

## CHAPTER ONE

# Cash Cropping, Price Instability and Household Coping Strategies

### Introduction

Agriculture forms the main component of the economies of the less developed countries of Asia, Africa, and Latin America. In these countries, a prevalent form of agriculture is the cultivation of cash crops, such as cocoa, rubber, oil palm, coconut, coffee, tea, banana and plantain, pineapple, tobacco, cotton, grains, pepper and many others. Cash crop here means a crop sold for cash (Maxwell and Fernando, 1989:1678). This common-sense definition refers to all marketed surplus at the household level as well as crops sold abroad. The aim of cash cropping differs from subsistence activities. The overriding objective of subsistence production is to produce enough for the households' daily sustenance. By contrast, in cash cropping activity, a significant part, if not all, of production is for sale. In other words, cash crop production provides households with an important source of cash income, which is then used to pay for food, to meet household medical and children's educational expenses, to buy other basic essentials, etc. The development of commercialization has impelled peasants in the less developed countries to change from subsistence to cash crop production.

### The Transformation to Cash Cropping

The transformation to cash cropping may be a selective or planned change (Rogers & Shoemaker; 1971: 8). In selective change, the adoption of cash cropping by households is spontaneous and selective, that is, based on their needs and initiatives. On the other hand, a planned change is initiated by outsiders who, on their own or as representative of change agencies, intentionally seek to introduce cash cropping to the peasantry to achieve a defined goal. The underlying objective of this type of planned change is to increase or improve the household's incomes (and consequently the socio-economic status) through the increase in yield or production. Generally, the transformation involves the gradual or drastic change from traditional subsistence activities into cash crop production, which often implies the adoption of inputs such as fertilizer, agro-chemicals and new technology

or improved agronomic practices. This planned change has been enhanced by the adoption of a number of strategies.

The strategies for planned change may be broadly categorized into four approaches namely (a) land development, (b) *in-situ* agricultural development, (c) social and institutional development, and (d) regrouping villages and urbanization of rural areas.

### **Land Development**

Land development may be categorized into two types. The first refers to land settlement schemes where uncultivated lands are developed to resettle a certain segment of the population in a planned and coordinated manner. The aim of such land development schemes is to improve the quality of life of settlers in the new environment. The term land settlement scheme is synonymous with 'land resettlement scheme.' According to Hulme (1982: 21) this type of planned change has been used as a rural development strategy throughout countries in the Third World.

The second type of land development is *in-situ* land development. *In-situ* land development makes use of the unused or underutilized land for cash cropping purposes for the benefit of landowners without jeopardizing their rights of ownership to such land. *In-situ* land development brings projects to areas where there are already people inhabiting or cultivating on them, instead of bringing people to projects in land settlement schemes. *In-situ* land development may take many forms such as drainage and irrigation schemes, the adoption of Integrated Agricultural Development Project (IADP), and so forth.

Usually, land development schemes are organized either on an estate or plantation scale or centrally managed under the group farming concept. The schemes are provided with basic social facilities and other modern amenities as pointed out by Emrich (1973), Shamshul Bahrin and Perara (1977), Reining (1982), Overton (1987, 1988), King (1988), Shamshul Bahrin and Lee (1988), and Abdul Rahman and Hoh (1989). The aim is to facilitate farmers to practise commercial agriculture effectively through the cultivation of cash crops such as rubber, oil palm, cocoa, coconuts, tea, etc.

### ***In-situ Agricultural Development***

*In-situ* agricultural development<sup>1</sup> involves the supervision of planting grants or subsidy schemes and associated research and intensive extension programs (IEP). Conceptually, the subsidy schemes program consists of two components: (a) supply of inputs, and (b) the introduction of cash crops and new technology. Thus the subsidy schemes are considered as an extension tool, including supporting the supply of inputs for the extension program. Basically, these two components are the so called 'commercialization' and 'modernization' intervention package of the *in-situ* agricultural development and the improvement of smallholdings through IEP.

### ***Social and Institutional Development***

The next program of planned change provided by governments in the Third World is through social and institutional development. This program emphasizes on human resource development and the social aspect of the development process. In this regard, effort has been taken to develop the motivation and spirit of self-help and group effort among farmers through training and the development of effective farmers' cooperatives or organization and farmers' institutions.

### ***Regrouping Villages and Urbanization of Rural Areas***

Under this strategy, a number of scattered villages are resettled to form model village in selected strategically located sites. This approach is intended to solve some of the problems connected with low agricultural productivity and the cost-effectiveness associated with providing basic infrastructures, services, and agricultural development to isolated and widely dispersed rural communities.

In brief, due to its wider coverage, the *in-situ* agricultural development and its associated research and extension program have been crucial elements in introducing cash crop production and in the modernization of peasant agriculture in less developed countries. In addition, this approach is complemented by the land development schemes, and regrouping of villages in the rural areas whose overall impact provide only limited coverage.

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<sup>1</sup> This term is coined by King (1988: 227), Cramb and Dixon (1988), and Abdul Rahman Zainal (1989) and is the same as the 'improvement approach' used by Long (1977:145).

## Research Problem

Unquestionably, cash cropping provides farmers with an important source of cash income and is thus essential to the livelihood of the farmers. A nation or state requires large-scale production of cash crops for economic development.<sup>2</sup> The cultivation of cash crops generates food and employment for the growing population, raw materials for the agro-based industries, and balance of payment through exports. In other words, both national governments and the farmers themselves are keen to adopt cash cropping as a means of increasing cash incomes and achieving economies of scale in processing and marketing.

Allocating considerable resources in agriculture (including cash cropping) for economic development involves a number of risks (Mellor 1991: 3-15). Sonka and Patrick (1984: 95-115) have identified several major sources of risk in agriculture. These risks include: production risks, technological risks, legal and social risks, human sources risk, and the market or price risk. The market or price risk is the paramount focus of the present study. Commodity producers are usually exposed to repeated commodity price instabilities or fluctuations. Price instabilities thus pose a serious problem to cash crop producers

## Price Instability

In this study, price instability refers to the tendency for the price of cash crops to fluctuate sharply and unpredictably. Price instabilities are often beyond the control of smallholders and governments. They are an especially great source of risk to smallholders who rely totally upon cash crops for their income and livelihood.<sup>3</sup> Therefore, dependence upon cash cropping exposes smallholders to uncertainties determined by the vagaries of the global market. Although integration and dependency upon the world market subjects smallholders to price fluctuations, they represent risks that one needs to take to make economic gains.

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<sup>2</sup> For a complete discussion and debate on the contributions of cash crops to a nation see for example: Ghatak and Ingersent (1984); Matthews (1988); Maxwell (1988); Maxwell and Fernando (1989) and Myint (1984).

<sup>3</sup> See for example: Abdul Aziz (1988: 3 & 5); Chandra (1989: 61-63); Duncan (1991: 121); Foster (1988: 248); King (1986a: 76); Scott (1976: 58-59); Sen (1981: 126); Thirwall and Bergevin (1985: 812-813); Tisdell and Fairbairn (1984: 240).



### ***The Detrimental Effects of Price Instability***

At the micro or household level, price instabilities have several detrimental effects on smallholders who depend heavily on cash crop production for their livelihood.

First, a sharp decline in the price of a cash crop results in a similarly sharp decline of earnings of the smallholders. Therefore, a prolonged price decline can lead to a situation where smallholders can no longer afford to pay for the rising cost of fertilizers, agrochemicals and other farm inputs or even buy some essential food items. During a slump, prices are too low to provide a decent income to smallholders. As a consequence, they become very vulnerable—causing them to be poorer, more deprived and insecure.

Second, price instabilities can result in earnings or incomes of households to vary considerably over a short time. A high degree of instability in earnings can serve as a disincentive to smallholders. As a result, resources for the production of cash crops may be withdrawn; thus, gardens or farms may be abandoned partially or completely. In addition, new cultivation will virtually come to a halt. Consequently, the output and employment will fall.

Finally, cash cropping may be able to alleviate poverty only if prices are reasonably high and remain uniform, and smallholders are protected from price instabilities. Price instabilities will definitely interrupt their aim to increase their household cash income. Thus, price instabilities do not provide lasting improvement in household cash income and are detrimental to poverty alleviation programs.

Price instabilities and slumps can inflict catastrophic effects upon any economy. One immediate effect is the fluctuation and contraction in the value of export earnings. A massive loss in the value of export earnings is detrimental to the nation's economic growth, since this leads to a reduction in real wages and employment. The heavier the dependence upon export earnings the more serious the impact upon economic growth. The ensuing budgetary squeeze cuts into allocations for infrastructure, human resources development and the overall social services. This can seriously weaken the development process in many commodity-dependent countries (Maizels, 1994).

### ***Causes of Price Instability***

Since this study deals with the responses of households to price instabilities, it is important to understand the causes of price instabilities. There are several causes of price instabilities in cash cropping. First, a price instability might be due to supply variability. Generally, in a purely competitive market, the price of a commodity is high when there is a shortage of supply of that particular commodity. The high demand for an insufficient supply of a commodity causes a sharp rise in prices. On the other hand, the commodity tends to fetch low prices when there is a glut of supply arising from sluggish demand. A surplus of supply is partly due to a very large number of potential producers (both domestically or internationally) producing the same commodity. This is always the case for agricultural commodities. The elasticity of supply for agricultural commodities can also be high. This arises when a small rise in price of the commodity leads to a large expansion in the number of producers. A surplus of supply is also caused, in part, by the high rate of adoption of improved technologies during a price boom. This over-production problem is further complicated by few or limited traditional markets for the same commodity. A limited number of markets means that the accessible saturation point can be reached very rapidly especially if demand remains constant.

There are several reasons why the supply of a commodity varies. The main one is variability in climatic, physical environments, other production conditions and occurrence of natural disasters. This is probably the major source of supply variability for agricultural commodities. Other factors that appear to be important are differences in grade, location, and services associated with the products. There are quality differences in nearly all agricultural commodities. Usually, these differences can be identified, and they provide a basis for separating the commodity into different grades. Each of these grades ordinarily brings a different price and may require different production costs. Another factor is the distance separating a commodity from its final point of consumption. Costs of transporting and selling goods are incurred between the processes of production and consumption. Price differentials due to location approximates differences in the cost of transporting the goods to the consuming points. Another factor evident in recent years is the increased number of services associated with agricultural commodities. Obviously, production of these additional services cost money. With more and more services being

sold with farm commodities, the percentage of money spent by consumers going to the farmer decreases.

Another cause of supply variability arises from variability in price expectations of output. One of the classic cases of price variability is explained by the cobweb theorem (Watson, 1963: 279-283). According to this theorem, the prices and outputs of many agricultural commodities show pronounced cyclical movements over long periods of time. The general trend is that the prices of these commodities rise and then fall, rise and fall again in a continued wavelike pattern. Production or supply of the same commodities has generally moved up and down in counterwaves. A typical complete cycle is depicted below. A commodity price boom, for instance, encourages producers to increase production by increasing the use of inputs such as capital, land, labor, and agrochemicals. In addition, a price boom also attracts an additional number of new producers. This leads to the emergence of new competitors. Consequently, production increases tremendously. This leads to a glut in production, and a price dip will take place. As the price slump continues, producers abandon or curtail production. Then, production will fall drastically causing the price to increase suddenly. A high price entices producers into production again, and again, production increases and thus the price cycle resumes. Examples of these cyclical price patterns are illustrated by pepper and cocoa production in Malaysia (see Figure 1.1 and 1.3). The cyclical price pattern is directly correlated with cycles in production or supply of the commodity. The cycle of production is influenced by at least two factors: (a) the length of production period, and (b) price of the commodity. For example, a commodity that has a short production or gestation period, where producers can get into and out of production quickly, is usually subject to more violent fluctuations in production and prices than a commodity that has a long period of production.

The second notable cause of price instabilities is demand variability. The demand for a commodity may vary over time in a systematic and predictable way; there are two primary reasons why this might occur: (a) income variability, and (b) variability in the price of other commodities. Incomes of consumers vary, for example, over the trade cycle, and this leads to variation in the quantity of the commodity. Variations in the price of a substitute or complementary commodity would bring a corresponding variation in the

supply of the commodity. A classic example of this is the shift in demand for natural rubber arising from the development of synthetic rubber. The discovery of synthetic rubber has depressed the price of natural rubber ever since. Another example is the shifts in demand caused by rising incomes are greater for industrial products than for food and other agricultural commodities. In other words, the income elasticity of demand for agricultural commodities is generally lower than for industrial products. Thus, a shift in demand for other substitutes or goods can lead to a prolonged price slump in some agricultural commodities. In addition, the income elasticity of the demand for agricultural products is usually less than unity. This implies that a ten per cent rise in the level of income does not generate a proportionate increase in demand. Hence with economic growth and a rise in per capita income, the rise in the demand for agricultural products will tend to decline in proportional terms. Furthermore, the price elasticity of the demand for cash crops is also less than unity (Ghatak and Ingersent, 1984: 282). Thus, an increase in supply of agricultural products in the market will reduce the price.

