The Peri-Urban Interface:

a Tale of Two Cities

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Defining the peri-urban interface

The Hubli-Dharwad peri-urban interface may be loosely characterised as the area within the Hubli-Dharwad city region but outside the core urban area and encompassing the villages connected to Hubli and Dharwad by city bus services (University of Birmingham *et al*., 1998b). It includes five taluks around the city within Dharwad District: Dharwad, Hubli, Kalghatgi, Kundgol and Navalgund.

Within the city region there are differences in climate and physiography: "Kalghatgi taluk to the southwest of the city is part of a hill area, with higher rainfall; Dharwad taluk is in a semi-hill area, and Hubli, Kungdol and Navalgund are plains areas, in which rainfall decreases to the east, particularly in Navalgund and Kungdol taluks" (University of Birmingham *et al*., 1998b, p. 16). The quality and type of soils also varies between different parts of the region. "Black cotton soils are characteristic of the northern and eastern sides of Hubli-Dharwad, contrasting with the medium red soils in the south and west of the city. Kalghatgi taluk, the southern part of Dharwad taluk and the southern part of Hubli taluk have red soils and higher rainfall, increasing to the southwest, while Navalgund taluk, Kundgol taluk, the northeast of Hubli taluk, and the northern part of Dharwad taluk have black cotton soils" (ibid.).

In 1991, the city region had a population of 1,428,174, including 648,298 in Hubli-Dharwad Municipality, of which 50.5% were classed as urban. Population in the remaining rural and semi-rural areas grew at a rate of 2.7% per year between 1981 and 1991, faster than that in Hubli-Dharwad, which grew at 2.1% per year (University of Birmingham *et al*., 1998b, pp. 16-17). In 1991, the average population size of villages varied from 1,394 in Kalghati taluk, to 2,722 in Navalgund. Although larger villages tend to be located in the black cotton soil irrigated areas, in the 1980s they also tended to lose population through out-migration while in the south, particularly in Dharwad taluk, villages have attracted in-migrants. Greater proximity to the city is also linked with more rapid growth compared to more distant locations.

The regional and city economies

Current trends in peri-urban farming systems

Production activities in the peri-urban interface of Hubli-Dharwad are characterised by heterogeneity in the physical environment and farming systems, and also by patterns of dynamic change in some areas, while others have remained relatively stable. These factors have lead in turn to varying levels of productivity and prosperity and have had differential effects on the livelihoods of peri-urban residents.

Hubli-Dharwad is located in a predominantly rural region where agriculture is the principal economic activity due to the productive nature of the soils. The Baseline Study provides an initial characterisation of the main changes in peri-urban production activities, focusing mainly on farming systems (Hunshal, 1997). Changes in cropping patterns appear to be linked to the opening-up of the local market (city-region), and also increased access to wider regional markets including those in Bangalore and Bombay via Hubli-Dharwad. A trend has been established illustrating that farming patterns have varied on each side of the city.

These areas are also characterised by differences in type and form of production, land size, and access to irrigation and marketing. As a generalisation, to the east of the city farming is more urban-oriented, which means that there has been a diversification from subsistence to commercial cropping in order to satisfy urban markets and also due to increased irrigation (*e.g*. floriculture). To the west farming is rural-oriented, where farming is still geared towards traditional subsistence crop production, where crops such as rice predominate. Farming has also seen a trend towards mechanisation as a replacement for more traditional farming techniques using plough animals, which is also thought to have led to a decrease in demand for manual labour and also in the availability of organic manure (Hunshal, 1997).

Peri-urban farmers are experiencing labour shortages, due to the growth of industry and construction and the higher wages available for these activities. This trend is particularly observable among the younger generation, as agriculture as a livelihood is regarded as backward. A response to this problem has been a shift towards crops that require less labour input, such as mangoes (Hunshal, 1997).

Irregular wages and underemployment both in the agricultural and non-agricultural sectors in the villages have led to an exodus of the rural population towards the city in search of employment opportunities. This is mainly due to uncertain rainfall and poor irrigation facilities that in turn have reduced agricultural production. School dropouts are increasing due to the demand for family and child labour both in agriculture and factories because family income is not sufficient to meet the basic needs. The overall effect of the change is that people have additional employment opportunities during non-harvest seasons in agriculture, and have good access to transportation facilities (Budds with Allen, 1999). The social groups most affected are both farmers and farm women having less than 6 ha of rain-fed (e.g. not irrigated) land who seek employment in the cities during non-harvest season. The Baseline Study identified that these trends are also related "to changes in land tenure, with new (urban-based) land owners coming into the picture, and small holders seeking to minimise risks and improve security of market access" (University of Birmingham *et al.*, 1998a, p.62). However, who sells the land and what happens to the proceeds are important questions that remain unanswered.

The peri-urban interface is undergoing a transition from the use of fuelwood to the use of gas (Liquefied Petroleum Gas - LPG) for energy, especially by lower-income groups. The use of forests for fuelwood has become a concern, and fuelwood is now being commercially farmed. A cheap alternative fuel source for low-income groups is agricultural waste, for instance cotton stems, however its collection is time-consuming. Electricity is extended to the more accessible villages, where provision is between 80 and 100%, however the supply is subject to frequent power-cuts (Hunshal and Nidagundi, 1997).

Water is a valuable commodity in the peri-urban interface of Hubli-Dharwad, as it is scarce in much of the area, and agriculture in the drier black cotton soils depends on it for irrigation. There are two sources of water: reservoirs (and piped to destination), or borewells which extract groundwater directly. Piped water is extended to some peri-urban villages in the form of standpipes and paid for by the local administration. There have been reports of water shortages from standpipes due to energy shortages, which is needed to pump the water. In more remote villages borewells are more common. Borewells are also used for irrigation and there have been reports of an excess of borewells, which in turn has led to the lowering of the water table and lack of underground pressure to bring the water to the surface and also water of a brackish nature. There is possible contamination of groundwater from landfills (Khan and Mulla, 1997). There is a lack of information about water pollution, although there is concern about the quality and quantity of freshwater both in reservoirs and borewells. The lack of drainage is also a problem as is a lack of water for small irrigation schemes (ibid.).

Changes in marketing opportunities, off-farm employment and availability of inputs for peri-urban production activities have been identified in several documents as the main factors likely to be directly influenced by the proximity and connectivity to the city and by intense urban-rural interactions (Hunshal, 1997; Budds with Allen, 1999; Patil, 1999; Allen, 2000). However, there is still little information on the regional trends that are driving these changes. In this sense, it can be argued that the characterisation of farming systems has been focused so far on changes at the peri-urban micro-scale but there is still insufficient knowledge to explain the forces driving rural-urban linkages at the regional level.

Current trends related to urban expansion and industrialisation

The peri-urban interface of Hubli-Dharwad can be loosely geographically delimited as an area surrounding the twin cities within which urban bus services are extended, thus distinguishing it from rural areas. The area can be characterised as undergoing changes due to the growth of the twin cities and the increased connectivity with them. The peri-urban areas of Hubli-Dharwad are represented by villages outside the twin cities which have experienced such changes. Furthermore, the fact that Hubli and Dharwad have been brought within a single municipal district has meant that the villages located in the area between the two cities have lost their rural character and have become peri-urban, which is a unique feature of the structure of the Hubli-Dharwad city-region.

In 1991, land not available for cultivation occupied 4.1% of the total area of the revenue villages in the five taluks of city region. However, between 1981 and 1991, there was a significant decline in the area of land unavailable for cultivation (34.6%) (University of Birmingham *et al.*,1998a, p.22). Although greater land pressures were not exclusively linked with proximity to the city, more recent reports (Budds with Allen, 1999, Patil, 1999) suggest that peri-urban villages are undergoing changes in land ownership, arising when the government displaces landowners with compensation and sells the land to the private sector - usually industry - for development. However, little is known about how much land is being converted and for what purposes, whether the land is being converted for residential, speculative or industrial purposes.

Furthermore, there is no characterisation of who is buying land and for what purposes, whether it is urban dwellers buying land for investment or speculative purposes, farmers from other villagers or new industries buying agricultural land for industrial purposes.

The state promotes the industrialisation of the city region based on Hubli-Dharwad's strategic location and good connections with Bombay and Bangalore, and the availability of water and forest resources and cheap labour, all of which make it a potentially prime location for industry. However, despite state policy promoting industrialisation, there are several infrastructural constraints that limit its viability in the Hubli-Dharwad city-region. The most significant of these is a lack of public investment in the necessary infrastructure due to constraints to capital investment (resulting from structural adjustment) for new projects and the administrative difficulties of bringing private sector involvement into public works. The most notable example of this is the power sector. Hubli-Dharwad suffers electricity shortages which are common throughout India, and these shortages are worse the greater the distance from the municipal area, that is, peri-urban areas. Water shortages represent a similar constraint (Budds with Allen, 1999).

