

# **SUSTAINABLE LIVELIHOODS AND LIVELIHOOD DIVERSIFICATION**

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## **S U M M A R Y**

This paper constitutes a preliminary output of the ODA-funded research programme on sustainable livelihoods being carried out by the Institute of Development Studies and the Poverty Research Unit at the University of Sussex, in collaboration with the International Institute for Environment and Development.

This programme aims to explore the alternative routes to sustainable livelihoods pursued by rural people in contrasting agro-ecological settings in four countries: Bangladesh, Mali, Ethiopia and Zimbabwe. In relation to this aim, the overall focus is to understand how institutional arrangements determine rural people's entitlements, provide the setting within which they construct their livelihoods, and determine who gains and loses in the struggle to maintain livelihoods. It is proposed that rural people construct their livelihoods via three main strategies: agricultural intensification; livelihood diversification; and migration. This paper explores the second of these strategies using evidence from Asia and Africa.



## **SECTION I: INTRODUCTION**

A large and disparate literature, arising from a variety of disciplines, has confirmed that rural people in Africa and Asia do not normally specialise in livestock, crop or fish production to the total exclusion of other income generating activities. Rather, a majority of rural producers have historically diversified their productive activities to encompass a range of other productive areas. Motivations for such diversification are multifarious, linked with wide range of possible activities, and associated with both positive and negative outcomes. This recognition has led many researchers to represent rural livelihoods as constructed from a portfolio of resources, or activities (Adams and Mortimore 1997; Dercon and Krishnan 1996; Ellis 1996; Unni 1996).

The literature generally concurs that while such diversification of livelihoods is common, in takes on a different nature in different contexts. It is:

- sometimes a means to enable accumulation for consumption and investment;
- sometimes employed to help spread risk, or to cope with temporary crises;
- sometimes an adaptive response to longer-term declines in income or entitlements, due to serious economic or environmental changes beyond local control;
- inevitably pursued via a range of activities that are by nature specific to the local context (in relation to resources available, culture, natural resources, climate etc.);
- often differentiated (types and degrees of diversification differ according to location, gender, age, class, and culture);
- usually structured by a wide range of motivations, restrictions and opportunities;
- often closely bound to and concurrent with the development and implementation of other livelihood strategies, especially agricultural intensification and migration;
- tempered in form and extent by wealth disparities and differential access to entitlements.

### **(i) Key definitions**

The term "**Sustainable Livelihood**" is used here to refer to a livelihood that can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

In this study, **Livelihood diversification** refers to attempts by individuals and households to find new ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not), and the reversibility of the outcome. Livelihood diversification includes both on- and off-farm activities which are undertaken to generate income additional to that from the main household agricultural activities, via the production of other agricultural and non-agricultural goods and services, the sale of waged labour, or self-employment in small firms, and other strategies undertaken to spread risk; included in this are what has been termed

'activity or environment diversification' in agriculture (Carter 1997), or more radical migratory strategies (Stark and Levhari, 1982).

In a recent paper, Ellis (1997) defines livelihood diversification as 'the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living' Ellis (1997, p5), pointing out, rightly, that livelihood diversification is not necessarily synonymous with income diversification. This is the approach taken in this paper.

## **(ii) Organization of this paper**

This paper reviews some of the broad theoretical and case-study based literature on various forms of livelihood diversification in rural areas of developing countries. The case study material referred to throughout the paper is drawn largely from studies of Sub-Saharan Africa, with some reference to work on Asia.

In Section II, some of the linkages between the three livelihood strategies being addressed by this research will be outlined. For many researchers the boundaries separating livelihood diversification, migration and agricultural intensification strategies are by no means clear. Rather, these three areas represent interlinked tendencies which, although often studied in isolation, are implicated together in the formation of Sustainable Livelihoods.

Section III addresses the context within which livelihood diversification is undertaken by reviewing a series of questions addressing various aspects of its extent, the activities undertaken, the gender differentiation which may occur, and rural people's motivations for undertaking it. It also points out some of the supports for and constraints to livelihood diversification identified during the review.

The final two sections attempt to draw together some of the overriding themes identified during this review. First some preliminary conclusions are drawn about the nature of livelihood diversification, its causes and extent, and the relative access of rural groups to it. Finally, some preliminary guidance is set out for researchers examining livelihood diversification as it relates to the formation of Sustainable Livelihoods.

## **SECTION II: LINKAGES BETWEEN LIVELIHOOD DIVERSIFICATION AND OTHER LIVELIHOOD STRATEGIES**

Although livelihood diversification is an important strategy by which rural people may work to achieve sustainable livelihoods, it is one that generally operates in conjunction with other strategies which also contribute to the formation of sustainable livelihoods. Two of the strategies which complement livelihood diversification, and which are being considered as a part of this study, are

migration (often in itself a part of livelihood diversification) and agricultural intensification.

Migration forms a central component of livelihood diversification. In Ethiopia, Bangladesh and Mali, for example, migration is widespread and in all three cases it is linked to income generation strategies (McDowell and de Haan, 1997). It has been seen how migrant remittances may relieve rural credit constraints (eg, Taylor and Wyatt, 1996), the particular importance of migration to those living in poor agroclimatic conditions (Reardon, 1997), and some writers have shown how migration may represent a rational allocation of total household labour to maximize household utility (Bigsten, 1996). In the past some researchers have pointed out the importance of migration in providing much-needed resources for investment in rural production (eg, Griffin, 1976; Stark, 1976), and although there is now vigorous debate as to the degree to which remittances are used for rural investment, it is widely agreed that migration forms a central part of rural people's risk mitigation strategies. Other examples that demonstrate the overlaps between migration and livelihood diversification abound throughout the literature.

In a recent review of the migration literature, McDowell and de Haan (1997) review a diverse range of migration types. They point out that the type of migration which is being undertaken needs to be considered in terms of the context within which it is occurring. They underline the importance of considering migration issues in tandem with other livelihood strategies if we are to begin to draw out any generalisations about this complex process. This point applies equally to the process of agricultural intensification.