Another important factor in commodity price instabilities is the role of a small number of very large buyers. Monopsony and oligopsony still reign widely in the market for agricultural commodities at both the local and international levels. The local market is controlled by a small number of speculative intermediary buyers or middlemen who exercise excessive exploitation. The market control by monopsony or oligopsony can be attained by markets merging at various levels. The exclusive control of the market by these intermediaries of the commodity makes the fixing of minimum prices possible causing the price to depress or remain low for an extended time. In some instances, these brokers or middlemen make contractual deals with a few selected producers or countries. In this case, the buyer or middleman will state the type, grade, and quantity of commodity to be produced or supplied at an agreed upon price for certain periods of time. This fixing of price by contract is a disadvantage for other producers as prices of the commodity do not vary according to the dictates of market forces as they would in a truly competitive economic system. In other words, these brokers or middlemen are price makers, not price takers and their manipulation is an exertion of control of the market. Thus, in this type of market structure, the commodity producers are generally price takers rather than price

makers (George, 1977: 37). As such they cannot raise the price unless they can exercise monopolistic control in the supply of a particular cash crop.

Finally, greater emphasis and the rapid expansion and development of the non-agricultural sector particularly the industrial sector can also contribute to price instabilities in agriculture. The reallocation of production resources to the industrial sector for its expansion and development or the withdrawal of production resources from the agricultural sector (due to price slump) will result in 'reproduction squeeze' in the agricultural sector. The outcome is the curtailment of production and employment in the sector then followed by corresponding variation in prices of the agricultural commodities.

### **Coping with Price Instability: A Professional Neglect**

The price of commodities determines incomes of households. A prolonged price collapse can do considerable damage to individuals, members of households and their communities by making them economically impoverished or socially dependent. This means that the incomes of the producers are relatively stable when prices of their crops are high or relatively good. Higher and stable incomes would enable the poor farmers to choose and have more of what they want and need. However, as I have already discussed earlier, the markets of these commodities are characterized by interference and by exploitation.

Cash crops will continue to play a very important role in the farming sector for some time to come. This is partly because both national governments and the farmers themselves are keen to adopt cash cropping as a means of increasing cash incomes and achieving economies of scale in processing and marketing. Consequently, price instabilities and their associated consequences will never go away completely. Farmers must somehow survive those years even when their net incomes fall below a certain critical minimum. Under such circumstances they would have to consider the various options available to earn a livelihood. However, success depends very much on their ability to respond to such options. Yet, a price slump stretches each household's ability to respond to these options. A study of their responses to price movements would reveal the coping strategies of smallholders under full range of conditions of risk and stress. In turn,

this would enable us to approximate the ability of smallholders to withstand the vagaries of the market.

Although price instabilities pose a serious problem to cash crop producers, it has received little attention from professionals and bureaucrats. This neglect stems from the common belief that price fluctuations are beyond the control of policy makers or bureaucrats. For the academics, this problem is part of a vicious cycle of greater production chasing good returns that consequently cause a price crunch and production plunge. To them this is only a temporary and passing phenomenon that results from the regular balancing out of the forces of supply and demand in the international market place. This common belief conceals the complexities of price instability and the resultant outcome to the point of diminishing it practically to a non-problem.

Another apparent reason for neglect is the priority of the policy makers, planners and bureaucrats. This group of professionals places a high priority on the planning and implementation of anti-poverty policies and programs. Their main concern is to raise the income of the poor through prestigious projects that emphasize monocropping and large-scale and/or large output but give little or no attention to its consequences. They easily overlook the consequences of price instability and the overall security of smallholders during a price crisis or collapse.

Moreover others, mainly academic social scientists have little interest in issues of this kind. Admittedly, discussions and studies on agricultural and rural development in Malaysia are voluminous,<sup>4</sup> but such discussions and studies have generally focused on issues and directions in Malaysia's agricultural policies, and strategies in rural development. In addition, there are a number of published works and articles by both local and foreign social scientists that offer detailed analysis on the performance of particular development programs in Malaysia, such as the different government sponsored land schemes.<sup>5</sup> Other specific major social studies on agriculture include works by:

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<sup>4</sup> The documents referred to here are: Abdul Majid, Hatta & Mohd. Yusof (1990); Chamhuri & Nik Hashim (1988); Fatimah, Abdul Aziz, Wan & Wong (1989); Jomo (1989); Jomo & Ishak (1986); King & Nazaruddin (1992); King & Parnwell (1990); Mohd. Yaakub (1991); Muhammad Ikmal & Johan (1991); and Ti & Yee (1986).

<sup>5</sup> Examples of these works are: Alladin (1988, 1990); Awang Zain (1986); ; Cramb (1989a, 1989b & 1992); Kedit (1978); Lang (1986); Lian (1980: 1-9); King (1986a: 71-99, 1986b: 53-60, 1986c, 1988: 263-298); Lim (1988: 2-11); Lim & Dorall (1992: 71-118); Majid & Majid (1983: 66-99); Ozay (1982: 340-360); Shamshul Bahrin & Perera (1977); Shamshul Bahrin (1988: 89-128); Shamshul Bahrin & Lee (1988); Shamshul Bahrin, Lee & Dorall (1988); and Sutton (1989).

Freeman (1955); Lim (1976, 1977); Schwenk (1978); Bailey, (1983); Wong (1983 & 1987); Muhammed Ikmal (1985: 101-128, 1988, 1992: 81-114). There are also numerous studies that concentrate on specific cash crops, but they are mostly in the form of conference proceedings, seminar papers and isolated articles.<sup>6</sup> These tend to be about specific technical subjects such as agronomy, crop protection, processing, breeding, production and economics issues. Equally, most macro-level economic analyses, overlook the 'informal economy' in which the poor operate, which is crucial to their survival, and through which they conduct a large part of their livelihood.

As I will discuss in the literature on household responses to crises, there is, to the best of my knowledge, not a single study that examines household responses to price instability crises (see Table 1.5 below). Rather, the bulk of research is concerned with household responses to crises generated by food shortages, famine and poverty following seasonal drought and other uncertain circumstances. Geographically, the literature skews toward West and East Africa and the Indian subcontinent where published postwar empirical studies of famine have been done. Therefore, the focus on price instability and household coping strategies fills a void.

## **The Importance of Cash Crops in Malaysia**

In Malaysia, the cultivation of cash crops started more than a century ago. In some states, cash cropping had begun as early as the 1870's. Literature on the early development of cash crops (such as spices, sugar cane, coffee, tobacco, coconut and rubber) in Malaysia is abundant and needs not be repeated here.<sup>7</sup>

After Independence in 1957, the government laid considerable emphasis on the cultivation of high yielding rubber and other cash crops. By 1970, Malaysia became not only the world's leading exporter of natural rubber but also palm oil. Subsequently, Malaysia also became the world's leading cocoa producer. This is the direct consequence of the diversification policy pursued by the government after Independence. As we will

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<sup>6</sup> See for instance, Anuwar Mahmud & Abdul Halim, (1984); Bong C. F. J. & M. S. Saad (1986); Hashim (1994); Ibrahim M. J. Musa & Shaaban (1984); Lai & Nurjayadi (1994); Mohd. Yusof Ibrahim, C. F. J. Bong, & I. B. Ipor (1993); Also see Antonio J. Guerrerrio (1988); ; B. G. Grijpstra (1978); Chua & Wong (1981); Erik Jensen (1974); Harcharan Singh Khara (1975); and H. H. de Groot, M. Noltén & J. van Troon (1989).

<sup>7</sup> See for examples: Chew (1990); Cramb (1988); Dalton (1912); Jackson (1968a & 1968b); Lim (1976); Lim (1977) and Voon (1976).

observe shortly, these cash crops have been the driving force behind the growth and development of agriculture in the country. Other minor cash crops include: coconut, pineapple, pepper, sago, tobacco, coffee, tea, sugar cane, fruits and vegetables.

*Table 1. 1: The Importance of Cash Crops in Malaysia: Total Land Use, Export Volume and Value, and Employment Content of Each Crop by Selected Year.*

Year & Selected Indicators	Cash Crops									
	Rubber	%	Oil Palm	%	Cocoa	%	Coconut	%	Pepper	%
<b>Total Area in Hectare and</b>										
1960	1,548,300	96.4	54,656	3.4	-	-	NA	NA	2,990	0.2
1970	2,019,400	86.9	290,967	12.5	7,381	0.3	NA	NA	6,387	0.27
1980	1,999,300	56.5	1,023,306	28.9	138,302	3.9	354,500	10.0	14,293	0.4
1990	1,932,900	41.0	2,029,464	43.0	415,628	8.8	315,481	6.7	11,467	0.24
1992	1,807,000	38.4	2,167,396	46.1	388,700	8.3	315,925	6.7	11,267	0.24
<b>Export Volume ('000 tons)</b>										
1960	838.8		NA		-		NA		4.1	
1970	1,324.1		402.4		30.6		47.5		26.1	
1980	1,530		2,576		37		62.5		31.7	
1990	1,291		6,095		247		55.7		31	
1992	1,218		6,373		220		66.4		26.1	
<b>Export Value (Million RM) *</b>										
1960	1,828.7	93.0	61.0	3.1	-	-	58.5	3.0	17.2	0.9
1970	2,031.1	77.8	264.3	10.1	162	6.2	49.7	1.9	59.1	2.3
1980	4,618.0	57.7	2,928.7	36.6	202.2	2.5	100.1	1.3	107.7	1.4
1990	3,026.6	32.3	5,337.7	56.9	755.0	9.4	57.4	0.61	117.6	1.3
1992	2,357.2	24.5	6,367.5	66.3	641.3	6.7	103.1	1.1	53.9	0.56
<b>Employment</b>										
1980	152,218*		92,352*		4,091 <sup>c</sup>		4,648 <sup>d</sup>		30,600 <sup>e</sup>	
1990	98,207*		115,285*		56,424 <sup>c</sup>		2,476 <sup>d</sup>		56,000 <sup>e</sup>	
1992	76,112*		NA		NA		NA		NA	

Source: Ministry of Primary Industry, June 1993

Percentage is based only on the total for these cash crops: rubber, oil palm, coconut, cocoa, pepper and pineapple

\* Not including about 500,000 smallholder families

<sup>b</sup> Not including some 72,000 households in the public sector land scheme

<sup>c</sup> Only estate workers under direct employment and contract employment

<sup>d</sup> Employment in estates only in Peninsular Malaysia

<sup>e</sup> Number of smallholder families

<sup>f</sup> Not including some 3,500 smallholder families, NA means not available

The importance of cash crops to Malaysia's economy may be seen from the following: (1) the total area of agricultural land use, (2) export volume, (3) export earnings, and (4) employment content. Table 1.1 above clearly shows that the three most important cash crops of Malaysia are oil palm, rubber and cocoa. The less important crops are coconut, pepper and pineapple.

Rubber has dominated Malaysia's agricultural land use for at least three decades: the 1960s, 1970s and 1980s. The percentage share of land use for rubber at the beginning of each decade were 96.4%, 86.9% and 56.5% respectively. However, by the beginning of

\* All the currency used in this study is Malaysian ringgit unless other wise stated.



the eighties total land under oil palm increased dramatically to 28.6%; and by 1990, its share reached 43.0% and had overtaken rubber (41.0%). Overall there is a tremendous rise in the land area devoted to oil palm, cocoa and pepper (Table 1.2). By contrast, the area under rubber and coconut has declined gradually since 1960. Even so, by 1992, the total land area under rubber and coconut is still quite extensive: 1,807,000 and 315,928 hectares respectively.

Although there has been a steady decline in the export volume of natural rubber since 1960, it continues to contribute much of the value of total agricultural exports up till this day. In 1992, rubber still contributed 24.5 per cent of agricultural export earnings (24.5%) even though its share had declined since the 1960s, palm oil is in the largest agricultural export earner (66.3%). Cocoa, pineapple, coconut and pepper have also shown some significant increase in their shares of export earnings, even as they fluctuate from time to time, indicating cyclical price instabilities.

Finally, in terms of employment, oil palm, rubber, cocoa, and pepper are the largest providers of employment in the agricultural sector. In 1990 alone, the number of smallholder families employed by oil palm, rubber, cocoa and pepper subsectors amounted to 115,285, 98,207, 56,425, and 56,000 respectively (Table 1.1). As may be expected, the employment contribution of the rubber subsector has declined, whereas the oil palm and cocoa subsectors have increased. The employment content of the pepper subsector tends to vary positively with the volume of production and the price variations (see Table 1.2).

