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A SYNTHESIS OF PERI-URBAN RESEARCH OF KUMASI, HUBLI-DHARWAD AND KOLKATA PERI-URBAN INTERFACES

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http://www.infobridge.org/nrsp/search.asp

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List of acronyms used in this document

BAIF	Bharatiya Agro Industries Foundation
BPF	Best Practices Foundation (Bangalore, India)
BYN	Boafo Ye Na (Who can Help the Peri-urban Poor?)
CAZS	Centre for Arid Zone Studies (UW Bangor UK)
CEDAR	Centre of Developing Areas Research, UK (Royal Holloway, London)
CEDEP	Centre for the Development of People (NGO in Kumasi Ghana)
CGIAR	Conservation Group for International Agricultural Research
CLF	Community level facilitator
CMA	Calcutta Metropolitan Authority
CO	Community Officer
DPU, UCL	Development Planning Unit, University College London
DFID	Department for International Development (UK Government)
EKW	East Kolkata Wetlands
EMB	Eastern Metropolitan Bypass
FTR	Final Technical Report
GIS	Geographical Information System
GP	Gram Panchayat
HD (H-D)	Hubli-Dharwad
HDMC	Hubli-Dharwad Municipal Corporation
HH	Household
IDS	India Development Service
IGAs	Income Generating Activities
IPM	Integrated Pest Management
K	Kumasi
KMA	Kumasi Metropolitan Assembly
KMC (CMC)	Kolkata (Calcutta) Municipal Corporation
KNUST	Kwame Nkrumah University of Science and Technology
KPUI	Kumasi Peri-urban Interface (Ghana)
LPP	Livestock Production Programme
MOVE	Market Orientated Value Enhancement
NR(s)	Natural Resources
NRSP	Natural Resources Systems programme
NGO	Non Governmental Organisation
NRM	Natural Resources Management
NRSP	Natural Resources Systems Programme
PAP	Participatory Action Plan (Planning)
PRA	Participatory Rural appraisal
PU	Peri-Urban
PUI(s)	Peri-Urban Interface(s)
Rs	(Indian) Rupees
SAFS	School of Agriculture and Forest Science (UW Bangor UK)
SHGs	Self Help Groups
UAS	University of Agricultural Science (Dharwad, India)
UN	United Nations
UW	University of Wales
WRR	Waste Recycling Region
ZP	Zilla Panchayat

A SYNTHESIS OF PERI-URBAN RESEARCH OF KUMASI, HUBLI-DHARWAD AND KOLKATA PUIs

ABSTRACT

This synthesis cuts across several studies of peri-urban interfaces, comparing, contrasting, and bringing together findings that would otherwise remain unrelated and invisible. It is particularly concerned with the effects of urbanisation on the livelihoods of poor rural people and the potential for making changes in their livelihoods. It reports new knowledge needed in the formulation of policy that aims to affect poverty and productivity associated with the transition from rural to urban living. The PUI is not a homogenous area but a fragmented mosaic of dynamically changing resource flows arising as a consequence of urbanisation and offering both opportunities and threats for people living in this space that change over time. The opportunities and threats are not evenly spread either within the PUI space or between the people inhabiting the PUI creating both winners and losers.

This background against which people generated their livelihoods in the three cases was complex. The processes of urbanisation were moving poor PUI inhabitants from a self-provisioning to a monetised economy, potentially increasing their vulnerability. The livelihoods of the poor were typically multi-stranded, risk-reducing strategies that combined a cash earning component with activities requiring minimal capital input. Despite long term structural trends and an eroding natural resource base, agriculture remained the most widespread peri-urban livelihood activity. Trading was an important income generating activity, especially for women in Kumasi. Low incomes and profits made speed of cash return a critical aspect of income generating activity for the poor. Women and the poor were more likely to be affected by the threats to their livelihoods and less likely to benefit from the opportunities arising from living within the PUI. The processes of urbanisation perpetuated and deepened existing structural inequalities between rich and poor, male and female, skilled and unskilled and small and large-scale income generating activity.

Descriptive and action based research showed it to be possible to help poor people (though not necessarily the poorest of them) living in PUI circumstances that threaten their livelihood activities, to change to new ones. Income generating activities based on natural resources were valuable for all groups as long as the NR base was protected, rehabilitated or improved as a consequence of the activity. Where interventions focussed on sustainable natural resource management food security and perceptions of wealth were improved for the poorest households in contrast to places where NR use remained extractive. Short term impacts suggest that effective alternative income generating activities - whether NR based or not - had rapid production cycles, used little space, and were able to profit from group action as well as allowing individual initiatives. However, the contribution of group action in moving people into new income generating activities also had negative aspects.

NGOs, community based facilitators, self-help groups, participatory planning, demonstrations of alternatives, provision of information and training and access to credit all showed potential to reduce constraints to a move by peri-urban poor people to new livelihood activities. The interventions implemented by research increased financial, natural, social and most significantly human capitals, this latter in the form of increased self-respect among poor people and greater self-confidence in their ability to manage peri-urban change. The style and focus of project implementation affected the outcome.

1.0 INTRODUCTION

This synthesis of research integrates the findings on peri-urban production systems and livelihoods of poor people generated by separate lines of research from the city-regions of Hubli-Dharwad and Kolkata in India and Kumasi in Ghana to identify potential consequences for economic growth arising as a result of PUI influences. Broadly, the research findings pointed out more similarities than differences in the effects of living within the PUI on the livelihoods of the poorest people. The major differences were linked to cultural variations - for instance the effect of different dietary restrictions on agricultural production or the effect of different land tenure systems on farmers - and to dissimilarities in aspects of the interventions performed by the research projects.

1.0.1 Urbanisation background

In developing countries a growing proportion of people live in or around metropolitan areas. Nearly half the world's population now lives in urban areas and this is projected to grow by another 1.5 billion people by 2020 (CGIAR 2002). The driving reason for this is the migration of people from rural areas searching for work in the growing urban industrial and commercial sectors and for other urban benefits.

As a consequence of this migration and of natural growth worldwide, city populations are projected to double by 2025 (DFID 2001) with the greatest increases in Asia where the percentage of the total population living in urban areas by 2025 is expected to rise from 38% to 55% (DFID 2001). In India, 28.4% of people already live in cities, which have an annual growth rate of 2.7%. By 2005 Africa is expected to become 54% urban (UN 1995 in PD138 2005). Expanding cities affect the areas surrounding the city by altering the natural resource base, converting land to new uses, changing labour patterns, concentrating urban waste pollution and diminishing natural resource based livelihoods. For the poor people inhabiting these areas the challenge is to pass through the rural-to-urban transition with the least damage to their lives and even to gain net benefit from the change.

1.0.2 Kumasi, Hubli-Dharwad and Kolkata

Kumasi (K) is located in the centre of Ghana and is home to nearly 10% of the total population (1.8 million people[1]). It is the second largest city after Accra and the focal point of the Ashanti Kingdom. Located in the tropical forest eco-zone, it has traditionally been an important cocoa growing and trading area for nearly 200 years. Currently, four administrative districts share areas strongly affected by Kumasi's peri-urban interface (PUI) (Bosomtwe Atwima Kwanwoma, Ejisu Juabeng, Kwabre and Kumasi Metropolitan Authority). Urban Kumasi comes under the jurisdiction of the Kumasi Metropolitan Assembly (KMA) (PD138: 4). In order to facilitate data evaluation, the twelve peri-urban villages characterised by this research were further divided into more rural, intermediate and more urban villages[2].

[1] Ghana Statistical Service 2000 Population Census 2002

[2] The classification for this was based on a combination of indicators outlined in R8090 according to degree of urbanisation recognised (R8090/Bi B: 9). Accordingly Abrepo and Apatrapa are more urban, Atafoa, Duase, Esreso and Okyerekrom are intermediate and Swedru, Ampabame II, Behenase, Asaago, Adagya and Maase are more rural (Aberra and King 2004:3).

Hubli and Dharwad (Hubli-Dharwad/HD) are twin conurbations in Karnataka state in South West India with a total population of 786,018 (PD138, 2005). The two cities were combined into a single administrative unit under the Hubli-Dharwad municipal corporation (HDMC) in 1962 making it the third largest city in Karnataka state (Brook and Davila 2000). Villages exist between the twin cities that were included in the new municipal boundary. The area principally affected by the peri-urban interface of Hubli-Dharwad is loosely defined as that outside the built-up urban areas and including villages connected by the city bus services (University of Birmingham *et al* 1998).

Income disparity is marked, with the richest 20% earning seven times more than the poorest 20% (Brook and Davila 2000). Disparity of income may significantly affect the ability of the poor to exploit opportunities because of the inequality of opportunity.

Kolkata is an Indian mega city and the capital city of the West Bengal state in the North East of the country. Historically, Kolkata was established as trading post and later became an important commercial and industrial centre and port exporting raw materials, cash crops and processed and industrial goods. The population of Kolkata in 1981 was estimated to be 10.7m with an estimated population growth between 1981 and 1991 of 33.7% and an estimated population density (from the 2001 census) of approximately 44,400 people/km^2, reportedly one of the highest in the world (R7872/C/Working paper 4: 6). Complex patterns of migration and urban growth mean that up to 3 million people are estimated to live in poorly serviced slums (or *bustees*) despite many slum redevelopment programmes. The central area of the Kolkata city is generally flat with some natural depressions formed by old river channels and varies from 1.5 – 9 m above sea level. The Hooghly River forms the western and northern western boundary while land to the south and east slopes towards the coast and the low lying wetlands (R7872/C: 2). The Calcutta[3] Municipal Corporation (CMC) constitutes the administrative core of the city, while a wider agglomeration defined as the Calcutta Metropolitan Authority (CMA) surrounds the CMC area. Notwithstanding this, the CMC area abuts directly onto areas classified as rural and supporting important agricultural areas that have environmental, social and economic benefits that have led to the designation of 12,500ha as a waste recycling region (WRR). The main concentration of farming using urban wastes, known as East Kolkata Wetlands (EKW), lies adjacent to the Eastern Metropolitan Bypass (R7872/C: 8) and was designated a RAMSAR[4] site in August 2002 in recognition of its international importance as a wetland site (Kundu *et al* 2005).

1.0.3 About the peri-urban interface

Rapid urban growth no longer supports the traditional simplistic divide between 'urban' and 'rural' (Simon *et al* 2004). The peri-urban concept attempts to move understanding beyond definitions considered solely in terms of geographical location and spatial land use. Rather it considers the PUI as the meeting of rural and urban activities – in effect a process rather than a place (Brook and Davila 2000). Although this is a less comfortable conceptualisation than one based on place, it attempts to categorise linkages and interactions between rural and urban areas

"characterised by flows of produce, finance, labour and services and by change – economic, sociological, institutional and environmental" (Purushothaman and Purohit, 2002 p.8)

[3] Now renamed Kolkata
[4] The RAMSAR Convention recognises and lists wetland sites of international importance. EKW is maintained as site no 1208 on the list held by the RAMSAR Bureau established under article 8 of the RAMSAR Convention (Kundu *et al* 2005)

giving a sense of the inherent dynamism and patchiness of the PUI. As the cities expand, the surrounding peri-urban areas also grow. Thus, areas that were peri-urban become urban and areas that were rural become peri-urban. This means that the nature of the peri-urban interface is one of constant change leading to a variety of livelihood and natural resource problems specific to the PUI. Those living in such an area experience livelihood structures in constant transition and unless the effects of changes and flows as well as the spatial aspects of the PUI are taken into account the poor and very poor will continue to 'fall between the cracks' of policy divided between urban and rural in its perspective.

The University of Birmingham *et al* (1998a) identified the peri-urban space as a dynamic one where a high proportion of capital investment and new activity is located. This is where new industries and housing are established and where people affected by city centre development migrate. It is an area of intense rural-urban linkages with flows of labour and natural resources moving into the urban area and flows of people and waste moving outwards from the urban area.

However, the rate of change is not uniform across the PUIs studied by the research synthesised here and this heterogeneity is reflected in people's livelihood strategies. The livelihood strategies of poor people living within the Kumasi and Hubli Dharwad and Kolkata PUIs were complex and sometimes contradictory and data available about K and H-D showed that the options available varied with the process of urbanisation, creating both winners and losers.

1.0.4 Livelihoods model

While it can be useful to recognise five livelihood assets[5], this analysis focuses mainly on income generating activities (financial capital) within the PU context to seek answers to questions posed about economic activity, how labour markets work for the poor and what alternative livelihoods are available at local level. Natural, physical, human and social capitals may have an impact on this especially where they are factors in the marginalisation of poor people preventing them from taking advantage of the opportunities arising from proximity to the city (*Section 3 on livelihood constraints gives greater detail).*

Scoones (1998) considered livelihood strategies to be all the activities forming the means of generating a living; also that they are dynamic in that they respond to external pressure and opportunity. The livelihood assets that people command are very much influenced by the context in which they live. Tacoli (1999) recognised that proximity to urban opportunity offered the potential to lift people from poverty. Off farm employment, changes in marketing opportunities and the availability of inputs for peri-urban production have been identified as the main factors likely to offer new livelihood opportunities to people living within the PUI (Brook and Davila 2000). However, access to these opportunities is not evenly distributed but depends on the livelihood resources people are able to mobilise in order to take advantage of the opportunity.

Both the H-D and K PUI studies showed that the peri-urban poor were less able to take advantage of urban opportunity and more likely to be adversely affected by urban threats. Consequently, living within the PUI had the potential to increase the vulnerability of the poor because of the dynamic effects of urbanisation on their livelihoods and macro-economic forces impinging on assets, wages and prices over which they had very little influence or control. Lack of influence on planning and policy making processes left the poorest and most vulnerable in a position of continuing

[5] Defined as "…the capabilities, assets (including both material and social resources) and activities required for a means of living." Carney, 1998 p.4 Published in Sustainable Rural Livelihoods: What contribution can we make? 1998 ed Diane Carney

weakness where the impact on their livelihoods caused by urbanisation may be neither recognised nor understood by governments and policy makers. Social changes caused by migration altered traditional patterns of behaviour and yet tradition played a central role in much livelihood activity. Traditional activities provided security in a changing world and used existing skills but could militate against productive change because traditional institutions had not built up sufficient knowledge about how these changes might be brought about. The studies described the context within which poor and very poor people made their living, considered the way that the very poorest could become marginalised within the PUI as a consequence of urbanisation and explored methods that may have potential to move poor people towards new productive activity or livelihood enhancement.

2.0 LIVELIHOOD CHOICES WITHIN THE PUI

Key findings

- A PUI alters the resources used for livelihoods, usually irrevocably. Sometimes this change is rapid. The poor had fewest of the livelihood assets needed to cope with these changes, easily becoming more vulnerable as a consequence of PUI change.

- The loss of livelihood assets for self-provisioning was moving people further towards dependency on cash based income generation within a monetised economy, where income generating activities were changing as a consequence of urbanisation.

- Farming and trading, usually in agricultural produce, were the most frequently mentioned income generating activities in all three PUIs. The activity which dominated seemed to be the result of the characteristics of a particular location. In the East Kolkata Wetlands (EKW) aquaculture was of specific importance.

- Where people were not engaged in farming or trading, casual, unskilled labouring in construction, agriculture and factories formed the basis of cash income generating activity for many poor people in the PUI. There was a trend away from natural resource based activity that was more pronounced closer to the city centre. The city was becoming increasingly important for people's livelihood activity. This change was most significant for men, with women and poorer people remaining most dependent on NR based livelihoods.

- A greater range of income generating opportunities could be demonstrated for men than for women. The growth in non-farm employment was particularly marked for men. This expansion of non farm employment was not uniform across the PUI, being concentrated in specific areas as a consequence of whatever special circumstances had generated large scale economic activity in that place (e.g. good physical infrastructure giving rise to a university department or factory, specific natural resources giving rise to quarrying or saw-milling).

- Women's earning capacity was lower than men's in both the Hubli-Dharwad and Kumasi PUIs. Low paid agricultural labour was a particular feature of employment for women in HD where non-farm work was not increasing for women as fast as it was for men. Work opportunities for women in the EKW appeared to be particularly restricted.

- People developed a range of livelihood activities to form a multi-stranded, risk reducing livelihood portfolio that enabled them to cope with the challenges of living within a dynamic PUI. This was more marked for the poor than for non-poor or very poor groups and was less of a feature in Kumasi. Livelihood diversity and speed of change was greater in PU villages closest to the city

2.0.1 Non cash based livelihood activity

Within the PUI people's livelihood activities fell into two broad categories of cash based and non-cash based activity. Non-cash based activities such as household food production, fuel, fodder or medicinal herb collection or access to building or artisanal materials depended on free access to communal natural resources (or ancestral land ownership for subsistence food production in India). The knowledge base for these traditional activities was handed down though the generations.

In both HD and K, the early research showed that the poor tended to feel the adverse effects of PUI changes most as they lost forest resources to overexploitation, land resources to building, water became more polluted or dried up or urban waste was dumped into the PUI (e.g. R8094/ F: F10). In addition, peri-urban livelihoods such as brick-making or sand-winning that have developed as a consequence of urbanisation rested on the depletion of natural resources and were leading people to take a 'hit and run' attitude to these resources (Brook 2002). Traditional hunting, gathering or certain agricultural or aquaculture livelihoods had become less tenable as a consequence of natural resource depletion and urban planning restrictions. For some, household food security had become threatened by loss of the land or natural resources needed for food production thus increasing household vulnerability. Dynamic change occurring as a consequence of PUI interactions could have rapid and irreversible effects on the natural resources on which non-cash livelihood activity was based. (*This is considered in more detail in section 3, constraints and barriers to the livelihoods of the poor).*

The threats to non cash based livelihood activity as a consequence of the living within areas affected by the PUI required poor people to further develop cash based livelihoods within an increasingly monetised economy.

2.0.2 Income generating activities in the PUI – common themes

For the poor in both HD and K PUIs, income generating activities fell into three categories -these being agriculture, business/trade or casual employment. People's access to these was either as employees or self employed (or a mixture of both). There was a seasonal component to some types of income generating activity which poor people found difficult to manage and which led to consumption based borrowing in the form of advanced wage or profit taking (Gregory 2003; Working Paper 5 2002:15). In HD, advanced wage taking was repaid either in whole or part by their labour and had the potential to bond people's labour to the landowner (R7867).

Occupations fell into primary or tertiary sectors[6] with almost no manufacturing other than small scale artisanal production (e.g. carpentry, textiles, shoe making, leaf plate making). Korboe *et al* 1998:12 (in Brook and Davila 2000:33) reported that trade liberalisation had had a negative impact on the manufacturing sector with the *'flood of imported second hand clothing'* blamed for problems in the local textile dying, leather working and clothes making industries and arguing that '*the city's economy is driven primarily by imports'* (ibid). In both HD and K PUIs certain traditionally produced items (leaf plates, pottery, woven grass goods) were becoming uneconomic in the face of global competition and new materials (R8090/FTR R8094/FTR) although some items that met niche market or traditional cultural needs were still being successfully produced and expanded (e.g. alata soap or agarbatti incense sticks). There was some large scale agricultural added value activity in both HD and K (puffed rice making and mango processing in HD and oil palm extraction in Kumasi (Brook and

[6] Primary production - agriculture and quarrying; secondary production – manufacturing; tertiary sector - service industries (Barrett *et al* 2001).

Davila 2000 & 7549/2). Otherwise value added production was small and a specifically female sector e.g. cooked food production (R7854/ G).

In K unemployment was recorded as a feature of livelihoods of the poor in a way that was not reported in HD (R7549: 183). Kasanga (1998) reported 18% unemployment with 55% of PU dwellers suffering periods of unemployment. High youth unemployment was reported even for those with an education. Where households had lost land the research showed that 25% were left without alternative livelihoods and dependent on relatives (Brook and Davila; 208).

Similarly, remittances were an important source of income for some classes of people in Kumasi which had been helped by liberalisation of foreign exchange controls (Brook and Davila 2000: 33). The importance of remittances was briefly mentioned in HD (Gregory 2003) and Kolkata (R7872/C), but no detailed data on the topic was collected.

The EKW is a unique and interesting human and ecological system that has been intensively studied in Kolkata and that has some peri-urban features. However, it forms only a part of the wider Kolkata peri-urban interface that has not been subject to research scrutiny. The livelihoods data generated from the EKW wetlands was limited to people working within the waste water agricultural, horticultural and fishpond systems that are specific to the EKW, although they shared many common features with livelihoods detailed in the Kumasi and HD PUIs especially for those who were poor. For instance, similar constraints of seasonality on casual employment, low wages leading to diversity of livelihood strategies and mixed employed and self-employed livelihood strands were recorded. Traditional livelihoods were under similar pressures for change as a consequence of urban pressures on the peri-urban environment. However, the presence of labour unions in the fisheries systems giving employees negotiated employment rights was only reported in the Kolkata PUI (R7872). These unions negotiated with the fish producer associations in respect of wage rates, benefits, job descriptions, leave entitlements, minimum labour requirements and employment days for both temporary and permanent employees although the terms and conditions varied according to the size of fishery (R7872/C: 28).

2.0.3 Paid employment for poor socio-economic groups in the PUI

In both HD and K people gave secure, salaried work as their first priority. However, these opportunities were extremely scarce for poor and very poor people who lacked education and skills (R7854/H: H11; Gregory *et al* 2004). Where people had paid work it was generally their only income generating activity (R7854/G: 35).

Cash based employment for poor or very poor people in both PUI areas was typically short term, casual, seasonal, 'by day' employment requiring few skills. Labouring work was divided into agricultural and non-agricultural. Agricultural labouring was very poorly paid despite competition for labour apparently driving agricultural wage levels upwards but was easily accessible to the poor who also had the traditionally learned skills (R7549: 147; R8090/Bi B: 33).

Men were most likely to take advantage of city based casual labouring opportunities. Although these were poorly paid they were generally more productive than agricultural labour (Ambrose-Oji 2005). This was particularly the case in HD where farm activity had been damaged by drought between 2000 and 2004 (PD138 2005). This type of livelihood shock sometimes formed the basis for a longer term trend towards non farm based livelihoods especially for men who have greater opportunity to make this change (Hillyer 2002). In both PU areas there was a marked increase in non-farm employment especially for men living in districts closest to the city (Blake *et al* 1997b), with men in these areas moving out of agriculture and into better paid urban occupations. Non

agricultural labouring opportunity encompassed work in factories, sawmills, construction, quarrying, brick making, sand winning and menial domestic services. Brook *et al* (2003: 69) showed that the poor in HD preferred factory labour because of the regularity of work while construction work gave the best pay rates. The very poorest households had fewer workers (2%) involved in the better paid brick and quarry labouring activities than the poor, even though there appeared to be enough opportunities to employ more people. This may have been due to age, higher levels of health problems and disability in these groups that precluded physical labour as an occupation (Hillyer *et al* 2001).

The location of these opportunities varied through all the peri-urban areas often with specific places having a single, significant industry located there influenced by the pattern of urban development within the area and affecting all the other livelihood activities carried out there. The variability of non farm employment in some HD taluks[7] indicates the way this type of employment was linked to the development of large scale commercial activity in certain places (Brook and Davila 2000). In K the relative scarcity of large commercial enterprises in rural zones gave fewer alternatives to agriculture (R7854/ G: G10). In Kolkata the wetlands have effectively become an 'economic ecosystem' with an estimated 50,000 fishing, horticultural and agricultural livelihoods supported by the use of urban wastes (R7872).

The existence of off farm, casual labouring employment had created labour competition with more traditional occupations and in particular for agricultural labour. This had changed the way that agricultural labour was used. *(The effect of this is described in more detail in Section 2.1.3; peri-urban agricultural systems;).* Loss of labour to more highly paid urban opportunities was also noted as a constraint to agricultural production in Kolkata (Kundu 1994 (cited in R7872/ C: 6.2) (*more detail in peri-urban changes in agriculture; section 2.1.3.5 v).*

2.0.4 Self employment for poor socio-economic groups in the PUI

Self-employment opportunities arose from agriculture, trading, service provision and artisanal activity. Outside of agriculture, self-employment revolved around selling services or skills such as carpentry, making and/or selling consumer products such as soap, detergent or incense sticks or becoming involved with markets and trading. Some people traditionally traded in specific goods or services (e.g. Gowlie caste, milk traders in HD or female market traders in Kumasi) and had skills passed down through generations. Otherwise, people generally heard about opportunities from their friends or from exposure to new ideas by visiting the city.

Examples of self employed IGAs reported in both PUIs were dressmaking or tailoring, ancillary skills required by the building and construction industry such as plumbing, electrician, welding or general service provision such as driving or providing transport. Some culturally defined IGAs were also offered. In Kumasi hairdresser/barber, alcohol making and prostitution were mentioned while in HD unskilled services (such as making religious devotions for others) or services requiring talent rather than formal skills e.g. play acting or singing were listed (Hillyer *et al* 2001; R8090/G: G36 Table 10). In the EKW both employment and self-employment was largely dependent on the waste fed fishpond system.

Self-employment linked people flexibly into the informal economy and allowed, or perhaps demanded, that people develop diverse income generating opportunities. Some occupations were noted to be easier to combine than others with more specialised occupations (e.g. driving, mechanic, electrician) and men's occupations most likely to be sole pursuits.

[7] Administrative districts in India

2.0.5 Agricultural labour

Agricultural livelihoods included both paid and unpaid agricultural labour in addition to farm ownership and receipt of the usufruct benefits from the land. Paid labourers might be people who were landless or those who had access to land but who also needed to generate further cash income by selling their labour (Gregory 2003). Family members, especially women and children, provided unpaid farm labour at home. In general agricultural wages were low, with women earning less than men. Men in HD earned 20-50R[8] per day while women earned 20-30R per day (R7549: 147). Slightly higher wage rates (40 rupees for women and 60R for men) were reported for agricultural work in Kolkata although women appeared to more likely to undertake unpaid work on the household plot unless adverse family circumstances required them to work for others (Working paper 5 2002). No additional money was reported for additional skills or responsibility in HD (Gregory 2003) but this was not true for Kolkata where specialist aquaculture skills could give rise to greater rewards under a more unionised labour system than was found in the other areas. Where groups of workers in HD had managed to organise themselves into labour gangs they had been able to negotiate higher wage rates by taking on whole contracts (R7867/FTR: 27 & Annex B, table 14). In Kumasi a higher wage level of around 25,000[9] cedis per day was described (R8090/Bi B: 33 and Aberra personal communication 22/6/05) possibly reflecting increased labour competition in the faster growing city. In Kumasi no data was collected on gender based wage differentials but the rising costs of labour disproportionately affected female farmers because they were the people most likely to be employing agricultural labour.

A typical number of days worked in HD was 62 in the wet season and 42 in the dry season giving estimated female wages per year of US$ 59 and for men US$ 104 (Nunan et al 2000: 39). Low agricultural wages were encouraging a move out of agriculture and into other labouring opportunities afforded by proximity to the city. This was particularly so for men and younger people in both HD and K (R8090/Bi B and PD138).

2.0.6 Gender and age dimensions to income generating activity

The common theme in all three PUIs was that female access to the most productive income generating activities was more restricted than for men. Most significantly the movement to off farm activity, especially paid employment, was more pronounced for men and access to the more lucrative agricultural and trading activities was more restricted for women. The occupations most associated with poverty in K were also those most associated with older women. Farming was the sole occupation of over 30% of older women in PU villages. When trade, cooked food selling and construction labour were added the poverty associated occupations accounted for almost 80% of older women's major occupations (R7854/ G: G37).

In Hubli Dharwad, paid work for women was concentrated in the agricultural sector and was very poorly paid reflecting women's lack of alternative opportunity especially in the more rural villages (R6825/ Vol 1 pii). In HD, where women had no personal access to land, young women worked as agricultural labourers at home or on larger farms while older people did labouring work in the village (ibid).

There were cultural limitations on what women in India could do that did not apply in Kumasi. It was considered socially degrading for Indian women to have to work outside of family enterprises. Their domestic duties also made it more difficult for them to work very far from home (Hillyer *et al* 2001& Working Paper 5, 2002). In addition, women in more urban villages were less likely than men or women in more rural villages to take

[8] at exchange rate of 44 rupees to the GB £
[9] at exchange rate of 10,000 cedis to the US dollar; 17,000 to the GB £

advantage of urban opportunities (Gregory 2003). This constrained many women to income generating activities located close to home.

Women's' work opportunities appeared to be most restricted in the Kolkata PUI being limited to the lowest paid and least secure activities. Female agricultural labourers commonly worked in rice production, usually in post harvest activities such as threshing or drying grain or in horticulture. When work was scarce women could usually find employment as rag pickers (R7872/C iv). Informal discussions revealed that women undertaking paid agricultural and horticultural work were often the main supporters of the household due to some other social factor such as illness or widowhood (R7872/C: iv) or that they were young women needing local work to diversify inadequate household income sources (Working Paper 5 2002: 5). It was noted in R7872 (C: 30) that no women owned or leased fisheries and very few women were employed as workers in the fisheries. Some co-operatives had female members and in these cases women undertook activities such as weeding and transporting fish. However, they were only allowed to do this if no other members of their family were employed in the fishery. To some extent this echoes the finding of Gregory (2003), that women in more urban villages in HD were more constrained in their livelihood activities and more likely to be dependant on male family members for their income than men or women in more rural villages. Other focus group discussions did show that women in the EKW undertook a variety of work activities including ornamental fish culture and vegetable trading (Mukherjee *et al* 2002) despite information, resources and training to diversify livelihoods being notably difficult for women to access (R7872/C: 40) demonstrating women's resilience and supporting the idea that women are amply able to take advantage of peri-urban opportunity despite disproportionate constraints placed on their activity.

In Kumasi women's work was also frequently defined by gender norms. Activities such as trading and adding value to agricultural products were traditionally women's work (R7854/ G: G37). Some tribes did not approve of women working, believing that women's domestic responsibility took precedence over income generating activity while in other tribes women could not sell livestock even if they owned it (R8090/FTR: 14).

However, Ambrose-Oji (2005) (R8094/ E: E18) pointed out that changes in labour supply and demand was of growing importance for women in the PUI with mounting labour constraints affording them more flexibility in their choice of labour market.

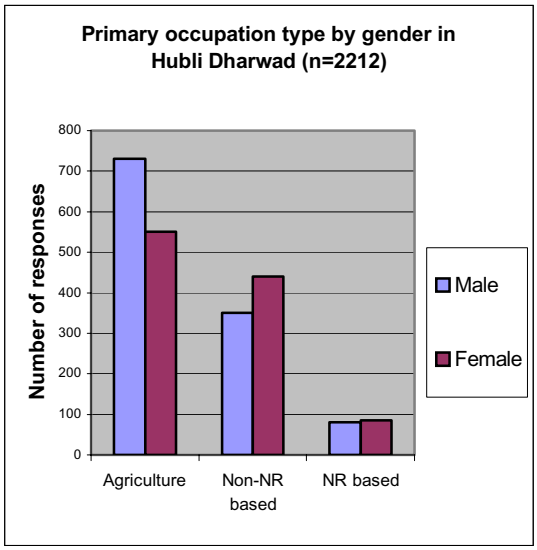
2.0.7 Natural resource based livelihoods

Agriculture remained the most significant natural resource based livelihood activity in both HD and K. The PD 138 (Project Impact assessment of May 2005: 35) showed that despite urban proximity, the ranking of land-based income sources in HD had not changed during the 10 years of research, while crop farming remained the most frequently cited occupation in the village assessments in Kumasi (R7854/ G: G35). Agricultural activity was complex and differed between social groups, understandably relating closely to access and tenure of farm land which is subject to significant pressure for changing usage as a result of urban growth. In Kolkata livelihoods derived from urban waste based aquaculture and food production were subject to detailed study *(considered further in section 2.1.3, peri-urban agricultural systems).*

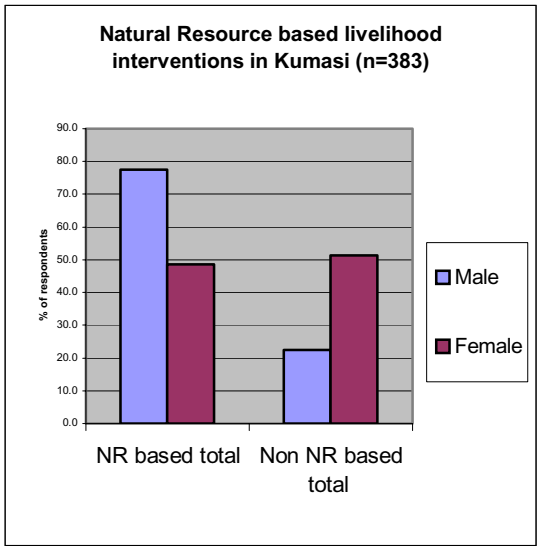
Both the K and HD studies identified long term trends towards off farm activity, indicating that NR systems were no longer the most important elements of livelihoods for a significant proportion of people across all social groups in both HD (Ambrose-Oji 2005) and K (R8090). However, these relationships were not entirely straightforward.

For example, NR based livelihoods remained a more significant feature of male livelihoods (Ambrose-Oji 2005 and R8090) and of the livelihoods of the non-poor *(PD 138 2005).* This is likely to be due to greater access to land and the increased significance of the more lucrative sectors of farm based production for these groups.

Figure 1
Natural resource based livelihoods by gender in HD and K



Source: Ambrose-Oji R8094 FTR Annex E



Source; R8094 FTR Livelihoods data

The above data, triangulated from two different sources, supports the idea that primary economic activity for a significant proportion of men depended on the NR base. Wealth ranking data was deficient, so differences between natural resource use between poor and non poor groups are unclear here.

However, data from the PD 138 (pps 22 & 44) showed that in both Kumasi and Hubli-Dharwad the poor and women still remained most dependent on natural resource based activities against a background of decreasing natural resource availability. This is likely to be due to the greater importance of agricultural labour and traditional farming to women in both communities, as well as the importance of wood fuel collection to women and the poor. If trading in agricultural products and value added food products in Kumasi is included as a natural resource based activity, the data is significantly affected.

Figure 2
Proportions of household income derived from land based and non land based sources: most important economic activity – Kumasi

	Before research interventions		After research interventions		
	Land based	Non-land based	Land based	Non-land based	Sample size
	%	%	%	%	
Poor	49	51	41	59	51
Non poor	26	74	19	81	27
Male	45	55	37	63	38
Female	38	62	30	70	40
Total sample					78

Source: HH survey from PD 138 2005

The NRSP Impact assessment Final Technical Report May 2005 (PD138: 1) described a sharp contrast in NR usage between K and HD as a consequence of the differing character of their research interventions.

In Kolkata 50,000 people were estimated to depend on the natural resources of the EKW wetlands for their living to some extent linked together in an integrated system. Fish farming alone provided work for around 8,500 people (Kundu *et al* 2005). Direct and often regular, employment in various capacities was an important benefit of the fishponds for people living in the EKW (R7872/C: iii). Strong labour unions had a profound impact on labour within the fisheries system (R7872/C: 28) negotiating beneficial terms and conditions for both temporary and permanent workers. Many ancillary occupations resulted from the fish and vegetable production and marketing, with some specialist skills ensuring relatively secure employment for some groups. The range of occupations described includes such diverse activities as security services, harvesting work, packers, porters, auctioneers, traders, retailers, fish seed raisers, boat builders, net makers and labour used to maintain the wastewater systems (New Agriculturalist 2002). The poorest groups of people who were trying to make a living from these peri-urban production systems in the EKW were suggested to be landless labourers, casual workers and fisherman's wives (Working Paper 5 2002: 4).

Vegetable and rice production were more typically household scale activities with people renting small plots (or subletting their plots) both to provide income and contribute to household food supplies (New Agriculturalist 2002). Family members normally undertook the bulk of the cultivation work although casual agricultural labouring work was available during busy periods (R7872/C: v). However, like the HD and PUIs, the availability of agricultural labour was affecting farming systems in Kolkata and similarly represented an opportunity cost to household members remaining in unpaid work on the household plot (R7872/C: 6.2). This was recognised as a personal disadvantage especially by the young (Working Paper 5 2002:6) and combined with falling profitability that is already limiting farm incomes, (Working paper 5 2002:8) will ultimately underpin moves to off farm employment. There were a few reports of work taken outside of the EKW in city based employment such as construction or road sweeping (Working Paper 5 2002: 21).

2.0.8 Move to off farm employment

Despite the undoubted importance of peri-urban agriculture, all the data collected indicated a long term trend towards off farm income sources (University of Birmingham *et al* 1998b; Brook and Davila 2000; PD 138:35). Overall dependence on non-land based income sources in HD had increased, although less so for women and the poor.

The project PD 138 (Impact assessment of May 2005: 35) showed the poor in HD had become more dependent on the city for their livelihoods during the lifetime of the research (city previously ranked 3rd with village 1st / city now ranked 1st with the village 3rd). Similarly in Kumasi, the importance of agriculture as a sole occupation had fallen over time. This change had a clear peri-urban character, becoming particularly marked with proximity to the city where people had a greater choice of livelihood options (R7854/ G: G35 Table 11). R8090 (Figs 8 and 9) based on 2004 survey data showed farming in Kumasi comprised only 12% of the livelihood sources of more urbanised communities, where more advantage was being taken of other PU opportunity such as trading and waged work compared with 32% in more rural communities.

2.0.9 Taking advantage of peri-urban opportunity

In HD greater proximity to the city was linked to more economic rapid growth than for locations further away. (R7959/A: 163). This was similarly shown to be true in Kumasi where there was a clear reduction in poverty related occupations[10] in the more urban villages. The research noted a gender element to this change with men, both young and old, more able to take advantage of PU opportunity than women. (R7854/ G: G37).

Figure 3

Poverty related livelihood activities undertaken by women as their major occupation in Kumasi

	More urban	Intermediate	More rural
Village	Apatrapa	Duase	Swedru
Older women	72%	76%	91%
Younger women	34%	43%	57%

Source: R7854G/ G39

Poverty related livelihood activities undertaken by men as their major occupation in Kumasi

	More urban	Intermediate	More rural
Village	Apatrapa	Duase	Swedru
Older men	34%	34%	73%
Younger men	28%	16%	44%

Source: R7854/G: G39

As in Kumasi, people in PU villages in HD also took advantage of urban proximity to move into alternative income generating activity (R7959/A: 163). However, in contrast to Kumasi, this was determined in large part by socio-economic status. The non-poor with access to land remained in agricultural production, although people in villages nearer to the city also often moved from agricultural production into other business areas or secure, urban based employment. The poor had fewer opportunities, with those in the more rural villages involved in agricultural labouring, while those in nearer villages took up labouring work outside of agriculture.