When defining agricultural intensification, Carswell (1997) employs the definition as devised by Tiffen et al (1994): increased average inputs of labour or capital on a smallholding, either cultivated land alone, or on cultivated and grazing land, for the purpose of increasing the value of output per hectare' (ibid, p29). Carswell points out many of the important linkages between agricultural intensification, economic diversification, and market infrastructure. Like migration, agricultural intensification is affected by market proximity (eg, Reardon, 1997), among other factors, and these markets can help farmers generate farm and non-farm income from a wide range of sources (eg, Valentine, 1993). A proportion of this income may then be used to invest in the productivity of their landholdings. The degree to which this happens, and the causality of this process, especially its direction (rural-urban or urban-rural) , is a matter for further research (see Haggblade et. al., 1991, for one approach). It is clear, however, that the linkages between agricultural intensification and livelihood diversification strategies need to be researched further (Tiffen et al 1994).

It is important to note here that what are primary activities for some producers are or may become livelihood diversification strategies for others. The literature on the "homogenisation" of livestock and crop production systems in semi-arid Africa provides one of the best examples of how what is livelihood diversification for some, is primary production for others. Researchers have shown that in the Sahel, crop producers are increasingly keeping livestock and herders increasingly engage

in crop cultivation (Toulmin 1983a and 1983b: 37-3; see also Pelissier 1977). Bourn and Wint (1994) also show that with a general movement of livestock from northern to southern regions of the Sahel an initial coexistence has been followed by a '...gradual integration of animal husbandry within local farming systems' (see also Delgado 1989).

Crop livestock integration may therefore form part of a complex of strategies to enable the construction of sustainable livelihoods - especially the process of agricultural intensification. It is therefore essential to be aware how different livelihood strategies complement one another as rural producers make their way in what are often risky, resource-poor environments

A typical example from West Africa helps to illustrate some of these points:

**Box 1: Diversification in Rural Mali**

Cekan (1992) tracks the use of seasonal "coping" strategies during the dry season in five Malian villages revealing the variety of strategies employed by different social actors. She argues that these represent ways in which livestock and crop producers attempt to adapt their livelihood strategies to ensure their long term viability. Giving the example of one village, Gallo, these included reduction of calorie consumption, temporary migration of many people (including non-lactating women, young men, and middle-aged men and women) to urban centres in search of paid work, and various income generating activities: women undertook cash crop production (cotton), cleaned "wool" and decorated cloth, ran market gardens sponsored by the local women's organisation, and invested in livestock (especially small ruminants such as goats). The income from these activities was used to invest in grains for planting at the beginning of the rainy season. Each village studied had different sets of activities available, dependent on infrastructure (proximity of roads to urban centres), existence of local organisations and natural resources available.

*Source: Cekan (1992)*

So migration and investment in agricultural intensification are often combined with a range of income diversification activities to form the basis of rural people's total livelihood strategies. It is critical to bear this in mind as we focus on the extent of livelihood diversification activities and the different groups involved.

**(i) What are the different levels of livelihood diversification?**

Livelihood diversification may take place when rural producers change the composition of agricultural products they produce. This is a natural starting point for poor rural producers with low levels of capital, who may be able to restructure their production mix more easily than to invest in other non-agricultural areas. One example of this, that of crop-livestock integration, was mentioned briefly above. Not only can this integration help farmers to maintain fertility through the incorporation of animal litter into soil, but the animals themselves may provide other products as well, in addition to acting as a liquid asset. All of this helps to build up or maintain agricultural

production and reduce risk.

Other permutations on this theme have been well-documented elsewhere. This is particularly true for Africa, where the process of agricultural restructuring as part of a longer term adaptive process has been examined in Kenya (Tiffen et. al., 1994), Northern Nigeria (Prothero, 1957; Mortimore, 1993), and Niger (eg, Koechlin, 1977). Comparative studies have also been undertaken to examine this process of change and the causative factors underlying it. For example, Boulier and Jouve (1988) examined the evolution of farming systems as they intensified and diversified in six regions across Senegal, Mauretania, Burkino Faso and Niger, pointing out the importance of, and interaction between, population increases, developments in markets and market infrastructures, and climatic variability. Intercropping and other so-called 'sustainable agricultural practices' have also been examined in terms of the ways that they help farmers to spread risk, maintain and augment soil productivity and incomes through increasing biological diversity (eg, Altieri, 1987; Lightfoot and Noble, 1992).

Livelihood diversification via non-agricultural means is also very important. Examples of the critical importance of non-agricultural activities in Africa are widespread. In many instances, non-agricultural activities have been analysed using economic models (Dercon and Krishnan 1996; de Janvry 1994; Reardon et al 1992; Haggblade et al 1989) and household food security approaches (Webb 1993; Drinkwater and McEwan 1994; Davies 1996b).

Non-agricultural activities are also analysed in the literature on micro-enterprises. Many of the diversification activities pursued by rural people involve micro-enterprises, and the importance of micro-enterprises in generating employment and income in rural areas of Africa has become increasingly recognised. According to Liedholm et al (1994:1177), past empirical studies have indicated that they provide 20% to 45% of full-time employment and 30% to 50% of rural household income in Africa. De Janvry (1994) confirms this view, noting that off-farm rural incomes are necessary for successful income growth in Africa. They are therefore critical to the achievement of sustainable livelihoods.

There is a wealth of literature which discusses non-agricultural activities (or non-farm/off-farm activities), non-agricultural employment and de-agrarianisation - three interrelated approaches which focus on the way in which sub-Saharan Africa is steadily becoming less rural in character. This process has been termed by some as "deagrarianisation" (Bryceson 1996). All these activities are forms of livelihood diversification, in the sense defined earlier, when pursued by people whose primary production activity remains crop or livestock production, i.e., the majority of rural Africans.<sup>1</sup>

A recent synthesis study has attempted to understand this process by examining historical population growth, urbanization, trade, and market development trends across West Africa, and then making long term projections (CILSS, 1994). This study points out some of the forces driving some of these trends, and their associated effects. It points out, for example, that urbanization is being

caused by a combination of factors, including population growth, changing terms of trade for farmers, due to economic restructuring, and market development through increased exposure to world trends. The authors take an essentially positive view of this process, pointing out how the integration of these trends may be the key motor for the development of the rural sector, especially agriculture.

Similarly, Bryceson (1996) argues that rural non-agricultural employment is of increasing importance in sub-Saharan Africa. She provides empirical evidence this region is steadily becoming less agrarian (both as a long-term historical process, and as an integral part of rural households' livelihood strategies). She concludes that:

Deagrarianisation in sub-Saharan Africa appears to be proceeding on the basis of individual activity diversification with limited intrasectoral diversification. Occupational specialisation is largely missing. (1996:106)

Pursuing non-agricultural activities therefore represents a risk minimisation strategy to achieve basic household subsistence needs. In contrast to the CILSS study discussed above however, Bryceson goes on to argue that this evolution is associated with falling incomes generally.

