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Poverty and Wellbeing in the Peri-Urban Interface of Developing Country Cities: A Review

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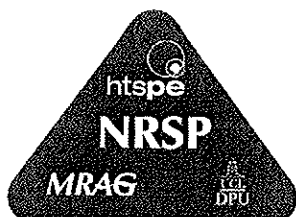
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Poverty and Wellbeing in the Peri-Urban Interface of Developing Country Cities: A Review

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A report on research carried out on behalf of the UK Department for
International Development Natural Resource Systems Research Programme.

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SUMMARY

The aim of this commissioned desk review is to assess what is known about the extent and characteristics of poverty in the peri-urban interface of developing country cities in order to identify research needs, in particular for the Peri-Urban Interface Production System and related natural resources research programmes funded by the UK's Department for International Development. In view of the limited and patchy nature of the research which specifically focuses on the PUI, recent literature on rural and urban poverty is also reviewed and the relevance of these to peri-urban areas assessed.

Income and consumption-based definitions of poverty and the perception of poverty and deprivation revealed by Participatory Poverty Assessments are reviewed to identify the critical dimensions of poverty and wellbeing. Available research and data, especially from World Bank funded Poverty Assessments, is used to compare the extent, characteristics and causes of poverty in rural and urban areas. The value of moving beyond estimates of consumption poverty to understanding of household livelihood strategies and the need to analyse the dynamics of poverty are stressed.

A brief assessment of poverty reduction strategies and experiences touches on the role of macro-economic and meso-policies before examining a range of policy options related to capital assets. Experience with attempts to assist the poor manage their stocks of capital assets, to increase the assets available to poor households or communities, and to enable them to take advantage of opportunities by removing constraints are discussed in relation to natural, physical, financial, human, social and political capital.

Research on processes of change in the PUI is reviewed, paying particular attention to the poverty implications of the changes identified and gaps in understanding. The main processes discussed are changes to farming systems and land use, land markets and development, changing patterns of labour force participation, social change, infrastructure needs, waste and pollution. It is noted that, at the PUI, both threats to the wellbeing of poor people and opportunities to improve their living conditions and access to economic opportunities occur. The threats and opportunities vary spatially both within the PUI at any one point in time, and over time as the zone of intense interaction and competition shifts outwards as the built-up area expands. They also vary between households, depending, for example, on their prior asset position and composition, as well as on contextual environmental, economic and social factors. The new opportunities for disposal of land and sale of labour, goods and services in urban markets may result in reduced poverty incidence. However, some settlements and households are better able to resist threats and take advantage of opportunities than others, and there may also be an influx of higher income people, leading to increased differentiation both spatially and socially.

Our understanding of these dynamics and their outcomes is patchy and impressionistic at present. There is a need for both in-depth research around particular cities and comparative research between city regions to increase our knowledge of the processes at work and their poverty implications. Investigation is also needed to analyse the potential for and likely outcomes of interventions designed to increase the wellbeing of poor people in peri-urban areas.

The aims and content of the PUI research programme since 1995 are reviewed, with particular reference to its poverty relevance. This programme includes a number of thematic projects, developing sets of projects focusing on two city regions (Kumasi in Ghana and Hubli-Dharwad in Karnataka, India) and peri-urban projects being carried out in conjunction with other production systems research programmes. Methods are also discussed, in the light of the current

debate about the need for and compatibility of household sample surveys of income and consumption and qualitative/contextual methods.

It is not possible to reach firm conclusions about the extent, characteristics and causes of poverty, impoverishment and improved wellbeing in the PUI on the basis of the available evidence. The rare studies of poverty and processes of change in the PUI, the more widely available but problematic urban-rural comparisons possible using national data, and the review of DFID-funded research currently under way are, therefore, used to produce a series of hypotheses which suggest future research priorities. A broad definition of research, including traditional academic research, action-research and evaluation of policy and programme implementation, is adopted. Therefore both hypotheses arising out of the main gaps in our understanding and also hypotheses about potential interventions and their likely outcomes are identified.

1. INTRODUCTION

1.1 Aims of the review

The aim of this review is to contribute to programme development of the Natural Resources Systems Programme, specifically the Peri-Urban Interface Production System. The purpose of the Renewable Natural Resources Research Strategy is to enhance productive capacity in the RNR sector on an economically and environmentally sustainable basis, in order to contribute to a goal which includes poverty reduction in addition to economic growth and reform and mitigation of environmental problems.

The Peri-Urban Interface (PUI) research programme currently has three purposes, of which the relevant one aims to optimise management of peri-urban resources through improved productivity, control of environmental degradation and energy efficiency, in order to contribute to a goal of increasing the productivity in peri-urban production systems through the application of systems-based approaches. The purpose is to be achieved, inter alia, by links between technological and socio-economic change in the peri-urban environment, including allocation and access to market systems, being identified and incorporated into risk-reducing strategies. This review will contribute to the achievement of this output.

The activities which were undertaken included:

- i. A desk-based review of available material on the extent and characteristics of peri-urban poverty and recent literature on urban and rural poverty in developing countries

This review summarises what is known about poverty in the peri-urban context and identifies the major gaps in current knowledge. The review of literature on the extent and characteristics of urban and rural poverty, and recent approaches to poverty reduction, suggests hypotheses about poverty in the peri-urban context

- ii. A review of the extent to which the current PUI research programme captures issues related to the reduction of poverty and deprivation, leading to recommendations on future research priorities.

The review and recommendations will form an input into the revision of the logframe which is currently under way.

1.2 Structure of the report

The report is divided into four sections: following this introduction, the second comprises the literature review of our current understanding of poverty and poverty reduction, with particular reference to the PUI; the third considers the PUI research and assesses the extent to which it deals with poverty reduction; and the fourth identifies a number of research hypotheses which could be tested in future PUI research relevant to poverty.

The second section is divided into seven parts. It first considers definitions of poverty and issues of measurement. This is followed by a review of evidence on the extent of and trends in poverty, with a geographical focus on Africa and South Asia. Thirdly, the characteristics of poverty are discussed, with particular reference to comparisons between rural and urban areas, and the causes of rural and urban poverty analysed. Following a review of strategies for and experiences of poverty reduction, material on the poverty implications of processes of change in the PUI is reviewed.

The third section will consider, first, the PUI strategy, particularly the existing and draft revised logframe, and second, projects which have already been commissioned, especially in the case study cities, in order to assess the extent to which poverty issues have been addressed, and should and could be in future. This section is based on a review of the documentation supplied by the PUI Production System Leader and discussions with the Acting NRSP Programme Manager, Lead NR Adviser for NRSP and researchers engaged in a number of the current research projects. It will also contain recommendations with respect to proposed revisions to the PUI strategy, ongoing research projects, and follow-up research activity. Finally, in the concluding section, a series of hypotheses arising from the literature review are identified.

2. POVERTY IN A PERI-URBAN CONTEXT

The peri-urban interface is a dynamic zone both spatially and structurally. Spatially it is the transition zone between fully urbanised land in cities and areas in predominantly agricultural use. It is characterised by mixed land uses and indeterminate inner and outer boundaries, and typically is split between a number of administrative areas. The land area which can be characterised as peri-urban shifts over time as cities expand. It is also a zone of rapid economic and social structural change, characterised by pressures on natural resources, changing labour market opportunities and constraints, and changing patterns of land use. The Hubli-Dharwad inception report emphasises the intense urban-rural interactions which characterise the PUI, including flows of capital/investment, commodities, natural resources, people, labour, knowledge, energy, water, waste and pollution (Birmingham et al, 1998a).

The first task set for this project is to review recent literature on poverty. Much of the policy debate has been about reducing (or, more idealistically, eliminating) poverty. When economic definitions of poverty are used, then a satisfactory quality of life is expected to be delivered by 'welfare' or the ability to consume a sufficient quantity of commodities (goods and services). As will be seen, many consider that the economic definition does not encompass significant dimensions of poverty, so they often use deprivation (or perhaps exclusion) in conjunction with, or instead of poverty. Wellbeing is therefore the goal for poverty reduction.

In order to identify material on the nature and extent of poverty in the peri-urban, rural and urban contexts, the following strategies were adopted:

- review of available reports of World Bank poverty assessments (15), which are increasingly based not only on welfare monitoring-type household surveys but also on participatory poverty assessments (sometimes supported by other funders including DFID)
- on-line searches of Environmental Abstracts, Sociofile, Econlit, ASSIA and ID21
- personal contacts with the Institute for Development Studies and the Poverty Research Unit, University of Sussex; Centre for Development Studies, University of Swansea; UEA; International Food Policy Research Institute; Centre for Development Studies, University of Bath; School of Urban Development and Policy, South Bank University.

The effort to identify research which specifically focuses on poverty in peri-urban areas drew a near-blank. The search was, therefore, broadened to include studies of processes of change which appeared to have some poverty relevance. The findings are reviewed in Section 2.7. Most of the analysis which follows will, therefore, consider rural poverty and urban poverty. An examination of 15 World Bank funded Poverty Assessments (PAs) showed that most disaggregate poverty

estimates by region and break them down into urban and rural, but do not disaggregate further. More detailed studies of poverty in rural and urban areas are locationally specific, and many do not try to quantify the incidence of poverty.

In Section 2.1 conceptual and definitional issues are reviewed. In Section 2.2 evidence on the incidence of poverty is presented. The characteristics or correlates of poverty are analysed in Section 2.3. This again can draw on the PAs, but it becomes increasingly important to supplement them with other sources when attempting to identify what is known about the causes of poverty (Section 2.4) and the dynamics of poverty at household level (Section 2.5). The evidence on poverty reduction strategies and experience is reviewed in Section 2.6. The final section reviews the limited literature which is available on processes of change in peri-urban areas and their poverty implications.

2.1 Definitions of poverty

Commonly, individuals or households are poor when their level of economic welfare falls short of that sufficient to consume a reasonable minimum basket of goods and services. The generally preferred indicator of household living standards is given in a recent comprehensive review by two of the foremost economists concerned with poverty issues: "... current real consumption, given by a price-weighted aggregate of all marketed commodities consumed by the household from all sources (purchases, gifts and own production)" (Lipton and Ravallion, 1995, p.2572). Within this general definition, either an absolute Poverty Line (PL) (based on the cost of a basic food basket, with or without other necessities, for a particular country or region at a particular date) or a relative PL (consumption equal to a percentage of total or average consumption, sometimes but not always that thought to represent sufficient to satisfy basic food needs, with or without other necessities) may be defined. Consumption is preferred to income because it is considered a better indicator of both current and long term average economic welfare, but is nevertheless "intrinsically limited" (ibid, p.2553).

Lipton and Ravallion identify some of the limitations of money metric methods:

- households will, in general, not prefer constant consumption over the life cycle
- households face differing constraints on consumption smoothing over time, with the chronic poor least able to do so
- it is assumed that consumption is divided equally between household members, but this may not be the case and the distribution of gains or losses in welfare may demonstrate intra-household variations. The distribution of food, status, influence in decision making and access to services may vary with gender, age and position in a household, in different ways in different situations (see also Guhan and Harriss, 1992; Hanmer et al, 1997). Economists have attempted to develop household models which recognise this issue, drawing in part on the insights of sociological and anthropological studies.
- comparisons between households are complicated by differences in household size and demographic composition, which are not adequately captured by normal methods (per capita or adult equivalent income or consumption). Allowance for scale economies is rare (Hanmer et al, 1997). It is noted in Rakodi (1995a) that the problem is more complex than mere differences in household size: household members move in and out at different intervals, resulting in changes to household composition; definitions of 'a household' are culturally determined and may not coincide closely with census or survey definitions; there are problems in identifying 'the household head'; and it is often difficult to ascertain how the total

earnings of household members are allocated between household and individual expenditure. In addition, resources flow between co-resident households and other family members (Srinivasan, 1993).

- levels of access to publicly supplied goods and common pool resources (CPR) are important components of welfare, and vary between households

Other problems were summarised in Rakodi (1995a; see also UNCHS, 1997, p.110)

- the difficulty of estimating income or consumption levels in economies which are only partly monetized and in which households consume their own production. Although methods have been devised for ascertaining estimated annual farm household income and consumption, urban and rural households engaged in self provisioning and own account economic enterprises rarely keep accounts. They also buy goods and inputs and sell outputs irregularly, do not separate business and household accounts, and consume unsold goods within the household (see also Chilowa, 1991). Self provisioning activities such as foraging and urban agriculture are particularly under-recognised in urban areas, although they may be significant for poor households and in times of crisis. These difficulties are exacerbated by the invisibility of many business activities of women and children, which are often considered too insignificant to report by men in a household. Also the income from illegal activities is not reported and expenditure on items such as alcohol is reported unreliably.
- how to deal with the fact that reported/observed consumption usually exceeds income
- selection of appropriate deflators when measuring trends over time (see also Guhan and Harriss, 1992)
- differences in the composition of consumption between different income groups
- changing rates of change in the real costs of different goods, which complicates estimates of the cost of a minimum basket of goods and services, a calculation which underlies most definitions of absolute PLs
- minimum consumption requirements are typically based on the food expenditure necessary to attain some recommended food energy intake with a (more or less) arbitrary allowance for non-food necessities, but there is little evidence on energy requirements. These vary between groups of people, and even minimum subsistence requirements, including food preferences, are culturally influenced as well as biologically determined, while people may be able to adapt to food shortages (see also Lipton and Ravallion, 1995). The definition and cost of 'non-food necessities' varies between social groups and locations (especially urban/rural).

Methodological refinements can accommodate some of these issues, but the analysis will only be as reliable as the assumptions and data on which it is based. Poverty lines tend to be arbitrary and prone to statistical or political manipulation, but

- are widely used because it is generally accepted "that inadequate command over commodities is the most important dimension of poverty, and a key determinant of other aspects of welfare, such as health, longevity, and self-esteem" (Lipton and Ravallion, 1995, p.2553)
- provide the comparable indicators needed for comparisons in time or space.

Head count measures of poverty do not give any indication of the depth of poverty, for which the poverty gap index is more appropriate¹, or the severity of poverty. It is, therefore, important to use more than one indicator, and to subject them to tests of sensitivity to the assumptions used where possible, although Quibria and Srinivasan (1993) conclude that overall time trends in poverty incidence in Asian countries are not significantly affected by the poverty measure used. In practice, non-comparable data means that poverty assessments, such as those funded by the World Bank in many countries, use different bases for PLs. These are a mixture of relative and absolute PLs, so that inter-country or intra-country between survey comparisons are unreliable (see also Hanmer et al, 1997). Even with all available refinements, poverty line indicators based on household consumption do not capture all dimensions of poverty and vulnerability. In addition, Hanmer et al (1997) contend they are not very valuable in understanding the causes of poverty and thus in identifying appropriate poverty reduction interventions.

Finally, definitions of who is considered poor in terms of income and consumption are definitions framed by the non-poor, and outsiders. The categorisation may not coincide with the perceptions of the poor themselves, with respect to either who is considered poor, or how their poverty and deprivation is understood. This in turn has implications for the methods used to quantify poverty; explanation of its continuation, reduction or deepening; and the outcome of interventions designed to eliminate it (Jodha, 1988; Rakodi, 1995a).

Research on the perceptions and definitions of poverty used by the poor illustrates, firstly, that poverty is not defined solely in terms of low incomes, but uses a broader concepts of deprivation and insecurity; and secondly, that any attempt to place monetary values on these aspects of personal, household and social deprivation involves so many arbitrary assumptions that it is likely to be meaningless. Vulnerability is defined as insecurity, sensitivity of wellbeing to a changing environment, and households' resilience in the face of the risks they face during negative changes (economic, environmental, social, or political; including shocks, trends or seasonal cycles). High levels of vulnerability may be accompanied by uncertainty, reduced self-respect, and a sense of helplessness (Moser, 1997). Analysis involves identifying the threats, but also examining responses to both threats and opportunities, which depend on the assets or entitlements individuals, households or communities can mobilise and manage in the face of hardship, because the more assets people have, the less vulnerable they are.

In addition, households defined as poor in consumption terms may not capture all deprived and vulnerable households and individuals. For example, the Guinean household surveys do not reveal that women as a group are disproportionately poor in terms of consumption poverty, either as heads or within households, but if deprivation includes excessive workload, social subordination and reduced life chances, they are undoubtedly deprived (Shaffer, 1997). It is also the case in India and Ghana that, while national household sample surveys do not indicate that women are disproportionately exposed to poverty, participatory assessments emphasise the vulnerability of female headed households, particularly widows (Booth et al, 1998). In addition, different trends, affecting different people, may be revealed by different approaches (see, for example, Jodha's (1988) comparison of findings using farmers' perceptions of change versus income/ consumption surveys in Rajasthan villages). It is also suggested that concepts of poverty based on income fail to pay sufficient attention to social and health dimensions of deprivation (Satterthwaite, 1997).

¹The poverty gap index is the sum of distances between the PL and the consumption levels of the poor, as a proportion of the PL, divided by the total population. The income gap ratio is obtained by dividing the poverty gap index by the headcount ratio. It measures the average shortfall of the consumption of the poor relative to the PL, as a % of the PL. The Foster-Greer-Thorbecke index is calculated in a manner similar to that of the poverty gap, except that the weights used are simply the squared values of the index shortfalls.

Evidence from a number of participatory poverty assessments shows that, for poor people, the critical dimensions of poverty are

- food insecurity: insufficient and/or irregular and poor quality food
- unsatisfied basic needs, especially for clothing, water and sanitation
- precarious livelihoods, leading to shortages of money to purchase necessities, including health care and education
- lack of assets to provide a basis for secure livelihoods and a hedge against insecurity
- powerlessness and lack of self respect
- isolation, including physical isolation, and difficulties of accessing markets, formal institutions (e.g. for credit) and influential individuals
- vulnerability to stress and shocks, both external and internal to households

Wellbeing, therefore, is characterised by:

- food security: sufficient and nutritionally adequate food on a regular basis throughout the year
- ability to satisfy basic needs for a socially acceptable quality of clothing, clean drinking water and a sanitary environment
- secure livelihoods, yielding sufficient own produce and/or income to purchase necessities, including basic curative health care, and to meet the cost of education to the desired level for a household's children
- the ability to accumulate sufficient assets to provide a basis for, firstly, production and/or , secondly, for sale, to enable a household to weather shocks
- self respect and the ability to exert control over an individual, household or community's future
- connectedness to information and opportunities
- resilience in the face of shocks and stresses

2.2 The extent of poverty

The household consumption definition is that used in attempts to estimate the incidence of poverty, and so will be used in the analysis contained in this section. Broader definitions and methods based on ascertaining the perceptions of the poor are not appropriate for this purpose because of the difficulty of standardising them. However, when, in Section 2.4, the literature which purports to explain the causes of poverty is summarised, it will be found that broader concepts of deprivation and social exclusion, together with research which draws on the perceptions of the poor themselves, is often of greater explanatory value. Poverty profiles compare the incidence of poverty, and sometimes the extent of inequality, generally between regions of residence. Typically regions are defined in administrative terms and sample size limits

the extent of disaggregation which is feasible. Increasingly, data are disaggregated into rural and urban areas, by region, and sometimes both.

Estimates of the extent of poverty (based on household consumption indicators) are generally derived from national household sample surveys, which may collect data only on income and expenditure or on a range of household characteristics, social indicators and access to services. Particularly in those countries without an established national system for carrying out such surveys, they are often sponsored by the World Bank as part of monitoring the effects of structural adjustment policies. A summary of findings from selected PAs in Sub-Saharan African countries is presented in World Bank (1996a, p.34). The World Bank notes that different PLs are used and so cautions against inter-country comparisons². In some of the PAs it also notes that different surveys within countries may use different definitions of PLs, producing very different estimates of the incidence of poverty. A similar set of comparisons for urban and rural areas is given in UNCHS (1997, p.113).

i. Urban/rural comparisons of poverty incidence

The data available indicate that:

- i. The *incidence of poverty* is at least a third higher in rural than in urban areas in most of the countries for which World Bank poverty assessments have been carried out. However, in a few countries (for example, Egypt, S Korea), the proportions are approximately equal and in a few others a larger proportion of urban people are poor (e.g. Cote d'Ivoire in the 1980s, the Gambia in 1989). Only in a few countries, mostly those with low overall levels of poverty, are fewer than 20% of the urban population poor (Tunisia, China, S Korea, Malaysia, Argentina, Costa Rica) and in most countries where more than half live in poverty overall, more than 40% of the urban population are poor (e.g. Zambia, Philippines, Guatemala, Peru, Sierra Leone, Madagascar) (World Bank, 1996a).
- ii. The incidence of poverty is generally highest in the most remote and poorly endowed regions and least in the capital city.
- iii. Where time series data are available, they indicate that the incidence of poverty may have
 - *increased* (e.g. in Cameroon in 1993 48% of the population fell below the consumption level of the bottom 40% in 1983/4, World Bank, 1995a); in Mexico the incidence of extreme poverty increased from 20% in 1984 to 24% in 1989 (McKinley and Alarcon, 1995)
 - *stayed roughly the same* (e.g. in Lesotho between 1986/7 and 1993, World Bank, 1995b)
 - or *decreased* e.g. in Nigeria between 1985 (43%) and 1992 (34%) (World Bank, 1996b); S. Korea between 1965 and 1984 (Kim, 1994); Pakistan between 1984/5 (46%) and 1990/1 (34%) (World Bank, 1995c), India between the early 1970s and the late 1980s (Mathur, 1994); the Philippines between 1961 (75%) and 1988 (50%) (Balisacan, 1993, p.542)
- iv. The *share of urban and rural populations in increased poverty or increased prosperity* varies. The proportion of rural people below the PL decreased overall between the mid-1960s and 1988 in 41 countries, but increased in 23 (UNCHS, 1997, p.110). In Cameroon

² In particular, the PLs used may be either absolute or relative PLs and may define either the poor or the very poor (those below the food poverty line).

there was a marked increase in both urban poverty (from 1-2% in 1983/4 to 20-30% in 1993) and rural poverty (from 49% to 71%) (World Bank, 1995a). In the Philippines rural poverty declined from 80% in 1961 to 54% in 1988 and urban from 65% to 40% (Balisacan, 1993, p.542).

- v. The *contribution of rural poverty to total poverty* depends on a) the incidence of poverty in rural and urban areas and b) the extent of urbanisation. It thus varies from 92% in Uganda (where 89% of the population is rural) to 43% in Brazil (where 25% of the population is rural). Although small at present in many countries, the contribution of urban poverty to overall poverty is generally growing. Ruel et al (1998) found that in seven of eight countries examined the share of the poor in urban areas is increasing and in five of the eight the absolute numbers of urban poor are also increasing. Even where the incidence of overall poverty is declining, urban poverty may be becoming more prominent over time, for example in Indonesia the rural:urban poverty ratio narrowed from 82:18 in 1976 to 65:35 in 1990, in the Philippines from 76:24 in 1971 to 59:41 in 1991 (Rigg, 1997, p.96). Views about whether the available estimates of the incidence of urban poverty are reliable vary: UNCHS (1997, p.111) and Rigg (1997, p.96) consider that urban poverty is likely to be underestimated, especially because of a failure to fully account for the higher cost of gaining access to basic standards of housing, transport and services in urban areas. However, there is a counter-argument that a rural population with the same per capita private income finds it more difficult to translate that into wellbeing because of the distance to public services, especially health services (Lipton and Ravallion, 1995).
- vi. *Inequality* is generally greater in urban areas e.g. in the Philippines, the urban gini coefficient³ is 0.43 compared to a rural coefficient of 0.38 (Balisacan, 1993, p.538); in Madagascar the gini coefficient in the capital is 0.48 compared to 0.40 in rural areas (World Bank, 1996c). In Sri Lanka, where the gini coefficient was 0.44 in urban and 0.41 in rural areas in 1980/1, it was 0.62 and 0.55 respectively in 1985/6, showing worsening inequality, particularly in urban areas (Gunatilleke and Perera, 1994). In Tanzania the ratio of the per capita expenditure of households in the richest quintile to those in the poorest was 6.35:1 in urban and 5.25:1 in rural areas (World Bank, 1996d). However, there are exceptions e.g. Kenya, where rural inequality worsened in the 1980s and the gini coefficient was 0.49 in 1992 compared to 0.45 in urban areas (World Bank, 1995d, p.9).
- vii. The *poverty gap* in urban areas is often greater than in rural areas (e.g. Madagascar, Lesotho), but not always (e.g. Philippines).

ii. A need for analytical caution

All the studies used for the above analysis disaggregated data using administrative boundaries, which poses major problems for the interpretation of urban/rural differences. Lipton and Ravallion (1995), for example, note that the definition of 'urban' varies between countries, but do not follow through the implications of this in any detail, choosing instead to accept urban/rural decompositions of poverty incidence at face value and using them to draw firm conclusions about the greater incidence of poverty in rural areas in most countries. They are not alone in this: most analysts, including the World Bank, do the same. Many of the broad conclusions and policy implications drawn from the analysis may indeed be valid.

