysis, particularly to do with the need to conduct further research on clientisation, or customer relationships:

- how have they developed?
- how can they be encouraged?
- what is the importance of interlocked transactions (inputs and credit)?
- what is the role of farmer and trader organisations, such as those in Awisa, Nchira, Offuman?

A concern arising from the IFCSP workshop held in Sunyani in 1998 (10-11 September) concerned the role of farmers' associations and their potential to increase farmers' bargaining power. It is unlikely that bargaining power can be increased, but the important of clientisation may rest in assuring agricultural services, particularly market access and outlets throughout the season.

- In the project now being reported, the research hypothesis was that the importance of the lack of timely, available, reliable market price information can be obviated or mitigated by cooperative buyer-seller client relationships.

#### **1.2.4 Institutional constraints: AGSSIP**

A major formal sectoral institution with which recommendations must be consistent is the proposed Agricultural Services Sector Investment Programme (AGSSIP). This derives from the Sector Investment Approach to developing an integrated programme of government and donor expenditures, in this case for the agricultural sector in Ghana. The public sector will provide an enabling environment for the private sector to boost agricultural production, processing and exports.

#### *Major elements*

The major elements of the AGSSIP cover policy reforms, institutional reforms and investment programmes for:

- improving access to markets and promoting the production and export of selected commodities;
- facilitating access to agricultural technology;
- facilitating and increasing access to rural finance;
- providing rural infrastructure and utilities; and
- building institutional capacity.

Wide stakeholder participation has been undertaken prior to and during the preparation of the AGSSIP proposal. Final appraisal by donors is planned to be undertaken in October 1998.

The focus of the strategy will be geared towards making agriculture attractive as a vocation and contributing substantially to food security and national income. The SIP approach is predicated on the full involvement and coordination of the activities of all sectoral stakeholders. MOFA is charged with the specific responsibility of increasing



contact at all levels with private trader and producer associations for inputs and outputs to ensure that future policies and programmes are as effective as implementable in supporting private incentives and capabilities.' (p. 45).

Decentralisation and participation policy is the GOG strategy to ensure participatory development in the country. Decentralisation transfers hitherto diverse central government responsibilities to the District Assemblies within one administrative unit. The District Assembly is the planning authority, charged with the overall development of the district. MOFA's activities will also be decentralised. The Regional Agricultural Development Authority is headed by the Regional Director of Agriculture. The RADU's role is to supervise, coordinate, monitor and evaluate all agricultural development programmes in the region.

The District Director of Agriculture is the administrative head of the District Agricultural Development Unit, which will become a Department of Agriculture of the District Assembly. The District Agricultural Coordinating Committee (DACC) should be formed with a mandate to address all issues of the Accelerated Agricultural Development and Growth Strategy in a holistic approach. The District Agricultural Coordinating Committee model seems to have worked well in Wenchi: 'The DACC has proved itself to be an effective means of ensuring stakeholder involvement' (Department for International Development, 1998a). However, it has its limitations, including replicability. Overall administrative capacity of MOFA is regarded as weak, and this, if true, would surely be a constraint to decentralisation.

Two recent articles have emphasised these constraints in practice. Firstly, according to Larbi (1998) the design of decentralising reforms need to be sensitive to the operational context and capacity of the institutional structures, and implementation needs to be planned and managed. In the case of health services in Ghana, the capacity of the administrative centre was considered to be too weak to perform its integrating, coordinating and monitoring role effectively.

Secondly, in coastal areas of Ghana, District Environmental Management Committees were found to be falling short of the role envisaged by government, having minimal real impact at village level (Porter and Young, 1998). The authors added that Ghana faces enormous difficulties in securing popular participation.

#### *The traditional trading system*

It is acknowledged that the traditional trader is present in all the food lines as the main intermediary of the marketing chain. 'The system of operation of these traders in their respective food lines should be studied to enable interventions that would facilitate and make their activities more efficient. Consideration should also be given to possibilities of assisting them to increase their level of operation.' (p. 61-2). Strengthening of entrepreneurial skills is considered crucial in order to develop the necessary business skills, not only for traders but also for farmers. Physical market infrastructure needs to be managed and improved.

Creation and strengthening of existing (voluntary) traders associations needs emphasis, particularly in relation to their use as vehicles for marketing development and marketing extension work. The potential of such organisations should be tapped to maintain quality standards, manage physical infrastructure, keep market records, plan and develop

appropriate projects, collect revenue, serve as a channel for education, communication and information purposes.

#### *Nucleus outgrower scheme*

The nucleus outgrower scheme as is being practised in the oil palm industry is to be introduced into non-traditional agricultural products (fruits, vegetables, cashew nuts and maize) to facilitate the Export Diversification Programme. 'The scheme proposes the identification and selection of satellite farms in strategic locations for the various crops. These should be assisted to build a strong farmers cooperative which would be further assisted to secure credit facilities and purchase inputs in bulk. The scheme would facilitate the dissemination of new technologies and marketing.' (p. 81-2). The scheme is also envisaged as the basis for the Programme for Sustainable Food Security and Employment.

#### *Market information systems*

Market information gathering, analysis and dissemination should be strengthened. Market information should be disseminated in the local markets through the use of billboards, public address systems, marketing associations, in addition to the present system of radio and newspaper advertisements.

The Ministry of Food and Agriculture (1997) is more explicit about improvements to agricultural marketing and information systems. In Section 3.4 Marketing and information (pp. 15-16) the recommendations included:

- to study current agricultural marketing practices and remove exploitative elements;
- extend the use of radio to broadcast information through public-private enterprise collaboration;
- provide production and market information to farmers' associations through fortnightly bulletins of MOFA or District Assemblies.

#### *Vegetable crops*

Vegetable crops constitute one of the seventeen prioritised commodity programmes of the 1996-1998 Medium Term Action Plan (MTAP) of the National Agricultural Research Strategic Plan (NARSP) of the National Agricultural Research Project (NARP), initiated in 1991. It has been suggested that the current NARP should be continued and the present MTAP should be extended to five years. Continuing activities will include research on non-traditional crops covering the production-consumption continuum, including international markets. 'Our strategy is to enhance export diversification and help alleviate the poverty of the populace, especially the rural population.' (p. 69).

### **1.3 Visits to research sites and the project area**

#### **1.3.1 Preliminary visits**

The field survey was preceded by two preliminary visits to Ghana and the survey area by the principal investigator in Wye College and the local collaborator. The first visit in September 1998 was intended to establish contacts with officials in the agricultural system, that is, civil servants, researchers and others in non-formal organisations. It was also to seek local literature on vegetable markets and development strategies, establish contact with local organisations and familiarise the project team with the decentralisation of decision making in development policy to Region and District level.



The second visit in January 1999 was to select target areas, test and initiate the data collection instruments. Discussions were held with District Directors of Agriculture and their officials that provided guidelines for the selection of the villages for the survey itself.

### **1.3.2 Workshop**

A third visit was made by two members of the Wye team in July to attend the workshop with project stakeholders and hold further discussions with stakeholders.

## **1.4 Brong Ahafo Region**

Brong Ahafo Region (BAR) is in the mid-western part of Ghana, within the forest-transition agroecological zones. Sunyani, the Regional capital, is about 2 hours north-west of Kumasi, about 6 hours by good tarred road from Accra. The Region is rich in agricultural land and is well known as the principal producer of the main staple food crops of Ghana, namely maize, cassava and plantain. Its importance, however, is not restricted to staple food production. The production of horticultural crops on a commercial basis is widespread. The main vegetable crops grown are tomato, garden egg, okro and pepper.

### **1.4.1 Project districts**

The level of production of vegetables varies from one District to another. Of the thirteen Districts in BAR, Atebubu, Nkoranza, Wenchi, Sunyani, Techiman and Dormaa Districts are those that are well known for producing horticultural crops in commercial quantities. However, the remoteness of Atebubu District from the other Districts compelled us to exclude it from the survey.

### **1.4.2 Selection of field sites**

In consultation with District officials of the Ministry of Agriculture, ten villages were selected from the five Districts for the survey. In Wenchi District, Awisa was selected mainly because it was on the main road and access was not a problem. Akrobi in the same District had proximity to Wenchi, the District capital, as an advantage while Badu, the third village selected for the District, was in a remote area with the road leading to the village untarred. All three villages produced a mixture of vegetables. Tuobodom and Tanoboase in the Techiman District and Manso in Nkoranza District were chosen mainly because tomato constitute the major vegetable that is grown. Tuobodom also had a largely unsuccessful tomato farmers' association.

Abesim and Fiapre in Sunyani District both had the advantage of proximity to the regional capital and they represented additional variety in the sense that they offered opportunities for peri-urban horticultural production.

Dormaa District was selected for the survey mainly because it borders Côte D'Ivoire and enjoys opportunities for cross-border trade in horticultural products. Duasidan and Benekrom villages in the District were chosen because they produce mainly for the Abidjan market in Côte D'Ivoire. In addition, Duasidan was remote from the main Dormaa-Côte D'Ivoire road.

## **1.5 Field survey methodology**

### **1.5.1 Data collection**

The use of purposive sampling permitted identification of the Districts and villages where there might be replicable cases of enhanced marketing practices. Within the selected

villages, convenience sampling was used under supervision of the field research team. Convenience sampling is a non-probability technique that has the advantages of reduced cost and ease of administration. Because the selection of the sampling units is usually left to the enumerator, selection bias is a serious potential problem (Malhotra, 1999). However, this was considered to be unimportant for this project, because the purpose was qualitative rather than quantitative, ie to identify enhanced marketing practices. It was not the intention, nor is it permissible, to make population inferences from the sample.

Four skilled enumerators were employed locally in Sunyani and trained for the implementation of the questionnaires. The survey was done under the supervision of the local collaborator from ISSER, University of Ghana at Legon, and a research assistant employed by the NGO Technoserve. The field research team accompanied the enumerator team from one village to another until the survey was completed.

Table 1.1 Distribution of farmers by village and District

Village	No. of Farmers	District	No. of Farmers	Percent of Farmers
Awisa	16	Wenchi	36	29.5
Akrobi	8			
Badu	12			
Abesim	12	Sunyani	24	19.7
Fiapre	12			
Tuobodom	14			
Tanoboase	10	Techiman	24	19.7
Manso	14			
Benekrom	12			
Duasidan	12	Nkoranza	14	11.5
Total	122			
			122	100.0

Table 1.1 shows the distribution of farmers interviewed by District. It was decided that a minimum of 8 and a maximum of 12 farmers should be interviewed in each selected village. The maximum was exceeded in Manso village because it was the only village selected for the Nkoranza District. A total of 122 farmers were interviewed.

### 1.5.2 Data analysis and presentation

Data were entered in Ghana (ISSER, University of Ghana, Legon) and checked at Wye College, University of London. They were analysed using descriptive statistical procedures of the SPSS programme. Initial results and potential recommendations were presented and discussed at a project stakeholder workshop in Sunyani, BAR in July 1999<sup>4</sup>, and a workshop at Wye College in July 1999<sup>5</sup>, and again at a seminar at the University of Reading in December 1999<sup>6</sup>. Among the issues discussed at the Sunyani workshop was the representativeness of the sample during which farmers acknowledged the credibility of the data (see section 2.1.1).

<sup>4</sup> 'Improving Informational Constraints', workshop held in Sunyani, Brong Ahafo Region, Ghana, 5 July 1999.

<sup>5</sup> 'Information in Vegetable Markets in Ghana – a preliminary report', Poole, N.D. (1999), paper presented at the workshop 'Improving Smallholder Market Access in Remote Areas of Sub-Saharan Africa', Wye College, 8-9 July.

<sup>6</sup> 'Market Information and Access for Smallholders in Sub-Saharan Africa', Poole, N.D. (1999), seminar presented at the Department of Agricultural and Food Economics, University of Reading, 6 December.



## 2 CHARACTERISTICS OF VEGETABLE FARMERS

### 2.1 Sociocultural characteristics

This section describes the sociocultural characteristics of the vegetable farmers surveyed. The major characteristics of the sample are gender, age distribution, level of education and household size.

#### 2.1.1 Gender

Both men and women grew vegetables in the survey area. No conscious efforts were made to interview male and female vegetable farmers. Almost 25 percent of vegetable farmers interviewed were females while a little over 75 percent were male (table 2.1)<sup>7</sup>.

Table 2.1 Gender of vegetable farmers

Gender	No. of farmers	Percent of Farmers
Male	93	76.2
Female	29	23.8
Total	122	100.0

#### *Gender<sup>8</sup>*

*More men are involved with the production practices than women, but there is differentiation in the production and harvesting practices. The whole household is involved in vegetable production, but the man has 'ownership' of the enterprise. Women are often preferred for harvesting, and sometimes are give the job of negotiating with the (invariably female) traders. The women agreed that the general balance of gender involvement in production is 60/40, men/women.*

*In Dormaa District, where it was said emphatically by farmers and traders that the gender division was 80/20, men/women, most of the production work is done by men. It is considered that women are not able to undertake the physically demanding and more sophisticated production practices such as staking the tomatoes for sale in Côte D'Ivoire. In particular, women are not strong enough to wield the mattocks that are used there. However, women are involved in the production of other vegetables.*

*The role of women depends on the type of crop, and the activities under consideration. Gender roles are crop and task specific. A clear impression was being given that men are seeking profit, and that women are being driven out.*

<sup>7</sup> Rigorous base-line data on gender differentiation and commercial orientation of vegetable production are not available. The historical view is that vegetable farming has been largely a female activity in most Ghanaian farming communities. However, the involvement of men in commercial vegetable production has been increasing in recent years. Ashitey et al. (1994) reported that vegetable crops traditionally were grown by women, but that men had shifted into vegetable farming, particularly commercial production of garden egg and tomato. Warburton and Lyon (1995) attribute an undocumented but acknowledged increase in male participation in vegetable production to the increasingly commercial environment. Lyon (1997) also suggests that in recent years male unemployment has stimulated this increasing involvement in commercial farming.

Thus, both men and women are involved in commercial production, with an increasing participation rate of young men in commercial production.

<sup>8</sup> Workshop Report, July 1999.

### 2.1.2 Age

Comments are often heard that farmers in Ghana, particularly cocoa farmers, are old, (generally over 50 years) and that the youth are not attracted to farming. However, from table 2.2, a majority of vegetable farmers, 62 or 50.8 percent of the sample, were in the 20-35 years age group. There is evidence of considerable new entry particularly by young men, although it has been reported elsewhere that the young male entrants to tomato production aim rapidly to gain financial capital and move on to other income-generating activities<sup>9</sup>.

Table 2.2 Age distribution of vegetable farmers

Age group (years)	No. of farmers	Percent Of farmers
< 20	6	4.9
20 - 35	61	50.0
36 - 50	51	41.8
50 +	4	3.3
Total	122	100.0

Male farmers in the sample were younger than female farmers.

### 2.1.3 Educational level

Education enables the farmer to comprehend extension education and to digest and apply information better in farming activities and in the marketing of farm produce. Literacy and numeracy are important skills in appreciating the importance of and in maintaining records. Higher levels of literacy and numeracy are likely to be associated with a more commercial orientation.

The level of education of vegetable farmers in the sample is shown in table 2.3.

Table 2.3 Level of education of vegetable farmers

Educational level	No. of Farmers	Percent of farmers
None	12	9.8
Primary	23	18.9
Middle/JSS	77	63.1
Secondary	10	8.2
Total	122	100.0

Only 12 of the vegetable farmers interviewed did not have any form of education. A majority of the vegetable farmers, 63.1 percent, had attained the middle school or junior secondary school level of education. It is the most basic level of education that a person is expected to attain in order to qualify for the most basic white collar jobs in Ghana. Thus, at that level a farmer should be able to communicate, read and keep basic records either in English or in the local language.