Figure 4

Comparison of uptake of PU opportunity of different socio-economic groups in HD

	Non-poor		Poor	
	Near	Far	Near	Far
Agricultural production	**52**	**76**	4	8
Dairy	20	22	4	2
Agricultural labour	2	4	**15**	**27**
Construction, brick and quarry labour	2	2	**22**	**8**
Artisan	1	0	5	2
Trade	1	3	2	4
Other	7	3	6	4
Total	85	110	58	55

Source: Derived from Table 5.3 Brook et al 2003 (Changing Frontiers p67)

[10] Poverty related occupations were used as a wealth characterisation feature in Kumasi

2.0.10 Processes driving peri-urban livelihood change

People did not seek change and tradition and familiarity were powerful forces for stasis within the PUI areas studied. As already outlined, the processes of urbanisation influencing livelihood change include intense competition for land leading to increasing land values and land use change, loss of access to and deterioration of the natural resources traditionally used to support livelihoods, increasing requirement for cash income and pressure into the cash based economy, loss of soil fertility, greater choices of occupation available, expanding consumer base leading to greater opportunities services and trade, transport availability leading to greater market access and competitive advantage of proximity for perishable agricultural products. Furthermore, the detail of PU change was not the same in all peri-urban villages. University of Birmingham *et al* (1998b) demonstrated that the uneven development of villages within the HD PUI was explained by factors such as soil type, availability of irrigation, accessibility and specific 'big industry' local employment that varied between individual villages.

Nonetheless, within the PUI change could be rapid, for example when common property land in Kumasi was sold without consultation with the users and without replacement by alternative economic activities (Simon *et al* 2004). This change often affected the poor more than the non-poor *(and is considered in more detail in Section 3; constraints and barriers to livelihood change)*. Hillyer *et al* (2001: B29) showed people made more changes to their livelihoods in villages closer to the city in HD, suggesting greater opportunity for change exists in places closer to the city. Similarly, in K the rate of livelihood change for poor and very poor households was faster in villages nearer to the urban centre than in those further away (R78549/G). Typically, where people had given up income generating activities, these had been abandoned for better paid work, easier options or for health reasons. For example, men in HD moved from agriculture into more lucrative non-farm work such as quarrying or factory work (Hillyer *et al* 2001) or into the more productive activities such as vegetable growing in Kumasi when other cropping activity became untenable (Aberra and King 2005).

'In the past I worked as an agricultural labourer. Here I learned tractor driving and now I can earn more money in the quarry.' **Mr G-HH C2**

'I tried printing press work as a helper. Then I worked in a rice flour mill. It was hard to get my salary so I decided to start my own business.' **Mr K-HH G3**

'I thought by starting a tractor business I could earn more money than as an agricultural labourer.' **Mr A-HH C3**

'In the past I worked as a building labourer in Goa but it was difficult to travel there so I stopped.' **Mr T-HH K4**

'In the past I was a puffed rice seller but I had to give this up when my health became upset.' **Mr B-HH M4**

Source: Gregory 2003

In HD there was an observable difference between those who were confident about their abilities to make change and those who weren't. Where people felt confident, they were able to take advantage of peri urban opportunity and had the information sources to allow them to do this (Gregory 2003).

2.0.11 Livelihood diversity as a response to PU change

Diversity of occupational types recorded within the PUI was an indicator of a wider choice of economic opportunities available to inhabitants. For instance, in Kumasi villages closer to the city, people had a more diverse range of occupations. In Apatrapa, Kumasi (more urban) 55 different occupations were reported while in Swedru (more rural) only 25 different occupations were reported (R7854/G: G5).

In the peri-urban context pressure on land availability, insecurity of work, small cash returns and low pay rates were prime determinants of poverty (*considered in more detail in Section 3; constraints and barriers to livelihood change*) leaving vulnerable people needing multiple stranded livelihood portfolios in order to reduce their vulnerability to livelihood shocks and stresses. This may require most family/ household members, including children, to be economically active to give sufficient household income. In both HD and K, poor and very poor people showed a diversity of income generating strands. Nkrumah *et al* (1998) and R8090: 5 Fig 5 indicated that 75% of households in PU Kumasi had more than one livelihood source. Hillyer *et al* (2001) showed livelihood diversity to be major coping strategy within the Hubli-Dharwad PUI although unexpectedly, women in more urban villages in HD had a lower livelihood diversity than other poor groups either male or female and were less likely to be employed in the cash economy *(Gregory et al 2004)*. This may be due to the greater reliance on agricultural labour for women in these villages (Hillyer *et al* 2001), and when this opportunity disappeared women became excluded from the job market. Whatever the reason, the consequence was that these women were more vulnerable to changes in their marital status and their households potentially more vulnerable due to reduced livelihood diversity. It further suggested that even where diversity of choice was available other factors could prevent people from accessing these opportunities.

Figure 5
Livelihood diversity in urban and rural PUI villages

	Urban	Semi-urban	Rural
Kumasi village	Apatrapa	Duase	Swedru
Households with three or more income strands	22.8%	17.1%	3.0%
Hubli-Dharwad	Near Villages		Far villages
Households with three or more income strands	33%		44%
Mean number of female income strands	1.1		2.1

Source: R7854 Annex G and Gregory 2003

The degree of livelihood diversity varied across social classes and genders. This was evident in both HD and K. In HD Hillyer *et al* (2001) showed that richer wealth classes had a fewer livelihood strands, indicated by the Shannon Weiner index of diversity. Similarly, research from K showed the more specialised crafts or better paid and secure work options also formed sole pursuits (R7854/G: 35).

The Kumasi data showed that some occupations were easier to combine than others (R7854/G: G35). Consequently, different occupations appealed to different sectors. For instance mushroom production combined well with trading activity allowing the women involved with the mushroom growing intervention an income while they were waiting to harvest the mushroom crop (R8090 Figs 8&9). The research also showed

that the poor in K chose alternative enterprises that fitted in with agricultural seasonal slack periods which expanded livelihood diversity and also helped to drive the change from farm based to non farm based livelihoods where non farm income streams proved more reliable. A similar effect was noted in HD (Hillyer *et al* 2001)

2.0.12 Occupations in Kumasi

In Kumasi farming was the most frequently cited occupation in all but the most urban of PUI villages with trading as the second most important activity. In urban villages this priority was reversed (R8090/G: G36 table 10). A diverse range of other income generating activities was quoted, mostly craft based artisanal activities, which may be employed or self employed in nature (R8090/G: G36 Table 10).

Trading was a particularly important income generating activity for women in Kumasi, with 83% of women quoting trading as a livelihood source (compared with 16% of men). R8090/FTR: 33 Fig 11 sourced from baseline data 2002 (*more detail in section 2.2 trading and markets within in the PUI)*

The range and prevalence of occupations for different age and gender groups in Kumasi were identified as:

Group	Occupation
Young men	carpenter, trader, mason, driver, shoemaker, vegetable farmer, electrical work, construction
Young women	trader, tailor, cooked food seller, hairdresser/beautician,
Old men	food and tree crops farmer, carpenter, trader, driver, mechanic, construction
Old women	food crop farmer, trader, cooked food seller

Source: (R7854/H: H11 and G: G37)

Job prevalence varied slightly with proximity to the city, however farming and trading remaining the two most frequently mentioned occupations in all places (R7854/ G: G36-39 tables 10-12).

Migrants were more likely to be better equipped with skills and education and created competition for jobs among less well qualified indigenes (R8090/Bi C/37). 45% of migrants were employed and 35% self employed (18% provided employment opportunity for others). People who had secure employment were most likely to live in the more urban villages. Self-employed migrants generally fell into the lower and middle income groups working as craft based artisans such as electricians, welders, plumbers, carpenters and masons etc (R8090/Bi B).

Case study of hairdressers in Duase, Kumasi

These young women plaited hair and had all been in business for a minimum of three years. They had all trained as apprentices, learning either from family or by paying apprenticeship fees to strangers. Some equipment was needed but electricity was not. A kiosk was helpful but could be taken on as the business developed. For more specialised styles additional equipment was needed but this could also be acquired later. No special contacts were needed to set up in business and no licence was needed but kiosks were expensive and rates had to be paid. The shop also allowed other trading activities such as iced water sales.

Starting capital required without the kiosk costs was around 150, 000 cedis for plaiting and 3,000,000 for hairdressing but credit was not easily available leaving some trained women working for others rather than starting their own businesses. On a good day a profit of 30,000 cedis may be obtained but incomes fluctuated dramatically with incomes lowest at holiday periods Prices depended on style and cost of materials. Custom may not be determined by ability but by the patronage of friends and relations. Maternity leave posed particular problems making it difficult to restart the business later.

In smaller communities there was no access to the hairdressers' association and the technical information and advice they provided was not available.

Source: R7854/ H: H21-23

(Exchange rate approx 10,000 cedis to the US dollar, 17,000 to GB£)

2.0.13 Occupations in HD

In Hubli Dharwad only 55.1% of the working population depended on agriculture compared with the state average of 61.1%. This indicated the potential of other sectors to provide a living within the PUI (R7959: 163). In 24% of villages land available per farmer increased despite the land per household decreasing indicating that fewer people were working the land. However, no simple relationship could be demonstrated between proximity to the city and the decline in people engaging in farming (R6825). Livelihood options open to people in PU villages were varied. Data presented in R8094/ E: E20 (Ambrose-Oji 2005) showed that people in the poorest wealth categories had diverse, risk reducing livelihood strategies that combined a cash earning component with activities requiring minimal capital input.

Figure 6
Comparison of major livelihood activities of different socio-economic groups in HD

	Rich	Medium	Poor	Very poor
Agricultural production	72	56	12	0
Dairy	19	23	5	1
Agricultural labour	0	6	25	17
Construction, brick and quarry labour	0	4	15	15
Artisan	0	1	5	2
Trade	4	0	3	3
Other	6	4	4	6
Total	101	94	69	44

Source: Derived from Brook et al 2003 (Changing Frontiers p67 Table 5.3)

This showed the non-poor to be engaged more in agricultural production while the major IG activity for the poor was employment as wage labour. It should be noted that the very poor groups were least represented in every occupation category. This may be

indicative of the smaller sampling frame but this in itself suggests a smaller proportion of the very poor were able to take up IG opportunities perhaps because of age, ill health or family responsibilities.

The main income generating activities identified in HD that were considered to be a result of peri-urban opportunity were :

- trading in the city, (vegetables, flowers, mangoes, milk, puffed rice etc)
- offering services, (hire tractors for construction work, picture framing or domestic service for richer professional families),
- bulk purchase from city wholesalers for retail sale in the villages
- paid employment within industries generated by growing urbanisation (factory work, construction and building, quarrying, brick making, watchman)

Commonly reported occupations of poor people in three peri-urban areas

Figure 7
Most common occupations of poor and very poor groups in HD

Type of Activity	**Poor and very poor groups (n=114)** % of total
Agricultural labour	36.8
Agricultural Production	10.5
Dairy production	5.3
Commercial labour	9.6
Construction labour	6.1
Brick/Quarry labour	8.8
Artisan	6.1
Trading	5.3

Source: Data from R7867/Annex B Section 4.2/Table 6)

Most frequently reported occupations in Kumasi

Type of Activity	**All groups (n= 2051)** % of total
Farmer	41.7
Trader	19.8
Tailor	6.4
Artisan	5.9
Driver	3.6
Chop bar	3.0

Source: Data from R7854/G Table 10

Poor groups present in PU Kolkata

Occupation	**Poverty rank**
Casual workers (no regular income)	1
Rag Pickers	2
Scavengers/ cleaners	3
Fishermen's wives	4
Landless labourers	5
Sex workers	6
Transport workers (rickshaw pullers)	7.5
Vegetable vendors	7.5
Agricultural workers	9
Fisheries workers	10

Source: R7872/ Annex A Symposium paper: 2

2.1 AGRICULTURAL LIVELIHOODS WITHIN THE PUI

Key findings

- Agriculture remained a livelihood component for the majority of people living within the PUI. Despite the importance of agriculture, food security was compromised for a substantial proportion of poor peri-urban inhabitants. Tradition, security and generational skills were significant in the choice of farming as a livelihood option.

- The importance of agriculture as a sole occupation fell with increasing proximity to the city as a result of pressure on land availability and the presence of alternative employment opportunities. As urbanisation changed land use, farming was gradually becoming a minor occupation, especially for those whose access to land was constrained by PU development or where farm prices reduced incomes to unsustainably low levels. The group most notably dependent on agriculture were poor female agricultural labourers in HD.

- A dichotomy of agricultural activity was developing as a consequence of peri-urban pressures. Richer peri-urban farmers were moving to higher value enterprises. These were becoming more capital intensive (and potentially more polluting). The poorest farmers had no option but to remain in agriculture.

- Alternative labour options for men within the PUI had created a shortage of affordable agricultural labour. This offered increasing opportunity for women to take advantage of work as agricultural labourers. Agriculture and agricultural labour could be done in combination with other activities and close to home, which was especially important to women with domestic responsibilities. However, agricultural labour was very poorly paid especially for women.

- Choice of crop depended on length of production cycle, proximity to the market, market price and demand and availability of land. A better variety of seeds was available in urban markets and could affect cultivar choices in the PUI.

- Livestock keeping was not seen as a land based activity in either K or HD and was often accessible to the poorest groups of people. Even where animals were restrained from free ranging, people were often still able to manage animal keeping using zero grazing techniques and natural or agroforestry fodder. Dairying was a vibrant livelihood opportunity for the poor in HD. Small animal ownership was most diverse among the poorest groups in K, but meat and milk production was not a developed livelihood activity for the PU poor in K.

- Urban wastes formed a specialist resource for agricultural production, with a second function of reducing urban pollution. Urban wastes in the form of human sewage were being used for fish farming in Kolkata and for vegetable growing in both Kolkata and HD. Intensive poultry waste was available for soil improvement in Kumasi and industrial waste in the form of sawdust could be used for mushroom growing. Solid wastes from Kolkata were used to improve soils in peri-urban vegetable cropping.

- Fish farming had a unique niche in the agricultural economy of Kolkata but had diminished in importance in HD and K PUIs due to water pollution and drought.

Peri-urban agriculture had a number of broadly positive characteristics:

- It was fundamental to the food security of many households.
- It formed the basis of the cash income for many households especially where they were able to take advantage of PU market opportunity.
- The proximity of urban consumers, structured markets and distribution systems and available transport provided the opportunity to produce and sell high value and perishable commodities such as fish, vegetables, flowers, fruit, milk and curds and mushrooms within the PU and city areas.
- Where activities could be scaled up, they encouraged people to move beyond subsistence agriculture into more profitable crops or related micro-enterprises such as processing
- Women could take the opportunity to develop processing opportunities based on household agricultural production (e.g. cooked or prepared foods for sale)

Negative characteristics/ threats facing peri-urban agriculture:

- Access to the land and water resources fundamental for farming activity in the PUI were increasingly threatened by urban expansion.
- Poorer people were less able to take advantage of the more lucrative types of PU agriculture than richer groups and were more likely to have their crop choices driven by their needs for short production turnover times.
- The poorest people did not have the resources to scale up their farming activity.
- Women were more likely to be channelled into the less productive sectors of PU agriculture such as staple crop production or low wage labouring.
- Traditional attachment to the land and land inheritance patterns could lead to increasingly small land parcels often too small to support household food requirements.

2.1.1. Who farmed?

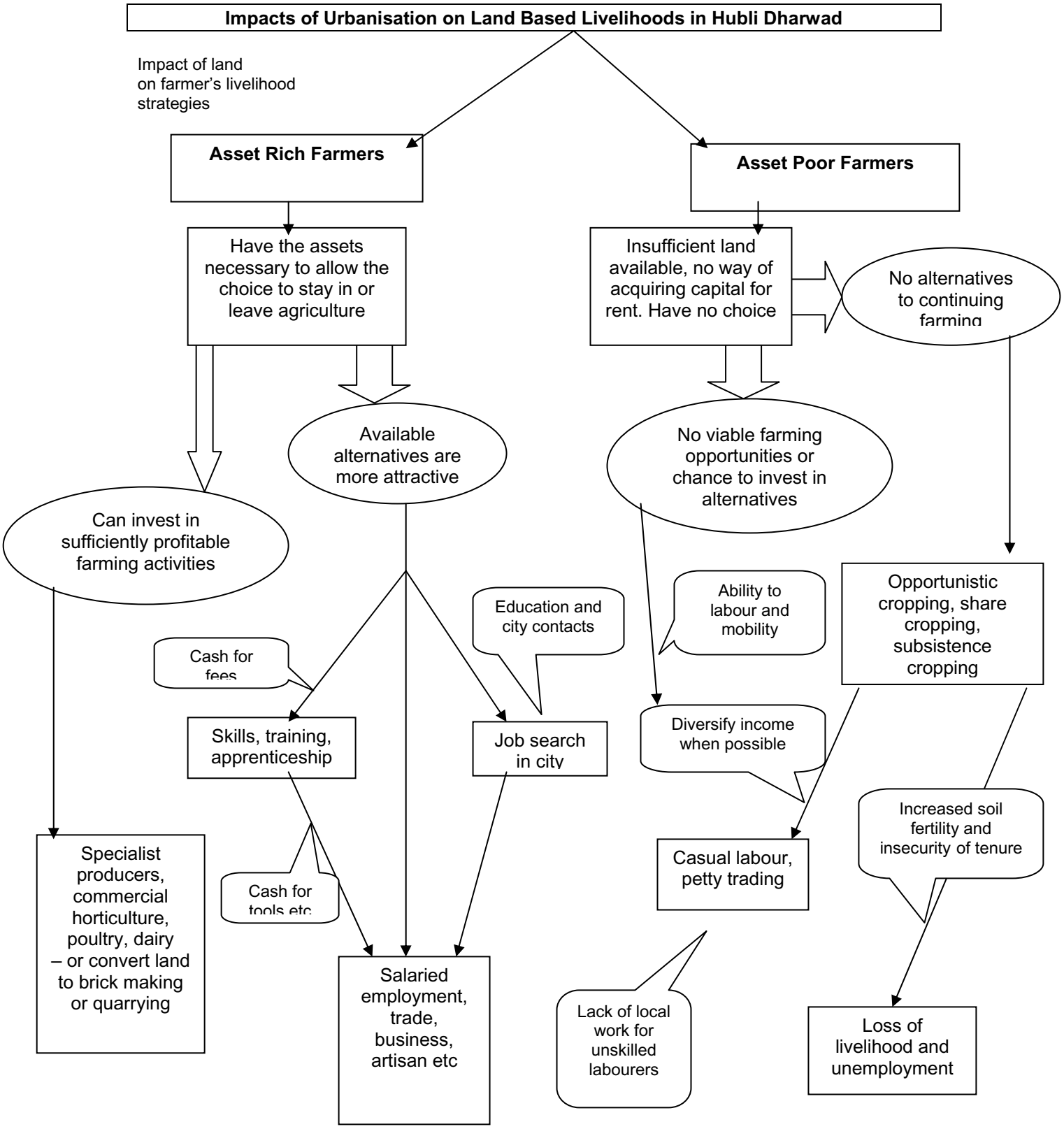
Despite the long term trend towards off farm and non farm livelihoods, agriculture remained the most significant livelihood activity for a large proportion of people in peri-urban villages around both Hubli-Dharwad and Kumasi. Over 50% of PUI inhabitants listed agriculture as an important livelihood activity (R7959: 163; R6799/14:94). This increased to almost 70% in the poorer wealth categories (R8090: 33, fig1; baseline data 2002; Gregory *et al* 2004). However, agricultural activity was changing within the peri-urban interface as a consequence of the irreversible changes being brought about by urbanisation. There was a polarisation of production between genders and social classes with men and richer farmers taking advantage of PU opportunity by growing more profitable crops for urban consumption while women and poorer farmers remained in the less profitable sectors. There was also a structural trend of people moving out of agriculture and into off farm, non-NR based livelihood activities with younger people, especially in Kumasi, less likely to be involved in agriculture (R7854/ G: G37; R6799/14:94).

Small farmers engaged in agriculture primarily as a subsistence activity in both HD and K. Tradition was an important reason for undertaking this activity (Hillyer *et al* 2001 and Aberra and King 2005) exemplified by Swedru crop farmer, Baffour Kyei, and others who saw farming as a heritage handed down by their forefathers. Farming skills were handed down through generations in both HD and K (R7995/FTR/4: 2; Hillyer *et al* 2001). It represented a low risk and familiar activity where people had the skills and understood both the product and the market.

However, despite the importance of subsistence farming in Kumasi, up to 60% of people were unable to meet all their food needs (R6799/14; 91 table 16 quoted in R7549: 186) In Kumasi, the activity of farming itself was identified as an indicator of poverty with food crop farmers considered to be among the poorest peri-urban inhabitants (R7549/6.4.1). In both HD and Kumasi even those people with secure access to land felt the need to pursue better livelihood options as a response to declining productivity and prices, increasingly erratic rainfall and land tenure difficulties (R7549: 147; R7854/G: G35). As a result the total number of people engaged in agriculture was declining (Brook and Davila 2000:127 quoting University of Birmingham 1998b). Interestingly, only 2% of people in HD thought a reduced reliance on agriculture was a positive livelihood trend, suggesting that agriculture still forms a great emotional attachment for people (Ambrose-Oji 2005; R8094/ E: E18).

Two distinct classes of farmers were identified in both HD and K; those who were asset rich and those who were asset poor. In HD, the asset rich were able to invest in profitable farming activities taking full advantage of the opportunities for production provided by the PUI. The asset poor had little alternative but to stay in farming and to try and diversify their income where possible (Brook and Davila 2000). This dichotomy between rich and poor farmers was similarly reported in Kumasi who found that those who stayed in farming tended to be either specialist producers with enough capital to invest to remain profitable or those who had so few resources that they had very little alternative but to find the means to remain in farming to provide their most basic food needs (R7549: 183).

Figure 8
Dichotomy of agricultural opportunity



Source: Brook and Davila (eds) 2000: 17 Fig 2

2.1.2 The nature of land holdings

Land tenure systems formed one of the most significant differences between Kumasi and Hubli Dharwad. In India, land tenure was by title ownership while in Kumasi land tenure was by access to common property rights. This left farmers in Kumasi less secure than farmers in Hubli Dharwad about their land tenure rights under peri-urban conditions which was reflected in cropping patterns and created an additional driver of agricultural change in Kumasi. In both PUIs, where people lacked either owned or common property rights, land was utilised by share cropping or rental systems. Landlessness in both HD and K was growing, and focus group discussions with villagers suggested that they expected it to increase (PD138). *(This is discussed further in section 3, constraints and barriers to livelihood change)*

i) In Hubli-Dharwad

In HD small and marginal farmers accounted for 41.3% of holdings controlling about 16.7% of the land. Average holding size was 3.5 ha but this included all holdings including those of the non-poor. (R 7959/ A: 164[11]). The baseline study (University of Birmingham *et al* 1998b: 178) showed average farm areas of less than 2 ha per household with one village having less than 1 ha. FTR 8094/ G found the average holding size for the poorest groups to be closer to 0.3ha. The proportion of villages with land holdings > 5ha varied from 12% to 40% indicating wide variations in the wealth of farmers around HD (University of Birmingham *et al* 1998b: 127).

ii) In Kumasi

Small farms were most usual in K with 80% of people having less than 0.8ha of land. 59-69% of these received land on the basis of customary tenure with 29% having to share crop or rent (R6799/14:98). The great majority of farmers paid nothing for the land they farmed (81% females and 74% males (R7549: 49) but those who had customary access to land had no security of tenure. People with temporary access to land were often moved, sometimes even before they were able to harvest their crops (R8090/ Bi B: 7). Characteristically indigenous staple based farming took place in the uplands with the swampy valley bottoms being used for vegetable farming where people took advantage of moister conditions and increased fertility from periodic inundation. There was no data on the importance of peri-urban garden plots in terms of food production or cash generation but some information about urban agriculture. In particular, urban backyard plots made a significant contribution to the household food budget. Some people farmed in the urban gaps left by building plots or on unused land at the sides of the roads after they had lost access to any other land (R7549: 57).

iii) In Kolkata

Traditionally feudal landlords controlled access to the land but land reform carried out in West Bengal in the early '50s restructured land ownership and limited the size of land holding that could remain in private hands. Further 'land ceiling' acts defining land holding sizes were implemented in 1971. Larger holdings were vested[12] by the government and distributed to the landless and land poor. The maximum area that could be allocated was 0.8ha (2acres). Despite this some large landholdings still remain. Amendments to these land reform acts brought fisheries under state jurisdiction in 1995 and several large fisheries have recently been distributed among fishermen's co-operatives. This practice of vesting land has resulted in a decline in larger fisheries under private ownership although a number of smaller, independently managed, household ponds and *jhils* remain (R7872/C: 17). Some of the fishponds were leased out to commercial interests while others were managed by the government or by fisherman's co-operatives (New Agriculturalist 2002). The larger

[11] Data sourced from National Bank for Agric and Rural Development potential linked plan: 2000-1 Dharwad Karnataka, Bangalore Regional Office 1999

[12] Purchased by the government for redistribution (R7972/C: 17)

fishponds lent themselves to joint management, acting in some cases in the manner of a common property resource (R7872/C: 44). This element of land redistribution is quite unlike either HD or K PUIs, where changing land tenure systems remain unplanned and subject, in the main, to free market forces of supply and demand. Nonetheless, many people in the EKW remained landless (Working Paper 5 2002: 4)

As a consequence of the land reforms, agricultural land distribution in the EKW was complex with holdings both tiny (average sizes ranging from 0.13 ha to a maximum of 1.3ha) and fragmented and with some individuals managing more than one plot (in a way that was reminiscent of land holdings in Kumasi and to a lesser extent HD). Some people, often migrants into the city, retained plots in other places at a distance for Kolkata (sometimes even in different states) (R7872/C: 34) again reminiscent of the Kumasi situation where men often leased land well away from the city in order to produce cocoa and other tree crops that required long term land tenure. Much of the land in the EWK remains vested in the state (in the form of the Kolkata Municipal Corporation - KMC) with people taking plots on short term leases. In the rice growing areas further away from the city the majority of people owned the rights to sell the land they farmed (as *raiyatas*[13]) although ownership was normally vested in the state. This system had some similarities to the common property rights vested in the Asantahene in Kumasi, although there the similarity ends as the Kumasi farmers lacked the power of decision making about the land transaction and rarely gained the compensation from the land transfer which ultimately resulted in its change of use.

A farmer survey for R7872 (C: 34) showed that all the land farmed for vegetable production was owned by the Kolkata Municipal Corporation (KMC alias CMC earlier in this document). Some had leased land direct from the KMC while others were subletting KMC land although farmers were often found to be reluctant to discuss leasing arrangements (Bunting 2004). However, leasing arrangements were very short term (a single year at a time) leaving farmers feeling insecure and less willing to invest in the long term management of the system leaving its future under threat (R7872/C: 35).

2.1.3 Peri-urban agricultural production

2.1.3.1 PUI Cropping Systems

i) Crops in Hubli Dharwad PUI

Land use systems were heavily dependant on soil characteristics with the major constraint on crop production being the availability of water. Cropping intensity was over 100% reflecting the capacity of farmers to produce two crops per year from their land. (R7549; Brook 2000). Cropping systems were heterogeneous with rain fed rice and legume production to the west of the city and maize, cotton, sorghum and wheat plus protein and oilseed crops to the east. A stable cropping pattern of cotton-chilli and sorghum-pigeon pea as the major intercrops was described (Brook 2002). University of Birmingham *et al* (1998a: iii) showed crop diversification into intensive vegetable production on a small proportion of the cultivated land in villages that had access to sewage water *(considered further in section 2.1.3.4; peri-urban agricultural systems deriving from urban wastes).* In some villages there had been diversification into specialist horticulture, potatoes, floriculture, fruit trees especially mango and sapota, maize and horticultural/arable intercropping.

[13] Indicating that the ownership of the land ultimately remained vested in the state but the *raiyata* could sell the right to the land as long as its use remains unchanged (R7872/C: 44)

ii) Crops in Kumasi PUI
The R7549 study noted the considerable homogeneity of cropping systems in Kumasi in stark contrast to those in HD. R6799 showed the main difference in farm systems between PU villages around Kumasi were determined by proximity to the city. The Baseline study (2002) results (illustrated in R8090/ Bi B: 32 Fig 10) showed that subsistence food crop farming was an important activity in each of the 12 villages surveyed. Although there appeared to be some deficiencies in survey techniques used R6799 and R7549 (Brook R 2000) identified the major staple crop species grown at village level as maize, plantain, cassava, and a variety of unspecified yam species. Other predominant crops were solanaceous and leafy vegetable species, and tree crops, oil palm and cocoa. Vegetable crop specialisation differed between PU villages often following the main rivers in the communities. Earlier studies underlined the move from tree cropping (cocoa and oil palm) to staple crop production and vegetables (R7854/ FTR: 1 & 15).

iii) Crops in Kolkata
PU vegetable farming was centred on the Dhapa area of the EKW with production estimated at 147 tonnes daily (R7872/C: 34). Intensive cropping was possible using wastewater irrigation resulting in several crops being cultivated in a year. Intercropping was common practice (R7872/C: iii). A diverse range of vegetables (up to 16 varieties were grown) including gourds, cauliflower, radish and various amaranthus and solanaceous species were recorded (R7972/C: 38). More drought tolerant, leafy vegetables had been introduced in some areas recently as a response to the reduced availability of irrigation water (R7872/C:). Rice was a widely grown and valuable crop being grown mainly in peripheral areas, with potatoes also being produced in some places (Kundu *et al* 2005).

2.1.3.2 PUI Livestock systems

The peri-urban livestock production systems related to diet and tradition within each culture. In India milk was an important dietary component for people who in general did not eat meat for religious reasons. In contrast, many Ashanti people in Kumasi did not drink fresh milk in part due to a common, genetically based lactose intolerance but they had no religious objections to eating meat.

Livestock systems were characterised in both the Kumasi and HD PU studies. There was little information about husbandry methods in either HD or K but there was evidence of some protein feeding of animals sometimes of urban wastes especially for pigs in both Kumasi and HD (R7549/3). In HD uncontrolled pigs roamed the city streets rooting in rubbish piles. They were widely disliked and considered a health hazard but in fact performed a service by removing piles of rotting rubbish. Similarly, urban livestock keeping in Kumasi appeared to be an irritation to non-farmers. Official policy was opposed to urban livestock keeping in both places (R7549: 86). Animal production (other than fish) was not characterised in the Kolkata PUI, which was thought to be a significant oversight (R7872/C: 5) although roaming pigs were noted (Juniper 2004) being kept in a similar manner to those in HD. Bunting (2004:15) records cattle, goats, chickens and ducks apparently kept for domestic use and that animal assets were used as savings, which could be sold under duress. Bunting (2002) reported the removal of cattle sheds from the east of the city (reducing the perceived nutrient status of the wastewater resource for fish and vegetable production) suggesting city based animal production is under similar pressure to that reported in HD and K.

Livestock systems did not appear to be considered to be farming in either HD or K, in part at least because they were not closely attached to land ownership and use. Animals were either kept on free range or confined on zero grazing/stall fed options. Because of this, poor people were quick to see the livelihood opportunities offered by livestock keeping in the PUI, especially cattle and buffalo keeping for dairy production

in HD, small animal keeping in Kumasi and poultry and in both HD and K. However, poor people lacked the capital to take full advantage of the opportunity (Brook *et al* 2002; R8090).

The correlation between livestock ownership and wealth was not straightforward. Non-poor people in both PUIs had greater numbers of cattle and pigs and were more involved in dairy production than the poor (Brook *et al* 2003: 67 Table 5.3). However, the poorest people had the greatest diversity of animals and dairying was rising in importance for poor groups in HD while small animal keeping was a significant component of the NR based interventions in K. However, increasing demand for animal products (milk, meat and manure) is likely to expand the presence of livestock in both places giving an opportunity for the poor to benefit from livestock keeping at least short term. Unsympathetic planning policies that don't recognise the importance of PU animal keeping at the very least remove livelihood opportunity while missing the opportunity to promote better human and livestock health.

i) Livestock in Hubli Dharwad

Livestock were more in evidence in HD than in K. In HD livestock included dairy cattle and buffalo for milk production and oxen for draught power and transport. Their dung was a significant factor in maintaining soil fertility (R7549: 48). People of many castes and tribes kept livestock but Gowlies had a long tradition of keeping milking animals (R6825/03:paper 7,3; Nunan 1999:14 quoted R7549: 68). The contribution of dairy farming to household income was proportional to herd size with herds varying between 1and 20 animals. Animals were hand milked, often by women. Milks yields varied between breeds and between rainy and dry seasons (R7549: 68).

Animals were allowed to roam freely once crops have been harvested taking advantage of weedy pastures while adding fertility to the land they grazed. Little concentrated food was fed, but owners might supply crop residues after harvest, and grass on a cut and carry basis during the rainy season (R7549: 68). Some people made a living from the collection and sale of fodder (Gregory 2003). There were a variety of outlets for milk from both cattle and buffalo with buffalo milk commanding the highest prices (R7867/FTR). There was a specialist market for liquid milk where animals were milked in front of the customer to ensure freshness and that milk wasn't watered down. Other milk was sold through creameries via village co-operative societies. This was pooled and sold either pasteurised as liquid milk or processed into a variety of forms that includes butter and ghee, whole milk powder, skim milk powder and lassi (buttermilk). Some milk was converted into curds while two ice cream factories purchased cream and skimmed milk (R7549: 70). Livelihoods varied from complete reliance on milk production for income generation to it being a single strand of a more complex livelihood strategy.

Farmyard manure was in demand for fuel cakes or fertiliser and may be sold or exchanged for forage (R6825 quoted R7549: 70). Where people owned land they used the manure to raise fertility on their own fields.

ii) Livestock in Kumasi

Livestock was reported to be widespread in the Kumasi PUI with sheep, poultry and goats being kept mainly on free range systems (R7854: 20). Goats were not popular and in some places were taboo because of the damage they did to surrounding trees and crops (Brook and Davila 2000). Around 1-3% of farmers owned cattle, 2-3% owned pigs 14% owned goats and 28-31% owned sheep. In general, the numbers of animals owned were small. Modal size of herds/flock was cattle 21-25 sheep/goats 6-10, pigs 1-5 and poultry 6-10 (R7549: 92). There were some larger units but information about these was limited.

There was some fish farming but this was not a small farm activity and there were significant constraints on production (R7549: 89). Rabbits, grass cutters, snails, bees and giant rats were all kept. Data collected about these activities was contradictory (Solomon R6799/28:58 quoted R7549: 86) and their importance as a livelihood activity was difficult to judge as the animals were kept on a small scale and as much for pleasure as profit (R7549: 87). All the animal keepers interviewed in Kumasi were male (R7549: 88 from R6799/28:58) and all appeared to have other sources of income.

Some poultry was kept in intensive units, which were most numerous in the peri-urban central belt 10-20k around the city and then in the 0-10 km zone. (R7549: 53 Fig 2.2) where space for production and manure disposal was available but city markets were close.

There was little peri-urban cattle production, mainly due to the presence of trypanosomiasis vectored by the tsetse fly that was able to breed in the bush remaining in the PUI. Cattle owners did not appear to be particularly poor while herdsmen were better of than other manual labourers (R7549/ 3: 79). Milk had a ready market despite the prevalence of lactose intolerance and was often processed into cheese and yoghurt, which has a much reduced lactose content. The herdsmen in charge of the cattle used the sales of milk to provide their wages.

Careless disposal of manure and the potential for unpleasant smells sometimes led livestock husbandry into conflict with other sectors of society. For instance, city cattle keepers were under pressure to move into the PUI. They were resisting this because of the trypanosomiasis threat in the PUI not present in the city (R6799/28: 30). Pig production likewise was an urban rather than a peri-urban activity. Animal manures were not efficiently used as soil ameliorants and the lack of integration between livestock and crop production had significant implications for the use of animal manures to improve soil fertility otherwise primarily maintained by bush fallow - a system which had broken down in places nearer to the city (R7549: 49).

The PU pressures on land availability was limiting the way animals could be kept, thus gradually reserving this as an activity for the non-poor with access to sufficient space for grazing or housing (R8090: 7). Broadly, animals were kept for income generation by the non poor rather than for domestic consumption by the poor. Consequently, livestock keeping did not appear to an important form of capital saving for the poor within the Kumasi PUI. The loss of animals for domestic consumption has the potential to affect the protein needs of the vulnerable poor being especially serious for children and pregnant women.

iii) Other PUI livestock studies

These findings were confirmed by research undertaken by the RNRRS Livestock Production Programme (LPP). For instance, Thorp and Richards (2004) noted that peri-urban and urban livestock keeping was an essential livelihood activity for many people and in particular for vulnerable social groups. Animals provided a variety of products for sale or consumption and could act as a bank or insurance policy for the poorest groups. The LPP noted that peri-urban livestock keeping was increasing in many cities although exact numbers were not quantified. Problems frequently arose from waste disposal, water availability and zoonoses (ZC0201 &Thorp and Richards 2004). Despite the problems, the growing demand for animal products in urban areas livestock production offers great livelihood potential for many groups of producers in the PUI. Consequently, action that identified efficient and viable market mechanisms and supported better management and business skills, improved returns for peri-urban livestock producers (R7321). However, training was more likely to focus on commercial farming techniques. Public health risks, economic performance in indigenous dairy

product markets, and identification of relationships between producers, market agent practices and government policies are at the initial stages of characterisation. Many urban livestock regulations were irrelevant and obsolete (R7321). Furthermore, the poor frequently remained unaware of the regulations and were rarely consulted about formulation of policy (Thorp and Richards 2004). There can be cultural limitations on women's animal ownership (R8108), which were similarly noted in Kumasi. (R8090/FTR: 14)

2.1.3.3 PUI Tree ownership

Tree ownership can be interpreted as a function of security of tenure (Brook R7854). Trees were clearly related to proximity to the city in the Kumasi PUI, less clearly so in HD - probably as a consequence of the different systems of land tenure and consequently different perceptions of security applying in each place. In Kumasi, both farmers in rural villages and those utilising urban backyards planted productive trees. By contrast, farmers within the PUI limited their production to annual crops (Aberra and King 2005). Tree ownership was related to gender - only men owned trees in Kumasi (R7854/FTR) while in HD only men owned land (so trees planted become male family property). In HD, trees were mainly fruit trees such as mango and sapota and were typically grown by non-poor farmers on suitable soils around the city in response to labour pressures and beneficial tax conditions. It was possible for poorer farmers to lease trees on a share cropping or rental basis (Gregory 2003). At the time of the Kumasi baseline survey (1997), cocoa plantations were being rehabilitated in villages furthest from the city and new ones were being established as a result of rising cocoa prices and suggesting confidence in more rural areas about tenure security. Cocoa farming was a consistent indicator of a high wealth ranking in Kumasi (R7549: 166 table 6.2).