Many analyses of income diversification conceive of diversification in terms of strategies employed to earn cash income in addition to primary production activities from a variety of sources. It is often argued that this is a strategy primarily intended to offset risk (Dercon and Krishnan 1996). These analyses tend to be rooted in economics and quantitative analysis, focusing on the relative importance of the different sources of income of poor households.

It must be underlined that many livelihood diversification strategies are frequently gender specific. The literature confirms that women may undertake a similarly wide range of diversification activities as men (see Chen 1989 on Gujarat, India), but in many contexts, men are able to avail themselves of diversification opportunities that are not open to women due to cultural constraints. For example, Kabeer (1990a) notes that women's strategies in Bangladesh are limited by the practice of female seclusion (*pardah*) which operates at a practical and an ideological level. Personal accumulation and consumption are sanctioned for men to fulfil their part of the patriarchal bargain: women try to renegotiate this to protect themselves against the break-up of the household.

There is also strong evidence that the involvement in, and therefore reaping of benefits from, non-farm employment is skewed in favour of men, and against women. First, in Africa many women are engaged in the lowest levels of micro enterprise: household-based income generating activities. There are no substantial barriers to entry into this type of activity in terms of skills and capital, but they yield very low incomes (not to diminish their importance in supplementing the household budget). They are, on the whole, "survival" activities (Haan 1989). Further, while reliable statistics on the different levels of involvement of women and men in rural non-farm employment are hard to



find, those that exist point to women not participating equally. Haggblade et al (1989:1193) show that in rural areas of Mali the participation rate of women in non-farm employment is 16% as opposed to 84% for men. This indicates that men do have more opportunities to pursue this type of diversification, although this proposition must be further tested in the field.

Conversely, women may also employ coping strategies that are not easily available to men (see Koch Laier et. al. 1996). Prostitution is one income diversification strategy that has been employed by women in urban centres of Mali to increase their independence from male migrants (Vaa et al 1989), and is cited as an advantage held by female heads of household over men (see Jiggins 1986). While some authors may regard this as a form of exploitation to be resorted to only in extreme circumstances, it can, as above, be regarded as one opportunity for sustaining livelihoods. Further, it has been noted that:

Women dominate many of the non-farm activities that will grow most rapidly during structural transformation - activities such as food processing and preparation, tailoring, trading and many services. They likewise hold a major interest in many of the declining rural non-farm occupations - basket making, mat making, ceramics and weaving. Consequently, women will be key actors in the economic transition of Africa's rural economy. (Haggblade et al 1989: 1192)

While these are important income-generating activities, it must still be emphasized that the greater body of evidence suggests that diversification activities open to women are often less lucrative than those pursued by men.

The literature on coping strategies also shows the existence of gender differentiation (Chen 1989, 1991; Jiggins 1986; Kabeer 1990a). Koch Laier et al 1996 provide a review of some of the vast literature on coping strategies in Africa and Asia, and focus on gender-differentiated coping. Their review of the literature on coping strategies shows that:

- strategies to ensure the survival of the household in times of stress which are available to women differ to those which men can draw on;
- and more generally, that strategies traditionally reserved for periods of unusual stress are increasingly incorporated into vulnerable livelihoods for part of every year, becoming so-called adaptive strategies (this occurs across livelihoods - not just those in drought-prone areas).

They also point out that the literature on South East Asia focuses more on longer term adaptation than on coping with short term shocks, and on institutional rules underpinning coping/adaptive capacity, as opposed to the literature on Africa concerned with seasonal and drought related coping behaviour (1996:8-9).

It is clear, then, that Livelihood Diversification occurs at all levels of the rural economy, and that rural people's linkages with markets and urban centres are also important. An individual's level of involvement in this process is affected by location, wealth and gender, and it does not seem that many rural people are totally excluded from it. In the next section we explore some of the reasons why people engage in livelihood diversification.

**(ii) What are the principle motivations for livelihood diversification, and how do they vary between groups?**

Chambers (1997:162-187) has argued that poor people in particular normally have to diversify sources of livelihood in order to survive in a risk-prone and uncertain world. This is especially true for West Africa, since Sahelian people have historically preferred to diversify than to intensify primary production activities (Painter et al 1994:457). This has led many of them to build up a wide portfolio of activities. Thus, diversification may be important to maintain livelihoods by providing flexibility among sources of income, in case primary activities fail (Berry 1989a). It may also satisfy the need to acquire some cash income to enable purchases of essential goods and services, which are increasingly commoditized (soap, dairy products, organic or chemical fertiliser, etc.) and to pay school fees, medical/health clinic costs and government taxes.

There are numerous household income surveys which provide data on the different sources of household income, and the motivations for undertaking diversification opportunities. One such survey conducted in Burkina Faso for example, found that:

- land constraints did not drive income diversification, but shortfalls in cropping income did;
- changing terms of trade tended to pull farmers towards diversification strategies, but cash cropping activities did not substitute for non-farm diversification activities;
- income diversification was associated with those in higher income groups, and that the role and root of livelihood diversification varied according to type of agroecological zone.

*Source: Reardon et. al. (1992)*

Hence, both push factors (eg, environmental risk, falling incomes) and pull factors (eg, changing terms of trade, perceptions of improved opportunities) may be involved in spurring on the process of livelihood diversification. And this process may become more important and more common in the future, although much of the evidence to say that this is already happening is anecdotal (Ellis, 1997). However, some research on income diversification and diversification of employment in developing countries does indicate that income from non-farm activities is of increasing importance in developing countries (eg Arnold 1994; Bernstein et al 1992).

In a thorough overview of issues relating to rural poverty in sub-Saharan Africa, Heyer (1996)

argues that there is normally more widespread income diversification at the household level in this region than in Asia. Heyer states that: 'The poor generally have access to land and engage in own-account farming, in non-agricultural activities and in migration to seek work' (1996:284). This is confirmed in a recent review of income data for Africa which has found the dominant importance of non-farm wage labour *vis a vis* farm labour – despite a wide variation, a simple average of 45 % of income earned by the rural sector was derived from the non-farm sector (Reardon, 1997). This compares favourably with data from Pakistan, where the lowest income groups derive up to 50% of their total income from non-farm sources (Adams, 1994).