Institutional structures and decision-making processes

In addition to central government, three levels of government administration have a presence in the city region of Hubli-Dharwad: state, municipal (urban) and rural. The two principal bodies active at the municipal level are the Hubli-Dharwad Municipal Corporation (HDMC) and the Hubli-Dharwad Urban Development Authority (HDUDA). The rural level is governed by the Panchayat Raj (council) system, divided into three further sub-divisions, Zilla (district), Taluk (sub-district) and Gram (two or three villages) Panchayats. Although none of these is concerned with land use planning and natural resources management, they are responsible for the allocation of resources and the implementation of programmes and schemes defined by the Central and State government (Subhas, 1997; Budds with Allen, 1999).

The central government has introduced several policies and incentives to farmers in order to improve agricultural production and to secure access to land for the poor. Thus, for example, if people earn less than 2,000 rupees per year, they are eligible for a grant of land to practice agriculture. Landless people in the taluk and people who hold insufficient land receive priority. There are special regulations of grants of land to lower castes, and a certain proportion of all land (not less than 50%) granted must go to these castes, if they are present. Although land cannot be bought by civil servants, this is ignored in practice (Nidagundi, 1999).

The Deputy Commissioner has the power to lease lands (subject to availability) to farming co-operatives, village panchayats and taluk development boards and any company or association engaging in agriculture, industry, or public utilities. Land leased for agricultural purposes is subject to the following conditions: land must not be permanently destroyed, the lessee must not sub-let or abandon the land, land must be cultivated personally by the lessee, land must not be used for other purposes, and annual rent is 10 times the land revenue plus water rates not exceeding a certain value according to the class of land (Nidagundi, 1999).

Under the Karnataka land reform of 1974, laws were introduced in favour of land tenants, giving a person illegally cultivating land belonging to another person the status of tenant. The result has been that many large landholdings have been reduced and land has been redistributed among the landless (who are now tenants), resulting in an overall increase in production. Poor people who were working under landlords were also given tenant status, and this has improved their livelihoods. This was a very strong measure taken by the government for poverty alleviation but little is known about its effectiveness and impact on the peri-urban poor (Nidagundi, 1999).

In relation to agricultural policies, the central government has provided regulated markets in each taluk, has introduced policies to ensure that farmers' crops are measured accurately and that farmers can sell directly without middlemen, do not incur unforeseen expenditures and are not responsible for losses once their produce has been sold (Nidagundi, 1999). However, although access to markets by farmers has increased, because of the growing markets in Hubli and Dharwad and also better connections to take their produce to market, they complain of low prices for their produce, especially when sold to the government via middlemen (Budds with Allen 1999; Allen, 2000).

The networks for the marketing of farming products and the main stakeholders involved in these networks are also characterised in the Baseline Study (University of Agricultural Sciences *et al.*, 1997; University of Birmingham *et al.*, 1998a, 1998b). Agricultural produce markets appear to be highly fragmented, with weak links to the state and the national and international markets. Poor farmers were found to avoid harvesting crops of higher productivity and risk in order to avoid price and post-harvest and storage risk. Key factors that demand further consideration are the constraints to the access of poor farmers to credit and to marketing organisations and information.

With regards to agriculture marketing, the government has established an Agriculture Produce Marketing Committee which provides loans to farmers (Nidagundi, 1999). However, in practice other institutions appear to be the main sources of loans for farmers. Villagers in Mugad, Gokul, Kotur and Aminbhavi ranked as one of their principal concerns the fact that farmers are increasingly taking loans from money-lenders and other financial organisations, to whom they are forced to sell their produce if they are unable to repay. When yields are low, they are forced to mortgage their lands (Patil, 1999). The formal and informal institutional mechanisms available to access credit require further investigation.

Among the government initiatives in support of agricultural production, there is a Cereal Improvement Programme through which farmers are given field demonstrations, are trained, and are then paid 5,000 rupees per season to test cereal and rice production. Similar schemes exist for pest management, production of improved seed, experimentation with compost made by vermiculture etc. Irrigation policies specify that in order to preserve levels of the water table for irrigation, borewells must have a minimum distance of 300 feet between them. This rule appears to be grossly violated in practice, especially on private land. The State Government has launched a scheme (*Ganga Kalyana Yojane*) in order to increase access to irrigation (and therefore productivity) through the provision of hand pumps fixed to borewells. The misuse of such hand pumps has been reported as a problem but has not been further investigated (Nidagundi, 1999).

Caste occupations like pottery, fishery and bamboo product making are least affected because profit is inversely proportional to the investment (University of Agricultural Sciences *et al.*, 1997). However, little is known about the contribution of non-farming productive activities to reduce poverty in peri-urban villages. In order to cope with the changes affecting farming production, women have taken up work in factories and also sell vegetables, cereals and pulses in the weekly markets of Hubli and Dharwad. Many young people and women have also taken up dairying (Patil, 1999). In Mugad, the women's association is well organised and has put in place a small savings scheme. At the local level, several community organisations appear to play a key role in terms of supporting and diversifying local livelihood strategies. Little is known, however, about the strengths and weaknesses of these organisations. Further research on the role played by these organisations in expanding the social capital of poor peri-urban dwellers is required, in order to guarantee that future interventions are supportive of current initiatives at the grassroots level.

From an institutional point of view, the decision-making arrangements and mechanisms affecting peri-urban production activities appear to be highly fragmented and lacking attention to environmental and poverty concerns. However, this does not mean that there is an institutional vacuum concerning the management of peri-urban productive systems. Further research is required on the effectiveness of existing policies in supporting farming systems and their impact on poor farmers, with particular attention paid to the increasing engagement of women as agricultural labour force. Aspects of particular relevance to be further examined include the impact of these policies to improve market opportunities and access to credit, availability of labour and draft power, and the role of village organisations, such as producer cooperatives and women's organisations in addressing these issues at the local level.

In relation to urban development, the main institutions directly involved in land-use planning have been characterised in the Baseline Study (Subhas, 1997). The Hubli-Dharwad Urban Development Authority (HDUDA) is responsible for the planning of urban areas including areas of urban expansion and takes the stance of accommodating urban growth rather than making specific land use decisions. The Hubli-Dharwad Municipal Corporation (HDMC) is responsible for implementing urban plans and the maintenance of urban public utilities.

The rural-oriented Dharwad Zilla Panchayat (DZP) is primarily concerned with short-term socio-economic planning and adopts a non-spatial planning approach, with no attention to land-use decision-making, physical planning or environmental concerns. The role of the DZP is to allocate financial resources to specific project proposals by Village Development Committees at the Gram Panchayat level (lowest-level village authorities) in accordance with Central and State government directions. "The largest spending is on health, education, and public works – roads, water, buildings, but the Zilla Panchayat is split into 33 departments. Each department has their own sources of information which are not shared with other departments, and each has their own separate linkages with other levels of government. The Chief Executive Office is responsible for co-ordination, and together with the Planning Unit and the Deputy Secretary (Development) appears likely to be able to facilitate contacts with stakeholders in the district" (Subhas, 1997, p. 110).

There is a high degree of centralisation at the state level, which means that neither the municipal authorities nor the Panchayati Raj system have significant power or financial autonomy to carry out independent decision-making (Sundaram, 1995). This is exemplified in the process of industrialisation and urbanisation promoted by the State government.

The state tends to impose a top down approach, with state-wide policies on industry and urbanisation drawing little resistance from the rural authorities. Although the Panchayat has the right to approve (or reject) requests for land conversion, in practice the state government has the power to acquire the land and overrule the lower-level Panchayat authority (Budds with Allen, 1999).

The process of planning also appears to be heavily politicised. For instance, despite holding regular elections, the Panchayati Raj system is also characterised by patriarchy and bureaucracy. In general, peri-urban villagers oppose moves to incorporate them into the Hubli-Dharwad municipality because they do not want to lose their Gram Panchayat form of local administration, as this would mean that they would be absorbed and dominated by the municipal authorities with less say in the running of local matters than at present. Losing their local form of government would also mean paying higher taxes corresponding to the municipal authorities and losing rural subsidies for farming, for example access to subsidised credit. They also fear increased air and water pollution from the growing city and loss of common land and open space (Patil, 1999; Allen, 2000).

As mentioned above, none of the above authorities give attention to environmental planning and management for the peri-urban interface, not even the HDUDA which supposedly takes a longer-term and more strategic approach. Both the Karnataka State government and HDMC have pollution control departments; however, no central department of the environment exists within any of the authorities responsible for the Hubli-Dharwad city-region. There is a general lack of information on industrial pollution in Hubli-Dharwad, although there are many undocumented cases of bad pollution. Although pollution control exists in the legislation, politics and corruption hinder its enforcement. Potential conflicts may arise in the future due to environmental problems that to date have not been planned for (Nidagundi, 1999).

