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# RURAL-URBAN LINKAGES: PROBLEMS AND OPPORTUNITIES

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**Resumo -** Esse artigo examina a recente evidencia observadas em vários países da América Latina, Ásia e África sobre a intensidade das relações entre as áreas urbanas e rurais. Uma compreensão de como as relações operam em diferentes contextos e como são moldadas pelos fatores como as políticas econômicas, medidas administrativas e planejamento regulador são importantes, como esses têm um efeito sobre a subsistência empresarial e privada dos mais pobres e mais vulneráveis. Com o emprego de ilustrações, o artigo elucida os problemas e oportunidades que vêem a partir dos processos de mudanças, entre outros, crescimento urbano, migração e fluxo de serviços e (incluindo dejetos sólidos e líquidos).

**Palavras-Chave** - relações rural-urbano, sustentabilidade, globalização.

**Abstract -** This article examines recent evidence from a wide range of countries in Latin America, Asia and Africa, about the intensity of ties linking urban and rural areas. An understanding of how rural-urban linkages operate in different contexts and how they are shaped by factors such as economic policies, administrative measures and planning regulations is important, as this has an effect on the livelihoods particularly of the poorer and more vulnerable households and enterprises. With the help of illustrations, the article highlights the problems and opportunities that arise from processes of change

resulting from, among others, urban growth, migration, and flows of services and goods (including solid and liquid waste).

**Keywords -** rural-urban linkages, sustainability, globalisation

## INTRODUCTION

This article examines recent evidence from a wide range of countries in Latin America, Asia and Africa, about the intensity of ties linking urban and rural areas. An understanding of how rural-urban linkages operate in different contexts and how they are shaped by factors such as economic policies, political concerns, administrative measures and planning regulations is important, as this has an effect on the livelihoods of many people, but particularly the poorer and less powerful groups within society. Governments, the private sector, aid agencies and civil society can help shape the nature of such linkages and therefore indirectly affect the quality of life of a substantial proportion of households for whom these linkages represent sources of food, jobs, raw materials, as well as of human and social capital. Much of the focus of concern of the research from which this article arises is on the poor and most vulnerable households and enterprises[1].

[1] This is an on-going research programme funded by the British Government's Department for International Development (DFID). It has involved a number of academic institutions in Britain, and universities, NGOs and local authorities in a number of countries, including Ghana, India, Brazil and Colombia, and has generated a number of written outputs. See, for example, Brook and Dávila (2000), and Allen and Dávila (2002). More information on the programme, including downloadable outputs, can be found on: www.ucl.ac.uk/dpu/pui

Following this introduction, the second section briefly places the discussion in a wider historical and disciplinary context, the third section briefly discusses a conceptual approach to poverty and a fourth section examines how globalisation might be shaping rural-urban ties. Using illustrations from a range of less developed countries, a fifth and sixth section highlight, respectively, the manner in which the poor benefit and are negatively affected by rural-urban linkages. A final section concludes.

## DEFINITIONS AND DISCIPLINARY BOUNDARIES

The juridical separation between city and countryside started dissolving in Europe with the French Revolution. The principles of equality advocated by the revolutionaries and the sudden overthrow of a regime that for centuries had secured land for feudal lords, marked the end of a legal differentiation between rural and urban populations (Nello, 1998). In more recent decades, some of the wealthier metropolitan regions of the world, in Europe, North America, South East Asia, and to a lesser extent Latin America, have witnessed the spatial dispersal of a growing number of people who lead what can only be described as an 'urban' lifestyle, made possible by an efficient transport infrastructure, high incomes, good telecommunications, and the rapid rise of a service economy to sustain them. Rural living has become desirable, as long as this does not involve extracting a surplus from the land through back-breaking, long hours of work in the open. In the periphery of the large metropolises of the world, the

rural and the urban are no longer as distinct as they once appeared to be.