³ Indicator of the extent to which a given income distribution differs from an equal distribution, in theory varying from 0 (equal distribution) to 1.00, but in practice from about 0.3 (relatively equal) to 0.7 (extremely unequal).

However, the differing threshold populations used to define settlements as urban, the basis for defining administrative boundaries, changes in administrative boundaries, and movements of people across administrative boundaries during migration, labour market participation or trade mean that simplistic analyses may draw mistaken conclusions. With thresholds for defining settlements as urban being as low as 2,000 or 5,000 in some countries, so-called 'urban' poor may in practice be part of the rural economy. The definition of administrative boundaries around urban areas tends, moreover, to be an arbitrary bureaucratic and political process. The boundaries may be drawn tightly (indeed may be considerably less than the full extent of the contiguously built up area) or loosely, incorporating much land in predominantly agricultural use within the urban boundary. Assessing the growth in total or poor urban population is complicated by boundary extensions, especially as poor residents are not evenly distributed throughout the urban area. They may be concentrated in peripheral settlements (inside or outside the official boundary at different points in time) or close to the centre of a city, depending on topography, history, and land and housing markets.

A large proportion of urban growth may be due to reclassification, absorbing poor rural people (often farmers) into 'urban' areas. The increased poverty share of urban areas may be attributable to such boundary changes in some cases, rather than to impoverishment of the urban population (e.g. the Philippines, Balisacan, 1993; Brazil, World Bank, 1995e), although in others registration systems may lead to the classification of people engaged in the urban labour market as 'rural' (e.g. Thailand, Rigg, 1997, p.92, 161). The practice with respect to definition of boundaries varies between countries and may even vary between cities within a country. As a result, any urban/rural breakdown of data needs careful inspection before interpretation and comparison.

iii. Disaggregation and peri-urban poverty

In part because of their limited sample size, with one exception, none of the national data sets has been disaggregated to reveal the incidence of poverty in peri-urban areas.

Data from the 1996 Living Conditions Monitoring Survey in Zambia was disaggregated into twelve geographical areas, distinguishing between urban areas at different levels in the settlement hierarchy, the surrounding rural area (<50 Km) and more remote rural areas. The incidence of poverty was least in Lusaka (31%), followed by Ndola (45%) and Kitwe (51%). The figures showed relatively little difference between the areas surrounding these cities (65%) and other urban areas (63%), but poverty is much more extensive in all other rural areas (84%). Because PLs are not defined separately for urban and rural areas, despite differences in the cost of satisfying basic needs, the incidence of poverty in urban areas may be underestimated (Zambia, 1997).

Disaggregation of other national surveys, even using such an arbitrary definition of peri-urban areas, might also be expected to reveal levels of poverty intermediate between those in urban and rural areas. However, the peri-urban interface is constituted of a variety of processes and interactions rather than a defined geographical area. It is unlikely to coincide, even at a single point in time, with administrative boundaries and, in any case, is transient and shifting in spatial terms, making the identification of boundaries over time difficult. It would be possible to overcome the constraints imposed by administrative boundaries if data from the household sample surveys was geographically referenced and analysed using a GIS, but sample size would continue to be a problem for all but the crudest disaggregation.

Concern is mounting that the cost of national household sample surveys will prohibit their regular repetition, especially when donor funding is not available. Increases in the sample size of such surveys to enable finer geographic disaggregation seems infeasible in most poor countries.

Because of their unsuitability for use at the local level, increasingly they have been supplemented, for monitoring and planning purposes, with smaller scale data collection using Participatory Rural Appraisal (PRA) methods. It has been demonstrated that it is possible, in villages with fairly stable populations, to obtain a reliable wealth ranking, which indicates the proportion of households in different wealth categories. This was attempted in four urban, peri-urban and rural villages between 6 and 15 km from Kumasi, where informants considered that between 50% and 60% of households were poor or very poor in each village (Nkrumah and Antoh, 1998). This data needs to be used with care, as the informants were better educated than most villagers, were identified by chiefs, and did not entirely agree on categories or rankings of households.

In this Kumasi exercise, it was possible for informants to make informal enquiries to enable them to rank individual households whose degree of wellbeing was not personally known to them. However, experience in Participatory Urban Appraisal shows that, while urban informants can identify categories of wealth and poverty and the typical characteristics of households within each of the categories, populations of residential areas are too large and unstable for a comprehensive wealth ranking to be possible. In addition, many of the poor do not live in identifiably low or mixed income settlements (and some of the poorest may be homeless). Reliable estimates of the incidence, depth and severity of poverty in urban and peri-urban areas with populations which have not been settled for generations and/or do not live in small clearly defined settlements must, therefore, depend on household sample surveys modelled on those undertaken at national level for welfare monitoring surveys. Even such surveys may not capture all the poor. For example, the Lesotho PA acknowledges that the poorest in urban areas may have been omitted from the sample because they tend to sleep rough (World Bank, 1995b).

2.3 The characteristics of poverty and deprivation

i. Characteristics of poor households

A variety of research, including World Bank funded poverty assessments, shows that a series of characteristics of poor households can be identified, which are widely if not universally applicable. These are correlates of poverty and are not to be confused with causes.

a. poor households in both rural and urban areas tend to

- be larger households with high dependency ratios (few working adults, especially men, but large numbers of young or school age children, sometimes elderly people and/or unemployed young adults). Households may even become larger in severe economic conditions, in order to achieve higher participation rates, and because newly formed households cannot become separate self-sustaining households
- have heads (and other adults) with lower educational levels, who are often illiterate. Although many African studies demonstrate that the educational level of the head is a significant predictor of poverty in both urban and rural areas, elsewhere it may be more significant in urban areas e.g. Bangladesh and Indonesia (Quibria and Srinivasan, 1993). A Costa Rican study found that it was most significant for urban families, and more for non-farm than farm rural households (Rodriguez and Smith, 1994)
- have heads (and other adults) who are disabled or mentally sick
- be members of particular ethnic groups who are discriminated against e.g. Brazil (World Bank, 1995e), Ecuador (World Bank, 1995f), Pakistan (Beall et al, n.d.)

- be displaced people (involuntary migrants)

Often it is suggested that female headed households are more likely to be poor. However, the evidence varies from country to country. In some countries, female headed households are a heterogeneous group, including both rich and poor households, and female headship is not a significant predictor of poverty, e.g. the Gambia (World Bank, 1993d); Mexico; the Philippines (Balisacan, 1994); Uganda (Appleton, 1996); see also Chant (1997). In Lesotho, de jure female headed households were, in 1993, only slightly worse off than male headed households and de facto female headed households were better off because they were mostly in receipt of remittances from their absent heads (World Bank, 1995b). In other countries, female headed households (especially those headed by women without support) are disproportionately poor (e.g. Uganda, Tanzania, Madagascar, Zambia, Benin, Pakistan). In Kenya, a third of rural households are female headed and 60% of these have no male support. 59% of male headed but 80% of female headed households are poor (World Bank, 1995d, p.23). In Accra 40% of households in the poorest quintile were female headed in 1991, compared to 16% in the richest quintile (Songsore and McGranahan, 1998, p.401).

However, there is not necessarily a large difference between male and female headed households, and in all cases, male headed households constitute a larger proportion of the poor (for example in Zambia 70% of ultra poor households are headed by married men, World Bank, 1994a). Care must be taken to base conclusions on per capita or adult equivalent income, since, even though household incomes may be less in female headed households, these households are often smaller. In some cases, only particular categories of female headed households are poor: for example those with children and no other adults, widows (e.g. Ecuador, World Bank, 1995f, Nigeria, World Bank, 1996b) or the elderly (e.g. Mexico, McKinley and Alarcón, 1995). Sometimes, the findings of different surveys in the same country conflict. In Tanzania, for example, the PPA suggested that earnings from casual labour and microenterprises increase the incomes of households headed by women, but their lack of assets makes them over-dependent on the market and therefore vulnerable (Booth et al, 1998). Even if female headed households are poor in monetary terms, they may see non-monetary benefits in female headship, for example, increased control over household resources (Chant, 1997).

Finally, it may not be particularly helpful to frame the analysis in terms of the gender of the household head alone, as intra-household distribution of resources and workloads is critical for the wellbeing of individuals. In this respect, women in general may be disproportionately affected by poverty (Bardhan, 1993), because of their

- lack of control over the proceeds from their labour, which may result in men consuming a disproportionate share of household resources, including food, alcohol and tobacco (e.g. Uganda, World Bank, 1993b)
- heavy work burden
- lack of say in household decision making
- lack of access to (accessible, good quality) land for cultivation
- lack of access to cash or credit, restricting both earning opportunities and access to health care
- lower educational levels
- lack of access to agricultural extension services
- cultural constraints
- being forced to take on responsibility for non-traditional expenses, such as education (e.g. Cameroon, World Bank, 1995a)

Hanmer et al (1997, p.8.4) are critical of most of the World Bank African PAs they review for their tendency to gloss over the dimension of gender relations, although these "...may well be the source of the most serious distortion of incentives and resource allocation."

b. **poor households in rural areas** tend to be

- farm households, usually solely or predominantly dependent on agricultural production for their subsistence and incomes. This is universally true in Africa. For example, in Madagascar 80% of all farmers are below the poverty line (PL) and 70% below the extreme PL; if fishermen and herders are added these make up 78% of all the poor. Also their incomes are more concentrated: 55% of poor households' income is from farm revenue (60% for the extreme poor), compared to 40% for the non-poor (World Bank, 1996, p.20). However, it is also the case in Asia, where Quibria and Srinivasan (1993) note that it has been common to characterise the landless and those dependent on wage incomes as the poorest, but that the intensity of poverty is as, if not more, severe for many self employed cultivators.
- farm households with limited or insecure access to land, especially in Asia (a higher proportion of the extremely poor in Bangladesh were functionally landless or pure tenant households, Quibria and Srinivasan, 1993), but also in Africa (for example, the descendants of captives in Guinea, World Bank, 1997).
- farm households without access to technology for improving productivity, often because of their lack of access to credit
- landless or land-short households who are forced to undertake farm labour and casual work, in Asia (over half the rural poor in India are wage labour households, Quibria and Srinivasan, 1993), Latin America (half the rural poor in Brazil are landless, World Bank, 1995e) and Africa (called piecework in Zambia, World Bank, 1994a). Working for others on their farms may be associated with a social stigma, especially where it is not well established, for example in Uganda (World Bank, 1993b).
- households without other assets, such as livestock or trees
- households who are, therefore, more dependent on common pool resources
- households whose lack of access to income earning opportunities makes them more dependent on income conserving and expenditure saving activities, such as foraging for fuelwood (Bardhan, 1993) or wild vegetables (World Bank, 1996d), placing heavy demands on women's time and energy.

c. **poor households in urban areas** tend to be (Mathur, 1994; Kim, 1994; Khundker et al, 1994; Ratankomut et al, 1994; Balisacan, 1994; Firdausy, 1994; Pernia (ed), 1994; UNCHS, 1997)

- dependent on incomes derived from work in the informal sector as employees or self employed businesspeople, particularly in services (formal sector employees and self employed manufacturers tend to have higher incomes)
- dependent on casual work (for example in Nairobi, World Bank 1995d; Pakistan, World Bank, 1995c)

- dependent on occupations associated with dirt and waste, especially in South Asian cities, although even within the waste management system, some earn more than others (Beall, 1997a)
- dependent on agriculture or fishing, for example, a large proportion of the urban poor are engaged in agriculture in Indonesia (24%) and Thailand (Firdausy, 1994, p.77)⁴
- characterised by high unemployment rates amongst adults e.g. Lesotho (World Bank, 1995b), Mombasa (AMREF, 1997), Tanzania (World Bank, 1996d), Pakistan (World Bank 1995c; Beall, 1997b), Brazil (Mueller, 1995, p.78)
- elderly people without support because of the loss of their children, or whose children are unwilling or unable to support them (or, more generally, in some countries, older heads of household) (Lockwood, 1997)

Specific poor groups in urban areas include

- children in especially difficult circumstances, including street children and domestic workers (see, for example, the description of street girls in the Togo PA, World Bank, 1996e)
- individuals within households, for example unpaid family workers (e.g. many poor women in Dhaka, Huq-Hussain, 1995)
- the 'new poor': some of those who have been laid off from formal wage employment during economic crisis and restructuring may join the ranks of the poor (for example, Ahmad and El-Batthani, 1995, estimate that perhaps a fifth of those below the PL in Khartoum are newly impoverished laid off public sector workers)

There has been considerable debate in the literature about whether the urban poor are predominantly migrants (implying that urban poverty is rural poverty transferred), with assertions and counter-assertions which are not always based on sound empirical evidence. De Haan (1997) emphasises the complexity of this question, noting that outmigration patterns vary between districts in India, the characteristics of migration streams vary, and the experience of migrants once they arrive in urban areas varies. Other authors emphasise the complexity of migratory movements of individuals and households over time, the varying propensity of migrants to maintain rural links and the variable significance of first generation migrants in both total urban populations and population growth.

Another element in the debate has been on the role of culture and individual psychological characteristics in poverty. While this is a much less common element in the analysis than it has been in the past, some of the World Bank poverty assessments identify the roles of alcoholism and laziness or lack of initiative in household poverty. Morcol and Gitmez (1995), like earlier authors, suggest that degrees of poverty in Turkey are associated with cultural/psychological dimensions and attitudes, including locus of control, life satisfaction, happiness, past experience and future expectations of living standards. Using cluster analysis, they distinguish, as in Gutkind's 1986 study of the urban poor in America, between doers (who achieve better living conditions, and tend to have positive and optimistic psychological dispositions), losers (who have negative and pessimistic attitudes) and accommodators. They associate (without much empirical evidence) the emergence of doers and losers with the economic changes of the 1980s, which

⁴Figures on the proportion of urban households primarily dependent on primary sector production are influenced by where administrative boundaries are drawn, and should be treated with caution.

enabled the upwardly mobile to respond to new opportunities, while the downwardly mobile were impoverished. The use of cluster analysis in this way does not, however, permit examination of cause and effect relationships between living conditions and attitudes.

ii. Characteristics of poor areas

The above discussion has concentrated on identifying the characteristics of poor households, but there is also a spatial dimension to poverty. Poor regions or communities are typically characterised by

- location in resource poor and/or remote regions. For example, the incidence of poverty is greater in semiarid Kenya or northern Nigeria, even though the absolute numbers of poor households may be greater in more densely settled areas of higher agricultural potential. Heyer's (1996) generalisation that poverty in Africa is more about poor rural areas than inequality within rural areas is not universally true and in some cases (e.g. Kenya) appropriate attention needs to be paid to both poor areas and the large numbers of poor people within areas of high agricultural potential.
- population pressure, fragmentation of farms, and environmental deterioration (for discussion of cause and effect relationships, see Section 2.4)
- physical isolation, resulting in poor access to markets (difficulties of transport and/or reliance on traders), services (especially education, health and training), and information (especially farm prices, technology)
- poor environmental sanitation, leading to poor health, reduced work productivity, and a vicious circle of poverty. While the characteristics listed above typify rural areas, inadequate supplies of water and unsatisfactory sanitary arrangements characterise poor communities in both urban and rural areas.
- distinct ethnic composition, resulting in exclusion from access to services etc

iii. The dynamics of poverty

A final important characteristic of poverty is its dynamism: poor individuals, households and communities are not necessarily permanently poor and it is important to distinguish between chronic and transient poverty (Srinivasan, 1993; Rigg, 1997). Although they may be trapped in a vicious circle of poverty and deprivation, or become permanently impoverished or better off, they may also move in and out of poverty, as a result of

- wider shocks and stresses (for example, periodic drought, fluctuating prices for main crops)
- seasonality, especially in rural areas, but also in urban areas, where factors such as health, food prices, and vulnerability to flooding have seasonal dimensions. In Zambia, for example, poverty peaks in November-February, because this is the rainy season, resulting in high levels of illness and high health care costs, but it is also the lean season, when money is also needed for the purchase of farm inputs. These demands on household incomes are compounded by Christmas and the need to pay fees at the start of the new school year (World Bank, 1994a; see also Lipton and Ravallion, 1995)

- cyclical factors e.g. the time of the month, which primarily affects monthly paid wage earners (e.g. in urban Zambia, World Bank, 1994a), but has knock-on effects on others
- life cycle factors, both intra- and inter-generational. For example, it was noted above that large households, typically those with large numbers of children, are associated with poverty. Having many children may, however, also be seen as security enhancing at later stages in the life cycle, as more household members enter the labour force (e.g. in Zambia, World Bank, 1994a). Life cycle events may also impose major stresses and shocks on households, foreseen (e.g. providing a bride price for a son or dowry for a daughter) or unforeseen (especially the impoverishing effects of illness or bereavement, especially of the main breadwinner). The severity of such shocks varies between households, depending on their composition (Beall et al, n.d.)

iv. Outcomes of poverty

The outcomes of insufficient incomes and own production to sustain a household and satisfy its basic needs include poor nutritional and health status, low school enrolment and, especially in urban areas, poor quality housing. Some evidence on these is presented below.

The proportion of household expenditure on food increases with decreased income, but the food available is still insufficient and of poor quality, resulting in an increase in the proportion of malnourished children with decreased income. Stunting is generally more prevalent in rural areas. The incidence of wasting may be greater in urban areas, indicating the vulnerability of poor urban people to severe transient food insecurity (e.g. Benin, World Bank, 1994b; Madagascar, World Bank, 1996c; Mali, World Bank, 1993c), but urban/rural differences are generally of small magnitude and are inconsistent between countries (Ruel et al, 1998). Food insecurity has adverse effects on the ability of mothers to breastfeed adequately and on the general health of those affected. In addition, poverty is associated with poor environmental sanitation and inadequate access to health care.

Available figures invariably show that basic health indicators are better for urban than rural areas. Ruel et al (1998) reviewed data from 44 demographic and health surveys in 35 countries and found that

- infant, child and <5 mortality rates for rural areas are higher than for urban areas (except in five countries, where urban rates are slightly higher than rural rates)
- overall childhood morbidity is higher in urban areas in a quarter of the countries, but differences in morbidity from respiratory infections and diarrhoea are small and inconsistent
- for the eight countries for which data for more than one year between 1985 and 1994 are available, IMR and child mortality decreased more in urban than rural areas in Ghana, Bolivia and Indonesia, less in Zimbabwe and at a similar rate in the remaining four countries.

However, it has already been noted in Section 2.2 that inequality is often greater in urban areas. Figures for the incidence of poverty, malnutrition or mortality and morbidity rates for urban areas as a whole reveal little about the situation of the urban poor, but intracity disaggregation of data is rare. Those analyses which are available show that malnutrition, mortality and morbidity amongst the urban poor are higher than amongst the better off and are, in some countries and at some times, higher than amongst the rural poor. For example, Basta (1977) found that anaemia

was twice as prevalent, malnutrition three times greater and the prevalence of most communicable diseases 50% greater in squatter areas than in cities as a whole and that the differences within cities were greater than urban/rural differences. Bradley et al (1992) reported that IMRs, malnutrition, morbidity from diarrhoea, and the prevalence of parasitic infections were up to three times higher in Latin American squatter areas than for high income groups. In the Philippines the nutritional status of urban lower income groups did not improve during the years of economic expansion (1972-82), despite substantially lower real cereal prices, because of falling real urban wages, whereas they improved marginally in rural areas, where the calorie intake of the bottom two quintiles was higher than in urban areas (Bovis, 1990).

Timaeus and Lush (1995), using demographic and health survey data for Ghana, Egypt, Brazil and Thailand, found that socioeconomic differentials in child mortality vary with the level of economic development. They were very large in Brazil, large in Egypt and moderate in Ghana, and, except in Egypt, mortality rates among the urban poor were at least as high as amongst the rural population. In Bangladesh, the IMR in 1981 was 112.2/1000 in rural areas, 99.4/1000 for the urban non-slum population and between 152 and 180/1000 for the slum population (Khundker et al, 1994, p.23). In another review of infant and child mortality data from 20 demographic and health surveys, it was found that rates in rural areas were generally higher than in urban areas without piped water and these exceeded those in urban areas with piped water. Overall, poor urban children had a 57% greater <5 mortality risk than wealthier urban children, but a 17% lower risk than rural children. However, in some countries the mortality risk of the urban poor exceeded that of the rural poor (Bicego and Ahmad, 1996).

Low incomes are also associated with low school enrolment and a high proportion of working children. Gender differences in school enrolment arising from poverty are linked to cultural perceptions of the value and appropriateness of education for girls. Children may work as unpaid family workers or in the informal sector. For example, in Madagascar, 46% of those aged 7-20 from extremely poor households were working compared to 39% from poor households and 29% from non-poor households (World Bank, 1996, p.25). Their contribution to household survival is variously seen as vital but under-recognised (Robson, 1996), or as contributing to the inter-generational perpetuation of poverty. Where the work contributions of children increase in importance, it may give rise to changes in social behaviour (Barrett and Browne, 1998).

Especially in urban areas, low incomes preclude households from living in secure and sanitary residential accommodation. Increasingly, the urban poor are unable to own their own houses and rent or share instead.

2.4 The causes of poverty

Causes of chronic poverty or impoverishment, as well as the sources and means of achieving increased wellbeing may be found at national, regional/area/community and individual/household levels. At the upper levels, they include geographical and political conditions, economic policies and power relations which influence policies and the allocation of resources. These reinforce or counter factors causing or perpetuating poverty at community, household and individual levels.

Particular attention has been paid to so-called 'urban bias' in explaining the alleged greater incidence, severity and persistence of rural poverty. This includes (Lipton, 1993)

- Firstly, a price bias against (some) farmers, due to inappropriate policy, because of the political power of urban interests (and the resulting need for cheap food) and some rural interests (especially large farmers).

- Secondly, and more importantly, an expenditure bias in favour of industrialisation and therefore urban areas, exacerbated by rural problems of inaccessibility and low population densities, because of the greater political influence of urban interests. This bias is harder to escape and (he asserts) has worsened since the 1980s.

The extent to which the original urban bias theory is a valid and sufficient explanation of anti-agricultural and anti-rural policy has been subjected to an ongoing critique (e.g. Jamal and Weeks, 1993) and some of Lipton's early ideas have been modified. In particular, it has been noted that there is no significant anti-rural bias in some countries; that anti-agricultural policy and price biases have declined or been eliminated during economic reforms in most countries; that ethnic and religious identities may cut across the rural-urban and class divides, making mobilisation of rural/sectoral interests in support of particular policies harder to achieve; and that rural/urban boundaries are arbitrary and/or hard to detect (Varshney, 1993). In addition to spatial over-generalisation, Rigg (1997) asserts with respect to SE Asia that theories of rural neglect tend to downplay the temporal dimension of change, which has rendered the urban/rural distinction obsolete in conceptual, empirical and policy levels in that region.