An example helps to illustrate the level of diversification experienced in one community in Burkina Faso, and the degree to which income is derived from non-agricultural sources. At one end of this spectrum, livelihood diversification may be undertaken to support the improvement of livelihoods, allowing surpluses to be generated that can then be invested in a variety of other activities. Hirway (1994) shows this for both India and Indonesia in Asia, while Reardon et al (1992) provide evidence that in West Africa, income diversification is associated with higher incomes and food consumption, and more stable incomes and consumption over the whole year (see also Bernstein et al 1992). Likewise Stark and Lucas (1988) and Connell et al (1975), working respectively in Africa and Asia, supported claims that remittances from migrants were key elements in boosting agricultural productivity. Evans and Ngau (1991) suggest that non-farm income provided risk insurance that enabled farmers to adopt new production methods and thereby raise output. Taylor and Wyatt (1996) point out that diversification income is useful in helping farmers overcome both risk and credit market constraints, and this is supported elsewhere (eg, Reardon, 1997). So diversification may lead to increased investment in local production.

**Box 2: Rural non-agricultural activities in the Department of Zabre, south-eastern Burkina Faso**

According to Delgado (1989) cultivators in Burkina Faso normally obtain 25-50% of their income from non-agricultural activities. The significance of such activities was shown in this study of the Department of Zabre, south-eastern Burkina Faso. Here, participation in non-agricultural activities allowed farmers living near to subsistence levels to acquire cash to supply their basic needs in addition to those supplied by own production.

The activities pursued include: small-scale food processing, petty trade, artisanal activities (eg. basket making) and fishing. Men and women carry out sharply differentiated activities.

Men trade in food grains on a larger scale, make baskets and fencing, fish, and migrate in search of work. There were also several skilled craftsmen: eg. ironmongers, carpenters and a mechanic.

Women make and sell millet beer (dolo), sell prepared food in markets, carry out petty trade in cereals, sell shea nuts and butter, sell groundnut oil, and processed grains (such as soumbala, a flavouring for sauces made from the grains of the nere tree). Some living near the Ghanaian border cross into Ghana to buy chillies which they resell in the village markets of Zabre. Women also make clothing, sheets etc. for the household.

Children regularly resell certain products, such as prepared food, cigarettes, and provide services such as shoe-shining.

The profit margins for these activities differ greatly: making beer provides a low profit margin compared to large-scale trading in grains. It is notable, then that women's and children's non-agricultural activities, though more varied, tend to be less remunerative. However, many women benefit from the support of a strong women's organisation which had obtained international resources to buy food processing equipment. For men, membership of a strong village group or peasant organisation is of critical importance to obtaining small-scale credit to fund dry season activities

Most non-agricultural activities take place in the dry season, when there is little agricultural activity and when stores of the last season's harvest are low. However, many artisanal activities are carried out all year round, usually in addition to farming.

In conclusion, these non-agricultural activities constituted an opportunity for residents in this Department, benefiting from proximity to Ghana and vibrant markets, to increase their sources of income and their possibilities to increase investment in agricultural production. Indeed, villages further from this border did not benefit from the same range of activities, and hence were more limited in their abilities to move beyond a largely subsistence survival strategy.

*Source: Hitimana et al 1995:31-34; Maizi 1991; Delgado 1989.*

However, the possibility that livelihood diversification leads to income which is used for investment may be dependent on wealth. Berry (1989a) argues that poor producers are unlikely to be able to use income from livelihood diversification for agricultural intensification, but rather use it to support consumption and essential current expenses in order to survive. This likewise needs to be understood in terms of the context within which diversification is taking place.

While recognising that "keeping options open" is inevitably important in the context of risk and uncertainty, von Braun and Pandya-Lorch (1992) do not see risk as the only motivation for diversification. Through an examination of the motivations underlying poor people's livelihood strategies in several African and Asian countries, they conclude that the former diversify their income due to a range of other important factors which vary according to context.

Dercon and Krishnan (1996) add to this argument, showing from their research on diversification in rural Tanzania and Ethiopia that the different income portfolios held by households cannot be explained by their behaviour towards risk as is usually suggested. They argue that the ability of households to adopt more profitable diversification strategies depends on access to the means required to pursue such activities, such as skills, location, livestock ownership, access to capital and credit.

There is wide agreement that a fundamental motivation for diversification out of primary production is environmental uncertainty related to climatic variability (in particular, low and unreliable rainfall and drought). While of particular relevance to semi-arid regions in Africa, and parts of Asia (see eg. Jodha and Mascarenhas 1983), diversifying sources of livelihood is a normal way to minimise risks implicit in a totally "peasant" production based livelihood strategy.

Berry expands on this notion of risk (1980; cited in Bernstein et al 1992:81):

...diversification of income-earning activities is a key factor because farming in Africa is usually so risky: crop yields are subject to the uncertainties of rainfall and input supply, and farming incomes are subject to the uncertainties of both yields and prices.

Indeed, in their study of livelihoods in India and Tanzania, Jodha and Mascarenhas (1983) refer to "household risk strategies" rather than livelihood diversification or livelihood strategies. Toulmin's work on Mali provides further evidence that diversification may be partially a response to risk in semi-arid environments (see Box 3 below).

There is a broad literature covering extensive work carried out on household food security, which treats sets of livelihood diversification strategies as part of a set of coping strategies employed by rural producers in developing countries to survive. Coping strategies may be employed systematically in certain periods every year, or special strategies may be employed during periods of severe, unusual drought. As has already been pointed out, such diversification is an important strategy employed by rural people in sub-Saharan Africa in order to cope with crisis and seasonal stress (Jiggins 1986; 1989).

### **Box 3: Risk-induced diversification among the Bambara of southern Mali**

Poor and variable rainfall, including the constant threat of drought, combined with demographic problems (high child mortality, low adult life expectancy and limited ability to reproduce labour) have increased uncertainty and risk for Bambara farmers in southern Mali. In her case study of household survival in Kala village, Toulmin points out that this situation has obliged cultivators to change the way they farm, adopt different varieties of crops, change their production plans and cultivate an array of different production choices (or portfolios of activities).

At a general level, diversification strategies undertaken in response to these risks include:

- trading financed by millet harvests;
- migration (to supply cash earnings for household expenses);
- marriage alliances between households in different settlements.

In addition high fertility is favoured as children provide insurance against risk.