<sup>9</sup> Dorward, P. (1999). Personal communication, arising out of DFID Project R6730 (Socioeconomic Methodologies of NRSP: Development of Farm Management Type Methods for Improved Needs Analysis).

For rural communities in SSA, the reported level of education among the vegetable farmers was high<sup>10</sup>.

Male farmers were more likely than female to have been educated to middle/junior secondary or secondary level. No relationship was found between age and level of education.

#### 2.1.4 Household membership

Household size gives an indication of labour availability in farm families and consumption demand. Large households tend to have better access to family labour for farming activities. The national average household size is about 4.5 persons. In the sample, only 30 percent of vegetable farmers belonged to households whose size ranged between 1-5. The high number of people in the households of vegetable farmers was typical of farm households in Ghana.

Table 2.4 Household size of vegetable farmers

Number of people	No. of farmers	Percent of Farmers
1-5	37	30.3
6-10	43	35.2
11-15	14	11.5
16-20	12	9.8
Over 20	16	13.1
Total	122	100.0

As expected, there was a positive association between household size and age; the 20-35 year age group of farmers were from smaller household. Older farmers were associated with larger households and more diverse agricultural production.

Household size was not related to gender of farmer, level of education, level of other income or propensity to rent land.

<sup>10</sup> This finding is not inconsistent with other work. In her study of agricultural information in Ghana, Carter identified marked regional differences within the country concerning levels of literacy and educational attainment. For her sample, of farmers in the north of the country, only 6% of group members interviewed had attended high school for 2 or more years, compared with 53% in southern Ghana (Carter, 1999).

### 3 VEGETABLE PRODUCTION AND OTHER ENTERPRISES

#### 3.1 Introduction

This section of the report describes the resource base of vegetable farmers with respect to the availability and use of land, production systems and input use. Reference is made at the end of the section to other agricultural enterprises and income sources additional to vegetable production.

#### 3.2 Land

##### 3.2.1 Tenancy

As shown in table 3.1, 90 vegetable farmers owned farm plots. This represents 73.8 percent of vegetable farmers in the sample.

Table 3.1 Ownership of farm plots by category

No. of plots	No. of farmers	Husband	Wife	Family	Others
1	23	4	9	11	6
2	18	1	4	6	1
3	28	1	2	6	1
4	17	2	0	4	1
> 4	4	1	0	9	0

The remaining 26.2 percent either rented the plots or used plots belonging to husband or wife or the entire family. The most significant of these categories is family ownership where 29.5 percent of vegetable farmers indicated that they farmed family-owned plots in addition to their individual plots.

Most tomato plots are owned either by the husband (18 percent of the sample), father (14.8 percent of the sample) or wife (5.7 percent of the sample). The pattern of ownership of vegetable plots is the same for the other vegetables. However, combinations of other forms of ownership has the highest proportion for all vegetables, ranging from 13.1 percent of the sample for garden egg growers to 27.9 percent of the sample for tomato growers.

##### 3.2.2 Distance from village

Only 5 percent of farmers travel on average less than 1 km to their plots. About 49 percent of vegetable farmers travel between 0.5 to 2.5 kilometres to their plots of land, while more than 15 percent travel 5 km or more on average to their plots (table 3.2);



**Table 3.2** Average distance (km) from plots to centre of village

Distance (km)	No. of farmers	Percent of farmers
<1	5	4.1
1 - < 3	54	44.3
3 - < 5	43	35.2
5 - <10	16	13.1
10 +	3	2.5
Missing	1	0.8
Total	122	100.0

### 3.2.3 Renting

It is significant to note from table 3.3 that about 50 percent of vegetable farmers rented land. Of those who rented land 23 (18.9 percent) rented less than 2 acres while another 29 (23.8 percent) rented 2-5 five acres, and 10 farmers rented more than 5 acres.

Female farmers and older farmers were significantly more likely to rent land than male farmers. Age of male farmers did not affect the likelihood of renting land.

**Table 3.3** 'How many acres of land do you rent?'

Acres	No. of farmers	Percent of farmers
None	60	49.2
< 2	23	18.9
2 - < 5	29	23.8
5 - <10	9	7.4
10 +	1	0.8
Total	122	100.0

## 3.3 Production of vegetables

### 3.3.1 Vegetables species

Tomato was the most widely cultivated vegetable, followed by garden egg, okro and pepper (table 3.4). Onion, cabbage and lettuce were also cultivated, but to a limited extent:

**Table 3.4** Frequency of cultivation of vegetables

Vegetable	No. of farmers	Percent of farmers
Tomato	98	80.3
Garden egg	75	61.5
Okro	56	45.9
Pepper	47	38.5
Onion	9	7.4
Cabbage	2	1.6
Lettuce	1	< 1

### 3.3.2 Production areas

In all the Districts, tomato was the most popular vegetable. This was followed by garden egg, okro and pepper respectively. Areas cultivated of individual crops reflected their

popularity: tomato was also the vegetable grown in the largest area, followed by garden egg, okro and pepper respectively (table 3.5). All but one farmer grew other crops in addition to vegetables (section 3.4 below).

**Table 3.5** Area of vegetables cultivated by households in 1998

	Maximum (acres)	Mean (acres)	Std. deviation
Tomato	40	2.74	4.57
Garden egg	20	1.09	2.08
Pepper	6	0.54	1.06
Okro	6	0.48	0.81
Total vegetables	47	4.85	5.70
Total other crops	50	7.70	7.56

Total vegetable production by the sample is presented in table 3.6:

**Table 3.6** Scale of production – all vegetables

Area of vegetables (acres)	No. of farmers	Percent of farmers
< 2	23	18.9
2 - < 5	59	48.4
5 - < 10	30	24.6
10 +	10	8.2
Missing	1	0.8

Gender and level of education did not affect scale of production, but farmers in the age group 20-35 years were more likely to produce on a larger scale than were farmers in the age group 36-50 years. There was no association between scale of production and whether or not farmers rented land.

### 3.3.3 Production motivation

Exactly 50 percent of vegetable farmers in the sample were interested in vegetable farming because it offers them regular income. Another 13.1 percent of the farmers cultivated vegetables because of profitability. Thus the income and profit motives are the driving force behind vegetable cultivation in BAR. There was only limited evidence of interest in medium or long-term capital gains rather than regular income generation (table 3.7):

Table 3.7 Reasons for producing vegetables

Reason	No. of farmers	Percent of farmers
Profitable	16	13.1
Regular income	61	50.0
Irregular but large income	2	1.6
Other	2	1.6
Combinations	40	32.8
Missing	1	< 1
Total	122	100.0

Table 3.7.1 Reasons for producing vegetables\*

Reason	No. of farmers	Percent of farmers
Profitable	55	45.1
Regular income	101	82.8
Irregular but large income	14	11.5
Other	2	1.6

\* values include multiple responses

### 3.4 Inputs and irrigation in vegetable production

#### 3.4.1 Inputs

Vegetable production in BAR is relatively intensive. Elsewhere it has been reported that soil fertility is under threat, and disease and pest infestation increasing due to serial monocropping, induced by reputation effects of successful villages and the marketing systems which favours product specialisation<sup>11</sup>. Seeds, fertiliser, agrochemicals and irrigation water are important in the relatively intensive production systems. In particular, the type of seed used is important in determining the quality of the product and consumer acceptance. In most cases the source of seed supply also determines the quality of the seed used in production.

#### *Inputs*<sup>12</sup>

In Abesim there is some use of organic manure, from poultry droppings, but otherwise, farmers are highly dependent on the purchase of agrochemicals.

Seed merchants and agricultural stores were a source of inputs (seeds, fertilisers, and agrochemicals) for 65% of producers (table 3.8). Seeds were saved from previous seasons (38%), and also sourced by producers from fellow farmers (26%).

<sup>11</sup> These issues are the subject of research by the DFID-funded Integrated Food Crop Systems Project (IFCSP), Sunyani, Ghana (R6630), with which the current project has been linked.

<sup>12</sup> *Workshop Report, July 1999.*

Table 3.8 Irrigation and sources of input supply\*

Source	No. of farmers	Percent of farmers
Seed/agricultural merchant	79	64.8
Seed saved from previous crop	46	37.7
Inputs from a fellow farmer	32	26.2
Inputs from trader	9	7.4
Inputs from Côte D'Ivoire	11	9.0
Inputs from public sector sources	6	4.9
Water supply other than rainfall	102	83.6

\* values include multiple responses

A greater proportion of large scale vegetable farmers (the 35 percent who grew more than 5 acres) sourced their inputs from a seed merchant than did the smaller scale farmer, but the difference was not statistically significant. Small-scale producers used a wider range of input sources.

Some 9% of farmers (in Dormaa District) sourced inputs (seeds) from Côte D'Ivoire (CDI) – though they did not always sell to CDI. Traders were only a source of seed for only 7%, and agricultural extension services and the agriculture department were cited by only 5% of farmers.

Traders from Togo were prominent in some villages, and traders were recorded also from Burkina Faso. (Traders from Côte D'Ivoire were also cited as a source of new information about crops and varieties).

### 3.4.2 Irrigation

Water supply is critical for vegetable production, particularly, in the dry season (table 3.8). A high proportion of farmers (84%) had access to sources of irrigation to supplement rain-fed production, ranging from stream water, commonly pond and irrigation, to occasional boreholes and flood irrigation water. Nearly 60 percent of vegetable farmers relied on ponds and rivers as sources of water for irrigating their vegetables. Over 12 percent of the sample used buckets to draw water from wells and dugouts for irrigating their vegetables. About 10 percent of the sample used water from small streams while 16 percent of vegetable farmers used other unspecified sources of water supply and another 3.3 percent used a combination of sources.

### 3.5 Production of other crops

Maize, cassava, yams, groundnuts and beans were the main non-vegetable crops grown by vegetable farmers. They are all mainly staple food crops.

Only 27 (22.1 percent of the sample) of the vegetable farmers also cultivated cassava. The area ranged from 0.50 to 8 acres. Cultivation of cassava was small scale as 24 out of the 27 vegetable farmers cultivated between 0.5 to 3 acres.

On the other hand, 114 vegetable farmers (93.4 percent of the sample) also cultivated maize. The acreage of maize cultivated ranged from 0.5 to 50 acres. Thus maize farming appears to be a major activity for vegetable farmers. There appears to be a skewed distribution of vegetable farmers in the acreage range in favour of small-scale maize



production. About 55 percent of vegetable farmers cultivated up to 5 acres of maize. The remaining farmers were evenly distributed in the remaining acreage range (6 to 50 acres).

The other crops did not appear in any significant proportions in the vegetable farmers' plans. Only 14 (11.5 percent of the sample) of the vegetable farmers grew yam in areas ranging from 0.50 to 4 acres. Another 5 vegetable farmers (4.1 percent) grew groundnuts in the same range as for yams.

### **3.6 Income from other sources**

Vegetable farmers earned income from a variety of other sources. These were mainly from other crops, livestock, firewood and charcoal, hunting, etc<sup>13</sup>. The most significant of these was from other crops where maize and beans featured prominently. Incomes from maize were reported to range from C30000 to C3.15 million for 95 farmers in the sample. Almost one-half of vegetable farmers (48 percent) made earnings from cassava (up to C2 million). Only 13 vegetable farmers (11 percent) earned income from beans (up to C3.24 million).

Only 34 vegetable farms (about 30 percent) earned income from livestock, the most significant being from sheep (8.2 percent of farmers). Other forms of livestock included ducks, goats, pigs, and poultry. In general, earnings from livestock in 1998 ranged between C40000 to C1.2 million. While one farmer each was involved in firewood/charcoal activity and bee-keeping, two were involved in hunting. Income from firewood was about C8000 while that for hunting and bee-keeping average about C300000 in 1998. Remittances did not constitute a major income source for vegetable farmers. Only 9 farmers received remittances from outside the village in 1998 and this ranged up to C500000.

Reported total income from other sources is shown in table 3.9. Over one-quarter of the farmers in the sample earned other income on more than C1 million. The maximum recorded was C4.27 million.

**Table 3.9 Income from other sources**

Income range (cedis)	Percentage of farmers
< 500000	40.2
500000 - < 1000000	23.8
1000000 - < 2000000	13.1
2000000 +	12.3
Missing	10.7

<sup>13</sup> The exchange rate at the time of the survey was approximately £1 = C3800.

## 4 MARKETING OF VEGETABLES

### 4.1 Experience in marketing

The number of years in which a vegetable farmer has been selling his produce was assumed to be a proxy of his experience in vegetable marketing. Table 4.1 shows that almost 20 percent of the vegetable farmers surveyed had less than 4 years experience in vegetable marketing. At the other extreme, 32.8 percent of the vegetable farmers had more than 10 years experience in vegetable marketing.

Table 4.1 Experience in vegetable marketing

Years of experience	No. of farmers	Percent of farmers
1-3	23	18.9
4-10	57	46.7
>10	40	32.8
Missing	2	1.6
Total	122	100.0

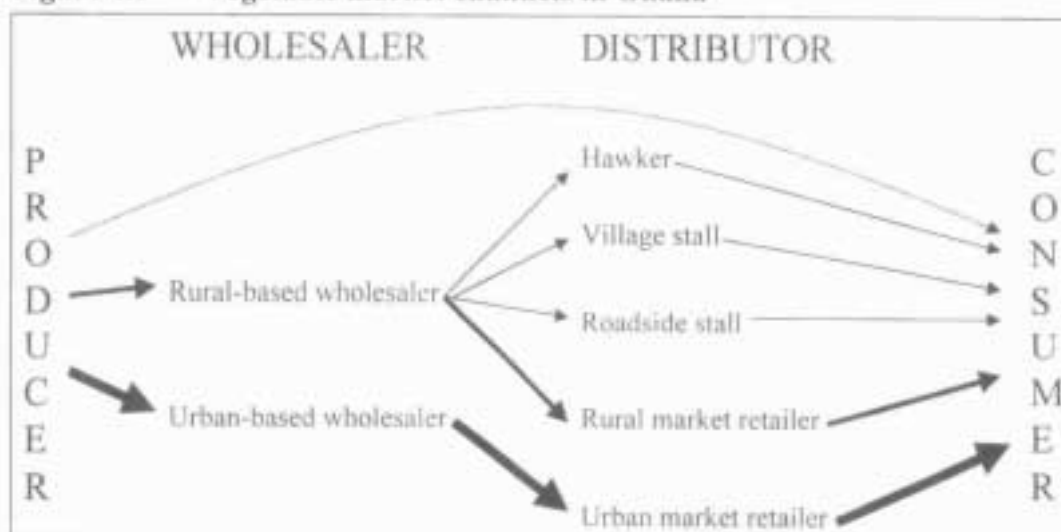
Years of vegetable marketing experience were related to level of education. That is to say, new entrants since 1995 onwards were less well educated than the farmers of longer standing in the vegetable trade.

No relationship was found between age and entry into the market; that is to say, producers of all age groups accounted for the entrants since 1995, and new entrants were not significantly younger than those with 5 or more years of experience.

### 4.2 Destination markets

Vegetable farmers sell to clients from far and near the point of production. They sell to itinerant traders in the village, traders from the same region and traders from urban centres in other regions. They also sell to a combination of these clients, as indicated in figure 4.1. The estimated relative importance of different channels is indicated by weighting of the lines.

Figure 4.1 Vegetable market channels in Ghana



#### *Varietal differences in market chains<sup>14</sup>*

The tomato chain is different – shorter than garden egg and the other crops because of the higher perishability. There are more local traders and more extensive use of relay markets for garden egg and the less perishable vegetables than in the tomato trade.