In general, there is an absence of communication and co-operation between the planning authorities, especially the HDUDA and HDMC bodies, in spite of the fact that their realms overlap to a certain degree. In order to counteract this, the state government has set up a District Planning Board with representatives from all of the local planning authorities. The Baseline Study highlights the scope to integrate and enhance the planning mechanisms of both the HDUDA and the DZP through the implementation of the Board and also the need to support the work of both agencies by providing research support and policy advice from the findings of existing and future research on the peri-urban interface (Subhas, 1997). However, little is known about the specific role and responsibilities of the Board and also about the factors that hamper its implementation.

The main policy mechanisms identified to guide land-use and ameliorate the impact of urban expansion on peri-urban areas are the Comprehensive Development Plan, devised each ten years by HDUDA, and more specifically a designated green belt within the plan, earmarked for agriculture and future expansion of settlements. Both mechanisms appear to have taken little account of environmental considerations and also lack a broader vision of regional development to promote a more efficient use of renewable natural resources in the PUI (Nidagundi, 1999).

Green belts are designated around towns with populations exceeding 50,000, as is the case of Hubli-Dharwad. The green belt is maintained with a view to contain future development or expansion of a settlement. During the 1970s and 1980s, some of the green belt was converted for residential and industrial uses. The green belt and the 18 villages covered by the 1988 Comprehensive Development Plan (HDUDA) remain under the jurisdiction of the local Gram Panchayats and the Taluk Panchayat. HDUDA has enforcement powers, but not political status to apply these powers in practice. In addition, the Urban Development Authority has no statutory controls beyond the local planning area, so difficulties have emerged in enforcing the 1988 Plan (Nidagundi, 1999).

In contravention of the plan, some local panchayats have granted formal permission to change the use of agricultural land. Some previously agricultural land around Hubli-Dharwad has been converted to residential use, some of which was done illegally, with no provision for basic infrastructure such as electricity, water and drainage. Land speculators are reported to have offered half of the market value to farmers, built in inadequate roads and sold off plots of land to low income groups (University of Birmingham *et al.*, 1998a, p.108). Migrants to the city who have been unable to purchase plots have illegally occupied other areas. However, in the studies done so far, there is very little coverage of unauthorised and speculative land developments. The Regularisation of Unauthorised Construction Act (1995) has encouraged or supported unauthorised developments. In addition to this, pressure may be exerted on the Slum Clearance Board to class these settlements as slums so that services have to be provided by the government.

Several mechanisms are in place to prevent land conversion and speculation (Town and Country Planning Act, Revenue Act and Urban Land Ceiling Act). Since 1997, the Development Authority has started to coordinate efforts with the Municipal Corporation and the Dharwad District Deputy Commissioner to stop the growth of unauthorised settlements (University of Birmingham *et al.*, 1998a, p.109). However, land-use planning is in general terms handicapped by the fragmentation and overlapping of the institutions involved.

The Deputy Commissioner may sell sites for building, as long as 18% are reserved for lower castes, for a price which is not lower (except in especially deserving cases) than the market price. These sites cannot be granted to people who already own a home or land within the village, or have received a site from the authority in the last 20 years. Although the government has introduced policies and programmes designed to provide plots to poor people, these have not typically reached the poorest of the poor. In addition to this, the Town Planning Department lacks the capacity to keep an updated cadastral system. A Revised Comprehensive Plan was developed in 1998 but is likely to have similar weaknesses to the 1988 plan (Subhas, 1997; Nidagundi, 1999).

The institutional framework and policy mechanisms promoting industrial development have been characterised by Nidagundi (1999). Recently, five major industrial estates have developed around the peri-urban interface of Hubli-Dharwad for medium and small-scale industries. The Belur Industrial Growth Centre purchased 3,000 acres of agricultural land for industry. Land conversion from agriculture to industry is made by the Deputy Commissioner and the Joint Director of the District Industrial Centre (DIC), who surveys public opinion and then brings the proposal before the Committee made up of the DIC, Pollution Control Board and HDUDA, with the District Commissioner as chairman. In consultation with the District Commissioner, the Joint Director of the DIC has the authority to authorise the conversion of agricultural plots of land of less than two acres to industrial use. Tax concessions have been one of the main mechanisms deployed by the State to attract new industries, aiming to relieve pressure on the Metropolitan area of Bangalore (University of Birmingham *et al*, 1998a, p.106).

Compensation given to farmers is negotiable and is double that fixed by the Registrar of Land Records. There is no obligation on the part of the industry to offer employment to those displaced from the land. This policy has encouraged many agricultural landowners to offer their lands for conversion in order to profit from the compensation. A major gap appears in understanding the coping strategies adopted by farmers to compensate for the loss of their farmland when it is sold.

The Baseline Study found that information on land holding is available in each village going back several decades (University of Birmingham *et al*, 1998a, Section 8.4; 1998b, 1998c). The Revenue Department keeps manual records and maps of land holding for each village. The creation of a computer database and related digital maps covering those villages where land pressure appears to be more acute could facilitate the analysis of land transactions and values, providing a useful tool to monitor changes taking place in the peri-urban areas of the city region.

Another trend to be considered in the analysis of changes in peri-urban areas driven by urban development is the increasing amount of urban waste flows. The peri-urban interface is the chosen location for the cities' landfills, where waste pickers operate (despite the fact that most of the glass and plastic is separated out of urban solid waste for resale before the waste reaches the dumpsite). Some urban waste is composted and used as fertiliser on agricultural land, although this mechanism is largely restricted to wealthy farmers who can transport the waste from the dumpsites and hire labourers to separate the waste before application to the fields. There is possible contamination of groundwater from landfills (University of Agricultural Sciences *et al.*, 1997).

The Health Department of the Hubli-Dharwad Municipal Corporation (HDMC) has responsibility for the collection and disposal of solid waste. It is estimated that around 50 tons of solid waste are collected in Dharwad each day and around 120 tons per day in Hubli. Each city has a dumpsite, though the HDMC is seeking to relocate the Dharwad dumpsite as the city has engulfed the present site (University of Birmingham *et al*., 1998a).

The responsibilities of the HDMC regarding waste and sewage are set out in the 1976 Karnataka Municipal Corporations Act. The waste and sewage disposal section of the Health Department uses a fleet of 17 trucks to transport the waste, five in Dharwad and 12 in Hubli. Of these, four trucks in Dharwad and eight in Hubli are hired at the rate of Rs.350 per day. Densely populated wards, vegetable markets and slums are visited once a day, while other wards are visited once or twice a week. However, not all of the waste is collected in Hubli-Dharwad. Five private sector companies are contracted to provide municipal waste collection and HDMC has put the waste treatment facilities out to tender (University of Birmingham *et al*., 1998a).

Open dumping is the common method for waste disposal. The waste deposited at dump sites is generally neither spread nor compacted on a regular basis. It is also not covered with inert material, thus giving rise to very unhygienic conditions. Most households, shops, establishments, building contractors etc. do not use dustbins, but dump waste on streets. Hospital waste management is grossly neglected: hospitals generally do not segregate infectious and non-infectious waste, but leave all for the corporation to take to the dump site (Nidagundi,1999).

By law, local government authorities must arrange for road-sweeping and the disposal of solid waste, but this is not carried out effectively. There is a gap in the legislation as it neither makes it mandatory for residents to have a domestic bin and community bin and to dispose of their wastes into municipal systems, nor does make it compulsory for the urban local bodies to make doorstep collection of wastes or community based collection, resulting in unsanitary conditions in the urban areas. The laws generally provide for street sweeping, provision of dustbins and removal of waste therefrom, which are not adequate to handle the situation effectively. They also fail to give powers to local bodies to punish the offenders. Local bodies have to file complaints in the courts where the legal process is very slow. The monetary value of fines that can be imposed is also very low, thus having little effect and leading people to blatantly disrespect the law (Nidagundi, 1999).

Industrial waste is generally disposed of in an unscientific manner which creates environmental pollution. Industrial plants lack adequate treatment facilities and state industrial waste disposal is not strictly enforced. However, the government appears to be committed to encouraging the development of industries seeking to maintain ecological and environmental balances. Distilleries are one of 18 categories of polluting industries, and the pollutants created such as solids, liquids, gaseous substance present in such concentrations of pollutants should not be damaging to the environment. Several norms for treatment and disposal of effluents from distilleries are in place. These include the use of Environmental Impact Assessment reports and Environmental Management Plan using remote sensing technology. The norms also allow composting of effluents after preliminary treatment for agricultural purposes under some circumstances (Nidagundi, 1999).

A research project (R7099) was conducted by the Universities of Birmingham and Wales, Bangor (Universities of Birmingham *et al.*, 1998a; 1998b; 1999a), which provided an initial characterisation of the main stakeholders involved in urban solid waste (USW) management and the composting of USW both from the supply and demand sides (Universities of Birmingham *et al.*, 1998a; 1999a). A number of options to optimise the use of municipal waste have been adequately characterised, focusing particularly on potential strategies for optimal composting solutions affordable by smaller per-urban farmers.