Drawing especially but not only on World Bank and Asian Development Bank commissioned poverty analyses, the causes of poverty and impoverishment may be summarised as follows:

- i. *Lack of access to land and insecure tenure*, especially in rural but also in urban areas. Population pressure and fragmentation of holdings, commercialisation of land markets (and competition for land from large farmers or urban developers), and eviction play a role in Africa as well as Asia in excluding the poor from land. However, in the former the prime cause of rural poverty is locational, reflecting a location-specific lack of access to an array of facilities and opportunities, together with environmental constraints (Heyer, 1996; Ellis, 1997), whereas in Asia and Latin America inequalities in access to land, resulting in widespread landlessness or near landlessness, are more significant in explaining poverty, in particular through details of tenure arrangements, or lack of access to new technology and agricultural inputs on the part of small farmers (Quibria and Srinivasan, 1993).
- ii. *Environmental stress and natural disasters*. The 'vicious circle' theory links poverty and population increase to extension of the cropped area, which causes environmental degradation, resulting in reduced yields and thus increased poverty. Reardon and Vosti (1995) criticise this literature for failing to differentiate between either types of poverty or types of environmental change; containing insufficient analysis of the strength, symmetry and dynamics of poverty-environment links; and neglecting evidence on changing farm practices. Instead they propose a model in which the assets available to households and villages determine their behaviour with respect to the environment, conditioned by variables including markets, infrastructure, technology and population pressure (see also Leach et al, 1997; Duraiappah, 1998). Reardon and Vosti conclude that reducing environmental degradation can reduce poverty (for example, where soil degradation is reducing yields on the farms of poor farmers) but can also increase it (for example, if foraging is stopped to protect common property resources). There is evidence of poor farmers changing practices to cope with environmental degradation (e.g. in NE Thailand, upland Java or upland Cebu in the Philippines) or less intensive agriculture being facilitated/permitted by the availability of off-farm income (e.g. in NE Thailand) (Rigg, 1997, p.256). However poor farmers may not be able to adopt improved practices or carry out environmental improvements without assistance because of a shortage of household labour, capital or stocks to tide them over until new investment yields its full return (Hansen, 1993). Shortages of farm labour may also lead to neglect of maintenance and environmental degradation (Rigg, 1997)

- iii. *Lack of or irregular markets and/or declining prices for agricultural products.*
- iv. *Inefficient, absent or broken down supply systems for agricultural inputs* (especially in Africa) and/or exclusion from government benefits or subsidies (Srinivasan, 1993).
- v. Increased *food prices* for food purchasing households.
- vi. *Lack of access to health, nutrition and education services*, because of physical remoteness and/or inability to afford official and unofficial charges for public services or the cost of private services.
- vii. *Declining demand for formal sector labour*, or inability to gain access to formal wage employment, especially in urban but also in rural areas, because of civil service/parastatal reform, trade liberalisation, stagnant markets for import substituting industrial products and failure to attract investment in export manufacturing, leading to
- viii. *Declining demand for goods and services*, because of declining real wages, which in turn affects opportunities in the informal sector. Often viewed as dynamic, responsive and able to absorb labour not required by the formal sector, evidence also shows a high degree of differentiation within the informal sector. The poor are often excluded from the more dynamic higher return activities and have to rely on activities with easier entry but lower returns. In addition to poverty associated with underemployment, economic recession may be accompanied by increasing unemployment, not just amongst the young and better off, but also amongst older people, household heads and the poor. Humphrey (1994), for example, analysing data for São Paulo, demonstrates that unemployment rates rose during recession amongst the wage employed in both the formal and informal sector, but that participation rates did not rise to compensate, because the informal sector could not respond quickly enough. Studies in other countries have, however, found evidence of increased participation e.g. in Bogota, where household poverty has decreased largely because of declining fertility and increased labour force participation and not because of increased earnings by individual workers (Gilbert, 1997).
- ix. *Civil conflict.*
- x. More general *breakdown of social support networks*, which is thought to be more severe in urban areas (e.g. Cameroon, World Bank, 1995a; Kenya, World Bank, 1995d). Social support networks operate at the household or family level and beyond this at village/neighbourhood or wider levels based on, for example, ethnicity, common residence, or religion. Some authors include both household relations and community associational life under this heading, while others exclude the former. PPAs and other studies which have attempted to ascertain the perceptions and definitions of poverty used by the poor themselves indicate that poverty is not solely defined in terms of low incomes or inadequate consumption, but encompasses experiences of deprivation and insecurity. Claims to social networks emerged as key to achieving security and wellbeing.

For example, Narayan's (1997) analysis of Tanzania, after controlling for a range of variables, concluded that village level social capital is a powerful determinant of levels of individual incomes. Social capital is defined as "the rules, norms, obligations, reciprocity and trust embedded in social relations, social structures, and society's institutional arrangements, which enable its members to achieve their individual and community objectives" (p.50). In practical terms it is defined to include perceptions of trust, unity and a spirit of participation; associational activity; association with external groups, especially NGOs; and the presence of

village facilities/institutions such as schools, markets and courts. The main intervening variables in the correlation between levels of social capital and incomes were found to be the use of improved agricultural inputs and credit. Claims on social networks are also important in the strategies of households in countries in economic transition, such as Georgia (Dershem and Gzirishvili, 1998).

The absence or breakdown of claims on social networks increases vulnerability (Booth et al, 1998). The latter may occur because of repeated shocks (for example, recurrent drought resulting in general asset depletion and impoverishment among populations of whole areas), economic crisis or physical insecurity. Social networks are generally thought to be less robust in urban areas because of mobility and heterogeneity and also to be under threat from economic crisis, violence and crime (Moser, 1997; Beall, 1997b). Booth et al (1998) caution that not all social networks are supportive of the poor and effective as social capital; in the Tanzanian study organisations were weighted according to their locally perceived worth and degree of social inclusiveness.

The wide range of social, political and environmental as well as economic factors perpetuating or causing individual or general impoverishment, together with an improved understanding of households' own perceptions of their situation and the choices open to them has led to a consensus on the importance of analysing household livelihood strategies. As understanding of the nature of such strategies has increased, the outlines of a more adequate conceptual framework for understanding conditions of poverty and deprivation, as well as processes of impoverishment at household and community levels, are emerging. These will be summarised in the next section.

2.5 Household livelihood strategies

Both urban and rural households cope with impoverishment by (Rakodi, 1995a, 1995b; Beall et al, n.d.; Latapi and de la Rocha, 1995; Kim, 1995; Van Dijk, 1997; Moser, 1997, World Bank PAs):

- diversification of economic activities (including migration)
- utilising social networks based on reciprocity
- borrowing
- seeking charity/begging
- selling assets e.g. livestock, jewellery, land
- saving expenditure by postponing or not seeking medical treatment (or choosing cheaper providers), withdrawing children from school, postponing consumption or investment, purchasing poorer quality or less food, increasing own production (especially of food), and embarking on or increasing foraging (for wild foods or fuel, scavenging waste)
- changing household composition (either increasing its size to increase labour power or reducing it e.g. by sending children to live elsewhere)

The key to successful coping strategies seems to be diversification, in which those households with access to assets are able to mobilise these, firstly to cope, and secondly, to increase their wellbeing, while households lacking assets are vulnerable to further impoverishment.

"A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is considered to be sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base." (Carney, 1998, p.2)

At household, community and societal levels, the assets available constitute a stock of capital which can be stored, accumulated, exchanged or depleted and put to work to generate a flow of income or other benefits. Social units need, it is suggested, to be able to call on stocks of all types of capital (natural, produced/physical, human, social, political and financial), although there are tradeoffs between them. Identifying threats to capital and constraints on the ability of households or communities to access and use particular assets may increase understanding of poverty and vulnerability and suggest policy interventions to reduce vulnerability, increase capabilities and reduce constraints (Booth et al, 1998; Moser, 1998; Carney, 1998; Douglass, 1998).

Households aim at a livelihood which has high resilience and low sensitivity to shocks and stresses. Most commonly, poor households seek this by diversification, to reduce firstly, the overall risk of income failure, and secondly, both intra-year and inter-year income variability. Diversification may incorporate expenditure reducing and emergency strategies, and include the use of social and political capital, but it centres on diversification of economic activities. Farm households seek, where possible, complementary sources of farm income (in kind and cash), off-farm income (wage or exchange labour on other farms) and non-farm income (wage and self employment, migration and remittances) (Ellis, 1998a). Rural non-farm and urban households are likely to seek a similar range of income sources, although the balance between them will differ. Typically, poor households, at least in Africa, depend more on farm income than better off households and even where they can access other sources of income, it tends to be poorly waged off-farm income or low return non-farm income because of their limited skills and capital, and entry barriers (Reardon, 1997). Given evolving rural-urban and farm-nonfarm interactions, a spatially extended concept of the household or community, to take into account migration, commuting and remittances is likely to be needed (Heyer, 1996; Rigg, 1997; Bryceson, 1997a; Tacoli, 1998).

Often the management of assets and activities pursued, both economic and other (e.g. fertility decisions), are opportunistic or reactive, as individuals and households adjust to unpredictable circumstances, rather than 'strategies' planned in advance (Lockwood, 1997). Nevertheless, the poor may be seen as managers of complex asset portfolios, including both tangible assets (labour, human capital, land, housing) and intangible assets (household relations, social and political capital) (Moser, 1997, 1998).

From this analysis of the characteristics of poor households and communities, the causes of poverty and livelihood strategies, it is possible to identify three trajectories, each of which calls for a different combination of policy interventions:

- i. *A vicious circle of chronic poverty*, in which households are trapped in poverty throughout their life cycles, and where, because of limited assets, low incomes, poor health and low school enrolment, poverty is perpetuated intergenerationally (see, for example, Nigeria, World Bank, 1996b; Zambia, World Bank, 1994a; Kenya, AMREF, 1997)
- ii. *A vicious spiral of impoverishment*, resulting from stress and/or single or repeated shocks, which may be either external to the household (e.g. environmental degradation, natural disasters, increasing food prices, loss of employment) or internal (e.g. bereavement, ill health, loss of assets). Households seek to protect themselves against stresses and shocks by consumption smoothing or personal contingency strategies and may choose short term poverty rather than the increased vulnerability which might result from the sale of assets or borrowing (e.g. Mali, World Bank, 1993c).

- iii. *A virtuous spiral of increased wellbeing*, in which households take advantage of opportunities to increase their incomes and use those increased incomes to reduce future risk and increase future incomes, by investing in assets, including human capital, physical assets, and social and political capital.

Similar types of trajectories can be detected at community or area level in some cases, both where households within communities are relatively homogeneous in terms of their resource endowments and incomes, and where the multiplier effects of the economic activities of the nonpoor benefit the poor.

2.6 Poverty reduction: strategies and experiences

Much of the attention given to poverty reduction adopts an income/consumption based definition of poverty and focuses on the effects of economic policies and government expenditure on household welfare measured in money metric terms. In the first part of this section, the relationship of these broad policies to poverty reduction will be discussed. However, as noted above, increased understanding of poverty has led to acknowledgement that it cannot be reduced to household income/consumption. The evolution of a conceptual framework for understanding poverty and deprivation based on household livelihood strategies presents an alternative starting point for identifying appropriate policy interventions and will also be discussed. Finally, a range of specific policies will be identified and discussed in turn.

i. Macro-economic and meso-policies to reduce poverty

There does seem to be an association between rapid economic growth and reduced poverty, as illustrated by the experience of a number of Asian countries. This may (Thailand) or may not (Indonesia, at least until the late 1980s) be accompanied by increasing inequality (Rigg, 1997). However, this association is sensitive to the definition of the PL which is being used. Thus Hanmer et al (1997) point out that economic growth is strongly associated with reduced poverty if half or more of the population is defined as poor, but is not if the PL is defined to include only the very poor, who typically do not benefit from economic growth. The association between economic growth and reduced poverty also only applies if inequalities in society are not extreme and if macro-economic policies are combined with meso-policies which, inter alia, encourage investment in human capital (Quibria and Srinivasan, 1993; Mills and Pernia, 1994). In addition, some countries have reduced poverty in the absence of rapid economic growth, illustrating that policies do matter. These include macro-economic, meso and local policies. Thus any attempt to identify the policies which might most effectively achieve the goal of poverty reduction must examine all these levels.

At the *macro-economic level, fiscal and monetary policies* are used to achieve price stabilisation and promote economic growth. Devaluation, price policies, interest rates etc. are liberalised to increase exports and encourage investment. Their greatest impact on the poor is by their effect on the demand for labour and on agricultural production. Macro-policies influence primary incomes. The effects of these policies are transmitted to the micro/household level by the conduits of markets and infrastructure (Behrman, 1993) It is difficult to assess the impact of macro-economic policies on the poor because of the complexity of the effects, and the heterogeneity between countries. Care must be taken to separate the effects of the economic crisis and the policies which helped to precipitate it and the impact of the economic reforms themselves. Typically, economic performance and household welfare before and after reform are compared and changes attributed to the process of economic reform, when counter-factual approaches would be more methodologically sound (Sahn, 1996). Also a distinction needs to be drawn between short and long term effects, which may differ quantitatively and even in direction (Behrman, 1993).

The rural poor depend mainly on agriculture, both for subsistence and sale (and, in some countries, for wage employment). Poor farmers are relatively insulated from price changes as consumers and the rural poor in general are not much affected by public sector retrenchment and wage policies. Nor do poor farmers tend to use improved technology and modern inputs. In addition, their access to subsidies and public sector services is poor. Because of improvements in rural terms of trade as a result of devaluation, liberalised marketing, higher producer prices and lower taxes, the incomes of the rural poor have, in general, increased marginally. However, export crop producers, especially of non-traditional crops, have gained more than other producers

and only some food producers have benefited (Faruqee and Husain, 1996; Sahn et al, 1996). In addition, the rural poor have not suffered from cutbacks in public sector employment, increased prices of imports or reduced subsidies, as they generally did not have access to these previously (Sahn et al, 1996).

Stabilisation and structural adjustment policies have, however, led to falling real wages, increased prices for some wage goods and loss of public sector jobs, with knock-on effects on the rest of the economy. These have had a particularly adverse effect on some urban workers. In addition, over-rapid liberalisation has led to de-industrialisation (Goetz and O'Brien, 1995; Hoeven, 1995). Thus real wage reduction has not always been associated with increased employment but with job-shedding and increased casualisation of work. While initially demand for goods produced in the informal sector may increase because of their lower prices, later aggregate demand falls and too many people are competing for opportunities in the sector, while the open unemployment rate has increased in urban areas (Zezeza, 1994; Basu and Stewart, 1995; Jamal, 1995). To the extent that the urban poor were buying their essential goods (including food) in parallel markets before adjustment, their welfare was not adversely affected. But where they had access to cheaper goods, they were adversely affected by food price increases (Faruqee and Husain, 1996).

In Sahn et al's view (1996), policy reforms have, while not generating rapid economic growth, generally redistributed real incomes in a way that is marginally beneficial to the majority of the poor. However, economic growth has, in their view, been held back in many cases by poor implementation of reforms, as those who benefited from pre-reform policy regimes try to protect their interests. While not acknowledging the adverse effects on economic growth of non-economic factors, especially conflict (Hanmer et al, 1997), they do conclude that macro-policy reforms are in themselves insufficient to dramatically reduce poverty and increase economic growth unless accompanied by sound development policies.

Increasingly, it is recognised that the design of policies, including sequencing, and the type of economic growth achieved matters. The World Bank is beginning to recognise that for economic growth to be accompanied by poverty reduction, it needs to be, variously, 'broad-based', 'labour intensive' and 'pro-poor', although it is by no means clear what is meant by this (Hanmer et al, 1997). Questions of equity are not considered to be as important as growth by the World Bank (see also Lipton and Ravallion, 1995), although others consider that policies designed to achieve economic growth need to be accompanied by redistribution, especially of land (Stewart, 1995).

Meso-policies are fiscal and public expenditure policies which impact secondary incomes (incomes after tax) and tertiary incomes (incomes after tax and the effects of government expenditure policies). Many developing countries rely heavily on indirect taxes (e.g. sales tax) which may be regressive. Public expenditure impacts on tertiary incomes and also, according to so-called 'new' growth theory, is supposed to increase growth by increasing human capital and so to have an impact on the primary income distribution.

Meso-policies may reinforce or compensate for the poverty-increasing effects of macro-policies by means of (Stewart, 1995):

- their impact on disposable incomes by direct taxes, transfers and schemes to generate employment or raise productivity
- their influence on the prices of goods and services consumed by the poor (especially food) by means of indirect taxes and subsidies. Tax policies which tax goods consumed by the poor (food, fuel for public transport, beer) and reduce food and other subsidies are

regressive. Replacing general by targeted subsidies may increase the proportion of the total subsidy received by lower income households but targeted subsidies also tend to leave out more eligible people than general subsidies.

- their influence on the availability (and price) of publicly provided goods, especially health, education and water.

Public expenditure policies may have a significant impact on poverty. For example, a study of Kerala in India found that rural poverty had declined between the mid-1970s and the early 1990s, not because of economic growth and wage increases (which were both slow), but because of the expansion of state-directed programmes, which accounted for roughly a fifth of the consumption of landless rural households. The problem is that such public expenditure is unsustainable and insufficient in the absence of a growth strategy capable of providing adequate employment to all members of the labour force (Kannan, 1995).

Sahn et al (1996) note that total public expenditure on the social sectors, especially education and health, has not generally fallen during adjustment but that the expenditure is often not well-targeted to the poor. In Bangladesh, for example, although the tax structure is progressive (the tax/income ratio was 7.14% for those above and 4% for those below the PL in 1986 and indirect tax is also progressive) expenditure allocations are not pro-poor (Khundker et al, 1994, p.25). Further, in very few cases does public expenditure disproportionately benefit the poor. More common are policies which benefit the poor about as much as middle and upper income groups (primary education and non-hospital health services), but which generally are allocated a small share of total budgets. In addition, reforms may adversely affect access by the poor to these services. One of the reasons for the good human development performance of the advanced Asian economies, it is suggested, has been large allocations for social services combined with prudent, low deficit fiscal policies; efficient resource allocation within the social sectors for basic education and health services; and reliance on the private sector for higher levels of education and expensive curative health care (Mundle, 1998).

Because of data problems, there are few analysis of the net incidence of fiscal policy. Recent attempts focus on the Philippines and Ghana. In the former, the analysis found that the incidence of taxes is broadly neutral, while health, education and infrastructure expenditures are progressive because of their concentration in poorer regions. Thus the net fiscal incidence is progressive (Devarajan and Hossain, 1998). In Ghana, the analysis attempted to determine whether economic reforms have shifted the net fiscal burden towards the poor. It found that direct taxes, sales tax and tax on gasoline are progressive. Cocoa tax, on the other hand, although reduced, still provides about a fifth of all revenue and is both regressive and distortionary (discouraging production for export). Although all in Ghana are paying higher taxes as a result of economic reform, the increased tax burden has not, Younger (1996) concludes, fallen disproportionately on the poor. The analysis does not cover government expenditure, but it is suggested that there is no evidence that it has shifted towards the wealthy.

The reason for this brief discussion is to draw attention to the primary significance for poverty reduction of national level macro- and meso-policies. At micro- or local level, poverty incidence and characteristics result from the interaction between macro- or meso-processes and policies and the particular circumstances of local economies, residential areas and households. Local attempts to reduce poverty are both constrained by the effects of these policies and by the allocation of responsibilities for, for example, health care, primary education and other social expenditure, as well as expenditure on publicly provided infrastructure, especially water. Decisions on the expenditure priorities for revenue generation; the design of health, education and other social policies; and pricing and subsidy policies for health care, education, water and so

on, can, in some circumstances, be influenced at the local level. There may also be potential for investment in infrastructure improvements, in order to encourage economic activities and improve living conditions; other types of support to economic activities; and policies to increase demand for labour and facilitate access to work; as well as safety nets for those excluded from labour market options by age or ill health. The scope for action depends on the extent of local autonomy, which is limited in most countries.

Even where local government has appropriate powers, a realistic approach to the likely achievement of local actions in increasing the wellbeing of the poor is needed, as the effects of local policies may quite possibly be outweighed by the effects of national macro- and meso-policies. The administrative fragmentation so typical of peri-urban zones is likely to further limit the scope for local actions to reduce poverty.

Two cross-cutting categorisations of poverty reduction policies are DFID's own distinction between enabling actions, inclusive actions (e.g. sector programmes which ensure access by the poor) and focused actions which directly address the rights, interests and needs of the poor; and the classification of interventions into those with indirect and direct effects. Most macro- and some meso-policies have, or are designed to have, indirect effects on poverty, while some meso- and many local policies may have, or be designed to have, direct effects on poverty. There is no consensus on which are the most effective or what an appropriate balance might be. The impact of policies depends in part on the poverty profile, which in turn raises questions about whether policy should aim at increasing the welfare of the poorest by incremental amounts (perhaps insufficient to bring them above the absolute poverty line), at those just below the PL (who can, with relatively little effort, increase their wellbeing), or at those just above the PL but vulnerable to impoverishment. As noted earlier, PLs are often defined arbitrarily and views differ about whether it is desirable to fix them so that 40% or more of the population is considered poor, in which case general development policies are required, or to fix them so that the most marginal groups are identified: those who, either permanently or temporarily, cannot benefit from general economic growth and development policies and so need specifically designed safety nets and other interventions. The question of whether it is more effective to devote resources to interventions which will increase economic growth and the prosperity of a local economy, because of their indirect effects in reducing poverty, or to actions which will have a direct effect on the poor, is related to the above issues, and came up frequently in discussions on the NRSP.

ii. Capital assets and policy options

If the starting point for identifying appropriate policy interventions are the livelihoods strategies pursued by poor households, then, as described in Section 2.5, the crucial determinants of households' ability to achieve increased wellbeing are their access to capital assets and the effect of external conditioning variables which constrain or encourage the productive use and accumulation of assets in order to enable households to achieve increased security (often by diversification) (Ellis, 1998b). Interventions may focus on enabling households to take advantage of opportunities by removing constraints and assisting them to accumulate assets. Policies to assist the poor manage their stocks of each type of capital asset will be briefly discussed in turn, starting, because of the particular concerns of the PUI research, with natural capital.

a. Natural capital

This is comprised of the natural resource stocks from which resource flows useful to livelihoods are derived, including land, water and other environmental resources. The natural resources on which the poor most depend may, because of their lack of access to private assets, be common

pool resources. Lipton and Ravallion (1995, p.2624-5) provide a framework for exploring alternative interventions by distinguishing between policies which affect the volume, productivity or price of five productive factors, including land (although other environmental resources are not explicitly referred to). Making increased volumes of land available to the poor may be either distributionally neutral (land settlement schemes), redistributive (land reform) or both (transmigration of the landless). Productivity enhancing policies include yield-increasing technology, which may be poor-orientated by, for example, a focus on 'poor people's crops', and/or improving or stabilising the price of inputs bought or outputs produced mainly by the poor.

Because of inequalities in access to land and insecure tenure, land reform is often advocated as an essential component of a poverty reduction programme. Past experience demonstrates, however, that the outcomes of land reform are often unexpected and not always beneficial to the poor. For example, Otsuka's (1993) review of evidence from the Philippines, India and Sri Lanka finds that land-to-the-tiller reforms probably aggravated rural poverty by pushing share tenants into the class of landless labourers. He advocates strict enforcement of land ownership ceilings, from which owner-cultivator landowners are not exempt, combined with the relaxation of tenancy regulations to allow landless labourers to get a foothold on the path to accumulation of land assets, together with creation of non-farm employment opportunities. Many researchers note that redistribution of land is insufficient if other necessary inputs are not made available (e.g. Lastarria-Cornhiel, 1997; Malik, 1998). Land titling may exclude some socio-economic groups, especially women, who in the African context may lose their customary rights of access to land when title is formalised and individualised, as often advocated to encourage investment. Recent research, for example in rural Ghana (Besley, 1995), concludes that, while better rights to land may encourage or facilitate investment, these do not need to be formal transfer rights. There is insufficiently clear evidence that indigenous tenure systems are a disincentive to investment to justify external imposition of individual freehold (Sjaastad and Bromley, 1997). Unless land grabbing is controlled, and suitable inheritance rights enacted in law, the possible benefits to the poor of first round land redistribution may not be maintained over time.