Table 4.2 shows the wide range of local and national market destinations from which buyers came, and also highlights the importance of Accra as the single most important destination of the vegetable trade from BAR.

Table 4.2 Destination markets\*

Origins of traders	No. of Farmers	Percentage of farmers
Accra	88	72.1
Village	66	54.1
Kumasi	68	55.7
Brong Ahafo Region	70	57.4
Other domestic markets	40	32.8
Togo	21	17.2
Côte D'Ivoire	9	7.4

\* values include multiple responses

Other Ghanaian markets cited included Aflao, Bolgatanga, Ho, Koforidua, Takoradi, Tamale and Somanya. Other destination markets were the neighbouring Francophone countries of Togo and Côte D'Ivoire.

### **4.3 Production and sales of vegetables**

#### **4.3.1 Production volumes**

Table 4.3 indicates the approximate production volumes that were produced in 1998<sup>15</sup>. These data must be treated with caution because of potential problems of recall and lack of standardisation. Most vegetable farmers produced up to 50 crates/bags of the major vegetables in 1998.

<sup>14</sup> Workshop Report, July 1999.

<sup>15</sup> Standardisation of units is problematic (Lyon and IFCSP Team, 1997):

- tomato output is sold in wooden crates of two sizes, of approximately 55-60 kg, and 70-80 kg;
- garden egg is sold in sacks of two sizes, 35-40 kg and 72-82 kg
- pepper and okro, commercialised on a smaller scale, are sold from farms in different sized containers, but quantities in the markets are standardised volumes of 'rubbers' or black plastic buckets.

**Table 4.3** Production of vegetable (crates/bags) in 1998

Crates/bags	Percentage of farmers producing:			
	Tomato	Garden egg	Pepper	Okro
1-50	35.1	33.2	34.0	36.7
51-100	19.4	14.7	3.2	4.0
101-150	9.8	4.0	1.6	1.6
151-200	4.9	1.6	0.0	0.0
201-250	3.3	3.2	0.0	0.0
251-300	2.4	0.8	0.0	0.8
300+	4.0	0.8	0.0	0.0
Missing	21.1	41.7	61.2	56.9
Total	100.0	100.0	100.0	100.0

Over 33 percent of vegetable farmers produced this range of production (up to 50 crates/bags) for tomato, garden egg, pepper and okro. For tomato, and garden egg 29.2 percent and 18.7 percent of the farmers produced between 50 and 150 crates/bags, respectively. Fewer farmers produced in the higher range of production for tomato and garden egg while for pepper and okro, production scarcely exceeded 100 crates/bags.

#### 4.3.2 Marketed volumes

Table 4.4 indicates that vegetable production was highly market-oriented. In 1998, sales were quite vigorous. For tomato, 64 percent of the farmers made up to 20 sales in the year. The proportion of farmers making sales declined as the number of sales increase. Likewise, there were fewer sales for pepper and okro than for garden egg, and also for okro than for pepper.

**Table 4.4** Number of sales of vegetables in 1998

No. of sales	Percentage of farmers selling:			
	Tomato	Garden egg	Pepper	Okro
1-10	32.0	18.9	11.4	3.2
11-20	32.0	26.1	13.1	8.9
21-30	10.7	10.6	4.9	0.8
31-50	13.8	7.2	2.4	0
50 +	9.6	9.7	3.2	1.6
Missing	1.9	27.0	64.8	85.2
Total	100.0	100.0	100.0	100.0

Table 4.5 gives an indication of what was sold out of the production of vegetables for 1998. The pattern of quantities sold appears similar to the quantities produced (table 4.3). Over 55 percent of tomato farmers sold up to 100 crates/bags of tomato compared to almost the same proportion that produced this range of tomato. Similarly, 47.4 percent of garden egg farmers sold up to 100 crates/bags compared to 47.9 percent who produced that quantity of garden egg. Similar comparisons can be made for pepper and okro and between other ranges of production and sales. This seems to suggest that almost every vegetable that is produced was also sold. Evidence of a strong commercial orientation among farmers in the sample was intended by the purposive approach of the research.



**Table 4.5** Quantity of vegetables sold in 1998 (crates/bags)

Bags/crates	Percentage of farmers selling			
	Tomato	Garden egg	Pepper	Okro
1-50	36.6	33.5	31.6	36.7
51-100	18.6	13.9	3.2	3.2
101-150	8.1	4.0	1.6	1.6
151-200	4.9	1.6	0.0	0.0
201-250	4.1	3.2	0.0	0.0
251-300	2.4	0.8	0.0	0.8
>300	4.0	0.8	0.0	0.0
Missing	21.3	42.2	63.6	57.7
Total	100.0	100.0	100.0	100.0

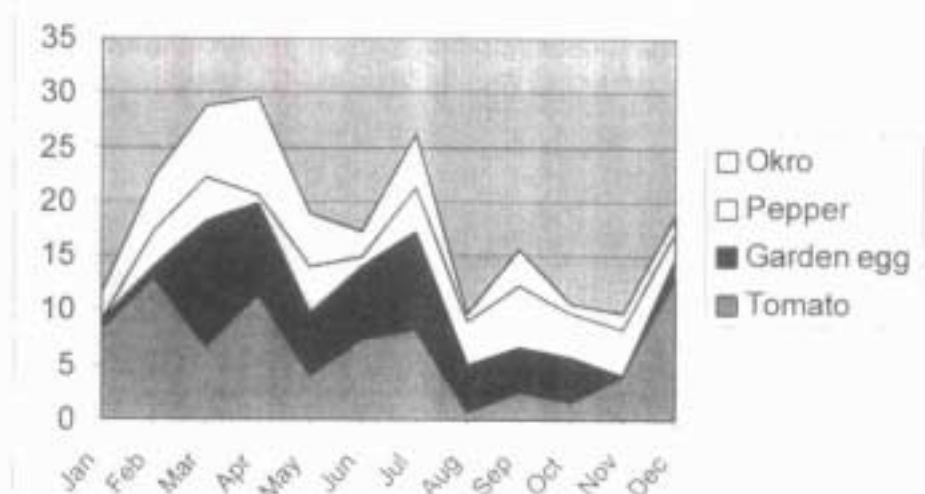
### 4.3.3 Marketing season

The months of major sales of vegetables in table 4.6 showed variations between the vegetables. For tomato, the months December through April were the major period of sales. A second but short period of sales was June/July. The period December to April can be considered as minor or dry season sales while June/July is the rainy season sales. These two major seasons of tomato sales conforms to the bi-modal rainfall pattern in the survey area.

**Table 4.6** Months of major sales of vegetables in 1998

Months	Percentage of farmers selling:			
	Tomato	Garden egg	Pepper	Okro
January	8.2	0.8	0.0	2.5
February	13.1	0.8	3.3	4.9
March	6.6	11.5	4.1	6.6
April	11.5	8.2	0.8	9.0
May	4.1	5.7	4.1	4.9
June	7.4	6.6	0.8	2.5
July	8.2	9.0	4.1	4.9
August	0.8	4.1	4.1	0.8
September	2.5	4.1	5.7	3.3
October	1.6	4.1	4.1	0.8
November	4.1	0.0	4.1	1.6
December	13.0	1.6	2.5	1.6
Missing	18.0	43.4	1.6	56.6
Total	100.0	100.0	100.0	100.0

Figure 4.2 Sales periods for major vegetables (%)



Tomato sales were spread, albeit unevenly, throughout the year. For garden egg, the major period of sales was March to July. There did not appear to be a clear period of major sales for pepper and okro as sales were more evenly distributed throughout the year. This is attributable to the less perishable nature of the two commodities and that both are easily amenable to drying and storage. In fact, there is a greater demand and a higher price for both vegetables when they are dry than when sold fresh. It is significant to note, however, that sales of the major vegetables do take place throughout the year, reflecting the year round demand.

#### 4.3.4 Guide prices

Price data, like quantity data, need to be treated with considerable caution, but have comparative value. Prices received by vegetable farmers also varied markedly from one vegetable to another as shown in table 4.7.

Table 4.7 Minimum and maximum prices of vegetables in 1998

Vegetable	Price in cedis (C) /crate or bags*	
	Range of minimum prices	Range of maximum prices
Tomato	5000 - 40000	20000 - 270000
Garden egg	1000 - 24000	6000 - 100000
Pepper	500 - 70000	1200 - 200000
Okro	500 - 18000	1000 - 360000

\* excludes outliers

The minimum prices received by tomato farmers varied between C5000 and C40000 (per crate/bag). However the most frequently occurring minimum price (mode) for tomato was C10000 which was cited by 23 percent of tomato farmers. On the other hand the maximum price received by tomato farmers ranged from C20000-C270000 per crate/bag with the mode being C60000 which was declared by 13.9 percent of the vegetable farmers. However, for a majority of vegetable farmers (57.3 percent) the maximum price for tomato in 1998 ranged between C20000-80000 per crate/bag.

It was reported in the July workshop in Sunyani that tomato prices can fluctuate from C5000-310000 per crate of 70 Kg.

For garden egg minimum prices varied between C1000 and C24000. The maximum price for garden egg ranged between C6000 and C100000 with the farmers randomly distributed within this range without a clear mode. However, 37 percent of the farmers felt that the maximum was between C20000 and C80000. 42.6 percent of farmers did not answer the relevant question.

Pepper had similar ranges of prices to garden egg with the exception that the highest of the minimum price range for pepper is slightly higher (C30000) than that of garden egg. Also, 63.1 percent of farmers did not answer the relevant question.

Okro has the lowest price ranges for both minimum and maximum prices.

#### *Prices and quality<sup>16</sup>*

Tomato prices can fluctuate from C5000-310000 per crate of 70 Kg.

The Côte D'Ivoire experience is interesting: trade is much more quality oriented. The traders visit farms and select the product at the farm. The output from the whole village is then assembled at the village centre for regrading on a scale of 1-3. Quality standards and varietal specifications are demanding, and the price for grade 1 tomatoes is up to three times that for the worst grade. Traders monitor production and there is a high quality of interaction and collaboration throughout.

Away from the border, the domestic trade is characterised by bulkier packaging, which is delivered by traders to farmers before harvest, and collected afterwards. Traders commented that 'the farmers harvest, and then you get to Accra and discover poor quality produce at the bottom'. There is a lack of inspection on-farm that is in part attributable to procedures, and also made more difficult by the form of packaging. Also, there is always a market outlet for poorer quality produce. The profitability of trading depends on the final margin farm-Accra, which is heavily influenced by transport costs.

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<sup>16</sup> *Workshop Report, July 1999.*



## 5 BUSINESS STRATEGIES AND MARKET KNOWLEDGE

### 5.1 Record keeping

In spite of the relatively high level of basic education of vegetable farmers in the survey, only 47.5 percent of them indicated that they kept some records. *Significantly more male farmers kept records than females* ( $p = 0.030$ ). There was no association between level of education and, nor age and record keeping.

Of the respondents who did not keep records, the reasons suggested are shown in table 5.1.

Table 5.1 Reasons for not keeping business records

Reason	No. of farmers	Percentage of farmers
Tedious exercise	7	5.7
It is not important	20	16.4
Don't know how to	13	10.7
Don't know why	19	15.6
Other reasons	2	1.6
Missing	3	2.5
Total	64	52.5

### 5.2 Market knowledge

#### 5.2.1 Current price information

As shown in table 5.2, 49 percent of farmers said that they had very good knowledge of market prices while about 37 percent had some limited knowledge about vegetable prices; few vegetable farmers (9.8 percent) had no knowledge at all about market prices of their product.

Table 5.2 'How well do you know market prices?'

Level of knowledge	No. of Farmers	Percentage of farmers
Very well	60	49.2
Not very well	45	36.9
Not at all	12	9.8
Missing	5	4.1
Total	122	100.0

Most farmers obtain knowledge about current market conditions (supply, demand and market prices) from the traders. Traders, neighbours and friends, and visits to markets were the main information channels. Radio was of little significance as a source of information, and only 2 farmers cited the extension services as a source of such information.

Table 5.3 Sources of knowledge about current market conditions\*

Source of knowledge	No. of Farmers	Percentage of farmers
Traders	63	51.6
Neighbours & friends	39	32.0
Visit to market	23	18.9
Radio	10	8.2
Extension services	2	1.6
Other sources	1	0.8
<i>'I don't know at all about market prices'</i>	12	9.8
Missing	14	11.5
Total	122	100.0

\* values include multiple responses

### 5.2.2 Use of radio

About 55 percent of the sample said that they listened to the radio everyday. Another 37.7 percent said that sometimes they listened to the radio. Only 8 farmers (6.6 percent) said that they never listened to the radio. Nevertheless, as noted above, radio was of minimal importance as a medium of current information about supply, demand and prices. This implies that information content of radio programmes on vegetables is either very low or non-existent.

Table 5.4 Frequency of radio listening

Frequency	No. of Farmers	Percentage of farmers
Every day	67	54.9
Sometimes	46	37.7
Never	8	6.6
Missing	1	0.8
Total	122	100.0

### 5.2.3 Knowledge of new crops and new varieties

Knowledge on new vegetable crops and on new varieties of the vegetables came mostly from fellow farmers, as revealed in table 5.5. Traders also constituted a significant source of knowledge about new crops and new varieties. Farmers who cited various sources cited most frequently other farmers, and then other traders. The extension service was cited in more than a quarter of the responses.

Table 5.5 Knowledge of new crops and new varieties\*

Source of knowledge	No. of farmers	Percentage of farmers
Fellow farmers	58	47.5
From traders	44	36.1
Extension officer	33	27.0
Research station	1	0.8
Other sources	8	6.6
Missing	5	4.1
Total	122	100.0

\* values include multiple responses

### 5.2.4 Information sharing

Information appeared to be widely shared among producers, but less so between producers and traders: only 12.3 percent of farmers said that they did not share information on crops and prices with other farmers, and 21.3 percent said that they did not share such information with traders.

## 5.3 Strategic responses to information

### 5.3.1 Production strategies

Knowledge about historic market conditions enables agricultural producers to plan their planting and harvesting activities to avoid low market prices. In the sample, indeed, 98 farmers (80.3 percent) indicated that they actually planned planting and harvesting operations precisely for the purpose of avoiding low market prices (table 5.6).

Early and late planting were the most favoured strategies. Multiple strategies were cited in 20 responses. Disaggregating the multiple responses raised the importance of changing the combinations of vegetable and non-vegetable crops grown. Staggered planting was a common 'other' answer suggested by respondents, as was also monitoring current price trends in the market.

Table 5.6 Farmer planting and harvesting strategies\*

Strategic response	No. of Farmers	Percentage of farmers
Change combination of vegetables grown	22	18.0
Change to non-vegetable crops	5	4.1
Early planting	35	28.7
Late planting	27	22.1
Other	34	27.9
<i>I do not plan my planting and harvesting activities to avoid low market prices</i>	24	21.3

\* values include multiple responses

### 5.3.2 Varietal choice

A number of factors may influence the choice of the variety of crops cultivated by farmers. Ideally, production possibilities match consumer demand. Sometimes market intermediaries specify the variety. Other factors such as neighbours, the extension service and better prices for certain varieties influence farmers' choice.

The relative strength of these factors is indicated in table 5.7. It shows clearly that first, price, and second, traders exert a high level of influence on vegetable farmers in their choice of variety. This makes sense as that can guarantee them a market for their produce at harvest time. The lack of influence of the extension service in the choice of vegetable varieties grown is worth noting. Among 'other' responses, perishability was a common answer, producers choosing varieties that were hard and maintained a good physical appearance. High yield was also cited as a factor, as was suitability to the local soil and rainfall regime.