In Kolkata, coconut trees were replacing palm trees since every part of the coconut tree was considered useful and profitable. These were one of the few trees that could tolerate the saline soil of the EKW. An interesting side effect was that some people felt this change had reduced alcohol consumption (of the local liquor or *tari*) traditionally produced from the palm (Working paper 5, 2002:17).

2.1.3.4 PUI agriculture deriving from urban waste reuse

The reuse of liquid and solid waste in peri-urban agriculture often contributes significantly to the management of waste in urban areas with potentially even greater benefits if this concept could be supported by and incorporated into formal waste management systems. However, the value of the link between peri-urban agricultural systems and the informal use of urban wastes is rarely made despite being amply characterised in many NRSP reports and a number of authors already indicating the need to 'close the nutrient loop' (Hofmann 2005). For instance, in Hubli Dharwad the disposal of liquid sewage waste is an obvious problem for municipal authorities while at the same time forming a valuable resource for vegetable crop farmers (R7867/FTR). Kindness (1999) made a detailed study of the availability of waste that could be converted to soil ameliorants in and around Kumasi but only a small faction is actually usefully used. Large quantities of municipal waste are transported to landfill sites with about 20% remaining uncollected. The central market waste contains up to 80% organic material which could be composted and reused for agriculture while nightsoil and sewage from the city gets dumped into the river because of the lack of a proper disposal system (*ibid*). Sawdust from a number of industrial saw milling operations is freely available as an urban waste with dumping in the river recorded as a means of disposal (R8090/FTR).

By contrast, the reuse of sewage based nutrients has been central to the development of the East Kolkata Wetlands systems (R7872/C) and where, uniquely, waste water

and solid wastes are applied in combination (Hofmann 2005). The exact contribution of the EWK garbage farming system to the managed waste disposal of Kolkata has not been fully characterised and may have been oversimplified. However, maintenance of the siphons, lock gates, and secondary drainage that enable sewage use by the fisheries and wastewater pumping into the fishponds all contribute a significant, indirect subsidy to urban waste disposal. (R7872/C: 22).

The gender and health dimensions of waste collection are poorly understood although in India wet waste collection is considered religiously polluting so 'waste picking' activity is confined to low caste and poor people (Working paper 5; 2002). In this case, it is the most vulnerable people whose health is most likely to be affected by any occupational risks associated with working with urban wastes. In addition, risks to consumers from the use of untreated wastes for food production are unquantified. Moreover, these risks have yet to be fully characterised. At the same time, it is the livelihoods of the poorest people that are most threatened by unreliable urban waste supplies, changes in labour dynamics, fluctuating markets for organic waste or insensitive legislation.

i) In Kolkata

Historically, waste from the city supported the intensification of urban agriculture in the EKW area of Kolkata while the produce supplied growing urban markets (R7872: 12). The livelihoods of many poor people in this region remain inextricably linked to the sewage fed fish rearing and crop farming using solid waste (Bunting *et al* 2001 in Kundu *et al* 2005). Vegetable farming is an important output from the Dhapa region and is entirely dependant on the city sewage coming into this area (Kundu *et al* 2005) while rice is also a valuable crop gaining high prices as a consequence of buoyant urban demand (R7872: 13). Kundu *et al* (2005) indicated that rice production is limited to the peripheral wetland areas although nutrient rich waste water is used for paddy irrigation up to 50km from the city (R7872/C: 13). Naskar (1985 cited in R7872/C: 13) reported on the practise of integrating fish and shrimp farming with rice farming. In the more peripheral areas potatoes and other vegetables were also cultivated using more traditional methods (Kundu *et al* 2005).

Fish production

The 254 fisheries are spread throughout the region as *bheries* (large fisheries up to 70ha in area but >13.3ha) or *jhils* (small ponds up to 3.3ha) (Kundu 2005 and R7872/C: 17). Uniquely, fish production in the EKW is based on raw sewage from the city, using both solid and liquid fractions. This trickles along slow flowing channels where the solid faction is separated out in ponds to be used as compost for crop and vegetable growing while the nutrient rich liquid fraction is then used to top up the fishponds (Juniper 2004). Tilapia and Indian major carp were the main fish species grown (R7872/C: iii) and an estimated 13,000 tonnes of small fish is produced annually using this system most of it consumed in Kolkata (Juniper 2004) where it provides an affordable, year round, protein source for city consumers (R7872/c: iii).

Siltation of the fishponds was a major problem threatening their continuing existence (Kundu *et al* 2005) and also recorded as a constraint to productivity by 23% of fish farm managers (R7872/C). Other constraints to the viability of the fishpond system were uncertainty about waste water supplies (86%) and declining water quality (9%), lack of affordable finance (25%), poaching (34%) and labour problems (30%) (R7872/C: iii).

Vegetable production

Garbage farming for vegetable production is mainly confined to the Dhapa area of the East Kolkata Wetlands, where compost is derived from solid urban waste and city sewage is used for irrigation water (Kundu *et al* 2005).

ii) In HD

Wastewater irrigated agricultural production

An estimated 60 million litres of waste water is generated daily which flows untreated through open drains into natural watercourses. In a semi-arid region such as HD, irrigation with wastewater has enabled small scale farmers to diversify their cropping practises allowing year round intensive vegetable production in specific villages close to the city and an extension of the growing season in areas further away. The nutrients in the solid fraction of the wastewater increase crop yields with the market advantage being particularly pronounced during the dry season when production limitation elsewhere ensures the highest wholesale prices. Waste water is pumped into the highest point of a precise system of furrows from where it flows into the cropping areas. The furrows are opened and closed to regulate the water flow maximising its benefit. It is labour intensive due mainly to increases in noxious weeds and pests associated with system. As a result of the hot climate, continual monoculture production, and the spraying techniques used to control insect pests, multiple pesticide resistance in the most common pest species is reported which often leads to total crop failure and changes in cropping patterns. Nonetheless, the potential profitability makes this an attractive option for at least some PU farmers (Bradford *et al* 2003).

Furthermore, in India, waste water irrigated agroforestry is a recognised strategy for wastewater disposal mainly mixed fruit orchards and agro-silviculture. Fodder for animal production (oxen and dairy) supports milk production and animal traction (Bradford *et al* 2003). The use of sewage contaminated water has health implications, which appeared to impact more on the most vulnerable, especially women and children, but the nature of these effects were considered to require further investigation (Hofmann 2005).

iii) Animal manure as a soil ameliorant

Animal manure from intensive city and PU units is a typical peri-urban waste product. Reusing such waste resources offers a potential solution to the limitations of fertility and access to artificial fertilisers experienced by many farmers in developing countries such as those described in Kumasi (R7549: 50). This potential for resource replacement serves the further function of managing peri-urban waste to offer a greater degree of environmental protection.

In India animal manures were used not only as soil ameliorants for crop production (R7099/16: 11) but were also dried as a fuel source (R8094/U). However, in Kumasi little use was made of livestock manures as soil ameliorants (R7549/4).

Another Kumasi study revealed that there were potentially far more nutrients available in organic material than in inorganic fertilisers used – essentially a wasted opportunity (Kindness 1999). Reasons given for not using available organic manures included lack of knowledge, no access to the resource, cost of bulky transport and less effective than chemical fertilisers (R7549: 51). High transport costs hindered the use of animal manures by PU crop producers in Kumasi (Hofmann 2005). Indeed, the use of organic soil ameliorants in Kumasi was seen as the least economic option for promoting soil fertility (Kindness 1999). Cultural concerns about aesthetics and odours were also noted to limit the use of manure although the most significant constraint was considered to be lack of institutional report which was a recurring PUI theme in the use of organic wastes in PU agriculture in all the PUIs examined (R7549/4.6.2).

iv) Other use of organic wastes

Some promotion of activities that utilise some types of organic waste has taken place in Kumasi. The use of waste from the city's sawmills as a substrate for mushroom production and as bedding for rabbit and grasscutter rearing, with the final waste

products being utilised to raise soil fertility, became part of the livelihood activities in Kumasi (R8090/FTR). This report also notes the use of sawdust stoves (also mentioned in HD - R8094/U). The techniques of mushroom and grasscutter production were already established in K prior to the project suggesting that some earlier awareness raising had taken place.

Commercial vermiculture is becoming an accepted technique for producing compost from organic wastes and municipal compost (R7589/4.6.2:118). However, costs of transport and labour may make this an option not easily available to resource poor farmers without greater institutional support. A common theme in all the reports analysed was that inorganic fertilisers were often perceived as essential due to lack of information about alternatives (R7867/FTR, R6799/FTR, R7099 Phase 1 report, R7872/FTR, Hofmann 2005). Lack of networking between farmers further reduced practical information available about organic wastes as an agricultural resource (Hofmann 2005). Furthermore, the declining quality of organic wastes, because of the increased admixture of plastic and other non-biodegradable waste plus the potential for toxic contamination of urban wastes, is increasing the difficulty of recycling urban wastes into per-urban agriculture.

v) Declining quality of urban wastes

In Kolkata, declining waste quality, transport problems and government subsidies on chemical fertilisers formed considerable problems for the exploitation of solid urban waste.

The solid waste is brought in via the EMB and dumped for sorting by rag pickers who remove the non organic waste fraction (polythene, glass, metals) for recycling. The conditions are hazardous and the pickers, including children, work without protection becoming exposed to untreated human faecal matter and toxic and clinical wastes as a result (Juniper 2004). The organic fraction is used as compost for vegetable growing. Almost 150 tonnes of vegetables per day are estimated to be harvested from small scale horticultural plots irrigated with wastewater (New Agriculturalist 2002).

However, the suggestion that the short term nature of vegetable growing land leasing from the KMC with traditional knowledge and practise increasingly becoming redundant or inappropriate (R7872/C: 6.4) and insecurity of tenure leaving people less willing to invest in long term strategies to maintain soil fertility (R7872/C: 35) is also pertinent. In this there are similarities with Kumasi, where a similar relationship between insecurity and changing soil fertility was reported and similar problems with changing knowledge and in the costs of transporting useful urban wastes that could be used as soil ameliorants reported. Despite the problems associated with solid urban wastes in Kolkata, vegetable farmers reported valuing the use of these organic materials suggesting that opportunities to access and safeguard supplies should be investigated (R7872/C: 36). (*More detail about insecurity of land tenure in Kumasi is in Section 3, constraints and barriers to livelihood change).*

vi) Weak institutional linkages

Legislation regulation and central or municipal control of waste disposal and environmental pollution can affect the supply of wastes making them less reliable or more expensive. This was noted particularly in Kolkata where the changing availability of sewage waste water supply was seriously affecting the livelihoods of the many users in the EKW (Bunting *et al* 2005). Similarly, legislation that is looking to remove animals from the urban areas may also affect the availability of animal manures. In Kumasi, farmers believe moving cattle rearing into the PU area will bring health risks to both animals and humans due to the presence of the tsetse fly (not a factor in urban animal keeping) (R6799/28: 30). Municipal waste collection schemes rarely connected the

waste being randomly dumped in the PUI (where it may have caused problems of pollution) with the value of the waste as a resource for PU agricultural production. However, early efforts to develop solid urban wastes as composts were not commercially successful so interest in this aspect has declined in importance at the same time as the potential for its use is increasing (R7549/4.6.2:119).

2.1.3.5 Peri-urban changes in agriculture

Despite the importance of agriculture in the livelihood portfolio of the majority, overall the number of people engaged in farming was declining. Brook and Davila 2000 (p127 quoting University of Birmingham 1998b) concluded that there was no simple relationship between proximity to the city and the decline in the number of people engaged in agriculture in HD.

By contrast, in Kumasi farming activity showed a clear decrease in agricultural activity with proximity to the city (Aberra and King 2005) supporting other observations about rising land loss and landlessness with increasing proximity to Kumasi.

Figure 9
Location of farming activity within the Kumasi PUI.

	More rural villages	Intermediate villages	More urban villages
Farming activity carried out	61%	30.5%	8.5%

i) Pressure on land availability

Pressure for space to accommodate and service an expanding urban population has created intense competition for land and is driving changing land use. Farmland availability in Kumasi declined with proximity to the city, with much farmland being allocated for housing. As a consequence landlessness was reported to be increasing (R7549). Similarly, villages surrounding HD experienced a decline in the average available land area per household (between 2-3.3%pa) Brook and Davila 2000 (p127 quoting University of Birmingham 1998b). In addition, proximity to Hubli-Dharwad meant that richer urban people were interested in investing in PU land for brick making, orchard growing or building. The higher prices offered encouraged sales by small and marginal farmers and landlessness was increasing (focus group discussions carried out as part of the PD 138 2005: 54).

Competition for land around Kumasi appeared to be most intense in the band 10 to 20 kilometres from the city centre where land use was changing most rapidly. Both intensive poultry production and intensive vegetable production were increasing here with typically young, in-migrant male farmers engaged in these activities on small plots of rented land (on average 0.5ha) and possibly showing greater entrepreneurial activity than other categories of farmers (R7549: 53). In HD, Purushothaman *et al* (2004b) noted land was being allocated within the PUI for the growing food processing industry where building land and waste disposal was relatively more available than in the city area.

In Kolkata the pressure for changing land use in the EKW is intense, although this has been restrained by successful conservation lobbying. Recent estimates put the pond area at 2,550-3000ha (down from a peak in 1945 when it covered 7,300 ha). Between 1962 and 1972 about 1520 ha of ponds were filled in using silt dredged from the Hooghly River. This reclaimed land was used to develop the residential area known as Salt Lake City, while further urban development replaced yet more fishponds during the 1970s. Another 2000 ha of ponds have been converted to rice farming since the early

1980s, as a consequence of strong market demand maintaining high prices but this conversion also acts as a precursor to redevelopment for industrial or residential purposes (R7872/C: 13). Currently, the proximity of peri-urban farming practices to the urban areas is of growing concern to municipal authorities – especially where this activity impedes urban growth (R7872/C: 7). The proximity of the EKW to the main city highway (Eastern Metropolitan Bypass or EMB) has increased its attraction for development making the pressure for fisheries owners to sell land for development immense. R7872 (C; 14) reports that although the Government is conscious of the need to preserve the wetlands, acquisition notices still threaten around 1,100 ha of the wetlands despite a 1992 Calcutta High Court ruling that:-

" no government or non government body can reclaim any more wetlands on the eastern fringes"

The effect of implementing the recent RAMSAR listing will not become apparent for some time. Given the opportunity, some farmers, mainly those who are migrants from other states, would like to sell their land rights to developers. Local resident farmers would prefer to continue farming which is their only accessible livelihood option (R7872/C: 42). The action of water pumping into the fishponds underlines the fact that the EKW wetland system is manmade and its continued existence depends on a functioning fisheries system (R7872/C: 23). Thus, breakdown of the fisheries system would further encourage silting and drying of the fishponds and increase the likelihood of its loss to urban development.

ii) Profitability

Small farm areas, from which it was difficult to make a living, insecurity of land tenure and increased potential for urban employment were assumed to have contributed to the reducing number of people in agriculture (Brook and Davila 2000: 124).

Nunan *et al* 2000 (Valuing PU Natural Resources: 76) showed typical returns from traditional cropping to be between US$333 and $1,285 per ha. With typical farm sizes being between 0.2 and 1 ha such modest returns gave farmers little incentive to invest in land improvements to enhance productivity and so little potential to move people out of poverty. However, Gregory *et al* (2004) showed that despite decreasing returns from agriculture being consistently identified as a major cause of livelihood vulnerability, farmers and landowners were reluctant to change to other income strands.

Further investigation of profitability of farming activity in Kumasi was constructed by examining outstanding debt for all farmers. Traditional crop farmers and those who mixed traditional crop with vegetable farming were burdened with higher percentages of outstanding debt than those solely cultivating vegetables (Aberra and King 2005). However, this picture was complicated by the varying distribution of debt between locations with rural farmers, who were most likely to grow traditional crops, having a lower debt burden than those in urban locations.

	More rural villages	Intermediate villages	More urban villages
Outstanding debt	23.8%	35.8%	32.2%

Source: Aberra and King 2005

These apparently contradictory findings may indicate that traditional crop farmers were more conservative about taking out loans for the less lucrative crops they grow (and as a consequence made lower inputs into these crops) but that when they did borrow money they found it harder to repay.

iii) Cropping changes

Traditional cropping patterns were changing as a result of urban-driven changes in labour availability, proximity of the market and, in Kumasi, declining soil fertility. University of Birmingham *et al* (1998a) reported agricultural cropping changes occurring in HD since the 1970s with farmers linking change to availability of irrigation and labour and to the relative profitability of different crops.

The Village Characterisation survey (R6799/08a: 56) reported changes in farming systems in most villages around Kumasi since 1983. The main changes were increased use of herbicides, decreased soil fertility (with fallow periods declining from 6.8 years in 1983 to 2.8 years in 1997), increases in maize and vegetable farming, decreases in area under tree crops and an increase in monoculture replacing intercropping.

From the data available it was difficult to differentiate between the effects of change over time from the effect of change due to urban pressure. However, data from Kumasi for example showing reducing fallow times at different distances from the city, greater prevalence of tree crops further from the city (R6799/08a: map 11) and increasing prevalence of tomato and green maize crops closer to the city (R6799/08a: map 11), offered some evidence for a trend of accelerated change in agricultural practice due to urbanisation.

The different crops grown demonstrated the differential agricultural opportunity between villages within the PU continuum. Traditional crops were grown in the more rural locations. For instance in Kumasi, rice, considered by farmers to need a 6 yr fallow period to reduce weed infestations, was being grown as a food and cash crop only in villages further from the city (R7549: 49), reinforcing the idea that opportunity for growing traditional agricultural crops was greater in PU villages further from the city centre. Aberra and King (2005) confirmed vegetable crops were more widely grown in intermediate and urban locations around Kumasi where the pressure on land precluded traditional crops that required a sizeable land area to make a profit.

Figure 10
PU location of vegetable and traditional crop growing activity, Kumasi

	More rural villages	Intermediate villages	More urban villages
Vegetable growing	46%	60%	85.7%
Traditional crops	54%	40%	14.3%

Source: Aberra and King 2005

The implication here was that as land was lost to urban development, particularly in the drier uplands more suitable for building, people moved into short term vegetable production rather than staple or perennial cropping as a response to insecurity and lack of space for agriculture.

This was amply demonstrated by the peri-urban valley bottom farming around Kumasi where farm plots consisted mostly of cash crops with minimal perennial content (tree planting) which is symptomatic of feelings of insecurity. Other signs of a short term approach were mining of soil nutrients, annual or short duration crops and ‘hit and run’ horticultural enterprises all features of PU farming and described in both K and to a lesser extent in HD (R7549: 57).

iv) Animal keeping

Threats to animal keeping in the PUI included the gradual loss of grazing within both the urban areas and the peri-urban interface that was starting to impact on animal keeping. Labour costs were rising and theft of animals was reported as a problem in the Kumasi PU area (where people considered it was perpetrated by city dwellers R7549: 86). In many countries keeping livestock in urban areas is illegal, leaving livestock producers with limited access to livestock services or information about basic animal husbandry and healthcare information (R8110). The research noted that adverse urban perceptions and tighter regulation of livestock keeping could impact on the potential for the poorest people to engage in livestock production whilst the idea that animal keeping was not an agricultural activity risked marginalising it by limiting access to institutional agricultural advice. Tightening urban livestock regulation may transfer livestock activity further into the PUI. Farmers in Kumasi believed this would present problems because of the trypanosomiasis threat that was not present in the city (due to bush vegetation in the PUI that allowed the insect vector to breed) (R6799/28: 30).

v) Labour availability

University of Birmingham *et al* 1998b *(*and R6825/07*)* showed that while the number of labourers in HD increased by 30% between 1981 and 1991 censuses, the number of agricultural labourers only increased by 16% indicating the proportion of people available for agricultural labour had declined. This competition for labour had forced changes in cropping patterns in some areas of HD. The change by some landowners to mango production, a crop with low labour demands, provided an example of two peri-urban flows; the flow of labour from rural to urban opportunity and the flow of produce to city based markets and wholesalers taking advantage of regular transport (R7867).

In Kumasi the rising costs of agricultural labour impacted more on female farmers who had most need to purchase additional labour inputs. In most cases women had to hire in labour to cultivate labour intensive crops especially in the initial stages of land preparation or tree clearance (Aberra and King 2005).

Costs of hiring labour for female farmers in the Kumasi PUI

Felicia Frempomaa, a yam cultivator from Duase, hired labour to clear land and raise mounds. In 2005 she planted 1600 mounds of white yam paying 20,000 cedis and giving 320,000 cedis solely in labour costs.

Akousa Addai, a farmer from Swedru, planted 1.5 acres of okra intercropped with cassava. She spent 300,000 cedis for clearing, 350,000 for cutting trees and pressing down and 250,000 for weeding – in total 900,000 cedis. She was able to carrying out the planting herself.

Ama Serwaa, a farmer from Swedru, borrowed 400,000 cedis for okra and cassava cultivation. She spent 150,000 on land clearing, 200,000 for clear-cleaning and 150,00 for weeding. 73.8% of the total production costs arose from hired labour.

Source: Aberra and King 2005

(Exchange rate approx 10,000 cedis to the US dollar, 17,000 to GB£)

2.1.3.6 Gender issues arising in PU agriculture

In both HD and K PUIs dependence on agricultural occupations in the poorest wealth classes was a more significant component of the livelihood strategies of women and older people (R7549: 146 Table 5.2; Gregory *et al* 2004).

In HD women were more reliant on agricultural labour than men reflecting fewer opportunities for women in alternative work areas and because land ownership normally derived from male inherited title. 73% of poor and very poor women were engaged in some kind of agricultural work either on the home farm (15%) or as paid labour on other people's farms (58%) while up to 20% of women were engaged in dairy farming or wholesale milk selling. Agricultural activity made up 43% of all income generating activity for the poorest women (Gregory *et al* 2004).

Similarly, in Kumasi 41% of women quoted farming as their main occupation compared with 29% of men (R7549/183 Table 6.5 and R6799/14:94 Table 18) while 66% of women quoted farming as one of their livelihood activities compared with 60% of men (R8090: 33 Fig 11 (from Baseline Data 2002-gender and livelihood sources).

i) Agricultural production patterns

Cropping patterns showed a marked gender dimension in Kumasi again reflecting the concentration on women in the less profitable areas of agriculture. This was not a feature in HD as women did not have personal input into crop choices.

The analysis in R7549: 51 suggested farming system in Kumasi were in rapid transition from low input staple crop based systems to higher input cash based vegetable growing systems. However, women remained in low risk, low profit staple food or subsistence cropping (maize, cassava, plantain, yam, coco yam) deepening their vulnerability by maintaining them in the less productive sectors of agricultural production. Men were more likely to be engaged in cash cropping most commonly tree crops (oil palm or cocoa) or vegetables (tomato, egg plant and leafy vegetables) (R6799/08). 78% of those cultivating vegetables were male with 54% of male vegetable farmers being single supporting other work that showed young men dominated this sector. These entrepreneurial young men were taking ready advantage of urban markets and were often migrants from the north of the country but it was not known if this activity was permanent or a temporary stepping stone to other livelihoods activities (R7549: 49).

Men appeared to have moved from tree crop growing to vegetable crop growing perhaps as a result of the relative success of this activity and land pressure and insecurity contributing to a decline in tree growing as an income generating activity (Aberra and King 2005). Women dominated only in traditional cropping and okra production. However, Aberra and King (2005) suggested that, since more participants of the recent research intervention featuring trials of alternative livelihoods cultivated traditional food crops (51.2%) than cultivated vegetables (28%), the peri-urban shift towards vegetable growing may have been overstated in earlier studies. The speed of production cycle, and therefore speed of cash flow, was an important reason for choosing a crop. This factor is likely to have the greatest significance for the poorest people. Vegetables had a shorter production cycle than other food crops cultivated within the PUI. Okra in particular could be harvested in 2 months and this may explain the predominance of women, who were often poorest and thus most likely to need rapid cash returns, growing this crop (Aberra and King 2005).

ii) Land holding

Women had discriminatory lack of access to land in HD, K and Kolkata. Personal land holding, land purchase or land and property inheritance was very rare for poor women

in HD (Pawadshetti, CO at IDS personal communication June 2003) with a similar lack of access to land assets for women in Kolkata (Working Paper 5 2002). In Kumasi, where both men and women farmed under traditional common property rights, women's land holdings were smaller than men's and women were 6% more likely than men to have only a single plot of land (R7549: 173, R6799/14: 98,Table 19).

Figure 11
Land holding by gender in Kumasi

	Mean farm plot size		
% farmers	0.1-0.8ha	0.8 - 1.6ha	> 1.6ha
Male	65	22	13
Female	81	14	5

Source: (R6799/14:98)

An additional dimension in Kumasi was the effect of age and marital status on agricultural activity. Farming as a sole occupation was most important for the older generation, with older women most likely to be engaged in farming (R7854/G: G35). In general younger people, especially girls, were less likely to have land than older people (R7854/ FTR: 49, Table 3.9) while further data from R6799/14:94 showed marital status to be an important determinant of farming engagement. Only 17% of single women and 33% of single men remained in farming leaving younger people needing to seek alternative, off farm employment *(*R7854/G).

iii) Soil fertility
There was a notable difference in the methods of maintenance of soil fertility. In HD soil ameliorants were widely used, livestock manures were integrated into cropping systems, fertility building leguminous and green crops were grown and soil ameliorants (composts and fertilisers) were used, as well as some sewage (Brook and Davila 2000). In East Kolkata, urban solid wastes and irrigation with sewage enriched water were the established means of maintaining soil fertility (*as described in section 2.1.3.4; PUI agriculture deriving from urban wastes).*

Not less than 92 commercial poultry units were recorded in or close to Kumasi (R7549: 83). The poultry manure from these intensive units (a PUI feature) presented a disposal problem for producers but only 26% of farmers used this as a resource to restore soil fertility (R7549: 50). Depending on the data either 57% (R6799/29) or 80% (R6799/b: 12) of available poultry manure was used by farmers with the remainder having to be thrown away (R7549: 84) with waste dumping most commonly occurring within the PUI. Similarly little attempt was made to exploit pig manure to raise soil fertility. Only 50% of pig farmers used this or made it available to others and even those who did this still threw part of it away (Brook and Davila 2000: 95).

In Kumasi, despite food cropping dominating farming activity, indigenous knowledge about maintaining soil fertility using traditional bush fallow techniques was no longer sustainable. There were very few livestock in the system to support soil fertility, the use of legumes or compost was not widespread and in many cases people lacked the cash to purchase chemical fertilisers. Where these were used it was for the higher value vegetable crops rather than the lower value traditional crops most frequently grown by women (R7549: 50 & Aberra and King 2005). Moreover, Brook (2000) reported increased pest and disease control problems following the intensification of production systems that may have also impinged on farmer's choice for bush fallowing. However, increasing land loss meant that fallowing times were becoming too short to maintain fertility (Holland *et al* 1996: 70, Brook and Davila 2000: 123). The potential reduction loss of soil fertility was more rapid near the city (R7549: 49) (where pressure on land

use was greatest) and on women's plots (which tended to be smallest), if diminishing bush fallow times were taken as an indicator of reducing soil fertility.

For 67% of women the fallow period was 2 years or less (R7549: 50). The consequent decline in soil fertility was considered to result in the adoption of short-term cropping patterns and a tendency to mine soil nutrients. This combination of circumstances is likely to have an increasing and cumulative effect on women's livelihoods unless steps are taken to remedy the problem.

The reduction in fallowing time has been linked to insecurity of land tenure (R7549: 55 & R6799/08) and certainly the tendency was to adopt short term cropping in the villages where pressure for land use change and consequent feelings of insecurity of tenure was greatest (R7549: 55) with women again most likely to suffer in this respect (*see section 3.1.2 iii; insecurity of land tenure*). The lack of integration between cropping and livestock farming, cultural issues surrounding the utilisation of urban waste materials such as poultry manure and other difficulties suggested the problem of low soil fertility around Kumasi was likely to intensify as a constraint to improving returns from peri-urban agriculture for both male and female farmers (R7549: 58).

Blake *et al* 1997a suggested that a decline in women's food cropping productivity might have an impact on household food provision. Certainly data collected found high levels of food shortage (60%) (R7549). PD 138 (2005: 73) assessed poverty in terms of hunger (less than 2 meals daily for more than 2 months of the year) finding around 65% of the population were often unable to meet basic food needs.

2.2. TRADING AND MARKETS WITHIN THE PUI

Key findings

- Trading in urban markets was a key peri-urban opportunity and in all three PUIs selling and trading emerged as important activities especially where good peri-urban transport infrastructure was available. In Kolkata fish was a traded as a commodity at wholesale markets within the PUI although some new markets were emerging.

- The major trading activity in both HD and K was in agricultural produce This was normally carried out by women in Kumasi and by men in HD and Kolkata. Non-food trading made up less of the trading activity, was more capital intensive and more likely to be undertaken by men in both HD and K. Non-food trading generated higher returns, but food trading was combined with meeting basic household food needs, with lower cash returns quoted as a result.

- Trading formed an important income generating activity for poor women especially in K where it was a traditional female activity. The increasing importance of trading for women in the Kumasi PUI was linked to declining access to natural capital, especially the loss of land for female farmers in villages closer to the urban centre where urbanisation is fastest.

- The scale of trading determined profitability; consequently hawking and small scale or petty trading was an indicator of poverty. Trading generated small returns but gave a reliable daily income. This pattern of need for constant daily returns to meet consumption needs reduced the possibility for reinvestment becoming a coping mechanism rather than a route out of poverty.

- Many traditionally produced consumer durables (pots and baskets) were under pressure from cheaper and more convenient commercially produced goods (sometimes imported). Other local products have retained a robust market share by meeting traditional needs and preferences (incense sticks or ‘royal’ cloth). Some products, mainly introduced by migrants wishing to retain their cultural links, have established new market niches.

- Small agricultural producers were limited to local and village markets or direct selling while larger farmers, growing a wider variety of crops, were better placed to access wholesale, regional and national markets in both HD and K.

- Inadequate linkage of local agricultural markets (in HD) to wider national or international ones and inadequate market information (in both HD and K) led to production gluts and price variability, potentially discouraging poor farmers from diversifying into the higher value, high risk crops often cited as a key peri-urban opportunity. On-farm storage, access to credit and technical and market information were found essential to help farmers manage their marketing.

- An important opportunity for women in the Kumasi PUI was trading processed food. Adding value to food products by processing was an important income generating opportunity making particular use of women’s traditional skills with the secondary benefit of reducing seasonal agricultural surpluses. In HD moving food processing into the formal economy e.g. the mango pulping factory, reduced its potential as an income generating activity for women.

2.2.1 Trading and selling as a PU based livelihood activity

Selling[14] and trading[15] in urban and peri-urban markets emerged as key opportunities for all socio-economic groups in both HD and K. High value perishable products especially fruit, vegetables, flowers and fish were a feature of trading all 3 PUIs studied (K, HD and Kolkata). People sold their own produce, traded by buying wholesale to sell retail, or a mixture of both activities with some people or groups becoming specialised commodity dealers. When non-poor people carried out trading or selling, it was formulated more formally and permanently as businesses or shops. The outcome of trading activity varied between rich and poor and between genders. For instance, there was a qualitative difference between trading and hawking and large scale trading in Kumasi, with the former two activities being considered indictors of poverty and typically undertaken by women, while the latter category contained the richest village members, usually male household heads (Village Characterisation Study quoted in R7854/G: G6).

Trading activity within both the HD and K PUIs was complex and featured typical PUI flows of goods; i.e. rural production going into the city and manufactured or processed goods that may be unavailable in rural or peri-urban areas being brought from the city. Traders took advantage of price differentials in the different areas to generate income. This could encompass buying agricultural or locally produced consumer goods (such as leaf plates in HD, grass mats or shoes in K) in the more rural areas and selling at higher prices closer to the city; buying domestic goods such as salt, oils, detergent, or other foodstuffs wholesale in the city and then selling retail (sometimes repacking bulk goods into smaller packs) or trading in factory made consumer goods (such as bangles, combs, radios, matches, toothbrushes etc) to supply rural consumers.

Consumer goods for sale could be factory made and/or imported (e.g. toothbrushes, bangles, clothing) locally produced by artisans (cloth, leaf plates, grass woven ware, woodcarving, shoes) or second hand (clothing in K). Traditionally produced consumer items (pottery, baskets, shoes, grass weaving and woodcarving) were under pressure from commercially produced goods that were cheaper or more convenient. Other products, often those introduced by migrants wishing to retain their cultural links, have established new market niches (e.g. Fante kenkey[16]). Some local products such as alata soap[17] and royal cloth (in K) and leaf plates and agarbatti incense sticks (in HD) retained a robust market share based on meeting traditional local needs and preferences.

In K the poor were reported as still being able to collect a range of forest products for sale. This included snails, mushrooms, fuel wood and charcoal, kapok, chewing sticks, wild fruits, mango and cola nut, grasscutters, sponges and a range of leaves for various uses. These products were becoming scarcer as forest resources disappeared removing an important livelihood strand from the poor. In K foraged forest plants were being sold to pharmaceutical companies although it wasn't stated where these companies were located or what plants they were utilising (R8090).

The growing population of the PUI created opportunities for traders by increasing market demand. 50% of R8090 (Kumasi) project beneficiaries identified the presence of a stable market as the reason for adopting the activity (Aberra and King 2005). The ease of access to urban markets affected the type of produce traded, with perishable

[14] Selling is defined as sales of the products of primary or secondary sectoral production (sectors defined after Barrett *et al* 2001).
[15] Trading here is defined as buying products (wholesale) to sell at a retail profit.
[16] A long lasting maize meal wrapped in dried plantain leaves that is eaten with hot pepper, fish or sugar (R8090Bi C: 31) eaten in Kumasi.
[17] A type of locally made soap

agricultural produce such as fruit, vegetables and milk being primary choices for peri-urban producer/traders (Brook *et al* 2003; 69 & R7549: 181).

A wide range of market outlets were described in both K and HD PUIs ranging from permanent shops and kiosks, temporary stalls, an allocated space within the market, squatter markets, a place on the pavement/ at the side of the road, hawking, retailing from house to house and street vending. Agricultural commodity sales could be made via specialised agricultural sales infrastructures. Trading and selling in some urban markets in both HD and K was not accessible to certain sectors of the poor.

The poor in Kumasi used roadside table tops, floor pitches, or direct hawking – which had the advantage that it was not necessary to pay a fee for the pitch - but which people disliked because it was tiring and risky. Daily markets occurred in between 25% and 50% of all villages in the area studied around Kumasi. However, daily markets were more common within the intermediate villages suggesting that urban villages were more dependent on the Kumasi urban centre for trading. (R7854/G: G10)

Returns from trading in K were small but reliable on a daily basis (PD138: 2005), which was also the main reason for choosing this activity (R8090 & Aberra and King 2005). However, this feature of small returns needed for daily consumption limited reinvestment in goods and so limited the women's potential for diversifying or scaling-up their activity.

In Kolkata the trading activity mentioned was linked to the wetlands production system, and featured fish, vegetables and rice sales but the range of trading activity was not specifically investigated.

2.2.2 Who traded?

The natural resource focus of the HD research meant there was little characterisation of markets other than agricultural markets. The detail of trading in HD centred around the structure and function of agricultural markets with little information about the importance of trading activity to the poor and very poor, although the trade in milk and curds by women in HD was described (Brook *et al* 2003). Some people traditionally specialised in buying and reselling specific agricultural products, for example, the Gowlie caste in HD traded (i.e. bought and sold) milk as middlemen (R7867). In Kumasi traditional 'Market Queens' were significant in the trading of agricultural goods (R7854).

The cultural differences between HD and K were more marked in selling and trading than in other livelihood activities. This was mainly due to the differing cultural expectations of women's roles. In Kumasi trading was seen as a female activity and petty trading and hawking were considered a characteristic of the female poor. In HD, fewer women lived by trading where women's livelihoods traditionally remained close to home. However, very poor women in HD were noted to engage in petty trade for immediate cash return but little else was documented about trading as an activity for the very poor (R7867).

Nonetheless some women were skilled traders. Gregory (2003) showed 10% of women interviewed were traders, while another 37% of the sample included trading in their portfolio of activities. These women traders had learned the skills needed from their families or their husbands. In HD, self-help groups (SHGs) formed bulk buying groups to save household cash and some of the women further developed this activity to become independent traders *(personal communication with SHG members Kelageri and Mugad June 2003).*

The following case study shows how poor people can take advantage of their peri-urban position to engage in petty trading.

Jaibun and Shamshuddin – Mugad Village HD

Jaibun (35) was married to Shamshuddin (48) and they had 5 children. Together they traded a range of goods planned to smooth out seasonal income flows. They bought groundnuts, chickpeas (and sometimes rice) for retail sale in the district. In addition, Shamshuddin sold ice cream - 500 sticks a day for 7 months of the year while Jaibun sold roti[18] and charcoal that she made herself.

The charcoal was made using wood collected by the children as Jaibun rarely left the village (*although she noted that things were not as strict as they were when she was a child and women and girls could not leave the home*).

Shamshuddin bought groundnuts, chickpeas and rice from wholesalers in Dharwad and supplies of ice cream from a factory in Dharwad. He travelled to collect supplies using the bus but makes his sales using his bicycle. When he started selling ice cream the ice cream factory was located in the village and the relocation of the factory would have made things difficult if he hadn't already been well established as a trader. He made a small amount of extra money by collecting (whisky) bottles and returning them to the sellers.