Taken as a whole, the contribution of the agricultural sector to the country's GDP, employment and export earnings have declined, but remain considerable.<sup>9</sup> For instance, in 1960, its contribution to GDP, employment, and export earnings amounted to 37.9%, 58.7%, and 66.3% respectively; but in 1990, it contributed 18.6% to the GDP, 27.8% to employment, and 22.2% to export earnings.<sup>10</sup> This trend underscores the growing importance of manufactured products in total exports.

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<sup>9</sup> For detail accounts of this see Awang Adek Hussin (1992); Fatimah (1992: 67-80) and Mohd Sheriff (1989: 11-34).

<sup>10</sup> See Awang Adek Hussin (1992: 2).

## Important Cash Crops in Sarawak

The cash crops grown in Sarawak are very diverse, namely, sago and coconut in the coastal zone and rubber, pepper, cocoa and oil palm in the inland areas. Pepper cultivation in the state begun more than a century ago while rubber only started after 1910. By contrast, oil palm and cocoa are relatively new cash crops, and cultivated on a large scale only in the 1970's.

As can be seen from Table 1.2 rubber, pepper, oil palm and cocoa are the four most important export earners for Sarawak. In 1992, they contributed 7.5%, 14.4%, 43.7% and 8.9% percent share of the total agricultural export value respectively.

### Rubber

Rubber is predominately planted by smallholders of almost every ethnic group throughout Sarawak. In the early years,<sup>11</sup> the adoption of rubber cultivation among smallholders was spontaneous and scattered, that is, especially when prices were high. It was not until Sarawak joined Malaysia in 1963 that the state government made some direct attempts to develop and revitalize the rubber industry. These directed changes include the Rubber Planting Scheme and opening of land development schemes for rubber.<sup>12</sup> The implementation of these two schemes has been an important factor in encouraging the opening up of new areas with high yielding rubber by the smallholders.

In 1992, the state had a total 217,318 hectares of land cultivated under rubber. Of this total, about 211,140 hectares (97%) were in the smallholding sector. The area planted by estates was 826 hectares while the area classified under such public land schemes stood at 5,415 hectares.

More than half of the smallholders' rubber gardens are old<sup>13</sup> and poorly planted from unselected seedlings, grossly under-maintained and have long passed their optimal tapping age. Low productivity and unattractive rubber prices have led to low tapping

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<sup>11</sup> This was before the introduction of the Rubber Planting Scheme in 1956. This scheme was under the supervision of the Department of Agriculture and continued after Sarawak joined Malaysia in 1963 but renamed Rubber Planting Scheme 'A'. The state government suspended the scheme in 1972 because of unfavorable market conditions and reintroduced it in 1976 under the Rubber Planting Subsidy Scheme (see FAO, 1980).

<sup>12</sup> For the progress report on these schemes see Sarawak Development Progress for the following issues: 1964-1967: 1-4, 1968-1970: 24-26, 45-51. See also for examples: Francis Jana Wan Lian (1979 & 1980) and James C. Jackson (1968b: 94 - 98), for the development and evaluation of these schemes.

<sup>13</sup> This point is supported by the survey data found in Chapter three in a section on rubber as fall-back cash crop.

intensity. In addition, the sale of low quality unsmoked rubber sheets and cup lumps are still prevalent among some farmers. As a result, the returns to farmers have been poor and uneconomical.

In Sarawak, rubber tapping is to a large extent, an activity that is carried out in conjunction with other agricultural activities such as pepper, cocoa or oil palm production.

Table 1. 2: *Export Value and Percent Share of Total Agricultural Products for Important Cash Crops, Sarawak, 1970-1993*

Year	Rubber		Pepper		Oil Palm		Cocoa	
	Export Value (RM '000)	% Share*	Export Value (RM '000)	% Share*	Export Value (RM '000)	% Share*	Export Value (RM '000)	% Share*
1970	23,976	22.5	56,208	52.8	-	-	-	-
1971	16,594	18.5	62,820	70.0	-	-	-	-
1972	14,427	17.4	58,098	70.0	-	-	-	-
1973	56,719	35.6	66,280	41.6	-	-	-	-
1974	50,428	28.5	102,949	58.2	732	0.4	-	-
1975	35,866	22.8	100,938	64.0	3,204	2.0	199	0.13
1976	64,301	28.4	124,499	55.0	8,223	3.6	433	0.19
1977	62,861	23.6	132,745	49.8	20,669	7.8	1,731	0.65
1978	74,044	26.8	131,913	47.7	28,346	10.3	3,322	1.2
1979	88,432	28.2	136,387	43.5	35,604	11.3	4,528	1.4
1980	88,072	29.3	104,033	34.6	34,386	11.4	7,563	2.5
1981	57,578	26.4	81,685	37.4	23,539	10.8	11,689	5.4
1982	24,240	12.0	65,872	32.5	26,432	13.0	14,808	7.3
1983	37,766	15.7	78,299	33.2	36,292	15.4	26,224	11.1
1984	34,766	13.1	79,048	29.9	54,322	20.5	35,962	13.6
1985	27,517	8.8	141,497	45.1	43,691	13.9	49,879	15.9
1986	28,770	7.9	162,547	45.4	32,625	8.9	56,691	15.5
1987	42,894	10.2	162,546	38.6	46,893	11.1	69,432	16.5
1988	78,207	16.4	164,059	34.4	81,367	17.1	64,374	13.5
1989	54,705	12.3	165,450	37.2	87,512	19.7	54,181	12.2
1990	31,944	8.2	117,127	30.1	77,489	19.9	54,278	13.9
1991	28,924	7.7	85,079	22.6	100,974	26.8	50,283	13.4
1992	27,447	7.5	52,829	14.4	127,196	34.7	32,764	8.9
1993								

Source: Agricultural Statistics of Sarawak (Different issues)

\* Percent share of total export value of agricultural products

One remarkable feature of rubber is that the trees can withstand considerable degree of neglect and laxity in maintenance compared to other cash crops. Consequently, rubber gardens are often regarded as the main cash stand-by or fall-back cash crop of the rural farmers particularly in time of need or when other cash crops are facing a price slump. This household income remedial strategy will be dealt with in greater details in Chapter three.

## Pepper

Malaysia is one of the largest producers and exporters of pepper in the world. In 1970, 1980, 1990 and 1992 Malaysia produced about 28.8, 24.7, 14.7 and 11.4 percent

respectively of the world's total production. Sarawak produced most of Malaysia's pepper. In 1992, for example, Sarawak produced about 99.7 percent of Malaysian pepper. Table 1.2 depicts the export revenues of pepper from the state. During the pepper boom period (1985-1989) its export value ranged from RM117,127,000.00 to RM165,450,000.00 and in 1992 it declined to RM52,829,000.00. Pepper cultivation forms the main income-generating cash crop among farmers in the inland and midland regions of the state.

Unlike other crops, pepper farming is absolutely the preserve of independent smallholders. What this means is that individual households operate their pepper farms independently of each other so that the daily management of their holdings is totally in their hands. In this case, the household head has almost complete freedom in the management of his family farm. This also means that the initial adoption of pepper cultivation by smallholders was initiated by them, without any government assistance. The long awaited assistance only came in 1972, when the state government introduced the so called Pepper Subsidy Scheme.

Pepper cultivation is concentrated mostly in Kuching, Samarahan, Sri Aman, Sibuan and Sarikei Divisions of Sarawak; and its cultivation involves almost every ethnic group in the State. The widespread cultivation of pepper among rural farm families and the remoteness of these rural families' communities make it difficult to determine the actual land area and accurate number of farm families involved. Nevertheless, in 1992, the estimated total agricultural land use under pepper was 11,267 hectares.<sup>14</sup>

Unlike rubber, pepper cultivation in Sarawak is both capital and labor intensive.<sup>15</sup> Its cultivation is a major activity for a large number of smallholders. Harvesting begins at the end of the second year. The main harvest months are June to August. Harvesting work is laborious and the process involves picking the minute pepper berries by hand. Part of the harvesting work also involves picking berries from the top portion of the pepper vines using a long wooden ladder.

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<sup>14</sup> Department of Agriculture, Sarawak obtained this figure based on feedback obtained from farm operators and Assistant Agriculture Officers in each administrative District throughout in the state.

<sup>15</sup> This is ascertained by Noorzakiah, Alias and Sazali (1993: 299-321). See their recent study of pepper smallholders from nine Divisions of Sarawak.

Virtually all the pepper produced in Sarawak are in two forms, black and white pepper. A larger portion of the pepper produced is of black pepper. To prepare black pepper, the ripe and unripe matured berries collected are first trampled to separate them from their stalks and then sun-dried for at least two to three days. Preparation of white pepper involves selecting matured or ripe berries and soaking them in running or pond water for about one week to remove the pulp and pericarp from the corns. The next step is to wash off the pulp and pericarp from the pepper corns. Finally, the clean corns are sun dried for about two days.

### **Cocoa**

Compared to rubber and pepper, cocoa is a relatively new crop in Sarawak. The Department of Agriculture, Sarawak introduced the crop into the state in 1969 under the Agricultural Diversification Scheme. The primary aim then was to intercrop cocoa with coconuts so that the income of coconut farmers would increase with a more intensive land use. The crop gradually gained acceptance by smallholders in the coastal areas and in other areas as well. This acceptance gained momentum towards the fourth quarter of the 1970's when high prices increased its attractiveness. The depressed pepper prices during this period also assisted in the spread of this crop in the late seventies and early eighties, with pepper farmers converting their pepper gardens into cocoa farms. Today cocoa prices are low, but cocoa has become an important crop involving a considerable number of smallholders and a large land area.

The estimated land area under cocoa in the state at the end of 1992 was approximately around 57,200 hectares. Out of this total figure, the public sector land development schemes managed by SALCRA<sup>16</sup> planted about 4,052 hectares at its various cocoa schemes in the state. SALCRA embarked on the cultivation of cocoa in 1982 and this activity continued up to 1989. To date, there are about six of these schemes managed by SALCRA namely, Tae/Serian Cocoa Scheme, Bajo/Pandan/Blungei Cocoa Scheme, Pantu Cocoa Scheme, Krokong Cocoa Scheme, Awik Cocoa Scheme and Paku-Layar Cocoa Scheme. The Paku-Layar Cocoa Scheme is one of the two land schemes chosen as

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<sup>16</sup> Acronym for **Sarawak Land Consolidation and Rehabilitation Authority** formed on May 1, 1976. Its fundamental responsibility is to develop, rehabilitate and manage Native Customary Right (NCR) land for agriculture using the *in-situ* concept without depriving the owners of their legal rights of land ownership.

research sites for this study (the other being Pakit-Undop Oil Palm Scheme). There are 2,248 landowners participating in the SALCRA cocoa schemes mentioned above.

Besides the public sector land development schemes, a number of large commercial estates also participated in the cultivation of this crop. At its height in the late eighties, there were at least 38 such estates in the state that spread over 11,000 hectares of land. The continually depressed prices of cocoa during the last few years have led these estates to abandon or chop down the cocoa trees and replace them with more remunerative crops, particularly oil palm.

### **Oil Palm**

Oil palm was first cultivated on a commercial basis in Sarawak in 1969. The first cultivation of 650 acres was at the Bukit Peninjau Oil Palm Scheme in Miri Division. In 1980, the land area under oil palm was merely 726 hectares. This figure has increased many fold; by 1992, Sarawak had a total 69,148 hectares of oil palm. However, this number represents only 3.2 per cent of total land planted under oil palm in Malaysia. Of this total, 28,767 hectares belonged to the private estates. These big estates are spread over several areas mainly in Miri Division. Apart from this, FELDA<sup>17</sup> has also planted about 8,334 hectares of oil palm in the state. The total land cultivated by independent smallholders is comparatively very small—only 646 hectares. The remaining 31,301 hectares are under SALCRA and SLDB<sup>18</sup> land schemes.

The total land area under oil palm schemes managed by SALCRA for the smallholders stood at 14,546 hectares at the end of 1992. The SALCRA's oil palm schemes are mostly in Sri Aman and Sibu Divisions of Sarawak. One of these schemes is Pakit-Undop Oil Palm. This scheme is one of the earliest Oil Palm Schemes started by SALCRA. This particular Oil Palm Scheme is one of the two land schemes managed by SALCRA and chosen as a research site for this study.

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<sup>17</sup> Acronym for **Federal land Development Authority**

<sup>18</sup> Acronym for **Sarawak land Development Board** the first land agency established on February 1, 1972. Its objective is to accelerate land development in the state by resettling selected persons on the land developed to eradicate rural poverty and provide better living standard and income to the settlers.