And yet, this separation still lives in the minds of government officials, international aid agencies, urban planners, and occasionally academics. A perception that in the development process rural areas are somehow exploited by city dwellers is still pervasive. Implicit in this is the notion that rural dwellers must somehow be isolated from the corrupting influences of the city (Epstein and Jezeph, 2001). There is an epistemological divide: agronomists do not exchange views with urban planners. This is reflected in policy making and in the instruments of planning (all kinds of planning, from spatial to social and sectoral), which discourage both the analysis and the management of city and countryside as an integrated whole. The influence of 1950s development models where the urban was equated with 'modern' and the rural with 'traditional and backward' pervades much development thinking and policies to this day. In the 1970s, rural dwellers were even seen as the victims of exploitation by urban dwellers (Lipton, 1977), in the mistaken assumption that all urbanites are rich and all ruralites poor.

Cities are seen in isolation from the rural areas from which they usually derive perishable foodstuffs, from which they use environmental services such as landscape and sinks for urban waste or, more crucially, water, and which provide some of the cheap labour force they require to prosper. For their part, rural dwellers are often seen as being alienated from city life, with interests and

needs restricted to those of agricultural production, credit, fertilisers, and feeder roads.

But the reality in many parts of the so-called Third World is different. In the daily experience of a large and growing number of households, city and countryside are very much intertwined. Just as rural areas have been a source of food, raw materials and labour for cities, cities have historically been places of opportunity for rural dwellers. Cities provide markets for agricultural products, specialised services (health, higher education, wholesale, government and finance), and even sources of temporary employment and shelter for some rural household members.

But a more significant indication of how reality has evolved from the times when the development process was conceived as comprising a simple dichotomy between the urban (manufacturing and services) and the rural (farming, with some mining) is provided by recent figures showing that a substantial proportion of rural household incomes is derived from non-farm occupations: an average of 40 per cent in Latin America and the Caribbean, 45 per cent in Africa and 35 per cent in Asia (Reardon, Berdegué and Escobar, 2001)[2] And the relationship also works in the opposite direction: in the case of Chile, for example, 20 per cent of the agricultural labour force is supplied by urban households (ibid.). As accessibility improves and average household incomes rise, rural areas can no longer

[2] Only the average for Latin America and the Caribbean is weighted by country rural populations; for the other two regions, the average is a simple one over country figures.

be considered to be synonimous with farming[3].

The nature and intensity of rural-urban linkages vary between regions of the world and even within countries, as well as in response to economic, political and environmental factors. Thus, for example, many dwellers of large African cities retain strong links with their rural birthplaces and even return there to retire and die; in Latin America, by contrast, few migrants to large cities would choose to retire away from their offspring and friends in the city. Similarly, villagers in many parts of the world often retain close ties with their urban relatives as this facilitates access to secondary education and jobs for their children and specialised health care for the elderly. Cities are also the source of cash remittances (including capital for machinery) for rural relatives, who often correspond by sending produce from the land and hand-crafted gifts.

## POVERTY AND RURAL-URBAN LINKAGES

The notion of poverty underlying the present examination of rural-urban linkages is that of a dynamic concept which suggests that people tend to move in and out of poverty in response both to external shocks and stresses and their capacity to recover from these. They will adopt one or more strategies to cope

[3] There is no direct correlation with size of landholding, a measure of household wealth. Reardon, Berdegué and Escobar (2001) find that in Brazil, Chile, Ecuador and Peru, the level of rural non-farm income rises with land ownership. However, in Nicaragua and Panama the relationship is U-shaped, whilst it is negative in Argentina and Mexico's *ejidos*. For a more detailed discussion of the Brazilian case, see Graziano da Silva and Del Grossi (2001).

such as income-earning, expenditure-reducing, collective support (where social ties and kinship play an important role), and external representation (where external institutions help bring additional resources to the community). The causes of poverty are complex and cannot be generalised across societies, but they can derive from a society's incapacity to generate wealth, paired with processes of exclusion involving legal, political, economic, social and cultural mechanisms amongst others. Poverty cannot be measured solely on the basis of monetary income, as this only shows a very narrow dimension of people's livelihoods and capacity to survive and even thrive. Instead, the extent to which these strategies are used is determined by a range of assets to which the poor have access in greater or lesser degree, including among others their own labour skills, natural resources (including land), solidarity ties, and financial capital (i.e. savings). The poor are seen as a heterogeneous group, with some being more vulnerable than others to environmental changes, even within the same household. Thus, for example, as cities expand, older women in many peri-urban areas in Africa tend to be more negatively affected than young men by the loss of farming land to property developers.