At a more specific level, a range of non-agricultural activities are undertaken in the dry season. These are gender differentiated. For example, men sell firewood, make ropes and hunt. Women spin cotton, wash clothes and sell prepared food.

Households are unequal in their ability to take up available opportunities for diversification, with a principal constraint being size of household (as the main constraint to agricultural production is labour, not land), but also livestock holdings. Those who can accumulate via diversification tend, therefore, to be richer households.

*Source: Toulmin 1992*

Chen (1989) has shown that the situation is similar for vulnerable producers in areas of India. Chen's study of seasonal coping strategies in Gujarat shows the breadth of this approach, including as "coping strategies" the following range of activities:

- diversifying income sources (by seeking second jobs, cultivating a variety of crops or livestock, etc.);
- migrating;
- stocking up on various supplies;
- mortgaging or selling assets;
- sharecropping;
- borrowing and lending;
- drawing upon common property resources (eg. pastures, village wells and trees);
- drawing upon the various forms of social and family relationships;
- participating in relief work;
- money lending.

Coping strategies are employed seasonally or in response to external shocks (eg droughts) by relatively vulnerable households. The implication of coping strategies is that the portfolio of

activities of these people changes to cope with unusual stress (Davies 1996a:238; see also Jiggins 1986). Such strategies are employed to ensure survival, but are reversible, hence, while their use *may* indicate vulnerability, they are not wholly negative (see Davies 1996a:238-241). The same activities may be used, for example, simply as part of a broader strategy to maintain incomes at a certain level (Bisten and Kayizzi-Mugerwa, 1995).

Many researchers consider that diversification has been associated with more longer-term negative effects. Berry argues that a state of continuing agrarian crisis and economic instability has caused an increase in farmers' propensity to invest in extended social networks as mechanism of access to the means of production, accompanied by increased off-farm activities to fund production and consumption. She asserts that the need to enhance diversification strategies for gaining liquidity and flexibility has also been responsible for reducing the scale and time horizon of primary productive activity (Berry, 1989a:17).

Given that employment opportunities fluctuate according to the health of the economy as a whole, an increase in the number of diversification activities undertaken does not necessarily mean that livelihoods are becoming more "sustainable." Poor farmers who increasingly engage in off-farm activities may rather be doing so as a long-term adaptation to stress, shocks and poverty – these farmers are trying simply to survive in a poorer, riskier world, rather than to improve livelihoods and invest in production.

For example, research on the Inland Niger Delta region of Mali indicates that livestock and crop producers have increased diversification of their livelihood systems to spread risk, but that this diversification is becoming less and less effective in supplying producers with their needs (Davies 1996a:284). Further, the overall shift to extra activities that has occurred has turned what were accumulation strategies in the past into regular and essential sources of household income for subsistence in any year. According to Davies, each household chooses a complex mix of activities according to a range of livelihood criteria in the wider context of greater dependence on the market, and of a recently established negative cycle of subsistence and adaptation (ibid.: 190). This conclusion, that livelihood diversification in sub-Saharan Africa and in Asia is increasing, while being essentially negative in nature, is supported in other work (eg Bryceson 1996; Chandrasekhar 1993 (on India)).

The view that income diversification is a survival strategy in the context of stress is also presented by Ghosh and Bharadwaj in relation to their work on rural India. They state that:

Some economists might argue that the diversification of rural employment is part of a positive dynamic whereby economic growth entails a shift in employment from agriculture to industry and then to services ... However, in the Indian case, the spread of non-agricultural employment reflects the growing desperation of the rural poor for income-generating

opportunities. Non-agricultural employment arises from the survival strategies of rural households unable to obtain employment or self-employment in agriculture. It is a last resort rather than an attractive alternative livelihood. (1992:153-154)

Bernstein et al (1992) also regard diversification generally as a form of adaptation that remains essentially negative: a change of livelihood to support a lower quality of life than was previously possible. They argue that in the Indian case, '...the spread of non-agricultural employment reflects the growing desperation of the rural poor for income-generating opportunities. Non-agricultural employment arises from the survival strategies of rural households unable to obtain employment or self-employment in agriculture. It is a last resort rather than an attractive alternative livelihood' (1992:153-154). This view of adaptation can be disputed, however. Practices and adaptive strategies may be positive, functional, sustainable, and thus lead to sustainable livelihoods. Or they may be dysfunctional, leading to non-sustainable livelihoods - depletion of the environment or human resources, or continued external support (IISD 1996).

Davies elaborates on the concept of adaptation from her work in Mali. Her use of the term essentially applies to the "negative" kind of adaptation referred to above. She notes that while coping strategies in the Inland Niger Delta region are normally reserved for periods of unusual stress, the same activities can become adaptive strategies, or strategies used every year to '...fill the food gap left once production and exchange entitlements have failed to meet minimum food requirements' (1996a:238). All producers, including those who had diversified more, have become vulnerable to food stress due to population pressure on natural resources, increasing competition for natural resources, pressure on dry season grazing, and increased dependence on the market. Livelihood diversification has therefore become a form of negative adaptation: ie. a strategy necessary to ensure survival in the context of a structural, annual gap between cereal production and consumption needs (Davies 1996a:168). It also becomes a debt trap due to the need to fund new activities.

This form of adaptation is often involuntary, inasmuch as it is necessary to adapt in order to survive, and irreversible. It still involves a change in portfolio of activities, but to a lower, more vulnerable level of existence. This certainly does not contribute to the achievement of sustainable livelihoods, but to a cycle of impoverishment that may begin with a "normal" hungry season, which may possible lead up to the creation of household indebtedness, low food stocks, sale of assets (eg. livestock) and an inability to bounce back after temporary setbacks (pest attacks, livestock disease, household illness, etc.) (Cekan 1992).

In spite what is known about the extent to which diversification is a necessary and ongoing strategy employed by rural people, it is not yet clear how diversification contributes to survival *vis a vis* asset accumulation, and the relative proportions of diversification income which are used for consumption versus investment. This is one of the key questions facing researchers concerned with



understanding livelihood diversification in specific contexts - one for which there are no general conclusions yet to be made. It is certainly known that income diversification provides income, of which a significant proportion is used for consumption, but researchers are at odds over the degree to which the remainder is used for investment, and the relative levels of investment required to have a significant long-term impact.<sup>2</sup>

One likely possibility is that a spectrum of outcomes arises as a result of livelihood diversification, ranging from long-term adaptation to accumulation for investment purposes, and that these outcomes vary over time. Heyer, for example, argues that agricultural and non-agricultural activities coexist in a complex mix that produces positive accumulation only in specific contexts. Machakos District in Kenya is given as an example and this is shown in Box 4 below. Haggblade et al (1989) have also suggested that in sub-Saharan Africa certain policy interventions are necessary to allow positive farm-non-farm growth linkages, and ensure the success of non-farm activities in reducing poverty and promoting accumulation.