For the first time, palm oil overtook pepper as the top export earner in the agricultural sector in 1991 (see Table 1.2). Today, palm oil has become a very important export commodity of Sarawak.

Before 1980, pepper and rubber were the main cash crops of Sarawak, in terms of output and foreign exchange earnings. However, with crop diversification during the 1970s and the falling average annual prices of pepper and rubber, in the later part of the decade, cocoa and oil palm had become increasingly important.

## Cash Crops Price Instability in Sarawak

### Price Instability in Sarawak

The exposure of smallholders to price instabilities in Sarawak can be measured by computing their respective coefficient of variations.<sup>19</sup> This is the most commonly used and easily interpretable measure of average variation of a non-trended data series. A relatively high coefficient of variation (CV) signifies a rather high price variability or instability and vice versa. As illustrated in Table 1.3, the CV differs widely among the four important cash crops of Sarawak. Overall, pepper has the highest CV values, followed by cocoa, rubber and oil palm.

Table 1.3: Price Variability of the Important Sarawak's Cash Crops for Indicated Period

Cash Crops	Time Period	Average Price <sup>a</sup> /100 kg (RM)	Standard Deviation	Coefficient of Variation <sup>b</sup>
Oil palm	1971-1993	900.65	228.54	25.38
Cocoa	1975-1993	386.70	151.47	39.17
Black pepper	1950-1993	303.77	196.14	64.56
White pepper	1950-1993	457.71	337.23	73.67
Rubber	1950-1993	155.23	52.90	34.08

Sources of price data: Oil palm, SALCRA; Cocoa, Malaysia Cocoa Board; Rubber, Agricultural Statistics Sarawak (different issues); Pepper, A Digest of Agricultural Statistics, Sarawak, 1965-1967 and Pepper Marketing Board, Sarawak, 1968-1993.

<sup>a</sup> Based on unadjusted average annual prices.

<sup>b</sup> The coefficient of variation equals to standard deviation divided by mean and then multiplies by 100 and it is unadjusted for trend.

A relatively higher CV value of pepper prices suggests that this particular crop has the most varied or unstable price. Price variability also differs substantially between black and white pepper. The former has a CV value of 64.56 while the latter CV value is 73.67.

<sup>19</sup> For measuring the instability of time series data see J. D. A. Cuddy and P. A. Della Valle (1978: 79-85).

The differences in these figures show that, the average price of white pepper is moderately higher but it is relatively more unstable compared to black pepper.

Cocoa has the second highest CV value after pepper. However, its CV value is substantially lower than pepper. In other words, the price variability in cocoa is less than pepper. The average annual price of cocoa is considerably higher than black pepper, but is less than the average price of white pepper.

Rubber has a slightly lower CV value than cocoa. This means that rubber prices are generally more stable than cocoa and pepper. However, although, the price variability of rubber is comparably lower, its average price is the lowest.

Among the four important cash crops of Sarawak, oil palm has the smallest CV value. This indicates that palm oil price is the most stable compared to the other cash crops. The overall average annual price of palm oil is also the highest (RM900.65).

### Price Instability in Sarawak, 1984-1993

Table 1.4 depicts the price variability of the same cash crops for the past ten years, that is, from 1984-1993. The statistics displayed in this table are much lower than those CV values shown in Table 1.3 above.

*Table 1. 4: Price Variability of the Four Important Cash Crops of Sarawak, 1984 -1993*

Cash Crops	Average Price <sup>a</sup> /100 kg (RM)	Standard Deviation	Coefficient of Variation <sup>b</sup>
Oil palm	865.64	235.43	27.20
Cocoa	319.47	105.28	32.95
Black pepper	440.67	211.77	48.01
White pepper	672.40	324.74	48.30
Rubber	162.20	28.12	17.34

Sources of price data: Oil palm, SALCRA; Cocoa, Malaysia Cocoa Board; Rubber, Agricultural Statistics Sarawak (different issues); Pepper, A Digest of Agricultural Statistics, Sarawak, 1965-1967 and Pepper Marketing Board, Sarawak, 1968-1993.

<sup>a</sup> Based on unadjusted average annual prices.

<sup>b</sup> The coefficient of variation equals to standard deviation divided by mean and then multiplies by 100 and it is unadjusted for trend.

For the past ten years, rubber did not vary as much as pepper, cocoa, and oil palm. This means that the price of rubber has remained persistently low for the past decade. On the contrary, the prices of black and white pepper are the most unstable, followed by cocoa and palm oil. However, the CV values for black and white pepper are significantly



lower than those found in Table 1.3. This means that the price variability of pepper is lower in the last decade compared to overall price variability of pepper for the past forty-four years (see Table 1.3 above).

However, the CV value for oil palm is slightly higher for the last decade compared to the specified period found in Table 1.3. This is due to the effect of an exceptionally bad year in 1986, when the price of crude palm oil (CPO) plunged to a low of RM518.72 per metric tons (see Figure 1.5 below). This implies that the average price of CPO for the past ten years is lower when compared to the early years, that is from 1971-1984. The price of crude palm oil is not only stable but also fetched a higher overall average annual price (RM865.64) for the last decade compared to pepper and cocoa.

Evidence of price instabilities and sharp fluctuations in prices would be clearer if we examine their occurrence on a crop by crop basis.

### **Pepper Prices Fluctuations, 1946-1993**

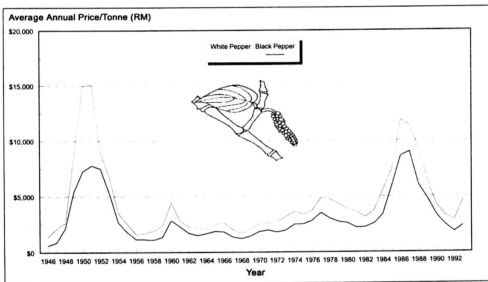
Figure 1.1 below gives a graphical presentation of the general price movements of black and white pepper for the past 48 years. There are two prominent peaks in this graph, representing the two biggest booms for pepper during this period. The first is the tallest and sharpest and it stretches from 1951 and 1953. The second peak is more recent, that is, from 1985 to 1989. In addition to these two major peaks are two minor ripples, indicating episodes of smaller or moderate boom. The first peak extends from 1959 to 1969, while the second stretched 1977 to 1979. It will be observed that accompanying every major and minor peak is a broad furrow marking a somewhat prolonged price depression period.

Pepper prices rose steadily in the immediate post-war years to reach a peak of RM15.12 per kilogram and RM7.80 per kilogram for white and black pepper respectively in 1951. This boom stimulated considerable new planting of pepper among the traditional producers, chiefly, the Chinese farmers. As these vines matured, output soared. In 1956 the production of white pepper rose to 2,760 metric tons from 313 metric tons in 1949, while black pepper increased from seven metric tons to 17,058 metric tons for the same period. The rise in output caused prices to fall from 1955 onward. Hence, some pepper producers were able to enjoy about four years of high prices until the boom tailed off in 1954.

Between 1955 to 1958 pepper prices experienced a slump. As a result, the output of white pepper dropped to 3,394 metric tons in 1960. Likewise the output of black pepper dropped to 707 metric tons as most farmers abandoned their gardens. This low output caused prices to rally again from 1959 to 1960.

The moderate upsurge in prices in the sixties stimulated significant new planting among nontraditional producers, particularly among the natives<sup>20</sup> of Sarawak. As a result, the annual production of pepper rose considerably. For instance, in 1969, the output of white pepper was at 11,879 metric tons while that of black pepper around 16,753 metric tons. This resulted in a stable supply of pepper during the sixties. This caused the prices of pepper to remain persistently low throughout the sixties and early seventies. The average annual prices of white pepper in the sixties and early seventies ranged from RM1.70-RM2.70 per kilogram and those of black pepper ranged from RM1.20-RM1.99 per kilogram compared to RM1.60-RM15.10 per kilogram for white and RM1.10-RM7.80 per kilogram for black pepper in the 1950s.

Figure 1. 1: Fluctuations of Black and White Pepper Prices, Sarawak, 1946-1993



Sources of price data: A Digest of Agricultural Statistics, Sarawak, 1965-1967 and Pepper Marketing Board, Kuching, Sarawak, 1968-1993.

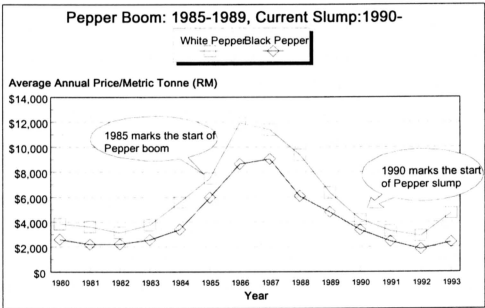
Note: See also Table A 1.1 and Table A 1.2, Appendix 1.

<sup>20</sup> For an account of this see R. A. Cramb (1988: 105-134).

However, prices rose steadily from 1973, which later peaked in 1977, attaining the highest price since the boom in the early 1950s. White pepper price fetched a high RM4.87 per kilogram, while black pepper obtained a high RM3.53 per kilogram. These reasonably good prices endured until 1979. As expected a large increase in the output of pepper followed. For example, in 1974, white pepper production attained an all-time high of 13,111.85 metric tons, and black pepper amounted to 25,744.45 metric tons in 1976.

The seventies and eighties saw a much higher output of black pepper. This is not surprising, since the price differential<sup>21</sup> between white and black had narrowed and it is more profitable to produce black pepper than white.

Figure 1. 2: The Pepper Boom of 1985-1989 and the Pepper Slump of 1990-1993



Source: Pepper Marketing Board, Kuching, Sarawak.  
 Note: See also Table A 1.1 and Table A 1.2, Appendix 1.

From 1980 to 1983 the price of pepper slumped again and this was followed by a decline in pepper output. This inevitably caused many grievances and immense hardship to the pepper producers. More often than not, the revenue obtained from pepper was insufficient or barely adequate to offset the increasingly high cost of production. The unattractive prices thus pressured many smallholders to abandon their gardens. This

<sup>21</sup> For a profitable white pepper production, white pepper price should be at least 30% higher than the price of black pepper.

spurred some of the pepper smallholders to switch to other more profitable cash crops, notably cocoa.

Pepper prices recovered dramatically in 1984 and, in fact overtook the 1977 high; white pepper obtained its highest price by 1986, while the price of black pepper peaked a year later (see Figure 1.2). The very recent pepper boom lasted from 1985 to 1989. This particular period is of great significance to the present study because it forms the reference period for the recent pepper boom. Pepper prices were remarkably high during the recent pepper boom. White pepper prices ranged from RM11,920.00 per metric tonne (RM11.92/kg) to RM6,360.00 per metric tonne and averaged at RM9,310.00. On the other hand, black pepper prices averaged RM6.91 per kilogram during the same period, and the annual prices ranged from RM9.04-RM4.80/kg.

The prices of pepper started to fall sharply after 1989, and remained low right until this survey was conducted. On the average, the price of white pepper was only RM3,770.00 per metric tonne for 1990 to 1993 period. This figure is barely two fifths (40.5 %) of the average price of white pepper computed for the 1985 to 1989 boom. The value for black pepper is even worse. Its average price for the same period was merely 36.3 per cent of the mean price of black pepper during the last boom. However, both white and black pepper prices have picked up slightly beginning from the fourth quarter of 1993. So in this study, the current pepper slump covers the 1990 to 1993 period (see Figure 1.2 below). Interestingly, this recent pepper price slump coincides with the slump in cocoa prices. The simultaneous drop in the prices of these two cash crops was a severe blow to the rural economy, particularly to the livelihood of smallholders who depend on these crops as the mainstay of their economy.

### **Cocoa Prices, 1975-1993**

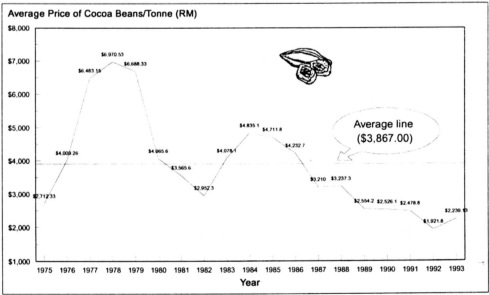
Figure 1.3 furnishes the annual cocoa price movements for the 1975-1993 period. This graph has two conspicuous peaks namely a primary and a secondary peak. The primary peak extended from the mid seventies to the early eighties and it represents the early cocoa boom. The crest of this primary peak was well above the RM3,867.00 overall average price. The secondary peak is much shorter than the primary one, indicating a much lower price level. By contrast, the latter has a slightly longer plateau that extends from 1983 to 1989 suggesting that this secondary boom is slightly longer than the primary

one. Immediately after the secondary peak is a long dip representing a rather long depression period in the cocoa industry.