Segregation at source is hardly carried out, except for separation of recyclable materials such as paper, plastics and glass by households for sale as scrap. A number of waste picking households operate in Hubli-Dharwad, an occupation based on community and caste, and mainly comprised of women and children. All newspapers are sent for recycling, for which there is an efficient system of collection. Recyclable materials include: plastic bags, plastic bottles, paper, milk pouches, tin/metals, cardboard, most of which go to Bangalore where there are more sophisticated waste markets and can fetch between 1 and 14 rupees per kilo (University of Birmingham *et al.*, 1999a). There is some recycling activity in Hubli-Dharwad, but there is a lack of information on this. Recycling units and associated industries are also key stakeholders to reduce the non-organic content of municipal solid waste and deserve further attention.

Although sewerage networks cover most of the urban areas of Hubli and Dharwad, peri-urban areas are characterised by a lack of sanitation infrastructure. No sewage effluent is treated, and there is a tradition of reuse of urban wastewater, sewage effluent and nightsoil as fertiliser on agricultural land, with some cultivation taking place alongside sewage channels. This can pose an environmental health hazard if the effluent is not sufficiently decomposed and thus requires further investigation (University of Birmingham *et al.*, 1998b).

The flow of urban and industrial solid waste – and to a lesser extent of liquid wastes - into peri-urban areas has been identified as a source of problems and opportunities to enhance the management of natural resources, to increase the productivity of farming systems and to improve the livelihoods of small peri-urban farmers. The institutional arrangements and policy mechanisms in place to control and regulate negative impacts have also been adequately characterised. However, their effectiveness needs to be further investigated as well as the role and capacity of several of the key stakeholders identified in the management of industrial and municipal solid waste.

In summary, the impact of urban development on the use of natural resources and the livelihood strategies of peri-urban dwellers have been only partially characterised in the NRSP research done so far. When looking at the policies currently in force, conflicts appear between long established policies supporting agricultural production and the more recent emphasis on industrialisation. Urban expansion is largely portrayed as an outcome of the lack of effectiveness of urban planning institutions and mechanisms. Further research is required to understand the driving forces behind land use changes and to examine whether they are a result of poor planning capacities at the local level or an outcome of contradictory policy objectives at the state and central levels. Road construction and transport policies have not yet been explored but appear to be extremely relevant in order to understand in what direction urban expansion is likely to occur and who is gaining access to urban facilities. Overall the development of specific initiatives to articulate and strengthen the planning

capacity of urban and rural institutions appears as a key factor to control the problems and profit from the opportunities arising from urban expansion.

An overview of the peri-urban area of Kumasi

Defining the peri-urban interface

Unlike the NRSP research in Hubli-Dharwad, the baseline study for the Kumasi peri-urban interface (Holland *et al*, 1996a, p. 8) shies away from defining spatial limits for it; this is partly because spatial limits are "moving targets as the intra-urban city expands" and partly because "there is considerable economic activity that would cross any arbitrarily defined boundary", but also because environmental phenomena (e.g. water pollution) have their own spatial impact. The baseline study team selected a number of villages located at distances ranging from 4 km to 47 km of the centre of Kumasi. The main consideration for including a village as part of the peri-urban interface was "the presence of bush/fallow agricultural land, but with competition for land from non-agricultural uses" (Holland *et al*, 1996a, p. 8).

It is not clear how the 'region' might be best defined for the purposes of the NRSP research programme. One possible definition would include the Ashanti (sometimes spelled Asante) Region, of which Kumasi is the administrative capital, as well as its historic and economic centre. Although smaller than the historical area of the Ashanti Kingdom, the region acquired its present boundaries with the Local Government Administration Act of 1971 (Nkansa Buabeng, n.d), and is one of ten regions into which the country is divided for administrative purposes.

For future research activities, another definition would limit the region to the 'Kumasi peri-urban' area, which is the approach taken by KNRMP researchers. Although more arbitrary and difficult to define, and with the additional problem that this region will continue to shift in size and shape as the city expands, this is perhaps a more appropriate choice for the purposes of any future research/action projects. The criteria behind the definition of this region appear in Holland *et al* (1996a), while Blake *et al* (1997a) defines its rough boundaries as being within a radius of 40 km from Kumasi, a 'guesstimate' of the area the city is likely to exert some influence upon.

The conurbation of Kumasi comprises an area which includes the Kumasi City Council (KCC) and the four districts adjacent to it: Kwabre, Atwima-Kwanwoma, Ejisu Juaben and Atwima-Nwabiagya. Together, the five districts

constitute what may be called the Greater Kumasi city region "to which … does not correspond any official administrative body" (Corubolo with Mattingly, 1999, p. 1). The most recent official information on population for the five districts is derived from the 1984 population census (Table 2.1).

Table 2.1 Population in Kumasi and adjacent districts, 1984

	Kumasi City Council Area	Kwabre	Atwima-Kwanwoma	Ejisu Juaben	Atwima Nwabiagaya
Female	103,873	15,296	9,787	9,143	10,718
Male	103,695	11,511	10,321	7,804	9,259
Total	**207,568**	**26,807**	**23,051**	**22,255**	**19,977**
Share (%)	69.3	8.9	7.7	7.4	6.7

Source: Holland *et al.* (1996a)

The regional and city economies

Future development strategies for peri-urban Kumasi ought to be based on some degree of awareness about the economic potential of both the city and regional economy. And yet, authors agree that there is a dearth of information on both. None of the documents consulted appear to provide a profile of the regional economy and only one (Korboe *et al*, 1998) provides a partial overview of the economy of the city (including its metropolitan area).

Although not an administrative entity, the Greater Kumasi city region (GKCR) would seem to be a useful unit of analysis for the purposes of the research and any subsequent strategies developed as part of the programme. However, it must be borne in mind that the peri-urban area is still a problematic concept, and that any trends are likely to be influenced by wider economic developments in the larger Ashanti region. Thus, reference should be made as far as possible to wider processes such as in-migration from the Ashanti region into Kumasi, marketing of agricultural produce and livestock to and from Kumasi and its surrounding area, substantial changes to infrastructure (e.g. transport, electricity, telecommunications), and other relevant indicators which might affect the economy and the livelihoods of the population in the GKCR.

Not much is known about long-term trends in the region's economy. For example, it is not clear how liberalisation affected the productive base, nor the long-term trends in cocoa production, an export product that for decades provided the mainstay for the region.

There is, however, some characterisation of the marketing system in and around the city (Blake *et al*, 1997a, p.86), which leads researchers to state that "the peri-urban areas are not the sole suppliers of foodstuffs to the city (but) areas beyond its daily sphere-of-influence may be able to supply produce at lower unit costs, or may have more land available, or have other comparative advantages". Furthermore, "the whole country, perhaps even the entire coastal West Africa, could be defined as the area of supply of its foodstuffs" (ibid.).

Key components of the Kumasi peri-urban region appear to have been adequately characterised in the different project documents, more notably Holland *et al* (1996a), and to a lesser extent Blake *et al* (1997a) and Kasanga (1998). But because of the nature of the KNRM project, these documents have tended to focus on the natural resource-based economy, notably agriculture, livestock, mining, energy, land, water and waste. Little or no attention appears to have been paid to non-natural-resource sources of sustainable livelihoods that are appearing or rapidly changing, such as trade, construction, small-scale and medium-sized manufacturing, services (e.g. repair workshops, hairdressers), as well as elements providing important support to the regional economy such as the regional infrastructure (e.g. electricity generation and distribution, other sources of energy, roads, telecommunications), education, health and inter-regional transport (there is some information, however, on intra-regional transport particularly to and from Kumasi). Similarly, there is no reliable picture of the changing composition of the labour force: the last source of information which might provide a composite picture of this is the 1984 national population census, whose reliability has been disputed (Korboe *et al*, 1998).

Some of the trends in the peri-urban economy may be gleaned from the reports. Tables 2.2 and 2.3 provide a summary of how these have affected a range of villages selected by a team led by Kasanga in 1996 (Kasanga, 1998, 1999). The trends reported there are corroborated for another set of peri-urban villages reported in Blake *et al* (1997a)[1]

The data in Table 2.4 show clearly that all peri-urban villages grew in population between 1984 and 1996, with the exception of Behenease, the most distant village, located some 24 km from the city centre. All except two expanded at higher rates than the national population growth estimated at some 3% per annum. This suggests that they are net recipients of population. Although according to respondents these villages have also 'exported' some of their former residents (in proportions ranging from a low of 5% in Atasamanso to a high of 37% in Akokoamong), they have been also giving shelter to newcomers.