Table 5.7 Factors influencing choice of vegetable varieties\*

Factor	No. of farmers	Percent of farmers
Better prices for certain varieties	69	56.6
Traders' requests	51	41.8
Neighbours	6	4.9
Extension service	4	3.3
Other	33	27.0

\* values include multiple responses

Knowledge of current market prices is not a decisive factor in cultivating vegetables because ripening is a natural process<sup>17</sup>, and storage (at least for tomato and garden egg) is not feasible. However, knowledge of current market prices is a decision tool for price negotiation, and acquisition of such knowledge is an important marketing strategy. In some cases, cash needs force farmers to harvest even when prices are low. In other cases, farmers desist from harvesting if prices are too low, either out of pique, or because low prices may render harvesting uneconomic.

A total of 75 farmers (61.5 percent) indicated that they have never refused to harvest their produce because of low prices. However, 47 farmers (38.5 percent) said that there were occasions when they decided not to harvest their produce because of low prices. For 11 percent of the sample, this had only happened on one occasion, but for others, the frequency was higher (table 5.8):

Table 5.8 'How many times have you decided not to harvest because prices are low?'

Frequency	No. of farmers	Percentage of farmers
Never	75	61.5
1 – 5 times	26	21.3
More than 5 times	6	4.8
Missing	15	12.3

#### *Non-harvesting<sup>18</sup>*

The data suggesting that maybe 40% of farmers at one stage or another decide not to harvest their produce because of low prices caused interest among the public sector officials. Farmers commented that low prices meant that it was better not to incur the high costs of harvesting. This applied particularly to tomato. In the case of garden egg, it is necessary to harvest in order to ensure continued production, but the harvest is sometimes discarded. The costs of harvesting are not inconsiderable. All farmers utilise hired labour at some stage during the year, because family labour bottlenecks occur at peak production times. Family labour is costed by the farmers, but not paid, and it was said that no farmer relies entirely on family labour. Hired labour has to be paid 'on the spot'.

<sup>17</sup> Use of cocoa fungicides has been identified as a production strategy to induce ripening in response to market prices. It is not known how widespread is the practice. It does pose significant health threats.

<sup>18</sup> *Workshop Report, July 1999.*

## 6 NEGOTIATION, REPUTATION AND TRUST

### 6.1 Negotiations for vegetable sales

Vegetable farmers may negotiate with traders for the sale of their crops individually, collectively with members of their family, or collectively with other farmers in the village or nearby villages. They can also do so through a negotiating committee, particularly when the farmers are organised into a group or some form of association or cooperative. They may use a combination of negotiating methods.

In 1998, most vegetable farmers negotiated for the sale of their vegetable collectively, that is, with other farmers and through a negotiating committee (table 6.1). This implies a high degree of interaction between vegetable farmers. However, farmers also showed a tendency to negotiate either individually or collectively with family members. A small number of farmers replied that there were no effective negotiations, but that traders dictated prices.

Table 6.1 Mode of negotiation of vegetable prices\*

Mode of negotiations	No. of farmers	Percentage of farmers
Collectively with other farmers	49	40.2
Negotiating committee	48	39.3
Individually	21	17.2
Collectively with family members	18	14.8
Combinations	13	10.7
'Traders dictate prices'	6	4.9
Missing	8	6.6

\* values include multiple responses

#### *Negotiating committees<sup>19</sup>*

In Sunyani and Abesim, where negotiating committees operate on farmers' behalf, they comprise both men and women. The *ad hoc* 'loose associations' serve the purpose of negotiating with traders about prices. The ability to organise and exercise bargaining power depends on season and the balance of supply and demand. In Dormaa, it is the trader who decides the price, and some do so on the basis of prefinancing production, because farmers need both production and consumption credit from somewhere. Negotiations are conducted in French, and producers are paid in Ivorian currency.

The loose associations of producers are fragile, and face problems of defection and free-riding when supply outstrips demand. Leaders of negotiating committees are also accused of agreeing preferential individual terms at the expense of group members.

#### *Farmers' comments*

'The problem with farmers' groups is that absentee farmers can infiltrate groups and become leaders and direct the groups. Groups sometimes do not work because of mistrust among farmers, some of who engage in direct negotiations with traders at the expense of group interests. Farmers tend to have little interaction with traders and are more individualist'.

Table 6.2 shows that almost 55 percent of farmers negotiated prices for their vegetables at the house. Negotiations in the market place, where a farmer might be considered to have less bargaining power, and in the field were less frequent negotiation locations.

<sup>19</sup> Workshop Report, July 1999.

Table 6.2 Place for vegetable price negotiations\*

Negotiation place	No. of farmers	Percentage of farmers
At the house	79	64.8
In the field	24	19.7
In own village	17	13.9
At the market	15	12.3
Other	14	11.5
Missing	4	3.3

\* values include multiple responses

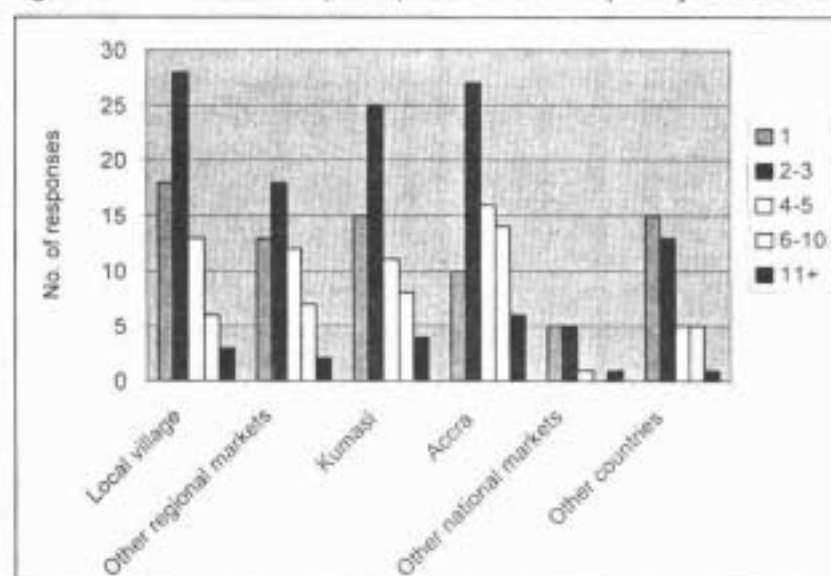
In two villages farmers reported different negotiation sites. In Awisa a number of farmers cited the chief farmer's house as the site of price negotiation. In Tuobodom, collective negotiation at the Court House was an important phenomenon.

Although there was evidence that negotiations about maize purchases were sometimes made by telephone (in Offuman, where a satellite telephone had recently been installed), negotiations on vegetable sales were reported never to be undertaken by telephone.

## 6.2 Traders and product delivery

In respect of the competitiveness of the producer-buyer transaction, farmers' perceptions of the frequency of visits made by traders varied with the traders' origin. Farmers' perceptions were that traders from most of the major markets made visits 2-3 times per week.

Figure 6.1 Farmers' perceptions of the frequency of traders' visits



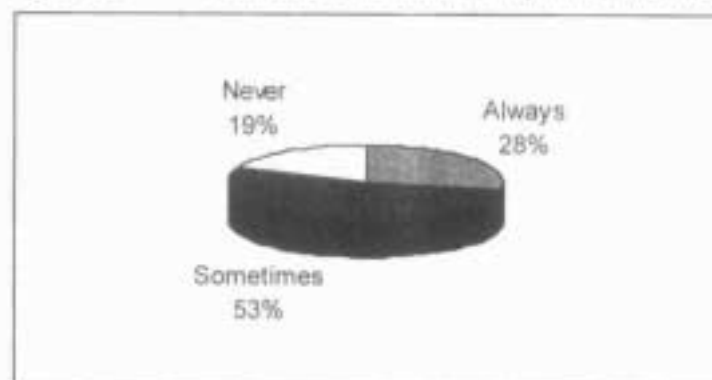
The number of traders who came to buy vegetables each week varied markedly between market destinations. Of the 68 farmers who answered the question with respect to traders based in the village, about 87 percent for them felt that most local traders numbered between 1 and 5 per week. Likewise about 87 percent of the 63 farmers who answered estimated that between 1 and 8 traders came from Kumasi to buy vegetable each week in 1998.



With respect to Accra, about 92 percent of the 73 farmers who answered the question estimated that between 1 and 10 traders travelled to their villages to buy vegetables each week. The estimate for traders from local markets in BAR was between 1 and 6 traders by 90 percent of 52 farmers while from other markets in the country the estimate was 1-3 traders per week by only 12 farmers who answered. As many as 39 farmers answered the question with respect to traders coming from outside Ghana. They estimated that between 1 and 13 traders came from outside Ghana per week to purchase vegetables. These estimates seem to confirm the relative importance of the sources of traders discussed earlier. More farmers thought that traders from Accra visited most frequently, emphasising both the importance of Accra as the major destination market, and also a higher level of competition than among traders from other markets.

On the combination of vegetables traders purchased during their visits, more than one-quarter of the farmers said that traders always bought more than one type of vegetable in their visits. More than half said that traders did buy more than one type of crop, while fewer than twenty percent said that traders bought only one type of vegetable crop during their visits.

Figure 6.2 'How often did traders buy more than one crop?'



As shown in table 6.3, a large group of vegetable farmers (almost 50 percent) delivered their produce to the traders in the field. Delivery at the house was also quite popular (almost 30 percent). In such cases, the harvest will normally have been done the previous day. Almost 20 percent of the farmers physically delivered their product in the market place. This point of delivery may be less popular because it involves transportation and the associated costs to the farmers. Other places of delivery, such as roadside, were used by 10.7 percent of farmers, with the responsibility for transport again that of the farmer.

Table 6.3 Point of delivery of vegetables in 1998\*

Place of delivery	No. of Farmers	Percentage of farmers
In the field	77	63.1
At the house	61	50.0
In the market	15	12.3
At the roadhead	1	0.8

\* values include multiple responses

### 6.3 Reputation and trust

#### 6.3.1 Frequency of disputes

Issues of confidence and trust in the relationship between vegetable farmers and traders relate mainly to payment of farmers for their produce. As shown in table 6.4, 21 percent of farmers reported that they always had problems being paid by the traders while another 56 percent often encountered problems. Only 23 percent said that they never experienced payment problems.

Table 6.4 Do you have problems being paid by the traders?

Frequency	No. of farmers	Percentage of farmers
Always	26	21.3
Sometimes/often	68	55.7
Never	28	23.0
Total	122	100.0

The incidence and frequency of payment problems was not associated with structural variables such as age, gender, scale of vegetable production, and level of other income. Better educated farmers encountered more frequent problems than less educated farmers, but the difference was not statistically significant.

#### 6.3.2 Sources of disputes

Delayed, partial and non-payment by traders were prominent reasons, as shown in table 6.5. Partial payment was often associated with *ex post* bargaining problems: on occasions traders reduced prices after the sale was negotiated and concluded, and sometimes there was insufficient money to pay for the produce at the negotiated price.

Concern arising from lack of standardisation of product quality was also a significant source of disagreement between farmers and traders. There was not a comparable scale of disagreement about quantity, although problems of quantity standardisation were present.

**Table 6.5** Sources of problems with traders\*

Source of problem	No. of Farmers	Percentage of farmers
Delayed payment	45	36.9
Partial payment	57	46.7
Non-payment	38	31.1
Argument over quality	22	18.0
Argument over quantity	8	6.6

\* values include multiple responses

### 6.3.3 Disengaging from exchange

When asked whether farmers chose not to sell their produce to a trader, almost half of the respondents (58 farmers) said that on occasions they had chosen not to sell. Of those who chose not to sell, most did so because they did not trust the traders, while others felt the price was too low (table 6.6):

**Table 6.6** Reasons for not selling to a particular trader\*

Reason	No. of Farmers	Percentage of farmers
Do not trust them	40	32.8
Low price	31	25.4
<i>I do not choose not to sell</i>	63	51.6

\* values include multiple responses

### 6.3.4 Clientisation

Regarding repeat dealing, over one-quarter of the sample (28.7%) seemed to have sufficient confidence in the trader with whom they dealt to maintain a long-term client relationship. One-third of respondents (32.8%) said that sometimes they sold to the same trader each year. However, more than one-third of respondents (38.5%) said that they never sold to the same trader from year to year (table 6.7):

**Table 6.7** Years of dealing with the same traders\*

Years	No. of farmers	Percentage of farmers
2	25	20.5
3-5	18	14.8
5 +	19	15.6
Missing	13	10.7
<i>I never deal with the same traders</i>	47	38.5
Total	122	100

Of the farmers who dealt with the same trader each year, approximately 40 percent had been selling to the same trader in the past 2 years, while 30 percent of them had been dealing with the same trader for between 3 to 5 years. The remaining 30 percent of the farmers had been dealing with the same trader for over 5 years.

### 6.3.5 Lack of clientisation

Various factors account for the reasons why farmers did not sell to the same trader (table 6.8):



Table 6.8 Reasons for not selling to the same trader

Reason	No. of farmers	Percentage of farmers
They fail to come/are unreliable	22	18.0
I accept the best price offered	16	13.1
I do not trust them	11	9.0
I sell to the first trader to arrive	9	7.4
Other/various reasons	5	4.1
<i>Not applicable</i>	59	48.4
Total	122	100

Incentives to farmers to engage in repeat dealing with particular traders were not pronounced. Mistrust was not cited by many producers as a reason to switch buyers. Rather, the reasons were predominantly circumstantial in nature: unreliability referred to failure to arrive at the farm, or failure to arrive in due time. Under such circumstances, producers sold opportunistically to whoever came or whoever offered a good price.

#### *Trading<sup>20</sup>*

Farmers trust the local traders more and enjoy a more cordial relationship, and tend to engage in repeat dealing with local traders to a greater extent. They tend to secure better prices from the traders from Accra. Most local traders give some prefinance in the form of food, clothing and paying hospital bills. Farmers can also sell in the local markets, but never in Accra.

Accra traders are at a disadvantage in that their level of information is lower: they know less about actual supply conditions in particular areas, whereas local traders are in the area, and can respond more effectively to local supply conditions. With the Accra traders, the farmers are less willing to compromise on price, and end up securing higher prices. Accra traders are also disadvantaged inasmuch as they must buy something to justify their return home. The lack of repeat dealing is problematic – information problems are important.

