1 Introduction

The majority of households in the hills of Nepal depend on agriculture for their survival; they subsist on the produce from their land. However, many households do not produce sufficient food grain each year to meet the annual requirement of household members. Households with small landholdings that are particularly likely to run out of food each year use a variety of means ('coping strategies') to obtain the food that they need. This article describes the coping strategies used by households in the hills of East Nepal and examines the extent to which these have been supported by an Integrated Rural Development Programme (IRDP).

2 Integrated Rural Development in the Kosi Hills of East Nepal

During the early 1980s His Majesty's Government of Nepal (HMGN) implemented an integrated rural development programme in the Kosi Hill Area of East Nepal (KHARDEP) with assistance from the British Overseas Development Administration (ODA). KHARDEP was initiated at the time when a 60km road was being constructed from Dharan, in the southern plains of Nepal, to Dhankuta, the capital of the Eastern Development Region, in the Himalayan foothills. KHARDEP was one of a number of IRDPs implemented by HMGN in the early 1980s and it was seen by ODA as a means of encouraging balanced social and economic development in the area served by the new road.

The KHARDEP programme area covered about 6500 sq km and comprised the four hill districts of Dhankuta, Terathum, Sankuasabbha and Bhojpur. In 1980 their combined population was about half a million.

Households in the Kosi hill area were studied in detail during the planning and implementation of KHARDEP. In order to understand the coping strategies of households that regularly face shortages of food supplies we have reviewed primary and secondary data collected during KHARDEP's planning phase. Our analysis of the contribution of development initiatives to these coping strategies is based on results of the ODA-supported KHARDEP Impact Studies.

3 Economic Characteristics of Households in the Kosi Hills

In 1979 the average area of land cultivated by households studied in the Kosi Hills was about one hectare. Forty-three per cent of households had access to less than half a hectare of cultivable land; in 1978 they were only able to produce about half their foodgrain requirements from their own land. Normally they would expect to produce more, but they would still go short of food for a few months each year. About 25 per cent of households had access to less than a quarter of a hectare and regularly faced shortages of food for more than six months in a year.

Subsistence farming households that cannot be certain of producing sufficient food to meet their consumption need are bound to be in a precarious economic situation. Household members depend on opportunities for off-farm seasonal employment — and a household's economy will be stressed if employment opportunities are limited or demand for off-farm work is unusually high. Unexpected events — such as the illness of a household member — add to these stresses. These adverse influences are likely to occur together, during the lean season, and their combined effect may be to precipitate a crisis within the household because household members find themselves acutely short of cash, food or time.

Household members adopt coping strategies to try to reduce the likelihood of stresses on the household economy precipitating crises. If a crisis is inevitable, attempts are made to minimise its consequences.

4 Analysis of Household Coping Strategies

Coping with Regular Food Deficits of a Few Months' Duration

During the lean season members of households that regularly face a few months' food deficit are likely to:

- reduce food intake during the months of food...
shortage: cutting down, particularly, on consumption of high energy foods;
— sell agricultural and livestock products;
— make and sell crafts such as straw mats and bamboo stools;
— seek employment outside their farms;
— take a loan (of food or cash) from a local moneylender;
— leave the household temporarily (to work, or stay with in-laws) thereby reducing the number of people who have to be fed on a regular basis.

The extent to which household members can rely on these actions as coping strategies depends on the availability of markets for their produce or labour. Their perception of present — and future — market conditions is a major influence on their choice of coping strategies.

In practice, though, they are also likely to be in debt, and the urgent need to repay outstanding loans may cause them to adopt strategies which provide quick returns without, necessarily, giving them the best possible yield from their endeavours. For example, they may have to accept low-paid casual work locally rather than travelling for several days to find a buyer for home produced crafts.

Events likely to place Extra Stresses on the Household Economy

Extra stresses on household economies usually result from unpredictable events, or events that can be predicted but occur infrequently and carry costs which greatly exceed the household’s means. Unpredictable events include:
— illness or death of a household member (particularly that of the main breadwinner in the household);
— a severe harvest failure (resulting in a larger food deficit than usual);
— environmental hazards (loss of land, livestock and dwellings through fire, landslides and earthquakes).

On the death of the head of a household the parental land and assets are divided equally between male offspring. Such events can be unpredictable and distressing, particularly for households where the resulting size of landholding is too small to produce sufficient food for its members, and may cause previously well off households to become much more dependent on off-farm income. In the East Nepal hills it is possible for the sons in a household to demand, without warning, for their share of the household land before their father dies.