Table 2.2 Share of labour force in agriculture in selected peri-urban villages around Kumasi, 1970-1996

	Share of labour force in agriculture* (%)						
	Female				**Male**		
Village (approximate. distance to Kumasi centre)	1970	1984	1996		1970	1984	1996
Akokoamong (13km)	56.3	55.8	30		32.2	30.6	28
Asaago (12 km)	49.5	49.6	41		40.0	41.0	32
Atasamanso (7 km)	33.1	29.2	6		20.0	18.1	4
Behenease (24 km)	38.5	41.2	54		41.5	40.1	36
Emena (13 km)	60.8	60.1	24		20.6	25.7	16
Esereso (13 km)	47.5	45.2	14		35.0	34.5	8
Maase (13 km)	59.1	58.7	34		19.3	22.3	20
Okyerekrom (15 km)	38.1	36.8	27		18.4	17.2	21
Mean	47.9	47.1	28.8		28.4	28.7	20.6

* For 1970 and 1984, the national population census uses the classification 'agriculture'; the 1996 census conducted specifically for the research uses the classification 'farming'.
Source: Kasanga (1998, table 5 and appendix 2)

Table 2.3 Share of employment in selected occupations in Kumasi and adjacent districts, 1984 (%)

	Kumasi City Council	**Kwabre**	**Atwima-Kwanwoma**	**Ejisu Juaben**	**Atwima Nwabiagaya**
Agriculture	12.3	66.2	84.2	74.5	76.2
Manufacturing	20.9	11.1	4.3	9.6	8.1
Trade & restaurants	41.9	13.5	5.3	7.5	8.5
Community social services	25.0	9.2	6.3	8.3	7.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Total employment	**186,830**	**25,567**	**22,408**	**21,665**	**19,065**
Share in GK (%)*	67.8	9.3	8.1	7.9	6.9

* District share of Greater Kumasi in the four occupations shown
Source: Holland *et al.* (1996a)

Table 2.4 Population growth in selected peri-urban villages around Kumasi, 1970-1996

	Resident population				Native population	
	1970	1984	1996		1996	
Village (approximate distance to Kumasi centre)			Total population	Annual growth* (%)	Currently Resident (%)	Out-migrant (%)
Akokoamong (13km)	247	322	488	3.5	63	37
Asaago (12 km)	273	527	847	4.0	82	18
Atasamanso (7 km)	830	971	2,679	8.8	95	5
Behenease (24 km)	207	274	258	-0.1	67	33
Emena (13 km)	213	244	665	8.7	81	19
Esereso (13 km)	441	673	1,711	8.1	90	10
Maase (13 km)	269	522	829	3.9	69	31
Okyerekrom (15 km)	497	589	734	1.9	68	32

* Annual growth of village population between 1984 and 1996.

Source: Kasanga (1998, Table 3)

The survey reported in Adam *et al.* (1997, p.4) comprises six villages located between 8 and 30 km of Kumasi city centre, of which only two are located on a main tar road. Data for these also suggest that four or five of these villages experienced net growth between 1984 and 1997, while one or possibly two had decreases due to out-migration exceeding in-migration. In-migrants to these villages came mainly from the north of the country. "While in-migration has been either for farming or in the case of Abuakwa (and Duasi) for easy commuting access to the city, out-migration has in most cases been to the city (or perhaps one of the settlements closer to the city) to seek or engage in urban occupations" .

The reasons why peri-urban villages closer to the city attract newcomers are mentioned by Kasanga (1998), and would seem at least partly to relate to the higher costs of housing in Kumasi. Housing rental in Kumasi tends to be expensive for the poor, who often live in overcrowded conditions in large compounds accommodating several households; only the better off can build and own detached villas, both in town and in its surrounding area (Tipple, 1998). A substantial number among poor owners and renters use their dwelling for generating income from a range of activities including food production, manufactures, shops, and services, such as hairdressing and day care (Sinai, 1998).

It is pointed out in Holland *et al* (1996a, p.18) that "many of the new villas being built in and around Kumasi belong to strangers rather than local villagers". Although some anecdotal evidence may be available, this may in fact be an unsupported generalisation which contradicts the findings of Tipple (1998) for Kumasi, who in a sample of 184 house owners who had recently built their house found that the average length of stay of the household head in the city was 29 years (with a median of 25). Their average age was 48 years, while on average the new house to which they had moved in had 6.3 rooms.

Holland *et al.* (1996a) also states that recent in-migrants are said to work in the city, "or at least have income sources from outside the village" (ibid.). However, the research does not seem to have focused on the group of in-migrants to these villages, so not much is known about them. A more in-depth and systematic analysis of a sample might have provided more information on the reasons why they chose to move to the villages, their sources of income, their age and sex breakdown, their skills and so on. Even a non-statistically representative sample of the peri-urban area might have provided some clues about the current and potential role that peri-urban villages provide particularly as regards newcomers (be they from the city or from outside the region). It might have also provided some idea about their desire to settle in the peri-urban area, thus giving some clues about possible future trends.

Similarly, not much seems to be known about middle- or upper-income purchasers of land in the peri-urban area, nor about their intentions to permanently settle in the area. There is some anecdotal evidence that as the ancestral seat of the Asantahene, Kumasi may attract people of Ashanti origin who seek to settle in the area (Blake *et al.* 1997a). Others may in fact be simply using their savings (from Ghana or abroad) to speculate with land in and around a city that is growing fast and where urban land prices may also be rising fast. Some more systematic knowledge of this might be relevant in forecasting future trends in sales of peri-urban lands for housing and related amenities (commercial uses, clubs) and perhaps even businesses that do not require a central location to operate. Moreover, as will be shown later, this might also provide some clues as to the

pressure they are likely to exert in attracting utilities to the area, and even in accelerating the pace of gentrification in the villages.

As has been shown in the project documents, the labour force in peri-urban Kumasi is fast ceasing to depend on agriculture. Data for 1996 show considerable drops in the proportions working in agriculture in the eight villages surveyed by Kasanga compared to the previous two decades (Table 2.2). In some cases, such as Akokoamong, Emena and Maase, from employing more than half the female labour force, this had dropped to between a third and a quarter. Only in the most remote village, Behenease, was there an increase in the share of female labour force in agriculture between 1984 and 1996. As has been shown in the project reports, agriculture employs a proportionately smaller share of men, but even here there were marked drops in virtually every case, with the exception of Okyerekrom (the second most distant village).

The data from the six villages surveyed for Blake *et al.* (1997a, p.5) show similar trends, with agriculture still the main source of livelihood but ceasing to be a primary occupation particularly among young women and men. It is, instead, acquiring a secondary and supporting role. The young (especially men) "are generally not interested in traditional food crop farming, but if they remain in the village become engaged in crafts and artisanal work, also vegetables and rice growing". By the same token, "opportunities for alternative livelihoods within the village for women are restricted to trading, crop and food processing, dressmaking and hairdressing" (ibid.).

The figures in Table 2.3 point to a long-term trend, similar to one observed in metropolitan regions around the developing world, towards forms of employment other than primary sector activities. And although some pointers are provided in the project reports, there is, however, no composite picture of what might be appearing as other possible sources of employment among the peri-urban population. We do know, however, that 'unemployment' is high there (Kasanga, 1998, 1999), though it is not clear from the data how, in the absence of a social security system, the unemployed survive without sources of income. One suspects that extended family networks provide a form of safety net but not much is known about how this operates and how long it is likely to be effective in sustaining the livelihoods of the unemployed (see chapter 6 for a more detailed discussion on peri-urban livelihoods).Given the trends described above, and the continuous physical expansion of the city towards its periphery, one might expect peri-urban inhabitants to shift towards occupations in the secondary and especially tertiary sectors. However, what other possible sources of income for the peri-urban poor there might be in this context is not clear either. Some clues might be provided by an examination of the city economy, and an assessment of the main trends.

A 1984 snapshot view of the distribution of employment in Kumasi and the four adjacent districts is given in Table 2.4. This shows that the area of jurisdiction of the Kumasi City Council (KCC) had the lion's share for Greater Kumasi of employment in the four selected employment occupations shown in the table (this does not include all forms of employment). Even in agriculture, the KCC had more jobs than any of the other districts, though not surprisingly the relative share of agricultural employment was considerably smaller than in any other district shown. In terms of non-agricultural employment, Kwabre District was more active than any of the other adjacent districts in manufacturing, trade (including restaurants) and services. It is interesting to note that already in 1984 in all four districts there was a non-negligible presence of non-agricultural activities, a sign of the dispersal of jobs and residents from the city core that these districts was already experiencing.