## **6.4 Interlinked product sales, credit and input supplies**

### **6.4.1 Credit to producers**

The use of credit by farmers was insignificant. In 1998, only 22 farmers in the sample (18.0 percent) of vegetable farmers accessed credit facilities. Of these, 16 farmers received credit in cash. Agricultural inputs were unimportant. Sources of credit were various, mainly informal, and the involvement of banks was negligible (table 6.9):

<sup>20</sup> *Workshop Report, July 1999.*

**Table 6.9** Credit: kind and sources

Credit	No. of farmers	Percentage of farmers
<i>Kind</i>		
Cash	16	13.1
Fertiliser	2	1.6
Agrochemicals	2	1.6
Other	2	1.6
<i>Source</i>		
Neighbours	6	4.9
Trader	6	4.9
Family	5	4.1
Bank	3	2.5
Other	2	1.6
I did not receive credit	98	80.3

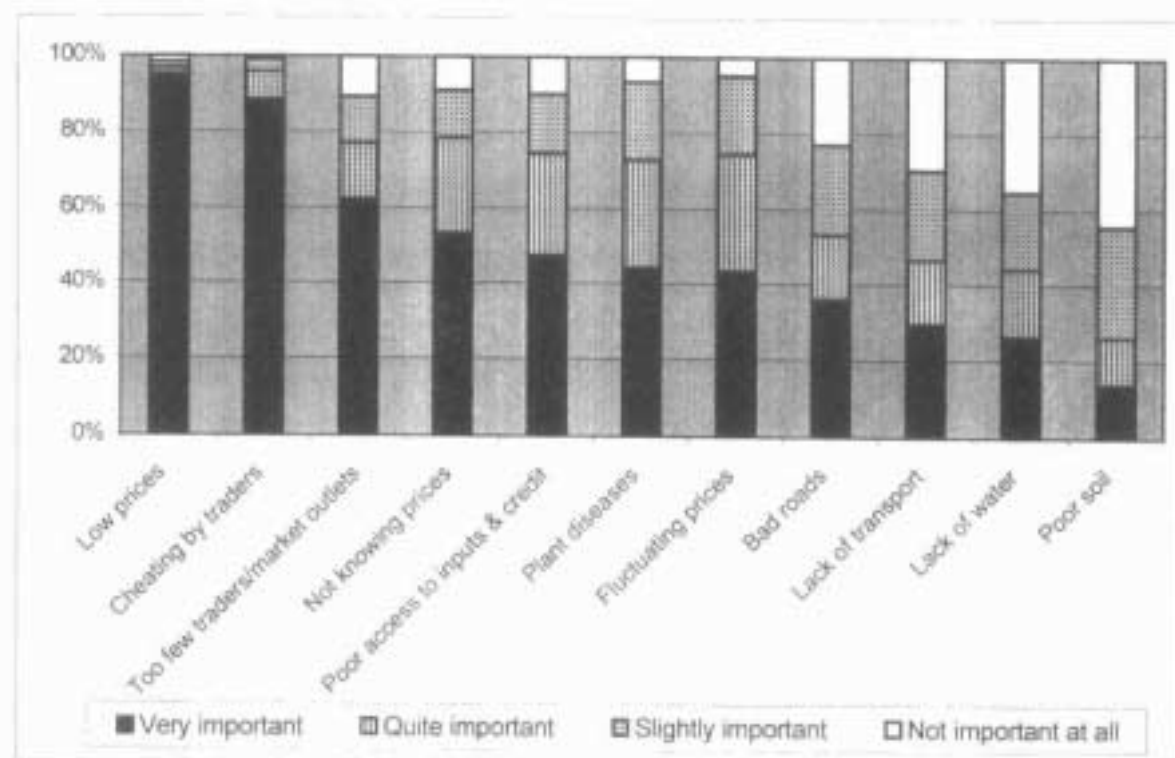
#### 6.4.2 Credit to traders

On the other hand, the practice of selling produce credit by farmers to traders on credit was very common. An overwhelming majority of vegetable farmers (114 or 93.4 percent) acknowledged that on occasions they gave their produce to traders on credit.

#### 6.5 Risk factors

There are a number of risk factors in vegetable production and marketing. These include low prices, fluctuating prices, lack of knowledge about prices, few traders and lack of alternative markets, cheating by traders, lack of water etc. The ranking of these risk factors in order of importance is given in figure 6.1:

**Figure 6.3** Relative importance of risk factors

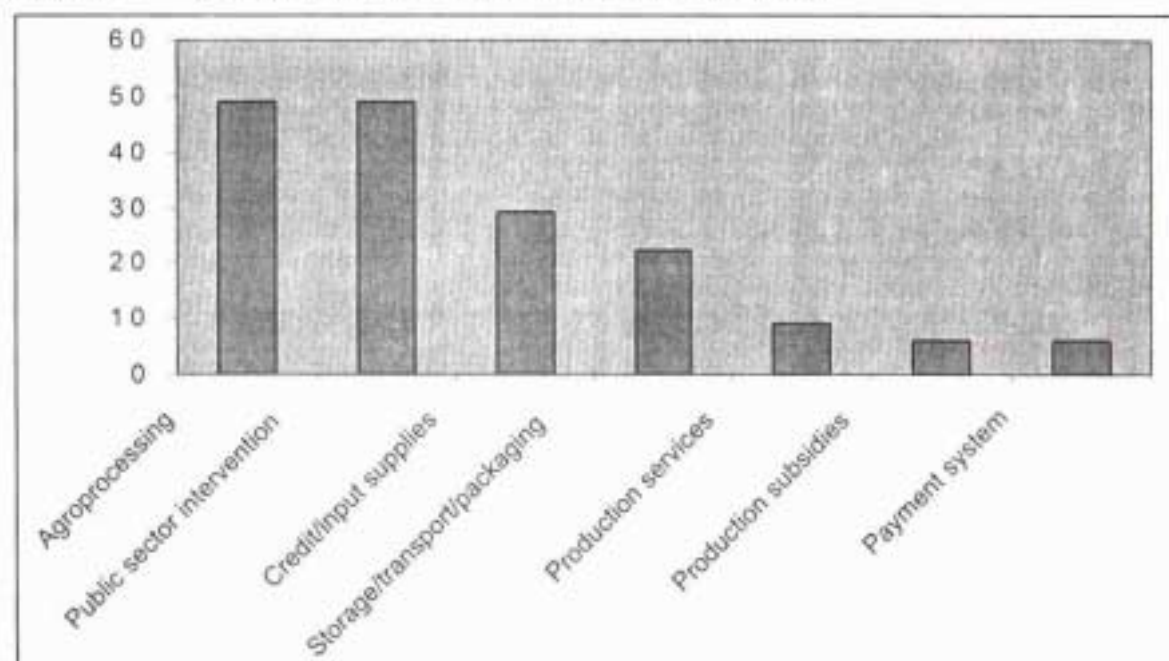


It is not surprising that low prices were the major preoccupation of producers. After low prices, vegetable farmers were most worried about cheating by traders, which was the most important risk factor for 88.5 percent of farmers. Lack of a competitive product market and poor current price information followed. Fluctuating prices were of lesser importance. Poor access to input and credit markets was cited as the next most important risk factor. Production factors such as diseases, availability of water and soil quality were relatively unimportant. Again not surprisingly, post-sale factors - poor roads and lack of transport - were also unimportant to producers.

## 6.6 Marketing improvements

Finally, when invited to suggest ways in which vegetable marketing could be made better and easier, farmers' responses fell into a limited number of categories<sup>21</sup>. Answers recorded here are those in addition to statements about reducing costs, improving prices and making buying more competitive by increasing the number of buyers (figure 6.4):

Figure 6.4 Marketing improvements – number of responses\*



\* n = 122

Processing was rated highly as a means to increase market outlets. Secondly, there was a strong expectation that government intervention might improve producers' positions. This applied in certain cases to agroprocessing: the government should set up a processing industry; government should also buy vegetable products in bulk and encourage vegetable exports. Subsidies to producers were specifically cited by a small number of producers. There were indications that credit and inputs supplies were wanting, and that there were potential improvements to the functions of storage, transport and packaging of produce. Finally, improvement to the payment system was cited by a small number of producers: institutional mechanisms were suggested to ease the payment problems, register buyers and encourage cooperation in marketing.

<sup>21</sup> At this stage, a measure of interviewer bias was noted. There was a high response rate concerning state-managed export support in interviews conducted by one interviewer.



## **7 CASE STUDIES AND INTERVIEWS**

### **7.1 *The Offuman case: a successful farmers' organisation***

#### **7.1.1 Introduction**

The Offuman Garden Egg Farmers' Association was established through Tom Ahima, the 1987 national best farmer. The leadership role played by Ahima was formative, as was to a lesser extent that played by the late chief of Offuman, who was also a garden egg farmer. Ahima currently plays a minimal role. However, the group is still strong and there is in place a dedicated executive.

#### **7.1.2 Origin of the group and factors for its formation**

Garden egg had been produced in Offuman for some decades, but not on commercial basis until in 1987 when Ahima and his wife brought some seeds from Yendi. The popularity of the crop in the Offuman area is due to Ahima's interest in helping other farmers in his home area to make a living out of the vegetable. He and his wife started a quarter of an acre farm that yielded so much that they convinced other farmers in their church to go into commercial garden egg production. He first started with seven farmers whom he helped with ploughing, cultivation, chemical and fertiliser application, transplanting and other extension services. Gradually more farmers were attracted to the project leading to saturation in the surrounding markets of Wenchi, Techiman, Sunyani and Kumasi. To alleviate the marketing problem, national radio announcements were made which attracted buyers to Offuman from all over the country.

Currently garden egg production has become so popular that there is no home in and around Offuman that does not grow the crop. In order to diversify, farmers are gradually moving into tomato production that is equally lucrative. At the peak of harvest (November) there are about 10 to 15 trucks loaded with garden egg leaving Offuman for Accra, Takoradi, Cape Coast and other destinations in the country each harvesting day.

#### **7.1.3 Group executives**

As more farmers were attracted to the project, the executive positions of the group comprising the chairman, the secretary, the treasurer and the organising secretary were instituted. Their primary function is to regularly negotiate for prices whenever buyers come. The organising secretary is the one who informs the other executives about the arrival of buyers.

#### **7.1.4 Group composition**

The Association comprising of about 400 members has more women than men, in the ratio of 3:2. Though their ages range between 25-40, the men happen to be on the younger side. The group comprises people within about 5-10 km radius of Offuman. The average land size cultivated is about 2 acres. There are those who hold about 6-10 acres and others cultivate as little as half an acre.

#### **7.1.5 Setting of quality standards**

Quality standards are set by farmers and traders together. Farmers always make a conscious effort to produce what the final consumer desires. However the traders also

make suggestions to farmers about quality standards and other requirements. These standards are derived from consumer complaints and from what is grown elsewhere. For example, the original garden egg brought from Yendi had some black markings. Consumers prefer their garden egg plain, and this has led to selection against the marked garden egg. In order to preserve their reputation as high quality producers of garden egg, the farmers make sure that they introduce their fellow group members to any new improved high quality seeds they have come across. This enables the high quality garden egg to be produced in large quantities in order to maintain their reputation and also to attract large number of buyers to the area.

#### **7.1.6 Group functions**

The main function of the group is that of price negotiation with garden egg buyers from all over the country. Whenever the buyers come from Accra and elsewhere, the executives sit with them, negotiate prices, and come to a consensus before asking the farmers to harvest.

In some vegetable producing towns and villages where such formal associations do not exist, some individuals volunteer to negotiate prices on behalf of others. Some of the problems that have come to light in such villages and towns are that, those who volunteer to do the negotiations sometimes (if not always) accept lower prices for others in return for higher prices for their own produce. In Tuobodom, for example, it came to light that some tomato farmers even approach buyers on the way before they get to the town, giving them information on availability of supply, which undermines the farmers' price negotiation efforts. Nothing of the sort was found in Offuman because the executives who bargain for prices on behalf of the group are very committed to the group.

Apart from price negotiations, the group also negotiates for tractor services, beating down prices to the level affordable by each member of the group. The executives also inform traders about the quantity of garden egg that they can obtain from the area and based on this the traders bring the right size and number of bags and vehicles.

The major factor that has kept the group together is marketing (to market cooperatively and also to have market power), but they also thought that belonging to the group gives them some sort of security. The group members realise that it is only through their executives that they can send messages to Accra and elsewhere, informing buyers about supply. Those who do not have the ability to talk prices are covered by the group.

#### **7.1.7 Trading relationships**

The group does well to foster a good relationship with buyers, but sometimes these buyers are guilty of default of payment. Some buy on credit and do not return to the village any more. Some defaulting traders ask relatives or friends to buy on their behalf, as they cannot return to the village.

The Offuman Association deals with other trader groups who are so well organised that, no farmer could by-pass them to sell directly in the markets. Traders sometimes influence farmers to go behind other farmers to harvest when agreement on prices could not be reached. Some traders also try to break the collective commitment of the group in order to deal with individual farmers directly. Traders sometimes try to lure individual farmers into harvesting quantities in excess of what they (farmers) can store effectively. The farmers are obliged then to sell all harvested produce, which brings down the price. This jeopardises the activities of the group, but in general the Offuman group is so strong that

such occurrences are infrequent.

### **7.1.8 Inputs, credit and information exchange**

Traders bring to farmers for cultivation the seeds of a particular variety they are interested in. A trader may sometimes give a production loan to a farmer, which places an obligation on the farmer to deal with that trader alone. Farmers still maintain the ownership of their farms in the face of huge cash injections by traders.

From the traders, farmers often obtain 'informal' information such as preferred varieties and knowledge of market factors such as planting times and types of garden egg grown in other production areas. The Association executives inform buyers about estimated level of supply so that traders can bring their vehicles and bags according to supply conditions.

### **7.1.9 So what is the success story?**

#### *Training in production techniques*

Mr Ahima stated categorically that the success story of the group began from the day one. The farmers were organised and trained on nursing and transplanting techniques, especially cultivation in lines.

#### *Input supply*

They also recommended and brought the appropriate fertiliser to the village so that farmers did not have to travel out of Offuman to buy their inputs. Farmers now are so experienced with garden egg production that they do virtually everything by themselves.

#### *Results: commercial enterprises and infrastructural developments*

The successful take-off of the group, coupled with the popularity of garden egg in the area, have led to opening of shops to sell to farmers fertilisers and other agricultural inputs.

Initially, Offuman had only two vehicles plying Wenchi and Techiman. Now, garden egg farmers own about six tractors and numerous commercial vehicles.

New buildings have sprung up as a result of commercial production of garden egg.

More than 100 members of the Association have made enough savings and travelled to Europe and America to seek economic advancement. In general, the standard of living of the members has increased appreciably resulting in a happy society.

Trying to identify the extent to which Ahima as an individual influenced the group, it was found out that, he set out to do extension work to help his own people by setting an example. Hence farmers from the area drew considerable motivation from him.

It is in no doubt that members of the Offuman Association have benefited a lot from belonging to the group. Some of the sources of this benefit were found to be:

- cooperative and convenient input supplies;
- varietal improvement;
- cooperative product marketing;
- a ready market with remunerative prices;
- increased bargaining power;



- an executive to negotiate prices on behalf of all group members.

It is to be noted that financing production is not a function of the Association. Farmers do not receive any formal production loans, whereas elsewhere (it is asserted) farmers think that anybody who organises them should provide them with money for their farming activities.

#### *Replicability?*

With the advent of the national, regional, and District best farmer awards, farmer groups can be organised around these award winners and other prominent farmers. The nucleus farmer model has been proposed as a means for stimulating group development. However, it is worth noting that Ahima put some resources and his skills in farming at the disposal of the group. Therefore the success of any such groups will at least depend on an individual or two committed to the course of farmers.

## **7.2 The Tuobodom case: an unsuccessful tomato farmers' association**

### **7.2.1 Introduction**

In Tuobodom, it was realised that farmers would only market cooperatively if their production requirements were met as a group. There have been several attempts in Tuobodom by different agencies to form farmer groups, all of which proved futile. The provision of finance was the rationale, summarised by a woman farmer who said 'you can only get farmers together when you promise to give them loans, we have made several attempts to organise ourselves but have failed'.

### **7.2.2 Functions**

In the first place, the Techiman Rural Bank started the group by giving the farmers production loans. The group collapsed when the loan was not forthcoming. The Tuobodom people also complained bitterly about the inability of IFAD'S Rural Enterprise Project (REP) to fulfil promises made to the group. The REP offered a two week period of training to the group with the promise to:

- provide production loans;
- find markets for their tomato;
- provide pumping machines for irrigation purposes.

Failure to keep those promises led to the collapse of the group.