Reducing poverty may reduce resource degradation where poverty is driving cultivation into vulnerable environments, or inhibiting investment in mitigating measures, but does not necessarily do so. For example, it is unlikely to reduce investment in livestock or deter the over-use of agricultural chemicals. Enhancing the natural resource base can reduce poverty, for example where soil degradation is reducing yields on the farms of the poor (Reardon and Vosti, 1995). In Nepal, for example, nationalisation of forests has resulted in people treating them as open access systems, leading to poor management, deforestation and erosion. The introduction of modified community management led to more environmentally sustainable management practices, based on agroforestry and the planting of forage grass in gullies. This, in turn, reduced poverty, as women used the grass for stall fed cattle (Hansen, 1993). In some circumstances, such action may be taken by farmers themselves, while elsewhere public support will be needed and, where the social returns of more environmentally sound agricultural practices exceed the private returns, then there is a case for subsidies (Hansen, 1993).

Direct access to and use of natural capital is, in some respects, less significant to the urban poor. However, land and security of tenure is a major issue. A declining proportion of the urban poor succeed in purchasing or occupying land, but house ownership, where it is a possibility, constitutes a favoured poverty-reducing strategy, especially for women. It provides increased security, a location for home based enterprise, and a potential source of income from rent. Many households own their houses but rent, squat on or occupy land under various forms of informal arrangement. For such households, increased security of tenure is a priority, although there are alternatives to individual title. Urban residents are, of course, indirectly dependent on natural

resources, as they are the basis for supplies of food, energy and water to urban areas. Continued cultivation of rural land to which urban dwellers retain rights and agricultural investment (e.g. in livestock) form important components of the livelihood strategies of many urban households, especially in Africa. In addition, agriculture within or on the outskirts of the built up area may be a (more or less) significant element in the household strategies of urban households. There is evidence that agricultural production increases in overall importance and increases its importance to middle income households with economic recession, in Asia, Africa and the transitional economies, but access to land varies greatly between cities and within cities over time, as pressures on land increase and land markets are commercialised. Views differ on whether policy should actively support urban agriculture (e.g. by allocating land, providing extension services), refrain from harassing cultivators, or regulate it, because of the environmental and health risks (e.g. of raising livestock in residential areas or growing crops contaminated by pollution).

b. Physical capital

Especially, but not only where lack of access to land is not the major root cause of poverty, the absence of investment in physical capital constrains farmers from using appropriate inputs and accessing market opportunities. Access to basic infrastructure and the means which enable people to pursue their livelihoods, such as tools and equipment, is needed. As part of the Zambian poverty profile, for example, a smallholder household model was developed using linear programming to identify the main determinants of poverty and smallholder decision making (Alwang et al, 1996). Two policy priorities emerged: firstly, improving access to markets for farmers in remote regions, especially by investment in roads, and secondly, interventions designed to reduce the labour constraints faced especially by female headed households. The latter is discussed further below. It was considered that priority should not be given to extending extension and credit services in remote regions until improved access to market opportunities created a demand for technology and inputs.

Many other analysts emphasise the importance of investment in regional and farm physical capital, especially in Africa (see, for example, Heyer, 1996), but also elsewhere (e.g. India, Siamwalla, 1993; Bardhan, 1993; Thailand, Ratanakomut et al, 1994; the Philippines, Balisacan, 1994). In Mexico, where poverty increased amongst *campesinos* (the smallest farmers), landless farm workers and construction workers in the 1980s, investment in small scale irrigation and roads is advocated to assist in the revitalisation of agriculture and generation of construction employment (McKinley and Alarcon, 1995). Lipton and Ravallion (1995) point out that area-wide infrastructure may be distribution-neutral (e.g. irrigation, at least in principle, although not necessarily in practice) or pro-poor (where the owners of the infrastructure are the poor and the infrastructure chosen appeals only to the poor e.g. hand and animal tool supply and maintenance). It may also be anti-poor, for example where forest roads advantage in-migrants seeking land over indigenous forest dwellers or the effect of boreholes on ground water adverse affect those dependent on hand-dug wells. The distributional outcomes of productivity-enhancing interventions (e.g. improved maintenance) can likewise vary.

Physical infrastructure investment (e.g. roads, electrification) is also necessary for the development of non-farm economic activities in rural areas or small urban centres (Bardhan, 1993; Heyer, 1996; McKinley and Alarcon, 1995). Such infrastructure provides opportunities both for diversification of economic activities by farm households and alternatives to long distance migration by those with access to land.

Physical capital, including infrastructure, improved access and electricity supply, is also important to poor urban households. Improving the access of the poor to physical infrastructure should be a priority for public investment, where it leads to increases in the productivity of the

economic activities in which they are engaged. Cottam (1997) emphasises the need for infrastructure investment to be flexible and responsive to the needs of the poor. However, the extent to which individuals and households should contribute to the cost of physical infrastructure installation is a matter of debate. This comes even more to the fore when investment in water and sanitation infrastructure is considered. Investment in water supply has both directly productive purposes (irrigation in farming or the use of water in industrial processing, for example) and a role in increasing the productivity of labour, because of its impact on health, when combined with improved drainage, sanitation, nutrition and health care. The interactions and complementarities between different types of capital are very clear in this instance. The Zambia analysis referred to above, for example, stresses the need to relieve the labour constraints on households headed by women by, amongst other things, increasing their access to physical capital, including oxen for land preparation, hammer-mills for grain milling, and improved water supply (Alwang et al, 1996). Bardhan (1993) also emphasises the need for labour saving investment to assist women, for example increasing access to water and fuel, and otherwise reducing the time needed for household chores. The improved health which is associated with investment in water and sanitation, and with some investment in housing improvements, cleaner fuel etc, benefits individuals and their households, but also the population at large, through the reduction in communicable disease.

Physical infrastructure investment has, therefore, a mixture of both public and private good properties, and has both capital and recurrent cost elements, which can be paid for indirectly via the tax system or directly via user charges. Limited tax revenues and increasing budget deficits have led to increasing pressure on governments and service providers to move towards direct pricing systems. Both have distributive implications, which manifest themselves at different levels (see above). While the introduction of direct charges may result in increased investment and improved services, it may also, without appropriate pricing policies, subsidies and/or exemptions, exclude or discriminate against the poor, thereby also reducing the social benefits of improved individual access to infrastructure. The most appropriate means of ensuring access by the poor will vary according to circumstances and may include geographical price discrimination (which may not be feasible where regions, communities or residential areas are heterogeneous), individual price discrimination (which may be efficient, in the sense that subsidies are narrowly targeted, but is also costly and difficult to operate and liable to exclude many of those eligible) or self-selection (by designing infrastructure so that it does not appeal to the non-poor) (Gertler and Rahman, 1994).

It was noted in Section 2.3 that the poor tend to be casual workers or engaged in trade, services and the least profitable branches of informal sector manufacturing. In some cases, therefore, improved availability of productive equipment will enable small scale entrepreneurs to increase their profits or embark on more lucrative activities (Mazumdar, 1994), but this may benefit the poor through the creation of wage employment rather than directly (e.g. in Brazil, Humphrey, 1994). Investment in improved housing may be relatively higher priority than in rural areas because of the greater health risks of poor quality shelter in precarious high density urban settlements and its potential as an income generating asset (Satterthwaite, 1997; Moser, 1998).

In order to increase the volume or productivity of the assets and enterprises of individuals and households, access to financial capital is required and this will be discussed in the next section.

c. Financial capital

The financial resources available to people (including savings, credit, remittances, and pensions) provide them with different livelihood options (Carney, 1998). Policy interventions to reduce poverty have focused on increasing the access of poor people to institutional credit, to enable

investment in physical capital to increase the productivity of assets (land and equipment), to provide working capital for the purchase of inputs (including farm inputs, raw materials for processing, stock for trading), and to allow for consumption smoothing (enabling major expenses such as health treatment, school fees or dowry/weddings/funerals to be met). For example, credit would be required to enable women headed households (individually or jointly) in rural Zambia to access labour saving assets and investment, including hiring labour and oxen, diversification of crops to spread peak labour demand, or investment in hammer-mills (Alwang et al, 1996). However, it is considered unlikely that chronic poverty can be reduced appreciably by credit-based interventions (Lipton and Ravallion, 1995).

There is no agreement on whether an appropriate public sector role should include subsidies. Many analysts believe

- a. that the volume of funds available to institutions lending to poor people will never be sufficient unless market interest rates are paid to both depositors and borrowers, and
- b. that it is the lack of available credit rather than its cost which is the main constraint on improved access by the poor.

However, Harper (1998), while agreeing with these points, notes that some microfinance institutions, especially where they have a monopoly, are charging above market interest rates, while Lipton and Ravallion (1995, p.2625) appear to favour poor-selective capital or interest subsidies in order to improve or stabilise the prices of inputs bought mainly by the poor.

Experience with public supply of credit has been poor, characterised by inadequate supply of capital for lending; bureaucratic procedures; exclusion of the poor due, inter alia, to the role of political influence in allocation; and failure to enforce repayment. Public supply is not entirely ruled out by analysts e.g. Lipton and Ravallion (1995) suggest that it might be appropriate if 'competitive'; and Siamwalla (1993) considers that, once a viable new technology is available to farmers, increased public supply of credit may be appropriate if the supply from other sources is inelastic in the short run). A more appropriate public sector role is, however, likely to be in encouraging the provision of not just credit but financial services more generally (savings, credit, insurance) to the poor by commercial banks and/or NGOs (mainly specialist financial service providers). These may build on, or use as models for aspects of their activities, the existing ways in which poor people organise their finances, especially rotating savings and credit associations, moneylenders and transfers within (extended, multi-local) households. However, even the most appropriately designed micro-finance system may not include the poorest.

d. Human capital

The quantity and quality of labour resources available to households are both subsumed under human capital by some analysts (e.g. Carney, 1998), but treated separately by others (e.g. Lipton and Ravallion, 1995; Moser, 1998), while yet others deal only with some aspects (e.g. Booth et al, 1997, concentrate on quality). As the quantity and quality of labour resources for productive and reproductive tasks are inter-related, they will be discussed together here.

Households' ability to manage their labour assets to take advantage of opportunities for economic activity (and education) are constrained by the levels of education and skills and health status of household members, and the demands of household maintenance. As noted above, the poor are excluded from well paid wage or profitable self-employment opportunities in the non-farm sectors by their low educational levels and lack of skills. Evidence on the relevance of educational levels in the farm sector varies (e.g. Rodriguez and Smith, 1994), but skills and

knowledge are important. The time available to household members to engage in income earning activities is influenced by the household dependency ratio, stage in the household life cycle, and technology for and access to household provisioning activities, including collecting water and fuel. Households may respond to economic stress by increasing participation rates, but this may have adverse effects, for example, if child care or food preparation suffers or children are withdrawn from school. The returns to labour may be increased either by releasing more adult labour for productive activity (e.g. by reducing the number of children, saving time on household maintenance activities, increasing access to child care facilities, increasing the number of adults in a household) or by increasing the productivity of that labour (e.g. by learning skills, increasing productive assets and inputs, and by improving health).

Policy attention has been directed to increasing labour market opportunities, improving the general quality of human capital resources and enabling people to take advantage of economic opportunities, each of which will be discussed in turn:

- ***increasing labour market opportunities*** - here attention will be focussed on direct employment generation programmes but poverty reduction policies may also include law enforcement against discrimination (Lipton and Ravallion, 1995) and enabling policies designed to foster economic development, especially in the small scale urban and rural sectors.

Public works programmes are generally seen as safety net provisions, providing work during times of distress (e.g. drought, recession, after civil conflict) (Siamwalla, 1993; Subbarao et al, 1997). They are likely to reduce the severity rather than incidence of poverty. However, some analysts consider that they can play a long term role in livelihoods, by increasing wage opportunities in agricultural slack seasons, for both men and women, and both small farmers and the landless (Bardhan, 1993; Subbarao et al, 1997). They have often been poorly designed and implemented, failed to involve beneficiaries in planning, and resulted in leakages of benefits to the non-poor (Quibria and Srinivasan, 1993). In addition, their scale is often small in relation to the need and they are limited in duration (ILO, 1995), only a limited proportion of the resources devoted to the programmes are actually transferred in wages to participants (Guhan, 1994), they do not work if they increase women's time burden at very low wages (Buvinic, 1995) and there are trade-offs between employment intensity and the durability of the works constructed e.g. roads (Subbarao et al, 1997). However, they are seen by many to be appropriate interventions provided they do not clash with times of peak labour demand in agriculture and the (cash or in kind) wages paid are only attractive to the poor (women as well as men). Stewart (1995) recommends that they should be open-ended, providing employment to anyone who seeks it at the minimum wage. For example, the *Programe de Apoio al Ingreso Temporal* in Peru in the 1980s, which was directed at women, did not require prior training, allowed flexible work hours, recruited locally so that transport costs were nil or low, and allowed women to bring their children to work. The value of such programmes is enhanced if they are used to construct/maintain infrastructure which is accessible and high priority to the poor, which some argue should be economic infrastructure (Barros and Camargo, 1995) but others social infrastructure, because of the difficulties experienced by the poor in taking advantage of the improved opportunities offered by economic infrastructure (Stewart, 1995). It is also enhanced if they provide opportunities for learning new skills. It has also been suggested that they might have the beneficial effect of bidding up wages in agriculture (Guhan, 1994), although such an effect might contradict the macro-economic aim of keeping wages low to encourage investment and growth.

- **improving the general quality of human capital resources**, by investment in education and health

Nutritional status, especially for children, is determined by food security, adequacy of care, and health, each of which is necessary but not sufficient. **Food security and access to health care** are universally high priority issues amongst both the urban and rural poor and their significance is emphasised by research results. Food security is defined as having assured access to food which is adequate in terms of quality, quantity and safety, and culturally acceptable (Ruel et al, 1998). Individual food security is affected by household food availability, household decisions about food acquisition and intra-household allocation, and individual health status. The main thrust of policy must be to increase the food available on a stable basis to households, from subsistence production or through the market. However, there is also a need for safety net provisions to ensure minimum nutritional intake for deprived individuals and households. There is a move against general food subsidies because of their unsustainability and distortionary effects, but there may still be a case for limited subsidies if they can be precisely targeted and (preferably) transitional (Subbarao et al, 1997). More specific programmes are generally supplementary feeding programmes, targeted to specific groups or regions, again preferably not on a permanent basis. The extensive literature, which cannot be reviewed here, shows that such relief programmes are needed but can be costly and problematic, with considerable leakages. Even well-targeted supplementary feeding programmes (e.g. schoolchildren, lactating mothers) cannot increase nutritional status and food security on a permanent basis unless they are complemented by a range of other interventions (Ruel et al, 1998).

Targeting health provisions and expenditure to meet the needs of the poor involves the allocation of resources to primary health care (both preventive and promotive services and basic curative care), involving pricing systems which do not deter use, efficiently functioning referral systems, and improvements in quality. The allocation of expenditure has both sectoral and spatial dimensions: the poor may be disproportionately concentrated in remote locations, illegal residential areas and unhealthy environments. Access has both physical and socio-economic dimensions, which may be exacerbated by seasonal factors. Workable exemption systems based on means testing are extremely rare (Hanmer et al, 1997) so alternatives are preferable (e.g. the use of referral/price systems, exemption based on type of illness/condition).

In the African poverty assessments, **education** did not have the same universally high priority for poor people as health care. Nevertheless, basic education is regarded as important in breaking the cycle of intergenerational poverty, in reducing population growth (because of the association of lower fertility with higher levels of women's education) and in increasing the knowledge and basic skills of literacy and numeracy available to adults. Investment may focus on generating improvements in the availability and quality of (especially primary) education or, to maximise its poverty impact, be targeted on excluded groups such as girls, or areas where enrolment rates are relatively low. In countries where 100% primary school enrolment has been achieved, it will be more appropriate to focus on mechanisms to increase the access of the poor to secondary education (e.g. Ecuador, World Bank, 1995f).

- **enabling people to take advantage of economic opportunities** by skills training, provision of child care facilities, provision of improved employment information and policies to increase other relevant types of capital (physical assets, financial capital).

Skills training may take the form of extension services geared to the needs of the poor, especially women, both in farm and non-farm activities, but may also focus on business

management and vocational skills for small scale economic activities in both urban and rural areas. Although there are well-recognised problems with traditional government sponsored vocational skills training, there seem to be few systematic analyses of alternatives, including indigenous apprenticeship systems and NGO provision, and their effectiveness in providing skills appropriate for wage and/or self employment. Views differ on the extent to which the delivery of credit, business training and vocational skills training should be linked.

e. Social and political capital

Despite the increasingly widespread recognition of the importance of household relations and social capital in the livelihood strategies of poor households and the extent to which they may be threatened by economic and social change or some policy interventions, the poverty implications have been little explored. Many analyses, especially those concentrated on reducing income poverty, do not explicitly acknowledge the significance of social relations in addressing rural poverty (see, for example Lipton and Ravallion, 1995). Elsewhere, recommendations stop at suggesting that care should be taken to ensure that interventions take into account and do not destroy social capital, generally by involving the poor in policy and project design, or by making funding available for community projects. Specific suggestions may focus on measures to redress perceived deterioration in social capital, such as ways of increasing security in urban areas by ensuring the provision of safe public transport, improving policing and increasing security in living environments e.g. by the provision of street lighting (Beall, 1997b; Moser, 1998).

Closely linked to social capital (household and social relations and associational activity) and not separately identified by some analysts (e.g. Carney, 1998) is political capital, based on access to decision making. This is best seen "as a gatekeeper asset, permitting or preventing the accumulation of other assets upon which successful poverty-reducing growth depends" (Booth et al, 1998, p.79). With the exception of the South African PPA, political capital is not addressed in the World Bank Poverty Assessments, despite the significance attached to powerlessness in the poor's own definitions of poverty. Booth et al extend the concept to incorporate powerlessness within the household (especially its gender dimensions) and the powerlessness of children, as well as exclusion from political processes at local level, which is an outcome of the relationship between local people, local institutions and external political bodies and itself highly gendered.

Policy tends to focus on the involvement of poor people in local (specifically community level) decision making and rarely addresses wider issues of access to decision making, especially at national level. The rights of people to make demands and set priorities has tended to be incorporated in the strategies of (some) NGOs, CBOs (especially federations of local CBOs) (Satterthwaite, 1997; Anzorena et al, 1998) and social movements rather than those of public sector agencies. The examples of where these rights have been, at least partially, incorporated in the wider political system come mainly from South America.

iii. Trajectories of change and policy formulation

Within the capital assets framework for analysing household livelihood strategies and identifying interventions which might assist households to increase their wellbeing, it is necessary to highlight both the time dimension and the needs of extremely asset-poor households. It was suggested in Section 2.5 that it is necessary to differentiate amongst the poor in a way that takes account of the different trajectories of wellbeing which households experience, because of their assets and external circumstances. Different sets of interventions are needed to increase the wellbeing of households on different trajectories. Analysing necessary actions through this lens

also highlights the need to compensate for the inability of some households to mobilise productive assets, which may not emerge clearly when only the capital assets framework is used.

- a. *households/regions locked into a vicious circle of permanent poverty* can be divided into those containing members who are able to work and those unable to work (termed incapacitated households in the Zambia PA, World Bank, 1994a). While for the former the measures discussed above to increase the stocks of capital available to households and relieve constraints on their ability to take advantage of opportunities are appropriate, for the latter transfers, safety nets and assured access to services are needed. Transfers may be in cash or kind. They include some programmes mentioned above, such as supplementary feeding programmes, but also pensions and other welfare payments. It is estimated that in Zambia 10% of the rural and 5-10% of the urban population are likely to need permanent transfers (World Bank, 1994a). Such programmes may pose targeting problems, create a poverty trap for people just outside the eligibility boundary, and encourage dependency (Subbarao et al, 1997). They are often inadequate in scale, do not reach the poor or are ineffective and poorly administered (e.g. in Pakistan, Beall et al, n.d.). However, with national political commitment and careful administration, such systems can be effective (e.g. Mozambique, according to Schubert, 1995) and need not absorb large amounts of resources (Guhan, 1994, estimates 3-4% of GNP).
- b. the initial aim for *households vulnerable to or in the process of a vicious spiral of impoverishment* should be food security, requiring protection against risk and safety nets. Reducing the risks or alleviating the consequences of shocks and stresses can be achieved through public works programmes, subsidised health care, targeted food subsidies and other safety net programmes, as well as mechanisms to assist consumption smoothing, including financial services and investment in disposable assets such as small livestock (Siamwalla, 1993). The importance given in this context to transfers and safety nets reflects Hanmer et al's concern (1997) that the poorest (those unable to sustain themselves, the destitute) are neglected in the policy priorities adopted by the World Bank and emerging out of most of its PAs.
- c. In contrast, most of the Bank's attention and the actions which may emerge from a capital assets approach concentrate on assisting those *households who potentially or are already embarked on a virtuous spiral of increased wellbeing*. These actions include, as described above, assistance to accumulate assets and to take advantage of opportunities by relieving constraints on households' ability to do so, either by building capacity at household or community level, or by creating an enabling environment, especially in respect of the factors that govern household choices.

A similar distinction between trajectories of change, leading to different policy combinations, may be appropriate for local communities or regions.

2.7 Processes of change at the peri-urban interface and their poverty implications

In Africa, a general process of de-agrarianisation is occurring throughout rural areas (Bryceson, 1997a). Nevertheless, the process is at its most intense in peri-urban areas, where farmland is being developed for urban uses and the rural economy is significantly affected by its urban links. The zone of rapid change and intense interaction varies in its extent, depending on, for example, the ecological characteristics of the area around the city. It may be quite restricted where urban economic and demographic growth is slow or where topographical and other constraints inhibit the development of agriculture for urban markets around a city, while in Asia, it has been

suggested that extended metropolitan or *desakota* regions have emerged around core cities and the areas of urban sprawl which surround them. These regions are characterised by intensive agriculture mixed with non-agricultural uses, intense mobility and interaction facilitated by good transport and communications, and close links between the urban and rural economies (McGee, 1991; Parnwell and Wongsuphasawat, 1997; Rigg, 1997).

Processes which characterise the peri-urban interface include changes in land use and farming systems, the transformation of land from rural into urban use, changing patterns of labour force participation, social change, changing demands for infrastructure, and pressure on natural resource systems to absorb waste generated within the city. These processes will each be discussed briefly below, paying particular attention to their poverty implications and identifying particularly notable gaps in knowledge and understanding.

2.7.1 Changes to farming systems and land use

Agricultural patterns in the peri-urban zone are a product both of farming systems related to the natural resource endowment of the area and the proximity of a growing urban market for food and non-food crops. Typically there is a shift from the cultivation of staple crops to more intensive cropping and livestock systems producing fresh produce for urban markets, especially horticulture, dairying and egg production (Orchard, 1998). However, this is not invariably so: the *desakota* regions around some Asian cities have emerged, it is suggested, in part because these cities are located in areas of intensive irrigated rice cultivation, which support dense rural populations and where, despite the growth of non-agricultural activities and land uses, rice production continues to be important (McGee, 1991; Douglass, 1991). *The question in terms of poverty is who, amongst the farming population, is able to take advantage of the opportunities, and who loses out, remaining poor or becoming impoverished?*

Peri-urban farmers include (Swindell, 1988)

- capitalist farmers who are able to purchase land to extend their farms and to hire labour
- semi-capitalist and small commodity producers who produce both for their own consumption and for the urban market
- subsistence producers who have insufficient land for their own needs and who supplement the food they produce with earnings from wage labour, either farm or non-farm.

Whether or not such farmers are categorised in statistics as urban or rural depends on where boundaries are drawn, which is often quite arbitrary (a matter which is, as noted above, rarely explored by analysts). Of the 'urban' labour force of Greater Colombo, for example, 12% are engaged in agriculture (horticulture and livestock) and fishing in the peripheral areas of the city (Gunatilleke and Perera, 1994, p.182). Agriculture is an important source of income for many 'urban' families in the Central Valley of Costa Rica, where farms are intermixed with urban uses on the edges of expanding urban areas (Rodriguez and Smith, 1994).