Although focusing on governance and urban poverty, the economy of contemporary metropolitan Kumasi has been partially characterised in a report produced for DFID by Korboe *et al* (1998). They do note that availability of reliable information is also a problem in the city, which leads them to shy away from making an assessment of trends in key economic activities (Korboe *et al*, 1998, p. 16). They do, however, list a set of key factors that appear to have supported growth in the city's economy in the last decade. Most are at least partly the result of central government measures, such as:

- Liberalisation of trade, price de-regulation and relaxation of foreign exchange controls. This has helped attract remittances from nationals working abroad.
- Linked to the above is that competition in the banking sector has made banks more reliable to local savers
- Central government promotion of international tourism, which has helped attract US and Caribbean African descendants. Tourism is the fastest growing sector in the national economy, and Kumasi is an important recipient of tourists. It is estimated that half of all tourists arriving in Ghana visit Kumasi. However, no figures are offered on the employment this generates, or the income this brings to the city.
- Establishment by the central government of the Land Valuation Board. This led to a revaluation of the city's properties and to substantially increased revenues for the Kumasi Metropolitan Assembly (KMA).

- Improvements in KMA's finances through the District Assemblies' Common Fund, resulting in a doubling of KMA revenues.

Other measures have been specifically targeted at Kumasi:

- Central government investment in telecommunications and its subsequent privatisation. This dramatically increased the number of telephone lines especially in central areas.
- Improvements in infrastructure, mainly roads and water supply (with funding from the World Bank and DFID, among others). This opened up certain areas of the city to light industry, commerce and services such as car repair workshops (though it is not clear whether some of these were peri-urban in nature).

Some of the above have also had a negative impact on the city's economy, as is the case of import liberalisation. The authors argue that local manufacturers, "burdened with obsolete equipment and frequent breakdowns, have been extremely distraught" about its effects on their businesses (Korboe *et al*, 1998, p. 12). "A flood of imported second-hand clothing has been blamed for the declining patronage in the local textile dyeing, clothes-making and leather-working industries". Moreover, they argue that "it is apparent that the city's economy is driven primarily by imports and not by local production", though not much evidence is shown to support this proposition.

Another constraint on the city economy, also gleaned for peri-urban activities from some KNRM reports, is the high cost of informal credit (with interest rates of up to 15% per month against 50% APR for bank loans) and the barriers to entry into formal credit for the poor in the form of stringent demands for collateral. Another possible constraint to the growth of the local economy may come from an impending sharp increase in electricity tariffs and re-imposition of VAT at some date after the report was written. These apparently caused apprehension among businesses, but the authors fail to make any specific forecasts about their possible effects.

However, despite these useful pointers, the report lacks a systematic analysis of the economy of the metropolitan area. There is no attempt to identify the economy's growth sectors, sectors linked to exports, and how these might be promoted to maximise economic growth and employment. Similarly, there is no breakdown of the city's employment into its different sectors, and there does not seem to be an attempt to for example identify those sectors that might be supported by different institutions so as to increase incomes among the poor and most vulnerable groups.

An important dimension of the local economy that is highlighted in the report is the financial and operational capacity of local institutions, notably the Kumasi Metropolitan Assembly. This is shown to be structurally weak and poorly managed. "The main areas of weakness in KMA's revenue management would appear to be low rate levels, unscientific revenue forecasting, under-collection and non-monitoring of collections. Ultimately, shortfalls in revenue collection are likely to impact in KMA's ability to finance needed growth-promoting services" (Korboe *et al*, 1998, p. 14).

The institutional landscape

Institutional structures that impinge upon sustainable livelihoods comprise state institutions, traditional government structures, the private sector and non-governmental organisations, including community organisations. When it comes to analysing the role played by governments and their relationship to the private sector and local communities, the concept of governance can help advance our perception of what is relevant in this respect. In the case of Anglophone West Africa, Onibokun (1996, p. 168) has claimed that:

> Urban poverty is exacerbated by managerial incompetence, inefficiency, ineffectiveness and unresponsiveness. Moreover, a lack of transparency, accountability, responsiveness, institutional legitimacy and popular participation, have combined to weaken the capacity of the state. Few states are able to face the challenges of urban growth effectively. However, the solution seems to be in the institutionalisation of good governance. Simply stated, current practices cannot lead to sustainable development … the partnership between government and civil society is a mirage.

Governance has been defined by McCarney, Halfani and Rodriguez as "the relationship between civil society and the state, between rulers and the ruled, the government and the governed" (quoted in McCarney, 1996, p. 4). Local governance comprises "the operations of local governments, their relationships with the societies within which they operate, and ... the technical area of 'urban management'" (UNCHS, 1996).

Traditional and state structures

Government institutions in Ghana can be divided into national, regional and district (Nkansa Buabeng, n.d). In general terms, the existing literature provides useful and fairly thorough characterisations of these and of the recent changes to have affected them. A useful summary overview is provided in the form of an organisational chart in Appendix VII of Holland *et al.*, 1996b. This shows the Judicial, Legislative, Executive and Traditional structures of government at the national, regional, district and town/village levels in the mid-1990s (though a proviso is made in the document regarding the chart not being "an authoritative account of the structure of Government"). The same document provides a list of ministries and government departments, and their corresponding institutions at the national, regional and local levels, as well as an outline of institutions in all government tiers with responsibilities in managing natural resources. Although useful, it is worth pointing out that any future efforts to use this information should as far as possible be updated and checked with knowledgeable individuals.

It must be stressed that in Ghana formal government institutions cannot be dissociated from traditional governance structures. This is still true in urban and peri-urban Kumasi, particularly when compared with Accra where a much larger and diverse population, aided by Accra's more diversified economy, has contributed to a greater weakening of traditional structures (Gough, 1999).

A number of reports and documents produced by the research project provide an overview of social structures in the Ashanti Region. As has been shown in the section on land in this report, an understanding of traditional structures of government, particularly as they affect land tenure and land use, is important for the adequate formulation of future policies and strategies regarding peri-urban land. The Kumasi Peri-urban Baseline Studies report (Holland *et al.*, 1996b), the Inception Report (Blake *et al*, 1997a, pp.15-29), and two papers by Kasanga (1998, pp.23-33, 1999) provide useful overviews of traditional social structures in Kumasi and its peri-urban area, and highlight the effects they have on the changing use and ownership of land and other natural resources.

In villages, a distinction is made between family land (each family clan has its own land), stool land (land not allocated to specific families and controlled by the chief, who can sell it for development), individual lands (lands already sold by the chiefs), and government lands (used for public facilities). Apart from the implications of the sale of village lands (stool lands) in terms of homelessness and landlessness suggested under the sustainable livelihoods section, it is also pertinent to examine how the money from these sales is used locally to further development and help the poor. This has been explored in the sub-section on Land.

The documents also produce a characterisation of the relationship between the state and traditional authorities. The Baseline Study (Holland *et al.*, 1996a, p.18), for example, says that "the Lands Commission, which is responsible for the management of government lands, recognises the role of the Traditional Authorities in that it only accepts sale of lands which have been agreed through the established traditional channels". Thus, it acts "in support of the established hierarchy".

Decentralisation in Ghana

Decentralisation has been an important feature in Ghana's recent history. Accounts of its main features may be found in Nkansa Buabeng (n.d), Gough (1999) and Onibokun (1996). Gough notes that the Rawlings' PNDC government introduced the decentralisation programme, for which the district assemblies are the basic unit, "partly to placate the World Bank which was demanding fiscal accountability across state institutions and good governance including democratic elements. The PNDC was also facing internal critique from workers and students over the austerity brought about by structural adjustment and needed a strategy to placate these pressures and avoid a legitimacy crisis" (Gough, 1999, p. 8). Figure 1 in Nkansa Buabeng (n.d), provides a graphical summary of the structure of the country's decentralised system of government. For Onibokun (1996, p. 166) "decentralization has not been accompanied … by a devolution of power and authority. The various localities still operate as appendages of the central/state authorities, directed at will by the central or state institutions and depending almost entirely in their central government for their resources and initiative … all the chief executives directing the 110 district councils were appointees of the central government." Nonetheless, at least two- thirds of the assembly members are elected on a non-partisan basis, while the other third are appointed by central government.

As the overall government authority in a district, District Assemblies have an important potential role in promoting development and supporting the livelihoods of the poorer and more vulnerable members of their community (Holland *et al*, 1996b; Gough, 1999). They are mainly responsible for the overall development of the district, including the formulation of a plan and budget, and they implement development policies and programmes co-ordinated by the National Development Planning Commission (Nkansa Buabeng, n.d).

Under the Local Government Act 1993, Assemblies have deliberative, legislative and executive functions (listed in Holland *et al,* 1996b, p. 82). In theory at least, they are the highest political, administrative and planning authority at the district level. Many of their functions relate to provision of local services. In metropolitan areas like Kumasi, they are called Metropolitan Assemblies. In addition to the Kumasi Metropolitan Assembly, Kumasi has four Sub-metropolitan District Councils with executive functions.