### **7.2.3 Group coherence?**

Currently every tomato farmer deals singly with itinerant buyers. The problem associated with this is that because the farmers compete among themselves to sell their produce, they 'go all out' to meet traders on their way into the village, offering to sell to them. This attitude has a generally downward effect on prices. About a month before the date of the case study interview, the former executives of the dismantled group contemplated putting a committee in place to negotiate prices with itinerant traders on behalf of all farmers in order to stop the varied prices prevailing in the same town.

In spite of the negative experiences of cooperative activity, the people of Tuobodom acknowledged the need to come together and market cooperatively in order to obtain all

the supposed benefits. They stressed that what they are lacking is the source of inspiration which they could not find in the formal agencies. As one member said, there is no commitment on the part of the members towards the group. Also the expectation from the group is mainly financial. They also agreed that they have a problem organising themselves, the nature of which is strictly attitudinal/human.

### **7.3 Traders and their relationships with farmers**

Traders were interviewed in the Dormaa District, Techiman District, Sunyani District, and Makola market in Accra. Two traders also attended the workshop in July, at which one producer was also related to a trader.

#### **7.3.1 Cross-border trade: Dormaa District**

There were virtually no differences in the conduct of business in the domestic markets visited. In Dormaa District vegetable marketing was different because of the cross-border trade in the area. The high quality standards set by the Côte D'Ivoire market were manifest in a stronger trading relationship between farmers and traders. A reason adduced for this is that before traders can meet the high quality standards of demand in the Côte D'Ivoire market, they need to monitor the activities of these farmers.

##### *Variety*

The variety of tomato sent across the border is of a higher quality: more rounded, uniform in size, firmer and with a longer shelf life than the variety that is mainly sold in Ghanaian markets.

##### *Packaging, grading, handling*

The packaging to Côte D'Ivoire is different from that in Ghana. Packaging is done in three different grades on the farm. The traders again open the boxes and regrade at the assembly point, before finally labelling the boxes with the appropriate grades. There are three different grade points of packed fresh tomato into Côte D'Ivoire. The highest grade is about three times more expensive than the immediate grade that follows. This is an incentive for both the farmers and the traders to stick to the quality standards set by the Côte D'Ivoire market.

Unlike the bulky wooden boxes used in packaging and transporting tomato in Ghana, the Côte D'Ivoire tomato is packaged in smaller size cardboard boxes with the grade clearly labelled. These boxes are lighter and easier to handle by the traders themselves.

##### *Pricing*

Unlike for produce sent to the Ghanaian markets, Côte D'Ivoire buyers establish prices based on weights and grades. There are weighing scales on the farms with which farmers weigh their produce to determine price, given the grades. The flexibility associated with this is that, even at the farm gate any quantity can be bought, unlike in the Ghanaian markets where the unit is either a box or a bag full of the produce. Farm gate prices are based on the prevailing prices in Côte D'Ivoire, information that the traders – apparently – are willing to provide.

##### *Clientisation*

There is a great deal of repeat dealing stemming from the fact that the traders are locally based, ie do not travel from outside the region or even the District, to buy these vegetables across the border. The traders almost always buy from the same farmer, unless the



farmer's harvest cannot meet the trader's requirements for the day.

#### *Compliance*

There are isolated cases of breach of contract, where traders (after providing production loans and other finance) lose the harvest because the farmer had sold to somebody else. In most cases the traders provide these resources again in order to maintain a good trading relationship, though there have been some cases involving the police. In order to minimise the incidence of default by producers, traders bear in mind approximate dates of harvest, and go to the farms to make sure their boxes or bags are filled.

Traders are very happy about the absence of problems on the frontier, especially on the Ivorian side, and the lucrative nature of the cross-border vegetable trade.

#### **7.3.2 Local market trade**

There seems to be a closer relationship between the farmers and the rural itinerant trader or the resident trader than with traders from outside the area. Local traders are mostly aware of harvesting periods, because they know when farmers do the planting. That is why most of the local traders, unlike the Accra traders, said they always are able to procure their supplies and therefore do not buy other vegetables. The rural itinerant traders are restricted to their District and are also very loyal to the farmer in their locality and are therefore better informed on planting and harvesting times. Farmers visit these nearby markets with their own produce and receive vital information on prices and supplies prevailing elsewhere. Rural itinerant traders also get information from these farmers about produce availability and prices at the farm gate.

#### **7.3.3 Traders' perceptions**

##### *Default by farmers*

While farmers complained that traders default on payment (buying on credit and never to return), traders disagreed with this notion, and said that farmers do not release their vegetables on credit. Even if they did, they followed the traders to the market, stood by and collected his/her money after the trader had made sales.

Traders said that farmers sometimes cheat, but are quick to say that some are very reliable and are able to fulfil their promises. Whenever farmers renege on their promises, the traders lose not only the harvest, but some also lose packaging materials either because the farmers have destroyed them or discarded them after selling to the highest bidder.

It was alleged that farmers do not only breach contracts or destroy boxes belonging to the traders, but also place very low quality produce (damaged, over- or under-ripe) at the bottom of the containers, which the traders only realise when they reach their destinations. This normally results in losses due to low retail prices. Lack of inspection at the farm gate (cf the case for cross-border trade) may be due to a number of factors:

- the packaging is so bulky that it is nearly impossible to inspect and repackage after farmers have harvested and carted to the assembly points;
- the traders do not have any problems with selling the poor quality/rotten vegetables especially to 'chop bar' owners and other consumers, or use surpluses for seed extraction, and so do not spend the extra time and energy to inspect the quality of the produce;



- the lack of strict quality regulations in the fresh produce trade;
- the perishable nature of the produce does not allow for much postharvest handling.

Meanwhile those traders involved in cross-border trade have found solutions to these problems:

- they are almost always on the farms during harvesting;
- produce is regraded at the assembly points;
- they follow a three grade quality standard (for tomato);
- they use packaging that is easier to handle and also buy only less perishable tomato varieties.

Although they criticise the farmers, some traders also blame fellow traders for inefficiencies and imperfections. They complained about varied prices offered by their colleagues, because they do not have any means of bargaining collectively.

#### *Trade with Accra*

Traders from Accra deal on commodity lines with producing centres all over the country. Barriers to entry are stronger in Accra markets than the District markets. The strength of the long-distance traders, especially those from Accra, lies not in collective bargaining power, for they prefer to operate individually at the farm gate, but in the barriers to entry created by the trader commodity associations.

Clientisation between Accra traders and farmers is reduced compared with the local trade in vegetables. Accra itinerant traders tend to deal with different farmers on each visit. They seem not to be conversant with times that produce is available or ready to harvest, and they make journeys without having prior knowledge. Unlike those close to producing centres, they are not able to time their sourcing accurately and may travel to production centres without getting what they wanted. They move to nearby villages on the basis of local 'tip-offs', but 'most of these informants only deceive them'.

In the event that a trader buys other vegetables instead, the association for which she is not a member, she must resell. The subsequent transfer of ownership almost always is transacted below the farm gate price. For example, if an itinerant tomato trader buys garden egg because she did not get tomato, she will sell to a member of garden egg traders association, most of the time at a loss.

Most traders deal with different farmers on each visit. In most cases the reasons why itinerant traders do not deal with the same farmer is because their regular farmers may not have produce during their time of visit, or if they do not visit as scheduled. Accra traders tend to vary their sources more frequently. One Accra trader from Makola said, 'I do not buy from the same farmer because of previous disagreements, and I also move around in search of the lowest priced farmer'. A Kumasi trader buying garden egg from Abesim said, 'We know the season and therefore come to procure whatever we want; we do not come while produce is not in season'.

Garden egg itinerant traders said that they tend not to deal with the same farmers because the supply chain is slightly different from that of tomato. There are resident traders who normally buy these less perishable vegetables and sell to incoming traders from Kumasi and elsewhere. This longer chain is also found in producing towns close to major markets,

where resident traders buy from farmers to sell either in the nearby market or to incoming traders.

#### *Interlocking markets*

Traders who have been dealing with farmers for long periods provide production loans. Most of the time the request comes from the farmers themselves. Traders have lost substantial amounts of money through this gesture, but this does not deter them from providing these facilities. Other payments made to farmers include those for health, food, and clothing.

Apart from the Ivorian traders for whom a specific variety of tomato is produced, most of the traders selling in Ghana do not specify, but just recommend or suggest the preferred type or variety consumers from a particular market (locality or tribe). Choice of variety is solely at the discretion of the farmer. As a trader put it 'the farmer most of time selects his own varieties, through experience; they know what is good and what will be bought, though we sometimes make suggestions'.

#### *Negotiation*

Traders always try to negotiate price with farmers, but say that most of the time they do not succeed in bargaining up their prices since farmers are said to be adamant when it comes to price negotiation. However, traders are able to influence farmers with whom they have a long-standing supplier relationship, but even if farmers do not compromise on prices. The farmers tend to pre-determine their prices during periods of glut or shortage. Even where farmers are not well organised as a group they at least tend to negotiate prices together. But no matter the asking farm gate price, traders say that conditions outside the farm gate determine the final price: the quality and quantity of vegetable supplies; supply levels in the retail markets; and handling charges from the farm gate to the retail market.

Evidently the presence of traders from Togo and Côte D'Ivoire affect farm gate prices since these traders are willing to pay higher prices to farmers to get the produce.

#### *Losses incurred by traders*

Therefore, the trader is not sure of the final price until she gets to the market and finds the state of the vegetables and conditions prevailing in the market. Favourable conditions mean higher prices, but sometimes the traders even sell below the farm gate price if conditions in the market are not favourable. According to one interviewee, 'We have had instances where groups and individuals tried to help stabilise tomato prices but the nature of the vegetable market does not permit this'.

Several factors contribute to traders making losses: transport accidents which all traders acknowledged to be a source of worry, mainly come from the conditions of the vehicles, and vehicle breakdowns. Theft and tampering occurs during retailing. Since there is much more concentration in wholesaling than retailing, the wholesalers deal with several retailers. Problems affecting wholesalers are delayed payments, refusal to return packaging material (boxes) and sometimes disappearance of retailers who buy on credit. In general the relationship with retailers is cordial. The retailers perform a very important function for the itinerant traders who sometimes transfer ownership to retailers who finish selling before paying the itinerant traders. The retailer and the wholesaler may operate in the same or different markets. Some retailers sell directly in the wholesale market to consumers whilst others move to other markets or different locations in the same market.



## 8 DISCUSSION AND RECOMMENDATIONS

### 8.1 *Highlighted findings*

An account of the important characteristics of and imperfections in the BAR vegetable system is given below, and significant points are summarised in table 8.1. These comments are formulated primarily from the viewpoint of farmers. Traders, however, are important market stakeholders whose own business strategies are constrained by informational imperfections. The relationship is one of interdependence because asymmetries of market information, power, and risk-bearing at certain times during the season tend to disfavour traders, especially those who are based outside the production area.

#### 8.1.1 **Producer characteristics**

It is unlikely that the sample was representative of smallholder agriculture in Ghana generally. However, consistency with other research and validation of the results with stakeholders supports the assertion that the sample is not atypical of the commercially oriented vegetable sector. Regarding sociocultural characteristics, the structural features of the vegetable system are not a problem in general. A potential gender bias leading to enhanced participation by male farmers is probably attributable to traditional household roles (subsistence production, reproductive and labour roles) and differential access to educational opportunities, rather than to specific characteristics of the vegetable system.

#### 8.1.2 **Production and marketing systems**

Vegetable production in BAR is a relatively sophisticated and intensive enterprise. Evidently production conditions can always be better, rainfall more plentiful and better spread, costs lower and returns higher. However, access to production resources is not a major constraint to farmers. The findings indicate that the entry barriers faced by farmers are not specific to the vegetable system, nor can they be overcome by sector-specific intervention.

Production constraints and marketing systems for the four major vegetables vary from one product to another; seasonality and physiological characteristics of production, ripening and perishability impose serious rigidities on production and marketing decisions.

Marketing and business strategies of farmers are generally unsophisticated and passive. Fellow farmers and traders are important sources of information about market prices, notwithstanding the empirical questions about asymmetry and accuracy of information. Local networks are also important for accessing market knowledge about new crops and varieties. Overall, there was greater willingness to share information with other farmers than with traders, and limited access to exogenous information sources.

The potential of the trading system to deliver credit and inputs to farmers is largely unexploited. A major finding is that secure client relationships between farmers and traders are mostly undeveloped. Farmers frequently advance produce to traders on credit and often experience *ex post* payment problems. The costs of transport imperfections such as poor roads, availability of transport and traffic accidents are borne by traders - except where credit is advanced by producers to traders.



Coordination mechanisms to mitigate uncertainty and enhance clientisation can overcome the major informational imperfections in the marketing system. Although there is limited formal cooperation, collective action also has a potential role to improve market coordination.

**Table 8.1** Factors influencing strategies of incumbent vegetable farmers, BAR

Resources	<ul style="list-style-type: none"> <li>• <b>natural and climatic conditions</b> <ul style="list-style-type: none"> <li>– production conditions are favourable, notwithstanding seasonal factors which constrain water supply, cultivation, harvesting and marketing</li> </ul> </li> <li>• <b>factors of production</b> <ul style="list-style-type: none"> <li>– land tenure takes various forms including female ownership and control, and renting is widespread</li> <li>– soil quality and water availability outside seasonal constraints are not limiting factors</li> </ul> </li> <li>• <b>inputs and credit</b> <ul style="list-style-type: none"> <li>– the production system is input-intensive in respect of agrochemicals, potentially compromising long-term sustainability</li> <li>– production is dependent on farm-saved seed, either by the individual producer or by neighbouring farmers; seed quality and varietal choice therefore are compromised</li> <li>– farmers argued that availability of seeds, fertilisers and pesticides is a constraint</li> <li>– use of credit to farmers is very restricted, and only rarely provided by formal sources</li> </ul> </li> </ul>
Personal attitudes, aptitudes and attributes	<ul style="list-style-type: none"> <li>• <b>personal characteristics</b> <ul style="list-style-type: none"> <li>– there is evidence of increasing participation rate of men, and suggestions that young male entry is temporary, with greater use of rented land</li> <li>– female farmers apparently are disadvantaged by traditional sociocultural factors</li> </ul> </li> <li>• <b>wealth and diversity of income sources</b> <ul style="list-style-type: none"> <li>– considerable heterogeneity exists in the scale of vegetable production and in the level of diversification into other forms of agricultural production</li> <li>– considerable diversity exists in levels and sources of income, age and household size</li> </ul> </li> <li>• <b>level of management skills, market knowledge and experiential learning</b> <ul style="list-style-type: none"> <li>– only half of farmers consider that they are well informed about current market prices</li> <li>– most farmers adapt production and harvesting strategies according to historic price information and their own price expectations, but fewer than half keep records</li> </ul> </li> <li>• <b>risk management and cooperative tendencies</b> <ul style="list-style-type: none"> <li>– collective action by producers is an important potential mechanism to increase levels of market knowledge, enhance group solidarity and establish bargaining power</li> <li>– collective negotiation and 'loose associations' permit opportunism by free-riders</li> <li>– mistrust of traders by farmers is pervasive - and sometimes mutual - and centres on default on the terms of exchange, particularly payment problems</li> <li>– farm sales of produce on credit are partly impelled by cash needs, but both farmers and traders engage in unremunerative exchange to maintain the client relationship</li> </ul> </li> </ul>
External opportunities and constraints	<ul style="list-style-type: none"> <li>• <b>product characteristics</b> <ul style="list-style-type: none"> <li>– commodity-specific marketing constrains production patterns and trader activity</li> <li>– grading, quality control, standardisation and packaging are generally deficient</li> <li>– improved vertical coordination and better incentives through clientisation encourages superior production practices, grading, quality control, standardisation and packaging for the Francophone (especially Côte D'Ivoire) market</li> </ul> </li> <li>• <b>physical infrastructure</b> <ul style="list-style-type: none"> <li>– roads and transport are a direct constraint to traders, but only indirectly to farmers who bear extra costs where produce is advanced to traders on credit</li> </ul> </li> <li>• <b>policy environment: incentives and constraints</b> <ul style="list-style-type: none"> <li>– essentially free market and unregulated (with the exception of the transport system)</li> <li>– potential over-use/abuse of agrochemicals is a source of hazard and unsustainability</li> <li>– the extension role of local MOFA is limited to crop-specific knowledge</li> <li>– farmers have unrealistic expectations of public sector intervention</li> </ul> </li> <li>• <b>organisations, institutions and market conditions</b> <ul style="list-style-type: none"> <li>– obstacles to collective action in production and marketing functions can be mitigated, for example by exploiting the potential of the nucleus farmer concept</li> <li>– market power shifts during the season creating farmer-trader interdependencies</li> <li>– infrequent visits by traders reduce clientisation and competition at first buyer stage</li> <li>– informal networks dominate the provision of inputs, information and credit</li> <li>– there is little use of radio and other formal communication media</li> </ul> </li> </ul>

### 8.1.3 Public sector functions

Public information services are not important, except as a minor source of information on new crops and new varieties. There is no evidence that there is current public sector activity in marketing extension or training in improved business practices. Although public sector involvement is limited, nevertheless farmers expect the state to mitigate their marketing problems. The public sector and other formal organisations are likely to be the best source of impartial information on business and marketing, such as record-keeping and choice of alternative market outlets.