Some farmers have sufficient land and other resources, especially water, to take advantage of the opportunities for more intensive production. In the mid-1990s, 44% of Dar es Salaam's milk supply came from peri-urban producers (while 16% came from urban producers, 8% from distant Masai herds and 28% was imported). Although constrained by poor soils, uneven rainfall, limited fodder availability and disease, the commercial producers around the city include both well established Asian and Arab producers and enterprises established more recently by people who are currently or retired civil servants or businessmen (Sumberg, 1997).

Around Jos in northern Nigeria, about 2,000 small scale commercial farmers produce high value crops for Jos and the large coastal cities. The farmers have holdings averaging about 2 ha and use irrigation water from streams and abandoned tin pits, for which they compete with industry and the urban area (Van den Berg et al, 1998). The growers are mainly in-migrants from the north who were familiar with irrigated vegetable production and moved into the area originally to supply the expatriate market associated with the development of tin mining at the beginning of the century. Some have title, while many rent land from indigenous rainfed farmers, who work as labourers and are increasingly taking over as producers. Despite difficulties in accessing inputs, markets and extension services, these farmers have secure incomes. Those who cannot exploit the opportunities include recent in-migrants, women and young people.

The smallest commercial and subsistence producers include both farmers who are unable to access the resources and take the risks involved in more intensive and larger scale production and farmers whose plots are squeezed by inheritance or land market processes. *Analysts vary in their assessment of this increasingly small scale agriculture and the livelihood strategies which result: some portray a process of marginalisation, while others point to the maintenance of subsistence agriculture in the face of urban wage opportunities as part of a wise strategy of diversification.*

The opportunities and farmers' ability to take advantage of them depend on prices for farm produce; marketing systems; access to roads and transportation; access to capital, knowledge, technology and other inputs; land tenure and markets; the availability of labour; and ability to organise; as well as the natural resource endowment of an area. Although in principle the proximity of urban markets will result in both increased demand and changing patterns of demand, in practice there may be constraints arising from any of these which prevent some or all farmers from taking advantage of the opportunities. Evidence on the factors concerned, farmer responses and the potential for and outcomes of interventions is patchy.

- **prices and markets:** around Jos, producers sell in a limited number of local authority markets in the city which are monopolised by middlemen and women, resulting in unstable and low prices (Van den Berg et al, 1998). Around Hubli-Dharwad in India, small producers near the city carry their own produce to market because of the poorly developed local market system (Birmingham et al, 1998a).
- **access to capital:** in the absence of institutional credit, it is necessary to have access to capital from formal sector earnings or other sources for land purchase and investment. In the 1980s and 1990s around Kano, in northern Nigeria, economic crisis and liberalisation led to the development of large scale commercial irrigated wheat production in the river bottoms and upland millet and beans by absentee farmers, many of them (former) senior civil servants or political office holders (Iliya and Swindell, 1997). The cost of irrigation infrastructure may make vegetable production unprofitable unless the initial investment is subsidised (Roth et al, 1996).
- **access to land and inputs:** in Kwazulu, within the Durban metropolitan region in 1992, it was found that 25% of households living on the urban fringe were farming, of whom 10% were selling produce. Farming was mostly a female activity (spouses and female household heads) and involved not just welfare and remittance-dependent households but also wage earning households. However, the poorest were less likely to be involved than the slightly less poor, and many had only insecure tenure, particularly squatting. All experienced difficulties of access to credit, machinery and transport (May and Rogerson, 1995). Founding families in the villages around Banjul in the Gambia are reluctant to allocate land for vegetable production for fear it may be permanently claimed by those granted the usufruct rights ('borrowers') (Roth et al, 1996).

- **availability of labour:** the (gendered) demand for labour in nearby urban areas influences the availability of labour for agricultural purposes. For example, around Banjul, the ability of farm households to exploit opportunities for wage and self employment (85% of household income for households up to 20 Km from the urban area) appears to result in a labour constraint on increasing intensive vegetable cultivation (Roth et al, 1996).
- **ability to organise:** formal associational activity amongst peri-urban farmers seems to be rare, but does occur and may enable producers to negotiate more positive attitudes on the part of public sector agencies (e.g. the Vegetable Growers Association of Accra, Perlman, 1998).

Both 'rural' and 'urban' people are said to farm for subsistence on the urban fringe. Sometimes, farmers are long term residents of villages only affected in recent decades by urban economic and physical growth. In other cases, they have moved from or still live in the urban area.

In Bandim, an informal settlement on the periphery of Bissau, indigenous village elders control access to farm land, which is mostly used for subsistence production of rice, with some vegetable, cashew and fruit production. Livestock and the gathering of wild foods is also important to residents' food security, and artisanal fishing is also undertaken for subsistence (Lourenco-Liddell, 1995).

A 1987 survey of textile workers in Kano and Kaduna found that many farmed on the urban periphery even before the economic crisis, which had resulted in falling real wages since 1983. 30% of workers interviewed in Kaduna (where access to peri-urban land is easier) and 13% in Kano were farmers and more would like to have cultivated but could not get access to land (Andrae, 1992). A survey of university workers of all levels in Zaria, northern Nigeria, found that many farmed on the urban outskirts, mostly for subsistence to supplement declining real incomes in the 1980s (Gefu, 1992). An important aspect of households' responses to economic stress in Russia is subsistence agriculture, by both rural and urban households, the latter on peri-urban *dachas*. Some of the income-poor have plots, although their ability to access land and the travel costs of reaching peri-urban plots reduce the relative significance of agricultural produce to their household incomes compared to the middle income strata, for whom such production plays an important role in real incomes and food consumption (Seeth et al, 1998). Neither in Africa nor in Russia, therefore, is peri-urban farming confined to either rural residents or the urban poor.

A process of increased differentiation or polarisation between capitalist and subsistence producers is often referred to in peri-urban areas (Swindell, 1988; Iliya and Swindell, 1997). This has occurred since the mid-1980s around Dar es Salaam when liberalisation of marketing improved food supply in the city, and subsistence farming has gradually been supplanted by commercial production, leading to more social differentiation (Briggs, 1991). Those who cannot take advantage of the opportunities presented by urban markets include the already land poor, those who have insufficient capital to purchase land and/or intensify production, and those who are excluded from credit and extension systems, although the latter may affect all farmers within urban administrative boundaries. Often, women find it more difficult than men to access all these resources. In addition, processes in the land market may actively squeeze farmers out. Those with insufficient land resources to take advantage of urban food markets may, of course, be able to substitute other economic opportunities. Land development processes and their distributional impacts will be explored in the next section, and access to other labour market opportunities in Section 2.7.3.

2.7.2 Land markets and development

Peri-urban *land markets* are characterised by increasing competitive pressure on land. As the city expands, three processes may occur: land may be acquired by the state for public purposes (or subdivision); land may be sold and then hoarded or subdivided (often illegally) for private development; and land may be settled by low income residents, as squatters or illegal subdividers depending on the tenure situation, which may be complex and highly disputed. In and around Kampala, for example, there are four major categories of tenure, overlaid by numerous forms of informal access, varying from outright 'squatting' to land borrowing, the purchase and sales of informal use rights and illegal subdivision. A variety of tenancy arrangements also exist (Maxwell, 1996). In some parts of the world, the poor are not landowners and so the impact on them of sales and subdivision, as willing or unwilling sellers, or potential settlers, is indirect rather than direct. Elsewhere, the poor own (or have access to) land, although rarely sufficient to meet their own food needs, let alone produce a surplus. Urban pressures on common pool resources such as forests, rivers and wetlands, may lead to environmental degradation and reduced access by the poor to products they were previously able to gather. Few of the published studies refer to the impact of land markets and development on existing poor landowners, and few of those that do present many details or an explicitly gendred analysis.

The state may acquire land for its own purposes or play a role by (usually ineffective) exercise of its regulatory functions.. In Nigeria, where peasants were paid inadequate compensation, some of the large areas of land acquired for public purposes were illegally sold to others, for example around Kano (Swindell, 1988). The legislative framework for regulation of land use, subdivision and transfers may be different in the parts of the PUI within and those outside the urban administrative boundary. Capacity to enforce regulations is usually limited and, in any case, requirements can generally be evaded or satisfied by providing 'incentives' to public officials, who may also, in a private capacity, be engaged in land market transactions themselves.

Around Durban demand for land for formal and informal housing competes with agricultural use (May and Rogerson, 1995). Around Bandim, Bissau, the Papel elders are selling agricultural land (Lourenco-Liddell, 1995). Around Banjul, the founding families in villages near the urban area, who traditionally have allocated land without payment, are increasingly selling land. As the supply of unused land is used up, those with usufruct rights (tenants or borrowers) are evicted to provide additional land for sale. Towards the outer edge of the PUI, the ability to make improvements or transfer land is heavily compromised by the need for authorisations, both within the household and from landholding groups, but plot managers perceive themselves as having considerable freedom in plot management decisions, tenure security, and the right to bequeath land to heirs (Roth et al, 1996). Holders of usufruct rights to arable land on the outskirts of Gaborone, Botswana, where land boards continue to allocate land at no monetary cost, resist the reallocation of land for urban uses because of the lack of incentives to give up their rights, but holders of communal grazing rights have been less resistant, and village residents have agreed to the allocation of vacant land within the village of Tlokwen (to their relatives rather than strangers), leading to village expansion and increased congestion (Nkambwe and Arnberg, 1996). Around Hubli-Dharwad, land is being sold only to locals in more purely agricultural areas, but to both locals and outsiders in areas near the city. One or two of the World Bank poverty assessments refer to the development of land markets in peri-urban areas, leading to the loss of family rights to land (Cameroon), and poorly defined land rights (Madagascar) (World Bank, 1995a, 1996c).

Where land is purchased by speculators, it may be taken out of agricultural use, for example in the Chiang Mai valley in Thailand, which can have an adverse impact on the remaining farmers. For example, pest infestation has increased on the idle land (Rigg, 1997, p.254). In addition, uncertain demand and lack of capital may result in slow development, leaving land underused for long periods.

Urban land *development processes* also have an impact on peri-urban farmers. For example, development alters drainage characteristics, and land becomes subject to pollution originating in the city (see below). *Such pressures may reduce the viability of farming* and cause other farmers to sell up, for example, around Bangkok (Rigg, 1997, p.254). A similar process of displacement of small farmers is recorded around San Carlos de Bariloche in Argentina, where agriculture and cattle rearing were initially replaced by horticulture and dairying, but poor agricultural yields and increased land values led to sales and subdivision, leading to the displacement of agriculture by residential development (Abalaeron, 1995).

The process of informal settlement is described around Bamako, Mali by van Westen (1995). In the initial stage, a few families settle, with permission, near outlying villages or temporary settlements used seasonally near outlying fields. These are often poor in-migrants unable to afford urban rents, with construction workers well represented amongst them. Although they are able to construct their own houses, their resources are limited and construction quality is poor. If the local government does not intervene, many more residents move into the areas and build, and self-construction gives way to owner-controlled construction of a more urban style. These new residents tend to be wage employees or the self employed - they are not the poorest. Customary land rights are transferred either to the new residents or to brokers and, as settlements consolidate, the role of the chief fades to a formality (although a useful formality, when the time comes for regularisation). The commercialisation of urban property markets described here is typical: where land is freely available for settlement (either through traditional mechanisms or squatting, usually on public land), the poor can gain access for self-managed construction, but as settlements consolidate, good building land becomes scarce or owners/holders become aware of its commercial potential, and increasing prices place it beyond the reach of the urban poor, except as renters of rooms.

Large scale semi-legal subdivision and house construction by formal sector developers is illustrated by the case of Bangkok, around which, between 1975 and 1984 rural land was converted to urban use at a distance of between 11 and 20 km from the city, while by 1984 the main zone of urban expansion was beyond 30 km. Half of all the residential development during the period was by large scale developers, and so, although prices fell, was affordable only to the middle income groups. However, large tracts remained undeveloped in the 'inner' suburban zones because of the lack of infrastructure between the main arteries (Browder et al, 1995).

Explanations of the varying patterns of development around different cities and in different parts of the PUI around a particular city need to consider land tenure and ownership, organisation of house production, rates of urban and economic growth, the functions and effectiveness of land administration, and political factors. What research is available concentrates on the urban land development process rather than the interaction between urban development and agriculture.

2.7.3 Changing patterns of labour force participation

The residents of villages within the zone of peri-urban influence, generally farmers or farm labourers in the past, are presented with *alternative economic opportunities in the expanding urban economy*. These may arise from agricultural intensification, as discussed above; the demand for other raw materials, such as building materials or fuel, for urban use; wage employment in urban enterprises; or opportunities for self employment.

Agricultural intensification may give rise to increased demand for wage labour, on a regular, seasonal or casual basis. This may, in some circumstances, lead to increased wages, benefiting those of the poor who are agricultural workers, and perhaps enabling poor farmers to compensate

for reduced farm size or declining yields. In other cases the availability of alternative opportunities in the city may result in a farm labour shortage, leading either to mechanisation or to the in-movement of migrant labour. However, wages, especially for casual farm labour, may remain low, and this may remain the labour market of last resort for poor residents, especially women, who find it harder to travel into the city for work.

Around Gusan and Sokoto in northern Nigeria, *socio-economic differentiation* is occurring between wealthy farm households with heads in wage employment or business, or non-resident sons in wage employment who send remittances. These households are still benefiting from opportunities gained in the 1970s. Poor farm households, on the other hand, rely on sporadic supplementary employment in seasonal, casual or poorly paid permanent occupations and do not receive remittances from their non-resident sons. Intermediate farm households combine small farms with reliable non-farm employment and some remittances from non-resident sons (Iliya and Swindell, 1997). Foeken (1997) studying farm households in the rural districts near Mombasa, on the Kenyan coast, also finds that better off households have more diversified livelihood strategies than poor households: in the former 1.4 persons/farm household were engaged in off-farm activity, of which 41% were in regular employment and 14% engaged in temporary wage labour, over half in Mombasa. Of all the off-farm income (including rural casual labour and self employment), 45% was urban and 55% rural. Off-farm employment was a less important source of income in poor households, who depended more on food production (60%) and gained a third of their off-farm income from casual labour on nearby farms. Workers from these families earned less than half their counterparts in middle income and a fifth of those in high income farm households, not because they were engaged in different occupations or in rural as opposed to urban activities, but because they only have access to poorly paid jobs. A pattern was found of migration by young men, who later return to farm and establish an enterprise near the farm, which contributes at least as much to household income as farming. Women's movements are more constrained: they work on adjacent farms or are self employed rather than migrating to Mombasa. In households below the food poverty line, fewer women are engaged in off-farm employment, households contain more children, and members have a lower level of education⁵. Around Banjul, non-founding families have, on average, lower incomes and earn a relatively greater proportion of those incomes from non-farm employment than founding families, who have access to more land and labour (Roth et al, 1996).

The growth of wage employment in urban enterprises has been particularly significant in SE and E Asia. For example, 55% of the workers in a large export-oriented garment factory on the outskirts of Bangkok commute daily from rural areas (Lok, 1993, quoted in Rigg, 1997). In the extended metropolitan regions characterised by irrigated rice production, farms have been subdivided too extensively to support the whole farm household, but they still need labour in the peak agricultural seasons. A pattern of seasonal employment in farm-based nonagricultural enterprises, trading, and urban industrial and services sectors has developed over the long term, facilitated by a well developed road system and developments in transport technology (McGee, 1991). In 1991 Douglass explained the persistence of peasant agriculture in Central and East Java in terms of household survival strategies based on spatially extended commuting patterns, circular migration and the diversification of family labour, in the face of low agricultural productivity. However, in a later study, he found a more complex pattern, in which village specialisation occurs, but not all villages interact intensively with the nearby city, partly because of poor transport links, but also because of the specific socio-economic conditions of the village. The ability of villages to respond to opportunities, he suggests, is related to their own human and physical resources, as well as the degree of connectivity to larger urban and regional systems. More successful Indonesian villages are linked by daily bus services to more than one town or

⁵ This study did not consider household size and the availability of adult labour, or the relationship of working adults to the household head, which may be relevant variables.

city, develop agricultural specialisation, and have access to export oriented and agro-processing industrial employment, which in turn result in increased household incomes, leading to increased demand for other goods and services (Douglass, 1998b). He does not consider who, within villages, benefits or is excluded from such a virtuous circle.

Industrial enterprises adversely affected by diseconomies of congestion in cities such as Bangkok have been able to access cheap land in the surrounding rural area, without any significant disadvantage in terms of the quality of infrastructure, human resources and access to markets. In the Bangkok case, employment opportunities have been created, especially for the young. However, the pattern of development is decided by international capital with local industrial partners. Government regulation is very limited, with the result that there is a danger of an urbanised but unworkable region evolving (Parnwell and Wongsuphasawat, 1997). Much of the analysis of these regions in Asia has been by geographers, and the analysis has concentrated on the emerging spatial and land use patterns. Although the livelihoods framework for understanding household strategies would be particularly appropriate for analysing the diverse assemblage of income generating activities in which many households in peri-urban areas are engaged, it has not been much used to date. Rigg (1997) warns that it is difficult to assess who wins and loses from the intense process of urban-rural interaction which occurs in *desakota* regions, because boundaries and categories are rigid, but the situation complex and fluid.

Diversification of household livelihoods strategies is not confined to *desakota* regions. On the fringes of the town of Biharamulo in northwest Tanzania, Baker (1995) found that 83% of rural households in sample villages within 10 km of the town were engaged in multiple income generating activities. Because of the high costs and central function of agriculture in these strategies, households did not wish to move to the town, but they had frequent contact with it. Differentiation was occurring amongst both town and village households, because of their resource endowments and success with income diversification. Those relying solely on agriculture were found to be the most vulnerable, while the most secure were those who were successfully straddling the rural and urban economies.

In China, labour markets in peri-urban areas have been influenced in specific ways by government policies. An individual who was a member of a rural commune, even if recruited to the urban labour force, was not entitled to grain and other rations, so it was important that he retained access to land for food production. While a third or more of the daytime population of small towns commuted in by bicycle from surrounding rural areas, other family members continued to cultivate (although on holdings too small to produce a surplus). Because of the important insurance role of subsistence production, equalised access to small farms has resulted, rather than increased efficiency resulting from farm amalgamation. The increased availability of resources for investment from urban employment was counterbalanced by the absence of the male workforce. The diversified strategies of peri-urban households, the fragmented labour market, and government structures and policies have slowed rural-urban migration, but they have also given rise to social inequality arising out of the different opportunities people have had to take advantage of opportunities for urban wage employment or private entrepreneurship (Christiansen, 1990; Lee, 1991).

A distinction can be drawn between the labour markets of urban fringe residential areas and the more rural outskirts of the peri-urban interface. Surveys of unplanned urban fringe residential areas developed in the previous 15 years between 8 and 20 km from the city centre on previously unoccupied land in Jakarta, Bangkok and Santiago in 1990 found that

- they were predominantly occupied by migrants from other parts of the city - lower middle and middle income families in Jakarta and Bangkok, lower income households in

Santiago because of the importance of slum redevelopment policies, with the result that only 11% of households in the Jakarta area and 33% in Bangkok but 80% in Santiago reported having inadequate incomes (Browder et al, 1995, p.323)

- most workers were formal sector employees with regular wages, and only a small proportion of men were engaged in informal sector activities, although most of the women were in this sector.
- residents were well integrated into the urban economy, with few links with the rural economy or agriculture

Martin (1996) compares outer city neighbourhoods of Guadalajara with an agricultural area 48 km to the southwest of the city. In this case, the urban fringe neighbourhoods were deprived areas comprised mostly of in-migrants from rural areas. 51% of the households in one settlement and 31% in the other were existing at bare subsistence levels. Households allocate members to various types of work, mostly wage employment in small local enterprises, where pay is poor and employment insecure, so that households must have more than one breadwinner, including children. Households portray themselves as 'living hand to mouth', a strategy in which the management of resources is as important as earning them. The household moral economy is based on independence and self-reliance, and the strategy based on pragmatic allocation of labour resources between activities (even where this entails abandonment of traditional values) and the subordination of the interests of individuals to those of the household. In the more rural area, dependence on inadequate 2-3 ha plots and the limited local availability of alternative employment opportunities meant that 53% of households in one village and 27% in a second have incomes insufficient or barely sufficient to meet their needs. The most common response is increased labour inputs from women to stretch the resources available to households, but increasingly men and some (mainly younger) women are seeking work in Guadalajara and even in the USA (Martin, 1996).

Studies of the spatially and socially differentiated ability to take advantage of urban markets for labour, goods and services are, however, limited and some, not referred to above, are suggestive and anecdotal, rather than based on thorough investigation.

2.7.4 Social change

There is a tendency to see villages as high in social capital, even though this may be strained by adversity, especially in areas or amongst communities where all are poor or they are subject to repeated shocks. Conversely, it is often asserted that urban communities are lacking in social capital because of their mixed, large and transient populations and, for many, their relatively recent establishment.

"Despite the fact that the majority of the population and the poor in particular remain rural, urbanization has become one of the most conspicuous consequences of the agricultural decline in Sub-Saharan Africa, fostering an urban culture that is secular, individualistic, and commercially oriented, with a rapidly rising proportion of poor. Coping strategies and traditional cultures are breaking down; family and neighbourhood patterns of solidarity no longer prevail." (World Bank, 1996, p.38)

The problem is that this sees urbanization solely as a negative result of agricultural decline, rather than a positive aspect of economic development, it neglects processes of social change in rural areas, and it is based on superficial analysis of social processes in urban areas. Peri-urban areas are areas of rapid social change, in which rural settlements adjust economically and socially

to urban influences, both opportunities and threats, and in which existing populations are added to by in-migrants from either the inner city or other parts of the country. They are not alone in being affected by these changes, but the speed and intensity of change is greater in these areas than many others. Research has concentrated on the establishment and consolidation, physically and socially, of urban fringe residential areas (especially low income areas) and there is very little material available on processes of social change in peri-urban villages.

2.7.5 Infrastructure needs

Cities source natural resources to sustain their populations and economic activities externally. Some resources may be obtainable within the region surrounding the city (e.g. building materials, food, water), but for some resources and some cities, and increasingly as cities grow and become more affluent, resources are drawn in from longer distances, even globally. Peri-urban areas are called on to supply water, building materials, and sometimes energy, particularly in the form of woodfuel, to supply the needs of the city. *There is likely to be increasing competition for these resources between the local communities within the peri-urban area and the city.* For example, there may be competition for water between the demand for urban drinking water, industrial demand, and the needs of peri-urban settlements for domestic and agricultural supplies. Such competition is illustrated around Jos, Nigeria, where farmers, industry and domestic users compete for water, especially the best quality water, from abandoned tin workings (Van den Berg et al, 1998). In such competition, poor people may lose out.

In addition to satisfying the demand for urban infrastructure resources, peri-urban areas themselves need improved supplies of infrastructure to enable them to take advantage of economic opportunities and cope with increasing population densities. For example, power shortages have constrained development in the peri-urban areas around Hubli-Dharwad, where agricultural waste (especially cotton stalks) provides a cheap fuel for domestic use.

Closest to the city, *urban sprawl tends to occur faster than the capacity of urban utilities and infrastructure providers to keep pace.* In theory, the higher densities of peri-urban settlement should reduce the per capita cost of infrastructure provision below that in both low density rural areas and very high density inner city areas. However, data is not available. Exacerbated by the lack of planning capacity and failure to regulate development, a fragmented pattern of development of illegal subdivision for both upper and lower income groups occurs. Typically, development occurs first along the existing main roads, with the interstitial areas becoming infilled at a later (sometimes much later) stage. The provision of water, energy, and other infrastructure to such areas depends on the political system and the political clout of their residents, their location in relation to city-wide systems and the capacity of the latter to extend provision (which may be subject to physical, financial and organisational constraints), as well as the income levels of residents and investors. Analyses of the relative access to infrastructure of rich and poor households in peri-urban areas are scarce. Two studies have been identified which deal with some of the issues.