Chickpea and groundnut selling was a seasonal activity carried out during the rainy season and supplemented by agricultural labour at other times. It gave Jaibun a regular profit of 10 rupees per day (compared with 25 rupees/day she could earn as an agricultural labourer) Charcoal selling was a year round activity and earned 15r /box. Shamshuddin sold goods further afield using the bicycle while Jaibun sold to her neighbours and others in the village.

'Selling roti gives the most profit. I sell up to 50 roti every day'.

Jaibun had been trading for the last 10 years and had amassed 10,000r in savings. She sometimes made loans to others at 5% interest per month (taking gold jewellery as security). Her husband had been trading for 5 years and had saved 3,000r that he kept in the village bank.

Source : Case study from Gregory 2003

Exchange rate in 2003 = 44r/GB£

The gender difference in the goods traded was especially notable within the K PUI. Young men traded almost exclusively in non-food goods[19] hawked over a wide area. Older men were only reported as sellers of their own produce. Older women traded in vegetables, agricultural produce and other uncooked foods,[20] while young women were more likely to deal in processed and cooked foods adding value to them before trading e.g. wide variety of cooked food[21], sliced and packed fruit, iced water. The socio-economic differences were less well characterised, although it was clear that most of the trading described was petty trading which featured as a defining characteristic of the poor.

[18] A type of Indian flat bread
[19] Non-food items: included sandals, charcoal, firewood, soap, second hand clothes, cattle skins (Aberra 2005:8).
[20] Uncooked food: fruit, aubergines (garden eggs), palm oil, palm kernel oil, pork meat, cassava, yam, dry fish, dry bush meat, corn, plantain, maize, fowls, groundnuts, okra, orange, palm nut, Patrice, pepper, onions (Aberra 2005:8)
[21] Cooked food: chips, rice, corn or cassava dough, cooked rice, banku, doughnut, fante kenkey, gari, kawuro, 'akpeteshie' (local alcohol), fish, iced water, konkote (cooked cassava powder), rice porridge, tea and bread, kokoo (corn dough porridge) (Aberra 2005:8).

Honey and small animals for meat were also sold. Some meat and fish smoking may be carried out prior to sale. Solomon (R6799/28:63) quoted the following prices in 1999: grass cutters 30,000-40,000 cedis; rabbits 12 –20,000 cedis; honey 3,500 cedis, snails 350 cedis, giant rat 5,000 cedis.

Women in the R8090 interventions traded goods in the following proportions: uncooked food items (53.2%) cooked food items (38%) and non food items (8.8%).

Old women crop traders Aburaso, Kumasi

The respondents traded in vegetables especially aubergines, tomatoes, peppers, vegetable oil, smoked fish and staple foods such as cassava. They were well established traders with many years experience. They had learned the business from relatives and were motivated to continue by their own observations of the available opportunities. Most of their activity was village based. Some travelled to other villages but hawking was disliked because it was time consuming, tiring and risky. They gained advice and support from their colleagues but had no other sources of information.

The women bought their food items from the main market in Kumasi where sellers and buyers met to trade and sold it to customers in the village. Until the late 1990s the women traded from their homes but village elders thought they would be better trading from a single spot. Now they have individual tables with rough palm branch roofs (that leak in the rain). Anyone could set up a table to trade and no licence was needed. Traders paid a monthly rate to their district administration of 4,000 cedis for a table and 15,000 for a kiosk.

Capital needed to start was between 300,000 and 1,000,000 cedis (around US $30-100). Ongoing costs were mostly for transport to buy goods and for delivery charges. People often bought goods daily and transport and delivery costs could be substantial. People needed to eat while they were away from home and they had to pay for a health inspection costing 10,000 cedis.

Many relied on social capital for credit for goods especially when they were starting. They noted that this was not so easy now. Cheating had reduced trust and credit was now based on established relationships between traders and wholesalers. Some had gained financial support from their husbands to start or had saved capital from their own paid work. People were not keen to take or give informal credit as it led to bad feeling and harassment.

Income was constant but fluctuating ranging from 5,000 to 20,000 cedis daily. Occasionally losses could be incurred. Sometimes goods were not available to buy and then income was lost. At other times goods were lost due to lack of suitable storage. During festivals or when there the market is glutted people do not need their goods and their businesses suffer.

The women liked this way of making a living. They found it physically easier than farming and they get a regular income. Their main constraints were lack of capital to expand or diversify and lack of suitable storage to prevent spoilage.

Source: R7854/ H: H28 Kumasi focus group studies

(Exchange rate approx 10,000 cedis to the US dollar, 17,000 to GB£)

2.2.3 Value addition

Adding value[22] to food products was a key income generating opportunity within the Kumasi PUI with particular resonance for young women living in urban or peri-urban locations where they were shown to have less access to natural resources than any

[22] Additional processing, however simple, carried out to allow extra income to be gained from primary agricultural products.

other group (R7854/G). Cooked and processed food trading was considered reasonably lucrative with one person who was normally a hairdresser stating that fluctuations in demand for hairdressing meant she could earn more from iced water sales than her hairdressing enterprise (R7854/H: H23).

Young women cooked food sellers in Duase; Kumasi

A group of experienced women cooked food sellers explained that this activity needed no specialist training and used traditional female skills. The main food sold was Konkonte[23] and Banku[24] eaten with soups, rice and stew and rice balls. In addition they sometimes sold iced water and other drinks. Little capital was needed other than for utensils and food items and people raised the capital from their own small savings or family support (e.g. in the form of spare utensils). Several female family members often shared resources. Estimated operating capital needed to start was around 300,000 cedis (about $25 US) to buy utensils, fuel wood, ingredients, transport to buy food, assembly rates and fees although one person started with only 70,000 cedis that she repaid without interest within 3 months.

They traded from tables set up along the main road and the more established sellers might have a covered seating area with chairs and tables. Food and drink sellers needed a trading licence. Not all of them had this; family businesses usually shared a licence. They paid local currency equivalent of $5US for an annual licence plus local rates to the Kumasi Metropolitan Assembly. Health Inspectors visited to educate them on health and sanitation.

Customers came from all walks of life but demand was variable. Demand was highest at month ends when workers collected their salaries and during lean seasons when food was scarce. In the harvest season patronage fell, thought to be due to food being in abundance and people cooking their own food. Most of the ingredients were bought from Kumasi Central Market. Sellers ate free from the cooked food as well as making a cash profit for other household needs. Estimated turnover was 200,000 - 280,000 cedis (assumed daily) producing a profit range of 20,000 –50,000 cedis considered lucrative compared with crop farming. Few kept full records so figures were estimates. The interviews finished with wise words about not selling to customers on credit as that *'encourages you to run bankrupt'.*

Constraints recognised were – health hazards from the open fires, lack of funds to expand and improve the business, high costs of firewood and transportation, scarcity of water and difficulties of hiring labour for more tedious tasks. Space was a major constraint as well as competition, with many people all selling similar products. Interviewees thought that modern LPG cookers, refrigerated storage, being able to construct safe eating places and a reliable water supply would all make a significant improvement to their businesses. Some women would have liked to diversify or expand but their entrepreneurial ideas were limited by lack of capital. There was an additional tax levied on kiosks and shops. People whose homes were not on the main road might have to negotiate a payment to gain a trading spot.

Source: R7854/ H: H24 Kumasi focus group studies

(Exchange rate approx 10,000 cedis to the US dollar, 17,000 to GB£)

In both K and HD, men were inclined to trade in higher value goods, agricultural commodities in bulk, non-food and consumer goods and in greater quantities of goods than women. However, in Kumasi, only 9.1% of overall trade involved non-food items, reflecting the lower level of interest men have in trading (Aberra 2005:9).

[23] Konkonte – cooked cassava powder
[24] Banku –fermented dough cooked to a smooth paste and served with soup stew or sauce

Young male traders Duase; Kumasi

These young men were partly educated with some artisanal skills but a downturn in their original activity led to them into taking up trading. They traded almost exclusively in non-food goods, hardware, underwear etc hawked over a wide area. The businesses started on a small scale and had improved over time as they were able to add more items. None of the young men had stalls or shops and had to carry their goods from place to place in containers. Demand varied with the month end rising when people have been paid and during festive periods for some items.

They received no technical information from anywhere but over time had learned what goods there is demand for and purchase accordingly. Capital needed to start varied between 200,000 and 500,000 cedis (approx $20-50 US) depending on the types of goods sold. Capital was required for purchasing the sale goods and the container for carrying them. Costs included an annual trading licence costing 8,000 cedis and a daily ticket costing about 200 cedis. Turnover was estimated at 500,000 cedis per day yielding a profit of around 40,000 - 80,000 cedis weekly. No-one kept any records but they were keenly aware of their profit margins and considered they were able to give a good price to customers because they were able to move round to take advantage of market changes. Lack of access to credit meant that people used their own savings or family credit and profits were currently being reinvested to expand the trade. At times they got credit from wholesalers but did not risk giving credit to customers.

Each of the traders was happy with their business. Constraints recognised were lack of capital to expand the business, lack of a settled place to trade (which they would prefer not to have to move around so much) and limited support from anyone.

Source: R7854/ H: H28 Kumasi focus group studies

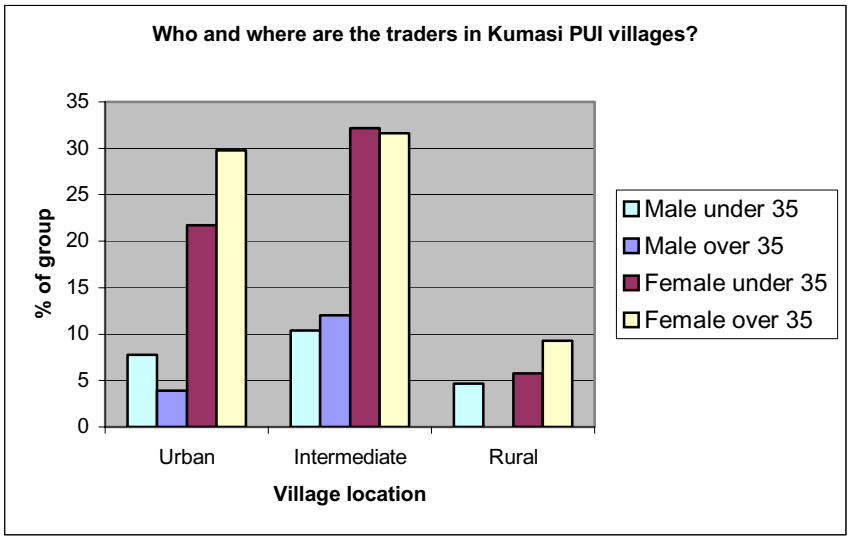
(Exchange rate approx 10,000 cedis to the US dollar, 17,000 to 1£ GB)

The Kumasi VCS identified trading as a particularly important non-farm activity for women in almost all villages while for men it was confined to specific urban villages (R7854/G: G7 Table 7). People in the larger urban villages were more active as traders, while it was less important for those in rural locations where subsistence farming options were still open, especially for women, giving trading activity a distinct peri-urban dimension. This pattern was confirmed by those taking up trading as part of the R8090 interventions (Aberra and King 2005). Taking up trading was the most significant income generating alternative used by people in order to cope with land loss in peri-urban Kumasi (Brook and Davila 2000/ 6.17: 210). Respondents in urban and peri-urban villages identified proximity to the urban centre, and easy transportation as beneficial to their trading activity (R7854).

By contrast, trading in HD was of greater importance to the income generating activities of poor people in villages further from the city than in the nearer villages. This probably related to the more limited availability of goods in the further villages and easier access of consumers in villages nearer to urban markets (Brook *et al* 2003: 70).

Figure 12

Who and where are the traders in Kumasi PUI villages



Source R7854: Adapted from Annex G; G37-39 Tables 12-15

2.2.4 Agricultural markets

Markets for agricultural produce were characterised (in some detail in HD, more broadly in K) underlining the continuing importance of farming within the PUI and the central role of both cities in marketing and relaying agricultural produce. The workings of these complex markets were broadly similar in both HD and K but the detail of market access had important repercussions for poor farmers and petty traders. Producers sold to wholesalers, small traders or directly to customers. Individual traders bought produce both from city based wholesalers and direct from farmers. However, public sector marketing of agricultural produce was an important feature in HD (Brook *et al* 2003) while this was rare in K, with the market being dominated by private traders and large marketing companies (R7549: 181).

Agricultural products typically sold in local markets in both HD and K were perishable products especially vegetables, fruit, eggs, and occasionally fish and mushrooms. Brook *et al* 2003: 69 showed that fruit and milk purchase and sales were a favoured income generating option in HD if there was a convenient market. Milk and curds had a complex market in HD (Brook *et al* 2003: 7). Lactose intolerance limited the market for milk in K but many people still purchased and used milk and milk products (Brook and Davila 2000:90). Meat sales depended on local religious observance and were not common in HD despite there being plenty of animals including roaming urban pigs. In Kumasi there was demand for meat but it was not shown to be a significant feature of poor producers livelihoods (R7549/3: 79). In HD flowers were also an important commodity taking advantage of demand for flowers during religious festivals (R7549/2).

Staple foods were traded in a variety of ways. Since they are easily stored they were more likely to be traded in bulk as commodities through the large scale, structured market systems available in K and HD. Small farmers in both places traded surplus staple produce only after they had met household consumption or more perishable crops that presented storage problems. This restricted the markets they were able to enter and consequently the prices they received for their produce. Older women featured as traders in agricultural produce in Kumasi while men were the traders in agricultural produce in HD. Gender and wealth differences were reflected in the scale, and therefore the profitability of the trading activity.

Acknowledgement of acceptable market price and ease of sales was made in both PUIs. Consequently, agricultural goods were the most popular goods to be traded because the market was understood, demand could be estimated and price ranges were known allowing an estimation of risk (R 8090 and R7854). However, commodity prices were also acknowledged to be unstable (R7854). Poor market information was identified as an issue in both HD and K (Brook *et al* 2003 & R7954). This often led to production of the wrong commodities for the market or surplus perishable goods with no market outlet leading to waste and loss. This was noted in the Kumasi action plans (R7995) as a problem but the R8090 interventions failed to test new ideas for processing and adding value to agricultural products.

i) Agricultural markets in Hubli-Dharwad

Agricultural markets in HD were described as fragmented with inadequate linkage of local markets to wider national or international ones. Consequently there were frequent localised gluts and price variability. This discouraged peri-urban farmers, especially those who were poor, from diversifying into higher value, high risk crops instead sticking to traditional staple crops in order to manage post harvest price and storage risks. Consequently, poorer farmers were moving away from producing horticultural products often cited as a key per-urban opportunity (R6825/4.6:50). This contradicted the expected picture of well-developed peri-urban markets and indicated that on farm storage, commodity processing and value added production and accessible, up to date market information were essential to support farmers in managing their marketing.

The availability of a reliable marketing chain for agricultural produce profoundly influenced household cropping decisions. In HD, crop profitability was linked to the development of specialised regional commodity markets (Brook 2002). The city was central to the marketing of food crops. Although marketing organisations existed in Karnataka there was little information about how they benefited poor farmers. University of Birmingham *et al* (1998b) hypothesised that the larger producers sold crops into the wider markets while the smaller producers served the local markets, which appeared to be less organised with higher transaction costs. A feature of cash cropping agricultural production systems around HD was that many were not dependent on the city for marketing. For instance chilli was sold at Sirsi (100km west), potato in Belgaum (75 km North) and mangoes were exported from Mumbai.

Despite the high level of market fragmentation noted a wide range of agricultural production marketing was described in HD (R6854).

The following marketing routes were identified in the HD PUI:

- Small scale producer marketing
- Sale to village merchants
- Sale though contractors and dealers
- Sale through various forms of government regulated markets
- Marketing through co-operatives

In India, a Government supported, regulated market for some farm products existed using a widespread system of commission agents giving producers a reliable outlet at a controlled price. Producers had to deliver their harvest to the agents, so those without transport needed to sell to an intermediary who collected from the farm gate (R6825: 54) with consequent price penalty. Selling commodities on a small scale or speculative sales of surplus production after household needs had been met disadvantaged small (and thus characterised as poor) producers. Brook *et al* (2003 Ch 6) demonstrated how small producers were limited to local and village markets or direct selling while larger, (non-poor) farmers growing a wider variety of crops, were better placed to access wholesale, regional and national markets (*see HD Market Structures at 2.2.6 of this*

document). The larger and more specialised crop farmers always gained the best market locations (Brook *et al* 2002)

Women in HD so rarely owned land or produced crops independently of men that agricultural trading was perforce a male dominated activity. However, certain dairy markets were accessible trading and sales arenas for women (Brook *et al* 2003).

ii) Agricultural markets in Kumasi

With a long tradition of trade, the Asante people had a well organised local and regional market system. Highly structured markets featured a variety of market organisations each trading different agricultural produce. Association members elected queen mothers, or market queens, to maintain order and set prices. The Kumasi central market is a major relay hub for West African trade and a vibrant consumer market. However, agricultural markets in Kumasi had not been systematically characterised, although the Baseline Report stated that 10 market queens were interviewed (R6799/30:9-10).

The marketing of food crops was dominated by a large number of private independent traders and large marketing firms. Market queens and agents were in close contact with market information. Market queens were consulted daily about the interactions between the central market and surrounding areas. No detail was given about the type of information they received or how they managed this information to set prices. Arrangements were sometimes made between farmers and contract dealers who acted as commission agents selling produce to traders for a fee. Agents could maximise price returns by using their market knowledge and contacts. Within a distance of about 16K (2000 estimate from R7549) farmers took their products to Kumasi, while those further away waited for wholesalers or traders to visit them. Farmers taking their own produce were also able to arrange cash advances for their goods.

Traders from Kumasi visited many villages on a daily basis to collect produce to take to the city, and conversely village traders went early to Kumasi to bring back perishable items (meat/fish) and imported goods to sell in the villages. Some village markets closer to Kumasi were thought to have reduced in importance as producers, traders and consumers increasingly used the larger markets in Kumasi. (7549:181 quoting R6799/08a and R6448/01:43-45). In Kumasi traders established by tradition dominated the main city markets making access impossible for new traders (Aberra and King 2005, Aberra 2005:11). This left poorer women, especially those in the more urban villages, where trading was most significant, more dependent on peri-urban markets, some of which were already thought to be shrinking. Competition in this sector was therefore intense and had already been identified as a livelihood threat by traders (Aberra 2005).

Farmers in only one rural village raised physical access to markets as a significant problem, citing the cost of head loading to the road to meet traders who came twice weekly but only when they were invited. The cost of head loading was double that of trucking produce to Kumasi, demonstrating the advantage gained by producers in peri-urban villages with good transport connections to the city (R7954: 181).

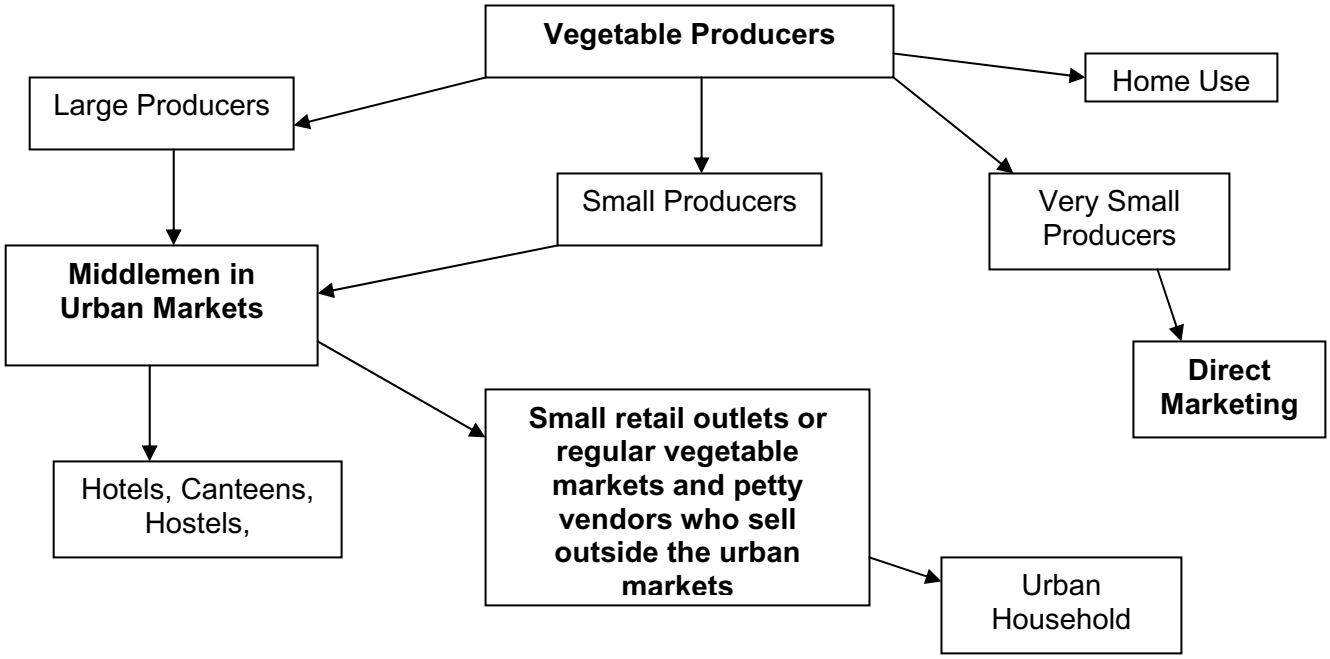
Brook 2000 (R7549: 55) reported that non perishable foodstuffs could come into Kumasi from great distances. Thus maize came into Kumasi from the Brong Ahafo region, yams from Ejura Kintampo, cassava from greater Accra and millet and legumes from the northern, upper eastern and western regions. Only bulky crops such as coco yams and plantain were supplied from the PUI where conditions were more suitable and available transport gave a comparative advantage. Local producers suggested the reasons for this influx of commodities from other areas were that lower unit costs prevailed, more land was available, the climate was better or labour was cheaper.

However, evidence for this was anecdotal so it was unclear what market factors actually affected agricultural production in the K PUI.

The following marketing routes were identified in the K PUI:

- Small scale direct producer marketing
- Through daily and weekly village retail markets
- Sale in the Kumasi central market and associated structures
- Through established producer marketing associations
- Sale to established outlets though contractors and dealers who visit villages
- Sale to established outlets through commission agents acting as intermediaries between wholesalers and producers
- Direct sale to large scale private wholesalers (companies and individuals)

Figure 13
Network for marketing horticultural produce in Hubli Dharwad



Source: Brook and Davila (eds) 2000: 85

2.2.5 Markets and trading in Kolkata

Information about markets and trading as income generating activities in the Kolkata PUI was limited. Market information was restricted to the marketing of fish and to a lesser extent vegetables. Kundu *et al* (2005) stated that, without exception, the entire fish production is sold through four wholesale markets located in the wetlands from whence they are distributed to scattered city retail markets in Kolkata. The costs and risks involved with transporting perishable products (especially live fish) apparently made farmers reluctant to sell directly to urban markets despite their proximity (Kundu *et al* 2005). However, they later noted that fish are increasingly being marketed in provincial towns and that marketing is becoming a problem although the reasons for this were not detailed (Kundu *et al* 2005). However, Morrice *et al* (1998 cited in R7872/ C: 6.2), surveying fish markets in Kolkata, recorded that large sized Indian major carp had mostly been imported from other states suggesting a wider variety of market

niches are being exploited by a wider variety of competitors. Both men and women were noted to trade in vegetables (R7872/C: iii & Working paper 5 2002: 18) and some men specialised in fish seed trading which was lucrative but seasonal and often disrupted by political instability (working paper 5 2002:36). Little further detail was recorded about other trading activities of either gender.

2.2.6 PUI market structures identified

Market structures in Hubli-Dharwad

Daily city markets
These were larger markets catering to large local urban populations. They dealt in both wholesale and retail sales procuring consumables goods from both rural and peri-urban sources and selling to retail outlets and consumers. Middlemen buy and sell produce on a large scale.

Weekly rural markets
The rural population buy and sell commodities in weekly held markets. These markets cater for the needs of a cluster of nearby villages and sell consumer durables and agricultural inputs as well as foodstuffs. Middlemen also procure agricultural commodities from these markets but on a smaller scale than the main city markets.

Direct marketing
Is done mainly by farmers with small amounts of produce to sell and immediate cash needs to meet. They sold from house to house meeting daily consumption needs or to retail shops. Perishable products, milk, vegetables and fruit are the most important products to be sold this way but hotels and some shops also procure staples on a small scale. The clear advantage was immediate payment and advantageous price by excluding middlemen. The disadvantage is the time taken which reduces time on the farm. Large scale producers never undertook direct marketing.

Farmer's markets
In Hubli, the government have recently created farmers markets ('*raithara santhe*'). This provides farmers with space in urban markets enabling direct marketing to the public in order to shorten the marketing chain.

Cash cropping markets
A feature of production systems around HD is that many were not dependent on the city for marketing. For instance chilli was sold at Sirsi (100km west), potato in Belgaum (75 km North), mangoes exported from Mumbai. The city was more important for marketing food crops.

Marketing Organisations
Government supported bodies offer price support, storage and marketing facilities for agricultural produce. They are structured organisations licensed and monitored by the government via agents. Goods are pooled, stored and displayed at the premises and are sold by auction or tender. The system allows farmers to have an advance payment for their goods prior to sale. The system exists at block (Taluk) and district level but transport limitations allow small farmers and peri-urban based farmers to access these structures more easily at district level. Farmers in small villages away from main transport routes have to rely on middlemen and thus get lower prices for their produce than those in more competitive positions.

Source: Brook et al 2003 Ch 6 & R7549

Market structures in Kumasi

Kumasi Central Market
This is a major consumer, wholesale and relay market for trade throughout Ghana and west Africa. Market interaction is controlled by 'Market Queens' who set prices and maintain orderly trading. Agricultural produce comes into Kumasi from a wide area of Ghana as well as local villages in the PUI. Perishable or bulkier crops tended to be supplied from within the Kumasi area (R7549:180). Non-food products produced in PU villages are also sold here (e.g. shoe making or carving work done by Duase youth R7854/G: G57).

Producer marketing associations
They appeared to be part of the Kumasi market structure. They dealt with different commodities, with association members electing the 'market queen' for their association. (*R6825*)

Wholesale markets
Independent private traders and large marketing companies control the wholesale marketing of food crops. Little information exists about the types of crops traded but staple crops are most easily traded this way. There was no information collected about the access of smaller farmers to this market but transport costs may be a significant factor in market access. Farmers in small villages away from main transport routes often had to rely on middlemen getting lower prices for their produce than those in more competitive positions. Farmers delivering their own goods were able to negotiate an advance payment for their goods on delivery but prior to sale.

Contractors, dealers and agents
Dealers and traders buy produce for both wholesale and retail sale especially from villages where people have reduced access to transport or where there is a glut of produce. Commission agents sometimes arrange sales between farmers and contract dealers selling produce to traders and wholesalers for a fee but using their intimate market knowledge to get the best price. Traders commute from the city to farms in peri-urban and rural villages to purchase vegetables (tomatoes, chillies, okra, aubergines) for retail sale in the city.

Daily markets
These occur in 25-50% of villages with the highest proportion in the peri-urban zone suggesting that 'urban' villages rely more on city markets for their consumption buying (R7854/G10). Products sold most significantly featured food products (either home produced or purchased for sale) including cooked food products (R7954/H: 24) and non food products such as clothes or domestic provisions. Traders sold goods from the roadside or from stands erected by the council.

Weekly markets
They are uncommon with only 1 village in 20 rural and peri-urban villages holding these markets.

Small scale marketing of produce
This is done by farmers or traders with small amounts of produce to sell and immediate cash needs to meet. Some women farmers take their produce to the city for retail sale to gain the maximum available price for their produce. Others sell goods in their own villages as street traders or from permanent kiosks where there are no formal markets available. Perishable products, such as vegetables and fruit were the most important products to be sold this way. Other products traded included dry domestic provisions and foodstuffs brought from the city for retail sale. Petty trade of food crops was an important activity for young women (R7854/H:11)

Sources: Constructed from data in R7549 and R7854

3.0 CONSTRAINTS AND BARRIERS TO LIVELIHOOD CHANGE

Key findings

Natural capital constraints

- Loss of access to land was a major cause of negative impact on the livelihoods of the peri-urban poor. The cases studied reaffirmed that land use change and land value increases are defining characteristics of the PUI.

- Farmers rarely, if ever, received compensation for the loss of their land use rights that was commensurate with the value of the land for their livelihoods.

- Land and soil productivity was being lost due to extraction and quarrying of building materials to meet urban construction requirements.

- Lack of access to natural resources, especially land and forest, limited traditional self provision, moving people into a monetised economy. This could be considered a further defining characteristic of the PUI.

- Poor urban and peri-urban waste disposal methods polluted water and soils used by peri-urban populations. The nature and quality of urban waste was changing, with greater plastic and chemical use compromising traditional systems that utilise biologically based urban waste as a productive resource.

Financial capital constraints

- Low pay and/or small returns from business of farming, petty trading, and low-waged casual urban and rural work left little scope for savings or investment for PUI residents. Lack of savings, secure work and property rights, small profits and low farm prices all acted to reduce access to formal credit sources.

- The need for credit to enable people to develop alternative income generating activities was more acute in the PUI because of the loss of access to the natural resources that maintained traditional livelihood activities. Lack of access to affordable credit was a significant barrier preventing people from taking advantage of new opportunities arising from urbanisation, expanding or diversifying existing businesses, developing sufficient scale to make traditional activities profitable or taking up new training options.

- Lack of market intelligence meant that small producers were not easily able to match supply with market demand while restricted access to large scale markets sometimes excluded or replaced small peri-urban suppliers. Less poor producers benefited most from existing market structures. With many people producing similar perishable products seasonally, glutted markets were a PUI feature, which was recognised by people as a problem but no solution was addressed.

Social and political capital constraints

- Migration and greater urban contact have eroded social capital and changed attitudes among peri-urban populations. Changes in community composition had altered traditional social structures and status. A reduction in community based action had affected natural resource protection. Changing social structures had restricted input into decision making and planning for the poorest community

members.

- Geographically based boundaries between rural and urban administrations fragmented government interest and policy making, reaffirming another defining characteristic of the peri-urban interface.

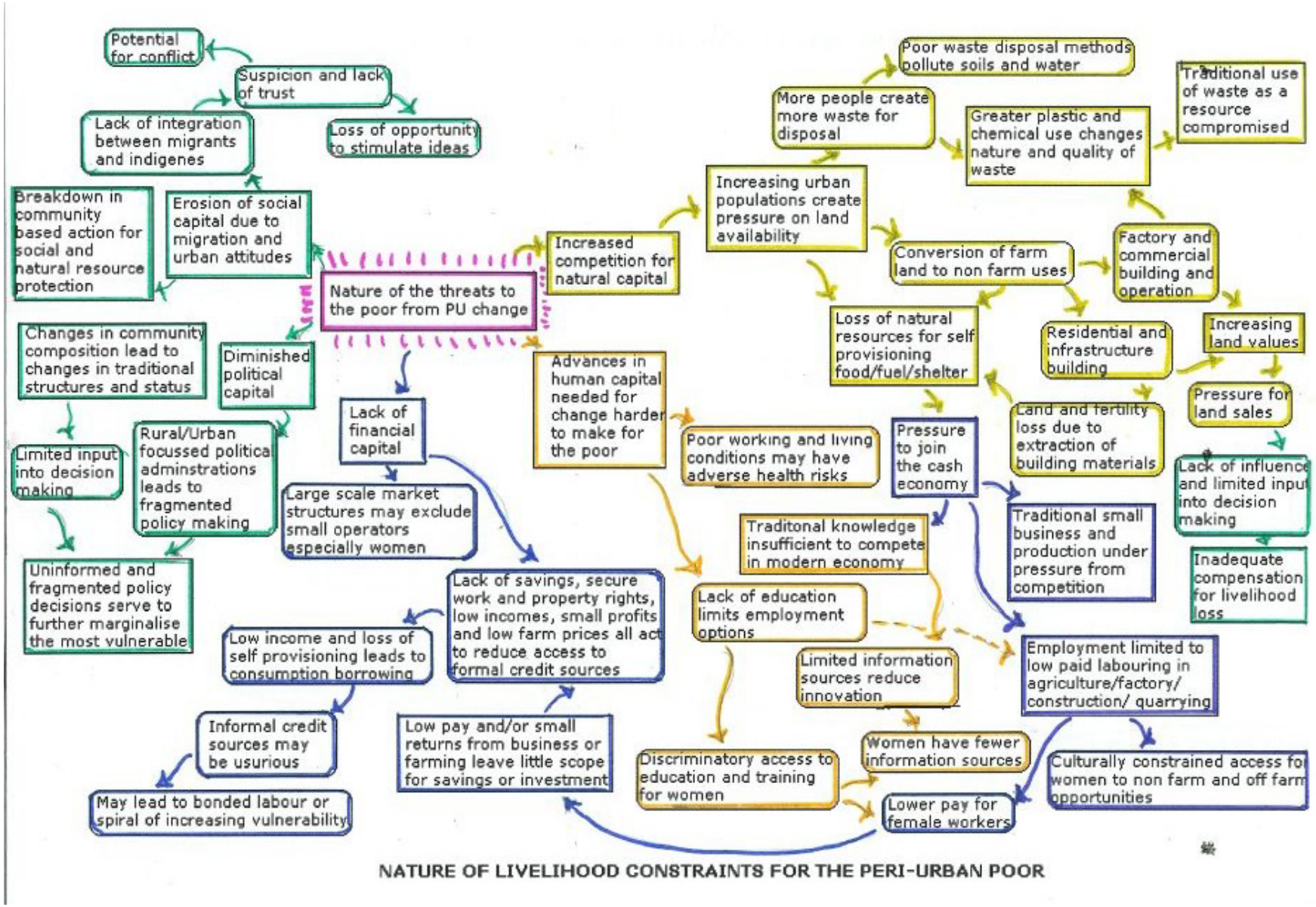
Human capital constraints

- The advances in human capital needed to adjust to the changes brought about by urbanisation were harder for the poor to make. This was particularly so because the lack of education limited employment options, and women suffered discriminatory access to education and training.

- Cash based employment for peri-urban people without education or skills, was limited to poorly paid labouring in agriculture, factories, construction or quarrying. Women's access to off-farm opportunities was less than for men and was also culturally constrained.

- Traditional rural knowledge was insufficient to compete in a modern economy. Limited information sources reduced innovation and consequently the potential to move into new productive activities. Women had fewer information sources than men.

Figure 14



NATURE OF LIVELIHOOD CONSTRAINTS FOR THE PERI-URBAN POOR

3.1 PERI-URBAN LIVELIHOOD CONSTRAINTS AND FACTORS THAT INCREASE VULNERABILITY

3.1.1 Overview

This section outlines the reasons why it is difficult for peri-urban poor people to make advantageous livelihood change. An understanding of the nature of these constraints and how they are influenced by the distinctive circumstances of the peri-urban interface may help to determine the effectiveness of policy. The complexity of interaction between these factors can make written descriptions circular so the major livelihood threats are outlined in the diagram at Figure 14.

Peri-urban poverty exhibited the characteristics of both rural and urban poverty. The rural element was linked to loss of natural resources while the urban elements were broader based and linked to the growing importance of inclusion within a monetised economy. Access to housing and services, work and business investment required the capacity to generate cash income or to access credit. The size and nature of the assets people controlled and the speed and type of the change they had to cope with determined whether the PUI was more of a threat than an opportunity for traditional livelihoods. Vulnerability derived from economic change and instability and people's capacity to adapt to this.

Poor people lacked control over the decision making processes that planned and managed urban change and consequently shaped their livelihoods. This was most obvious around the issue of natural capital. Destruction of natural resources took the form of land and forest lost to urban space demands, loss of soil fertility due to extraction of construction materials, opportunistic farming practises driven by insecurity of tenure, and soil and water pollution by urban wastes. The pressure of growing urban populations made natural capital in the form of land the most contested asset in the PUI. Farmland was in demand for housing, commercial development and public infrastructure. Loss of land rights was rarely sufficiently well compensated to allow the development of alternative livelihoods. Complex migration patterns were changing traditional social structures and decision making fora, while fragmented planning and policy making structures often led to uninformed policy decisions that further served to remove resources from the peri-urban poor.

Although urbanisation offered new services and income generating opportunities, the development of benefits for one group of people frequently removed or damaged livelihoods for another group of people. Changing access to livelihood resources was a significant feature of the PUI and could sometimes be rapid. These changes affected age groups, wealth groups and genders differently and led to increasing vulnerability of those groups, especially the poor and women, who were least able to move into new productive sectors, were unable to scale up activity to give economically viable returns, and/or were directed into low wage sectors of the agricultural economy because of lack of alternative opportunity. Insecure access to the resources on which the poorest people's basic needs depended undermined their ability to invest in new opportunities. Clearly, transition into new productive activity was hardest for the poorest people already working against a background of multiple disadvantage, with the consequence that peri-urban change potentially deepened existing social inequality producing self-perpetuating vulnerability. Where people become marginalised it not only affects the individuals pushed into greater livelihood vulnerability but also ultimately impacts on the wider economic growth of the area.

The problems noted as livelihood constraints in the EKW of Kolkata were inclined to be of a specialised nature related to the unique wetland environment. However, pressure on land and space, labour constraints, restrictions on women's employment confining

them to the lowest paid and most vulnerable niches, problems relating to male alcohol consumption and lack of access to affordable finance (Working Paper 5 2002:7) were recurring themes in all three PUIs. Similarly, seasonal commodity gluts were also noted to affect market prices although the diversity of produce grown in Kolkata helped mitigate this to some extent (R7872/C: 41). Focus group discussions also revealed that, although people felt their income from the agricultural and fisheries production systems were barely adequate, they also recognised that they would be even more vulnerable if their current livelihood options disappeared. Consequently, their greatest fear is loss of their lands or loss of work in the fisheries as a result of future development of the wetlands area (Working Paper 5, 2002: 17)

3.1.2 Increased competition for natural capital

One of the particular difficulties facing peri-urban areas is the intense and competing demands made on natural resources driven by population growth and migration. In all three PUIs studied the most significant pressure on the natural resource base and the major challenge to peri-urban space was competition for land. Agricultural and common land was increasingly being used for new housing, commercial and civic facilities and for the development of transport infrastructure. The brick making and quarrying activities required to provide construction materials further exacerbated PU land loss. A general deterioration of the natural resources available to households was apparent in the study areas, reducing the availability of the natural resource based products needed to support traditional and non-cash based, livelihood elements (food, fuel, building materials medicines, clean water). While the non-poor had other assets that allowed them to offset any threats to their livelihoods brought about by changes to the natural resource base, the poor did not. Furthermore, women had less access to land than men in both HD and Kumasi while at the same time their livelihoods were more dependent on agriculture and access to common property (R7549: 183 Table 6.5: R7549: 147). Consequently, changing natural resource availability did not affect all sectors of society equally. Natural resource problems such as pollution and waste management have become larger and more complex, with stakeholders that stretch beyond local communities.