Rural-urban ties are important here because access to these assets is in part determined by location, be this urban or rural, not only of the household as a whole, but of individuals within the household. Natural resources such as land, water and forests are more likely to be within reach of rural households than of urban-based ones. By the same token, urbanites will find it easier to enter a job

market where their labour will command a price (usually in cash, although sometimes in kind, as often happens in small family firms), as will the use of non-monetary assets such as housing to generate additional income (from, for example, renting rooms or setting up a business). Other factors which help determine access to assets are gender, migrant status and, in some cases, ethnicity, and religious and political affiliation (Tacoli, 2001).

Similarly, as will be seen below, at certain times rural households may resort to having members simultaneously in the farm and the city as a way of maximising income: one or two members may temporarily be employed in the city outside the harvesting season (for example in construction work, or street hawking), while others will look after livestock and tend the fields.

## RURAL-URBAN LINKAGES AND GLOBALISATION

It is difficult to generalise across countries about the nature of rural-urban linkages as these are shaped by a number of factors, including the country's urbanisation pattern, the history and geography of the city and its region, and the city's role in the national and even the world economy. Most cities retain strong ties with their surrounding regions ('hinterlands') in the form of flows of people, money, commodities and waste, while being sources of non-tradable services. Linkages often extend well beyond the immediate area of influence of the city, through for example migrants remitting part of their wage to remote villages, the consumption of exotic crops, the export of polluting substances to dumping sites

and the consumption of fuelwood from increasingly distant sources[4]. In some cases, such linkages may be comparatively weak, as is the case of cities built around seaports, city states and new administrative capitals.

Although not affecting all localities in the same way, globalisation, will tend to reinforce cities' ties with the international economy[5]. Many rural areas are also affected by global forces and policies designed to increase economic openness (increased cash exports, or competition from imports) but these tend to be felt more strongly in cities, particularly larger ones and those at the top of the administrative and economic hierarchy; it is there that changes associated with globalisation are more evident through shifts in the employment structure, budding international demand for prime-location properties, growing social exclusion, and increased consumerism (UNCHS, 2001). While globalisation and the shifts in employment patterns that it usually entails may widen the income-earning opportunities of some of the rural (and urban) poor (DFID, 2001), many

[4] The notion of 'ecological footprint' seeks to capture the environmental impact that a city and its inhabitants have on natural resources. So, the larger and richer the city, the larger its ecological footprint, and the more distant its sources of manufactured goods (and therefore of pollution resulting from manufacturing) and in some cases even food are likely to be. See for example Rees (1992).

[5] Globalisation is understood here as "economic fusion between national economies so that interactions decisively affecting national economic activity start and end not only beyond the power of national government, but usually beyond even its knowledge" (Harris, 2001, p. 2). This is what Boaventura de Sousa Santos calls 'hegemonic globalisation', which is imposed from above on people; for him, there is a parallel, counter-hegemonic globalisation, emerging from the grass-roots and having its expression in large international meetings like the Global Social Forum in Porto Alegre (Santos, 2002).

rural poor continue to live in relatively isolated regions marked by slow or negative economic growth, unsustainable land uses and resource depletion. There, a strengthening of rural-urban links which will accelerate the negative effects of globalisation through for example pressures to produce cash crops for export at the expense of food or hasten the introduction of a consumer culture of imported manufactured goods can be detrimental to local cultural, economic and social integrity (Douglass, 1998). In this, cities might be acting as transmission points for global forces.