The loss of an adult in a household which is entirely dependent on his or her labour or income for survival can be disastrous, particularly if many of the household assets have already been mortgaged or sold.

Extraordinary Measures in response to Unexpected Stress

The choices open to household members who cannot obtain the additional food they require through the coping strategies described above are extremely limited. They adopt measures which, they hope, will stave off a crisis in the knowledge that these will worsen their overall economic position. The variety and sequence of the measures adopted depends on several factors:

— If the members of a household have regularly sought work off the farm they will more readily look for work than will members of a household who normally expect to obtain cash for food purchase by occasionally selling livestock or taking out small loans.

— If there are more than two able-bodied adults within a household, its members are easily able to spare someone to leave home in search of work elsewhere. This option creates difficulties in households with only two healthy adults struggling to manage the limited amounts of land or assets at its disposal. It is not available to households in which there is only one able-bodied adult.

— If households have livestock they may sell one or two animals if they need cash in a hurry. This strategy often results in the sale of large animals (oxen, cows) in favour of investment in small animals (goats, pigs) and a move into more share-rearing arrangements with other households.

— If a household’s only asset is its land, its members will only sell this land if they perceive that there is no other way in which they can survive. The land is often mortgaged first in the hope that the loan can be paid back; in practice it is very rare for households to achieve this and, after years of debt, the land is finally sold. Very few households in the hills are able to support themselves totally from off-farm work. Traditionally, artisans such as blacksmiths and tailors have had guaranteed incomes: with the arrival of ready made goods from district markets their earning capacity is now under threat.

— If household members perceive that they cannot make ends meet staying in the hills they may consider migrating. In the past many Nepali hill farmers have moved to Northern India in search of employment. Recent hostilities in Assam have reduced the attractiveness of this option.
Influence of Household Economy on the Adoption of Coping Strategies

The coping strategies adopted by household members in the Kosi Hill area are strongly influenced by the size of their annual food deficit. We attempt to demonstrate this by presenting two scenarios. The first describes decisions made by a household that faces one or two months of food shortage each year: the second describes a household which regularly faces about six months' deficit in food supply. The scenarios are based on information obtained through case studies of household decision making undertaken in Dhankuta District in 1979-80 [Roberts 1981].

I The household that faces one or two months of food shortage each year makes up the gap by selling agricultural produce. It rarely faces crises as a result of acute shortages of resources. Household members will always need to be prepared for stresses that could result from a poor harvest (due to rain failure or landslide) or from unexpected demands for expenditure (such as the payment for treatment received during illness or the expense of a funeral). They will also have to contend with diminishing yields from their land (because of loss of soil fertility) and the effects of inflation on the prices of food, kerosene and consumable goods. They will try to accumulate reserves of cash or to invest in assets that can easily be sold (such as livestock). They will try to diversify their production, taking up additional crops (such as vegetables and fruits) that can easily be marketed, yet do not reduce their capacity to produce staple food. They will therefore be interested to find out more about opportunities for increasing production and/or income offered through development programmes. However, as they become involved in new initiatives, household members will need to invest more time in economically productive work. They will have less time available for childcare, and their children's health and nutritional status may well be compromised.

II The members of a household which faces substantial shortages in food supply each year are in a much more precarious situation. The household is vulnerable to a variety of external stresses and its members can only survive within the hills if they are able to obtain cash from whatever income earning opportunities come their way. They live a hand-to-mouth existence, moving from one crisis to another. Often the man and woman of the household will seek work independently and keep their financial affairs separate. They will both be indebted to a variety of local traders and most of their assets will be mortgaged. They will, though, try to keep their obligations to others to a minimum by entering into partnerships (sharecropping land or share-rearing land or sharerearing livestock) that serve their creditors' interests as well as their own. They see no prospect of accumulating wealth and cannot envisage that they will have cash to invest either now or in the future. They will avoid participating in new development schemes that they do not trust, particularly if they sense that any gift or loan which they receive will increase their liability to exploitation. However, they will be the first to participate in any activity that offers quick — and tangible — benefits. Development professionals might view members of these very poor households as unreliable manipulators; for them, however, survival depends on their getting what they can, when it comes and wherever it is available. If they perceive that there are secure income earning opportunities elsewhere — in the same district or outside — they will move. Such a move may be inevitable if the household is faced with an insoluble financial crisis such as the foreclosing of a long-standing loan from a local moneylender.