Land (and therefore usufruct) access was probably the most significant difference between Kumasi, where land access was by common property rights (Blake *et al* 1997b), and Hubli-Dharwad, where land access was by titled tenure vested in male family members (R6825/ Vol. 1: ii). This had considerable and complex repercussions for livelihood activities for the poor that are difficult to capture in a simple format.

Land transactions[25] were changing land access often in a way that served to marginalise the poorest sectors of society who had most invested in land-based food production and common property livelihoods and who were least involved in decision making about the land transactions taking place.

3.1.1.1 Loss of forest resources and water pollution

i) Forest resources

In villages closer to Kumasi, wood fuel had become a cash commodity (Adam *et al* 1999:13 in Brook and Davila 2000: 201). Even people in Swedru, the most rural PU village in Kumasi, complained about the loss of wood fuel from common property resources (R8090). Wood fuel could only be gained from fallow land and the decreasing bush fallow periods meant that timber regeneration was reduced and did not produce good quality fuel. Consequently, the loss of forest areas had the most

[25] Land transactions were mainly land sales (in both HD and Kumasi) but encompassed any other land transfer changes that altered previous land rights patterns.

negative implications for the poorest people who relied most on common forest resources to provide fuel. Forest loss had also diminished the potential for gathering forest products where a diverse array of forest products was previously used for both home consumption and cash income in the past; listed in R8090 as kapok, various leaves, medicinal herbs, forest fruits, honey and wax, bush meat. Land that used to be forest in Kumasi had now become grassland (R8090/Bi C: 31).

In HD forests were only a significant feature in the more hilly and wetter areas to the south and west with over 80% of villages having no forest access (University of Birmingham *et al* 1998a: 182). If firewood was not available within the village, wood collection fell to the men who had then to use mechanical means such as tractors to do this making an additional cost to the household (R7244). In the EKW lack of firewood as a result of diminishing trees was also reported as a problem, especially during the wet season, requiring the use of gas or kerosene as replacement fuels or the purchase of firewood at a cost of around 20R/week (Working Paper 5 2002:10).

ii) Water resources

In both HD and K the research showed water resources had become more polluted as a consequence of unplanned urban development where services were not keeping up with demand. Brook and Davila (2002) showed there was competition between rural and urban areas for water resources and that inadequate supplies were affecting both urban and agricultural productivity. In Kumasi, water was increasingly supplied from boreholes rather than local streams, which were becoming more polluted (R8090/Bi C: 32). Borehole water was generally of good quality but access required a cash payment that many could not afford to make. Consequently the most vulnerable risked health threats from the use of polluted river water (Blake *et al* 1997a: 31) and poor farmers became precluded from access to irrigation water (R8090/Bi C: 32). Thoday (2003) (R8094/J: J60) noted that fragmentation of government departments dealing with water in HD and the establishment of multiple schemes provided opportunities for powerful groups and individuals to play off different institutional bodies to their advantage, which was not necessarily in the interests of the wider public or the resource. In K people only protected the natural resources from which they gained direct benefit (R8090/Bi B: 48; R7330 FTR).

Pollution of water supplies or loss of timber for fuel impacted more on the lives of women who were the main collectors of these items (92% in Kumasi) and who had the main responsibility to provide household goods (Brook and Davila 2000). If they were not to be faced with additional cash demands for household needs that were previously free, then they had to spend more time finding livelihood necessities or accept less than adequate supplies.

3.1.1.2 Loss of land and increasing landlessness

i) PUI pressure for land

Land pressure is recognised as a defining characteristic of the PUI and is driven by population pressure. In both HD and K this demand for land was changing the balance of peri-urban land use between the land used for peri-urban agricultural systems and the land required for new urban construction.

In Hubli-Dharwad

The picture here was one of increasing pressure on land and a complex rearrangement of settlement patterns with movement both into and out of the city (Brook and Davila 2000: 128). Land available for cultivation in the defined PU area was about 4% in 1991 having declined substantially from 34% in 1981 (Brook and Davila 2000: 120). However, many of the poorest people in the Hubli-Dharwad PUI did not own land so

land based livelihoods, other than agricultural labour, were not significant for some groups of vulnerable people (R7549: 26*)* although landlessness was not necessarily synonymous with vulnerability. The extent to which common property resources had been reduced was not fully clear although the Impact Assessment (2005) showed that where common property natural resources had been restored they added a small but growing component of the livelihoods of both the poor and the non-poor (PD138: 35).

In Kumasi

In villages around Kumasi the land allocated for residential areas had increased rapidly and farmland had reduced (Blake *et al* 1997a). 90% of villages in the NRSP Village Characterisation Study (VCS - quoted in Brook and Davila 2000: 194) reported land lost to residential building plots, with 11% of villages having almost no farmland left. Farmland availability clearly declined with increasing proximity to the city where most farmland was being allocated for housing resulting in rising land loss and landlessness in these areas (R7854/G: G33). *(compare fig 15 with fig 9 section 2.1.3.5).*

Figure 15

Adults with access to land within the Kumasi PUI.

More rural village	Intermediate village	More urban village
66.8%	24.1%	14.7%

Source: R7854/G: G33, Table 7

Women were most affected by land loss in the more urban villages while men were most affected in the rural villages (R7854/G: G33). Different livelihood strategies were noted that may form a gendered response to land loss with urban women more likely to diversify into trading (Aberra and King 2005) while rural men sought plots of land at some distance from Kumasi (Nunan 2001). Competition for land around Kumasi appeared to be most intense in the 10-20K zone where land use was changing most rapidly. (R7549: 53).

Farming was such an essential livelihood activity for many people in Kumasi that a substantial minority (11%) were pursuing replacement land. This was often opportunistic such as the use of empty building plots or roadside verges (R7549: 184) or rented land, sometimes at some distance from their homes adding extra transport costs to their agricultural production (Nunan *et al* 2000: 39).

ii) Rising land values

With greater competition for land comes the escalation of land values within the PUI. Increasing demand for land for urban development has resulted in rising land prices imbuing land with a growing cash value as well as an opportunity cost. Land values in HD had increased three to five fold over the period between 1987 and 1997 although land pressure was not found to be related in any simple way to distance from the city (R7649: 112). Proximity to Hubli-Dharwad meant that richer urban people were interested in investing in PU land for brick making, orchard growing or building. The higher prices offered encouraged sales by small and marginal farmers and landlessness was increasing (focus group discussions carried out as part of the PD 138 Impact assessment 2005: 54).

In Kumasi, demand for development land had led to rising land prices, high house rents and land disputes. (Figures for rental values and building plot prices were given in Kasanga 1998: 29-31). Unauthorised building by the middle classes on community land and land belonging to the 'rural poor' was reported as a consequence of slow

official responses to planning applications (Holland *et al* 1996a; Brook and Davila 2000: 124).

'Sand winning'[26] had increased along with building activity and just over 50% of VCS study villages had sand winning sites. The increased commercial value of construction resources had resulted in their exploitation by the village chiefs who had the concession rights (Blake *et al* 1997a: 36). This gave a temporary advantage for village labourers working at the sites but was a permanent loss to farmers whose farmland has been degraded.

iii) Insecurity of land tenure

Traditional common property usufruct land rights added an extra dimension to land pressure in K that did not apply in HD (where titled land ownership allowed household based decision making over land sales). Increasing land values created economic pressure that was eroding traditional common property systems and leading to increasing insecurity of land tenure. Adams (2000) and R7549a: 3-7 described the increasingly common practise of sale of village lands for housing, depriving people of their traditional land rights while farmers suffered a high risk of eviction often at short notice.

Land tenure systems in Kumasi have been extensively studied in general terms and the key elements are well known (Holland *et al* 1996a p 33-37,38 and Kasanga 1998). The outline of traditional customary land tenure systems is that the land belongs to whole community and usufruct access to land is assured for every family.

A hierarchical system of paramount stool, sub stools and family usufructuary titles operated in Kumasi, with the Asantahene being the overall custodian of the land. Established usufructuary rights were inheritable and transferable and where land was insufficient for a family they could approach another family with surplus land and negotiate a rental or sharecropping arrangement. These rental and share cropping arrangements could also be made with 'strangers' - that is migrants into the community. Individual families could not dispose of land nor (according to Ghanaian case law) could the stool dispose of it without the consent of the families. Although the Asantahene managed the land decisions on a day-to-day basis the government had final control over all decisions including those relating to the timing of disposal and the distribution of the revenue relating to the land.

In practice, the chiefs and queen mothers carried out the allocation of land and collected land sales revenue. Titular holders became, in essence, *de facto* owners of the land (Blake *et al* 1997b; Brook and Davila 2000; 193). Consequently, land ownership was changing from common property with access rights granted by the Asantahene or stool chief into individual ownership of housing plots both in the city and PU villages. This was leading to increasing vulnerability, landlessness and homelessness with women being more affected than men (R7549: 111). This significant change from traditional common property practise represented a transfer of property rights from the poor to the non-poor in peri-urban Kumasi.

In Kolkata, most of the horticultural land in the Dhapa region is owned by the KMC, which only issues short-term lease agreements. This contributes to the uncertainty and insecurity felt by the farming community, leaving them unwilling to invest in long term land management strategies (R7872/C WP4: 14) in a manner reminiscent of that noted in Kumasi. There was no mechanism reported that allowed farmers to have a say in the way that state land is developed with the tenor of EWK focus group discussions appearing to suggest that many people felt very vulnerable to the urban forces of land

[26] The extraction of sand for construction material

use change on their livelihoods but powerless to influence the decision making process (Working paper 5, 2002:17).

iv) Inadequate involvement in decision making

Decision making structures were formulated differently in urban and rural areas of HD, with elected municipal and Gram Panchayat [27] authorities but institutions were complex and relatively inaccessible to the peri-urban poor (Holland *et al* 1996b/AppendixVII; Thoday 2003). Records of land ownership were difficult to access in HD so little information was held in communities about who was involved in land transactions. Government land planning and management activities were not considered effective at local level (R7649).

Despite decision making about land issues in Kumasi being vested in community based traditional authorities, poor people achieved little input into the decision making process. Although Ghanaian case law states that the stool cannot dispose of family property rights without consent, in practice few people in PU Kumasi were consulted before land transactions took place. Overall only 33% of people were consulted and only 66% of these gave consent i.e. only 22% of people were consulted *and* gave consent. Women were less likely to be consulted than men (27% of women compared with 47% of men) (Kasanga 1998 table 13; Brook and Davila 2000:194). Some communities had resisted development resulting in conflict that delayed the change of land use for many years (Brook and Davila 2000).

Many landless poor people living in the East Kolkata Wetlands have already been removed from the land market by historic legislative and urban changes. Consequently, they may have little influence over the direction of future land development, even though the loss of the wetlands to development is reported as their greatest fear for many of those thousands whose livelihoods are so heavily dependent it (Working paper 5, 2002: 17) However, for the men engaged in fish farming the labour unions have been active in the planning going on, and these may have some influence on the owner's decisions (Mattingly personal communication Sept 2005) In addition wider international interest in the wetlands system will have major ramifications for change in the EKW despite the government's ambiguous attitudes (R7872/C4:14) and may have some effect on balancing the conflicting interests of the workers and land owners.

v) Lack of compensation for land loss

As this related to traditional land rights, this again became a more complex problem in Kumasi than in HD. In HD titled ownership allowed household decision making about land sales and the revenue generated accrued to the household. Occasionally HD land owners lost land to compulsory purchase for which compensation payment was typically slow in coming. Revenues from land sales may have to be divided between a number of brothers with the consequence that it might not be sufficient for new income generating activity (personal communication with farmer who had lost land for railway development - June 2003)

By contrast, farmers displaced by land sales in Kumasi usually did not receive compensation or an alternative plot and had little opportunity to complain (Holland *et al* 1196b: 19; Brook and Davila 2000: 194). Only 9% of those interviewed had been compensated for the loss of their land rights, and the chief generally took this responsibility rather than the developer. However, the majority received no compensation at all although some farmers were given compensation for standing crops. Family heads usually received any compensation that was available with farmers perhaps receiving a share of the compensation from the family head.

[27] Village level governing body for rural areas. The lowest tier of decentralised administration.

Compensation usually took the form of providing a family building plot (41%) or cash (31%) although this may not be sufficient to provide an alternative livelihood as other skills may be lacking (Mazingira study - Kasanga 1998 Table 13; Brook and Davila 2000:197).

Where compensation money was used for community development the poorest groups may not benefit as in the example of village electrification that was not affordable for the people who had lost their land rights (Blake *et al* 1997a; Brook and Davila 2000: 197). Changing land use differed as a result of the individual outlook of the Asantahene and their integrity about the receipt of any money given for land sales. Ultimately, this system had the effect of enhancing the power of the stakeholders who stood to gain from disposal of the land to the detriment of the people who were using the lands for their livelihoods.

Mrs Margaret Donkor

Margaret holds an upland plot of land in the more urban village of Aburaso, Kumasi. In 1997 the plot was farmed first by Margaret's father, who grew a combination of food and tree crops that included cassava, yams, maize and oil palms, and later by Margaret herself. The food crops fed the family while the oil palm provided a cash income for the household. By 2001 the tree crop was gone. Cassava was still grown to feed the family while vegetables and maize provided some cash income.

However, someone is now about to build a house on part of Margaret's plot. Margaret doesn't know who this person is, nor has she been informed about the change, but the heaps of sand that have been moved onto the plot testify that this change is imminent. Neither does Margaret know who made the decision to allocate the land she has traditionally used to developers or the type of transaction that led to the land being allocated indicating just how little consultation there is between land users and decision makers and also the speed of land use change.

Source: R7854/FTR: 12)

3.1.3 Erosion of social capital

Migration into peri-urban areas happened as two distinct flows of people. Firstly those who were moving into the PUI from more rural areas in order to take advantage of PU opportunity and those who were moving outwards from the city in order to avoid the problems arising from city based development. (R8090; Migration Annex & Halkatti *et al* 2001).

In both HD and K people felt urbanisation was changing social capital in PU villages (R8090, Halkatti *et al* 2001, R7867). In HD researchers noted that the concept of Shramadan (group community work) had fallen into neglect (R8094/FTR: 4App 4b: 16). In Kumasi, people felt that family support was weakening leaving the old, the orphaned and women at a disadvantage (R8090/Bi B: 22) and that the social composition of the village was changed by in-migrants who did not quickly integrate with local inhabitants and at times were in conflict with them. There is a good deal of suspicion and mistrust of migrants evident in the description and discussion of migration given in R8090/ Bi C. The implication here is that the social mixing of 'indigenes', 'burgers' (people returning to Kumasi) and 'strangers', planned to avoid the development of exclusive social classes and slums, has weakened traditional social institutions. Whether the social changes described are truly a consequence of migration rather than urban influence changing social values over time is not disentangled.

Whatever the true causes, people in both HD and K PUIs felt that social cohesion in the villages was being weakened, that beyond the extended family community spirit had disappeared (R8090/Bi C: 38; R8094; Halkatti *et al* 2001) and that there were fewer opportunities for social interaction (R7854/H: H9) potentially leaving villagers less confident about addressing problems and taking opportunities.

The value of social capital for income generating activity was clear in both HD and K with people expecting that relatives would help in securing employment or assisting with business capital. Men in HD, especially older and richer men, had much greater opportunity for social activity outside the household. Only men reported attending marriages, fairs and festivals. They also reported more examples of social capital building such as settling quarrels or being on the Gram Panchayat (Gregory 2003).

i) Changing attitudes

‘ Rural attitudes’ were mentioned in both places as a tendency to cling to traditional ideas and social norms. In HD this was seen as a positive attribute making it easier for NGOs to work in the villages because of greater trust and social cohesion (Halkatti *et al* 2001) while in Kumasi it was seen as a negative attribute making it harder for people to adapt to PU change (R8090/Bi E: 5). This dichotomy may to some extent reflect the underlying bias of the writers.

In Kumasi people felt that urban opportunity encouraged the more enterprising to take up urban opportunities leaving dependents without proper care leading to social problems. For instance, in Kumasi 12% and 22% respectively thought an increase in divorce and teenage pregnancy rates were a result of increased urbanisation (Kasanga, 1998 table 14). Divorced women, single mothers, aged and disabled people were noted as particularly vulnerable in the K PUI (R7854/FTR: 44). R8090 noted that casual prostitution was an urban and peri-urban livelihood activity underpinned by changing social attitudes and female exclusion from the labour markets. This clearly has consequential effects on the spread of HIV/AIDS. The high frequency of informal marriage, early motherhood and unemployment were all mentioned as factors influencing poverty in Kumasi. By contrast, only unemployment, age and disability were mentioned in HD.

However, the problems arising from alcohol were noted in all three PUIs (R7959; Working paper 5, 2002 & R7854). It was considered a problem that arose as a direct consequence of living in close proximity to the city. In Kolkata this was rated one of the more significant livelihood constraints, especially among fisheries workers (R7872/C: 58). Some women considered men drank to forget their miseries but also explained that men’s alcohol consumption was detrimental to the whole family both financially and in terms of increased domestic violence (Working paper 5, 2002:9). In Channapur women thought male alcoholism impacted so greatly on their household livelihoods that they had no interest in any other activity until the problem was resolved (R7959/ A: 13.6). Nitturkar (2003) tells the story of how this was achieved by community action of the women in one PU village.

ii) Lack of political capacity

Chambers (1997) proposes that livelihoods are sustained by tangible assets in the form of resources and intangible assets in the form of claims and access to resources. Within the PUI, increased pressure on tangible assets as a consequence of urbanisation makes intangible claims and rights much more important in supporting livelihoods. To effectively maximise people’s productive livelihood activity, it further requires an enabling environment with benign and transparent government policy objectives.

Political capacity[28] was systematically investigated in HD by Thoday (2003) who concluded that those with the least education and wealth felt unrepresented by elected bodies. In the more rural village of those studied, those who felt they were well represented in formal decision making bodies claimed that no-one was excluded from decision making, suggesting a gulf between actual and perceived representation of the poor (Thoday 2003: 51).

In the more urban village, no-one felt they could influence decision making at the government level although views were more mixed on exclusion at the village level. Those with lower wealth ranking claimed no-one was excluded while other people mentioned groups to which they did not belong; for instance, a government worker said farmers were most excluded while a shop owner said government workers were the most excluded (Thoday 2003:52). This highlighted a greater awareness of other social groups by the more urban residents and may be indicative of changing social attitudes in the PUI.

Thoday (2003) showed that women in HD tended to be particularly excluded from the public sphere as demonstrated by women's inability to offer opinions on public life, their greater likelihood of making uneducated votes and their lack of inclusion in wider social groups. Exclusion was worse for women in the more urban village, which had an interesting resonance with the lack of income generating opportunity associated with women in more urban villages shown by Gregory (2003). It was suggested by local workers (IDS personal communication- Jun 2003) that both features might relate to changing attitudes of suspicion, distrust and perceived danger to women's honour.

There was no systematic collection of data about the political capital of the poor in Kumasi but many examples of the lack of interest and awareness of politicians and decision makers in both HD and Kumasi were recorded. This attitude led to planning decisions that excluded women and poor groups from decision making even where this had momentous impact on their livelihoods. In Kumasi, the poor were most affected by the breakdown of the traditional system of land tenure. Typically, there was a lack of consultation with land users who often lost both land and crops without compensation. Women were less likely to be consulted about land use changes than men (*detail in section 3 paragraph 3.1.2.2.iv*). This is a reflection of lack of political capital demonstrated as lack of influence over decision making.

Thoday (2003) (R8094/J; J58) showed people in both rural and urban areas of HD were used to control of natural resources and village decisions being made by external authorities. She noted where responsibility for resources became channelled thorough local government, people were less interested in self help and more demanding of the local self governing body for resources, while a longer history of poor governmental provision appeared to generate greater interest in self help.

iii) Weak links with political and decision making structures

Institutional structures impinge on sustainable livelihoods in the form of state institutions, traditional authorities, NGOs, community based organisations and the private sector. The background of decision making in Kumasi and HD was summarised by organisational charts in Holland *et al* 1996b/Appendix V11. Traditional authority structures in Kumasi are outlined in the following: The Kumasi Peri-urban Baseline Study (Holland *et al* 1996b) Inception reports (Blake *et al* 1997a: 15-29) Kasanga (1998 23-33, 1999) (Brook and Davila 2000: 35). This information would need up to date verification before use.

[28] Defining political capacity as the scope that an individual or group has to exert influence on decision making that affects them (both formally and informally) and so improve their livelihoods. (Devas in Rakodi, 1997; Baumann and Sinha, 2001 all quoted in Thoday 2003).

However, current institutional landscapes in both HD and K were not shown to be supportive of the livelihood activities of peri-urban poor and very poor people and lacked either understanding (HD) or interest (K) about the factors institutionalising poverty.

Fragmented and complex administrations, (Brook and Davila 2000, R7959, R8094/ B appendix 2 and Annex 1 figs 1 & 2) led to confusion about which institution or department was responsible for which geographical zone or issue (e.g. veterinary services in HD), or vested decision making in the hands of the more powerful (e.g. land transactions in Kumasi). The complexity of the political economy within the PUI filtered the flow of information and services, reducing institutional transparency and excluding those disadvantaged by lack of literacy and with little economic power or political capacity from involvement in planning and decision making. Hierarchical and centralised planning systems with a top down approach gave little potential for the rural poor to be involved in decision making. Consequently, little attention was given to policies that would improve opportunity for the poor, while uncoordinated service provision often served to exclude activities belonging to preconceived urban or rural distinctions leaving people on the wrong side of the boundary missing out on services or with a disadvantageous tax structure.

An interesting example of the lack of understanding of planners about the needs of the poor was in the arena of livestock keeping. Livestock keeping was not closely linked to land ownership. Consequently, it was identified in both HD and K as a significant livelihood opportunity for the poor in areas where pressure on land and the changing dynamics of peri- urban space meant that crop production was under pressure as an income generating option for many people. Livestock in urban areas can lead to problems of pollution from livestock wastes, public health concerns arising from zoonoses[29], and demand for water. However, planners frequently fail to recognise the importance of these activities to the livelihoods of the poor while livestock products produced in PU and urban areas are a critically important source of urban food (Thorpe and Richards 2004). These findings coincide with the understanding of peri-urban livestock keeping in HD and to a lesser extent in Kumasi. Fragmented responsibility for livestock in both HD and K meant that peri-urban livestock keepers might not be eligible for veterinary advice, subsidised vaccinations (in HD) or training in improving technologies depending on which administration area they fell under. Public perception of livestock in urban areas was negative because of free roaming animals so policy making was inclined to remove animals (Nunan 2001).

Similarly fish farmers in Kolkata and vegetable growers in HD who depended on sewage as an essential input into their production systems were disadvantaged by policy makers who failed to recognise the importance of these traditional activities to the poor, the risks inherent in them or how these activities could be enhanced for greater economic benefit while managing or mitigating health risks (Hoffman 2005, Bradford 2001, Bunting 2002)

3.1.4 Constraints on human capital advances

i) Knowledge poverty

Human capital is determined by people's personal qualities and is not only intrinsically important but also defines how other livelihood assets will be used. In both HD and K the research confirmed expected patterns of education. Educational levels for the poor were lower than that of the non-poor and women had less education than men (R8094 Annexe E & R7549/6.4.2 &R6799/14 table 11:83). This is a background factor against

[29] A disease transferred to humans from lower animals (Chambers English Dictionary 1990 7th ed).

which people of a PUI generate income. Lack of skills in a trade was noted as a constraint to developing sustainable alternative livelihoods (Kasanga 1998). However, Brook 2005 (R8094 FTR/4-App4b: 10) noted that where technical skills had been provided in the past, these were not always resilient enough to prevent disadvantageous change increasing vulnerability and were not always sufficient to enable people to take advantage of urban proximity. In Kumasi, access to skills did not necessarily add to well being (R7854/G: G26) especially for young women who were conspicuously less able either to complete training or to utilise completed training for income generation. The most frequent cause was pregnancy followed by lack or cash for training or start up. Existing social norms may also offer young women a less supportive business environment than others.

ii) Skills

Common traditional livelihood and income generating skills such as agriculture or trading in both HD and K were traditional activities that had been learned from other family members or friends and may depend to some extent on social capital. In Kumasi, apprenticeship schemes were available. These mainly attracted young people who were able to raise the fees (R7549: 184). In HD families looked to provide for their male children by expanding their existing activity or by adding an ancillary activity (e.g. farm tractor being used to provide transport services) (Gregory 2003). Where business people were illiterate, as most of the poor people interviewed were in both HD and K, record keeping was by memory (R8090 and R 8094). This potentially led to poor management skills and incorrect calculations of profit and profitability (MS Subhas – personal communication June 2003). This is likely to be enhanced by the pressure to sell in order to meet daily consumption needs. The greater the competition the more likely becomes the pressure to be a 'price taker'.

iii) Information sources

Because of the greater need to cope with dynamic change within the PUI the need for information is of particular importance. Access to high quality information is critical for the livelihoods of poor people within the PUI if they are to take advantage of the potential offered by their PU location. Recognising opportunity is the first step towards benefiting from that opportunity while accurate and rapid flows of information serve to improve access to opportunity. Lack of access to information is an increasingly potent source of exclusion for the poor. Furthermore information underpins innovation, which is especially important for remaining competitive or generating livelihood change.

The NR focus of the research from which this synthesis draws meant data about information was collected only as part of this understanding and as a consequence contained significant knowledge gaps. In the K and HD PUIs information flow rested on both the social capital, which dictated the breadth of people's information networks, and the physical capital (equipment) or places where people receive information. The flow of information enabled people to hear of job opportunities, market information or other ideas that allowed them to enhance their livelihoods (Gregory 2003). In HD men reported more, and geographically more widespread, sources of information and were more likely to recognise the need to seek information from experts. Women's information sources were confined to husbands, family and friends. Villagers in more rural Mugad used a greater number of information sources than in more urban Kelageri although these remained mainly local sources such as friends, neighbours and community organisations including the Gram Panchayat. NGOs were also cited (these were not mentioned in Kelageri). In Kelageri the main source of information was business or work associates (Thoday 2003: 51).

Little data was available for the Kumasi PUI about the ways people gained information or how data availability was changing, although there was mention of changing

information sources between urban and rural areas (R7995/FTR) that disadvantaged the poor. This may refer to pressure towards formal methods of communication that may require access to physical assets such as telephones, radios, TVs or computers or written information such as newspapers, handbooks and leaflets, requiring literacy skills.

Figure 16
Access to physical capital that enhances communication in Kumasi PUI.

Source: Qualitative surveys (R6799a-d)	Source: VCS (R6799j) (% of villages)		
	Rural	Peri-urban	Urban
% villages with a daily market	24	57	37
% villages with a telephone	0	5	55
% villages with a post office	6	14	0

Source: Table 14 pG10 Annex G R7854

Access to communications (telephones and post offices) was poorer within the peri-urban and rural villages in Kumasi than in more urban villages (R 7854/G/: G10) although phone access is likely to have increased rapidly since the1998 Village Characterisation Survey (VCS). Overall, it was not clear how information flowed in either PUI, what factors might be changing the flow of information and if this was affected by urban proximity. It is a topic that would benefit from further research.

iv) Innovation

Diverse information sources and migration driven social diversity within the PUI both offer great potential for innovation and change. However, the separation of communities described in both PUIs (see social capital section) and limited information sources available to the poor militated against this becoming a positive source of ideas. In Kumasi (R7995 FTR: 9) researchers found a problem of getting people to suggest ideas and communities tended to focus on ideas rooted in traditional agricultural systems or that demanded only small changes. They also found people unwilling to move from NR based activity (R7995 FTR/4.2.9: 6) Gregory (2003) also found poor people in HD lacked ideas about making livelihood change.

The need for innovation and information is likely to be more pressing within the PUI because of the greater need for people to be able to change and adapt their income generating activity. The loss of the basis for previous livelihood strands is largely irreversible, and traditional livelihoods and skills easily become irrelevant or outmoded and finding new market niches may mean taking up an activity that is entirely new. Taking up something new not only requires information about it but often the vision to see a possibility that has never been considered before.

v) Market information

Market information is essential if farmers and traders are to balance supply and demand to avoid gluts and deficits and corresponding price fluctuations. This is especially important where there are limited price controls, markets are regulated solely by supply and demand and perishable commodities are increasingly in surplus as they were in the HD and K PUIs (more detail in nature of constraints on IGAs section).

3.1.5 Lack of financial capital

i) Monetisation of livelihoods

The erosion of the peri-urban natural resource base increased pressure on people to join the cash economy. Consequently, in both HD and K PUIs subsistence production was declining and reliance on cash and markets for consumption goods was increasing. The pressure towards cash based incomes tended to exacerbate the dependency and insecurity that characterised the livelihoods of the poor (Brook and Davila 2000). People noted how they became more dependent on buying food as they lost land to urbanisation, that they needed capital to set up in new IGAs and to gain training and as a consequence had less money for other household expenses. (R7854/H: H10). Kasanga (1998; table 14) showed that 52% of people in Kumasi thought poverty and general insecurity were adverse effects of urbanisation whereas only 2% thought it had increased income. 66% of people reported higher costs of living in the PUI (Kasanga 1998: 89).

By contrast however, the experience of living in the Hubli-Dharwad PUI appeared to be more positive than for those in Kumasi. People cited the benefits of increased access to marketing opportunities especially for agricultural products (53%) better transport services (29%) better access to urban services (banks, education, government agencies etc) (9%). Negative influences mentioned were a decrease in availability of agricultural labour especially family labour (58%), reduction in access to grazing land (6%), and reduced water supply (9%) all important NR based issues (Ambrose-Oji 2005, R8094/ E: E18, Figs 18 & 19). People in all wealth categories mentioned increased level of household income and an increase in the diversity of income sources as a positive consequence of living near to the city (Ambrose-Oji 2005, R8094/ E: E20, Fig 20). For the poor and very poor groups this came from more opportunities to sell their labour and from the potential to sell milk and milk products (45% of all livestock owners mentioned this). Also considered by poor and very poor groups was increased access to consumer goods and reduced household costs (R8094/ E: E19).

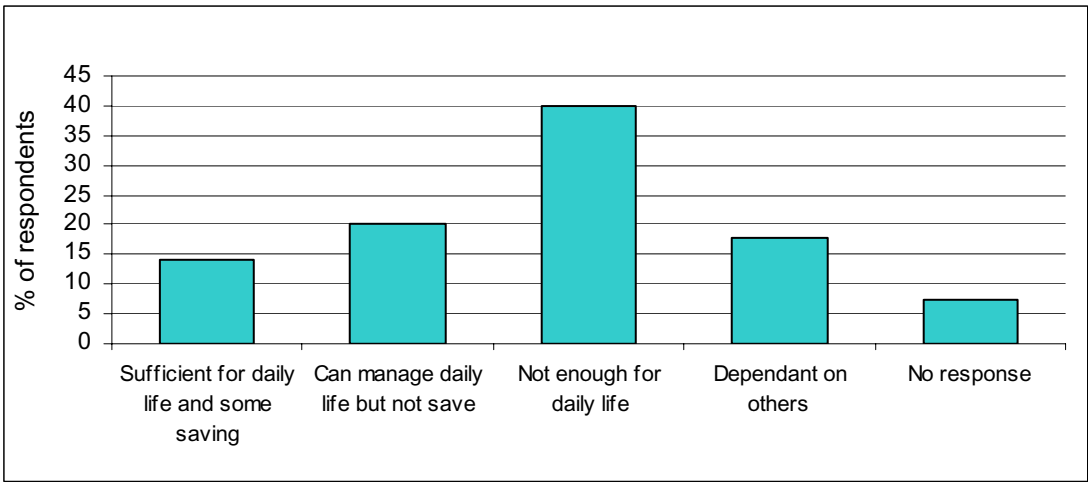
ii) Adequacy of household income - low pay and profits

The pressure into a monetised economy acts as a push factor into activities that generate a regular cash income. However, PU pressures on livelihood capital resources restricted the peri-urban poor, especially women, into the low waged employment sectors and less profitable income generating activity (noted in livelihoods section) so that income generating activity for the peri-urban poor was typically small scale, low paid or irregular. Poor people's incomes were more vulnerable to market price fluctuations, pressure from competitors in a crowded market and seasonal demand, requiring people to engage in multiple livelihood activities.

Wages and business profits generated were normally only sufficient for daily consumption purposes, discouraging business investment or savings (Brook *et al* 2002; Aberra and King 2005). The Kumasi studies (R7854/F: F15) confirmed the Ghana Social Assessment (GSA; Korboe 1998) that lack of access to adequate wage opportunities and crippling informal sector loans were key factors preventing people living in the Kumasi PUI from moving out of poverty.

Figure 17 shows how poor and very poor respondents felt about their economic circumstances in HD. The majority of households were vulnerable to unexpected shocks and stresses. 40% said they did not earn enough to manage their daily lives while 17% (all women) were entirely dependent on others for money. 20% felt they had enough to manage but could not save and unexpected occurrences would present difficulties. Only a small minority (14%) felt they had sufficient money for their everyday needs (Gregory 2003).

Figure 17
Perception of adequacy of household income in HD



Source: Gregory 2003

In Kolkata most of the focus groups perceived their cash income to be too small to meet their survival needs. The temporary and seasonal nature of much of their employment placed them in a precarious financial position and required them to diversify their income sources. (Working Paper 5, 2005:5&6) and leaving them vulnerable when there was an unexpected cash requirement (such a funeral) and making it difficult to plan ahead (Working Paper 5, 2002: 15). A similar picture could be constructed in Kumasi with the majority of intervention loan recipients indicating they were unable to save any money, usually because of a lack of a regular income source which was most problematic for people living in intermediate PUI locations (Aberra and King 2005:31). The consequence of this was the continuing, hand to mouth existence of the peri-urban poor and the need for rapid, even daily, cash returns from income generating activity.

iii) Credit

The most significant barrier preventing the poor from taking advantage of the considerable income generating opportunities available within the PUI was considered to be inadequate access to financial capital. This concern over access to finance was repeatedly recorded, with other factors always appearing to be of secondary importance. For instance, many of the peri-urban poor considered lack of capital or credit to be the main constraint to setting up or expanding business enterprises (Martin *et al* 2001 R7854/H: 11). The Baseline Survey R6448/01:21-22) cited lack of finance as a constraint on the use of agricultural inputs or to diversify out of agriculture. Farmers in Kumasi described lack of finance/credit as a significant constraint to productivity (R7549: 50 and R6799). Project participants in K stated that limited capital was a barrier to cropping intensification (R8090/Bi B: 33). Lack of available credit and costs of inputs and labour were identified as key constraints to agricultural production in both Hubli Dharwad (PD44/01) and Kolkata (Working paper 5, 2002: 7).

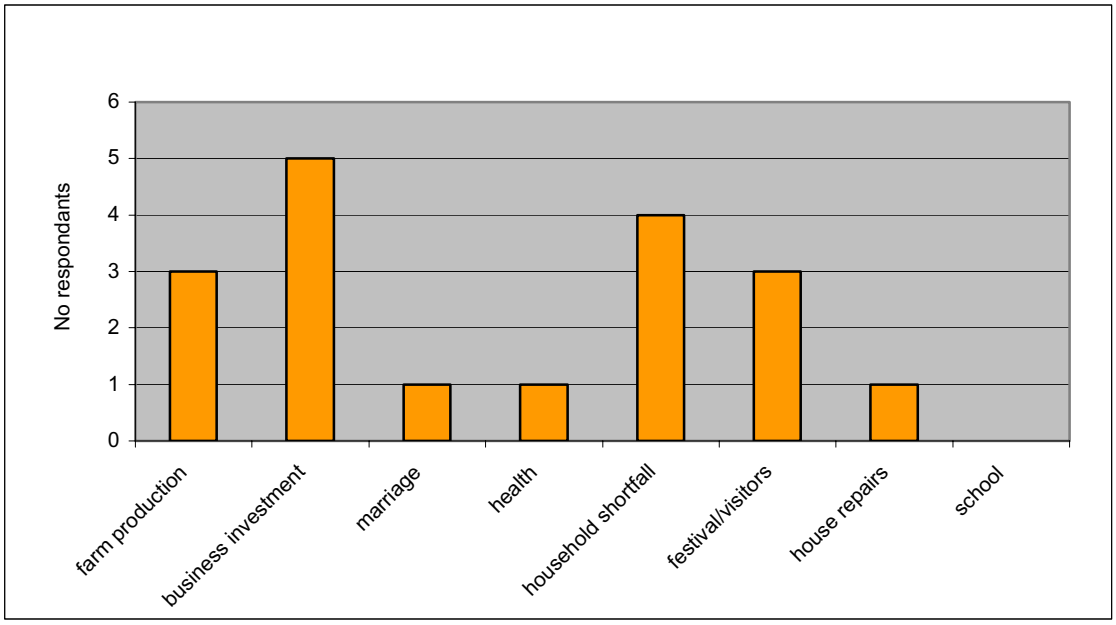
However, existing credit patterns could be complex with credit being used either for investment purposes or to smooth consumption flows [30]. In both HD and K this to some extent reflected a gendered dimension to borrowing. Men required greater

[30] This is an important strategy for coping with shocks and stresses but can act to increase vulnerability by adding an interest burden to household expenditure.

amounts of credit than women and used it for different purposes (R8090/FTR: 13 & R8094). In HD, women's borrowing was mostly consumption based to smooth out household income flow and meet domestic responsibilities. Men took credit for a variety of reasons mostly connected to their income generating activity. Average women's debt was 612 rupees (£14[31]) while average male debt was 5953 rupees (£135). The majority of people had repaid a proportion of their loans underlining the fact that this study was a snapshot of a dynamic process (Gregory 2003).