## RURAL-URBAN LINKAGES CAN GENERATE PROBLEMS FOR POOR WOMEN AND MEN

Depending on the nature and intensity of the relationship between urban and rural areas, the livelihoods of the poor will be negatively or positively affected by a number of processes. The meeting of urban and rural activities entails both problems and opportunities for the poor, depending on their sources of livelihood and their location relative to the city. In the peri-urban areas of a rapidly industrialising city, for example, the pace of change will be felt more strongly than in more isolated villages, and so will be the flow of people, information, money, commodities and waste between it and the city. As the examples presented below show, some peri-urban residents may find it hard to adapt to rapid change and will face a greater number of problems, whilst others even

within the same household may be quicker to take advantage of opportunities arising.

A number of processes of change are currently taking place around cities in many countries of Latin America, Asia and Africa. Some may be specifically linked to globalisation, but others are simply the result of demographic and economic change (be this growth or, not uncommonly, stagnation or contraction) or economic restructuring and their attendant changes. Some of these changes will impact positively and others negatively on the rural and peri-urban areas linked to the city, and more specifically on the people who either live there or derive a livelihood from these places. In other words, there arise both opportunities and obstacles for these people and businesses. The opportunities created by rural-urban linkages are reviewed in this section while the next one reviews the problems associated with them.

Land use changes are foremost among changes occurring around cities, as it is from this resource that many peri-urban poor derive an important part of their livelihood. However, as is shown below, land is not the only resource affected by change as for example water bodies (essential for irrigation, drinking water, fishing) may also suffer from pollution and import policies favouring cheap pesticides and fertilisers, while greater proximity to the city may help reduce the cost of chemical fertilisers thus increasing the health risks associated with their use.

a. Land: Urban growth has an important and visible effect on land, not only in areas surrounding cities, but often in more distant locations too. Perhaps because changes in land use arising from urban change are so visible and usually involve large financial transactions, as well as greater pressure from interest groups such as developers, middle class residents or even local government institutions, they are also the best documented. The processes involved comprise conversion from traditionally rural to urban uses (or at least increased pressure to convert), and increased commercialisation of land and (where they still exist, as in much of Sub-Saharan Africa) abandonment of customary practices of land allocation. These have different effects on the livelihoods of rural and peri-urban dwellers, as shown by a number of studies. A highly concentrated land property structure often underlies many of these problems, whilst traditional (non-capitalist) landholding sstructures do not necessarily provide a defence against commercial interests.

In the case of Kumasi, Ghana's second largest city, changes in peri-urban land use have been particularly detrimental to older women who find it harder to adapt to them (see Box 1). In the country's capital city, Accra, where the rate of conversion of peri-urban land from agriculture to urban use reached 2,600 hectares per year in the late 1990s, land is primarily acquired by relatively well-to-do, middle-aged men for residential use, while the indigenous communities selling the land are dominated by elderly household heads with lower educational and wealth status, a third of whom are women (Maxwell et al., 1998; Gough,

1999). As in Kumasi, land users who had been allocated plots for cultivation by local chiefs following customary practices are neither compensated for the loss of usufruct rights nor for the loss of livelihoods in farming. This exemplifies the tensions between customary systems of land ownership regulating peri-urban areas and more modern legal frameworks governing urban land transactions also found elsewhere in sub-Saharan Africa[6]. Some displaced farmers move out to ever distant locations to cultivate, while others work locally as casual labourers, informal traders, in construction or migrate to Accra. And, unlike in Kumasi, women in peri-urban Accra do not appear to be more badly affected by land sales and conversion processes. In some locations, however, minority ethnic groups who have little recourse with traditional rulers are.

Similar land conversion processes are documented in other parts of the world such as Manila, capital of the Philippines, where vast areas of irrigated rice farmland have been converted to an array of other uses such as speculative residential developments, industrial estates, golf courses and theme parks. Conversion has been abetted by a combination of a national policy framework favouring industrialisation rather than agricultural modernisation, flexibility in local zoning by-laws, and imbalanced power relations between landlords in search of higher financial returns and tenant farmers who are rarely compensated for the loss of farmland and lack the education or experience to exploit opportunities in the urban-industrial economy (Kelly, 1998). Similar processes have been

[6] See, for example, GRAD (2001).