These scenarios indicate the different contexts within which the members of households in the Kosi hills adopt coping strategies. In the next section we draw on data obtained from households as KCHARDEP was implemented to analyse the extent to which the programme influenced coping strategies.

5 Evolution of the Kosi Hill Area Rural Development Programme

The studies undertaken during KCHARDEP's planning phase in 1978/79 emphasised the over-riding importance of the annual food supply gap experienced by poor households and its negative influence on the ability of households to undertake new activities that would increase their production and income. The studies also emphasised the association between the poverty and deprivation associated with gaps in household food supplies and the nutritional status of their children. They indicated the crucial need for the creation of institutions at district and local level to improve the living conditions of households with small landholdings. Results suggested that if the members of these households were to improve their capacity to participate in the development process, they would need loans with which to buy more land and food, or alternative sources of cash income. The social scientists advising KCHARDEP's planners emphasised that a problem-solving approach was vitally important for the successful implementation of an integrated programme designed to bring benefits to deprived households in the area [Conlin and Falk 1979].

In practice it proved necessary for KCHARDEP to be implemented in a way which reinforced the...
development of HMGN's human and physical infrastructure at district level. This is organised in district sectors which correspond to central ministries. KHarDEP was therefore implemented as a range of sector-specific projects, though there was extra emphasis on the provision of services designed to meet the needs of households with small landholdings (low-interest credit for small farmers, increased population coverage by agricultural extension and livestock services, and cottage industry initiatives).

6 Assessing the Impact of KHarDEP on Households in the Area

A special feature of KHarDEP was the initiation of impact studies that were undertaken during the five-year period of the programme's implementation. They were planned jointly by the KHarDEP Coordinator's Office and ODA and were designed to assess whether the programme's overall objective of promoting balanced development in the Kosi Hills was actually being achieved. Data were collected from a relatively small sample of households, some intensively affected by KHarDEP-assisted projects and others more distant from them. Data were obtained on a continuous basis by a specially trained team of enumerators to provide information needed to answer questions about:

- the combined effect of sectoral programmes on households' productivity;
- households' access to, and use of, government services;
- the overall impact of these different initiatives on household members' health, nutritional and educational status (their well-being).

The effects and impact of development initiatives were studied separately among households that owned less than one hectare of land and those that owned more (with some corrections made for land quality). Attempts were made to distinguish KHarDEP activities from those of other public and private investments in the area.

The impact studies team anticipated that it would need information about the ways in which households use assets and resources at their disposal. It wanted a better understanding of the ways in which households (and particularly the poorer households) cope with the different stresses that they face, and the potential for these coping strategies to be strengthened — or hindered — by development initiatives. Hence the quantitative data were supplemented with qualitative data obtained through in-depth interviews with household members. The interviews yielded 'profiles' of most of the Impact Study households [Cassels et al. 1987].

7 The Results of the Impact Studies

The impact studies suggested that the well-being of some households in the KHarDEP area had improved during the period of programme implementation. None of the 200 households studied reported distress sales of land; extension services (agriculture, veterinary, health care) were being utilised by an increasing proportion of households, and offering a wider range of services; and the agricultural practices of some households were changing — new crops (wheat and potatoes) were being introduced.

In most cases these improvements were reported by households cultivating more than one hectare [Nabarro et al. 1987]. The impact studies suggested that the main stimulus to change in the agricultural practices of households in the Kosi Hills was the new opportunity for food, grain and cash crop sales that opened up in the hills following the construction of the road. This has encouraged households with productive assets at their disposal and adequate resources (labour, irrigation etc.) to utilise them, to request more inputs and services so that they can increase their yields and have more to sell. The government's district-level administrators are gradually evolving the capacity to respond to these demands; their efforts will be supplemented by ever-increasing private sector involvement. Wealthier households are starting to rent out more of their land to others so that they can concentrate on business work: if this trend continues the amount of land accessible to medium and small farmers will gradually increase.

The poorer households, cultivating less than one hectare, had not appeared to benefit greatly from the projects implemented by KHarDEP that were geared towards increasing agricultural and livestock production. However, some of these households had been able to increase their income from off-farm activities, from construction projects and other labouring work. It is not yet clear whether these improvements, and the increased opportunities that they bring to households with very small landholdings, will be sustainable. The pace of public works construction projects in the Eastern hills will depend on the continued influx of capital provided for development projects and the gradual expansion of the private construction sector. The value of the employment opportunities provided will depend on the extent to which wages offered to labourers will be sufficient to compensate for the effects of inflation on the purchase price of foods and other essential commodities.