On the rural fringe of Accra, 50% of households in 1991 obtained water from vendors, 32% from streams and wells, and only 18% had access to a piped supply. In comparison, in the rest of the city a majority had access to piped water and only a fifth of households in other poor areas depended on vendors (Songsore and McGranahan, 1993, p.19). Similarly, in the rural fringes, 92% used pit latrines, compared to half in low and middle income indigenous areas within the city (where a quarter of the households in low income areas use bucket latrines). The incidence of diarrhoea amongst children in the two weeks prior to the survey was highest in the poorest quintile (22%), compared to 9% in the wealthiest. High incidence was associated with the use of a communal standpipe, absence of a tap in the home, sharing of a toilet, using a nonflush latrine,

and poor hygiene practices. The risk factors compound each other, resulting in 57% diarrhoea prevalence where 6 were present and 69% where all seven were present. Although these risk factors are only partly associated with residential area, the prevalence of diarrhoea was highest in the rural fringe (24%) and the high density indigenous housing areas within the city (26%), compared to 14% in the high density low class housing areas and 4.5% in middle and high class housing areas (Songsore and McGranahan, 1993, p.26-30)⁶.

Vulnerability to flooding in peri-urban areas of Guyana's Coastal Region outside Greater Georgetown was studied by Pelling (1998a, 1998b). The data refers to the mainly agricultural village of Le Repos, in an area particularly vulnerable to flooding, 12 km from the city. Risk factors affect both individual households and whole communities. They may be seen, Pelling suggests, as pathways through which households and communities may be exposed to vulnerability. The most vulnerable households are the poor living in overcrowded dwellings with poor infrastructure; petty agriculturalists relying on backyard livestock rearing and vegetable and fruit production for their livelihoods; renters and squatters, who tend to live in dwellings which lack raised yards and infrastructure; female headed households, who tend to live in poorly serviced areas; owners, whose capital investment is vulnerable to damage; and children, who suffer most from the health impacts and are prevented from attending school. Although poor households are subject to more than one of these risk or vulnerability factors, they (particularly owners) were found to have more access to familial and social assets which they can mobilise to assist in dealing with flood impacts than higher income households. However, on the whole vulnerable households rely primarily on individual mitigation strategies (adapting their houses, local environmental improvements and investment in reciprocal arrangements outside the household) and adaptation (staying away from work or school during floods), because of underdeveloped civil society, weak local government, and resistance to imposed models of community and unrepresentative community leaders (Pelling, 1998a, 1998b).

In addition to physical infrastructure, the need for social infrastructure increases as the population increases, but provision often lags behind need. It is *suggested that the 'rural to urban transition' is associated with a health risk transition*, in which 'traditional' diseases (communicable diseases or those associated with undernutrition) become less important and the incidence of 'modern' diseases (non-communicable diseases, illness associated with injury, over-nutrition or psycho-social disorders) increases. Disease patterns are related to the level of economic development and therefore vary between regions, between cities, between urban and rural areas, and within cities, probably because of changes in the underlying risk factors. Birley and Lock (1998) have hypothesised that peri-urban communities may face a higher total risk than either rural or urban settlements, because

- they provide many breeding sites for the vectors of diseases such as malaria, filiarasis, dengue
- living conditions deteriorate because of the failure of environmental sanitation to keep pace with increasing population densities, resulting in a high incidence of communicable diseases
- plants may be contaminated with heavy metals, lead, other chemicals and pathogens from human waste
- people encounter risks when scavenging from waste dumps and using insufficiently digested compost in agriculture
- the intensive use of agrochemicals in vegetable production may expose consumers, and particularly agricultural labourers, to agrochemical poisoning

⁶ This sample was not sufficiently large to disaggregate by both residential area and household income within rural fringe areas.

- residents, especially women, are exposed to indoor air pollution from the use of biofuels
- malnutrition levels are high because of limits on breastfeeding etc
- food may be contaminated because of environmental deterioration in home environments and the increasing use of street foods
- the incidence of psycho-social disorders is increasing because of the increased importance of urban stress/risk factors, including a deteriorating physical environment (lack of open space, overcrowding and noise), increased insecurity, increased female labour force participation, underemployment, higher levels of violence and accidents, lack of control over events and lack of community support.

A limited amount of evidence is available to support one or two of these. A clearer distinction is needed between the effects of urbanisation and the effects of increased affluence on disease patterns: the disease profiles of poor city residents may, as noted in Section 2.3, resemble those of poor rural dwellers more than those of the urban rich. Information on the health status of rich and poor urban and rural dwellers is limited, and the hypothesis that peri-urban residents are subject to a particularly high level of risk, giving rise to high levels of mortality and morbidity, has not been tested.

2.7.6 Waste and pollution

Cities depend on their surrounding regions to act as *sinks and disposal sites for their waste*, particularly solid and liquid waste, and these regions may also be *affected by urban air pollution*. Peri-urban areas both provide official sites for refuse tips and sewage treatment, and are unplanned repositories of polluted water and illegally dumped solid waste. Pollution of the air, water and soil from industrial, commercial and household sources can have a negative effect on agricultural productivity and compromise the safety of fresh and processed produce (Orchard, 1998). For example, polluted water from the city is affecting small commercial irrigated vegetable producers around Jos (Van den Berg et al, 1998). Increasing consumer awareness of the dangers may affect markets for periurban produce, especially fruit and vegetables.

While it may be possible to derive some positive benefits from recycling of waste, the use of compost as a soil conditioner and fertility enhancer (Lewcock, 1995) or treated sewage effluent for irrigation does not necessarily benefit poor farmers. In addition, even where there are well established systems of waste utilisation, these may break down because of the changing composition of and collection methods for urban waste. For example, waste from Shanghai, which traditionally supplied farmers in the surrounding areas with compost, has become less suitable, and collection and supply mechanisms less appropriate in recent years (Whitney, 1991). Conversely, farming can impact on the city through environmental degradation and the excessive use of agricultural chemicals. Analysis of the balance between positive benefits and negative effects of waste management are lacking.

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3 CURRENT AND FUTURE PERI-URBAN INTERFACE RESEARCH AND POVERTY REDUCTION

3.1 The Peri-Urban Interface Production System research strategy

The current⁷ goal of the PUI research programme relates to improving productivity and productive potential, and the Objectively Verifiable Indicator (OVI) refers to a 15% increase in productivity in the PUI in targeted countries by 2010. As noted in the introduction, the programme currently has three purposes

- i. management of peri-urban resources optimised through improved productivity, control of environmental degradation and energy efficiency
- ii. crop production intensified on a sustainable basis
- iii. productive potential increased by greater use of 'waste' materials and recycling of resources

In each case, OVIs include an increase in productivity in target areas by 2005, specific production-related OVIs (utilisation of energy, maintenance of soil fertility, optimal use of agrochemical inputs) and environmental OVIs (indicators of environmental deterioration stabilised, increased recycling, achievement of effluent standards). The focus of outputs is strongly on the development of techniques and technologies (five out of six), with one reference to strategies for planning and management.

From the point of view of this review, the absence of any reference to who benefits from the intended productivity gains is notable. Because of the continuing uncertainty over the relative effectiveness in reducing poverty of direct and indirect interventions, it is premature to restrict activities or outputs to those which have a direct impact only on the poor, but the apparent absence of any explicit consideration of the distributional implications of the production systems research seems undesirable.

The cross-cutting division of the RNRRS into 10 specific programmes and 7 resource production system programmes produces a complex structure and difficult management issues, in terms of ensuring coordination and complementarity between the programmes and projects funded and managed separately, especially within the same geographic area. Its focus on increased productivity and identification of the immediate beneficiaries as the research organisations with which it works appear to result in a relatively narrow focus on subjects for research which are legitimate within this framework, but not necessarily those most relevant to reducing poverty.

This review of poverty in the peri-urban context and the poverty orientation of the PUI research programme is related to two larger reviews:

- operationalising a sustainable livelihoods approach, through policies and actions which promote such livelihoods, better opportunities for poor people and protection and better management of the natural environment, in order to eliminate rural poverty in poorer countries (see Carney, 1998). Carney suggests that such an approach would aim to promote sustainable livelihoods

⁷ Prepared in 1994 and incorporated in DFID's Renewable Natural Resources Research Strategy 1995-2005.

through access to and better management of natural resources, a more supportive social environment, access to financial resources, access to facilitating infrastructure and social services (education, training, information, technologies, health), and a supportive policy and institutional environment. Use of an asset-based conceptualisation of household livelihoods leads to an approach to research which focuses on understanding changes in asset status, especially the characteristics of households which have escaped poverty and the combination and sequencing of asset acquisition and use strategies which has allowed them do so. Important also are the context, structures, and processes which influence asset availability and define livelihoods options. This conceptual framework is broader than the focus of much NR research on increasing sectoral productivity. The approach to policy and action to which such understanding leads implies that selection of approaches should arise directly from livelihoods analysis (as well as assessment of the effectiveness of earlier/current interventions) rather than being predetermined, which means that the appropriate approaches may not be those of traditional concern to the NR programme, which has primarily focused on small agricultural producers. These are often not the poorest (Ellis, 1998b), so livelihoods criteria for NR programmes need to identify ways of increasing assets and choices available to those with no or very limited assets also. It is acknowledged that, as yet, the sustainable livelihoods approach provides little detailed guidance on appropriate interventions or policy content, in particular on how to move beyond both previous approaches to integrated rural development and sectoral organisation (Carney, 1999).

- development of a framework to assess the poverty impact of NR research (Cox et al, 1998). Cox et al conclude that NR research is a blunt instrument for achieving social objectives: it is possible to promote broad patterns of growth in agricultural production from which the poor benefit (by increased incomes, reduced food prices, feeding programmes) but the focus on increasing productivity makes it difficult to target so that they benefit disproportionately. Both demand for improved technologies and techniques and access to credit, extension and inputs tend to be higher amongst less marginal producers. In assessing the poverty impact of NR (proposed or completed) research, Cox et al suggest the use of two checklists: first, identification of the mechanisms by which the poor will derive benefit from the research as producers, labourers and consumers, in the long and short term, specifying the scale, degree and type of impact; and second, identification of the conditioning factors which will influence these impacts, in order to identify the supportive policy and institutional changes needed (including support services, access to markets, agricultural and food policies, removing gender bias, institutional responsibility for research and extent of farmer involvement). Finally, the use of a summary matrix is recommended, in which various types of research impact (income, consumption, diversification of livelihoods, changes to stocks of natural, human and social capital) are evaluated with respect to the degree of benefit/cost or change in vulnerability for the poor.

In practice, the PUI strategy is already evolving a more explicitly poverty-oriented direction than implied in either the existing logframe or the revisions proposed in April, 1998 (see below). This is envisaged as a four-pronged approach:

- i. improved livelihood options, including recognising and fully exploiting communal assets, especially land rights
- ii. innovative agroeconomic strategies which can exploit market location and make full use of available (but unfamiliar) inputs e.g. urban solid and liquid wastes

- iii. coherent natural resource management approaches in which inefficient degradation of the natural resource base is curtailed
- iv. relatively low-cost easy access information for local stakeholders at all levels to empower people to take action on NR management issues.

This fits well with the likely shift of emphasis from increasing productivity to fostering sustainable livelihoods but, especially in the PUI, because of proximity to urban land and labour markets, research is needed on social and economic change, and changing infrastructure and service demands, which are outside NR's traditional remit and its primary focus on agricultural production and social and economic changes affecting mainly farming populations.

The 1998/9 revision of the programme logframe has been driven by the findings of the 1997/8 review, which validated the broad relevance of the portfolio of research projects, but identified problems in achieving coherence, the arbitrary nature of the targets set in the OVIs, and the adequacy of the proposed means of variance (MOV). No change to the goal is envisaged in the logframe, but a single purpose is proposed⁸:

Management of peri-urban resources optimised through improved natural resources productivity and control of environmental degradation

Again there is no reference to the incidence of benefits, although one of the proposed OVIs refers to "optimal livelihood strategies in sample communities". The remaining OVIs refer to productivity increases and pollution reductions. The logframe does not define what is meant by 'optimal', although the MoV make provision for this to be defined and agreed collaboratively between local and external stakeholders. At present, neither the reference to 'optimal' nor the use of the term 'community' recognises that productivity gains have differential distributional impacts, which may or may not result in benefits for the poor. The MoV intend to demonstrate uptake of proposed technologies and approaches, and objective and perceived improvements. One refers to livelihood improvements, and one to improvements perceived by target beneficiaries, but in no case is it specified whether the uptake or improvements should benefit one socio-economic group rather than another. This provides little guidance to the designers of particular research projects

It is recommended that the purpose refer to the distributional impact of improved management, without specifying whether the improvements should directly or indirectly benefit the poor:

Management of peri-urban resources optimised for the benefit of poor residents through improved natural resources productivity and control of environmental degradation

The proposed OVI s/MOV are reasonable provided it is possible to arrive at workable definitions of 'optimal' and 'significant', which may only be sensible at field trial/sub-project levels. However OVI2 needs to specify for whom livelihood strategies should be optimal and the MOV should specify the distributional impact of 'uptake' and 'improvements' by socioeconomic group.

Four of the five proposed outputs refer to management methods or technologies. Although this reflects the traditional concerns and priorities of the NR research programme, it is not self-evident

⁸ The proposed revised logframe used in this review was produced in April, 1998. Further revisions have subsequently been proposed.

that technologies are the most appropriate ways of reducing poverty. In addition, in no case is there any reference to the distributional aims and impacts of the improvements. Output 1.2 is proposed:

Links between technological and socio-economic change in the peri-urban environment, including impacts on resource allocation and access to market systems, identified and incorporated into risk-reducing strategies.

A specific reference to the distributional impact is recommended:

Links...identified and incorporated into livelihoods strategies which result in reduced poverty/increased wellbeing for the poor.

The use of the term 'experimental strategies' implies the specification of broad aims and means of achieving them for the whole city region. In fact, it appears that what is intended is the pilot testing of approaches with a view to formulating a strategy at a later stage.

3.2 PUI research projects

The current PUI research programme has four components: crosscutting projects, city region case studies, related projects in the research programmes focusing on other production systems, and methodologies. These will be briefly summarised and assessed in turn:

3.2.1 Cross-cutting projects

Of five projects (excluding this one) two are complete, one in progress and two have only recently been commissioned.

A review of *the health impacts of peri-urban natural resource development* defines linkages between the main peri-urban NR themes and a range of health problems (Birley and Lock, 1997). A hypothesis is advanced that peri-urban residents, particularly the poor, may have particularly low health status, due to their susceptibility to both 'traditional' and 'modern' health hazards. Research is needed to refine this hypothesis (particularly to disentangle rural/urban, traditional/modern, and poverty/wealth related disease patterns) and test it, but this would be costly and methodologically difficult, so may be beyond the scope of the PUI programme. A method of assessment is advocated which could help ensure that health impacts are considered in project design and implementation, which will be relevant at the 'experimental strategy' stage of the city-related PUI research (see below). Research is under way to examine ways of tackling malarial vectors in the peri-urban interface of Kumasi.

A review of *the use of urban waste in periurban production systems* examines the classification of urban waste and identifies potential uses for it (animal feed, soil improvement, fuel; for weed, pest and disease control; aquaculture; cultivation of lower organisms; irrigation) (Allison et al, 1998). For each, factors affecting use are reviewed. The first of these factors is the type of agriculture, and it is only in the farming systems and household economies sub-section of this section that reference

⁹ The Natural Resources Systems Programme, including the PUI production system programme, produces a periodic newsletter (NRSP Update) and information booklets. These, which include contact addresses for further information, can be obtained from the Manager, NRSP, SYMO V714, DFID, 94 Victoria St., London SW1E 5JL.

is made to the heterogeneous nature of periurban farmers: subsistence, dairy, commercialised intensive horticulture. In the section on use of waste, reference tends to be to the farming systems or projects, and where reference is made to farmers, these are never disaggregated by size, tenure, subsistence/commercial or gender. The report does not, therefore, relate its discussion to the potential for and constraints on use of urban waste by poor periurban farmers or to the income generating potential of waste recycling for the poor.

Review of *peri-urban natural resource concepts and management approaches* (report in progress, early draft reviewed) (Nottingham and Liverpool, 1998). The aim of this project is to conduct a review of available literature, firstly, to summarise and make a preliminary assessment of the available theories or conceptualisations of the interactions between the users of different natural resources in the rural-urban fringe and, secondly, to review the planning and management procedures and approaches adopted to deal with NR issues in periurban areas. The conceptual background considers definitions and the role of the PUI in migration, and discusses issues of sustainability and urbanisation, poverty and gender. The report's consideration of land issues and economic activities covers land tenure and governance, economic activities (especially the spatial location of secondary and tertiary activities), transport and communications, and primary activities, mainly urban and periurban agriculture. The social issues section incorporates reviews of housing, infrastructure, and health, with reference to the low incomes of most people living in the PUI, and of recent leisure developments, with their adverse impacts on some population groups. The environmental impacts of agricultural land loss and degradation, water resource exploitation, aggregate extraction, energy and power generation, transportation and waste disposal are reviewed, rather than the implications of these environmental issues for particular socioeconomic groups. The management problems identified include the lack of effective decentralisation or community participation, local government fragmentation and weaknesses in planning and coordination. The research team were requested to focus on aspects other than poverty, pending this review, so the section specifically devoted to poverty in the draft report is short and quite superficial, although there are references to the needs of low income people elsewhere, especially in the consideration of social issues.

A new project on *valuation of periurban natural resource productivity* calls for a review of possible methods for valuing the use and productivity of various natural resources in the PUI, and the development of suitable methods for use in the city case study regions. To be relevant to poverty, the methods would have to demonstrate the value of production to (groups of) individual producers, in the context of diversified household livelihood strategies. There is a danger that economic valuation will be biased to marketable goods. The complexity of such an exercise is increased by the rapidly changing patterns of land and resource use which characterise the PUI.

Energy-related constraints to productivity in the PUI addresses a specific concern identified in the PUI logframe, and calls for a general review of literature, with brief case studies in the case study regions, to identify the potential significance of energy-related issues in PUI production systems and to identify future research priorities in the two city regions. As understanding develops of the poorest people's livelihoods, concerns are likely to include use of women's time in collecting firewood; the trade-offs between using crop residues for fuel, feed or soil ameliorants; the importance of energy supply to SSEs; and the need for regulation of land and energy markets to provide for environmentally sustainable energy supply.

3.2.2 City region case studies

The city region case studies have focussed firstly on Kumasi, Ghana and secondly on Hubli-Dharwad, Karnataka, India. The first of these started earlier and has progressed further in respect of conceptualisation, outputs and development of appropriate methods (see below). The intention is to develop a group of projects focused on each case study city region.

The initial workshop in *Kumasi* (NRI, 1995) identified the overall "theme" of the research programme as the "achievement of sustainable agriculture at the PUI" (p.2), modified to "achieve sustainable improvements in the productivity of priority NR in the Kumasi city region" in the Inception Report (NRI and UST, 1997). The inception stage of the research has drawn on PRA in six villages, a Village Characterisation Survey (VCS) in 66 villages <40 km from the city, specialist studies (land tenure, see also Kasanga, 1998; stakeholder analysis of NR management; soil analysis; examination of planning processes; definition of the city region); development of a GIS (including land use mapping at village level, see below) and a wealth ranking exercise (Nkrumah and Antoh, 1998). The results have helped to clarify the most significant processes of change and identify critical research issues, in particular

- a. control of and access to land: processes of change, distributional impact and implications for sustainable use
- b. control of and access to other NR: water and sand/stone have emerged as those important to farming systems and environmental impact respectively
- c. agricultural productivity in six farming systems: identification of changes, potential and constraints
- d. characteristics of peri-urban villages and the impacts of changes in land, NR and farm systems for livelihood strategies, especially for those who are losing out
- e. inadequate framework for planning and management, including fragmented institutional arrangements, information gaps and inappropriate methods
- f. extent and patterns of agricultural systems, settlement, markets and communications within the PUI

Specific research projects include:

- Kumasi NR Management (led by NRI), which is investigating the use of urban wastes to improve soil fertility, land and livelihoods, and the significance of agriculture in more built up parts of the city
- The use of waste in suppressing waste pathogens (led by the International Mycological Institute under the DFID Crop Protection Programme)
- The development of a useful and user friendly PUI NR information system (led by GDS Limited)
- Dairying around Kumasi, a project related to which is being commissioned jointly with the DFID Livestock Production Programme

- Vegetable marketing into and through Kumasi will be investigated in a joint project with the DFID Crop Post-Harvest Programme

The first of these proposes to examine non-farm but NR-based income generating activities, both successful and unsuccessful ones and potential alternatives, with a view to assessing their viability and pilot testing suitable activities as supplements or alternatives to agricultural production. Although the detailed studies of the livelihoods of vulnerable and landless groups will increase understanding of the processes of impoverishment and displacement under way around Kumasi, and the dairying and vegetable marketing projects of specific commodities and income generating activities, focusing on a few types of income generating activities in the absence of any wider understanding of trends and opportunities in the urban and peri-urban labour market is undesirable. Without analysis of trends in the urban economy and demand for labour, the most promising alternatives for those affected by agricultural change and land development pressures may not be identified. Such alternatives may not be NR-based. Whether they are in wage labour or self employment, access to them by the poor will require identification and alleviation of the constraints which prevent them taking advantage of the opportunities presented by a growing urban economy, the most severe of which may be outside the remit of an NR action research programme.

One of the broad areas for action identified at the initial workshop was watershed management and research has been commissioned (led by the Development Planning Unit, UCL and funded by DFID's Engineering Department) which will examine management of priority NR issues at the scale of a watershed, by means of stakeholder analysis, investigation of hydrology and water quality, analysis of the extent and implications of sandwinning, and analysis of the implications of urban waste management, in order to develop institutional and practical solutions to the problems identified. This research will be closely linked to the wider research programme, with its focus on land, livelihoods, soil fertility and waste utilisation, and planning and management. A complementary project, also funded by the Engineering Department, is considering the use of urban waste water in irrigation (led by the Institute of Hydrology). The former programme refers to the poor in terms of their access to potable water and the effect on them of pollution. However, water is of more central importance than the availability of clean drinking water to food security, health and household maintenance, and livelihood diversification (Soussan, 1998). Understanding of the conflicts between uses and users, and the institutional processes through which these are expressed and can be mitigated, together with analysis of how social, economic, institutional and resource use change conditions patterns of exploitation and people respond to scarcities can lead to proposals for actions to enhance the sustainable productivity of water resources to support livelihoods. In addition, it can lead to the development of formal and informal institutional capacity to enable the poor to secure rights of access to water and means of resolving conflicts over its use.

The *Hubli-Dharwad* studies are less advanced. Baseline surveys comprised RRA in 25 villages representing different production systems, PRA in four villages, and sector studies of farming systems, energy, waste, and socioeconomic, institutional and land use change. The baseline studies revealed significant landlessness, rapidly changing labour markets with implications for agriculture, poorly functioning product markets for peri-urban farmers and a number of marginalised groups of producers. The baseline study and preliminary workshop did not produce a coherent set of research priorities. The report demonstrates confusion (which is understandable, given the programme logframe) about whether the outputs of the programme should focus primarily on the development/adaptation of techniques to increase the productivity of agricultural systems, or broader issues of livelihoods, sustainable resource use and institutional arrangements for planning and management (Birmingham et al, 1998a). However, there was a consensus that systems and techniques for

processing urban waste to improve soil fertility are desirable and this has been given priority in a project to improve the utilisation of urban waste by near urban and especially small and marginal farmers, by studying waste generation, recovery and treatment; carrying out a stakeholder analysis; examining farmer practices with respect to soil fertility and the use of compost; and securing farmer cooperation in on-farm trials (Birmingham et al, 1998b). Poverty reduction did not emerge as a central concern during the baseline studies and preliminary workshop but is being paid increasing attention as the research agenda emerges.

The livelihood needs of the poor can only be addressed in the context of a thorough understanding of NR production and marketing systems. From the baseline study, it appears that future research should concentrate initially on

- developing a better understanding of farm systems, and the constraints faced by farmers, especially the poorest, which appear to include labour, water, energy, input availability/cost, markets and marketing. It is not possible to rank these constraints on the basis of currently available information.
- labour markets in the city region, to identify opportunities and assess constraints on access, especially by the poor.