The Kuching average annual price of cocoa bean was RM2,712.33 per metric tonne in 1975. However, there was an upsurge in the price of cocoa bean after the mid seventies. It rose to an average annual price of about RM4,000.00 in 1976. The following year the price stood at RM6483.15 per tonne. The average annual price remained beyond RM6,000.00 for the next two years. In 1980, however, the cocoa price began to dwindle to RM4,000.00 again.

The 1976-1980 cocoa boom was the most significant period for Sarawak's cash crop farmers. The attractive price of cocoa during this boom period had emphasized the profitability of cocoa planting relative to pepper cultivation. So, the switch to cocoa planting was an inevitable and a logical choice. This led to an increase in cocoa planting among the pepper smallholders in the state. This new cash crop was thus seen as alternative crop for a large number of pepper smallholders who had suffered considerably during the pepper slump of 1979 to 1982 period.

Figure 1. 3: Fluctuations of Cocoa Beans Prices, Sarawak, 1975-1993



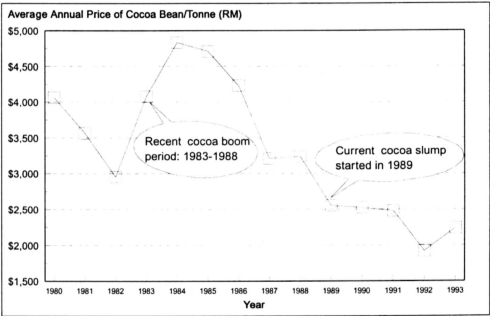
Source of price data: Malaysia Cocoa Board, Kuching, Sarawak.

Note: See also Table A 1.3, Appendix 1.

However, the average annual price of cocoa declined in 1981, and declined even further to RM2,952.30 per tonne in the following year. This substantial decrease in the price of cocoa did not deter the new planting of cocoa among pepper farmers, since the continued depression of pepper prices during the same period was too much to bear.

The cocoa price recovered immediately in 1983 and the mean annual price for that year reached the four-thousand ringgits level again (see Figure 1.4). This price level sustained until 1986. Beginning from 1986 onwards the price of cocoa dropped continually, but stabilized in 1987 and 1988 at a little over three thousand ringgit. Hence, the 1983-1988 period may be referred to as the recent cocoa boom years.

Figure 1. 4: The Cocoa Boom of 1983-1988 and the Cocoa Slump of 1989-1993



Source of price data: Malaysia Cocoa Board, Kuching, Sarawak.

Note: See also Table A 1.3, Appendix 1.

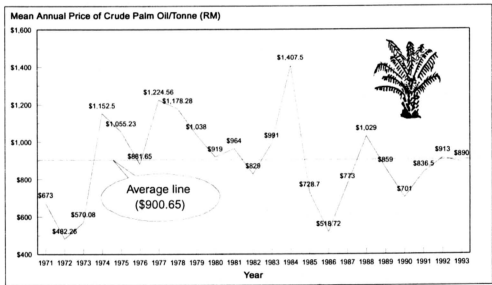
Beginning from 1989 the price of Sarawak cocoa beans dropped further to about two thousand five hundred ringgit and remained at this level for the next two years. Evidently, 1992 was the darkest year for cocoa in Sarawak as the price registered was a record low of RM1,921.13 per metric tonne. Nevertheless, in 1993 there was a slight increase in the cocoa price causing the price level to peak at RM2,239.13. Therefore, the current cocoa slump referred to in this study covers the 1989-1993 period (see Figure 1.4).

The recent cocoa and pepper price slumps occurred simultaneously. Pepper growers who diversified into cocoa cultivation thus experienced a very serious crisis causing economic distress among the poor. It had also taken a very heavy toll on their crops as well, as a number of them abandoned their holdings.

### Stable Oil Palm Price

As noted above, for the last twenty-three years (1971-1993) the average annual prices for crude palm oil (CPO) have been relatively stable. As I have established earlier, palm oil has the lowest CV value (CV = 25.38). In addition, the CPO market price averaged at RM900.65 per metric tonne for the past twenty-three years—the highest mean for all the cash crops.

Figure 1. 5: Average Annual Crude Palm Oil Prices, Kuching, Sarawak, 1971-1993



Source of price data: SALCRA's Headquarters, Kuching, Sarawak.  
 Note: Also see Table A 1.4, Appendix I.

As can be seen from Figure 1.5 there are only four instances where the annual prices fell extremely far below the grand mean for the entire twenty-three year period. The first three instances occurred during the three early years of the CPO market price in Sarawak, namely from 1971 to 1973. For these three consecutive years the mean annual CPO price ranged from RM482.26-RM673.00. The last case occurred more recently in 1986. At this time, the CPO only fetched about RM518.72 per metric tonne in Kuching.

From 1974 to 1985 most of the CPO prices spread well above the average line except for 1976 and 1982 where the CPO prices fell just slightly below the average line. Therefore, the 1974-1985 period represents the golden years of the oil palm industry in Malaysia. However, from 1987 onwards the CPO prices clustered very closely around the average line. This suggests that the CPO prices for 1987 to 1993 are much lower than those of the golden years.

## **Household Coping Strategies: A Review of Literature**

### **Coping Strategy As Conceptual and Analytical Tool: A Genesis**

This section traces the origins of coping strategies as a conceptual and analytical tool. The literature on the social or behavioral responses of households to stress, risk and uncertainty, poverty and seasonality, food shortages and famine is sizable and the terminology to describe responses of households are as varied as they are fanciful (see Table 1.5).

In 1956, Selye, a psychologist developed a framework for analyzing stress. He adopted the well-known triphasic "general adaptation syndrome" to describe the social responses to stress. Selye's model is conceptually useful in introducing the idea of phasic responses to stress or any other crisis for that matter. This response-phase model assumes that all living things or systems pass through a sequence or hierarchy of adjustments when confronting stress or crisis. This model divides crisis response sequences into alarm, resistance, and exhaustion phases.

Almost a quarter of a decade later, Dirks (1980), an anthropologist used Selye's triphasic stress model to analyze social or behavioral responses of households to severe food shortages and famine. This pioneering endeavor guided many later studies that advocate the use of "discrete stages" of household responses or coping strategies to food shortages or famine. This discrete response model assumes that the pattern of household responses or coping strategies to crisis generally follows a succession of stages along a continuum. Each response (or a cluster of responses) is adopted and exhausted before the household moves on to the next. This sequence of responses or events depicts a scale of increasing irreversibility of actions taken, and of increasing vulnerability to any



continuation of the crisis. It also assumes the worst; each response, at best, delays the onset of the next stage, unless the conditions change or external help arrives.

*Table 1. 5: The Social or Behavioral Responses of Household to Stress, Risk and Uncertainty, Seasonality and Poverty, Food Shortages and Famine: A Review of Literature on Genesis of Coping Strategy*

Field of Study	Terminology	References Cited
Stress	General Adaptation Syndrome	Selye (1956)
Risk	Risk Aversion	Pratt (1964).
Risk & Uncertainty	Risk Bearing	Arrow (1971).
	Adoption Behavior	Cancian (1980).
Agricultural Risks	Farmer Responses	Ortiz (1980).
	Risk Management Strategies	Mapp, Hardin, Walker, Odell & Persaud (1979); Taal (1989: 16-21); Matlon (1991: 51-79).
Business Risks	Risk Management	Sonka & Patrick (1984: 95-115); Barry & Baker (1984: 183-199).
	Risk Treatments, Risk Handling Procedure	Crockford (1986 & 1991).
Seasonality & Poverty	Seasonal Coping Strategies, Coping Mechanisms, Household Strategies	Longhurst, Chambers & Swift (1986: 67-70); Chambers & Longhurst (1986: 44-50); Toulmin (1986: 58-66); Jiggins (1986: 9-18)
Drought		Caldwell , Reddy and Caldwell (1986)
Poverty Poor & Destitute	Livelihood Strategies Survival Strategies, Coping Strategies, Coping Mechanisms	Chambers (1987). Katone-Apte (1988: 42-47); Beck (1989: 23-31).
Food Decline	Household Behavior Social/ Behavioral Responses	Jodha (1975). Dirks (1980: 21-44).
Food Insecurity, Food Shortages/Deficits	Household Responses, Household Strategies, Coping Strategies	Reardon, Matlon & Delgado (1988: 1065-1075); Teklu (1992: 247- 261); Webb (1993: 33-47) Campbell & Trechter (1982: 2117-2127); Watts (1983); Nabarro, Cassels & Pant (1989: 68-73); Campbell (1990: 143-162); Devereux (1993: 52-59); Davies (1993: 60-72).
Famine	Social/ Behavioral Responses Coping Strategies, Household Responses, Household Strategies	Dirks (1980: 21-44). Swift (1977: 457-478); Watts (1983); Longhurst (1986: 27-35); Cutler (1984: 48-56); Cutler (1986: 181-188); Corbett (1988: 1099-1112); De Waal (1989); Teklu (1992: 247- 261); Webb & Reardon (1992); Webb, Braun & Yohannes (1992: 30-58); Swift (1993: 1-16); Braun, Teklu & Webb (1993: 73-79).

Notable advocates of discrete stages of coping strategies or responses are Watts (1983), Corbett (1988), Matlon (1991), and Webb, Braun and Yohannes (1992). Watts (1983) in his work on food crises, famine and peasantry in Northern Nigeria argues that, coping strategies are sequenced in a way that reflects increasing “irreversibility” and “commitment of domestic resources.” Corbett (1988) reviews the evidence on household strategies for coping with famine in Africa and identifies some distinctive patterns in

these strategies. She suggests that coping strategies typically fall into a three-stage sequence: the initial use of insurance mechanisms, the gradual disposal of key productive assets once these insurance mechanisms prove ineffective and a terminal stage of destitution and distress migration. Matlon (1991) in his case study on risky environment of the West African semi-arid tropics, categorizes farmer risk management strategies into three sequential methods namely *ex ante*, interactive and *ex post* methods. He says that *ex-ante* methods are designed to place households in a less vulnerable position before the occurrence of a shock. Interactive methods involve the reallocation of resources at the time a shock occurs with the goal of minimizing its ultimate production impact. *Ex-post* methods involve actions taken after a shock has already reduced production and aim to minimize the subsequent impact on consumption (Matlon, 1991: 53). In their empirical study, Webb, Braun and Yohannes (1992), ordered household responses to food crisis along a continuum of "coping" that runs from "risk minimization" through "risk absorption" and the extreme "risk-taking to survive." The common focus of the above studies is obvious—to develop a stylized set of ordered responses; but this is a tenuous, expensive and time consuming exercise, since the choice and timing of responses is time dependent and household-variant.

However, a recent empirical study by Devereux (1993: 52-59) cast serious doubts over the discrete response or strategy sequencing model. His study concludes that household responses to a crisis are parallel processes rather than a series of sequential events or responses, that is, households adopt several responses simultaneously rather in a discrete sequential order. Similarly, Davies (1993: 67) stresses that households juggle between different activities simultaneously and in response to the seasonal options available to them. We may infer from the studies by Devereux and Davies above that several household responses may be undertaken by different household members simultaneously or in parallel.

Realizing that the discrete response model or response-phase model is oversimplified, tenuous, and operationally impractical the present study therefore adopts a more practical non-discrete response model akin to the model used by Devereux (1993).

The recent series of African drought-related famines of the 1980s provide a rare opportunity for scholars to study household responses to crisis in four main realms namely poverty, seasonality,<sup>22</sup> food shortages and famine. According to Torry (1988: 274) twenty-one African countries were affected severely by drought in 1984-1985. Thus, it is not surprising that the interest in coping strategies arose particularly in the aftermath of famines in the Sahel and Horn of Africa in the mid 1980s as a means of understanding how some people survived periods of dearth, while others did not. A catalogue of these studies is provided in Table 1.5 above.

Earlier, in the 1960s and 1970s, several theoretical perspectives of risk analysis were developed. They guided many subsequent empirical studies of risk aversion and coping strategies in risky, insecure or uncertain environments. These perspectives include utility theory, risk bearing theory, the notions of "risk preference" and "risk aversion," maximize utility model, safety-first model, focus gain-loss model, or the satisfaction models. There is no doubt that these theoretical concepts or models are useful research analytical tools. They have contributed much to the overall theory of risk management, including risk management in agriculture. However, their practical applications have been criticized by anthropologists, such as by Cancian (1980: 161-176), and Ortiz (1980: 177-202). For instance, utility decision model assumes that individuals have some idea of the probability of some outcomes or at least can rank them according to frequency, but there is a limitation of such an assumption. There are two obvious reasons why farmers do not behave according to the ideal model of the efficient rational farmer. First, farmers are neither well informed nor are they necessarily competent statisticians. Second, utility models themselves are gross simplifications of reality and are therefore, neither necessary nor accurate representations of peasant behavior. Nevertheless, we cannot discount the possibility that this elicitation technique is applicable to more highly commercialized farmers.