**Box 1:**

**Land conversion, agriculture and poverty in Kumasi, Ghana**

Kumasi is Ghana's second largest city and a major regional trade centre, with a population of over 700,000 growing at around 4 per cent per year. Lower land and rent prices and an increase in reliable and affordable transport in the areas within a radius of 35 km around the city are turning them into the destination of increasing numbers of people. As the demand for accommodation in many villages that once were predominantly rural has steadily risen, available farmland has declined. This has had a visible impact upon the livelihood strategies of the vast majority of the village population.

Under Ashanti customary law land belongs to the whole community and successive generations of families are only entitled to hold it in trust for the community. Local chiefs allocate farmland both to natives and outsiders on the basis of need in exchange for token money. However, as pressure rises for residential use and commercialisation, the traditional system has begun to break down. Only a minority of farmers, usually the larger ones, have the resources to compete with developers or speculators in the acquisition of land. Most often land is taken from farmers without consultation by traditional rulers and sold for the construction of new housing. As land is lost, so is the potential of peri-urban agriculture for the production of food for subsistence and high value produce which can be sold in the city.

The prospect of land conversion plays against agricultural production in peri-urban areas in that it creates a disincentive to investment. The reduction in the size of plots associated with higher population pressure and new developments, implies that the same quantity of crops now has to be produced from a smaller area of land. This can be achieved through an increased use of agrochemicals, a reduction in fallow periods and the adoption of more intensive cropping patterns.

The result in the longer term is a reduction in soil fertility and hence productivity, as well as the creation of potential health hazards associated with the widespread use of fertilisers and pesticides. As the number of residents increases, so does the amount of waste produced, in turn rendering village level waste management services inadequate. Poorer groups with little access to water and sanitation infrastructure become more exposed to health risks not traditionally found in rural areas but associated to the expansion of the city and its activities, such as non-communicable diseases and heavy metal contamination.

Women (particularly older women), who constitute the majority of peri-urban farmers, are worst affected. Not only is their capacity for any form of investment limited, but also they are consulted less than men on matters such as land use changes and plot sales. Alternative livelihood opportunities within the village for women are restricted to trading, crop and food processing, dressmaking and hairdressing. Most young men are rarely interested in traditional crop farming and prefer to look for work in the city; those who remain in the villages work in craft-making, and vegetable and rice growing.

documented for other large cities, like Buenos Aires (Pirez, 2002), Santiago de Chile and Lisboa (Madaleno, Gurovich and Armijo, 2002) and Cairo, but these represent only a small sample of the rapidly growing worldwide phenomenon of appropriation and privatisation of vast areas of land and public space often known as 'gated communities'.

The conversion of land from agricultural to urban uses can also carry unwanted health risks. The development of new areas for residential use can lead initially to the multiplication of breeding sites of malaria mosquitoes (*An. gambiae*); however, later canalisation of surface water, domestic pollution and increased human densities can reduce breeding sites and replace them with nuisance mosquitoes (*Cu. quinquefasciatus*). A case study in Brazzaville (Congo) in the 1980s, for example, shows that the rate of prevalence of malaria among rural children was 75-90 per cent, 50-80 per cent in peri-urban areas and under 7 per cent in urban ones (Trape and Zoulani, 1987, quoted in Birley and Lock, 1998).

b. Natural resources: the peri-urban poor are usually more heavily dependent for their livelihoods on access to natural resources than wealthier, more urban-based groups. Consequently, they are often worse affected when such resources are lost or degraded as a result of factors such as increased population densities from an expanding urban population, larger volumes of solid waste disposed of in peri-urban locations, and untreated liquid waste from residential and industrial

areas. Similarly, ecologically valuable peri-urban areas such as forests and river banks are sources of recreation for the urban poor in large cities like Mexico City so that their degradation or loss is more likely to affect these groups more than wealthier and more mobile households who can seek out these environmental services further afield (Wiggins and Holt, 2000).