These research areas can be linked through analysis of livelihood systems. In addition, there seems to be relatively little information on land: markets, urban development processes and changing patterns of use. Until more is understood about the processes of change and their effects on the poor, it seems premature to identify specific research topics intended to lead to appropriate action research, or activities to develop planning and management arrangements and policies. The only specific issue which emerges clearly at present is the environmental and health implications of using sewage for irrigation and ways of addressing the problems.

3.2.3 PUI projects in relevant NR research programmes

Of the NR research programmes four currently have PUI projects: Livestock Production and Animal Health, Crop Protection and Post-Harvest.

The *Livestock Production Research programme's* current aim is to improve the performance of livestock through improving feed availability and quality, management strategies, controlling disease and improved marketing (technologies and processing) of eggs, milk and meat. Since 1989 it has focused on ruminants. The programme has focused, therefore, on animals (specifically peri-urban dairying) rather than producers, and the non-poor rather than the poor. It has included projects to improve the production and marketing of livestock products in the peri-urban areas of three towns in Bangladesh, an analysis of peri-urban livestock production (dairying and poultry) in Tanzania, and a animal health project focusing on peri-urban dairying in India. The *Animal Health* programme has a disease control project in Indonesia. Discussions on the need for further research on livestock in peri-urban areas are under way (e.g. Silverside, 1997).

Livestock development projects generally aim at increasing production, based on technology and services, organisational change and institutional reform. A recent review of their outcomes concluded that there is little evidence that the technologies and services developed have benefited the poor, and that organisational change has delivered less than promised, partly because of unresponsive international and national policy frameworks (Ashley, 1998). This review recommends a change of

focus to supporting the livelihoods of poor livestock keepers rather than livestock and their products, or places where livestock production is highest. The implications for the PUI programme are that research should focus on livestock which are actually or potentially important to poor producers, including peri-urban producers who have lost access to most of their land. Continued attention to dairying may be relevant, based on the assets available to the poor (small scale production, limited land, limited access to extension services), but scavenger/small livestock should also be considered because of their importance to the poor for subsistence, income generation and management of shocks and stresses. There is also a need for exploration of the environmental and health implications of intensive livestock production, especially as densities increase on the urban fringe.

The *Crop Protection Programme* believes that the technologies it develops benefit the poor through increasing yields and solving acute epidemics of pests and diseases, but this will only be the case if extension services reach poor farmers and they are able to take up the technologies. The purpose of the programme in the PUI is to improve the volume, quality and seasonal availability of horticultural products through reducing losses caused by pests. It has a group of peri-urban projects in Kenya. A specific concern is emerging in the city region case studies for the production problems of growing crops in polluted conditions, at present only addressed in Kumasi.

The *Crop Post-Harvest Programme* aims to develop storage and handling technologies for fresh fruit and vegetables for local and export markets, to develop new process and handling technologies to exploit market opportunities and to develop marketing strategies, but there is no reference in the programme's aims to the intended beneficiaries from such activities. Potential research in the PUI is identified in a recent review as including (Orchard, 1998):

- a. improved post-harvest management and marketing systems to meet urban needs and increase returns to farmers
- b. assessment of the impact of pollution on post-harvest quality of fresh and processed produce
- c. development of technologies to produce 'safer' food and reduce the impact of urban pollution
- d. development of appropriate processing technologies
- e. development of market strategies to meet 'niche' and off-season market opportunities.

These should, it is suggested, be developed using a farm systems approach and not in isolation. The review gives no indication of who the intended beneficiaries would be, but a suggested focus on indigenous vegetables might be an appropriate way of involving poor farmers. The concern with the interaction of pollution, food production and health reflected in b and c is one which emerges from the city case studies and also concerns the CPP. It would require more explicit links between NR research and health than in the past. However, more evidence is needed that the other suggested research areas are demand driven and responsive to the needs of poor farmers.

The *Forestry Production Programme* has shifted its emphasis from technological and biological concerns to institutional and NR management issues in recent years, but has explicitly avoided research in the PUI because priority has been given to rural areas. Nevertheless a recent review of forestry projects (Arnold, 1998) notes the importance of conserving forest resources (both on-farm and CPR) so that poor people can retain access to forest inputs to their livelihoods. This issue is often significant in PUIs where rapid changes in land use and tenure threaten the use of forests for

supplies of fuelwood and other products, and where management strategies therefore need to incorporate realistic conservation strategies. Research on changing patterns of forest use and access in the PUI needs to be set within a wider consideration of the energy needs of poor people.

The *Fisheries Programme* does not have any peri-urban projects at present, although it is acknowledged that aquaculture is a potential area for research because of its significance on the fringes of some cities, the urban demand for fresh produce and its potential as an income generating activity as pressures on land mount. Townsley (1998) notes the need for conservation and management of aquatic resources, especially open access resources which are often those available to the poor, especially if open access resources are utilised for aquaculture. Although around the case study cities, aquatic resources and aquaculture are limited, conservation strategies and means by which aquaculture can be developed by poor producers are potentially relevant.

General concerns which were expressed were:

- the need for projects to address needs identified by small farmers in specific locations, implying a different approach to the development of project proposals and logframes to that traditionally adopted by UK NR research institutions. Development of research proposals in conjunction with local partners is needed, so that the project is appropriate, the chance of take up is improved and potential beneficiaries (and local research institutions) feel a sense of ownership.
- the need for a relatively long time frame to produce sustained changes in practice (ten years was suggested) which is threatened by the demand to demonstrate short term impact
- the limited extent to which research can produce widespread impacts is limited. There is a need for research to be linked into DFID country programmes, yet there is often no connection between the two.

3.2.4 Methods

Two aspects of methods are of particular relevance in the PUI research programme to date: development of methods of NR information collection, storage and use, and socio-economic methods.

The Kumasi city region case study has emphasised both the development of methods and the collection of empirical data. The latter is justified, indeed highly desirable, in light of the dearth of recent systematic empirical data on many aspects of development in Africa, especially at the subnational scale. Early work in the city region identified serious constraints to the management of peri-urban NR resources, and to integrating social, economic and physical planning and management at regional/local level, resulting from the non-availability, inaccessibility and lack of coordination of relevant information. In addition to the testing of relatively cheap methods for acquisition and storage of geographical information, the projects are now attempting to a) integrate data obtained during the project by other means, including PRA and related methods, into the database and b) make the data useful and accessible to planners and managers in the relevant organisations (a criterion which is often not met when GIS/databases are designed by technicians). It is desirable to incorporate systematic socioeconomic data into the IS as well, which will require assessment of the feasibility of accessing and including census and sample survey data (for example from the Demographic and Health Surveys and the Ghana Living Standards and Core Welfare Indicators Surveys). While census data should be available for each Enumeration Area, the latter are cluster

samples - this and the sample size are likely to limit the extent to which they can be disaggregated to provide data for specific localities. Although this type of methodological development is not directly related to poverty reduction, if it enables more effective planning and management of natural and other resources it may indirectly assist the poor. It is important in this context that all data gathered at community level is made available to communities for their own use and that, as the project develops, villages selected for study or pilot testing of technologies and approaches should have a say in the data to be collected, its presentation and use.

Although all NRSP now incorporate an appropriate level of socioeconomic analysis, a specific programme was set the task of developing socioeconomic methodologies for wider use. These include methods for needs assessment, participatory research, commodity systems analysis, monitoring and evaluation, understanding local agricultural and environmental perceptions and knowledge, gender needs and technological change, and improving promotion and uptake. Projects have developed farm management-type methods, methods for the collection of indigenous NR data, and participatory monitoring and impact assessment. Best practice guides have been prepared on stakeholder analysis and participatory methods in NR research, and dissemination pathways. A framework for integrating quantitative and qualitative approaches to socioeconomic research, and an approach for analysing gender relations for M & E in the RNR sector are currently being developed.

Many of these methods are relevant to the PUI research programme. It is important to recognise the strengths and the weaknesses of participatory methods and the limitations of some tools. Mosse (1994), for example, suggests that Participatory Rural Appraisals involve 'public' social events which construct local knowledge in ways that are strongly influenced by existing social relationships - of power, gender and between residents and external investigators. As a result, certain kinds of knowledge may be excluded. In addition, PRA needs to be complemented by other methods if the local knowledge it generates is to be used to solve problems and reach decisions on (locally controlled) innovation and change. Wealth ranking, for example, can be used as a way of describing and identifying criteria to distinguish wealthy and poor groups in qualitative terms (Scoones, 1995). The methodology used in the Kumasi study involved the use of a limited number of key informants. However, the identification of appropriate informants and reconciliation of differences of perception between them may be subject to bias. This method of wealth ranking should not be used to identify individual asset-poor households. In small settlements wealth ranking in open meetings may sometimes be used to identify specific poor households, but such an approach may be unworkable in large or heterogeneous settlements and may be socially divisive. To arrive at a reliable indication of the proportion of poor households in the overall population of an area, Ravnborg (1992) suggests that key household characteristics need to be translated into quantifiable parameters which can then be used to build a typology of farm households. The relative importance of the different types of farm household can be determined by a random sample survey of households (see also Scoones, 1995). Rigg (1997, p.113-4) notes potential difficulties in standardising and scaling up wealth rankings which may be particular to villages and localities.

A more balanced recognition of the strengths and weaknesses of quantitative and qualitative socioeconomic research methods is increasingly leading to advocacy of their complementary use (see Scoones, 1995; Moser et al, 1996; Carvalho and White, 1997; Booth et al, 1998). The PUI programme should be open to the possibility that the spatial and qualitative primary data on which the research is mainly drawing at present may need to be supplemented by higher quality sample survey data than that collected by semi-quantitative methods in the VCS in Kumasi or the village RRAs in Hubli-Dharwad. The current SEM project may produce relevant guidelines. In addition, methods for urban labour market research may be relevant.

4. CONCLUSION

The central research question of interest to this review is who are the people who live in and move into and out of the peri-urban zone as a city expands, and how do the transformation processes affect them? In particular, how extensive is poverty amongst this population, what are its characteristics, and how do the processes at work perpetuate, worsen or reduce poverty?

Most of the research on poverty and deprivation has focussed either on urban or on rural poverty, or, if it is looking at poverty nationwide, information on its incidence and characteristics is disaggregated by region and/or urban/rural. There is relatively little research on the PUI and what there is does not often document and analyse processes of change in any depth, very few studies are longitudinal and none of the research is centrally concerned with poverty. Research on peri-urban areas which appeared to have some poverty relevance was reviewed for this paper (Section 2.7). However, in view of the dearth of relevant studies, recent research on rural and urban poverty was also reviewed (Sections 2.2 - 2.6). These reviews are now used to suggest hypotheses for testing in future research in the PUI of the city case study regions. The hypotheses below arise firstly, from the lacunae in our knowledge and understanding of the poverty characteristics and processes in the PUI - they identify patterns and relationships about which we need to know more. Secondly, on the basis of existing knowledge, it is possible to identify a number of possible interventions which might increase the wellbeing of poor people or prevent impoverishment. Hypotheses related to the anticipated effects of such interventions are also suggested. These may be tested initially by participatory and collaborative research and action planning and, following implementation, by evaluative research.

Comparisons of the incidence of poverty were shown to be problematic, partly because of conceptual and methodological problems involved in using and measuring income or consumption poverty and partly because of problems in defining urban and rural areas. In most countries, the incidence of poverty is higher in rural areas, although the urban-rural gap may be narrowing and the share of the urban poor in total poverty growing. However, inequality is generally greater in urban areas and there are arguments about whether the extent of urban poverty tends to be underestimated. There is little work on the severity of poverty in urban areas, although there is some evidence that the poverty gap may be larger in some cases. A particular methodological difficulty also relevant to periurban areas is the usual dependence of disaggregated figures on administrative boundaries. Urban boundaries may be drawn tightly or loosely, which may influence findings on the extent of poverty, but however administrative boundaries are drawn, they are unlikely to coincide with the extent of the peri-urban area, posing difficulties for the use of national sample survey data for estimating the extent of poverty in the PUI and comparisons with urban and more deeply rural areas. Doubts have been cast by some on the value of estimates of poverty incidence (Hanmer et al, 1997), but most consider that both quantitative household measures of poverty incidence and qualitative analysis are needed. A possible set of hypotheses arising from the data currently available would be:

The incidence of poverty in the PUI is intermediate at any one point in time between that in urban and rural areas for the country concerned. The incidence of poverty decreases with distance from the boundary of the built-up area. The geographical of the PUI itself shifts as the built-up area expands, with the result that the incidence of poverty in previously peri-urban areas absorbed into the urban area proper approaches the urban average, while

poverty in rural areas newly affected by urban influences in the outer reaches of the PUI decreases to a level intermediate between urban and rural levels.

Demonstrating such shifting spatial patterns in poverty incidence does not, of course, in itself offer any explanation of the varying extent of poverty.

Existing research reveals that poor urban and rural households have a number of characteristics in common: a tendency to be disproportionately large households with high dependency ratios and to contain adults with low educational levels. Small households may be poor if they contain single adults and/or adults who are particularly disadvantaged e.g. the elderly, disabled, single parents, and some women. With respect to other characteristics, there is a divergence between urban and rural households arising from the predominant pattern of economic activities. Urban households in poverty are mainly those who are excluded from opportunities to earn adequate incomes, and are dependent on poorly paid wage jobs or less profitable informal sector activities, while rural households are predominantly farm households with inadequate access to assets and inputs to either increase agricultural production and incomes or diversify into other income generating activities. There is also a spatial dimension to poverty, especially in rural areas where poor regions or communities tend to be located in resource poor or remote regions and areas of population pressure. It would be expected, therefore, that:

The poor in the PUI will share the general characteristics of poor urban and rural households: poverty is associated with large household size, high dependency ratios and low educational levels, and particularly vulnerable groups are poor (e.g. the elderly without support, the disabled, the chronically sick). Female headship will only be disproportionately associated with poverty in those countries where this is the case at national level.

After this, the formulation of hypotheses becomes more complex because of the processes of change under way in the PUI, especially changes to farming systems and land use, high levels of activity in the land market and the process of urban development, and opportunities for access to economic activities linked to the urban labour market. As noted in Section 2.7.1, farming systems are subject to contradictory pressures and amongst the farm population, there is differential ability to take advantage of opportunities and withstand pressures:

- opportunities for intensification to meet urban demand, especially for fresh produce
- threats from the subdivision and sale of land for urban development (usually unregulated)
- adverse impact on the remaining farm businesses of the sporadic pattern of urban development, uncertainty over the future, increased difficulties in accessing extension services, disruption to drainage caused by urban development and infrastructure construction, and the effects of air and water pollution
- if the urban economy is buoyant, agriculture may also find it difficult to compete for labour

Current research does not enable a conclusion to be drawn on whether the increasing prevalence of part-time farming represents a process of marginalisation or a well-diversified, productive livelihood strategy (Section 2.7.1). Nor is there adequate understanding of the nature of the threats and opportunities, determinants of farmer response or the scope and outcomes of interventions (see also Section 3.2.3 which suggests a need for research to focus on the crops

grown, livestock kept and CPR used by poor people, and those for which there is a ready urban market accessible by small farmers). Further, the differential position of PUI residents with respect to land development processes and urban labour market opportunities is not well understood and little of the analysis is gendered (Sections 2.7.1, 2.7.2 and 3.2.2). Spatial differentiation within the PUI is more subtle than often recognised (Sections 2.7.3 and 3.2.2) but there has been little analysis of the factors underlying this. Differentiation and impoverishment within the PUI therefore needs to be analysed in a variety of cross-cutting dimensions: by distance from the urban area, between villages, within sector of economic activity and within villages. Little research has been done on the processes of social change (Section 2.7.4), relative access to infrastructure (Section 2.7.5), the costs and benefits of pollution and waste disposal and re-use (Sections 2.7.6, 3.2.1 and 3.2.3) or health risks and health status (Sections 2.7.5 and 3.2.1). It is possible, therefore, to hypothesise that:

In the early stages of urban influence and/or the outer parts of the PUI the opportunities for farm enterprises exceed the threats. Those who benefit tend to be the larger farmers and those who are least able to take advantage of the opportunities are smaller farmers who lack capital and surplus land, leading to increased differentiation. Increasing access by small farmers to capital and other farm inputs would enable them to increase productivity and benefit from increased sale of surplus produce.

In the later stages of urban influence and/or the urban fringe areas on the outskirts of the built up area, the threats to farm enterprises outweigh the opportunities, leading to increasing abandonment of farming. Those who benefit from this process are those who can either sell land to speculators or developers or have the capacity to develop it themselves, and those who lose are those who have little or no land, are dependent on wage or casual labour on other farms for all or part of their incomes, and are unable to take advantage of alternative economic opportunities in the urban labour market, because households and their members lack labour power, skills, contacts, capital, or freedom of movement. Those who have insecure rights to land, or who have little to sell, and who are excluded from urban labour market opportunities may be impoverished and, in any case, differentiation is likely to increase. Women are likely to be disproportionately affected.

Farm land may be converted from subsistence food production to either commercial production for the urban market or urban development. If the food producers are unable to access alternative IGAs, households will suffer from increased food insecurity, which will be associated with increased malnutrition and poorer health status.

Those seeking new economic opportunities are likely to face barriers to entry erected by those already pursuing particular IGAs. As a result, those who are forced to abandon cultivation and related activities on their own land will become more reliant on casual work or the less lucrative informal sector trading and service occupations, and unemployment rates will increase.

It is also possible to suggest hypotheses about the likely outcomes of possible interventions.

The process of impoverishment can be mitigated by safeguarding the rights of those who have usufruct tenure, enabling small landowners to benefit from the urbanisation of rural land by means of land readjustment processes, assistance with the development of minimal/no land agriculture and aquaculture, and increasing the availability of capital and

other support to enable potentially impoverished people to gain access to urban jobs and market opportunities.

Differentiation in the incidence and severity of poverty will occur between villages within the PUI with relatively poor access to good agricultural land, roads, electricity and marketing channels and those able to intensify agricultural production, diversify economic activities and market their products and labour in the city. Regional planning can identify marginalised areas within the PUI and, in conjunction with the village communities concerned, implement a programme of infrastructure installation and dissemination of market information to enable them to take advantage of the market opportunities offered by the city.

It is hypothesised by Birley and Lock that

Environmental changes in periurban areas (pollution from urban areas, intensified use of agro-chemicals, deteriorating environmental sanitation as infrastructure investment and utility services lag behind population growth, etc) result in higher health risk factors than in urban or rural areas, resulting in higher rates of mortality and morbidity. As poor health is both a result of poverty and exacerbates it, it would be expected that increased health problems would exacerbate the problems of chronically poor and newly impoverished households

Incorporating a health risk assessment and appropriate measures in project design can both avoid increased health hazards (e.g. of intensive agricultural production) and improve the health status of those in the area affected. The per capita costs of improving infrastructure and services is lower in peri-urban areas than in rural areas of lower or inner urban areas of very high population density and the provision of such services can be based on adaptable designs which allow incremental improvements as densities increase, the average income of residents rises and the potential for raising revenue from urban land development grows.

So far, the discussion has focused on the economic activity elements of household livelihoods, which depend on natural, physical and human capital assets, but recent research has demonstrated the critical importance of social networks and social capital in reducing vulnerability. It is suggested that social capital is weaker and under greater threat in urban areas than rural and so it might be hypothesised that:

Social capital is weakened as villages experience an influx of new residents, leading to the erosion of traditional authority and community structures and weakening of the social networks which are important in cushioning households against shocks and stresses, thereby perpetuating the poverty of many of the chronically poor and exacerbating the impoverishment of those already disadvantaged in the urban labour market. The increased commercial value of land is also socially divisive, as the ability to profit from the urban land development process is unequally distributed.

Participatory and collaborative needs assessment, action planning and implementation may be used to develop a shared understanding of processes of change and their distributional outcomes, to assess alternative interventions, and to agree appropriate programmes and divisions of responsibility at regional and community levels. At the local level such an

approach protects existing social capital and provides a basis for developing new forms of social capital appropriate to changing circumstances..

To summarise, therefore, research is needed to determine whether the balance between opportunities and stresses in areas of intense urban influence and rapid physical and socioeconomic change is positive or negative for different groups of periurban residents: indigenous and in-migrant households, poor and non-poor households and communities. This potential research agenda will need systematic data collection to assess the incidence of poverty and the characteristics of poor households, and in-depth investigation of livelihoods strategies over time, to ascertain which households are able to gain from the new opportunities for both farm and non-farm economic activities and which are either unable to take advantage of these opportunities because they are already disadvantaged, or are newly marginalised and impoverished. The determinants of the different position and trajectory of different households should be identified, seeking explanations in the asset portfolios available to them and the way in which they manage these assets in a situation of rapid change. Better understanding of livelihoods will, firstly, reveal areas where the most appropriate intervention is to stop activities which hinder households' efforts to develop sustainable livelihoods. Improved understanding of processes of impoverishment and increased wellbeing and research into the likely outcomes of potential interventions will also demonstrate the scope for positive supportive action at the levels of national sectoral policy; local planning, management and service provision; or the development of alternative technologies and techniques for the use of productive resources.

REFERENCES

- Abaleron, C.A. (1995) "Marginal urban space and unsatisfied basic needs: the case of San Carlos de Bariloche, Argentina", **Environment and Urbanisation**, 7, 1, 97-115.
- Ahmad, A.M. and El-Batthani, A.E. (1995) "Poverty in Khartoum", **Environment and Urbanisation**, 7, 2, 195-206.
- Allison, M. Harris, P.J.C., Hofny-Collins, A.H. and Stevens, W. (1998) **A Review of the Use of Urban Waste in Peri-Urban Interface Production Systems**, Coventry: Henry Doubleday Research Association.
- Alwang, J., Siegel, P.B. and Jorgensen, S.L. (1996) "Seeking guidelines for rural poverty reduction in Zambia", **World Development**, 24, 11, 1711-23.
- AMREF (African Medical Relief Fund) (1997) **The Second Participatory Poverty Assessment Study - Kenya**, Nairobi: AMREF.
- Andrae, G. (1992) "Urban workers as farmers: agro-links of Nigerian textile workers in the crisis of the 1980s" in Baker, J. and Pdersen, P.O. (eds) **The rural-urban interface in Africa: expansion and adaptation**, Uppsala: Scandinavian Institute of African Studies, 200-222.
- Anzorena, J., Bolnick, J., Boonyabancha, S., Cabannes, Y., Hardoy, A., Hasan, A., Levy, C., Mitlin, D., Murphy, D., Patel, S., Saborido, M., Satterthwaite, D. and Stein, A. (1998) "Reducing urban poverty: some lessons from experience", **Environment and Urbanisation**, 10, 1, 167-86.
- Appleton, S. (1996) "Women-headed ouseholds and household welfare: an empirical deconstruction for Uganda", **World Development**, 24, 12, 1811-27.
- Arnold, J.E.M. (1998) "Forestry entry point paper", Paper to the DFID Natural Resources Advisers' Conference, 5-9 July, 1998
- Ashley, S. (1998) "The integration of livestock interventions into a sustainable rural livelihoods approach", paper to the DFID Natural Resource Advisers Conference, 5-9 July.
- Baker, J. (1995) "Survival and accumulation strategies at the rural-urban interface in north-west Tanzania", **Environment and Urbanisation**, 7, 1, 117-132.
- Balisacan, A.M. (1993) "Agricultural growth, landlessness, off-farm employment and rural poverty in the Philippines", **Economic Development and Cultural Change**, 41, 3, 533-62.
- Balisacan, A.M. (1994) "Urban poverty in the Philippines: nature, causes and policy measures", **Asian Development Review**, 12, 1, 117-52.
- Bardhan, K. (1993) "Women and rural poverty: some Asian cases", in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 315-67.
- Barros, R.P. de and Camargo, J.M. (1995) "Active labour market policies and poverty alleviation", in Figueirendo, J.B. and Shaheed, Z. (eds) **Reducing Poverty Through Labour Market Policies**, Geneva: International Institute for Labour Market Studies, p.27-48.