In performing the executive and administrative functions, District Assemblies rely on a committee system which assigns specialised functions to the Executive Committee (called Metropolitan Authority in the case of Metropolitan Assemblies) and a range of sub-committees, whose number and functions vary according to the size and location of the district. Each sub-committee is comprised of a number of Assembly members as determined by the Assembly. Heads or representatives of government agencies are in theory expected to attend meetings of relevant sub-committees as ex-officio members with no voting rights. Sub-committees carry out detailed studies and other work in their area of concern, thus relieving the Executive Committee from these. A list of sub-committees in the five districts within the GKCR as well as the functions of the different sub-committees is found in Nkansa Buabeng (n.d). As the case of Kumasi suggests, by virtue of their larger size and greater complexity, Metropolitan Assemblies have a larger number of sub-committees covering a wider set of functions.

Within each district there are a number of Unit Committees at the village level (normally settlements or groups of settlements with populations between 500 and 1,000 in rural areas, and up to 1,500 in urban areas). This is the lowest level of the administrative spectrum. Unit Committees have important functions in "education, organisation of communal labour, revenue raising and ensuring environmental cleanliness, registration of births and deaths, implementation and monitoring of self-help projects" (Holland *et al.,* 1996b, p: 83). Within Kumasi Metropolitan Assembly there are 403 Unit Committees, while in the four adjacent districts they range in number between 64 and 216. The functions of these committees are also enumerated in Nkansa Buabeng (n.d) . Although they have no explicit planning or environmental protection functions, in practice, they "are concerned with development planning functions at the village level. This is because project initiation starts at the village level" (ibid., p. 12).

Natural resource planning and support for regional development

In the context of the NRSP, an adequate understanding of the structures of government nationally and in the Kumasi city region becomes necessary insofar as they have a bearing on the formulation of future strategies for interventions in land use and natural resources-based production systems. In that sense, it may be argued that one need look no further than to those institutional structures that directly or indirectly affect the use of such production systems. The most obvious one relates to those institutions that play a role in planning the use of natural resources in peri-urban Kumasi, including land. A brief review of the planning systems in operation is included elsewhere in this chapter.

It was already argued that the use of peri-urban natural resources cannot be dissociated from trends in the use of other resources in the Kumasi city region. This is so because it is very likely that, given recent trends, a diminishing proportion of the peri-urban population of the city will continue to make a living from the natural resource base, including land. So, future strategies regarding land use must look at alternative uses of peri-urban and urban land that provide alternative sources of income to the peri-urban and urban poor.

If this proposition is accepted, one must therefore look for studies that provide an adequate characterisation of government institutions which are in a position to support future income-generating activities of a non-primary nature. In that sense, the research by Korboe *et al (*1998, p.7) provides some useful pointers. These authors identify the Kumasi Metropolitan Assembly (KMA) as a key player in helping to guide future developments, though its actions are restricted to a small range of activities: providing and managing latrines, "compulsorily acquire any lands necessary for the nation's development", provision of business credit, provision of basic health and education services, and disaster management. The extent to which the KMA is active in these is briefly explored in the sub-section on Processes.

Other government institutions whose role might be explored in this respect include:

- District Assemblies: it was said earlier that Assemblies play an important role in supporting local development. However, existing research does not seem to explore sufficiently the issue of their recent performance and their real capacity to effect change. In particular, more evidence seems to be needed in terms of their potential capacity to channel funds from the sale of land towards improvements in local services which might help support livelihoods especially among the peri-urban poor (see section on Land).
- Unit Committees: these are the smallest administrative unit, for they operate at the village level.

- National institutions providing credit to businesses in the peri-urban area such as the National Board for Small Scale Industries (Korboe *et al*, 1998, p. 18)
- The National Disaster Management Organisation (NADMO) which is supposed to focus on disaster prevention mainly through education on environmental sanitation, though in practice very little is done other than provide token levels of relief (Korboe *et al*, 1998); in Kumasi there have been recent cases of flooding due to man-made blockages to the natural watercourses (through construction and indiscriminate disposal of refuse in drains and elsewhere) and fires resulting mainly from illegal and sub-standard electrical connections.

There are a number of non-government institutions which may provide some assistance to peri-urban dwellers in Kumasi. One of these is the Association of Ghanaian Industries (AGI) which is "expected to manage funds intended for disbursement as small credits" (Korboe *et al*, 1998, p. 18). The spectrum of community based organisations (CBOs) found in peri-urban communities is described in Pender (n.d). These typically have small memberships and range from religious associations to a youth group linked to the governing party. Their scale of operations is modest and they are funded largely through membership fees and most remain local, with little if any links to local organisations (other than the Unit Committees in a few cases), let alone organisations outside the region or Ghana. An interesting finding of the report is that the functions of these CBOs tends to focus on welfare issues in the more urbanised villages and on agricultural production and distribution in the more rural villages.

Land-use planning and the peri-urban interface

There is little planning (physical or economic) effective enough to have a role in major peri-urban production systems. There are no broad strategic plans covering the peri-urban area, much less ones which cover both peri-urban and urban areas (Blake *et al*., 1997a, p. 111).

Although there are actions stated in the development plans for the three peri-urban districts of Kumasi which would affect major production systems in the peri-urban interface, there is no evidence that these have been or are being implemented. Much less is there knowledge of their effects (Kasanga, 1999). From a 'review' of district development plans for three peri-urban districts around Kumasi (Williams, n.d.), it is possible to deduce that:

- A good deal of technique is available to the governments of these districts;
- There is machinery operating to produce plans of this kind;
- Much is known about the facilities in these districts;

- There is no recognition of the changes being caused or to be caused by the presence and growth of Kumasi, neither opportunities or threats. Problems and benefits do not seem to be recognised (there are one or two references to markets in Kumasi) and plans do not reflect the influences of, or any linkages to, Kumasi.

One district plan (Kwabre's) does recognise proximity to Kumasi as an important feature of potentials and restraints, but does not seem to respond to this at all with its plans. In short, there is little if any acknowledgement of the peri-urban interface effect and no attempt to address its opportunities and problems. In any case, district development plans have not attempted to address problems and constraints with specific proposals (Holland *et al*., 1996b, p. 31).

Some implementation of physical planning does take place in peri-urban Kumasi. A chief says he does not make allocations of land except those shown on the approved planning layout (Holland *et al*., 1996b, pp. 34, 41). But in another village, there is illegal housing in poorly drained areas (ibid., pp. 25-26, 34).

Planning for the Kumasi Metropolitan Assembly area as it expands into the peri-urban interface obviously affects production systems there when it is implemented, but this is estimated to happen in only 30% of the cases of layouts for developing land for urban purposes (Holland *et al*., 1996b, p. 26).Planning schemes do not incorporate agricultural zones (ibid., p. 32).

Planning is also said to be handicapped by lack of information, especially about which villages are growing and which have potentials. At the same time, no strategic planning is taking place which affects either Kumasi or its peri-urban interface (Holland *et al*., 1996b, p. 31).

The principal stakeholders in the planning of the peri-urban interface are known, as are those responsible for their implementation. For example, the district assemblies are responsible for preparing and implementing the district development plans (Holland *et al*., 1996b, p.24). Some of these are recorded in the literature (Holland *et al*., 1996b; Blake *et al*., 1997a; Williams, n.d.), but this is not a matter for research as they seem to be generally known locally. It is known that they do not cooperate and coordinate well (Blake *et al*., 1997a, pp.68, 77). Similarly, planning coordination among villages is weak (Holland *et al*., 1996b, p.31). The behaviour of various stakeholders and actors which leads to poor implementation of planning which affects the peri-urban interface does not appear to be documented.

Decision-making processes

In the sustainable livelihoods framework proposed by DFID (Carney, 1998a), the notion of 'processes' relates to the policies, laws, rules of the game and incentives which help define people's livelihood options. An adequate characterisation of these must relate to the structures defined earlier and therefore include an overview of the real and potential actions that may be taken by a range of actors at the national, regional and local levels. Any future research and intervention strategies within the NRSP must be framed within existing policies and if possible even foresee, and adapt to, subsequent changes in policies that might jeopardise the intended goal.

Cultural factors

In an examination of the range of factors that have led to environmental deterioration in peri-urban Accra, Yankson and Gough (2000, p.6) have identified the advance of Christianity over traditional beliefs as having accelerated the deforestation of what used to be regarded as sacred groves. "In the past, all of the indigenous villages had several sacred groves where they had their fetish shrines. People were not allowed to enter the groves hence the vegetation was left untouched. These taboos served as a means by which the traditional societies conserved their environmental resources. Today, however, only a few of the sacred groves are left".

The role of that cultural factors such as these does not appear to have been explored in the research reports on peri-urban Kumasi. In the absence of ethnographic material about the region, one may suppose that, as was reported for Accra, such factors might have impinged also in the conservation of some forested areas there. However, only a study which focused on these issues can shed further light on the effect the demise of traditional religious beliefs might have played in the demise of forests.