Similarly in Kumasi data from the R8090 project interventions suggested that credit was sometimes used to smooth out seasonal income flows. For example, some of the people engaged in the farming activity used part of the project loan to pay themselves wages for their own labour, repaying the loan later from profits gained at harvesting (R8090). This was less of a feature of women's borrowing because women were more likely to have to pay others to help with agricultural labouring work (Aberra and King 2005: 12/3).

Figure 18
Reasons given for requiring credit in HD PU villages



Source: Gregory 2003

Aberra and King (2005:28) demonstrated a further peri-urban dimension to borrowing using loan repayment data from project beneficiaries. There was a variation in income generating opportunities between urban, rural and intermediate communities, with the greater range of income generating opportunities available in more urban villages increasing income, savings and loan repayment with people in the intermediate locations of the PUI found to be the most economically disadvantaged.

iv) Formal credit

Bank and other interest rates were typically high and bank credit was less likely to be available to poor people. The Bank of Ghana had an official mandate to offer micro-savings and credit to the poor in Kumasi through the rural banks supported by savings and loans companies and credit unions. Despite this, the peri-urban poor were often

[31] Using exchange rate 44 rupees to the GB£

excluded from access to formal banking loans. They either failed to meet the qualifying requirements or they lacked accurate information about the procedures. In some cases micro credit loans were seen as return for political support (R8090/FTR: 21).

People wishing to borrow from the banks in K had to fulfil one or more of the following qualifications or conditions that made it difficult for the poor to get a formal sector loan:

- static/stable residence,
- have land as collateral,
- have a business plan,
- repayment over a very short time scale,
- be in secure waged work (R8090/FTR; R8090/ Bi C; R8090/ Bi D).

Financial service providers were wary of giving credit to peri-urban inhabitants in Kumasi because of the transient nature of their livelihoods (Aberra and King 2005). Bank interest rates were quoted as between 36% and 50%pa (R8090/Bi D).

Typically in India access to formal credit was most limited for women. This was mainly attributable to the fact that women do not own land, livestock or any form of assets that can be offered as collateral against a formal loan. When added to lack of access to, or control over, income every discussion with poor women's groups revealed that not only did these women have nothing, but that they could not envision any means by which they could engender solutions to their poverty by accessing formal credit (R7959/A: A132).

v) Informal credit

The lack of access to formal credit often left poor people dependent on informal credit sectors. The financing of small business was most often reliant on people's savings, gifts or loans from relatives or finding other sources of start up funds (R6799/h). The importance of these informal financial institutions in Kumasi were described in the Baseline survey R6448 and R6799 with Susu groups[32] and traders providing important mechanisms for saving and loans.

However, a negative consequence of the informal financial sector was the potential for usurious rates of interest. Informal credit interest rates varied widely but were typically in the region of 15% per month (i.e. up to 180% annually) and sometimes more for short term loans (R8090/FTR, Brook and Davila 2000; Gregory 2003). Loan repayment in HD was made either in cash, labour or produce or a mixture of these (R7867). When measured against reported incomes it was hard to see how some people would be able to repay. Some of the farmers reported their credit for inputs was only just repaid by the time they needed to borrow for the next year, indicating that debt interest was a permanent feature of these household's finances (Gregory 2003).

vi) Social capital and informal credit

Informal credit can become a network of obligation drawing on the social capital of the people involved. This has a marked economic impact and can make or break people's income generating activities. Occasionally traders in both HD and K gave credit (often reluctantly) to family or neighbours (Aberra and King 2005:11 and Gregory 2003:43).

The abuse of credit sometimes led to cash flow problems and even bankruptcy for small businesses.

[32] Informal savings and loans structure in Ghana that allowed very small savings to be collected from the door. Collectors were private individuals operating under co-operative decree but were not always reliable.

Kumasi okra farmer; Akosua Boatemaa stated (Aberra and King 2005:11).

'It is not easy collecting money from those who do not have the means but with persuasion we make headway'

In HD one trader lost his Kirani[33] shop due to lack of cash flow caused by credit given to neighbours and left him in debt himself. (Gregory 2003:43)

'The Kirani shop would have been profitable but many begged credit until I was forced to close'.

Young traders in Duase, Kumasi noted that they sometimes gained credit from wholesalers who supplied them with goods but never sold on credit (R7854/ H: H25)

'*because that way you will run bankrupt'*

Wholesalers formed a major source of informal credit in both HD and Kumasi. Farmers usually claimed an advance payment from wholesalers on delivery of their goods. Wholesalers sometimes offered retail traders credit on the goods supplied. This was a feature of trade in both HD and K although the terms and rates of interest varied and were not systematically unpicked.

Yaa Asantewaa charcoal seller from Atafoa, Kumasi

Yaa Asantewaa was a 71 yr old widow and head of a household of 7 people. She had stopped farming because of old age and had taken up charcoal selling instead. She had been able to start without any capital because she was able to persuade the charcoal dealer to supply her with bags of charcoal on credit. She made 5-6,000 cedis (£0.35?) profit per bag of charcoal sold. The quality of the charcoal was the main constraint to sales. Asantewaa could now afford to buy the charcoal but had stuck to the original arrangement with dealer as it suited them both.

Source: R8090: 41

[33] Small grocery outlet in Karnataka, India

3.2 NATURE OF CONSTRAINTS ON IGAs

3.2.1 Heterogeneity of PUI opportunity

The PUIs were not homogenous areas but fragmented mosaics of dynamically changing resources arising as a consequence of urbanisation and offering both opportunities and threats that changed over time. These opportunities and threats were not evenly spread, either within the PU space or among the people inhabiting it, causing poverty and vulnerability to be differentiated according to levels of urbanisation. Consequently, in any given location there may be specific opportunities or threats that are not found in other places in the same PUI. Thus, opportunities to pursue new income generating activities may be related to, or limited by, the specific characteristics of an individual location. This indicates that access to peri-urban opportunity is only predictable on a local scale and that this may affect the services available to, or required by, people in any given location. This in turn suggests that efforts made by outside agencies to support livelihood activity will require a fine grained knowledge of the specific PU areas where intervention activities may take place. A wide range of factors could determine the specific development of particular PUI areas.

In HD these variations were complex and did not bear a simple relationship with proximity to the city (University of Birmingham *et al* 1998a). For instance, the pattern of urban growth was dynamic to the North and West of HD while remaining stagnant elsewhere (Brook and Davila 2000). The factors that drove this were as diverse as soil types that affected cropping patterns, the availability of irrigation, transport infrastructure that favoured development of some villages over others, proximity to the urban area where changes were happening more rapidly, or the development of specific large scale industries taking advantage of a particular geographic or physical feature such as suitable sites for sand extraction or clay for brick making (Brook and Davila 2000). Consequently livelihood opportunities were dependent on the patchy development of the PUI (R7854/ G: G10).

Heterogeneity of opportunity was demonstrated by the changing populations in many PUI villages; some were shrinking while others grew. In Kumasi for instance, the population of the more rural village of village of Behenase had reduced by 1% between 1970 and 1996 while the populations of more urban villages Atasemanso, Emana and Esreso had all grown by over 8% (Kasanga 1998 in R8090/ Bi/ B: 17). Migration into Kumasi had led to differential dispersal of people throughout the PUI with the level of integration of migrant and indigenous communities shaping the character of the area and the nature of the environment (R8090/Bi C: 40).

A wide variety of examples of PU heterogeneity prescribing access to opportunity was described in the research documentation. For instance, patterns of employment in construction reflected the patchy and temporary nature of building development. The idiosyncratic nature of land transactions in Kumasi added further complexity exemplified by long running land disputes in Duase, where construction work had halted leaving construction workers unemployed (Brook and Davila 2000: 208). In Apatrapa, local people felt that the new university was pushing up land prices and that migrants were benefiting more from the university than ‘indigenes’ (R8090/ Bi C). By contrast, in HD mango growing had developed as a lucrative cash crop in the areas to the north and west of the city where soil conditions and ease of transport most favoured this (Brook *et al* 2002). Sewage irrigated vegetable growing opportunities in HD were confined to those villages where sewage was dumped (Bradford 2001) while in K vegetable growing was most successful in the wetter areas (Aberra and King 2005).

Analysis of credit repayment from the Kumasi project interventions noted that people in intermediate locations were economically more disadvantaged (lower savings, more credit, more irregular incomes, greater market and space competition, fewer

opportunities for traditional activities) than people in more rural or more urban areas (Aberra and King 2005:32) suggesting there may a pattern to the process of change over time – essentially urban areas had undergone most of the change already while rural areas were not yet affected. This may fit in with patterns of optimism reported in (R7854/ Bi B: 24) where people in the most urban villages were most optimistic about the future. This was considered to be a consequence of greater diversity of opportunity and a general move to off farm and non-farm income generating activities (R8090/G; G35) despite the rate of unemployment being higher in the most urban villages (R8090/G: G41).

Where change is gradual, the overall scale of change may not be noticed until it is pointed out. The R6880 study noted that although people recognised change was taking place, they were surprised at the scale of change when faced with the visual impact of past and present GIS images and became more concerned to take appropriate action (D' Souza (2000b).

3.2.2 Competition for physical space

The pressure on land in the PUI put a premium on space, making space for income generating activities both expensive and subject to intense competition. This was exemplified in different ways. For instance, in HD it was seen as reduced ability to keep livestock (Nunan *et al* 2001). In HD keeping cattle and buffalo to produce milk and curds was a peri-urban opportunity popular with poor people because of proximity to urban markets and the feeling that livestock production is not linked to land ownership (R7867) so a reduction in livestock ownership would have significant repercussions for those whose income depended on this (*see also 2.1.3.2 Peri-urban livestock systems).*

In Kolkata the land under the fishponds was desired as space for urban expansion creating a significant threat to the age-old system of urban waste based production of high value fish described in the UN database of best practice (in Brook *et al* 2002).

Pressure on space was noted as a significant constraint to livelihood activity in Kumasi with both traders and farmers having to adapt their activity as a consequence of pressure on space (R7854). Traders were finding it difficult to find places to put up kiosks that would improve their income generating activity. Farmers in intermediate villages were changing to space saving vegetable crops (increasing with proximity to the city) while in the most urban villages people had moved almost entirely to non-farm activity as a result of land loss (Aberra and King 2005). Problems arose for the alternative micro businesses piloted by R8090 project, where implementation and expansion of both natural resource based and non NR activities were truncated by lack of space. For instance, space became a problem for those trying to rear snail, grasscutters and rabbits when their animals finally reproduced. Many more new pens were needed than ever expected, so the space initially used was often inadequate and additional space had to be found that was conveniently located for maintaining regular care and security.

Jemima Gyamerah

Jemima Gyamerah was a cooked rice seller in peri-urban Duase. She operated her trade from a table top at the roadside but found it too small for her business. The cooked rice sellers considered that customers preferred buying their food at a kiosk presenting a trading advantage to those with kiosks. Jemima would have liked to expand her business into a kiosk but it was difficult to find sufficient space. In addition kiosks are expensive to construct and operate and this is beyond her means. The Kumasi Metropolitan Authority also takes a tax once traders set up a kiosk. Lack of space and finance reduces Jemima's ability to compete in an intensely competitive market.

Source: Aberra 2005:10

3.2.3 Prices and competition

Aberra (2005: 10) noted that competition for petty trading sales was intense in K and that the popularity of trading could easily saturate local PUI markets that are smaller than the urban markets. PU traders identified competition from local and external competitors as a threat by (Aberra 2005: 11 sourced from Case studies June 2005). External competitors included rural producers of traditional food crops bringing them to trade in PU markets rather than urban markets which may be less accessible to some small farmers. A regular plantain trader in Atafoa said ' *during the bumper harvest of the produce our profit margin goes down'.* (Aberra 2005: 11)

Richer people quickly took advantage of areas originally the preserve of the poor as soon as they were seen to be successful (Aberra and King 2005:1). For instance, in K, men traditionally grew tree crops such as oil palm and cocoa. Where land pressure had made this activity untenable, men moved into the more profitable areas such as vegetable growing traditionally undertaken by women. (Aberra and King 2005:1).

The prices received in K for goods such as sewage irrigated vegetables, milk or charcoal were affected by the customer's perception of quality. In HD milk from animals milked in front of the customer gained a premium price, as it is obviously fresh and no water has been added. (*Adding water to the milk is an important way that very poor families are able to retain some of the milk for their own consumption needs while not sacrificing income.*)

3.2.4 Speed of income return and potential to scale up an activity

The small scale of poor people's economic activity meant that income generated was often only sufficient to meet daily consumption needs. This was exacerbated by the increasing cash demands engendered by urbanisation *(refer to 2.0.1 and 3.1.5 i) on monetisation of livelihoods).* Consequently, poor people required rapid returns on any investment made. Lack of profitability restricted people's capacity to accumulate savings or to gain access to formal credit, limiting their ability to invest in more productive activities or to scale up to economically viable levels. For instance, a consequence of intense competition in peri-urban markets was that trading generated minimal profits. Where profits were only sufficient to meet daily consumption needs traders could not invest in improving, expanding or diversifying their businesses reinforcing the small-scale of the operation and maintaining the petty trader in a vicious circle of daily poverty.

3.2.5 Dichotomy of agricultural opportunity

Increasing urban demand for food did not necessarily benefit small scale farmers within the PUI who already struggled to retain access to land and maintain soil fertility. *(and see fig 8)* In addition to the more obvious constraints, they had to compete against large scale, national and international commercial and marketing interests developing commodity flows over a wider geographical area and using convenient city facilities and infrastructure not always available to small scale farmers.

Rakodi 1999: 58 (in Brook *et al* 2000 Changing Frontiers: 16) put forward the following hypothesis as part of an early NRSP funded study on poverty in the PUI. In the early stages of urbanisation or at the outer reaches of urban influence, PUI opportunities exceed threats to agricultural livelihoods. Those most able to benefit are the larger farmers while smaller farmers lacking sufficient land and capital were least able to compete. At this point, increased access to credit would help smaller farmers intensify production and benefit from urban opportunity. In the later stages of urbanisation the threats to agriculture are greater than the opportunities. The consequent abandonment of farming benefits only those who are able to capitalise their land rights in order to access alternative opportunity. Those who lose are those who are unable to take advantage of alternative opportunities.

Brook (2002) further surmised that if poorer farmers moving from agriculture into alternative occupations released land for other farmers to intensify or expand cropping there might be additional opportunities for more casual agricultural work. However, as there was already competition for labour from other sources, farmers were as likely to increase mechanisation (R7867) or to change crops (R7867; Aberra and King, 2005). In addition, there was significant traditional attachment to farming and a recognition that land husbandry offered security in a changing world. The changing agricultural 'landscape' will have an impact on PU food security not least as the individual loss of a livelihood strand for those vulnerable people whose access to land is changing.

3.2.6 Market access

The information gained about farming development in both HD and K suggested that existing market structures most benefited the non-poor (detail in agriculture section). A pattern of inadequate market access was reported in both HD (R7549: 156) and Kumasi (R8090/ Bi B: 33).

Lack of skills to access markets were noted by the researchers but were not identified by farmers, traders or project beneficiaries either during the surveys or the action planning. This suggests the importance of access to markets, market analysis and market research was being underestimated. This often led to problems with marketing – for instance in the Kumasi natural resource based interventions where initial confidence about the ability to sell goods were not translated into sales after production, seriously limiting income derived from the intervention. Similarly in HD, government initiatives to set up farmers markets were not accompanied by training in developing market share, leaving many still having to sell a proportion of their produce at low prices to middlemen with greater market knowledge and connections (Purushothaman *et al* 2004b).

The Baseline study report showed local markets in HD to be fragmented with insufficient linkages to the state, national and international markets resulting in "localised gluts, sporadic price collapse, and price signal distortions" (R6825/06:50). It was suggested this was a deterrent to risk taking especially for poor farmers. Agricultural and trading markets were not well characterised in Kumasi but it was clear that access to the traditional city markets was limited for the poor as a consequence of existing market structures (Aberra and King 2005, Aberra 2005:11). Although there was

some tacit recognition of the importance of market access, in Kumasi for instance by the intervention participants who chose crop farming (who gave stable markets that they understood as the reason for this choice), people had no doubts about being able to access markets which later proved to be more difficult than realised.

However, limited market information that prevented farmers from producing what the market required was identified as a problem for farmers in both Kumasi and Hubli-Dharwad (R8090/ Bi B: 33 & Brook *et al* 2003/6:94). Not only did this reduce immediate cash income but also militated against expanding production in the longer term because of the high risk involved. Inability to match supply with demand resulted in market price drops and unsold vegetables left to go rotten[34]. Inefficient market mechanisms, especially for perishable commodities, are potentially a significant deterrent to risk taking especially for poor farmers.

3.2.7 Availability of post harvest technology

Consequently, gluts and wastage were a feature of agricultural production noted in both HD and K PUIs. Following on from this, where perishable commodities were increasingly in surplus (as in HD) (Brook *et al* 2003/6:94) or often in surplus (as in K) (R6799/08:s 20-116) there was a need for means to extend their saleable life. Commercial processing units, specialist cold stores and refrigerated transport had limited availability in HD (Brook *et al* 2002) with no information at all about this aspect of production in K other than small scale food processing by women traders. Availability of post harvest facilities could extend markets for farmers by adding a layer of value added production to agricultural commodity markets. In addition, expansion of small scale value added production or processing could form a significant income generating opportunity for smaller farmers and traders especially women. Although the need for these facilities was noted both by researchers (in HD Brook *et al* 2001) and PU communities in K (R7995: 6) this was not taken forward as a livelihood opportunity for the poor. It is not clear why this idea was not taken forward, especially in Kumasi but it may be that the means of achieving large scale solutions seem very remote to people with few resources.

However, the new climate of opportunity represented by urban development is very attractive to existing corporate interest. These companies have no barriers to prevent them from taking advantage of the opportunities that prevail in the PUI. For instance in HD large companies are starting to expand into roti making. These are likely to become located within the PUI because of the cost of land relative to the urban centre is low enough to allow sufficient space to be taken for large scale activity. In addition proximity to the urban market and good transport infrastructure enables rapid distribution of perishable food products. This would form a direct threat to people (such as Jaibun – see box in trading section) who currently undertake this as livelihood option (Purushothaman *et al* 2004b).

The research clearly showed that it was women who made a living by trading value added cooked foods but men who were more likely to work in factories. Consequently, the change from small scale, home based, food production and sale to large-scale commercial production and distribution potentially represents a transfer of livelihood from (self-employed) women to (employed) men in a manner similar to the transfer of other PU resources from poor to rich already described.

[34] Despite Kumasi Participatory Action Plan 3 (R7995) featuring processing, vegetable processing was not included as an activity thus losing a useful source of knowledge about vegetable processing as a means of providing farmers with alternative livelihoods. (There may be gender implications of this since R8090 says processing is seen as female activity – which may reflect the nature of female input into the action planning process or communications between male and female groups/ men and women in groups)

The development of farmers markets around HD demonstrated the benefits of supporting facilities and institutions that enabled poor farmers to take advantage of specialised means of selling and marketing (Brook *et al* 2002). The further facilitation of the development of aggregation centres at nodal points where small scale producers could sell commodities, or products could be collected for processing, packing or distribution, would allow women and small producers to generate sufficient economies of scale to benefit from urban opportunities.

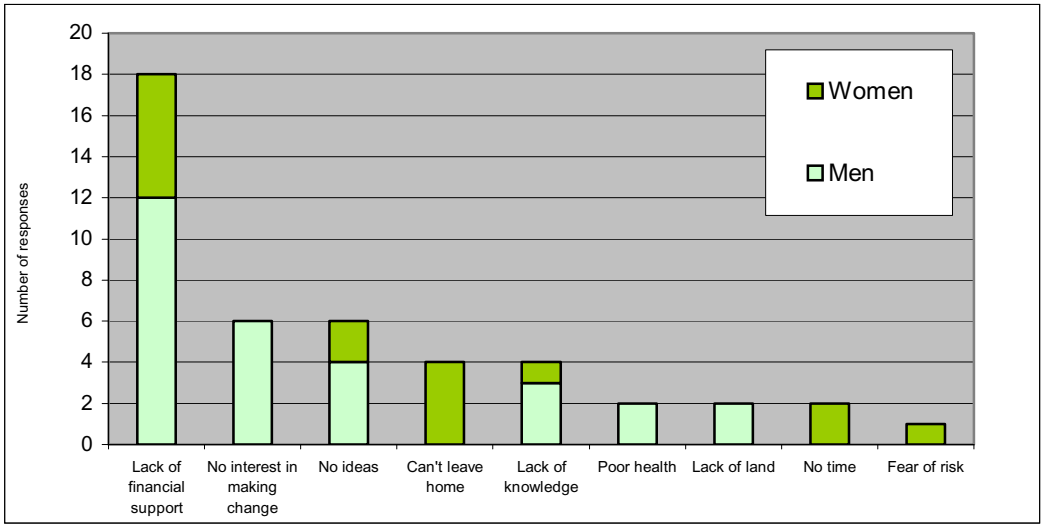
3.2.8 Irrigation and constraints on water

In HD irrigation was recognised as an area that would benefit agricultural production (R7959) confirming Brook *et al* (2002) who found irrigation was a major constraint for richer landowners. However, Thoday (2003) did not find water for irrigation to be a significant livelihood asset for non-farming and landless groups where many of the poorest people in HD were found. This demonstrates how prioritisation of constraints on livelihood activity varies according to assets available.

Erratic rainfall was mentioned as a constraint in the K lit (R8090/Bi B: B27 table 7) but irrigation was not identified in the participatory action planning as an area to be taken forward for livelihood development. Watering was mentioned as a difficulty by people making a field visit to a vegetable growing farm where irrigation was being carried out by buckets of water carried from the nearby river (R8090/Biii: 25) but wasn't listed as a constraint to production. Vegetables irrigated with contaminated water were seen as harmful to health and consequently received a reduced price (R8090/ Bi E: 22 and NRI *et al* 2000).

3.2.9 Perceived impediments to change

Figure 19
Perceived impediments to livelihood diversification in four peri-urban villages in HD



Source: Gregory 2003

This small scale survey gave an indication of some of the perceived impediments to change in peri-urban HD and confirmed the financial investment (and financial hiatus of making change) was the most significant perceived impediment to moving to new productive activity. The qualitative data collected from Kumasi suggested a similar array of perceived impediments.

3.3 DISPROPORTIONATE MARGINALISATION OF WOMEN AND POOR PEOPLE

Rakodi (1999) hypothesised that some households may become more vulnerable as the urban area expands. The K and HD PUI studies confirmed this hypothesis demonstrating how the processes of urbanisation could disproportionately affect the livelihoods of the poorest people. In summary, where natural assets became inaccessible, poor people found more difficulty in changing to new productive activity than the non-poor, especially where finance and skills to enable change were lacking.

In both HD and K there was evidence that the pressure of urbanisation reduced access of the poor and very poor to common property resources such as water, grazing and cropping land or forests. The research described why poor people were less able to take advantage of peri-urban livelihood opportunity and more likely to become marginalised by the negative effects of urbanisation. Direct threats to livelihoods arose from loss of agricultural land to development and the erosion, pollution or loss of natural resources used for self provisioning, while new vulnerability arose from the lack of ability to move into new productive activities. Within the general lack of access to PU resources disproportionately borne by the poor, women could be additionally marginalised by the cultural expectations constraining female activity, although the research did not uncover how far PU processes drove changes in attitudes.

Women had fewer skills, less education, less access to money to pay for training and therefore less access to waged work. Within paid employment, cultural norms genderised wage rates leading to lower cash incomes for women. For example agricultural labour remained the primary IGA for women in HD but female agricultural labourers earned 25-35 rupees per day (around £0.60p) while men earned almost twice that sum (Hillyer 2002 Annex B). Women also had more limited choices of work rooted in cultural perceptions of work that was acceptable for women and the lower growth of off farm and non-farm opportunities for women. Much of women's time was taken up with domestic responsibility, which also limited their availability for work (R7867).

Lower incomes limited savings that could be made. Women had little access to any kind of financial capital and lacked the resources that could act as collateral for credit. Women's reduced access to credit for expansion or change concentrated them into the least profitable business sectors and income generating activities requiring low initial investment.

Figure 20

Reported causes of vulnerability in Kumasi (*300 respondents in 12 communities)*

Source of vulnerability	**Response frequency**
Unemployment	12
Overexploitation of NR base (loss of common property/pollution)	10
Natural shocks (e.g. drought)	10
Landlessness	7
Lack of credit	4
Health and social barriers	3
Lack of family support	3
Poor market	2
Lack of skills	1
Lack of alternatives	1
Total number of community responses	53

Source: R8090/ Bi B: 27 Table 7

The first four sources of vulnerability arose from lack of access to opportunities that would allow people to generate more income and from natural or man-made circumstances that presented livelihood shocks to household economies. Inability to adapt to natural constraints was exacerbated by lack of technology and skills. The last six sources of vulnerability prevented people from changing to new productive opportunities where the old ones were failing or had failed.

4.0 OVERCOMING CONSTRAINTS AND BARRIERS TO LIVELIHOOD CHANGE

Key findings

- Interventions served to move peri-urban people to new productive activities . Where actions and actors were supported as part of NRSP research, there was more change to new or enhanced productive activity compared to those peri-urban people or villages that did not take part.

- The research activities that appeared to most usefully help people to move into new productive activities were support for participatory action planning, especially where this resulted in implementing a unique action plan for the whole community, for self help groups, for the provision of credit, training and information, and for the involvement of wider institutions.

- People involved in the research activities improved their livelihoods and gained self-respect, confidence and increased status within their family and the community as a result of increased financial and human capital compared with people who were not involved in the research projects' activities. Participants became more confident in their ability to make livelihood change and to approach wider institutions, either individually or collectively, to get the services and support they needed to improve their lives and incomes.

- Where the research activities protected or enhanced the natural resource base the effect on household incomes, savings, productive assets and food security was greater than where the approach to natural resources remained extractive.

- The poor remained more dependent on natural resource use than the non poor after engaging in trials of new or enhanced livelihoods, even where the intent was to move people away from natural resource based livelihoods. Where the natural resources were enhanced a greater number of people gained a higher proportion of their productive activity from them. Where the natural resource base remained unprotected it continued to decline increasing vulnerability for the poorest people.

- Natural resources had to be protected by specific targeting. Activities designed solely to promote income generation or to reduce pressure on natural resources had no effect in preventing further erosion of natural resources.

- Individual working gave greater financial reward and greater household food security than group working. However, social capital, measured as unity, co-operation and empathy, increased more where community based initiatives had taken place. This helped to mitigate the effects of the loss of social capital arising from patterns of migration into the PUI and changing attitudes as a result of urbanisation.

- Traditional farming and trading activity formed a valuable bridging activity supporting people's moves into new productive income generating activities. These activities often had particular importance for women.

- The research showed that multiply disadvantaged people were able to carry out effective market analysis and business planning given adequate training and that lack of attention to these aspects limited the productiveness of people's income generating activity with the most significant remaining constraint at the end of the

research being lack of market linkage between peri-urban producers and some existing urban markets. The need for market analysis and market training was underestimated in most of the livelihood activities especially those based on traditional activity.

- Processing of PU agricultural production represented a significant area of value addition and trade already being undertaken by women but not taken forward by the action planning. In HD, this market area was also shown to be of interest to large scale, commercial operators in way that could later threaten small scale female livelihoods in this sector. Because of their inability to achieve sufficient scale, small operators often remained confined to specific market niches that potentially maintained their small scale of production. Encouragement of potential for greater political capacity and economies of scale had been started by encouraging associations of self help groups but the activity of these self help associations was yet to be defined.

4.1 MOVING TOWARDS NEW PRODUCTIVE PROCESSES

The first phase of the various lines of NRSP research into peri-urban production systems and the livelihoods of its inhabitants described the threats and opportunities arising as a consequence of urbanisation, especially for those who were poor or becoming more vulnerable as a result of peri-urban processes.

In general, the research showed that poor people living in the PUI felt the livelihood shocks and trends associated with urbanisation increased vulnerability, either for themselves personally or for others. The inhabitants of the Kumasi PUI recognised their livelihood constraints and were largely pessimistic about the future. An Esreso community member said:

' More people are going to fall into the vulnerable bracket as a result of increasing loss of farmland and decreasing family support' (R8090/Bi B: 23).

Similarly the HD research pointed out the high degree of fatalism of PUI inhabitants especially among the poor and very poor with people believing that change was beyond individual control (Thoday 2003; R8094/FTR 4-App4b: 13).

If they are to remain productive in the face of urban changes and are to be able to take advantage of the undoubted opportunities that living in close proximity to cities brings, people living in the PUI need to have the capacity to move into new activities. Because poor and very poor people have fewer of the livelihood assets needed to make this kind of change, they may need to be supported in order to do this successfully. Consequently, the objective of the second phase NRSP action-based research was to investigate the means of reducing vulnerability and improving livelihoods for the peri-urban poor in the face of the dynamic changes occurring as a consequence of urbanisation.

People's capacity to make positive livelihood change and resist the impact of negative change is an individual process shaped by their access to the various livelihood capitals and the manner that these are put together to form a livelihood strategy. The constraints and barriers to productive change explored in the previous section could be tackled either by individuals themselves or by collective group or community action. Obviously, people in similar circumstances may use very different strategies to meet their livelihood needs making it difficult to capture any underlying principles. However, for those lacking livelihood assets or where action was collective, change could be facilitated by interventions. This may arguably, be considered a consequence of changing social structures within the PUI, perhaps brought about by migration and changing attitudes, that has reduced the capacity for collective, community action or for individual action with the support of family or community behind them. Investigation of this process of livelihood change formed a significant part of the NRSP action-based research.

4.2 ACTION BASED RESEARCH FINDINGS

Actions that interventions might support that helped people to make livelihood changes

4.2.1 Challenging changes in natural capital

Expansion of the cities had created many competing demands on the peri-urban natural resource base. The research showed how agricultural and common land was being converted for urban purposes and the NR base was becoming rapidly and often irreversibly degraded. Farmers had been practising agriculture as their chief livelihood activity for many generations, potentially gaining little experience of alternatives that took advantage of proximity to the city or that used little or no land while the increasing development of non-farm employment opportunities removed labour from agriculture making it harder for farmers to continue with traditional farming practises. Furthermore, traditional agricultural practises often remained extractive of natural resources, such as water or soil fertility, adding to the pressure on them and limiting productivity. Brook and Davila (2000) pointed out the dichotomy of agricultural development in both Kumasi and Hubli-Dharwad with the poorest farmers having little alternative but to find ways of staying in faming to provide their most basic food needs but with no opportunity to take advantage of more lucrative and less space demanding crops. This has to be weighed against a structural trend of the poorest people increasingly becoming landless and needing to find alternative, livelihoods. Notwithstanding this, peri-urban non farm and off farm[35] livelihoods often remain rooted within the natural resource of the area e.g. trading in agricultural or other natural commodities.

Despite the research showing plenty of evidence of the importance of natural resources in the peri-urban livelihoods and of the way that traditional peri-urban agricultural systems, especially urban waste based farming, could provide valuable environmental services for urban populations, the assumption in both the HD and K PUIs appeared to be that natural resource based livelihoods were irrelevant now that urbanisation was making changes. More formal government and institutional management of natural resources and urban waste management seemed to be expected, with a weakening of informal and traditional management input and with the most vulnerable having little influence over decision making (R6825/5: 74-76 & R8090/Bi B: 42 & 45). In Kumasi, people noted that they only protected the resources on which they depended (R8090/Bi B). Interestingly, there was a move towards greater tree planting by individuals in the more urban areas and peri-urban areas that were less likely to be lost to development (such as the marshy valley bottoms in Kumasi) that might be associated with greater security of land tenure in these places (R7549/57; Aberra and King 2005). In Kolkata, there was a move towards replacing the palm trees that provided the basis for local alcohol production to the more lucrative coconut trees with an eye towards exploiting peri-urban markets (Working paper 5, 2002:17).

i) Rehabilitation of NR base

The major NRSP research focus was to investigate *'strategies of natural resource management to benefit the poor'* (from HD log frame quoted in R8094/a App4b: 7). No evidence was offered within the research documentation of any new, community based initiatives designed to protect or rehabilitate natural resources. In fact, the documented descriptions demonstrated such a wide variety of stakeholders and such disparate power balances between them, that community based action for natural resource protection appeared to carry sufficient potential for conflict to make it unlikely to happen

[35] Differentiated according to Barrett *et al* 2001

easily. Where this approach was used in HD, it required careful facilitation by an external agency (R8094/FTR).

Nonetheless, as a result of the initial NRSP research contribution, the action based research in Hubli Dharwad proceeded on the assumption that improving, rehabilitating and protecting the natural resources could provide viable and productive livelihood activities. By contrast, this approach was not a feature of the Kumasi interventions *(see paragraphs at 4.5 on comparing intervention styles).*

Consequently, an ambitious programme of natural resource rehabilitation was put into action in HD, working both on a community and an individual basis in order to test the extent to which natural resource based strategies could form viable livelihood options for poor people living in peri-urban areas and whether it was possible to challenge the deteriorating natural resource base. The rehabilitation of the natural resource base in the different villages covered provision of irrigation by catchment rehabilitation and tank[36] restoration, vermicomposting and soil fertility management and WADI agroforestry that promoted forage, fruit and tree planting programmes (R8094/FTR).

ii) Farm based activity

Despite an overall decline in agricultural livelihoods, crop farming continued to play a significant role in people's livelihood strategies in all three PUIs studied especially for the poorest people. Not only did farming provide employment opportunities to the landless, but also appeared to serve as a safety net and as a bridging activity for those with access to land supporting any moves into alternative productive activities (Aberra and King 2005: 1). Where people had the personal capacity and livelihood assets to make the move into more productive forms of farming they were already doing so. This was clearly shown, for example, by the movement of people in Kumasi, especially men, into vegetable farming replacing more traditional tree crops such as cocoa and oil palm that were being displaced by peri-urban development (Nunan *et a*l 2001). The research showed clearly that developing a diverse range of crops was a livelihood strategy that helped people to overcome livelihood shocks (R8094/FTR). However, where people were unable to make this move for themselves they needed support to do so. Improvement of farming was the only activity common to both the HD and K research. Interventions at both locations took into account improved understanding of the constraints for poorer farmers derived from previous studies. However, the interventions were carried out in different ways in each place.

In K the potential for improving inputs to encourage higher value vegetable growing and farm crop diversification was explored as Action Plan 2 (R7995/FTR: 5) mainly by the provision of credit by the NGO. Where people were able to access land, the proximity of the market made this option very attractive so this activity was most relevant to those people living in the more rural areas with most access to land (Aberra and King 2005: 3). In the first batch of action plans prepared in Kumasi people showed a marked tendency to stick to familiar farming activities such as maize and cassava growing in order to avoid risk when taking on loans. 70.6% of the people choosing the crop production alternative livelihood option were already engaged in farming and the majority also had other occupations. People gave familiarity as a reason for their choice. Other reasons given were the need to provide food for the family or to have crops to sell. They also stated that the market was stable, the implication being that people understood the market and were confident about making sales (R8090/Bi D: 50). The underlying implication here is that farming represents an important factor in people's livelihood security. It can also act as a bridging activity into other livelihood activity or simply to maintain livelihood diversity already shown to be an important

[36] A man-made reservoir impounding surface runoff behind earth bunds and embankments

livelihood strategy (Hillyer *et al* 2001). This contention appears to be supported by Aberra and King (2005: 5) who showed that poor repayment of loans for crop based production tended to encourage a move into trading activity (in the second loan cycle) as people became aware of the greater potential of trading for income generation.

In HD organic farming, integrated pest management (IPM), improved crop varieties, WADI agroforestry, fruit tree growing, adoption of small livestock for income generation, promotion of better animal health and training village paravets formed the main thrust of the farming based programmes. Ancillary issues of improving soil fertility, catchment rehabilitation and providing irrigation were achieved using a variety of mechanisms that rehabilitated the NR base (and detailed and explained in R8094/ E: E2 Table 1). Since many inputs were provided free, the most significant factor at this point in the intervention process was the provision of better information and training by the technical institutions, especially UAS, and the facilitation of community based rehabilitation work by the grass roots NGOs, BAIF and IDS, although some loans became available which were most often used for the purchase of livestock for dairy production (PD138: 34).

iii) Move from natural resource based livelihoods

The peri-urban pressures on natural resources operating to move people towards a more cash based livelihood activities drove people's need to invest in new forms of productive activity. Land loss and landlessness were not issues that could be tackled directly, either by individuals or by NGOs. In HD it was a fact of life that many people were landless or becoming so (R8094/FTR: 4-App4b: 5), while in K changing land tenure was considered too politically contentious a problem to tackle (R7995/FTR: 6). Furthermore, in Kumasi especially, livelihoods were not only constrained by loss of land but also by lack of physical space. There was also a feeling among some Kumasi PUI inhabitants that natural resources were not relevant to urban livelihood activity or were too degraded and insecure to provide sustainable livelihoods and that a movement away from natural resource based livelihoods would reduce pressure on them (R7995: 6). This attitude was most apparent in the more urban villages (R8090/Bi B).

In these cases, trials of natural resource based activities were not always thought appropriate, and interventions at both the K and H D PUIs sought to include this consideration by developing non-NR based livelihood trials. When this happened, the focus moved to promoting human capital and income generating activities to reduce reliance on natural resources for livelihoods.

iv) Income generating activity and livelihood programmes

Programmes in Kumasi

Non-farm natural resource based activity and processing (Action Plans 1 & 3).

A number of unfamiliar, natural resource based, activities were introduced as micro business options and implemented through livelihoods groups (Action plan 1). The intention of these was that they would address the constraints arising to livelihood activity as a consequence of lack of physical space. The original proposals for action plan 1 were for mushroom production, snail production, small animal production and beekeeping (R7995/FTR: 5). However, physical space remained a constraint on these activities (Aberra and King 2005: 28) consequently they were more successfully pursued in rural areas (R8090/Bi D). Basket weaving was considered in the original plans but was later discarded because the raw materials were not easily available and the baskets faced too much competition from plastic bags (R8090/ FTR: 8).