The increased cash earning opportunities thus far appear to offer greatest benefits to the income earners themselves — usually men. Their impact on women and children is less clear. As men spend more of their time away from their homes women may have
increased work to do on their farms and less time for childcare.

The nutritional status data collected for the impact studies emphasised the overwhelming effect of climatic conditions on household members' wellbeing and the increased vulnerability of women and children, particularly from the poorest households.

8 Lessons from the Impact Studies

The household profiles confirmed that households in the Kosi Hills are circumspect about whether or not to participate in development initiatives, particularly if they have had to evolve finely balanced strategies to cope with the stresses they face.

Both the choice of coping strategies and the order in which they are implemented are influenced by the household members' perception of their existing resources (family members able to work), saleable assets (principally those that are not essential for production), and external opportunities like availability of off-farm employment and access to markets.

In households whose socio-economic status is changing, the household's perception of its previous status may be more important than present status as a determinant of strategies adopted for coping with food deficit.

Several families expressed their reluctance to seek off-farm work and avoided this option by selling off their assets first:

_Nar Bahadur Rai and his family had been coping over the years with their increasing food deficit by selling their oxen and family jewellery. In 1983, because of crop failure, both husband and wife were forced to seek off-farm work as labourers. This was a difficult choice for them as it was the first time that anyone in their family had had to labour for someone else._

The recent growth in opportunities for wealthy creditors to invest in new business has led to their increasing the pressure on debtors to make timely interest payments, and even to repay loans hitherto left uncollected. Development opportunities have made the economic environment for some households with small landholdings increasingly unstable.

Households with regular food deficits have great difficulty in utilising institutional credit for production loans when they are heavily in debt and have an acute need for food or cash. However good the intentions of the household members or the loan agency, it is inevitable that, in a household where interest payments are a major drain on resources, cash obtained through an institutional loan for a specific new production project may end up being utilised for consumption purposes. The household then faces repayment problems and ends up poorer as a result.

The following example was typical of several families in the area who had used their production loans to relieve the pressure of outstanding debts:

*Because of his small landholding (0.4 hectare of bar land) Bal Bahadur Rai obtained sufficient cash for food purchase by taking portering work in the dry season. When a local moneylender requested the full repayment of an outstanding loan (400 rupees) he decided to use the money he had obtained from a credit scheme production loan for citrus farming. He did not know how he would repay this credit scheme loan.*

Households with small landholdings that did participate in programmes specifically designed for them were liable to be exploited by other households who were ineligible for these schemes, yet seemed able to 'capture' benefits at their expense. A particular problem resulted from the group liability for loan defaulting within a Small Farmer Development Project group: households were able to take loans, default on repayment, and adversely affect the credit-worthiness of other group members. Ironically it was often the better-off households who behaved in this way.

It was clear that programmes designed to reach households who were particularly deprived needed to be managed by competent staff who were sympathetic to householders' concerns about being involved in new activities whose potential benefits and risks were unclear. These staff were needed to ensure that households had access to inputs when they needed them and to protect them from exploitation.

When staff were sympathetic to the needs of individual households (and less concerned with targets to be met) the households with small landholdings were able to benefit from the group credit schemes:

_Kali Kami left his traditional work as a blacksmith and was earning cash through construction work and woodcutting. On the advice of his landlord he joined a Small Farmer Development Programme group; he did not participate in any group decision making because of his low caste status. However, the Group Organiser encouraged him to take out the smallest possible loan through the scheme to buy pigs. Kali Kami was confident in his own ability to manage this size of loan._

The limited impact of KARDEP-financed projects on the coping strategies of the most vulnerable households is, to a large extent, the result of serious difficulties faced by the programme during its five years' of implementation. Staff were often not posted, or if posted were absent; when in position they frequently lacked the skills required for their allotted jobs, did not receive their allowances and worked without consumables or equipment.