### **Definition of Coping Strategy**

Despite its extensive use, a concise definition of "coping strategy" is not available. Clarification is necessary here because coping strategy provides a useful conceptual tool

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<sup>22</sup> Longhurst, Chambers & Swift (1986) used this term to a cover period of bad years due to seasonal drought, household life cycle stress, seasonal fluctuations and shortage of both food supply and agricultural incomes.

for the present study. Nevertheless, recent works have taken some interest to define the term "coping" in their discussion. For instance, for Gore (1992: 16) coping essentially means acting to survive within the prevailing system. Davies (1993: 60) defines coping as a short term response to an immediate and habitual decline in access to food. The concept of strategy<sup>23</sup> has been used for sometime in rural sociology to refer to the ways in which farming families organize their labor and resources (Wallace, 1993: 94). However, according to Michael Redcliff (1986: 218-227), it was imported from studies of the urban poor in the Third World, particularly Latin America. In this context, the idea of a 'survival strategy' could be used to show how poor people's struggles to survive poverty could be both logical and resourceful. Meanwhile, Shaw (1990: 465-473) and Knight and Morgan (1990: 475-483) have traced the discourse of strategy to military and business organizations. The popularity among social scientists of analyzing situations using the term strategy is remarkable, not only because of the speed with which the use of the term strategy has grown but also because of the diversity of contexts in which strategic analysis is applied. Graham Crow (1989: 1-24), for example, describes at least seventeen ways in which strategy is used. Because of the diversity of context in which it is used therefore; a concise definition of coping strategy used in this research is necessary to avoid any potential confusion. Here, "strategy" is used together with the word "coping".

As noted from the review above, coping essentially means dealing with a temporal crisis or contingency such as food shortages, famine, destitution, poverty or even price instability. The concept of strategy is adopted here to mean any plan, scheme, response or action for solving a crisis or meeting a contingency. Thus, coping strategy as applied in this study refers to the adoption of an appropriate action by households for dealing with a temporal price instability crisis or price slump that periodically threatens smallholders' livelihood. It is essentially a short-term fall back mechanism adopted by households when prolonged price collapse threaten their livelihood, and is quickly discarded when conditions improve. In a more general way, household coping strategies may simply be defined as ways of surviving a crisis.

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<sup>23</sup> Recently there has been a lengthy discussion on the use of the concept strategy in sociology and other fields, for further details see Crow (1989: 1-24); Knights and Morgan (1990: 475-483); Morgan (1989: 25-29); Shaw (1990: 465-473); Wallace (1993: 94-117); and Watson (1990: 485-498).

## **Related Theories of Household Coping Strategy**

### ***Coping Strategy as Component of Risk Management Process***

As just noted above, the origin of household coping strategies has a direct link with risk and uncertainty analysis. Thus coping strategy forms one of the components of risk management. In the field of management, the standard method of solving any management problem consists of five major steps. They are (1) identification of problems, (2) evaluation of its potential effects, (3) identification and analysis of possible solutions, (4) adoption of the most appropriate actions or solutions, and (5) monitoring the results. Viewed from this perspective, coping strategy is a component of the standard management decision-making process. It corresponds to step number four of the problem solving process. The stages of risk management are also based on the standard management problem-solving process enumerated above. However, special names are given to each of the stages, as follows: (1) risk identification; (2) risk measurement and (3) risk treatment (Crockford, 1986 & 1991). This suggests that coping strategy as defined above is also part of the risk management process. To be more precise it is equivalent to stage three of the risk management process, that is, the risk treatment or the risk handling procedure stage. Another explanation for this is that, the problem of price instability as noted earlier involves some degree of risk and uncertainty, and undesired consequences and according to Crockford (1991: 1-2) these are the two main constituents in any definition of risk.

Risk treatment includes the choice and implementation of the most suitable risk-handling procedure like risk avoidance, risk reduction, risk transfer, risk retention and risk financing (Crockford, 1991: 7-9). According to Matlon, (1991: 51) any particular combination of risk handling methods can be defined as risk management strategies and they differ according to when they are applied relative to the occurrence of the production shocks. The risk management strategies that are of relevance to the present study are as follows:

First is risk avoidance. One can avoid risk by abandoning the activity that creates the risk, or by carrying it out elsewhere, by another method or using different material. Thus, to abandon the farm, garden or enterprise during a prolonged price slump is an intelligent or rational household response to avoid risk.

So Second is risk reduction or loss control. This involves taking appropriate action to reduce the probability of the risk producing its effects or the severity of loss. While it is not often possible to eliminate the risk completely, risk reduction or loss control can frequently diminish it to a level where it becomes an acceptable risk. Some fine examples of loss control strategies among farm-based households include austerity measures like production and consumption rationing, and a range of farm diversification practices.

Third is risk transfer. It may be possible to transfer the risk or its financial consequences to someone else. There are two main methods of transfer. The first one is transfer by contract. One can transfer risk by contracting the activity. Apart from that, one can also pass the cost of the loss by any exclusion clause in a contract, a limitation of liability, an indemnity or hold harmless agreement, etc. Examples of transfers by contract are forward contracting and hedging on the future's market. These marketing alternatives allow farmers to price their crop or commodity prior to delivery and thus remove uncertainty of the price of the product at the time of sale. The other method of loss control is transfer by insurance. This very common method of risk treatment passes the financial consequences of risk to an insurer upon the payment of a premium. In addition, risk reduction strategy may include spreading of sales. Spreading sales is essentially diversification over time rather than over enterprises. It results in price averaging over the marketing period and reduces the variability of expected returns (Sonka and Patrick, 1984: 105-106).

Fourth is risk financing. An important financial measure to survive a shortfall in net income is the liquidity position of the affected firm or household enterprise. Savings accounts are liquid assets of farm-based households because they can be quickly converted to cash and their liquidation costs are low compared to other assets such as land. Liquidating a tract of land or other similar assets on short notice generally involve a substantial discount in their sales value. Liquidating household assets such as family savings and land for coping with income crises may not be possible for the majority of farm-based households. This is because most of them do not have any saving or because some households are landless or almost assetless. However, financial arrangements can be made to maintain liquidity and one way of doing this is by borrowing from various sources such as social networking and banking institutions.

### **Sources of Coping Strategy**

The range of means with which poor rural people use for subsistence to maintain their livelihood, and to cope with contingencies, are impressive. However varied the household coping strategies are, it is possible to discern a common pattern within a superficially different set of strategies (Corbett, 1988: 1107). Some are obvious and well known: cultivation, herding large and small stock, laboring in agriculture, off-farm economic activities, mortgaging and selling assets including future labor, begging, theft, and the splitting, dispersal and migration of families. Others are less visible, less well recognized and less studied. They include eating less and worse, deferring medical treatment and expenditure, and exploiting common property resources (Chambers, 1989: 3). Davies (1993: 70, Table 2), classifies these sources of household coping strategy into a number of meaningful categories namely asset-based; common property resources based; reciprocally based; migration-based; consumption-based; exchange-based; labor-based; and production-based. This segment not only provides a review of related literature and research findings on these sources of coping strategy, but also highlights and raises some important points and hypotheses related to the central issue or problem of the present study.

#### **Asset-based**

A common response to famine is the disposal of assets. The kinds of assets commonly referred to include small livestock, oxen, cattle, personal possessions such as jewelry, agricultural tools and land (Corbett, 1988: 1106). In times of destitution and serious food shortages, distress sales<sup>24</sup> of assets are widely practiced strategy (Taal, 1989: 20).

The above observation led Swift (1989) to expand Amartya Sen's entitlement theory (1981) by including the role of assets in his analysis of vulnerability and famine. To improve our understanding of vulnerability and famine further, Swift, separates tangible and intangible assets into investments, stores and claims. This work has guided several works such as those by Chambers (1989), and Devereux (1993) to view household coping strategy to sell or mortgage assets for cash or food as the management of a household's complex portfolio of assets.

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<sup>24</sup> Distress sales here refer to sales specifically for the purpose of obtaining cash to purchase food.

The majority of these assets can be converted, through exchange, into cash to buy food-though some assets are less liquid (difficult to sell or mortgage), more 'lumpy'(indivisible), and riskier (prone to lose their value) than others. However, the unfavorable effects of disposal of assets can include loss of production, diminished value of labor and loss of self-respect (Chambers, 1989: 4).

The important work by Jodha (1975) recognizes that the cost of disposing assets rises as the level of assets owned by households falls. For this reason poor households, rather than liquidating their meager assets for cash to buy food in bad years, are likely to ration consumption most stringently in the bad years. Thus, a consumption modifying strategy is aimed at restraining the depletion of food as well as assets of households. In other words, households would choose to reduce food consumption to the extent of going without food rather than selling their productive assets to protect their longer term survival. Empirical evidence supporting Jodha's view of household behavior under food stress were provided by de Waal (1989: 7) and Devereux (1993: 52-59). From the risk management point of view the above household response may be considered as a risk reduction or loss control strategy.

Longhurst (1986) had observed that most households prefer to mortgage rather than sell their farmland, and he also noted that in communities with land holding and income inequalities, household responses will differ. Besides the above, Watts (1988) discovered that wealthier households can benefit from the distress sales of assets, at depressed prices, by poorer members of the community. From the above, it can be concluded that ownership of household assets is an essential component of household coping strategy.

From the above review, however, there is no attention given to forms of land tenure that a state or community upholds or advocates as a determinant of the capacity of households to cope with adversities such as commodity price slump. A different category of land tenure renders a distinctive set of benefit and security to the owners. Obviously the category that offers better benefits and higher security can provide better protection to the landowners in time of income or other crises. Hence, in this study, the differential land tenure system a state or community upholds or advocates is anticipated or expected to place some restrictions on the capacity of households to cope with income crises.



### **Common Property Resources (CPRs) Based**

Jodha (1992: 2), defines common property resources (CPRs) as those resources in which a group of people has equal usufructuary rights, specifically rights that exclude the use of those resources by other people.<sup>25</sup> In one important sense then, common property has something very common—exclusion of non-owners; common property is corporate group property. The property-owning groups can be tribal groups, subgroups, or subvillages, neighborhoods and the like. These groupings hold customary ownership of certain natural resources such as communal forest, farm land, grazing land, river or streams, etc. (Bromley and Cernea, 1989: 15).

Natural resources are important for two main reasons. CPRs provide subsistence and income. In other words, it is the source for a diversity of foods and materials such as wild vegetable, nuts, berries, fruits, tubers, wild animals, fish, firewood, water, building and thatching materials. At the same time, the collection and gathering of these resources for sale can provide a valuable source of income for households. Thus, exploitation of CPRs can spread earnings during lean months of the year, removes the need for outmigration, enhances security, as saving banks cashable to meet contingencies and avoids debt. In this context the main function of CPRs is to provide a safety net or floor for some of the poor households.

The exploitation of CPRs is an important component of household coping strategies during a crisis, particularly during food shortages or famine (Beck, 1989: 25). In the literature the frequently mentioned CPRs strategies are gleaning,<sup>26</sup> collection of fuel, and the gathering of wild foods. These studies also report that in very severe food shortages or famine many poor households make use of wild foods as their “famine foods.”

An inevitable problem arising from the use of CPRs as a household coping strategy is the depletion of resources exploited. This depletion has been referred to by Hardin (1968: 1243-1248) as the “tragedy of the commons.” This depletion makes access

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<sup>25</sup> This definition is consistent with the one given by Bromley and Cernea (1989: 15); Ciriacy-Wantrup and Bishop (1975: 714); and Demsetz (1967: 354).

<sup>26</sup> Gleaning involves the cutting and collecting the remaining crop residues or grains from a reaped field.

to CPRs more limited and this inevitably undermines the subsistence needs or food security of the households and their income (Alauddin and Tisdell, 1989: 567).