Action plan 3 originally focussed on processing and marketing of agricultural surpluses to extend shelf life and add value (R7995/FTR: 6). The two activities, trading and alata soap making, which finally became the staple activities of action plan 3, were not quoted as part of the original action plans. These had arisen as people had gained additional information about these activities and had requested CEDEP to include them in the programme. This suggests that the original action planning process may have had some weaknesses, perhaps of participation or integration of available information that led to changes on subsequent evaluation *(see also issues arising 4.7.1 about participation).*

Programmes in HD
Income generating activities in HD that needed less natural resource based involvement included soap making, incense stick making, candle making, poultry and livestock rearing, roti and papad[37] making, pickle making, beekeeping, photo framing and tailoring. IDS was more inclined to focus on these income generating livelihood programmes with less involvement in NR rehabilitation (PD138).

The MOVE (Market Orientated Value Enhancement) project was designed to investigate the potential of being able to select and adapt income generating activities to changing market conditions and recognising these new conditions by analysing the market on the basis of good market information/ market research. In this case multiply disadvantaged women received intensive training in market analysis (Purushothaman *et al* 2004b). Despite this approach market linkages were still an area that required further attention (PD138: 26; *see 4.7.3 about markets*)

4.2.2 Changing financial capital context

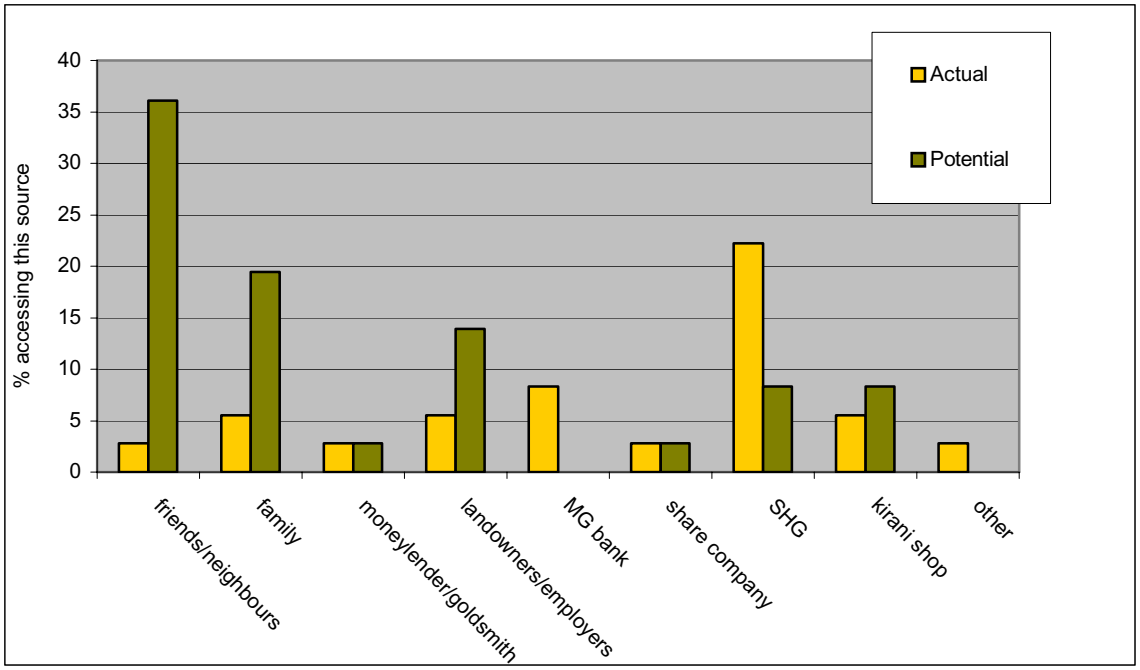
Financial capital is an important factor in wealth creation and access to financial capital can purchase access to the other kinds of livelihoods capital; social (including political), physical, natural and human. It consists of finance available to people from wages, savings, credit sources, pensions or remittances (Nunan *et al* 2001; R7845/F: F14). Nunan (*ibid*) notes that one of the most commonly cited characteristics of the poor is lack of financial capital and this was shown to be a significant constraint on those wishing to take advantage of PUI opportunities.

i) Low income, small scale, low productivity and effects on savings
The low incomes generated by existing income generating activities, the small scale of activity and low productivity of many of the income generating and farming activities reduced the resources (especially financial resources) required to move to new or more productive income generating activities or to enable expansion or diversification of existing activities. In addition, the research showed that many people found it very difficult to save which they attributed mainly to low incomes, increasing living costs arising from the loss of free natural assets previously used and greater capital demands for training and business investment. The poorest people were rarely able to access formal credit and usually relied on informal credit sources *(refer back to financial capital paragraphs 3.1.5 iii-vi).* Where people were able to they used credit from a variety of sources both to manage day to day living (consumption based credit) and to invest in new productive activities.

Figure 21 shows the places where poor people had taken credit in HD and the places where they felt they could access credit if they needed.

[37] Cereal flour based food products

Figure 21
Potential and actual credit sources used in PU villages in HD



Source: Gregory 2003

Similarly, in Kumasi people reported using mostly informal credit sources especially family and moneylender sources (R8090/Bi B ref). Some people were able to access credit from wholesalers that allowed them to start up into new income generating activity (R8090: 41) (*see Yaa Asantewaa's story –box on p 79 of this document*)

ii) Savings

Despite limited financial assets, a remarkable number of poor people in both HD and K managed to save. The savings mechanisms described were mainly cash based and located in the informal sector either as part of credit and savings self help groups (in HD) or specialised 'susu' collectors (in Kumasi). Own or family savings were the main source of investment credit for the poor.

Savings in Kumasi

Nearly 78% of Kumasi interventions beneficiaries had made savings with 52% of these claiming to save on a regular basis. The main motivation for saving was as a coping strategy to survive shocks (55%) or for expected future costs (22%) rather than for investment in economic activity (19%). Savings were made with banks (30.9%), Credit Unions (1%), Susu collectors (29%) in cash at home (29%) saleable investments (10%). 93.6% of the sample preferred to save on an individual basis, rather than as part of group, so they could independently meet their short term needs. In a list of physical assets that indicated wealth, livestock were not mentioned at all, suggesting that this did not feature greatly as a savings mechanism in peri-urban Kumasi (Brook and Davila 2000: 186). People who were able to save did not use credit to fund their livelihood activities. (R8090/Bi D: 58).

Savings in HD

In a small survey of household savings and debt carried out as part of an investigation into self help group activity it was found that self help group membership was a significant factor in saving strategies of the poor in the HD PUI. Overall, only 53% of poor people had savings of whom 71% were women (Gregory 2003). However, where people lacked access to satisfactory credit sources or had insufficient capital as

savings, the interventions addressed financial capital limitations preventing moves into new productive activity.

iii) Improving access to credit for investment

Access to credit was identified as a major constraint to the uptake of new productive activity. The research therefore both sought to address this constraint by providing access to credit carried out by diverse means. This covered self help groups making savings and loans, micro credit programmes and promoting greater access to financial institutions. In Kumasi, credit provision was also attached to business planning to enhance business viability and since the provision of a business plan was identified as a (minor) constraint to accessing formal banking services (R8090: ref). In both HD and K the lack of capacity for the projects to provide funds was a source of initial friction between the researchers and the communities (R8094/C; C24 & R8090/Bi A) suggesting maybe there was general perception among these communities that money was an expected element of development facilitation.

In HD self help groups played a major role in provision of credit, often starting initially as savings and loans groups generating funds that were rotated as loans among members (R8090/C: C31). PD 138:33 notes differences in style between IDS and BAIF groups in the level of borrowing relative to savings they could make, which had an effect on the amounts both saved and borrowed (*see consequences for livelihood change paragraphs for more detail*). Once SHGs became properly constituted with bank accounts and members had become more familiar with formal bank services, additional loans from the banks could be taken by the group (R8094/C: C35). In addition, bank accounts are essential if groups are to access government development programmes (R8094/C: C35). Training to familiarise with bank procedures was also put in place in order to lower the barriers for individuals to access banking institutions (R8094/C). In the last two years a capital investment of £16,000 was made by the research to provide revolving fund micro-finance for income generating activities for SHG members (R8094/FTR 4-App 4b: 11). A barefoot auditor checked the SHG accounts to maintain trust in the savings and loans procedure (R8094/C: C34). The SHGs appeared very effective at targeting poor households and reducing their reliance on moneylenders who charged excessively high rates of interest (PD138: 33).

In K the extension of the role of the livelihoods groups to include savings and loans didn't occur until the last year of the research in order to bolster group sustainability and enable further loans to be accessed from other financial institutions. Rural banks have been inviting village people to register themselves as savings groups and CEDEP representatives have liaised with rural banks about the possibility of working with the livelihood groups created, despite group conflict having compromised the viability of some of the groups making them appear potentially less creditworthy (PD138: 20). Nonetheless CEDEP felt that making linkages with rural banks had provided worthwhile lessons for the research participants (R8090/ FTR: 22). Micro-finance provision of $1000 US maximum was made available via the research with loans being disbursed by the NGOs and repayments collected by the CLFs (R8090/Bi A).

4.2.3 Increasing human capital

i) Training

A wide variety of training of participants in the research was carried out. Local academic institutions, training institutes, skilled practitioners and NGOs carried out the community based training. The training programmes were intended to improve technical skills for the poorest people.

In Kumasi, CEDEP provided both the training and the trainers for the micro business activities. Local practitioners carried out some of the training for the novel income generating activities selected by the livelihood groups (soap making, mushroom growing, snail rearing etc). Entrepreneurial skills were introduced in the form of basic bookkeeping and record keeping and planning skills were introduced as participatory business planning (R7995/IV: 2). The financial planning package was formulated and carried out by CEDEP, the CLFs (Community Level Facilitators) and junior researchers (R8090/Bi A: 28). Part of the business planning training was feedback from the community vetting committee who decided which action plans would be taken forward and giving the reasons for refusal back to the applicant so they could use this information to improve their next application (R7995/IV: 3). Other than business training, no training was offered to farmers or traders. These research participants did not identify any need for training and were content to continue unchanged with traditional activities. Training had to be confined to one activity per practitioner to ensure intended beneficiaries were able to attend (R8090/Bi B).

The non farm, natural resource based activities chosen were largely new. Consequently, significant training was required and the time needed for training was probably underestimated (R8090/ FTR: 8). Researchers also noted that people recognised that there were significant risks associated with these untried and unfamiliar activities and for which they used a precautionary principle of slow entry and modest financial exposure (R8090: 17 & Aberra and King 2005:7).

The CLF's leadership skills and integrity were considered to be key features in the effectiveness of the livelihood groups and the training received by CLFs was an essential element of the process in Kumasi. Areas identified for further training were conflict management and an in depth knowledge of the support agencies and service provision available to communities to encourage livelihood development. (R809/Bi A: 51).

In HD, a wide variety of training and exposure visits were carried out in order to build people's income generating capacity using new productive approaches. All SHG members received at least one training input and all poor participants attended at least 2 training courses (PD138: 41). The two NGOs involved (IDS and BAIF) had different training approaches. IDS concentrated on providing training for income generating activities (PD138: 26). The MOVE (Market Orientated Value Enhancement) project introduced intensive training in market analysis for multiply disadvantaged people. BAIF training was focussed on natural resource management included forest management, water and land management, cultivation of medicinal plants, horticulture and crop variety demonstrations. Farming techniques such as organic farming, integrated pest management, livestock production systems and vermiculture were also introduced (R8094). Up to 27% of people in received training in WADI/agroforestry plus exposure visits to gain practical knowledge. Exposure visits introduced new ideas such as forest and fruit trees, medicinal plants and less water demanding crops to cope with prevalent drought conditions (PD138: 25).

Training was also carried out in participatory evaluation techniques in order that people might develop ways of measuring the success of their SHG activities and their own individual livelihood activities (R8094/FTR).

ii) Expanding information sources to increase innovation

Innovation is of particular importance within the PUI because of the greater need for people to be able to manage the faster pace of change. It was noted in both HD and K that most vulnerable people involved in the research were also the least able to link existing problems to new ideas for solutions. Exposure visits were intended to widen

people's information sources and introduce people to see new ideas in practice in order to encourage people to try innovative or previously untried ideas for new productive activity. Expanding access to information sources was a prime function for the community facilitators.

In Kumasi, researchers cited lack of innovation as a problem arising within the participatory action planning process. The researchers pointed out that any attempt to cite an example quickly became a suggestion of what to do. Where the facilitator did not cite examples, people could only suggest already familiar livelihood activities despite the fact that they were already aware that they were unsustainable (R7995/FTR: 9).

In HD it was also noted that people found ideas for new livelihood activities difficult to think of. The poorest women found it particularly difficult to come up with concrete suggestions about livelihood alternatives (R7595/Envisioning the Future: Vol. 2 Feb 2002: 2). This is unsurprising since ideas are to some extent linked to a wide variety of experiences and information and women in HD have already been shown to have a very limited range of information sources (Thoday 2003). Selective access to information can inhibit access to peri urban opportunity and so limited access to information acts to reduce women's opportunity in a discriminatory way. SHG membership had a positive effect on increasing the number and quality of information sources that women were able to access (Thoday 2003). Certainly where people had access to information sources new ideas often occurred. For example, the Agarbatti[38] makers in HD got the idea from a group member who had seen it in a television soap opera (personal communication with Agarbatti makers June 2003). In HD, lack of ideas was tackled by increasing people's access to information (R8094/FTR 4-App4b: 8). The self help groups became the vehicle for organising activities such as training and exposure visits or input from the academic institutions or training institutes. People were taken to visit places where alternative activities were being carried out (R8094/E: table 4). The MOVE project took women to visit the city in order to investigate market principles before carrying out exercises to consolidate those principles (Purushothaman *et al* 2004b).

iii) Tackling social problems

The natural resources focus of this research meant there was no remit to tackle social problems arising from living in close proximity to the city despite the impact noted on livelihoods in both HD and K (R7959 & R7854) and also identified in Kolkata (Working paper 5, 2002). However, some of the community based action plans took these problems into account and took joint action to remedy them as a first step to improving livelihoods. For instance, in Channapur (HD) women thought male alcoholism impacted so greatly on their household livelihoods that they had no interest in any other income generating activity until the problem was resolved (R7959/ A: 13.6). The problem of excessive drinking was identified in more than one village but action only taken successfully in one (R8094/4-App4b:8) and this not without some conflict (Nitturkar 2003)

4.2.4 Improving social integration and political capital

i) Links to wider institutions– fragmented political support and unsupportive institutional landscapes

Competing interest for peri-urban resources requires sensitive input from planning and policymaking frameworks. In both HD and K the political and institutional frameworks that might protect natural resources and relieve poverty were complex, fragmented and

[38] A type of incense stick

sometimes ineffective or corrupt (R7959/FTR: 10 & Brook and Davila 2000: 34). Furthermore, the institutional attitudes in both places were inclined to be paternalistic reflecting the hierarchical nature of existing social systems (R7959/FTR: 11 & Brook and Davila 2000: 35). A general lack of understanding about the PU concept was exemplified in HD where BAIF reported that the training and political institutions were:-

" treating it (the PUI) as an urban area. They were of the opinion that the peri-urban effect is a natural process and it is beyond their ability to do anything in this area. Their involvement in the (project action) planning process has raised their interest in this issue" (R7959/FTR: 16)

while Onibokun (1996: 168 quoted in Brook and Davila 2000: 34) proposed that in Anglophone west Africa:

" *urban poverty is exacerbated by managerial incompetence, inefficiency, ineffectiveness and unresponsiveness. Lack of transparency, accountability and popular participation has combined to weaken the capacity of the state. Few states are able to face the challenges of urban growth effectively"*

In HD, the institutional landscape in HD is shown in R8094 Annex B/2 and R0890 Annex I Figs1&2. Wide ranging efforts were made to engage institutions and good relations were described with specific individuals on the Zilla Panchayat[39] (ZP) and the Hubli-Dharwad Municipal Corporation (HDMC) although it was subsequently recognised that interaction at district level was less useful than at either a more local (block or taluk) level or at a higher, state level. State level interactions are described in R7959/A: A55-63. The research endeavoured to serve as a bridge to engage the interest of government officials, opinion formers and policy makers which it was noted sometimes reflected the personal political capacity of the individuals involved (R7959/FTR: 10). Where the research succeeded in engaging political interest, the government officials involved expressed genuine surprise at the capacity of the poor to identify their own problems and solutions and the effectiveness of the participatory planning process. This engagement also made the officials more aware of the suffering of the poor. Although some officers were impressed by the potential of the technique, it was further accepted that government departments probably would not have the capacity to conduct participatory planning themselves. (R7959/FTR: 10). When successful links between the communities and the wider agencies were formed it was possible to identify how community concerns could be matched with the services already available and the gaps that needed to be filled (R7959/D[40]).

A rural/urban divide was noted in between accessibility of authorities when a village become designated urban rather than rural. This involved a transfer of authority and decision making from the village council (Gram Panchayat) to the larger, urban administration (HDMC) that reduced the size of community representation on the council and might also serve to make decision making more remote from the village poor. This change of boundary designation arbitrarily from rural to urban also means, for example, that people lose access to certain rural benefits such as access to the State Department of Agriculture extension information and loss of rural credit and subsidy schemes (Brook and Davila 2000:183).

In K, a hierarchical system of traditional authority operated as well as government administrative and state institutions. Government institutions could be divided into national, regional and state institutions. An overview is available as an organisational

[39] A sub-district or block level administrative tier
[40] In project magazine - Envisioning the Future, Aug 2001 Vol.1: 8

chart in Holland *et al* 1996b/ Appendix VII. Traditional authority structures remain strong in Kumasi despite the overall weakening of traditional institutions reported as a consequence of urban change (Brook and Davila 2000:35). Significant efforts were made to involve the various sectors of the institutional landscape but in contrast to HD, wider institutional involvement in Kumasi was not so productive in terms of eliciting practical support for the research or harmonising community plans with state provision. Rather, the input of the wider 'stakeholders' led to further suggestions for new or different activities instead of using the opportunity to discuss gaps in provision and how institutions could be encouraged to offer the communities support for the activities to be promoted by the action plans (R7995: Appendix 11).

ii) Community based networks

As a result of their patchy success in generating political interest in the research outputs and involvement of the target institutions in supporting community action, the researchers **in HD** anticipated a general indifference from the wider target institutions so sought to build community influence and impact sustainability by promoting federations of self help groups (R8094/FTR 4-App 4b: 9). Similarly, **in Kumasi** groups were encouraged to join together to form networks for each livelihood activity. In this case the primary focus was to disseminate best practise but the networks also carried the potential for other benefits of larger groups to be pursued. Four of these livelihood networks were formed and although group livelihood activity had been dogged by conflict, two of these networks had registered themselves as co-operatives (R8090/FTR: 21). Interestingly, the networks that had worked best were those with the greatest male participation (notably the grasscutter producer groups) while the female groups (notably the mushroom growers) were much less successful in creating wider networks of producers (P138: 19).

4.3 CONSEQUENCES OF THE INTERVENTIONS FOR LIVELIHOOD CHANGE

A comparison was made between villages around HD that participated in the research and others that did not. Similarly, there was a comparison of individuals participating in the K PUI research. The aim was to identify changes resulting from the activities of the last of the NRSP research projects. (PD138/: 7 & 9 Table 5*)*. This section considers in some detail the consequences of the research interventions on livelihoods of the participants plus, where possible, some comment on changes occurring outside of the research ambit.

4.3.1 Effects on natural capital and peri-urban production systems

An impact assessment (PD138) confirmed that the poor were more likely to depend on the natural resource base than the non poor for their primary economic activity (PD138: 1) while land based activity continued to be the most significant activity for the majority of PU inhabitants (R8094/FTR, PD138: 43 & Aberra and King 2005:2). The comparison showed that where natural resources were the focus of the intervention activities they were better protected and provided improved food security, greater income and increased livelihood diversity than where utilisation of the NR base remained purely extractive. The number of households that were food insecure fell in the areas where natural resource improvement was supported by the research while the numbers of food insecure households remained the same without this support (PD138: 2 & 46). The numbers of small farmers leaving the land or selling topsoil for construction fell in areas where natural resource management training was carried out (PD138: 54).

Despite an apparent preconception among administrations (R8094R7995/II) and potential beneficiaries (R8090/Bi A: 39) that NRs were not relevant to the economic activity of the PUI, this comparison clearly showed (both within and between the

studies of the K and the H D PUIs) that protection of the NR base had value both for improving livelihoods and for supporting urban environmental services (*see 2.1.3.4 PUI agriculture deriving from urban waste).* Where the NR base was not targeted for any positive action there was a continuing, general reduction of natural capital and a further move away from NR based livelihood activity by all social groups, but especially by those who were not poor, leaving the poor to remain dependent on the deteriorating natural resource base and confirming the widening dichotomy of agricultural and natural resource based opportunity between rich and poor.

4.3.2 Increased financial capital

The importance of access to credit and linking to the formal financial sector in order to stimulate income generating activity was recognised as sufficiently important to peri-urban livelihoods development that it was built into the interventions in both HD and K in the form of schemes to support both savings and loans and by providing loans through self help groups (SHGs). The interventions also helped to tackle formal financial sector access for the poor by supporting the exposure of poor people to the banking system. Making links between the poor and the formal banking sector worked to change perceptions of the bank to the credit needs of the poor. The reduced use of informal credit sources was used as a participatory indicator of the effectiveness of the research interventions in HD (R8094/FTR).

i) Effect on vulnerability and wellbeing

In Kumasi the research interventions made an impact on poverty with the number of households that considered themselves poor falling by 30%. In a sub sample of female headed households 29% had been lifted out of poverty and poor and female headed households appeared to consider themselves better off now than before they were helped to change their livelihood activities (PD138: 47). The interventions had little impact on food security (PD138: 2 & 46). Households not participating in the research had not experienced any change in well being, with the modal group remaining poor (PD138: 47).

In HD the survey results showed that none of the households considering themselves very poor in 2001 considered themselves to be poor now. (PD138: 45 & 49). Not only had incomes had increased but so had self respect so that, even where poorer participant households had not increased their income, they considered themselves less poor (PD138: 49). Food security increased substantially with 25% of poor participants becoming food secure during the term of the last research project (PD138: 2 & 52).

ii) Effect on incomes

All the alternative enterprises undertaken were profitable or were expected to become profitable with time and the number of people who considered themselves poor or very poor had fallen significantly compared with households not involved in the research (PD138: 34). However, the scale of this change was greater in HD than Kumasi. In HD none of the research participants who considered themselves poor at the start of the final projects (2001) did so now (2005) (PD138: 2).

In Kumasi the number of households that considered themselves poor had fallen by 30%. However, although the wellbeing of women had improved slightly (6%) by the end of the research 50% of female participants remained poor or extremely poor (PD138: 48). Income gains were more pronounced where people worked as individuals rather than in groups where conflict had diminished group viability (PD138: 41). Where

individual income needs were not recognised by a group this led to a loss of interest in the activity of the group (PD138: 26).

In HD household income increased on average by 40% with poorer SHG participants, especially women narrowing the gap with the non poor (PD138: 50). The average income for poor participant households rose above the state poverty line (PD138: 50) The main components of this change were increased IGA and livestock incomes attributable to the research interventions and some increase in incomes due to better rains and not attributable to the research (PD138: 50).

iii) Use of credit

The availability of credit enabled people to engage in new productive activity encouraging increased uptake of new livelihood activities, which was particularly notable in Kumasi (Aberra and King 2005). Interestingly men felt they needed required greater financial capital for their activities than women and the size of loans available made a difference to men's interest in the groups in both HD and K (PD138: 30 table 23 and PD138: 29). In HD, male savings rates were related to the size of loan they were able to realise from the SHG (PD138: 29). Access to credit allowed people to expand and diversify their existing activity or move into new activity. In Kumasi, 67% of female research participants elected to take up trading which was a 'woman friendly' activity that gave quick cash income returns (Aberra and King 2005:18 Fig 2.2).

Akosua's story demonstrates the changes in financial, human and social capital resulting from improved access to credit.

Akosua's story

Akosua was a 36 year old fruit seller living in the more urban village of Abrepo. Prior to joining Boafo Ye Na (BYN - the final Kumasi PUI research project) her low working capital limited the range and quantity of fruit she could buy so her profits were very low. After accessing a loan from the project she added lines of fruit that she did not previously sell as well as buying greater quantities of fruit. She now sells oranges, bananas, pineapples, watermelons and apples and has increased the scale of her activity.

Prior to the project she considered herself poor but now she considers herself average as a result of improvements to her income generating activity. She explained that her relationship with others had improved especially with her family because she no longer asked for money to pay her debts and was able to contribute to the household income and children's school fees. Her husband now consults her on family issues and she contributes to family decision making.

Source: PD138: 49 Box 5

Informal debt repayment was noted to be a priority for the poor in both HD and Kumasi (PD138: 20). People in HD were able to move away from moneylender loans as a result of the research interventions replacing them with self help group loans (PD138: 33), although men were less likely to use SHG loans to reschedule other debts (PD138: 29). There was some indication that loans were now being used for production as well as consumption purposes as a consequence of the participatory evaluation techniques used in HD (R8094/ 4-App4b: 12). In Kumasi, better loan repayments were achieved from the individual activities. Loan repayments from group activities were very weak probably as a consequence of the long term nature of the activities and poor market analysis that affected sales (PD138: 18). Support with business planning in

Kumasi was intended to help people to plan economically viable group and individual activity.

iv) Effect on savings

Interestingly, results from interventions at both K and H D PUIs showed similar patterns of savings changes. Where self help groups had a savings and credit component substantial increases in savings were made (PD138: 29) although success between groups was more mixed (PD138:32). Savings rates increased in all social categories but especially for the poor and for women who had increased their savings at a greater rate than those who were not poor (PD138: 32 Table 27 and PD138: 20). Savings of poor people in Kumasi rose by 22% and women's savings rose by 56% (PD138: 20). This indicated an increase in the capital of the target group who moved away from informal loans taken at high interest rates (PD138: 33). Improving savings was not part of the original research design in Kumasi. However, livelihood groups had proved useful entry points into the community for rural banks who were encouraging the groups to register as savings and credit groups (PD138: 21).

v) Effect on productive assets

Total livestock ownership, especially chickens and buffalos, had increased for women with the increase in buffalo ownership being statistically significant (PD138: 51). Otherwise, only men in BAIF supported villages had increased their productive assets (PD138: 52). In Kumasi research participants increased their productive assets across all social groups unlike others not participating in the research who have made no such gains (PD138: 21).

vi) Markets

Lack of attention to markets limited the productiveness of people's income generating activity particularly in Kumasi (PD138: 83). A traditional approach to economic development has been to conduct PRA exercises to assess the skills and resources of the community and then to direct production using this information. This often resulted in goods that had no market or trades that withered in the face of global competition. The MOVE project in HD succeeded in encouraging market analysis with some group members moving into trading in their own right (Purushothaman *et al* 2004b).

Ashabi's story

After the MOVE training Ashabi opened a shop. She purchased 400-500 rupees worth of goods wholesale and sold it retail making a profit of 100-150 r weekly. This she considered was enough for her to meet her family responsibilities and was especially important when guests come. She had stopped working on other people's land as an agricultural labour and now has an independent business.

Source; Purushothaman et al 2004b: 11

Trading in Kumasi also appeared to suit women's needs. It gave reasonable returns, a rapid payback time, and the capacity for women to match their time and labour input to their personal circumstances. The access to credit had allowed many women to expand and diversify their existing activity or move into new trading activity (Aberra and King 2005: 16). Research participants undertaking the mushroom cultivation, soap

making and farming activities also took up trading (Aberra and King 2005: 18) showing it to be an important bridging activity especially for women.

4.3.3 Changes in human, social and political capitals

Dynamic PUI change means that development interventions need to build people's capacity to recognise and address change and to find the means with which to make that change. At an early point in the research Thoday (2003) demonstrated a general view in the HD PUI that the power to make livelihood change was not vested in the individual. Those who most felt change was beyond their control or had no idea about how to make changes were uneducated women. However, after the research, people's perception of their potential to make change was altered. This was attributed to the increased confidence developed by research participants. Self respect and confidence increased in both HD and K so that even poorer participants considered themselves better off after their engagement with the research (PD138: 2 & 49)

i) Engendering confidence to make change

Primary beneficiaries in HD expressed the feeling they were better able to approach officials about matters that concerned them or who had services to offer (R8095/FTR: 4-App4b: 13). Some women were emboldened by inclusion in the planning process to come forward to ask for further help from the NGO and for greater inclusion in the action planning.

" Poor women have nothing. We just have to sit quiet with folded hands. If you can do something to find income generating activities it would be a great help for poor women" (R7959 /A: A67[41]).

Community groups served as a vehicle for people to build self confidence. Many HD women reported feeling more secure and confident since joining the SHG. This confidence enabled vulnerable people to approach more powerful people or institutions and, in doing so, take the first steps towards ensuring that decision making structures took their needs into account. For instance, a group of women in HD claimed that before joining an SHG they would never have considered speaking in public or complaining. However, recently when a borewell was not working they went to tell the chairmen to get it fixed (Thoday 2003).

Women also expressed new confidence in their domestic status in HD.

"We were very scared of our men and also to talk to them before forming the sangha[42]. Now we have gained enough courage to face them too" (R8094/C: C31[43])

Similarly in K, Akosua's story *(see box in this document)* showed how receiving credit helped Akosua increase the income from her trading activity, which had in turn improved her domestic status and her relationship with her family.

[41] Interview with Kalikadevi sangha, Mandihal 2004
[42] Self help group in HD
[43] Interview with Kalikadevi sangha, Mandihal 2004

Zubaidah's story demonstrates how her human, social and political capital developed as a consequence of being involved in the research in HD.

Case study of women's empowerment

Zubaidah's story

Zubaidah was a Muslim bangle vendor in HD who made her living by walking from village to village, selling bangles. She had 5 children and her dream was to raise them well and give them a proper education. However, she was very much under her husband's control.

When her neighbour formed a *Sangha* (self help group) for savings and credit activities she joined. Her husband would not agree for her to go to the meetings so she attended secretly when her husband was not at home. When her husband arrived home early one day he found Zubaidah at the Sangha meeting and she was badly beaten.

However, she continued to subscribe her savings although she stopped attending the meetings. Later Zubaidah's husband was badly in need of a loan but was reluctant to use the moneylender who charged 10% interest monthly. He eventually got a loan through his wife's Sangha at a minimal interest rate and became ashamed of his previous behaviour.

After that Zubaidah became an active members of the MOVE project. Her bangle selling had made her widely known and she was very popular for her attitude towards the Muslim community. In the last 20 years no-one had been elected as a Gram Panchayat member from her community. Her Sangha members asked her to compete for the position but she was hesitant as she was illiterate and had many responsibilities. Men asked her husband to compete but he said he 'could not squeeze anyone's hand so well as his wife does' and it was better that she compete. Finally the community nominated her, the whole village decided to elect her and she is now a *Gram Panchayat* member.

Source: PD138: 32

ii) Increased skills from training

The research in both K and H D showed a positive impact on livelihood skills for both poor and non poor participants (PD138: 1&26). Where people were given training it resulted in income gains although men were more likely to benefit from the training than women probably as a result of the nature of the activities taken up by the beneficiaries (PD138: 1 &13 &75).

In HD over 50% of participants reported the main gains from training to be more savings, new income generating activities that increased incomes and increased knowledge and awareness (PD138: 27). The majority of research participants (65% of poor and 60% of non poor) expected to continue using their new skills (PD138: 41). The research also demonstrated that multiply disadvantaged people were well able to carry out effective market analysis and business planning given adequate training (PD138: 26).

In Kumasi all households engaged in the final PUI research projects received planning and livelihood skills that were not previously available to the community (R8090/FTR: 7 table 1 & PD13: table 7). In addition there was some transfer of the new livelihood skills to people who were not participants in the research, both within and outside the community (PD138: 13) demonstrating there is demand for new skills where they are

made available. Male headed households were significantly more likely to have benefited from training. This is probably related to the uptake of the novel livelihood activities that divided into gender based interests where the female groups of alata soap makers were badly affected by inadequate training (PD138: 13) but may also link with earlier findings that showed how young women were conspicuously less able either to complete training or to utilise completed training for income generation (R7854/G: G26).

iii) Raised social capital

Social capital defined as enhanced co-operation, unity and empathy increased more in participating villages in both HD and K, although in HD this increase was greater for the non-poor than the poor. In HD, there was a statistically significant increase in the likelihood of co-operation in villages engaged in the research as opposed to those that were not (PD138: 28).

In HD, self help groups formed a new platform to discuss problems and seek support and co-operation from others (PD138: 31) and were valued for financial support, the provision of information, friendship and visits, giving women greater opportunity for building social capital. (Gregory 2003).

'After joining the sangha my fear for the future has gone. Now I have confidence in the future.' **Mrs C-HH G2**

'BAIF NGO encouraged me to join the SHG. They explained everything, the benefits, how much to save and keeping accounts. My friends and I were influenced by this and joined. Since then I have had 5-6 loans from the SHG to manage the family and also much information.' **Mr C-HH G2**

'I meet other women and can talk boldly and be involved.' Things have improved financially and also in knowledge and confidence. Totally I have changed. **Mrs J-HH M2**

'IDS encouraged me to join to save money. I find it very enjoyable when my friends get together. I have been given a lot of information. Loans are available and we also had a trip to a nearby village.' **Mrs N-HH M6**

'I feel very good about it now and more confident. I have had leadership training in Dharwad and I am now president of the sangha. I have given some speeches and I am confident that I will give more in future.' **Mrs A-HH C3**

Source: Gregory 2003

By contrast, in Kumasi the livelihood groups were not an unqualified success. Group based livelihood activity became accompanied by tensions and conflict (R8090/Bi D: 38) and group viability was in doubt as a result of lack of participation in decision making and lack of financial transparency and accountability (PD138: 19). Nonetheless, interest from neighbouring communities in the income generating activities the livelihood groups were engaged in had enhanced the social standing of the group members (PD138: 1 & 17).

iv) Political capital

A number of other positive social and political capital effects arose as a consequence of community based action planning. There was an increase in capacity among the

institutions, a different attitude reported to communities (less 'client-patron and more participatory) and increased interaction of institutions with poorer groups (R7959/FTR: 21). New ideas arising from the research interventions were now being incorporated into the teaching of some participating higher education institutions in HD (R8094/FTR 4-App4b: 28). Community action involving many different stakeholder groups, especially in the more ambitious plans to renovate natural resources such as the restoration of the Mugad tank, and involvement in self help and livelihood groups gave rise to an increased sense of community spirit, social capital and new political respect (PD138). The research produced more favourable attitudes towards its activities from local governments and some limited access to state institutions was achieved (PD138: 16 & 30). Attitudes of the institutions depended to some extent on the financial success of the groups, which in turn was linked to group cohesion (PD138: 17). Conversely, the research also generated slightly more positive attitudes from research participants towards state institutions (PD138: 17). The links made to the banks were among the most positive improvements in capacity because lack of access to credit remained a significant constraint to income generating activity.

4.4 INVESTIGATING THE INTERVENTION PROCESS

Knowledge about interventions that supports actors and actions to help PUI people make changes in their livelihood activities.

The second phase of the NRSP research sought to investigate the means of reducing vulnerability by using action based techniques that especially focussed on recognising and implementing solutions to the constraints and barriers to the process of change previously identified. In doing this it may also offer evidence for the types of intervention techniques that could support this process of change.

Brook (2002) noted that for new livelihood strategies to be sustainable in the face of long-term peri-urban change the principles underlying them need to be understood.

'In the past where direct livelihood projects have been implemented these are often no longer viable due to changes in consumer demand or loss of access to the natural resource base on which the activity was predicated' – (R8094/FTR 4-App4b: 10)

Brook (2005) gave the example of the development of pottery skills in HD, instituted 20 years ago by a local NGO, and now outdated because of the availability of lighter and cheaper factory made, plastic pots (R8094/FTR 4-App4b: 10). Changes in the PUI over time have meant that these activities were not sustainable in the medium term but the people engaged in them had not developed an underlying capacity to change their livelihoods as a result of the intervention (R8094/FTR 4-App4b: 10). It is revealing to compare this historic introduction of pottery skills in HD with the idea for basket making (now also outmoded by competition from plastics) floated initially in the K action plans and subsequently rejected as a viable income generating activity, indicating a general awareness of the scope of peri-urban opportunity even among the most vulnerable people.

The Kumasi and Hubli Dharwad action based research put very different types of intervention activities into place while taking the same basic steps that had comparable elements. In doing this they tested interventions that might enable poor people in the PUI to better manage livelihood change. Overall, the interventions were designed to facilitate and support people to identify problems and solutions, reduce barriers to change and to enable people to gain or maintain access to the resources they needed

for their livelihoods. However, we have not yet learned enough to know exactly what should change. A first step is for people to change what they are doing as a voluntary, planned response to threats they recognise. For example, a new activity may not be more productive than earlier activities, but it may be one that gets people through the rural to urban transition better than an alternative they may otherwise have to take up should they be forced to make a change. The implementation of the intervention activities gave some insight into the way different elements of an intervention might work to support people moving to make livelihood change.

This section of the synthesis report considers the nature of the interventions in order to better understand what elements might best support sustainable livelihood change. It also compares and contrasts the outcomes between the research in H D and K in order to further refine understanding.

4.4.1 The interventions

The interventions that were necessary to the initiating aims of the PUI research were themselves tests of means of supporting people to overcome the constraints that had previously prevented them from moving to new activities.

These intervention's activities used certain elements in the PUIs of both H D and K.

- The creation or redefinition of community based self help or livelihood groups,
- Known and trusted community based facilitators that lived within or very close to the communities they served and who initiated and promoted activity, mediated information and developed wider community links with external agencies.
- Support by community facilitators and NGOs for the process of participatory action planning to identify peri-urban threats and opportunities and for implementing action plans that assisted moves into new productive activities
- Actions that moved people towards new productive activity were supported by: the provision of credit, facilitating access to new and wider information sources, provision of technical training, improving access to existing services and developing confidence to link with wider institutions.
- Facilitating links with wider institutions and supporting the development of networks of groups in order to build social, political and economic capital.

Furthermore, the existence of a facilitating institution/s must also be assumed to such an element, the presence of which may act as a initiator mediating action for change by implementing interventions. While these techniques were not novel in themselves, they have not been systematically applied within the PUI before so there is little existing knowledge about the actions and institutions that might counter disadvantage arising from PU circumstances. Neither has comparison of interventions previously been made between two peri-urban interfaces.