One of the most frequent complaints from households was that inputs (seeds, fertilisers) were not available
Development agencies need to continue to focus on enhancing the security of poor households' assets and resource flows. Perceptions and decision making as well as details of households' longitudinal studies (through the seasons) which in rural communities require data obtained through designed to promote social and economic development profiles. We suggest that any development programme qualitative data and the construction of household article was obtained through the collection of alone. Much of the information presented in this need to determine whether particular programme programme is being planned and implemented there is households cope with regular food deficits. While the development require information about how poor Programmes designed to promote social and economic Impact Learning from Longitudinal Studies of Programme Learning from Longitudinal Studies of Programme Impact Programmes designed to promote social and economic development require information about how poor households cope with regular food deficits. While the programme is being planned and implemented there is a need to determine whether particular programme activities are able to enhance the security of poor households and increase their capacity to cope with the regular and acute stresses they face. As the results of the KHRDEP Impact Studies were analysed it was apparent that information of this sort could not be obtained through the collection of quantitative data alone. Much of the information presented in this article was obtained through the collection of qualitative data and the construction of household profiles. We suggest that any development programme designed to promote social and economic development in rural communities requires data obtained through longitudinal studies (through the seasons) which include the collection of information on householders' perceptions and decision making as well as details of assets and resource flows. Enhancing the security of poor households

Development agencies need to continue to focus on when they needed them:

Nar Bahadur Shrestha tried to obtain improved maize seed and chemical fertilizer from the local agricultural extension worker (the JTA). He went to the JTA's lodgings to purchase the inputs and saw them stored there. He was asked to return in a few days to collect them and was told the stock of inputs had run out. The JTA said he was unable to obtain any more for the coming planting season.

9 Implications for Development Planners

For the foreseeable future, the main emphasis of development initiatives within Nepal will have to be on increasing the rate of national economic growth within the country as a whole. If external agencies continue to support the development of district-level institutions and infrastructures during the next decade, and there is not an unusually high incidence of rain failure, their activities will have a significant impact on the well-being of a large proportion of the households in the area. Continuous and intensive effort is still needed to bring these benefits to the poorer households (cultivating less than one hectare) — particularly those with access to half a hectare or less. Indeed, care will be needed to ensure that efforts to achieve macroeconomic targets, and to adjust the national economy so that it is better geared to growth, do not lead to further impoverishment of poorer households and a decrease in government emphasis on assisting these households to obtain basic needs.

Learning from Longitudinal Studies of Programme Impact

Programmes designed to promote social and economic development require information about how poor households cope with regular food deficits. While the programme is being planned and implemented there is a need to determine whether particular programme activities are able to enhance the security of poor households and increase their capacity to cope with the regular and acute stresses they face. As the results of the KHRDEP Impact Studies were analysed it was apparent that information of this sort could not be obtained through the collection of quantitative data alone. Much of the information presented in this article was obtained through the collection of qualitative data and the construction of household profiles. We suggest that any development programme designed to promote social and economic development in rural communities requires data obtained through longitudinal studies (through the seasons) which include the collection of information on householders' perceptions and decision making as well as details of assets and resource flows.

Enhancing the security of poor households
Development agencies need to continue to focus on the difficulties faced by poor households and the coping strategies that they adopt for survival. Programmes that are designed to support the capacity of households to cope with the stresses they face need to have particular characteristics. They should offer a range of inputs, services and welfare provision that can be used by households when they need them. The coping strategies of poor households in the Kosi Hills can be supported by programmes that provide:

- easy access to effective veterinary services and improved access to fodder so that they can continue to rear and sell livestock as an alternative source of income.
- protected access to markets where household members can sell their home produce and craftwork.
- improved access to well-paid and secure off-farm employment to earn cash and grain to meet regular food deficits, and to avoid becoming further indebted.
- access to well-supervised institutional credit schemes from which loans (particularly small loans) can be taken for emergency consumption needs as well as production requirements.
- improved access to health services which offer effective — and rapid — care to adults who suffer from incapacitating illness, as well as curative and preventive care for their children.

These programmes will be difficult to design and implement and will demand well-qualified staff in field positions. However, if they are not established and implemented either by governments or by non-governmental groups, the chances for improving the position of the poorest in the hills of Nepal will be limited. KHRDEP was an imaginative programme and showed what is needed. We hope that HMGN and ODA will continue to seek ways of benefiting the poorest households even if these may appear to be elusive and incapable of economic justification using conventional arguments.

The poorest households in the Nepalese hills have complex and well-developed strategies to sustain their livelihoods. We need to match their sophistication as we attempt to assist them, and not to avoid the challenges because they are both costly and difficult to meet through conventional aid mechanisms.

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