**Box 4: Diversification in Machakos District, Kenya**

From the 1960s education and remittances combined with investment in agriculture and local non-agricultural activities (which were more profitable than alternatives) in a pattern of development associated with gradual increase in standards of living.

Causes included:

- growth in markets (and demand for agricultural products) alongside the general development of the economy;
- development of transport and communications (improved access to growing markets - local, national and international);
- availability of new technology for coffee, cotton, horticulture, and soil and water conservation, making agriculture more profitable;
- increasing investment in local farm and off-farm activities in Machakos due to the relative decline in availability of migration activities;
- from the 1960s onwards: increased provision of government services (agriculture, veterinary, education, health, law and order).

Hence, "Internally, it was the interaction of remittances, non-agricultural employment, agricultural employment and income, and education and health provision, that enabled rural incomes to rise and poverty to decline" (p.294; emphasis added).

This case showed that poverty, and accumulation, could not be explained solely from a local point of view. Rather, macro-economic health was critical to allowing livelihood diversification to support accumulation in Machakos. Also, there was a trade-off between migration and off-farm activities: reduced migration helped stimulate local activities and the economy as people sought to be productive at home, although the continued flow of remittances from previous migrants remained important.

*Source: Heyer (1996:292-294)*

Based upon the empirical data now available, it is not possible to say whether or not rural people's engagement in livelihood diversification strategies is either a sign of failing livelihoods, or a sign of improving prospects for rural people in Africa and Asia.<sup>3</sup> We can, however, state with certainty that there are a multitude of reasons to help explain why rural people diversify, that these are mostly context dependent, and that livelihood diversification can lead to both positive and negative outcomes.

#### **SECTION IV: SUPPORTS FOR AND CONSTRAINTS TO LIVELIHOOD DIVERSIFICATION**

The infinite variety of livelihood diversification strategies employed by rural people highlights the fact that rural people who operate in environments which are diverse, complex and risk prone (Chambers et.al., 1989) are often able to construct productive strategies in spite of overwhelming odds. In the section above some of the variety of diversification strategies employed by rural people to overcome these odds were reviewed, along with a range of explanations of the main motivating forces impelling them to engage in them. A few of the limitations of the diversification opportunities available for some groups (eg, the poorest) were also hinted at. In this section some of these constraints to livelihood diversification are outlined further, and alongside this we discuss some of the mechanisms and contextual factors which support the process of livelihood diversification associated with the construction of sustainable livelihoods.

##### **(i) Constraints**

The opportunities for livelihood diversification open to rural people vary according to a wide range of factors. For example, Seppala (1996) argues from his analysis of data collected in rural Tanzania that success or failure in undertaking diversification strategies is dependent upon households' different management approaches - differences in timing of activities, location of activities, or a capacity to estimate risks. 'The differences in resource management can be marginal differences, and difficult to observe, but are crucial in the competitive environment' (1996:569). And as mentioned earlier, Dercon and Krishnan (1996) have suggested that the different income portfolios held by households is best explained by differences in ability, location and access to credit. Likewise, Bigsten and Kayizzi-Mugerwa (1995) conclude that the ability of Ugandan households to diversify their income depends upon both household characteristics and economic variables, and Bigsten (1996) illustrates this in Kenya, where the size of a household and the existence of personal networks were key variables determining whether or not a household engaged in migration. As has been pointed out elsewhere, migration of one form or another forms the basis for many livelihood diversification activities undertaken by rural people.

One implication is that those rural groups who are most vulnerable because of their lack of access to education, their distance from markets, their low wealth status or small household size may have the fewest opportunities to diversify. This, in spite of the acknowledged importance of diversification as a strategy to accumulate income for consumption and/or investment, and to spread risk. During a recent review of the income diversification literature, Reardon (1997) not only pointed out the overriding importance of non-agricultural income to rural people in Africa, but that the poorest groups seemed to face the most barriers to accessing this area of the economy.

The barriers that appear to operate involve a large number of interlinked, context-dependent factors. Table 1 below summarises the main types of constraints to livelihood diversification raised in the literature covered by this review.

**Table 1: Constraints to livelihood diversification**

<b>TYPE OF CONSTRAINT/Specific constraints</b>	<b>CONTEXTS</b>	<b>EXAMPLE REFERENCES</b>
<p><b>MACRO-ECONOMIC AND POLICY CONTEXT</b></p> <ul style="list-style-type: none"> <li>• low population</li> <li>• no urban centres in proximity</li> <li>• market access</li> <li>• restrictions on internal and/or cross border movement and trade</li> <li>• government policies which extract surplus from people trying to diversify or which impede their preferred diversification strategies</li> <li>• market regulations in the wake of liberalisation and economic reform which adversely affect diversification</li> <li>• availability of infrastructure (markets, roads etc.)</li> <li>• policies that encourage decentralisation and the development of small-scale labour-intensive enterprises</li> <li>• labour availability</li> <li>• terms of trade failure for crop cultivators</li> </ul>	<ul style="list-style-type: none"> <li>• all developing countries</li> <li>• West Africa</li> <li>• Burkina Faso</li> </ul>	<p>Heyer 1996 Evans and Ngau 1991</p> <p>Delgado 1989, 1994; Toulmin 1992 Reardon <i>et al</i> 1992</p>
<p><b>PHYSICAL ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>• degraded or insufficient natural resources (land, water...)</li> </ul>		
<p><b>SEASONALITY</b></p> <ul style="list-style-type: none"> <li>• climatic risk and uncertainty</li> <li>• poor harvests</li> <li>• seasonal attacks of disease</li> </ul>	<ul style="list-style-type: none"> <li>• semi-arid regions; Tanzania</li> <li>• Burkina Faso</li> </ul>	<p>Seppala 1996</p> <p>Reardon <i>et al</i> 1992</p>
<p><b>LACK OF FLEXIBILITY</b></p> <ul style="list-style-type: none"> <li>• lack of flexibility in ecological management, economic activities and livelihood strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Nigeria</li> </ul>	<p>Adams and Mortimore 1997</p>
<p><b>SKILLS</b></p> <ul style="list-style-type: none"> <li>• limited availability of education and skills training</li> </ul>	<ul style="list-style-type: none"> <li>• all developing countries</li> </ul>	<p>Heyer 1996</p>