4.4.2 Mobilising effect of NGOs

Overall, PD138 reported that where the research activities were implemented people took up new productive activity in a way that did not happen where there was no research implementation. This indicates that the presence of an initiating agent is of value in mobilising individuals and self help groups to make radical moves towards new productive activities over and above what would have happened otherwise.

The research also showed that where new social structures (especially self help groups and community facilitators) were developed as a result of the initiatives of the research realised through NGOs, or where existing social structures were redefined to better develop livelihoods (especially the use of self help groups, community based action

planning, access to external agencies), people were more able to overcome constraints brought about by urbanisation and move into new income generating activities. Prior to implementation of these initiatives, even where people were able to identify new opportunities, they were often constrained by lack of resources from participating in these activities.

The research further demonstrated that facilitating organisations (such as NGOs) could enable production of community based plans for livelihood change using participatory action planning (PAP) and also motivate villagers to carry them out, changing the scale of existing productive activities and introducing new ones. In villages that did not have the support of the NGOs and community facilitators, this change had not happened. In Kumasi, three action plans were prepared and new income generating activities were initiated as a result of these plans in a way that was not found to be happening in other communities. In HD 12 action plans were developed. Only 6 were taken forward by the project with no evidence that the remaining 6 plans were implemented, reinforcing the importance of an external influence in supporting livelihood change.

A quantitative indication of the effect of the interventions can be inferred from data measuring change beyond the research activity. For instance, the table below shows changes in human capital in Kumasi as a result of these activities. This also shows how information transferred outwards from research participants, supporting the possibility that this would not have occurred without the interventions of the research.

Figure 22
Changes in human capital in Kumasi to 2005 as a result of NRSP research

	Research participants	Non participating members of the community		Non participating individuals outside the community	
	No. with improved skills	No. with transferred skills (n=1755)	% transferred benefit	No with transferred skills (n=1828)	% transferred benefit
Livelihood skills	197	51	2.9	48	2.6
Planning skills	180	28	1.6	0	0.0

Source: Adapted from PD138 Table 7

4.4.3 Participatory Action Planning (PAP)

Participatory action planning (PAP) was used to identify problems and solutions, promote group action and increase the flow of information at a local level. PAP is a recognised tool to assist people in managing change. Participatory Action Planning means involving communities at every stage of the intervention planning requiring communities to first define the areas /subjects to be given attention. They must be an intrinsic part of the decision making and such that they feel ownership of the proposals that emerge. It differs markedly from simply consulting communities on already designed plans. In these PUI studies, community based action did not always evolve in the way that researchers expected. Although this aspect was considered a mark of the validity of the action planning (R8094/4-App4b:8) it may simply have been a consequence of the time lapse between the action planning and the action *(see also paragraphs at 4.7.1 about participation later in this section).*

In HD, participatory rural appraisal (PRA) techniques were already widely used by the two participating grass roots NGOs (BAIF and IDS). However, neither organisation had used these for participatory action planning purposes prior to the NRSP PUI research. In the past a PRA assessment would be carried out and then the completed action plan would be given to the community for consultation so community based action planning

represented a significant change of practise (Purushothaman *et al* 2004a). Community group meetings were held to discuss issues, possible solutions, the outcomes they would like and the activities that would lead to this. Wider agencies were invited to attend community meetings as part of the action planning process. The tools used to build community rapport, carry out situation analysis and define and consolidate action plans were many and varied. There was not a clear cut division of techniques for identifying problems and opportunities and techniques overlapped to provide ideas and information from several sources. Brook 2002 (R7959: B10) classified the techniques used as follows:

- techniques to understand issues, actors and the context of relationships
- techniques to identify and prioritise central concerns for action, cause and effect links and possible solutions
- techniques to identify representatives from each village

The action planning process was an iterative process, carried out over time in order to incorporate new information and evaluation, based on community group discussion and facilitated by the community organiser from the NGO. As a result each community developed its own individual action plan. Community action plans were taken forward for implementation by the research in 6 villages (4 in Dharwad and 2 in Hubli) leading to an ambitious programme of intervention activities.

In Kumasi the PAPP was rooted in community discussion facilitated by the NGOs and the community level facilitators (CLFs) using problem trees and needs assessment of research participants (R809/BiA: 28). Plans were collected from the communities and brought by the village elders for presentation to a significant meeting of stakeholders where further suggestions for change were added. Three harmonised action plans were finally developed and implemented across all 12 village communities.

The three action plans (AP) formulated were:

AP1	Non farm, NR based activities
AP2	Farm based activities
AP3	Processing and marketing activities.

In the EKW, analysis of an existing planning activity highlighted important differences between the proposed framework and a locally instigated and facilitated process. Consequently, the action planning process developed and promoted during the research was thought able to meet the complex social, political and administrative context of peri-urban Kolkata while being more responsive to the needs of stakeholders in the local communities. Facilitating this process of participation offered rice, vegetable and fish farmers, and other community members, the opportunity to identify the most pressing water management constraints in the wetlands, propose appropriate solutions, agree a plan of action and implement preliminary activities to address some of the most pressing problems. This was a complex process because of the size of area affected and the range of stakeholders involved.

Specific attention had to be given to raising awareness and facilitating constructive dialogue with non-government organisations and rural and urban government departments and agencies in order to build consensus. Attention also had to be paid to ensuring the participation of women and vulnerable groups. The difficulty in accurately identifying these groups meant that their needs could easily be overlooked. Additional work was carried out with user groups to check on any unforeseen impacts of the three development activities that were finally selected. These participatory elements are frequently not considered in large scale, distant and technocratic planning approaches. The resulting recommendations received broad-based support from the principal stakeholders that participated in the process (Bunting *et al* 2005).

4.4.4 Self help groups (SHGs)

SHGs are recognised as an effective space for the implementation of all types of plans and form natural entry points into a community providing a framework within which implementing agencies can work (Purushothaman *et al* 2004). Consequently, self help groups are a widely used mechanism with which to foster community based change. Self help groups often appeal particularly to women (Satherthwaite 2002) providing a unique space for women's concerns. The research confirmed the advantage of single gender groups where women's concerns were discussed in a supportive environment and women were fully involved in decision making (R7959/4:9; R8094/C: C31; PD138: 53).

In both K and H D, the establishment of functional self help groups was recognised as central to the intervention process (R7959/A: A47) providing a mechanism for planning, information flow and action. The SHGs drew their members mainly from within poor groups in the community. In both K and HD community based self help livelihood groups were formed on an informal basis facilitated by the participating community based NGOs. In HD wealth ranking techniques were used to facilitate inclusion of the poor and very poor. In Kumasi, the wealth ranking technique was not carried out systematically and assessment of poverty of the participants rested on the calculation of mean cash income of research participants being below the World Bank recognised poverty level of $1/day (R8090/Bi B: 40 & R8090/Bi D: 25). However, subsequent assessment of the group members showed the livelihood groups to be socially heterogeneous with approximately 60% of the people participating in the research classified as poor using the inability to meet basic needs as a measure of vulnerability (PD138: 7)

Similar constraints on the social composition of the groups were noted independently in both places. The most significant of these was that social mixing between wealth groups had both positive and negative effects on a group and that this depended on the timing of inclusion of non poor members into the group. Including people from higher wealth classes brought additional skills and wider sources of information to the group (R8090/ Bi D & 8094/D) and groups that included some richer people were less likely to give up when things became difficult (R8090/Bi D & 8094/D). However, if richer people were included into the group from the outset then they were likely to take over the running of the group to the exclusion of the poorer members (R8090/Bi D: 24 & R8094/D).

In Hubli Dharwad self help groups (SHGs) were a significant feature of the existing development landscape being initially formed as savings and credit or thrift groups (and this remained an important function of these groups). Purushothaman *et al* (2000) noted that while vast numbers of SHGs had been organised in India by a variety of institutions, it was less clear how the SHGs could work to improve the livelihoods of their members. She further noted that the addition of action planning in HD had served to direct self help groups towards new productive activity moving the self help concept forward significantly. The development of SHGs as livelihood groups or to initiate community based activity redefined the purpose of the group (R7959/A: A25) often allowing women to move forward into traditionally male activities (PD138: 84).

About 25 new SHGs emerged across the 6 villages involved in the research activities (PD138: 5) as a result of facilitation by the community based facilitators (COs in HD) from the participating NGOs and by the end of the research 45 participating SHGs with 600 members were meeting regularly (R8094/FTR 4-App 4b: 11). New and existing SHGs played a crucial role in planning, negotiating and implementing the final action plans (PD138: 5). SHG plans were prepared in a participatory way with all members taking part in decision making and decisions recorded in resolution book. The HD

SHGs were relatively socially homogeneous single gender groups (Purushothaman *et al* 2000). A small survey of self help groups showed a high level of participation (over 50%) in some villages (Gregory 2003). Women were first to form SHGs after house visits by NGO staff although some of the women's husbands were suspicious about what the women would do (*see Zubaidah's story*). When men saw the benefits of self help group savings and links to the banks they also formed SHGs (PD138: 53).

In Kumasi, groups to try out new livelihood activities were formed by facilitation of the CLF. As many as 36 livelihood groups may have been formed although the gender balance of groups was not defined, joining a group appeared to be predicated upon individual interest in the group activity and was to some extent informed by existing gender norms – for instance women were inclined to take up mushroom growing and soap making activity while men preferred the small animal rearing activities (both of which related to traditional, gender based activities). However, many people did not join the livelihood groups at all since the farming and trading activity was carried out on an individual basis.

4.4.5 Community facilitators (COs and CLFs)

The community facilitators were an essential feature of the interventions in both HD and K. These were familiar and trusted people who lived in or near the communities they served. Living in the community was an essential feature of both styles of community facilitator designed to counter the reduction in social cohesion caused by peri-urban changes in traditional social structures (R7995/FTR: 17, R7959/4:11; Halkatti *et al* 2001). Naturally, there were strengths and weaknesses in each of the two concepts of community facilitators but a familiar person who formed a clear point of contact between the community and the implementing NGO was shown by the projects to inspire greater trust in the research activities (R8090 and R7959/A: A26). This was a key research finding from R7867.

In HD community facilitators (termed community organisers, **COs**) were employed by the NGOs and were skilled, educated and well trained by the NGO. However, they remained external to the self help groups potentially reducing the long term nature of this relationship. The size of the community dictated the number of community facilitators required for any given community (R7959/A: A26). Where people are employed by an external agency they add to the costs of implementing an intervention, which will limit numbers and availability of personnel perhaps to a less than optimal number.

In Kumasi, by contrast, the system of community level facilitators (**CLFs**) was based on elected volunteers. Volunteers had to be both resident in the community, readily available to community members and not existing community leaders (although 93% had held some kind of leadership position in the past - R8090/ Bi A: 29). The Kumasi CLFs had variable levels of education although a minimum level of literacy was required. Three CLFs were elected for each community (R8090/BiA: 20). The voluntary nature of the post meant there was always the risk of losing the CLF to competing work opportunities. Given the importance of community facilitators to the groups, the loss of training, experience and leadership skills could be a significant if not terminal blow to a livelihood group (R8090/ FTR; Aberra and King 2005: 38). This feature also required that the NGOs devise a system of long-term training in order to support new and replacement CLFs. Networks of CLFs that might have supported this element of the process were not particularly successful but the reasons for this were not investigated (R8090/ Bi A) although some CLFs did offer each other support to fill skills gaps (R8090/ Bi A)

i) Functions of the COs and CLFs

Despite differences in employment status and terminology, the functions of the community based facilitators were essentially similar. Most importantly they presented a universally recognised and uncontested two-way link between the community groups and all other actors participating in the intervention process. They had a wide range of facilitating roles that included initiating and promoting community group activity, mediating information, linking groups with training provision and developing wider linkages between external institutions and community groups.

As a volunteer representing community groups, the Kumasi community level facilitator (CLF) had a further mandate to make external linkages to wider institutions and rural banks especially valued this link into the community groups. In contrast, the HD community organiser (CO), who was employed by the NGO, transferred this responsibility this role to the SHG members after they had received training (PD138: 26) in order to avoid creating dependency on the external institution.

4.4.6 Inter institutional support and exchange of ideas

In HD the final two research projects that initiated trials of new and enhanced alternative livelihoods, relied on collaboration between five Indian and British Universities and three Indian NGOs all with different skills and perspectives to share. The two locally based NGOs worked at the grass roots to mobilise community action. In K the initiative involved one locally based NGO working at grass roots level plus one British and one Ghanaian University[44].

The involvement of expatriate researchers was more intensive and direct in HD than in K (PD138: 7) and therefore more costly, but as a consequence these final projects appeared to achieve a higher degree of continuity and good links with earlier research (PD138: 88). R7959/FTR: 21 pointed out the profound impact of the research on the research partners and stakeholders in HD who had observed the power of participatory planning and its ability to transform the confidence of community stakeholders.

4.5 COMPARING INTERVENTON STYLES AND OUTCOMES

4.5.1 Natural resource rehabilitation and micro business approaches

Natural resource based livelihoods were the initial focus of the NRSP research. However, this was interpreted quite differently by the final studies of the K and H D PUIs. The range of intervention activities implemented underline their differences in intervention style. The two approaches led to some interesting differences that may offer additional insights into interventions although it should be noted that no supporting statistical analysis could be provided.

In Kumasi, the approach taken was to develop income generating activities as micro-businesses in all three action plans in Kumasi, but especially the group based income

[44] ***List of participating institutions***

CEDEP	Centre for the Development of People, Kumasi
KNUST	Kwame Nkrumah University of Science and Technology, Kumasi
CEDAR	Centre of Developing Areas Research, UK
DPU, UCL	Development Planning Unit, London, UK
UAS	University of Agricultural Science, Dharwad
IDS	India Development Service, Dharwad
BAIF	Development Research Foundation, Dharwad
BPF	Best Practices Foundation, Bangalore
SAFS/CAZS	University of Wales, Bangor, UK

generating activities carried out for action plans 1 and 3 (snail rearing, rabbit and grasscutter rearing, mushroom production and alata soap making described in R8090). The intention here was to reduce pressure on the natural resource base.

In HD there was an intent to rehabilitate the natural resources, for instance by training farmers, introducing new crops and agroforestry techniques including tree planting, improving animal health and integrating livestock into farm systems to improve soil fertility. In addition, water storage systems were renovated and water catchment areas considered. Interestingly, the two participating grass roots NGOs in HD also took differing approaches. The NGO, BAIF, was most concerned with NR based interventions implemented by individuals and less so with group based, income generating activities while the NGO, IDS, was more inclined towards micro-business activities especially those that worked through self help groups in a manner similar to that in Kumasi (PD138: 28).

4.6 THE OUTCOMES

At the end of the research beneficiaries in both PUIs perceived their overall well being to have increased and recorded improvements in livelihood assets confirmed by a reduction in the number of households that consider themselves poor. However, within this overall gain, expectations in India were more nearly realised (PD138: 84). Taking an overall view of the consequences of the interventions for livelihood change outlined earlier, the data appeared to demonstrate that the approach that featured natural resource protection and rehabilitation was much more successful in raising incomes, promoting food security and building capital assets than the micro-business approach (PD138). Greater tree ownership, increased crop production and greater access to irrigation all helped to improve production, reduce forced land sales and increase awareness that natural resource based products can improve incomes if resources are rehabilitated or protected. As one beneficiary commented (PD138: 37)

‘ if you tend nature, nature will give you everything.’

Furthermore, the research indicated that, despite undertaking new activities that required less land than traditional farming activities, the natural resource base **in Kumasi** was continuing to erode both within and outside the research area (PD138: 22). This suggests that continued use of a natural resource base, even on a smaller scale than previously, does little to promote the protection of the resource base on which the activity depends. This view is supported by the finding that natural resources **in HD** outside of the research area also showed a continuing degradation that paralleled the situation in Kumasi (PD138: 76). Since the research also established that the peri-urban poor are the group who are most dependent on the NR base in both PUIs (PD138: 22&1), action that improves or sustains the NR base becomes an important PU livelihoods consideration for this group. Furthermore, in Kumasi, continuing diminution of the natural resource base may disproportionately increase the vulnerability of the more rural communities as the more urban communities already have a greater choice of non NR based livelihoods (R7549/G: G35)

In more detail, the protection and rehabilitation of natural resources in **Hubli Dharwad** led to improved incomes and food security across all social classes but especially for the poorest people. Food security for the poorest people increased by 25% during the term of the final research project, substantial increases in savings were made with the poor saving at a greater rate than the non poor and none of the households that considered themselves poor in 2001 did so now (PD138: 2). By contrast, the NR based livelihoods **in Kumasi** remained extractive of natural resources rather than protective or rehabilitative and this applied both to the farming (action plan 2) and the non-farm, group based NR activities (action plan 1). In this case food security had increased only

slightly, and while households that considered themselves poor had fallen by 30% compared with non-participating households, 50% of female research participants remained poor or very poor (PD138: 48).

There are no suggestions in the research documentation that environmental protection and rehabilitation was considered in the action planning choices in Kumasi – although tree planting and raising soil fertility by the use of poultry manure and municipal and urban waste composting were pointed out early in the investigations as activities that presented new opportunities. It may be valid to assume that the attitude that NRs were not relevant to livelihoods was generally held (perhaps even by the NGOs) or maybe that the NR issue was only seen as an issue of access to land. As a result, and despite the argument that livelihood group activities protected the NR base by reducing pressure on it, some of the livelihood activities chosen were already experiencing pressure for space and resources, were not taken up by people in the most urban areas and appeared very likely to become unsustainable in the medium term. In fact, this approach could be directly compared with Brooks (2002) example quoted earlier of the past introduction of the pottery that was ultimately unsustainable.

Finally, it appeared that the micro-business based approach appeared to be less successful in either raising incomes or food security for participants in the research. This was especially true for those working in groups whose incomes, savings and capital assets did not increase as much as those who worked as individuals (PD 138). Consequently, income generating activity carried out by individuals was much more successful in reducing vulnerability. This was true both within the HD research (when comparing the IDS with the BAIF approaches) and between the two lines of research (when comparing Kumasi with HD approaches) and this may beg more questions about group based livelihood activity in the PUI that could benefit from further investigation *(see paragraphs 4.7.2 about groups later in this section).*

Notwithstanding their more limited effectiveness at raising incomes, the mobilisation of strong groups was often needed to improve the natural resource base and where group based activity was carried out social and sometimes political capital increased with a statistically significant[45] increase in the likelihood of co-operation in H D villages involved in the research compared with those that were not (PD138: 29).

4.7 ISSUES ARISING

In the course of preparing this synthesis, a number of significant questions rose to the surface that could not be given adequate answers by the findings of the many PUI research projects. These are outlined here in order to suggest directions for further study.

4.7.1 About participation and action planning

i) Differing levels of participation appeared to lead to differing outcomes
Despite a general increase in female wellbeing reported as resulting from the Kumasi project and a 55% increase in female savings, the final outcomes for women were not as successful as for men and female vulnerability remained a challenge with 50% of female beneficiaries remaining poor after the research ended. There appeared to be indications of some inadvertent exclusion of women from the benefits of the

[45] T=8.73 p<0.001

interventions leaving the tentative conclusion to be drawn that this was linked to poorer outcomes for female participants.

For instance, the system of CLF selection appeared to inadvertently reduce the participation of women as CLFs despite the fact that women have traditionally held positions of authority (as village chiefs and queen mothers). Consequently, the gender balance of the CLFs was noted as a cause for concern with ¾ of the CLFs being male (R7995/FTR: 9). This may be due in part to the educational requirements that women are less likely to attain because of their differential access to education or to any prevailing social norms that reduced women's likelihood of putting themselves forward for election. It also may have to do with the many tasks that women are expected to perform, leaving them with less time to volunteer for the functions of a CLF. Single gender groups or even numbers of CLFs might help to redress this imbalance (R7995). The difficulties of actually ensuring the inclusion of women even where a determined commitment is made to ensure their inclusion was also noted in HD (R7959/A: A132). Single gender groups appeared to be very effective at promoting women's concerns in HD (R7959/4:9; R8094/C: C31).

Interestingly, neither alata soap making nor trading were mentioned in the initial action plans developed in K although trading eventually became the most successful activity developed by the research (PD138: 84). Both of these activities were more attractive to women then men and the continuing gendered nature of these livelihood activities was noted in the research documentation (R8090/FTR: 7). The increase in female participation in the research after trading activity was included was so significant that it changed the entire gender balance of the participation (R8090/FTR: 7). Although CEDEP later explained that trading was inherent within each income generating activity, because goods produced have to be sold, it also suggests that the voices of those most likely to rely on this activity (usually women) might not have been sufficiently heard at the initial participatory planning sessions.

Gendered activity choices also left women least likely to participate in the most lucrative income generating activities (R8090/FTR: table 7). Furthermore, it has already been noted that group activity was less successful for the mushroom growers, in which women had greater representation than men, while the more male dominated groups had greater success in joining with other groups to form livelihood networks (PD138: 19). The alata soap makers, again most often women, suffered most from inadequate training for a complex process (PD138: 13). Broadly, it was noted that male headed households benefited more from training in K than female headed households probably as result of the new livelihood activities in which they chose to participate (PD138: 41). Despite these constraints, the positive outcomes for women in K showed how successful they can be at seizing opportunities offered.

ii) Did the PAP lead to poor or limited choices of livelihood alternatives?

The intervention process in both HD and K brought together stakeholders of differing power and human capacity and social groups with differing priorities and solutions. In addition, the NRSP called for its research to investigate how PUI natural resources impinged on livelihoods. This did not necessarily coincide with people's own understanding of the livelihoods opportunities available to them. For instance, In Kumasi, people, especially those in the more urban communities, already felt the natural resource base to be unimportant to their livelihoods and that they would prefer the actions of the research to concentrate on training and promoting IGAs that were more artisan based such as carpentry, batik work, hairdressing or tailoring (R8090/Bi A)

Interestingly, peri-urban opportunities identified in Kumasi, such as processing of farm products, were not taken into practise despite initially being formulated as one of the

action plans (action plan 3) with activities eventually falling back into traditional areas of trading and farming (R7995/FTR: 6). The reason for this is unclear but could indicate that it was too complicated to tackle, was forgotten about or simply that tradition and familiarity are powerful forces militating against change.

That people forget, or were not party to, decisions made was suggested in HD despite the high level of community involvement achieved. According to the focus group respondents the participatory planning was not well remembered by people in the participating villages, and the implication was that it tended to be carried out with people who were vocal and well connected and that men were more involved with the process than women. No-one who was interviewed in 2005 could remember the decisions made at the time of the R7959 action planning in 2001 (PD138: 53).

The attitude of the community towards action planning in Kumasi also appeared to be rather confused. R7995 reported that at the final R7854 workshop, frustration was shown by the communities at the extent of the research undertaken to inform planning. Ashong (2002) (R7995/FTR: 17) noted that:-

'communities and some stakeholders even felt that plans should not be prepared at all but we should go straight into implementation of actions'.

However, the action planning activities in both K and HD did appear to trigger people's thinking because they later sought out ideas from other communities and practitioners, accepting new ideas and rejecting old ones on the basis of new information as part of an iterative process to refine choices (R7995/Appendix 11).

The changing nature of the action plans between ideas and implementation in Kumasi showed that despite an initial lack of ideas, people had reflected on the activities they had selected and had sought new information themselves. This suggested a growing confidence in the ability to make appropriate choices and further to approach the NGO to make changes to the programme. However, fluid decisions also underline the reasons why both the input of information and the time needed for reflection, discussion and revision must be built into a flexible action planning process that remains both iterative and accessible to the most vulnerable members of the community.

4.7.2 About groups within the PUI context

Peri-urban communities were shown to be socially heterogeneous and may vary widely between more rural and more urban PU locations. Certainly the size of the village and its proximity to the urban centre was found to have an impact on the formation of groups and this may affect the implementation of an intervention process in some parts of the PUI compared with others. In a large and very urban village in HD with a constant influx of migrants, Thoday (2003) noted that the concept of community participation for self help was not valued. Lack of community groups reduces recognisable points of access into the community by external agencies.

In practice, NGOs found it very difficult to facilitate groups in the more urban villages in both HD (R7959/FTR: 15) and K (R7995/FTR: 17). Consequently, developing research interventions was not pursued in the more urban village of Kelageri in HD, and three more urban villages in Kumasi. This difficulty was ascribed to a variety of causes that essentially described breakdown in social capital (e.g. urban attitudes, reduced social cohesion, more 'individualistic' people, lack of community spirit, lack of trust or people not being there as much because they are working in the city were all mentioned in the research documentation). Since so much development activity is predicated on the formation of groups, the difficulty in creating groups in the more urban areas of the PUI may be an important finding specifically linked to the processes of urbanisation. This

finding may be of significance when planning a new development process or activity in a peri-urban context and may benefit from further research.

Interestingly, the PD138 impact assessment showed individual activity to be more effective at increasing PU incomes (and group livelihood activity to be least effective) in both HD and K. In K, debt repayment patterns offered some evidence that this was also linked to increasingly urban location. Consequently, if the knowledge about the difficulty in forming groups in the more urban parts of the PUI is linked to the greater economic impact of individual livelihood development, the implication becomes that an approach that directly supports individual income generating activity may be of value especially in the more urban areas of the PUI.

i) Balancing group and individual benefit

In Kumasi, difficulties in group cohesion encountered by the livelihood groups attempting the non farm based natural resource based activities significantly reduced their effectiveness in generating cash incomes and left people unenthusiastic about working in groups for day-to-day management of their income generating activities. It also required unfamiliar conflict management skills of the CLF to ensure group effectiveness (R8090/Bi A). People freely discussed this aspect in Kumasi where most people preferred to work as individuals.

" the ideal number of people in a group is one"

" the fewer the merrier" (R8090/ Bi D:38[46])

Similarly **in HD**, the failure of sustainability of the MOVE project after its initial success, suggests the pressure on poor people for income to meet their immediate needs was not being recognised by group leaders. The rationale of setting up the MOVE project as a group business was that the group members with greater confidence and skills would support those with lower human capital. Essentially, the group would emulate a company with people undertaking different functions according to their skills (Subhas personal communication, June 2003). This was clearly a successful strategy at first, with the group choosing, developing and marketing a new detergent product. As a result many group members were able to undertake individual business activity building on the skills they had learned from the training (Purushothaman *et al* 2004b). However, lack of personal income benefit from the group later led to the loss of interest by the poorest members and the project falling into the hands of the more able and richer group members (PD138: 26).

This potential for more powerful people to move into newly successful areas that previously were the domain of the poor was also demonstrated in K. Here men traditionally grew tree crops such as oil palm and cocoa (Nunan *et al* 2001). Where this activity had been displaced by PU pressure on land, men had started to move into the more profitable areas traditionally undertaken by women, exemplified by the increasing involvement of men in vegetable growing in Kumasi (Aberra and King 2005: 1). This suggests that NGOs and community facilitators need to support group members in deciding how individual and group interests should be balanced and over what time scale.

ii) Group networks

However, even where people did not comfortably work together in groups, people recognised the value of developing networks and associations of groups. This development of greater political capital has the potential to initiate a more enabling business environment that would also include the poor. Although the extent of linkage

[46] quotes from mushroom growers groups

to wider institutions was limited due to fragmented institutional interest, people were shown to feel more confident in their ability to approach political institutions and became a little more convinced that they might achieve support or beneficial policy change this way. Thoday (2003) found over 60% of people in the more urban HD village of Kelageri thought change would only come about by political means. This in turn suggests that, despite the inherent difficulties, the creation of community groups becomes more important in more urban PUI villages in order to develop the political capital needed to enable input into wider decision making.

People in both HD and K recognised the need to process food to reduce gluts and wastage and extend the harvesting season. It has already been noted that this formed action plan 3 in K. The research also noted that this was traditionally a female area of activity that was already a significant income generating arena for many women – more so with increasing proximity to the city in K. However, in HD, Purushothaman *et al* (2004b) noted that big companies had already recognised this opportunity and were starting to move into the PUI to take up food processing in away that could replace the livelihoods of poor women who currently made and traded these products.

The idea of joining people up into marketing groups was mentioned by Brook *et al* (2001: 95) who gave the example of the farmers markets in HD. SHGs in HD had also joined into associations – although this latter did not have a marketing focus. A similar marketing initiative was occurring in K with the registration of the grasscutter networks as selling co-operatives (R8090/ FTR) both of which would allow small scale operators to make economies of scale and gain greater selling power.

4.7.3 About markets

Understanding markets and the need for market analysis is an interesting exemplar of the lack of capacity of traditional institutions to develop knowledge that takes advantage of peri-urban opportunity undermining capacity for economic growth.

People were aware of the need to reach the market but appeared to have absolute faith that they would be able to do so (R8090). No-one in either HD or K expressed a need for training in this. However, despite early optimism in K about access to lucrative sales (R8090/Bi D), people were finding it difficult to sell their production, at times having to resort to price taking at cost to move their stock (PD138: 26). Not only was it difficult to sell the end products, but traditional attitudes (that preferred to pursue the whole production system from start to harvest) left people reluctant to break a complex production process up into parts that had different saleable products. For example, where lack of space snail limited production but where there could have been a new market for young snails; or mushroom cultivation, where there was a potential market for compost already packed and inoculated with spawn ready for production of mushrooms by others (R8090/FTR). This different approach would have left people trying to develop new and untried markets without the market skills to do so.

Nonetheless, the MOVE project in HD showed a market based approach could be very successful even for multiply disadvantaged people (Purushothaman *et al* 2004b)

4.7.4 About natural resources

i) Who should protect NRs?

Thoday (2003) found people in the more urban villages took a more monetised approach to NR protection that had previously been a community responsibility and provision of services such as water and were more inclined to think they were the responsibility of the government. Where government support was inefficient, as it often

was in the more distant areas, people were more open to the idea of providing these things themselves by community action. A similar attitude was described in K (R8090/Bi C), for instance where migrants were more prepared to pay for services that to put in community labour (because of the time they already spent away from the villages - presumably at work so they were better able to afford money than time). R8090 (R8090/Bi B:15) noted a change in the way natural resources were being managed in K, moving from the informal (where people only protected what was useful to them) to the formal, managed through a variety of Government Departments. PD 138 reports a background of continuing decline in NRs both in K and in the parts of HD where the research activity didn't extend. However, this attitude that NR protection is the responsibility of government has implications for livelihoods because of the lack of interest of the urban administration in NR protection (maybe because it was not seen as relevant to urban livelihoods) and brings the argument back to the continuing marginalisation of the very poor as a result of continuing erosion of peri-urban natural resources on which the livelihoods of the poorest people most often depended.

4.7.5 About urban wastes

The evidence collected by both lines of NRSP research suggests a need to ensure any definition of PU natural resources also includes organic urban wastes. The research showed that urban wastes were not necessarily recognised as a resource of any value rather than simply a waste for disposal because the link made between peri-urban agriculture and environmental services failed to be recognised (PD138: 24, Bradford 2001, Hofmann 2005). Nonetheless, an argument can be made for the redefinition of natural resources, maybe into primary and secondary natural resources. For instance PU land loss had led to problems getting wood for fuel (which now has a cash value – people made their living form selling charcoal in both HD and K). At the same time sawmill waste was dumped into the PUI to dispose of it (sometimes causing pollution but always demanding space) (R7549/104). However, sawmill waste could also be used as a substitute fuel resource and sawdust stoves were mentioned in both K (R8090/FTR: 11) and HD (R8094/U)

Sawdust was also used as a substrate for the mushroom growers compost and as bedding for the small animals and poultry in K. Afterwards, the new waste (compost and manures) arising from these activities were used as soil ameliorants to raise soil fertility on farm plots (R8090/Bi D), reducing the use of chemical fertilisers improving crop productivity and reducing the potential for water pollution. In effect this is a demonstration of the replacement of one type of natural resource, being lost as result of urban development, with new ones that exist as a consequence of urban development.

Traditional recognition of urban wastes as a valuable resource has been powerfully demonstrated by the widespread use of sewage for fish and vegetable farming in HD and Kolkata (*see 2.1.3.4 PUI agriculture deriving from urban wastes).* This efficient and productive recycling of resources is becoming increasingly threatened by the lack of recognition of the waste as a resource by municipal authorities and the reduction in quality of these resources due to the changing nature of urban wastes and its increasing non-organic fragment.

Other examples of organic wastes that could be used in PU agricultural systems pointed out in the NRSP research were poultry manure and municipal compost both with a distinctly peri-urban waste dimension and the potential for utilising polluting materials productively as soil ameliorants (PD138: 24, R8090). Technical and social reasons, probably requiring recognition of the problems and input at administrative level, constrain the uptake of these resources (R7959 & R8090). However, the lack of success in interesting policymakers, who did not recognise the economic importance of urban waste resources to the vegetable and fishpond production systems, the value of

these production systems to the livelihoods of the practitioners and the economy food security of the city, or the environmental benefits from reducing pollution, didn't bode well for making policy changes that encompassed complex PU issues of waste management. A redefinition of urban wastes as productive natural resources may offer a first step in this recognition.

4.8 SUMMARY OF RESEARCH FINDINGS ABOUT INTERVENTIONS

The findings of the research projects about helping peri-urban people benefit from urbanisation can be usefully separated into two groups; those that were learned from trying alternatives and those that were learned from the research projects' interventions.

4.7.1 What was learned from trying alternatives?

This showed that:

- trying alternatives gave some people benefit. All the alternative enterprises undertaken were profitable or were expected to become profitable with time and the number of people who considered themselves poor or very poor had fallen significantly compared with people not involved in the research.

- for people with very low incomes to move into new productive activity speed of cash return was crucial. Where longer term payback was a feature of the new livelihood activity bridging activities needed to be available to help the poorest beneficiaries to manage the change period.

- the trials revealed technical details about the problems and successes of various alternatives. These have not been analysed as part of the synthesis report because of their individual country application allowing few points of comparison.

4.7.2 What was learned from the interventions of the research projects?

i) Effect of interventions on actions and actors

The research showed that:

- intervention that supports the actors and actions identified can help, possibly because these actors and actions can overcome certain conditions that the PUI creates.

- where there was support for participatory planning among other supports, people did better with changing their livelihood activities.

- given the support of the interventions, beneficiaries were willing to try new productive processes even where they were novel, meant taking unfamiliar risks, and were not proven to lead to livelihood gain or the gain was not immediate.

- the effects of the research projects were more variable for women than for men. Where there was a specific focus on women's needs, women made similar livelihood gains to men. Where this was lacking women's circumstances did not improve as fast as those of men.

ii) Knowledge about interventions that supports actors and actions to help PUI people make changes in their livelihood activities.

The research showed that where, because of a peri-urban interface, the following conditions arise:

- The increasing proximity of a city or town changes the way land is used, who can benefit from the use of land, and the productive processes that people can take up, resulting in physical, economic and social changes that are largely irreversible and which constitute a major break with the past.
- Tradition and familiarity are powerful forces for stasis and people do not seek change. PU processes create irresistible pressure for change, requiring people to assess unfamiliar risks or gain new skills in order to benefit from new opportunity. Many people have been previously immersed in rural economic activities, rural environment and rural social structures, resulting in limited knowledge of urban threats and opportunities.

- In-migration brings social, physical and economic changes creating further breaks with tradition and resulting in loss of group action and group support for individuals.

- Urban pressures lead to an increasingly monetised economy where livelihoods are cash based and subject to greater competition and the effects of globalisation. This results in pressure to move into cash based income generating activities on a larger scale than previously experienced and the further need to take national and international market conditions into account.

Interventions that include supporting the following actors and actions seem to help people to move to new livelihood activities:

- Participatory action planning that promotes group action, increases confidence to deal with the change being experienced, and increases flows of information at a local level, especially about urban threats and opportunities

- Community based facilitators, who provide information about urban threats and opportunities, promote participation in group action and facilitate links between local and wider institutions.

- Non-governmental organisations that can initiate and facilitate participatory action planning, provide information about urban threats and opportunities directly and through community based facilitators, and accumulate institutional knowledge about intervening in order to support changes in livelihood activities.

- Access to financial credit can facilitate moves to alternative livelihoods by those who lack financial capital or who had previously been able to practice productive activities that required very little or no financial capital.

- Access to training, information and other mechanisms for developing human capital to support the successful establishment of new, expanded or diversified livelihoods.

iii) Knowledge about actions that interventions might support that helped people to make livelihood changes

- Actions that supported actors in challenging or managing changes in the livelihood capitals available to vulnerable PU people appeared to help them to better manage the processes of livelihood change that may occur as a consequence of conditions that the PUI creates.

5.0 CONCLUSIONS

What are the livelihood activities of peri-urban poor people and how does a PUI shape them? What are the constraints and barriers to livelihood change in the PUI?

- Because the impacts of urbanisation affect locations differently, appropriate livelihood opportunities and constraints also vary spatially, yet without clear patterns.

- A PUI creates conditions that can offer opportunities for new productive activities with potential to generate more income than previously.

- At the same time, PU conditions can adversely affect existing livelihoods. The negative impacts land disproportionately on women and poor people

- PUI inhabitants are aware of the emerging urban opportunities but may need support to be able to understand and access them.

How can the peri-urban poor be helped to benefit from urbanisation?

- Interventions that lead to PUI people trying something new can improve livelihoods. There are actions and actors that interventions can support to this end.

- The research showed how actions that:
    - challenge changes in natural capital by rehabilitating natural resources,
    - change the financial capital context by promoting savings and improving access to credit for investment,
    - develop human capital by expanding information sources and providing training,
    - promote social and political capital by linking into wider institutional landscapes
    - develop community based action planning, community facilitators and more effective social networks

  all support the move of poor peri-urban inhabitants into new productive activities

- Interventions that enhanced or rehabilitated natural resources gave more positive economic outcomes that any other livelihood options. Peri-urban agriculture remains an important livelihood activity. It offers opportunities for the production of high value, perishable products to urban consumers and environmental benefits as a consequence of managing urban wastes as an agricultural resource.

- Traditional farming and trading activity forms a valuable bridging activity supporting people's moves into new productive income generating activities. These activities often have particular importance for women.

- Fast returns on new activities are needed because fewer non-cash based alternative livelihood strands are available to PUI people.

- People did better as individuals than in groups in terms of earning more income, possibly because peri-urban circumstances reduce social capital.

- Efforts to involve local government institutions did not succeed, providing evidence that governments lack interest in PUI problems and opportunities.

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