## 8.2 Conclusions and recommendations

Various approaches and roles have been identified for private initiatives, NGOs and sectoral associations, commercial interests and local public sector authorities. However, expectations of local government should be consistent with local capacity and should not be raised unrealistically because of decentralisation. Recommendations and issues needing further research are highlighted, specifically about the collection and provision of market knowledge and contractual arrangements to overcome significant informational and other imperfections.

### 8.2.1 Market knowledge strategies

The findings support other empirical research that the primary channels for the provision of price and marketing information to producers are informal networks. However, current levels of market knowledge are judged to be sub-optimal for efficient exchange. Acquisition of information requires active strategies of searching and recording. Farmers can use their own sources of historic price information if they keep records from one year to the next, but it is evident that this is not a popular strategy.

Free-flowing informal networks of community-sourced information are invaluable. However, friends and neighbours alone cannot deliver new, accurate exogenous information on changing consumer preferences, new technologies such as varietal development, techniques for enhanced sustainability, current market supplies and prices and alternative market opportunities. New information sources are required.

*Recommendation: training to build human capital*

*Sources of farmer training about record keeping, business management and active information acquisition should include formal extension activities of local public sector, NGOs and established farmer organisations<sup>22</sup>. Training in business principles should be integrated into school curricula. Relatively high levels of literacy and the reported 'information famine' highlight the training opportunity. Farmer training should also embrace health, safety and sustainability concepts<sup>23</sup>.*

Regarding acquisition of exogenous information, the potential use of radio and the value of satellite telephones were evident. New communication media are increasingly available, and will serve to enhance reliable client relationships. Communities and associations need

<sup>22</sup> Other DFID-funded research has generated a manual for Participatory Farm Management (Galpin, Dorward and Shepherd, 2000). A similar approach could be adopted for post-harvest management practices.

<sup>23</sup> Use of locally generated materials and the potential of the NGO sector for delivery of educational materials are dealt with in depth by Carter (1999).



to be made aware of the potential of private investment in telecommunications such as satellite telephones.

*Recommendation: local FM radio for information acquisition and dissemination*

*The commercial FM 'Radio BAR' should be considered as a potential dissemination mechanism for both daily current price information and other market knowledge. Expert comment from traders about market trends would serve to add context to the data.*

*MOFA should collect current price information in destination markets that can be disseminated by the local radio.*

*Given adequate advertising safeguards, sponsorship by commercial input suppliers is a potential means to provide funding.*

Although existing market information gathering and dissemination process of the PPMED of MOFA are weak and small in terms of coverage, collection of agricultural market information is a clear responsibility of the MOFA under the AGSSIP proposal. Incentives for Radio BAR would be to increase 'listenership' and listener satisfaction. This proposal is closely aligned with the (AGSSIP) recommendation to extend the use of radio to broadcast information through public-private enterprise collaboration.

The Regional Director of Agriculture (BAR) commented favourably on the proposal about information collection and dissemination, emphasising that Radio BAR might need to be 'conscientised'.

## **8.2.2 Vertical trading relationships**

Additional sources of market knowledge include mutual information exchange between farmers and traders. Enhanced information sharing between otherwise competing market stakeholders requires either a high level of trust or new institutional mechanisms to restructure incentives towards the adoption of joint business strategies.

Given trust, client relationships are an institutional mechanism to provide market services and reduce uncertainty. Under current conditions, uncertainty is pervasive, clientisation is uncommon, traders are not the expected source of inputs and credit, and producers (and sometimes traders) either run high marketing risks, or must incur considerable transaction costs to overcome informational imperfections. Under conditions of pervasive mistrust, formal contracts are an alternative institutional mechanism to create information, reduce transaction costs and to interlock information, input, credit and output markets<sup>24</sup>.

What follows is written in part from a UK perspective. At least in UK law, an agreement need not be written for it to be legally enforceable. Contract law is used in two important ways: use may be made of the remedies which the law provides if something goes wrong. But contract law is more commonly used to regulate the relationship between parties to an agreement (Beale and Dugdale, 1975);

<sup>24</sup> The suggestion of instituting written contracts to mitigate mistrust was made independently by farmers who were discussing potential mechanisms for improving marketing in the parallel seminar in Tanzania.

- planning primary obligations in a sales contract, such as the item, price, delivery date, terms of payment;
- formulating mechanisms by which these primary obligations may be adjusted;
- establishing rights of the parties in the event of unavoidable contingencies.

The use of written standard form contracts may furnish two major advantages over verbal agreements. The first is the planning purpose; it may be that the greatest value of standard contracts is to reduce uncertainty by specifying the terms of an agreement by which performance can be measured. Reducing uncertainty will reduce some of the transaction costs faced by both farmers and traders. Certain risks remain, but their incidence on different parties is made clear also by the terms of agreement.

Second, adoption of written agreements may boost the informal economic institutions (in the Northian sense) of business attitudes and ethics. That is to say, the express (and maybe implied) contractual terms will serve to provide clarity that in time may lead parties to adjust their attitudes accordingly and create a business climate more conducive to open exchange. Thus, moral obligation rather than the force of law may obtain. In the long-term, trust would be created between buyers and sellers.

A third point to note is that expectations of the remedial use of contract law should not be exaggerated in the event of non-performance. It may be preferable that certain 'unwritten' trade norms and customary law come into play rather than for parties to have recourse to the remedial use of contract law. Hence the importance of developing moral obligation.

The sum of these advantages will lead to increasing client relationships between farmers and traders, thereby overcoming some or many of the imperfections in market coordination identified in the research, and potentially in other economic sectors and developing countries.

*Recommendation: feasibility study of instituting written buyer-seller contracts*

*A voluntary register of traders and farmers with certification of identity is envisaged, at the Regional or District level. The voluntary characteristic may serve to limit rent-seeking, maintain cooperation and freedom of association. In any event, compulsion may be infeasible. A standards form contract specifying price, quantity, payment terms and possibly delivery dates would also bear authentication of the agent's identity using the certificate of registration. Contracts could be disposed of on fulfilment, but may also serve as a database for improved market monitoring by farmers.*

*Registration could be annual. The holder of the register would probably be MOFA. Enforcement of contract performance could be referred to the current associations, customary and judicial authorities. Independently, MOFA's sanction would be deregistration of offenders. It is not envisaged that offenders would be barred from exchange, but by deregistration offenders would lose authentication of trustworthiness.*

Formalisation of business practices is consistent with the UK Government's policy to improve business procedures and enhance local institutional performance. The former Regional Director of Agriculture (BAR) reacted favourably to the proposal on contracts,

indicating that Districts already had registers of farmers, and that traders' associations already existed. The RDA has since been transferred to Ashanti Region.

Further research is necessary to design and test the feasibility of implementing written contracts. Research should draw on experience with specification norms in the horticultural export sectors (eg pineapples) and in which smallholders already participate. Moreover, advice needs to be taken on Ghanaian contract law, criminal liability and the law of tort. Research should embrace the current formal types of business and contract. This includes the sale of, or the supply of goods on credit, the terms of contracts (particularly the certainty of terms, express and implied), the transfer of property, the performance of contracts, and legal and other remedies.

### **8.2.3 Trade with Francophone countries: enhanced vertical coordination**

The trade with Côte D'Ivoire, primarily of tomatoes is a significant example of enhanced production and marketing practices, and appears to be substantially different from the domestic vegetable system. Trade is much more quality oriented, apparently giving full due to consumer preferences. The traders visit and select the product at the farm, and regrade at the village centre. Quality standards and specifications in respect of product, production and packaging are demanding, and price premia are significant. Traders monitor production and there is a high quality of interaction and collaboration throughout. Offuman and the Francophone trade are illustrations of 'best practice'.

*Recommendation: further research into enhanced business practices*

*A better understanding of the structure of incentives underlying the cross-border trade with Côte D'Ivoire and Togo requires further research. In this respect traders assume more significant functions as suppliers of goods and services to farmers.*

Further research is needed to understand better the cross-border trade out of BAR, in particular the flow of incentives from final consumption to producers underlying the production and handling quality premia. Research into consumer preferences in the major Ghanaian markets and possibly neighbouring Francophone countries is necessary to identify the potential for a vegetable system of higher quality and greater innovation.



## 9 APPENDICES

### 9.1 *An evolutionary perspective on agricultural marketing in West Africa*

#### 9.1.1 Colonial era

Respect for the complexity of agricultural markets and commercial acumen in West Africa has a long history. According to Barrett (1988) the history and thriving nature of West African markets distinguishes the region from the rest of Africa. Functioning markets were reported by Arab travellers as early as the ninth century AD, and the existence of extensive Saharan trading networks linking West and North Africa precedes the period of European colonisation. Trading - including slave trading - was an important activity to a number of European nations in the precolonial period, and the West African trading predisposition was almost legendary. Portugal, the Netherlands, Denmark, England, France established political and economic dominance by turns in different areas. Whether or not local markets preceded or resulted from longer distance trade is a moot point still.

'Gold Coasting' was the early colonial era phenomenon whereby local trader-assemblers were advanced funds and became accustomed to turn over the capital two, three or more times in the interior before rendering account to their foreign trading master at the coast in export goods (Jones, 1974). Writing before the structural adjustment era, Jones noted that 'a dominant theme in the economic history of tropical agriculture during the past century is the increase in exports resulting from the response of African suppliers to increasingly attractive overseas markets....' (p. 5).

The historical intricacies of Ghanaian trade have been revealed, in the case the role of landlords and brokers in the cattle trade through Kumasi, by Hill (1966), and for foodcrops, by Southworth, Jones and Pearson (1979).

Bauer (1991) asserted that in West Africa, a high proportion of the population is engaged in trading and transportation activity, and not just primary economic activity. Small scale and widely dispersed production, long distances, poor communications infrastructure, profitable arbitrage opportunities, abundant labour, little capital, few alternative gainful activities conditioned an economy in which tertiary activity was prominent, despite the state of underdevelopment as measured by other conventional criteria.

Bauer interpreted trading as distinctly favourable to development. Writing of the 1940s and 1950s, he argued that the West African phenomenon - and Ghanaian in particular - of trading activity facilitated the development of the production (and export) of major commodities: cocoa, cotton, groundnuts, kola nuts:

'In all of this, the role of traders was crucial..... The traders made available consumer goods and production inputs and provided the outlets for the cash crops. Their activities stimulated investment and production..... Countless people in trading and transport often performed the services usually associated with capital-intensive infrastructure. For instance, human and animal transport, the contacts between the numerous traders, and long chains of intermediaries were partial but effective substitutes for expensive roads and communications systems' (p. 189-90).

Hill's analysis of the development of the Ghanaian cocoa industry is another seminal piece that acknowledged the important role of trading activity in the development of the West African economy.

### **9.1.2 Intervention in agricultural markets**

Control and taxation of long distance trade in Africa had been well-established benefits of traditional authorities long before European occupation. However, an important characteristic of West African agricultural trade in the colonial period that was to persist with calamitous results into the post-colonial period was the creation of marketing boards. Jones argued that the rationale for intervention in agricultural trade through the creation of marketing boards was always clouded (1987). Revenue generation for the colonial powers, securing strategic supplies during WW II, raising farm incomes, and other reasons, were all possibilities.

The West African Control Board, established by Britain in 1942, was the first board in the region. Export crops were the main target, but the management of the strategic stocks of foodcrops came to be seen as advantageous, particularly where there was a vociferous and growing urban population. Monopoly domestic, or foodcrop marketing boards, developed as a means of stabilising the prices of domestically traded goods, usually grain and other staple commodities (Arhin, Hesp and Van der Laan, 1985). Prices were fixed and the boards had monopoly powers, sometimes within specified areas, and private trade in particular crops was prohibited. Activities included intervention buying, storage and fixed prices. Prices were often been the vehicle for implementing government policy on regional development and equity through pan-territorial pricing and the belief in 'just prices'.

Marketing boards were sometimes set up as a response to a perceived lack of marketing facilities such as processing and storage infrastructure. There were complex administrative and technical problems associated with market management and price fixing, and there was a common problem of parallel markets (Jones, 1987). However, West African marketing boards rarely assumed the function of monopolising trade in foodcrops that was characteristic of East and Southern Africa, such that 'informal' trading activity retained its historic pre-eminence.

### **9.1.3 Research in the 1960-70s**

Paucity of information on the organisation of food crop marketing had not prevented politicians and administrators advocating state intervention on the basis of preconceived ideas. Common prejudices about market imperfections concerned: a) a basic lack of organisation of physical market places, and of grading and standards; b) 'imperfections' rooted in African society, notably the exercise of kinship relationships that acted as a disincentive to commercial activity; c) inadequate demand, because of the importance of the subsistence economy; and d) inadequate infrastructure - poor market places, storage facilities, and transport. Exploitation of the 'uncommercial producers' by a marketing élite through restrictive practices were held to be commonplace. This view has been widespread and influential in policy terms (Holtzman, 1989). Other areas where it was felt that governmental services could improve the functioning of the market system were the regulation of contracts, grading and standards and market conduct, the provision of financing, and the collection and dissemination of market information.

To test these prejudices, important studies of staple food marketing in tropical Africa were conducted in the 1960s (Jones, 1972). Jones' field research in Kenya, Nigeria and Sierra



Leone was intended to provide a definitive account of 'price formation, including market information, channels of trade, bulking, transporting, preservation and storage, contracts, financing, risk bearing, traders' margins, restraints on trade, weights and measures, quality standards, fees and taxes, and arbitrage among markets' (p. 21)

He traced the geographical specialisation in production (commented upon by Lyon) as resulting from the advantages of scale economies in buying, reputation effects, the provision of supporting services such as: food and accommodation for traders, adequate space for buying, assembling and storage, transport services, packing facilities, and the greater fund of market information. Certain large fluctuations in prices he attributed not to lack of information but to interruption of physical flows of goods. He did not regard security of contract as a problem, and the lack of grading and standardisation was much more of a problem to the statistician than to market participants.