<b>TIME</b> <ul style="list-style-type: none"> <li>primary activities not leaving enough time to pursue diversification strategies</li> </ul>	<ul style="list-style-type: none"> <li>Northern Nigeria, and all developing countries</li> </ul>	Adams and Mortimore 1997
<b>INSTITUTIONS</b> <ul style="list-style-type: none"> <li>norms and religious values excluding women or other groups from participation in certain activities</li> <li>rules which exclude certain people from informal credit markets (including borrowing and gift-giving)</li> <li>restrictions on the access to certain activities for lower classes</li> <li>monogamy and difficult divorce constraining women's economic independence</li> <li><i>pardah</i> restricting women's contact with wider society</li> </ul>	<ul style="list-style-type: none"> <li>Bangladesh</li> <li>Mali</li> <li>all developing countries</li> <li>many developing countries, excluding parts of West Africa</li> <li>Bangladesh; Nigeria</li> </ul>	Kabeer 1990a Jiggins 1986; Vaa <i>et al</i> 1989 Kabeer 1990a Watts 1988 Kabeer 1990a; Watts 1988
<b>LACK OF ACCESS TO COMMON PROPERTY RESOURCES</b> <ul style="list-style-type: none"> <li>exclusion of certain groups (in particular, the poor or women) from use of CPRs for the purposes of diversification</li> </ul>		Jiggins 1986
<b>MEMBERSHIP OF ORGANISATIONS</b> <ul style="list-style-type: none"> <li>exclusion of the poorest from membership</li> </ul>	Burkina Faso	Hitimana <i>et al</i> 1995; Maizi 1991
<b>PRESENCE OF NGOs</b> <ul style="list-style-type: none"> <li>lack of support for new income generating activities</li> </ul>	<ul style="list-style-type: none"> <li>all developing countries</li> </ul>	Masefield 1996; Hitimana <i>et al</i> 1995
<b>ACCESS TO OTHER MEANS TO DIVERSIFY</b> <ul style="list-style-type: none"> <li>unavailability of credit</li> </ul>	<ul style="list-style-type: none"> <li>all developing countries</li> </ul>	Masefield 1996;

Few of the constraints set out above affect only the poorest groups, but there are those that are likely to affect the poorest disproportionately. In particular, negative agroclimatic factors tend to impede the poorest from benefitting equally from diversification activities, especially via migration, in spite of the relatively higher importance of this type of diversification for all of those living in these zones, as compared with more favourable agroclimatic areas (Reardon, 1997). One reason for this may be that small or marginalized households may have fewer channels of access to institutionally-derived diversification activities (eg, Berry, 1989b), thereby limiting the possibility of diversifying outside the local area. At the local level, the lack of credit is also more likely to affect the poorest groups, and these people may find it more difficult to access other means to diversify because of, for example, their lack of power in decisions about the allocation of land or common property resources at the village level. The barriers affecting the poorest may therefore exist in a variety of dimensions.

## **(ii) Supports**

As has already been pointed out, many rural livelihoods in sub-Saharan Africa are generally constructed from a portfolio of activities in addition to primary activities (see Schoonmaker Freudenberger 1994), and the same holds true for many rural people in Asia. (eg, Adams, 1994) For every individual or household this portfolio of activities varies over time, and the relative mix of activities is tempered by context-specific constraints and opportunities (market development or proximity, prices, infrastructure, natural resource base etc.). However, groups of people still tend to differentiate themselves from others according to their subjectively, and historically, perceived primary activity (see Paarup-Laursen 1996 on northern Burkina Faso). This differentiation is reflected in distinct and persistent forms of social organisation.

Similarly, formal and informal institutions, social networks, and local non-governmental organisations of all kinds help to structure some aspects of livelihood diversification (Davies 1996a; Hitimana et al 1995; Bangura 1994; Berry, 1989b). They often condition who can diversify and the potential rewards from diversification, and they may place limits on the types of diversification open to people in different contexts.

The critical importance of facilitating organisations that provide the infrastructure and the means (eg credit) to support diversification strategies has been referred to above (see also Hitimana et al 1995). Katona-Apte (1988) shows the vital role played by the Grameen Bank in Bangladesh in providing credit to women which enables them to carry out diversification activities and to demonstrate that they are good credit risks for other sources of credit.

Anthropological studies show that livelihood diversification is intertwined with institutional as well as material concerns. For example, Seppala (1996) shows that diversification in Tanzania is a cultural as much as material strategy. In this case diversification was a strategy for cultural expression and the formation of a separate identity - a village level political identity that became possible due to esteem gained through income-generating diversification activities, including the economic wealth produced by opportunistic trading. Here, the desire for esteem spurred on the pursuit of livelihood diversification. The esteem achieved was manifest in the creation of an organisational identity at village level.

It is clear then, that diversification affects social relationships and institutions. It can result in changes in the respective roles of men and women within the household and in society. For example, where women manage to accumulate and control the resources supplied by livelihood diversification their influence over discussions regarding investment or time allocated to various household tasks may increase, displacing powers traditionally held by men. Institutions may also change in response to livelihood diversification. However, there is little evidence in the literature to provide clear conclusions regarding such relations of cause and effect.

The table of constraints set out above also provides us a way to point out other supports for

livelihood diversification which are already in place, albeit to varying degrees in different contexts. The macroeconomic and policy context in many developing countries has changed substantially in the past decade, and with high and sustained population growth in many developing countries, high rates of urbanization and market development, rural people may find increased opportunities to diversify – in some instances, they may have no choice other than to engage in it if they are to maintain their incomes in the face of increasing poverty pressures (eg, Heyer, 1996). The pressures to diversify will still be there, so it is fortunate that rural people are clearly flexible enough to cope with many of these pressures, although they still face important contextual constraints. These constraints are felt most by the poorest rural groups; the landless, those in small households, those with little access to credit or to extended social networks, and those with few assets.