- Basta, S.S. (1977) "Nutrition and health in low income areas of the Third World", **Ecology of Food and Nutrition**, 6, p.113-24.
- Basu. A. and Stewart, F. (1995) "Structural adjustment policies and the poor in Africa: an analysis of the 1980s", in Stewart, F. (ed) **Adjustment and Poverty: Options and Choices**. London: Routledge, 138-68.
- Beall, J. (1997a) "Thoughts on poverty from a South Asian rubbish dump: gender, inequality and household waste", **IDS Bulletin**, 28, 3, 73-90.
- Beall, J. (1997b) "Assessing and responding to urban poverty: lessons from Pakistan", **IDS Bulletin**, 28, 2, 58-67.
- Beall, J., Kanji, N., Faruqi, Hussain, C.M. and Mirani, M. (n.d.) **Social safety Nets and Social Networks: Their Role in Poverty Alleviation in Pakistan**, London: Development Planning Unit.
- Behrman, J.R. (1993) "Macroeconomic policies and rural poverty: issues and research strategies", in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 124-215.
- Bicego, G. and Ahmad, O. (1996) **Infant and child mortality**, Calverton MD: Macro International Inc, Demographic and Health Surveys, Comparative Studies No. 20.
- Birley, M. and Lock, K. (1998) "Health and peri-urban natural resource production", **Environment and Urbanisation**, 10, 1, 89-106.
- Birmingham, Nottingham and Wales, Universities of (1998a) "Baseline study and introductory workshop for Hubli-Dharwad City-region, Karnataka, India", Birmingham, Nottingham and Bangor: Final Technical Report Vol. 1, Peri-urban Interface Production Systems Research.
- Birmingham, University of, Wales, University of, Agricultural Sciences, University of and SDM College of Engineering and Technology (1998b) "Improved utilisation of urban waste by near-urban farmers in the Hubli-Dharwad City-Region", Birmingham: School of Public Policy, Bangor: Centre for Arid Zone Studies, Dharwad, University of Agricultural Sciences and SDM College of Engineering and Technology, Inception Report, PUI Interface Production System Research.
- Booth, A. (1993) "Counting the poor in Indonesia", **Bulletin of Indonesian Economic Studies**, 29, 1, 58-83.
- Booth, D., Holland, J., Hentschel, J., Lanjouw, P. and Herbert, A. (1998) **Participation and Combined Methods in African Poverty Assessment: Renewing the Agenda**, London: Dept for International Development, Social Development Division, African Division.
- Bovis, H.E. (1990) "Evaluating demand for calories for urban and rural populations in the Philippines: implications for nutrition policy under economic recovery", **World Development**, 18, 2, 281-99.
- Bradley, D. Stephens, C. Harpham, T. and Cairncross, S. (1992) **A Review of the Environmental Health Implications in Developing Countries**, Washington: World Bank, UMP.

- Briggs, J. (1991) "The peri-urban zone of Dar es Salaam, Tanzania: recent trends and changes in agricultural land use", **Transactions of the Institute of British Geographers**, 16, 319-31.
- Browder, J.O., Bohland, J.R. and Scarpaci, J.L. (1995) "Patterns of development on the metropolitan fringe: urban fringe expansion in Bangkok, Jakarta and Santiago", **Journal of the American Planning Association**, 61, 3, 310-27
- Bryceson, D. (1997a) "De-agrarianisation in Sub-Saharan Africa: Acknowledging the inevitable", in Bryceson, D. and Jamal, V. (eds) **Farewell to Farms: De-agrarianisation in Africa**, Aldershot: Ashgate, 3-20.
- Bryceson, D. (1997b) "De-agrarianisation: blessing or blight?" in Bryceson, D. and Jamal, V. (eds) **Farewell to Farms: De-agrarianisation in Africa**, Aldershot: Ashgate, 237-56.
- Buvinic, M. (1995) "The feminization of poverty? Research and policy needs", in Figueirendo, J.B. and Shaheed, Z. (eds) **Reducing Poverty Through Labour Market Policies**, Geneva: International Institute for Labour Studies, 133-54.
- Carney, D. (1998) "Implementing the sustainable rural livelihoods approach", Paper to the DFID Natural Resource Advisers Conference, 5-9 July.
- Carvalho, S. and White, H. (1997) **Combining the Quantitative and Qualitative Approaches to Poverty Measurement and Analysis: the Practice and the Potential**, Washington DC: World Bank, Technical Paper 366.
- Chant, S. (1997) "Women-headed households: poorest of the poor? Perspectives from Mexico, Costa Rica and the Philippines", **IDS Bulletin**, 28, 3, 26-48.
- Chilowa, W. (1991) **Food Insecurity and Coping Strategies Among the Low-Income Urban Households in Malawi**, Bergen: Chr Michelsen Institute R1991:4.
- Christiansen, F. (1990) "The ambiguities of labour and market in periurban communities in China during the reform decade", in Delman, J., Ostergaard, C.S. and Christiansen, F. (eds) **Remaking Peasant China**, Aarhus: Aarhus University Press, 94-105.
- Cottam, H. (1997) "A concrete response to poverty? Rethinking approaches to urban poverty and infrastructure: a Zambian case study", **IDS Bulletin**, 28, 2, 68-76.
- Cox, A., Farrington, J. and Gilling, J. (1998) "Developing a framework to assess the poverty impact of NR research: final draft report to steering group", London: Overseas Development Institute.
- de Haan, A. (1997) "Rural-urban migration and poverty", **IDS Bulletin**, 28, 2, 35-47.
- Douglass, M. (1991) "Planning for environmental sustainability in the extended Jakarta metropolitan region", in Ginsburg, N., Koppel, B. and McGee, T.G. (eds) **The Extended Metropolis: Settlement Transition in Asia**, Honolulu: University of Hawaii Press, 239-73.
- Douglass, M. (1998a) "Beyond dualism: rethinking theories of development in a global-local framework", **Regional Development Dialogue**, 19, 1, 1-18.

- Douglass, M. (1998b) "A regional network strategy for reciprocal rural-urban linkages: an agenda for policy research with reference to Indonesia", **Third World Planning Review**, 20, 1, 1-34.
- Ellis, F. (1997) "Household strategies and rural livelihood diversification" (draft)
- Ellis, F. (1998) "Livelihood diversification" Paper to the DFID Natural Resource Advisers Conference 5-9 July.
- Faruqee, R. and Husain, I. (1996) "Adjustment in seven African countries", in Huain, I. and Faruqee, R. (eds) **Adjustment in Africa: Lessons from Country Case Studies**, Aldershot: Avebury, p.1-10.
- Firdausy, C.M. (1994) "Urban poverty in Indonesia: trends, issues, and policies", **Asian Development Review**, 12, 1, 68-89.
- Foeken, D. (1997) "Urban trajectories in rural livelihood strategies: household employment patterns in Kenya's Coast Province" in Bryceson, D. and Jamal, V. (eds) **Farewell to Farms: De-agrarianisation in Africa**, Aldershot: Ashgate, 119-36.
- Gefu, J.O. (1992) "Part-time farming as an urban survival strategy: a Nigerian case study", in Baker, J. and Pdersen, P.O. (eds) **the Rural-Urban Interface in Africa: Expansion and adaptation**, Uppsala: Scandinavian Institute of African Studies, 295-302.
- Gertler, P.J. and Rahman, O. (1994) "Social infrastructure and urban poverty", in Pernia, E.M. (ed) **Urban Poverty in Asia**, Hong Kong: Oxford University Press, 127-95.
- Gilbert, A. (1997) "Work and poverty during economic restructuring: the experience of Bogota, Colombia", **IDS Bulletin**, 28, 2, 24-34.
- Goetz, A.M. and O'Brien, D. (1995) "Governing for the common wealth? The World Bank's approach to poverty and governance," **IDS Bulletin**, 26, 2, 17-26.
- Guhan, S. (1994) "Social security options for developing countries", **International Labour Review**, 133, 1, p.35-54.
- Guhan, S. and Harriss, B. (1992) "Introduction", in Harriss, B., Guhan, S. and Cassen, R. H. (eds) **Poverty in India: Research and Policy**, Bombay: Oxford University Press, 1-24.
- Gunatilleke, G. and Perera, M. (1994) "Urban poverty in Sri Lanka: critical issues and policy measures", **Asian Development Review**, 12, 1, 153-203.
- Hanmer, L., Pyatt, G. and White, H. (1997) **Poverty in Sub-Saharan Africa: What can we Learn from the World Bank's Poverty Assessments?** The Hague: Institute for Social Studies.
- Hansen, S. (1993) "Environment and rural poverty", in Quibria, M.G. (ed) **Rural Poverty in Aisa: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 368-404.
- Harper, M. (1998) **Profit for the Poor: Cases in Micro-finance**, London: Intermediate Technology Publications.

- Heyer, J. (1996) "The complexities of rural poverty in Sub-Saharan Africa", **Oxford Development Studies**, 24, 3, 281-97.
- Hoeven, R. van der (1995) "Structural adjustment, poverty and macro-economic policy", in Rodgers, G. and Hoeven, R. van der (eds) **The Poverty Agenda: Trends and Policy Issues**, Geneva: International Labour Office, 177-205.
- Humphrey, J. (1994) "Are the unemployed part of the urban poverty problem in Latin America?" **Journal of Latin American Studies**, 26, 3, 713-36.
- Huq-Hussain, S. (1995) "Fighting poverty: the economic adjustment of female migrants in Dhaka", **Environment and Urbanisation**, 7, 2, 51-65.
- Iliya, M.A. and Swindell, K. (1997) "Winners and losers: household fortunes in the urban peripheries of northern Nigeria", in Bryceson, D. and Jamal, V. (eds) **Farewell to farms: de-agrarianisation and employment in Africa**, Aldershot: Ashgate, 85-100.
- ILO (International Labour Office) (1995) "The framework of ILO action against poverty" in Rodgers, G. (ed) **The Poverty Agenda and the ILO: Issues for Research and Action**, Geneva: International Institute for Labour Studies, p.1-78.
- Jamal, V. (1995) "Changing poverty and employment patterns under crisis in Africa", in Rodgers, G. and Hoeven, R. van der (eds) **The Poverty Agenda: Trends and Policy Issues**, Geneva: International Labour Organisation, 59-68.
- Jamal, V. and Weeks, J. (1993) **Africa Misunderstood or Whatever Happened to the Rural-Urban Gap?** London: Macmillan.
- Jodha, N.S. (1988) "Poverty debate in India: a minority view", **Economic and Political Weekly**, Nov, 2421-8.
- Kasanga, K. (1998) **Rapid Urbanization, Land Markets and Gender Insecurity in Peri-urban Kumasi, Ghana**, Kumasi: Institute of Land Management and Development, UST.
- Khundker, N., Mahmud, W., Sen, B. and Ahmed, M.U. (1994) "Urban poverty in Bangladesh", **Asian Development Review**, 12, 1, 1-31.
- Kim, J-G. (1994) "Urban poverty in the Republic of Korea: critical issues and policy measures", **Asian Development Review**, 12, 1, 90-116.
- Kim, I.K. (1995) "Differentiation among the urban poor and the reproduction of poverty: the case of Nanjido", **Environment and Urbanisation**, 7, 2, 183-94.
- Kironde, J.M.L. (1995) "Access to land by the urban poor in Tanzania: some findings from Dar es Salaam", **Environment and Urbanisation**, 7, 1, 77-95.
- Lastarria-Cornhiel, S. (1997) "Impact of privatization on gender and property rights in Africa", **World Development**, 25, 8, 1317-33.
- Latapi, A.E. and de la Rocha, M.G. (1995) "Crisis, restructuring and urban poverty in Mexico", **Environment and Urbanisation**, 7, 1, 57-75.

- Lee, Y-S. F. (1991) "Rural nonagricultural development in an extended metropolitan region: the case of Southern Kiangsu", in Ginsburg, N., Koppel, B. and McGee, T.G. (eds) **The Extended Metropolis: Settlement Transition in Asia**, Honolulu: University of Hawaii Press, 137-56.
- Lewcock, C. (1995) "Farmer use of urban waste in Kano", **Habitat International**, 19, 2, 225-34.
- Lipton, M. (1993) "Urban bias: of consequences, classes and causality", in Varshney, A. (ed) **Beyond Urban Bias**, London: Frank Cass, 229-58.
- Lipton, M. and Ravallion, M. (1995) "Poverty and policy", in Behrman, J. and Srinivasan, T.N. (eds) **Handbook of Development Economics**, Vol III, Amsterdam: Elsevier Science, 2251-2657.
- Lockwood, M. (1997) "Reproduction and poverty in Sub-Saharan Africa", **IDS Bulletin**, 28, 3, 91-99.
- Lok, H. (1993) "Labour in the garment industry: an employer's perspective" in Manning, C. and Hardjono, J. (eds) **Indonesia Assessment 1993 - Labour: Sharing in the Benefits of Growth?** Canberra: Australian National University, School of Pacific Studies, Political and Social Change Monograph No. 20, p.155-72.
- Lourenco-Lindell, I., (1995) "The informal food economy in a peripheral urban district: Bandim, Bissau", **Habitat International**, 19, 2, 195-208.
- Malik, S.J. (1998) "Rural poverty and land degradation: a reality check", Vienna: Paper for the Technical Advisory Committee of the Consultative Group on International Agricultural Research.
- Martin, C.J. (1996) "Economic strategies and moral principles in the survival of poor households in Mexico: an urban and rural comparison", **Bulletin of Latin American Research**, 15, 2, 193-210.
- Mathur, O.P.(1994) "The state of India's urban poverty", **Asian Development Review**, 12, 1, 32-67.
- May, J. and Rogerson, C.M. (1995) "Poverty and sustainable cities in South Africa: the role of urban cultivation", **Habitat International**, 19, 2, 165-82.
- Mazumdar, D. (1994) "Urban poverty and labour markets", in Pernia, E.M. (ed) **Urban Poverty in Asia**, Hong Kong: Oxford University Press, 81-125.
- McGee, T.G. (1991) "The emergence of desakota regions in Asia: expanding a hypothesis", in Ginsburg, N., Koppel, B. and McGee, T.G. (eds) **The Extended Metropolis: Settlement Transition in Asia**, Honolulu: University of Hawaii Press, 3-26.
- McKinley, T. and Alarcon, D. (1995) "The prevalence of rural poverty in Mexico", **World Development**, 23, 9, 1575-85.
- Mills, E.S. and Pernia, E.M. (1994) "Introduction and overview", in Pernia, E.M. (ed) **Urban Poverty in Asia**, Hong Kong: Oxford university Press, 1-51.

- Morcol, G. and Gitmez, A.S. (1995) "A typology of the urban poor in Turkey", **Journal of Urban Affairs**, 17, 4, 413-22.
- Moser, C.O.N. (1997) **Confronting Crisis: A comparative study of household responses to poverty and vulnerability in four poor urban communities**, Washington DC: World Bank, Environmentally Sustainable Development Studies and Monographs, Series No. 8.
- Moser, C.O.N. (1998) "The asset vulnerability framework: reassessing urban poverty reduction strategies", **World Development**, 26, 1, 1-19.
- Moser, C.O.N., Gatehouse, M. and Garcia, H. (1996) **Urban Poverty Research Sourcebook: Module I: Sub-City Level Household Survey and Module II: Indicators of Urban Poverty**, Washington DC: World Bank, Urban Management Program Working Paper 5 (2 vols.)
- Narayan, D. (1997) **Voices of the Poor: Poverty and Social Capital in Tanzania**, Washington DC: World Bank Environmentally Sustainable Development Studies and Monog Series 20.
- Nkrumah, K.O. and Antoh, E. (1998) "A study of wealth ranking and perceptions of wealth in peri-urban villages around Kumasi", Kumasi: report for the Kumasi Natural Resources Management Project (draft)
- Nottingham and Liverpool, Universities of (1998) "Peri-urban natural resource conceptualisation and management approaches", Nottingham: Dept of Geography and Liverpool: Dept of Geography (draft)
- NRI (Natural Resources Institute) (1995) **Peri-urban Interface Research: Workshop Proceedings 23-25 August, 1995, Kumasi**, Chatham: NRI.
- NRI (Natural Resources Institute) and UST (University of Science and Technology) (1997) **Kumasi Natural Resource Management Research Project Inception Report**, 2 vols, Kumasi: UST and Chatham: NRI.
- Orchard, J. (1998) "Crop Post-harvest programme: Strategic overview of the peri-urban production system" (draft, Feb).
- Otsuka, K. (1993) "Land tenure and rural poverty", in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 260-86.
- Parnwell, M.J.G. and Wongsuphasawat, L. (1997) "Between the global and the local: extended metropolitanisation and industrial location decision making in Thailand" **Third World Planning Review** 19, 2, 119-38.
- Pelling, M. (1998a) **A political ecology of urban flood hazard and social vulnerability in Guyana**, University of Liverpool, Unpublished PhD Thesis.
- Pelling, M. (1998b) "participation, social capital and vulnerability to urban flooding in Guyana", **Journal of International Development**, 10, 469-86.
- Pernia, E.M. (ed) (1994) **Urban Poverty in Asia**, Hong Kong: Oxford University Press.
- Quibria, M.G. and Srinivasan, T.N. (1993) "Introduction", in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 1-102.

- Rakodi, C. (1995a) "Poverty lines or household strategies? A review of conceptual issues in the study of urban poverty", **Habitat International**, 19, 4, 407-26.
- Rakodi, C. (1995b) "The household strategies of the urban poor: coping with poverty and recession in Gweru, Zimbabwe", **Habitat International**, 19, 4, 447-71.
- Ratanakomut, S., Ashakul, C. and Kirananda, T. (1994) "Urban poverty in Thailand: critical issues and policy measures", **Asian Development Review**, 12, 1, 204-24.
- Ravnborg, H.M. (1992) "Resource-poor farmers: funding them and diagnosing their problems and opportunities", Paper presented to the 12th Annual Farming Systems Symposium, 13-18 Sept, Michigan State University.
- Reardon, T. (1997) "Using evidence of household income diversification to inform study of the rural nonfarm labour market in Africa", **World Development**, 25, 5, 735-47.
- Reardon, T. and Vosti, S.A. (1995) "Links between rural poverty and the environment in developing countries: asset categories and investment poverty", **World Development**, 23, 9, 1495-1506.
- Rigg, J. (1997) **Southeast Asia: the Human Landscape of Modernization and Development**, London: Routledge.
- Robson, E. (1996) "Working girls and boys: children's contributions to household survival in West Africa", **Geography**, 81, 353, 403-7.
- Rodriguez, A.G. and Smith, S.M. (1994) "A comparison of determinants of urban, rural and farm poverty in Costa Rica", **World Development**, 22, 3, 381-97.
- Ruel, M. T. et al (1998) "Urban challenges to nutrition security: A review of food security, health and care in the cities", Washington DC: International Food Policy Research Institute (draft).
- Sahn, D.E., Dorosh, P. and Younger, S. (1996) "Exchange rate, fiscal and agricultural policies in Africa: does adjustment hurt the poor?" **World Development**, 24, 4, 719-747.
- Satterthwaite, D. (1997) "Urban poverty: reconsidering its scale and nature", **IDS Bulletin**, 28, 2, 7-23.
- Schubert, B. (1995) "Poverty and poverty alleviation programmes in the urban areas of Mozambique", **Habitat International**, 19, 4, 499-514.
- Shaffer, P. (1997) "Income and participatory approaches to poverty", **Newsletter of the Poverty Research Unit at Sussex**, Spring, 3-4.
- Siamwalla, A. (1993) "Rural credit and rural poverty" in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 287-315.
- Sjaastad, E. and Bromley, D.W. (1997) "Indigenous land rights in Sub-Saharan Africa: appropriation, security and investment demand", **World Development**, 25, 4, 549-62.

- Songsore, J. and McGranahan, G. (1998) "The political economy of household environmental management: gender, environment and epidemiology in the Greater Accra Metropolitan Area", **World Development**, 26, 3, 395-412.
- Soussan, J. (1998) "Water/irrigation and sustainable rural livelihoods", Paper to the DFID Natural Resource Advisers Conference, 5-9 July
- Srinivasan, T.N. (1993) "Rural poverty: conceptual, measurement, and policy issues", in Quibria, M.G. (ed) **Rural Poverty in Asia: Priority Issues and Policy Options**, Hong Kong: Oxford University Press, 103-23.
- Stewart, F. (1995) **Adjustment and Poverty: Options and Choices**, London: Routledge.
- Subbarao, K., Bonnerjee, A., Braithwaite, J., Carvalho, S., Ezemenari, K., Graham, C. and Thompson, A. (1997) **Safety Net Programs and Poverty Reduction: Lessons from Cross-country Experience**, Washington DC: World Bank
- Sumberg, J. (1997) "Policy, milk and the Dar es Salaam peri-urban zone: a new future for an old development theme?" **Land Use Policy**, 14, 4, 277-93.
- Swindell, K. (1988) "Agrarian changes and peri-urban fringes in Tropical Africa" in Rimmer, D. (ed) **Rural Transformation in Tropical Africa**, Athens: Ohio University Press, 98-115.
- Timaeus, I.M. and Lush, L. (1995) "Intra-urban differentials in child health", **Health Transition Review**, 5, p.163-90.
- Townsley, P. (1998) "Aquatic resources entry paper", Paper to the DFID Natural Resource Advisers Conference, 5-9 July.
- UNCHS (UNited Nations Centre for Human Settlements) (1997) **An Urbanizing World: Global Report on Human Settlements, 1996**, Oxford: Oxford University Press.
- Van den Berg, L., Grossman, D. and Ajaegbu, H.I. (1998) "Small-scale market gardeners around Jos, Nigeria", in Aoyagi, K. (ed) **Towards Sustainable Cities**, Leiden: University of Leiden, Leiden Development Studies 15, 71-84.
- Van Dijk, M.P. (1997) "Economic activities of the poor in Accra", in Bryceson, D. and Jamal, V. (eds) **Farewell to Farms: de-agrarianisation and employment in Africa**, Aldershot: Ashgate, p.101-16.
- Van Westen, A.C.M. (1995) **Unsettled: Low-income housing and mobility in Bamako, Mali**, Utrecht: Universiteit Utrecht.
- Varshney, A. (1993) "Introduction: urban bias in perspective", in Varshney, A. (ed) **Beyond Urban Bias**, London: Frank Cass, 1-22.
- Whitney, J.B.R. (1991) "The waste economy and the dispersed metropolis in China", in Ginsburg, N., Koppel, B. and McGee, T.G. (eds) **The Extended Metropolis: Settlement Transition in Asia**, Honolulu: University of Hawaii Press, 177-91.
- World Bank (1993a) **The Gambia: an Assessment of Poverty**

- World Bank (1993b) **Uganda: Growing Out of Poverty**
- World Bank (1993c) **Mali: Assessment of Living Conditions**
- World Bank (1994a) **Zambia Poverty Assessment**, Washington DC: World Bank.
- World Bank (1994b) **Benin: Toward a Poverty Alleviation Strategy**
- World Bank (1995a) **Cameroon: Diversity, Growth and Poverty Reduction**
- World Bank (1995b) **Lesotho Poverty Assessment**
- World Bank (1995c) **Pakistan Poverty Assessment**
- World Bank (1995d) **Kenya Poverty Assessment**
- World Bank (1995e) **Brazil: A Poverty Assessment**
- World Bank (1995f) **Ecuador Poverty Report**
- World Bank (1996a) **Taking Action for Poverty Reduction in sub-Saharan Africa: Report of an Africa Region Task Force**, Washington: World Bank.
- World Bank (1996b) **Nigeria: Poverty in the Midst of Plenty: the Challenge of Growth with Inclusion**
- World Bank (1996c) **Madagascar Poverty Assessment**
- World Bank (1996) **Togo: Overcoming the Crisis, Overcoming the Poverty: A World Bank Poverty Assessment**
- World Bank (1996) **Tanzania: The Challenge of Reforms: Growth, Incomes and Welfare**
- World Bank (1997) **Guinea: A Socioeconomic Assessment of Well-being and Poverty**
- Zelega, T. (1994) "The unemployment crisis in Africa in the 1970s and 1980s", in Osaghae, E. (ed) **Between State and Society in Africa: Perspectives on Development**, Dakar: Council for the Development of Social Science Research in Africa (CODESRIA), 75-122.