Policies

The research documents do not appear to explicitly cover the effect of different government policies on Kumasi's peri-urban interface. For the purposes of an analysis of their impact on the peri-urban interface, one may differentiate between those policies that have an explicit spatial dimension and those that do not (Dávila *et al*., 1999). Although some discussions may be found in the KNRMP documents about the effects of decentralisation reforms on land tenure (cf. Kasanga, 1999), and some mention is made of the possible effects of liberalisation on Kumasi's industries in Korboe *et al* (1998), there does not seem to be a systematic attempt at tackling the possible effects of major policy shifts upon the regional or the city economy, and how sectors of their economy might be affected by such shifts. For example, not much is known about agricultural pricing or incentive policies, and how these might discourage certain types of cash crops (such as cocoa). Similarly, not much is known about trade or tourism policies that might positively influence the future development of Kumasi by strengthening some of its productive sectors.

Local/regional financing of infrastructure and development

Revenues from village stool land sales do not pass through the state system. "The local district in which the land is situated plays no part in handling land sales, but does receive revenue from the ground rents of developed areas" (Blake *et al*, 1997a, p. 19). Of the revenue from land sales, only a quarter is estimated to accrue to the village for provision of electricity, schools and sanitation (ibid, p.24).

More research might be needed in identifying the potential role that District Assemblies play in channelling funds from local land sales towards improvements in service provision locally. This problem is by no means restricted to Kumasi, as Gough (1999) has shown for districts in peri-urban Accra. There, an Assembly such as that of Ga District "has not been able to reach an agreement concerning the collection of development levies from stools and families who sell plots in the district, which could provide an important source of funding for service provision" (ibid, p. 9). Even in Accra, central government agencies are unable to keep up with demands for service provision in peri-urban areas, preferring to concentrate resources in inner city areas.

Similarly, more research might be needed into the reasons behind the reluctance of chiefs to use part of the proceeds of the sale of lands to fund the installation of basic services in peri-urban areas. In Ashale Botwe and Agbogba, two peri-urban districts in Accra, for example, profits from land sales have been used to improve the roads and school, and connect the villages to the electricity network. But such improvements are altogether absent in other districts like La Bawaleshie and Pantang, for example. "One factor which emerged as being of vital importance in explaining these differences, is the differing degree of control which the chiefs of the indigenous villages have over the sale of their land and hence the use of the profits derived from the sales. Where the chief or land owning family is resident outside of the indigenous village, as was the case in La Bawaleshie and Pantang, the village often derives virtually no benefit from the sale of their community land. If the village leadership is resident, enlightened, and

development oriented, as in Gbawe, then the inhabitants can benefit clearly from the land sales" (Gough, 1999, p. 10).

In the peri-urban areas of both Accra and Kumasi Assembly members have become more instrumental in improving services in the communities they represent. Gough (1999) reports that in the indigenous settlements around Accra many inhabitants regard these members as the people responsible for solving their practical problems. In Kumasi, the chiefs still play that role, though this may be undermined as the city expands and newcomers arrive and local villagers increasingly commute to the city. However, Assembly members must have the endorsement of local chiefs to hold meetings with the inhabitants of indigenous villages.

Gough also notes that residents associations are an important factor in providing basic services to peri-urban areas in Accra. Here too there might be lessons to be learned for Kumasi, and perhaps there might be some pointers here for what the future may bring and what might be the focus of future research. As most of the new home owners in peri-urban Accra are upper or middle-income households, they seek to protect their investment by forming associations that "have adopted a town-planning role to ensure that both the owners of the land and the land acquirers obey zoning regulations; they attempt to ensure that no-one builds in spaces earmarked for roads or communal areas and that the chiefs do not sell plots designated for these uses … (they) also police their areas to improve security and reduce theft, act collectively when trying to obtain documents, and arrange social functions" (Gough, 1999, p. 12). Although no evidence of such associations is apparent from the research on Kumasi, it is not inconceivable that similar organisations may develop as the city expands and peri-urban lands are taken over by greater numbers of middle- and upper-income residents.

This might have implications for low-income village residents, as the process of gentrification and the lobbying capacity of future resident associations may contribute to displacing them further out towards other peri-urban villages thus increasing the time and money they spend commuting to the city. Yet another dimension of this trend that Gough has noted for peri-urban Accra is that, once they have acquired their plot of land from the chief, middle- and upper-income arrivals have only sporadic contact with the chief, and tend to have little contact with, and confidence on, the District Assembly: "many of the new land acquirers did not vote in the district assembly elections and do not even know who their assembly member is". Moreover, "they do not consider the assembly members to be either interested in, or capable of solving, their problems, but prefer to go directly to the district assembly themselves or to the relevant service agency" (Gough, 1999, p. 11).

In Kumasi, the functions performed by a sample of community based organisations (CBOs) in peri-urban villages are characterised in a report by Pender (n.d) . In most villages there is a Unit Committee formed in recent years to take over the role of the previous Town Development Committees. "They form the base structure of the new local government system" and their specific objectives are as stated earlier (Holland *et al*., 1996b, p.83).

Apart from Unit Committees there are other kinds of community organisations in peri-urban villages. Their main function is to protect the interests of their members, who pay membership fees or make contributions in kind. The aims of these associations vary between villages but in general terms the closer the village to the city, the more the association is likely to focus on welfare and development issues. Associations in the more agricultural settlements focus on improvements to farming, while in the more urbanised ones they act as pressure groups to enforce land use planning regulations, improve sanitary conditions, or protect members' property. A few of the organisations reviewed in Pender (n.d) are religious associations (including Christian groups) with aims ranging from spiritual advancement to improvements in welfare of its members.

In Duase, for example, a village located 8 km from Kumasi, a watchdog committee was formed in 1998 to protect lives and property around the community. The committee is comprised of 17 members, all men under the age of 40 except for a group of five elderly male coordinators, to organise night surveillance against thieves. In Apatrapa, the eight-member Health Association inspects sanitary conditions within the homes and their surrounding areas and offers advice on keeping the environment clean. In the words of the author(s) of the report, proximity to the city is perceived as bringing about burglary and unsanitary conditions, which are labelled "social vices of urbanization" (Pender, n.d , p. 31).

Although clearly not as effective or powerful of the middle-class equivalent found in peri-urban Accra, these local associations could in future contribute to improvements in living conditions in villages, particularly among the more vulnerable groups, especially if they are given access to information and training as argued by the author(s) of report (ibid).

The KMA and local development

The functions of the KMA include providing and managing latrines, "compulsorily acquire any lands necessary for the nation's development" (Pender, n.d, p. 17), provision of business credit, provision of basic health and education services, and disaster management. local government including local finances, infrastructure and services, housing and the financial market. Some of these areas were addressed directly or indirectly under KNRM but may need to be updated or looked at more in-depth in future stages of the NRSP programme.

A concluding note on planning and the peri-urban interface

The foregoing review suggests that the planning machinery and the stakeholders and actors are probably adequately known both in Kumasi and Hubli-Dharwad. Written documentation may already exist about many aspects of these, but some effort may be needed to document what is knowledge generally available to actors who are close to these processes in the two localities.

Although in both Kumasi and Hubli-Dharwad, the effects of planning for urban development on peri-urban interface production systems are not known, they are likely to be of no importance because planning in general (whether physical or economic) seems to have a negligible role in peri-urban interface natural resources production systems.

In both city-regions, the effects of planning for the peri-urban interface on livelihood strategies of the poor are not known. Consequently, the effects on those livelihood strategies of planning the peri-urban interface for urban development are also not known. Nevertheless, since so little planning for urban development has a role in peri-urban interface natural resource production, and so little planning of any kind is actually implemented, the effects on livelihood strategies are probably negligible.

From this, and for the purposes of future intervention strategies, one can conclude that there is enough existing knowledge to consider the use of planning mechanisms in both city-regions for interventions. However, it is not at all clear why planning is so ineffective. Rather than undertake investigations into the poor performance of planning and to overcome the impossibility of learning about effects on livelihoods of planning that is not felt, it would make more sense to increase knowledge of these areas through action research which would formulate strategic interventions and attempt to implement them through pilot projects.

Note

[1] There is a substantial (and as yet unexplained) difference of scale in the maps showing the location of survey villages as shown in two of the project documents. Map 1 and Table 1 in the Baseline Studies document (Holland *et al.*, 1996a) show the village of Akokoamong as being 13 km east of Kumasi's centre. However, the (un-numbered) map showing the villages in Kasanga's paper on rapid urbanisation and gender insecurity (Kasanga, 1998, p.6) shows the same village as being located some 33 km from the centre. Comparison with Map 3 in the main volume of the Inception Report (Blake *et al.*, 1997a), would seem to suggest that the smaller distances offered by Blake *et al.* (1997a) are more accurate.