## **SECTION VI: CONCLUSION**

Based upon the evidence gleaned during this review, we have found it very difficult to draw many general conclusions about how livelihood diversification as a separate strategy feeds into the process by which rural people construct sustainable livelihoods, or its long-term impact. One of the main reasons for this is the fact that this subject has not been tackled directly and comprehensively before because: (i) it is very context-bound in content and form; (ii) it is difficult to trace trends over many years, and; (iii) an overt focus on income and income distribution by many researchers has limited the analysis undertaken. But most importantly, and as we pointed out in the discussion of migration and agricultural intensification, livelihood diversification is very complex and all-encompassing strategy, so disentangling the various components and factors surrounding it is difficult in any particular context. But it still needs to be carried out if we are to be able to identify its key limitations and opportunities.

In spite of these initial caveats, we have been able to draw four main conclusions

First, livelihood diversification is normal for most people in the majority of rural areas of developing countries in both Africa and Asia, and non-agricultural activities are critical components of the diversification process. Livelihood diversification activities are very likely to be central to the construction of sustainable livelihoods, and their importance will not diminish in the near future. Rather, we expect their importance to increase.

Second, livelihood diversification is pursued for a mixture of motivations, and these vary according to context: from a desire to accumulate to invest, to a need to spread risk or maintain incomes, to a requirement to adapt to survive in eroding circumstances, or some combination of these. It cannot and should not be characterized by the nature of short-term outcomes associated with it as these are too diverse to categorize, they rely upon a multitude of interdependent factors, and their long-term effects are little understood.

Third, and linked to above, the character of livelihood diversification is dependent primarily upon the context within which it is occurring - this includes the differential access to diversification activities and the distribution of the benefits of diversification. These likewise need to be examined as they change over time.

Fourth, and finally, the poorest rural groups probably have the fewest opportunities to diversify in a way that will lead to accumulation for investment purposes. This does not mean that they will not be able to diversify to this end over the long term, or that they will not make investments of, for example, labour, to build up their assets, or that they will not be able to develop access to diversification opportunities via social means. These issues have not been adequately addressed by research. Rather, the fact of rural people's engagement in livelihood diversification activities has been used by some researchers to demonstrate the vulnerability of these groups – the implication being that this type of diversification is mainly associated with a negative set of circumstances. As was seen above, this is not necessarily true. In fact it is probably untrue in many situations. This provides an essential focus for further research into livelihood diversification.

## **SECTION V: RESEARCH ISSUES**

There are a number of research issues that have arisen over the course of the preparation of this paper which are briefly addressed below.

First, the literature on rural livelihoods is vague regarding the specific unit of analysis that should be the focus of livelihoods-research. Many studies of rural development in Africa and Asia have chosen nuclear households as the central unit of analysis, treating the household as a unified actor, with decision-making undertaken by the household head (usually presumed male). Other research on Africa has shown the complexity of the internal relationships and distinct roles of individuals within African households (Ancy 1975; Gastellu 1980). These authors note that in West Africa "households" comprise diverse internal groupings of individuals, united by specific purposes. It must be acknowledged that the household is internally complex and multiactive, so it must be disaggregated: hence the different roles and activities of individuals (men; women; natural and adopted children) must be considered. Furthermore, the multilocality of households must be acknowledged, such that the impact of the activities and roles of non-resident members of households are not ignored.

Second, research must be based on the premise that members of households in Africa and Asia normally pursue a portfolio of activities, and that they play an important role in the pursuit of sustainable livelihoods. In addition, the geographical spread of households and the internal relationships between members vary according to context, and women, men and children have different degrees of autonomy of action and control over resources. As a result, the way in which

diversification incomes are controlled and used needs to be analysed in relation to norms relevant to each context.

Third, poverty characteristics and rural livelihood strategies are very different in rural Asia and Africa. Hence, comparative research should not be based on assumptions of diversification strategies being of the same nature (Heyer 1996:284).

And finally, further research needs to examine both the local non-governmental institutions which support the poorest rural groups in their attempts to diversify, as well as the ways and means rural people secure access to diversification opportunities via social networks.



## NOTES

1. Here, a primary activity is defined by the proportion of income it contributes to the household in addition to the subjective perceptions of producers regarding their primary activity. This does not always correspond to the labour time allocated to an activity. For example, given the seasonality of West African agriculture, where farming may occupy producers for only half of their time for 4-6 months of the year the primary production activity as defined here may take less than half of the time of household members. Nor is "primary activity" conceived in terms of the total value of output - something that changes year on year depending on uncontrollable factors such as climate. Further, there is evidence that in some areas (eg northern Nigeria) migrant remittances may provide a substantial cash income to crop producers, however these people still see their primary production activity as farming, not "farming out" migrants .

2. If a relatively small proportion of off-farm income is used for investment purposes, does it mean that this investment is insignificant in ensuring long-term income growth? A number of writers seem to make this assumption, yet it has not been explicitly addressed. And, in the absence of cash, farmers may invest their labour, so this too needs to be taken into consideration.

3. For example, Davies' (1996a:77) assertion that the increase of women's time spent on "a typical" activities indicates vulnerability is certainly questionable. This change in productive strategies may increase security in a changing context, depending on the activity and rewards. Hitimana et al (1995) have shown, for example, that the increased involvement in non-agricultural activities via a powerful women's organisation was important for some women to survive as well as improve their well-being. Indeed, those who could not do this were judged to be generally more impoverished.

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## **SUSTAINABLE LIVELIHOODS RESEARCH PROGRAMME (SLP)**

This research project is exploring alternative routes to sustainable livelihoods for poor people in contrasting agro-ecological settings. The research asks two questions: an analytic one - what institutional arrangements enable some poor people to achieve secure, sustainable livelihoods, when others fail?; and a practical one - what policies can support both groups?

The work focuses on the institutional arrangements which allow people to achieve sustainable livelihoods, or otherwise. We understand institutions in a very broad sense to mean the regularised practices or patterns of behaviour structured by rules which have widespread use in society; such institutions may be formal or informal. Such institutions mediate a range of livelihood processes in rural areas. We are focusing on four, related, processes: agricultural intensification, crop-livestock integration, livelihood diversification, and migration.

These livelihood processes will be investigated in four case study countries - Bangladesh, Ethiopia, Mali and Zimbabwe - with research sites located along agro-ecological gradients from high to low natural resource endowment and differing livelihood systems. In each country we work closely with local researchers and officials. The work started in 1997 and will continue to 1999.

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