In the literature, a number of theories explained the tragedy of the commons or depletion of CPRs. One such theory put forward is demographic. This demographic-based theory links an increase in population and the associated rising aggregate levels of consumption of resources to the reduction and depletion of CPRs (Hardin, 1968; Tisdell, 1983: 12; Allauddin and Tisdell, 1989; Jodha, 1985, 1990). The argument put forward by this theory reads this way. Although incomes per head are not rising significantly in many less developed countries, their high levels of population growth are such that, even with relatively constant levels of consumption per capita, aggregate consumption is rising. This places mounting pressure on the natural resources. At the same time, market demands on the resources put additional strain on the CPRs. Other theoretical explanations for the decline of CPRs include 'institutional change' such as land reforms (Jodha 1985: 253) and 'market-related' theories such as increased commercialization and expansion of the market system of CPRs-based activity (Tisdell, 1983; and Allauddin and Tisdell, 1989). Regarding institutional change, land reforms encourage the privatization of CPRs for use as croplands. The direct result of privatization is reduction of CPRs. As for market-related theory, it expects an increase in commercialization and expansion of market system to result in rising aggregate consumption and production of the resource, and it is seen as placing mounting pressure on the natural resource. Along with these, marketability and value of these CPRs have increased substantially. Thus, profitability of the traders has become the guiding force behind the reduction of CPRs. Another explanation for the depletion of CPRs is environmentally based. According to this set of theory, natural resources are disappearing or becoming extinct due to the rapid destruction of their habitat (Myers, 1979; Tisdell, 1983). Habitat destruction is an insidious threat to our natural resources. It is occurring all over the world as forests and trees are removed, as wetlands are drained, urban and rural settlements expand, and as land areas are transformed to meet the immediate demands of individuals. Another contributing agent that depletes CPRs is technological change (Tisdell, 1983: 13-14; Jodha, 1990). New technology can also provide means for accelerated exploitation of natural resources. The rate of harvesting of a wildlife species can be pushed beyond the rate of growth of its population because a

new hunting, fishing or harvesting technology is introduced, and consequently the exploited species may be driven to extinction.

Although the above-mentioned theories or factors can generally explain the depletion of CPRs, they only provide a limited explanation for the decline of the CPRs in the study areas. This is because the exploitation of CPRs of the present study is shaped entirely by different circumstances, and one of the governing factors is the prolonged commodity price slump. The dearth of cash caused by the commodity slump resulted in various degrees of destitution among many smallholders.

### **Reciprocally Based**

There is an entire range of networks and institutions outside the immediate family that may, and often do, act as shock absorbers during economic crises. A person's kinsmen, his friends, his village, a powerful patron, and the state, may help tide him or her over a difficult period of illness or crop failure, etc. (Scott, 1976: 27). All of these institutions (kin/friends, patron and state), then, have a crucial role during a crisis. They may provide vital social insurance against a time of dearth. Essentially such social insurance provides a system of redistribution of food or other assets or resources. Fundamentally, there are two types of redistribution systems, namely horizontal redistribution, between partners of approximately equivalent structural position, and vertical redistribution, between partners at different levels in a social or economic hierarchy (Swift, 1993: 5). Swift (1989: 11) uses the term "claims" for this type of social exchange—claims to assistance from kindred, patron, government or even international community that can be mobilized in a crisis.

However, reciprocally based social support networks have clear limits to what they can achieve. One reason is that reciprocity contracts gradually as the crisis progresses or prolongs (Firth, 1959: 83-84). Resources, particularly food and income, run out under a series of disasters, famines, or a prolonged crisis. Thus, mutual sharing of food and borrowing arrangements are no longer possible in horizontal redistribution or between partners of approximately equivalent structural position or economic status. They are too poor to be able to help or support each other.

One area that may be feasible in horizontal redistribution is the traditional exchange labor or reciprocal labor exchange. With falling household incomes following a commodity price slump, an increase in the deployment of reciprocal labor exchange and a reduction of hired labor is anticipated. Borrowing arrangements are only possible in vertical redistribution or between partners at different levels in a social or economic hierarchy. This means that the patron-client exchange—an example of vertical redistribution—will be expected to gain greater prominence during the commodity price slump. However, as commonly believed, a patron-client exchange can be deeply exploitative, and it also carries high costs and disincentives to the clientele system.

### **Migration-based**

One very common household coping strategy in times of crisis or economic slowdown is migration. It normally involves a male (sometimes female or both) member of the household moving out to town, city, or other regions to look for work, returning home later. This strategy, however, is more feasible for wealthier or larger households that are less affected by the absence of a productive member of the household (Taal, 1989: 20). There is a vast array of different classes of migratory movements, ranging from normal movement for economic advancement with eventual return, to that of “distress migration,” that is, moving for survival to places where free food might be distributed.

The vast majority of rural migrants would probably prefer not to move if they could only contrive adequate year-round livelihood at home. This is because the personal and social costs of migration are high. Migration has some pernicious effects such as family splitting, physical and psychological stress, vulnerability, prevention of children’s education, and insecurity of possessions left behind. Moreover, individuals left behind by male migrants suffer increased work burdens and may result in greater and more difficulties in basic survival.<sup>27</sup> Likewise, the migrants themselves also undergo innumerable difficulties and adjustments including accommodation problems, adaptation to new environment, poor living conditions, etc. The grave sufferings endured by rural migrant workers have been observed and recounted by numerous scholars (see for example Breman, 1985; Mukherji, 1985: 279-298, Jamilah, 1994).

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<sup>27</sup> For a good re-count of the effect of migration to the community left behind see for example Kedit (1993: 77-86).

Although the potential of getting good income may be available in migration-based strategies, the lack of actual rural and urban non-agricultural employment opportunities is a great deterrence to households tempted to use this strategy in times of destitution (Braun, Teklu and Webb, 1993: 75). Furthermore, Matlon (1991: 61) also pointed out that income-earning activities that depend upon incomes generated through input, output, or demand linkages to local cropping, are not an effective means of stabilizing household incomes. For these reasons he says, farm wage employment, receipt of gifts from other farm households, and non-farm employment (that relies upon local demand for goods and services) are relatively ineffective insurance elements when general production shocks occur. Conversely, employment driven by demand in other sectors and particularly in other (less affected) regions are more effective.

In the literature, various theories have been used to explain rural-urban migration. They are: (a) neoclassical theory of migration, (b) self-centered individual of migration, (c) structural transformation in agriculture, and (d) demographic factors.

The neoclassical theory of migration suggests that differences in net economic advantages, chiefly differences in wages are the main causes of migration (Nicks, 1932: 76). The basic line of reasoning runs like this: changes in the regional distribution of the demand for labor results in regional wage differentials, and migration is seen as an equilibrating force. Apart from its unrealistic assumptions of perfect competition, full-employment, perfect knowledge, homogeneity in skills, absence of barriers to mobility, etc., the theory analyses the migration process of only one category of rural population, that is, those who are currently employed (Roy, Tisdell and Alauddin, 1992: 58).

Recent theories of internal migration tend to emphasize the self-centered or individual aspect rather than family or household aspect of the migration process. This theory sees the process of migration as being linked to individual characteristics such as age, educational attainment, skill level, etc., that contribute to the potential earning of an individual (Todaro, 1969; Carvajal and Upadhiya, 1986). The implications of this hypothesis are: (a) the process of migration is an outcome of an individual's decision to migrate, (b) the decision is taken by free choice, (c) the migrants have certain qualities in the form of age, education, acquired skills, etc., with which they can maximize return, and that (d) pull-factors contribute to rural-urban migration. However, migrants may not, in

all cases, migrate by free choice, the decision may not be taken by individuals alone and many migrants may not reach the necessary age, or have education and skills. A theory of migration based on the self-centered individual cannot be applicable in traditional rural peasant societies where family welfare rather than individual welfare appears to be the overriding consideration in decision making. Furthermore, many households affected by commodity price slumps may experience falling household income, and some smallholders may have abandoned their crops and are thus unemployed; all these contribute to the push-factor. The migration process among smallholders may be induced more by push rather than pull factors such as better wages (income) or jobs.

Saint and Goldsmith (1980: 259-272) suggest that the structural transformation in agriculture (Green Revolution) is the primary cause of rural-urban migration. Introduction of more capital-intensive techniques in agriculture create labor surplus in peasant families, and some members of rural peasant families under disguised unemployment move out to cities or towns. However, this model fails to explain the rural-urban migration of smallholders caused by a commodity price slump. Green Revolution technologies can create over production or supply of agricultural commodities and this may result in the prices of the commodities to slump.

The demographic theory implies that a high rate of rural population growth causes rural-urban migration. According to this theory, the growth in population contributes to the growth in demand, and it also contributes to the growth in labor supply. Therefore, if the increase in labor supply exceeds the increase in the demand for labor some poor households would remain unemployed and ultimately would be forced to migrate to urban centers. This model obviously fails to explain the migration behavior of the smallholders experiencing a commodity price slump.

Thus the theories or models of migration of Todaro, Carvajal and Upadhiya, Saint and Goldsmith and other neoclassical formulations, only provide a limited explanation for the continuous rural to urban migration that many smallholders resort to in times of commodity price slumps.

### **Consumption-based**

Whenever food and money become scarce or when there are shortages of food and cash, it is not uncommon for household members to skip or miss their meals or reduce the amount of food prepared. The rationing of food consumption and food preparation both in the early and later stages of coping strategy are unmistakably forms of austerity measures of loss control or risk reduction. As noted in the studies by Jodha (1975), de Waal (1989), and Devereux (1993), there is some evidence to suggest that households do plan for long term future by regulating their consumption of food to protect their assets. Thus, the consumption modifying strategy that is commonly observed in almost any famine is not only aimed at restraining the depletion of food, but to protect the assets of the households. In other words, households would choose to reduce food consumption to the extent of going without food rather than selling their productive assets to protect their longer term survival. From the risk or crisis management point of view, the above consumption modifying response may be considered as a risk reduction or loss control strategy.

Reducing food intake to minimal levels to enhance chances of survival of individual members of households not only entails some sacrifices and suffering but it also suggests that part of the strategy of coping may be to become undernourished. Rising levels of malnutrition are not just a signal of the failure of any strategies adopted, but as one of their costs (Corbett, 1988: 1108).

Thus, the consumption modifying strategy is only confined to the rationing of food consumption among destitute households affected by famine. In a non-famine crisis, for instance, during a commodity price slump, the consumption modifying strategy would not be confined to food rationing alone, but would also cover expenditure or spending cuts in the non-food items such as clothing, a child's education, kerosene/gas, electricity, transportation, and so on.

### **Exchange-based**

This strategy includes such activities as hawking or very small scale retailing. Thus, scenes of women or children peddling from house to house or from village to village to sell prepared foods, and other basic goods to earn some cash incomes are not uncommon. Households also sell their home-produced subsistence foods or goods, for

example, eggs if they own some chickens or ducks, milk if they own goats or cattle, or a small quantity of produce grown near their dwellings (Katona-Apte, 1988: 45).

The exchange-based strategy is no doubt an important source of household income during a crisis. However, non-exchange based strategies (or subsistence strategies) are also equally or if not more important during economic crises. The subsistence-based strategy or non-exchange strategy is usually obtained directly from nature without exchange and includes among other things, fish caught from river or village ponds, fresh vegetables from back yard gardening, rice from paddy fields, wild vegetables from village compound and subsistence hunting. Many fail to see the importance of this strategy. They feel that these subsistence activities are a hindrance to cash crop production and increasing profitability. They claim that these activities are labor intensive, time consuming and less productive in cash terms. Others even assume that subsistence strategies are only found in 'pre-cash cropping' peasantry or in pure subsistence societies where the cultivation of subsistence crops predominate. Even in normal times, these subsistence activities are no less important among some semi-commercialized or commercialized farmers. When these farmers are confronted with falling household income (due to commodity slump), it is very likely that their relative dependence on subsistence-based strategies are greater. For instance, the affected households are expected to place high priority on meeting their food security needs. One of the food security needs is to give considerable priority to self-sufficiency in rice at the household level. In some cases, even the achievement of partial self-sufficiency is good enough to reduce the expenses on buying of rice. This move enables them to conserve their already low income. Thus, the employment of subsistence-based strategies in times of income shortages can be seen as a form of austerity drive taken by households to reduce expenses on buying of the basic food items.

Therefore, in a prolonged period of commodity price slump, when both real income and employment fall sharply, a subsistence-based strategy is expected to assume an even greater role among the lower income farm-based households. One expects, for example, these households to give more emphasis on the production of rice, vegetables, fruits, poultry and other foods.



### Production-based

According to Scott (1976), Allal and Chuta (1982), Nolten and Tempelman (1986), and Katona-Apte (1988) handicrafts, artisans or trades such as basketry, pottery, weaving, sewing, crocheting, etc., occupy many peasants during the slack agricultural season. These activities provide them with some supplementary cash income. In addition, food preparation is also not an unimportant income producing activity. There is a great advantage to processing and peddling home-produced foods as the demand for them in any one neighborhood does not necessarily decline. All these non-agricultural production activities keep the people usefully occupied, generate additional cash income, and keep the traditional arts alive (Allal and Chuta, 1982: 7). The literature survey suggests that these productive activities provide useful household coping strategies during the slack agricultural season, and diversify the economic base of households.