Jones argued that in the markets studied, price information was widely known to all market participants, but not from formal information sources:

'public information services were generally lacking, and crop forecasting was almost non-existent. Nevertheless, wholesalers and assemblers seem to have no difficulty in learning about prices in the markets where they customarily trade and they frequently also know what prices are in other markets' (1974: 16).

The lack of facilitatory institutions in the research areas such as grading, standardisation and pricing were overcome principally by establishing a set of trading partners. These relationships were of a personal, kinship or ethnic basis, characterised by mutual interest, manifest by sharing of information and resources. Brokers and commission agents were also important institutions for providing information, acting as guarantors and consummating exchange.

Of the relevant policy implications, Jones disagreed with the orthodox position that the central provision of market information would be relatively easy and cost-effective:

'It is not easy to judge how seriously this unanimous advocacy of regular market news services should be taken. Certain knowledge of prices and supplies is essential .....It is equally certain, however, that knowledge of opportunity for profit is not enough; there must also be the means to take the opportunity' (p. 260).

Physical remoteness and no alternative sale outlets, even in the presence of good information, is one factor that constrains farmers' bargaining power and is important by definition to the rural poorest.

Jones found insufficient evidence to support the allegations of widespread market imperfections, and did not propose extensive state intervention. The general thrust of the analysis was to rely on the existing private marketing system, with a facilitating and regulatory role for the government. He did not reject the possibility of government-supported news services. He proposed departments of marketing, whose role admittedly would be more facilitating than regulatory, staffed with able economists-administrators, including a market research unit to serve both public and private users. Market place price data would be recorded, supplemented by supply and demand information from



cooperating traders and agricultural officers. Dissemination media for market information would be newspapers and radio.

The investigation by Southworth, Jones and Pearson (1979), conducted at the height of state involvement in marketing, marked further questioning of the conventional wisdom about the exploitative nature of marketing. The formal attitude to marketing was described by Timmer (1983: 151-152):

The labels 'middleman' and 'speculator' almost universally carry negative connotations or actual opprobrium. The tendency is too widespread to be attributed wholly to a bad press. In fact, markets do not always function in the best interests of a broad cross section of society, especially in poor countries where communications and transportation facilities are poor, markets are highly segmented, and access for marketing participants is greatly restricted, sometimes to particular ethnic groups. Highly unequal financial bargaining power is often brought to the exchange relationship between seller and buyer. In short, the efficiency and economic gains potentially available from successful market coordination of a society's food system are an empirical issue, not a matter of faith and logic. Because the public image of marketing is so negative, especially in most developing countries, it is important for the food policy analyst to determine how effectively marketing institutions and marketing agents are performing their dual roles of transforming commodities in time, space and form while reflecting relative abundance and scarcity through the price signals communicated to producers and consumers.

The study by Southworth, Jones and Pearson was concerned with food markets in the Atebubu district of Brong Ahafo in Ghana. It was undertaken in the late 1970s as part of a broader project investigating the efficiency of domestic agricultural and food marketing in Africa. It remains a classic example of the approach to market analysis under the traditional SCP paradigm. This market study is also interesting from a policy-history perspective, undertaken before the era of market liberalisation. At that time the development orthodoxy still promoted widespread public intervention into the operations of agricultural and food markets. Viewed from this perspective, this study could be seen as a pre-cursor of the liberalisation movement: the results challenged the prevailing perception of the traditional Ghanaian food marketing system as exploitative and inefficient.

Questions investigated concerned the following elements of the market system structure and conduct:

- difficulties in estimating production and marketed quantities;
- location of the first point of sale;
- different ways farmers sell the various crops;
- the degree of commodity specialisation in wholesaling;
- the tendency towards ethnic domination of wholesaling;
- gender concentrations in different forms of trade;
- the role of traders' organisations or 'companies' and their internal organisation;
- the means of establishing contacts between farmers and traders;
- the necessity of visual inspection of agricultural produce;

- price discovery mechanisms;
- availability of price information;
- the role of brokers.

The writers were sanguine about the results: 'The market system for food crops in Atebubu District is not perfect, but it is sufficiently competitive to prevent traders from reaping excess margins' (p. 193). Buyers and sellers were many, they were price takers, information levels were 'adequate to obviate collusion' but 'could certainly be improved upon', and entry was free.

#### **9.1.4 Changing perceptions of market performance**

The policies of the new governments in the post-colonial era to the development of the agricultural economy were formed on the basis of assumptions that marketing systems were 'inefficient, disorganized, unresponsive and oligopsonistic' (Southworth et al., 1979: 157).

Jones (1984) summed up the previous two decades of research:

'The notable finding of recent research into private marketing of agricultural products in tropical Africa is that most of what was said about these markets a generation ago was wrong, but the word seems to have taken a long time to get around. African markets are not disorganized, African farmers are not unfamiliar with commercial activity, and African farmers do not respond perversely to prices. Nor are African farmers improvident. Most marketed food crops are grown by farmers who sell only part of their crop at harvest, holding the rest for their own consumption, for operating expenses, and for seasonal price rise. African farmers know what current market prices are and rarely are limited to only one or two prospective buyers. Private marketing is generally competitive and affords farmers a rather high share of the consumers' dollar while assuring supplies to urban areas at reasonable prices. This is all the more remarkable when account is taken of the physical obstacles that private merchants must overcome.....' (p. 117)

He cited obstacles such as low population densities, poor roads and transport services, language and cultural barriers, minimal specialisation in food crop production, atomistic and ill-educated trading communities, and poor market place infrastructure. Notwithstanding, 'Students of private marketing systems in tropical Africa in the 1960s and 1970s have been impressed with how well they operate despite these difficulties of space, demography and technical development' (p. 117).

Nonetheless, among the imperfections to which Jones referred was the lack of reliable information on crop supplies and requirements. Moreover, the ability of market participants to respond to trading opportunities required both market access and financial resources. West African traders have developed various arrangements to overcome problems of information and response through trading partners, couriers, letters, posted information, and brokers.

Jones argued that the collection and dissemination of crop data is costly and unreliable. Price data are 'easy to learn' and the collection and dissemination data on the general level of prices was feasible. Public collection of daily price data, however, was likely to be costly and ineffective, and dissemination untimely. Traders, brokers and agents would be



the best way to obtain reliable information about different prices. Trading partnerships, in fact, were the main source of information for traders, as well as a means of market access and guarantee against opportunism (cheating).

It is worth noting that Jones' comments about the effective and efficient organisation of trading referred mainly to inter-trader relationships. On the one hand, he commented that farmers are not unfamiliar with commercial activity, and know what current market prices are, rarely are limited to only one or two prospective buyers, and receive a rather high share of the consumer price.

On the other hand, less attention was given to the producer-trader interface. Elsewhere, producer margins have been compared unfavourably with those in others geographical regions (Colman and Young, 1989). For example, Pinstrup-Andersen (1997) asserted that 'As a result of inefficient markets and poor infrastructure, the cost of bringing food from the producer to the consumer is very high in many low-income countries, particularly in Africa' These generalisations warrant further investigation, especially where production is remote.

Other analysts also adopt a more reserved position on the producer-trader interface:

'Market conditions can typically be assessed fairly readily by buyers and sellers within localised market areas, but knowledge of price and volumes in other markets is often available to only a few people and closely guarded by them. Farmers and small traders with good private communications systems to other markets can thus realize sizeable gains from arbitrage opportunities. The uninformed farmer and small trader are then at a relative bargaining disadvantage' (Holtzman, Martin and Abbott, 1988: 40).

Wenner (1993) agreed that developing countervailing bargaining power of small producers vis-à-vis wholesale traders and processors, and improving market information throughout the chain are important areas whereby needed reductions in transaction costs can be achieved. They concluded that research is needed to explore the most effective balance of private and public sector involvement in the dissemination of market information.

#### **9.1.5 Changing perceptions of state intervention**

In reviewing the options for the provision of marketing services, Jones concluded that a national trading company built around existing marketing boards could contribute effectively to increasing inter-market arbitrage and integration. However, the evolving experience of state involvement during the 1980s continued to be discouraging. These criticisms levelled against private traders came to be directed with even more force at the marketing boards which had been envisaged as the solution to the problem of exploitation of smallholders by trading intermediaries. On the whole the performance of marketing boards was a gloomy one, and foodcrop marketing boards faced more problems than export marketing boards (Arhin et al., 1985).

In particular, pricing policy problems for foodcrop marketing boards were made more acute by the need to take into account the relative factor price changes, inflation, the prices of substitute crops, production costs varying over wide areas with different production practices. The cost of marketing board and policy failures and inefficiencies has been enormous, contributing greatly to the crises that precipitated structural adjustment.



The need for reform of the operations of marketing boards, if not of the whole concept, has been integral to adjustment policies. Reasons advanced by Jones (1987) to explain the persistence of marketing boards in the face of extensive criticism, were that institutional inertia prevented change, boards were still perceived as a means of maintaining political stability and national unity, they could still have an effective role in mitigating disaster, and they might still serve as a vehicle for targeting assistance to the poor. Reducing the scope of intervention was necessary, according to Jones, but there remained tasks that might still properly be the role of state marketing departments emerging from refurbished marketing boards: 'A task of unparalleled importance is the provision of public information.....' (1987: 393) He envisaged data on areas cultivated, crop conditions, size and timing to harvest, movements to markets, and prices in major terminal markets, collection and dissemination of which 'would be a relatively simple matter' (p. 393).

Abbott among others reviewed the reasons for undertaking reform of marketing and related services to agriculture in Africa and the need to move towards more competitive marketing systems (1987). He argued that reform would entail reducing the role of the boards, but retaining a professional unit located at an appropriate place in the public administration with responsibility for maintaining, among other things, market information services. While expertise was considered to be a constraint, other resources such as finance and infrastructure with which to fulfil this role were not mentioned.

As adjustment and liberalisation policies were being adopted in many developing countries during the 1980s, Reusse (1987) foresaw a strategic role for the state in improving market information flows. He argued that improvement in marketing transparency was probably the most important single element in promoting a competitive marketing system. Citing FAO recommendations, he envisaged the collection and dissemination of national market news at different points in the system, information on grading effects, stocks and export performance.

He was optimistic about the results of this provision. Apprised of these data, plus informed discussion of the reasons of the current supply and demand balance, and possible future trends, farmers and traders would be able to manage stocks and release supplies onto the market in optimal fashion. Dissemination of such market intelligence would have two further positive effects: it would ease the anxieties of consumers and calm the price climate in the event of scarcity, and also constrain the power of the oligopolistically-inclined market participant.

Reform of agricultural marketing has formed an important part of structural adjustment policies, adoption of which has been so forcefully urged by international institutions. Kydd and Spooner (1990) reviewed the arguments underlying the need for reform of the agricultural sectors of many Sub-Saharan countries, and explored the linkages between structural adjustment policies and the liberalisation of agricultural marketing. They identified Ghana<sup>25</sup> and Tanzania as strong reformers, and Zimbabwe as a weak reformer. They foresaw an enhanced role for the private sector, including the provision of market information (p. 70), but also envisaged that governments would need to be instrumental in developing an active and competent private sector, with an important role in ensuring a free flow of market information (p. 75, 77).

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<sup>25</sup> Ghana's example has recently been upheld as a case 'consistent with international development goals' (Department for International Development, 1998b: 3).

Yao (1991) also reviewed the background for reform, the pressures for change, and issues about the timing sequencing and pace of reform. They identified different patterns of reform, from the redefinition of parastatal roles through a range of more radical changes including abolition. The nature of the policies being adopted depended partly on the assumptions about the capacity of the private sector to respond and the estimate of risk of failure in unprofitable markets, the importance accorded to social or 'public' objectives such as stockholding), the existence of scale economies, and the danger of an emerging privatised monopoly.

They argued the case for selective intervention, identifying three broad groups of reforming countries for whom policy prescriptions should be tailored differently. Much of SSA they judged to be 'Type 3 economies' in which reform would necessarily proceed slowly, and the adjustment process would be the most costly, complex and difficult to manage. One of the priorities for such countries would be to facilitate the development of information networks (p. 87).

Evidently there is no general view about the role of the reformed state in information provision for the agricultural sector. According to DFID (Department for International Development, undated), whether or not a country has a public information system and statistical service in place to transmit price and planting information at the appropriate level is one element in deciding what is the appropriate role of the state.

## 9.2 Formal survey: producer questionnaire

Date: ..... Enumerator: .....

Horticultural Market Information Constraints, Brong Ahafo

Household Questionnaire

Village: ..... District: .....

Miles to tar road: ..... Miles to nearest telephone: .....

Respondent's name: .....

Section I: Household Identification.

1. Gender
2. Age (years)
3. What level of education have you completed?
4. How many people live in the household?

Section II: Resources

5. What is the average distance from the vegetable plots to the centre of the village?
6. How many plots belong to:
7. How many acres do you rent?
8. How many acres of vegetables did the household grow in 1998 (fill table below)?
9. How many acres in total of other crops did you grow in 1998?
10. What year did you start selling vegetables?
11. How many different sales of vegetables did you make in 1998?
12. Why are you interested in vegetable production?
13. How much money did the household earn in the 1998 season from different vegetables?
14. How much income was earned in 1998 from other sources?
15. Where did you get inputs such as fertilisers and seeds in 1998?
16. What type of irrigation water do you have access to?
17. To whom did you sell horticultural products in 1998?

Section III: Information strategies and market knowledge

18. Do you keep records of your business (e.g. inputs, purchases, crop sales, credit, etc)?
19. If not, why not?
20. How well do you know about the prices in the market?
21. If you know, how do you learn about supply, demand and market prices?
22. How do you learn about new crops and new varieties?
23. Do you normally share information on crops and prices?
24. How often do you listen to the radio?
25. Do you plan your planting and harvesting activities to avoid low market prices?
26. If so, how?
27. What factors influence the choice of varieties that you grow?
28. Have you ever decided not to harvest because prices are low?
29. If so, how many times?

Section IV: Reputation and trust

30. In the 1998 season how did you negotiate the sale of crops?
31. In 1998, how many traders came each week for purchasing vegetables?
32. How often in 1998 did traders buy more than one type of crop?
33. In 1998, where did you negotiate prices?
34. In 1998, where did you deliver the product?
35. Do you have problems being paid by the traders?
36. If yes, why?
37. Do you ever choose not to sell to a trader?



38. If yes, why?
39. Do you sell to the same traders each year?
40. If the same, for how many years have you dealt with this/these traders?
41. If not the same, specify reasons:
42. In 1998, did you get credit?
43. If yes, in what form?
44. From whom?
45. Do you ever give produce to a trader on credit?
46. Please rank the following risk factors in importance:
47. How do you think that marketing your produce could be made better and easier?

### **9.3 Case studies of successful producer organisations**

- Origins of the group and conditions enabling its formation
- Organisational style and 'constitution' - if organised
- Socioeconomic composition
- Group functions
- Vertical market linkages to traders
- Range of product, infrastructure, policy and market conditions
- Perceived advantages
- Long-term group expectations

### **9.4 Traders' interview schedule**

Name, gender

Location

The size of their operation

History of business development and accumulation

(How) do you cooperate with other traders?

Do you always buy from the same farmers?

Do you provide credit services to producers?

Do you always find the produce that you want?

Do you sometimes buy other goods if you cannot buy what you want?

Do you ever suffer losses through transport accidents?

Do you ever suffer losses due to low retail prices?

Do they specify quality and varietal characteristics?

Do the farmers ever cheat you?

Do you ever lose your packaging materials?

Do you ever go back to a farmer and (try to) renegotiate prices because of problems?

Do you ever decide not to buy from a particular farmer?

(How) do you cooperate with retailers?

What are your sources of market information about prices, demand characteristics?

What changes would improve your business?

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