Production-based strategies do not exclusively involve non-agricultural production activities like the ones just noted, for they also embrace agricultural production as well. The best known agricultural production-based coping strategy is farm diversification. The process of farm diversification involves combining enterprise to reduce the variability of total income (Sonka and Patrick, 1984: 102). Various forms of diversification at the plot or farm levels include (1) crop diversification, (2) variety diversification, and (3) land-type diversification (Matlon, 1991: 53-56). Farm diversification can take three forms: *ex-ante*, interactive and *ex-post* diversification, depending on when they are implemented or applied with the occurrence of a crisis or a production shock. *Ex-ante* farm diversification is designed to place households in a less vulnerable position before the occurrence of a shock or a crisis. Interactive methods involve the reallocation of resources at the time a shock occurs with the goal of minimizing its ultimate production impact. *Ex-post* farm diversification involves actions taken after a shock that has already reduced production and these actions are aimed to minimize the subsequent impact on consumption. However, opportunities for farm diversification are often limited by household resources (including labor, capital, land and other inputs), climatic conditions, and market outlets. Regardless of which form of farm diversification is employed, a diversified cash crop production can provide a buffer in times of prices slumps of certain export crops. Of the three forms of farm diversification mentioned above, *ex-ante* crop diversification is the one that can relieve farmers affected by commodity price slump almost immediately. *Ex-*

*ante* crop diversification provides farmers with an opportunity to carry out 'fall-back cash cropping' almost instantaneously. If the price of one commodity fell, farmers could always shift their emphasis on to other cash crops that were already cultivated. This type of diversity in cash crop production and the elasticity to shift emphasis from one crop to another makes the farming system highly flexible and resilient to price fluctuations.

Both these non-agricultural activities, and farm diversification methods (particularly *ex-ante* crop diversification) play a very important role in mitigating labor migration from rural to urban areas particularly during a prolonged commodity price slump. Conversely, if *ex-ante* crop diversification is not adopted or taken up in the farms, then one would expect that the rural to urban migration to increase among the members of these farm-based households.

Another important form of production-based coping strategy in agriculture is modifying the production process itself. Examples of this are reduce farm size and maintenance, abandon the farm. Reduction in farm maintenance is anticipated during a prolonged commodity price slump because farmers can no longer afford to buy and use expensive farm inputs. Frequency of fertilizer application, weed and pest control, harvesting rounds, etc., are all expected to be reduced or totally stopped.

#### **Labor-based**

Labor is an important resource for the process of production. There are different types of labor, namely household or family labor, hired labor and the traditional exchange labor.

Family or household labor forms the main source of labor for the production process in the peasant societies. In normal circumstances, there is a very clear cut division of labor by gender, age, or generation (parents, children, and grandparents and so on). The use of hired labor largely reflects a shortage of household labor during peak periods. It also reflects the economic conditions of the households. When farm incomes are high and certain more hired labor is used and vice versa.

Reciprocal labor exchange is mainly employed by traditional or subsistence societies particularly in the production of food crop. Once commercialization of agriculture (such as cash cropping) has set in, the used of reciprocal labor exchange may

be reduced or totally substituted with hired labor. In any case, the use of reciprocal labor exchange is related to the nature of the operation, that is, the degree to which the operation is facilitated by working in groups; and to the need for synchronization of operations within a farming area (Cramb, 1989c: 106).

In times of stress or economic crisis, such as a prolonged commodity price slump, the normal division of family labor may not be possible, and some redivision of household labor may be required. The use of hired labor is expected to be reduced, and it may be partially or totally substituted with exchange or family labor.

### ***Capacity of Coping Strategy***

There is considerable variation in the capacity of households to employ a particular or several coping strategies in a crisis. A capacity to adopt coping strategies refers to the ability of households to meet contingencies or crises without further impoverishment, so that an adequate and secure stock and flow of cash and food is available throughout the year.<sup>28</sup> For instance, not all the coping strategies undertaken by households at each stage of the crisis are beneficial, either to a household or to its environment (Webb, Braun & Yohannes, 1992: 31). To assess or evaluate the capacity of household coping strategies, Davies (1993: 69), proposes the use of four criteria namely intensity, motivation, effectiveness and sustainability.

Intensity measures how dependent households are on such strategies in a given crisis period. A high score for intensity means that many people have already pursued this strategy and perceived that it is the best option available to them. The next criterion is the motivation or the objectives of the household coping strategy. Scoring motivation hinges on whether the household abandons the strategy once recovery is underway. The effectiveness of a coping strategy measures the ability of this strategy in meeting subsistence security, income shortages or other general livelihood needs. Finally, there is a need to assess the economic and/or environmental sustainability of the household coping strategy as a result of the increased intensity of its use. A high economic sustainability would mean that the household can pursue these coping strategies over

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<sup>28</sup> This definition is based on the following: Chambers, 1987: 9; Chambers & Longhurst, 1986: 44; and Chambers, Saxena & Shah, 1989: 8.

time; high environmental sustainability means that they do not have deleterious effects on the natural resource base or the common property resources of the community.

The need to incorporate the assessment or evaluation of the capacity of household coping strategies in this study is very obvious. An effort like this helps not only to determine the effectiveness and economic sustainability of these strategies in meeting household income shortfalls and subsistence security, but also provides a strong basis for the implementation of appropriate public policies or interventions.

### **Paths of Household Coping Strategy to Commodity Price Slump: A Conceptual Model**

In designing a study to investigate the paths of household responses or coping strategies to cash crop price instability, it is necessary to develop a conceptual scheme or model to guide the investigation. The model used in this study is depicted in Figure 1.6 below. It displays various paths of coping available to the household. The paths are based on the various sources of coping strategies surveyed in the literature. However, the additional pertinent theories or models have been included or proposed to accommodate the central issue of the present study as well as location specificity.

### **Household Objectives Undergoing Income Deficits**

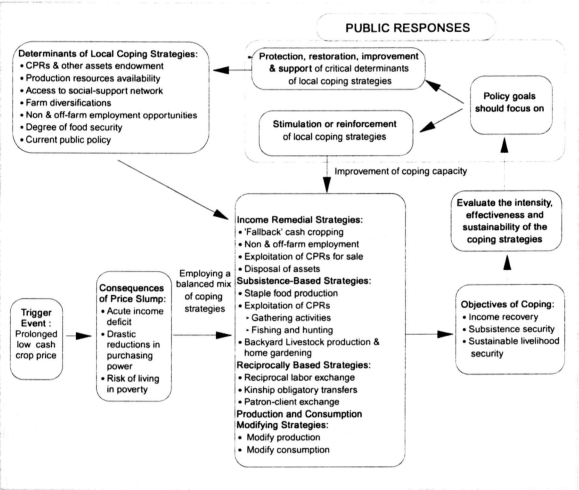
This model anticipates that households undergoing acute income deficits or shortages due to a prolonged price slump have at least three overriding objectives or priorities. They are (1) income recovery, (2) subsistence security, and most important (3) sustainable livelihood security. Put it in another way, for those households experiencing intense income shortfalls due to a price slump, their prime preoccupation is sustainable livelihood security. One dimension of a sustainable livelihood security according to Chambers, Saxena and Shah, (1989: 8) is to maintain an adequate and secure stock and flow of cash and food for the household and its members throughout the year. The priority and balance between income and stable subsistence or food security may vary from household to household or among groups or types of smallholders.

### **Household Coping Strategies During Price Slump**

Households faced with low cash crop prices are expected to pursue a certain path or combination of paths to absorb income shortfalls. The paths of a household coping

strategy can be grouped into four main categories. They are (1) income remedial strategies, (2) subsistence-based strategies, (3) reciprocally based strategies, and (4) production and consumption modifying strategies.<sup>29</sup> The paths of household coping strategies can overlap and coexist as they are not necessarily employed in a discrete sequential order.

Figure 1. 6: Paths of Household and Public Responses to a Commodity Price Slump: A Conceptual Model



Income remedial strategies employed by households may vary and their possible path and/or combinations of paths include (1) fall-back cash cropping, (2) engaging in

<sup>29</sup> This model offers a more comprehensive combination of household livelihood strategies compared to Morrison's trijectory model that limits the Iban household livelihood strategies to merely three sources namely subsistence production, cash cropping and off-farm employment. For a review of Morrison's trijectory model see Morrison (1992b), (1992c) & (1993).

non and/or off-farm employment (NOFE), (3) exploitation of CPRs for sale, and (4) disposal of household assets.

Household subsistence-based strategies are in three areas. The first is the production of sufficient staple food to secure adequate consumption throughout the year. The second group of subsistence-based strategies is the exploitation of CPRs. The CPRs coping strategies are (1) gathering activities, (2) fishing, and (3) hunting. Third is backyard livestock production and home gardening.

The main reciprocally based strategies or paths postulated are (1) reciprocal labor exchange, (2) cash borrowing, (3) sharing of production resources, (4) income-sharing through remittance transfer, and (5) patron-client exchange.

The production and consumption modifying strategies include the various austerity measures employed by the household such as production rationing, consumption rationing, and *ex-ante* and *ex-post* farm diversification strategies.

### **Assessing the Capacity of Household Coping Strategies**

It is somewhat incomplete just to examine household responses to commodity slump and how and why they vary from household to household (with group) or between groups. It would be more meaningful if we could assess the capacity of the household coping strategies to determine their effectiveness and sustainability in meeting household income shortfalls and subsistence security. It is only by doing this can we determine the resiliency or the failure of the household coping strategies in providing sustainable livelihood security to the smallholders or cash crop producers.

### **The Need for Public Responses**

There is an obvious limitation to using household coping strategies to overcome the problems of commodity slump as some of these strategies may be ineffective and nonsustainable. Some types of complementary, corrective or restorative public or state responses are therefore needed. The public responses may be in the forms of appropriate policies or interventions. The policy or intervention goals should focus on (1) the protection, restoration, improvement of critical determinants of these local or indigenous coping strategies; and (2) the stimulation or reinforcement of these household strategies.

## Objectives of the Study

The central question to be addressed in this study is how households involved in cash cropping cope with price instability? The specific objectives of this study are to:

1. Identify and compare household coping strategies used by independent and centrally-managed smallholders during a commodity price slump and/or boom.
2. Determine why different coping strategies occur within a particular group of smallholders or between groups apparently facing similar problems of price slump.
3. Assess and compare the intensity, effectiveness, and sustainability of the household coping strategies.
4. Recommend appropriate interventions and policies for the restoration, improvement and protection of household coping strategies.

## Significance of the Study

The focus on household coping strategies enables us to recognize the capabilities and the underlying rationality of households confronting price falls.<sup>30</sup>

This perspective further enables us to look at 'work' in a much wider sense, in terms of what people actually do rather than viewing very formally through the institutions of labor market or some form of formal employment. In this way, we would see the household as the determinant of its actions rather than the helpless subject of structural forces. Hence, it can defy a dominant view of the poor—that they are passive, irresponsible or conservative, or that the poor people are there to be planned for.

This approach also opens the possibility of recognizing contributions of different genders and generations in addition to the main 'breadwinner.' Most poor people do not choose to put all their eggs in one basket. Rather they reduce risk, increase adaptability, and seek a degree of autonomy, by developing and maintaining wider options, through the ability and willingness of different household members to do different things in different places at different times.

<sup>30</sup> Marxist structuralism sees individual actors as irrelevant or at best as reflections of dominant structural forces.

A crisis stretches household coping behavior to its limits, revealing the capacity of local or indigenous coping strategies of individual households or groups under a full range of conditions of risk and stress as well as exposing their strengths and weaknesses. Insights into coping strategies can improve our understanding of the resilience of households and their failure under pressure.

The other benefit of employing coping strategy as a conceptual tool is that it examines a crisis using an interdisciplinary rather than unidisciplinary approach that focuses on specific or confined issues. For example, the different sources of coping strategy cited above have been individually studied by economists, geographers, sociologists, anthropologists and ecologists. A fusion of these different insights would definitely foster a better understanding of the processes involved.

This approach will also be able to show how indigenous household coping strategies can be built upon, protected, restored, supported and improved. To effectively serve the welfare interests of the cash crop producers facing acute income deficits due to a price slump, interventions and policies should be consistent with and, most desirably, reinforce or stimulate these coping strategies. Conversely, if the new interventions undermine the key components of such strategies then the adoption of such interventions can block and/or reduce the households' welfare. The present study can contribute in a small way by helping to understand the capacity of household coping strategies and assist in formulating the appropriate interventions or policies based on the assessments made. Moreover, understanding household coping strategies is a necessary prerequisite to the formation of a realistic and flexible or resilient livelihood system. The focus of this study is thus on improving the responsiveness of farmers to changing market conditions, particularly the problem of price instability.