There are important gender and age dimensions here. In Hubli-Dharwad, in India's Karnataka State, for example, the selection, recycling and composting of municipal solid waste in peri-urban dump sites is mainly carried out by women and children. Women also collect recyclable waste from bins and dumps and sell it to itinerant traders. Within the household, women are involved in the composting of organic waste and its subsequent use in horticulture, as well as in a wide range of duties relating to household energy needs. As firewood (a main source of energy for poorer households) becomes scarcer around the city, women have to walk further to collect it. This can adversely affect their health and leaves less time for other household chores (Universities of Birmingham, Nottingham and Wales, 1998).

It must be noted that access to, and use of, peri-urban natural resources varies between regions of the world as well as with a country's level of urbanisation, and with income level within a country. For example, poor urban households in South Asia make greater use of forest and tree products than their Latin American counterparts, who tend to rely more on alternative materials for

construction, energy and foodstuffs[7]. Poor peri-urban households in Asian and African cities use primarily fuelwood gathered by household members (usually women). Wealthier households in peri-urban Hubli-Dharwad, for example, use tractors or bullock carts to collect fuelwood only a few times a year, sometimes with the help of paid labourers; by contrast, landless labourers collect fuelwood daily or weekly, spending on average between four and ten hours a week (Wilkinson, 1999, quoted in Brook and Dávila, 2001, p. 171). Gathering of fuelwood, food from forests and trees (mostly relishes rather than staples) and wood for construction are rarely income-earning occupations even in poorer and less urbanised countries like Nepal and India.

c. Shifts in agricultural practices: With urban expansion, some of the peri-urban and rural land that is not lost to residential, industrial or leisure uses may lose some productive potential, as farming will tend to rely more on practices such as higher water extraction, intensive irrigation and intensive use of pesticides which may in turn lead to soil degradation. Such uses are more in line with the greater intrinsic value of land and the proximity of urban demand for fresh fruit, vegetables and flowers. However, this may displace poorer households who rely mainly on farming and lack the resources to upgrade to more capital-intensive methods. Such is the case in the region surrounding Asunción, Paraguay's capital, where smallholders lack sufficient land to use as collateral and therefore

[7] The information on the use of forest and tree resource in this paragraph comes from six case studies in urban and peri-urban areas in Mexico, Brazil, Ghana, Zimbabwe, Nepal and India (Wiggins and Holt, op. cit.).

do not qualify for credit which they need for producing vegetables and fruit for the profitable urban market (Tacoli, 1999). This can also increase the cost of hired labour in commercial farms due to competition from manufacturing industries, as has been documented in Hubli-Dharwad, where a growing number of households have shifted from subsistence to commercial crops, though in this particular case of slow urban growth, the shift is not associated with urban expansion but rather with changes in consumption habits and an expanding food processing industry both nearby and in more distant locations (Brook and Dávila, op. cit.).

There are also health risks associated with more intensive farming and horticulture. Greater use of pesticides in peri-urban areas leads to groundwater sources being contaminated with nitrogen originating in fertilisers (McGregor, Simon and Thompson, 2001). Whilst there is no conclusive evidence on whether agro-chemicals are more heavily used by rural, peri-urban or urban farmers, a study in Lusaka, Zambia, suggests that household usage is greatest in peri-urban areas, followed by urban areas and then rural areas (Birley and Lock, op. cit.). Lack of knowledge and improper practices appear to be the main causes of poisoning from pesticides.

## BUT THEY ALSO OFFER OPPORTUNITIES

Not all processes of change brought about by more intense urban-rural linkages have damaging consequences. Opportunities for poorer households lie

largely in the potential benefit from using the comparative advantages of rural and urban areas simultaneously, particularly in times of need. However, in a similar way that problems may affect some members of a household or some specific groups (such as an ethnic minority, for example) more than others, opportunities will be greater for some depending on individual circumstances.

a. Increased diversification of livelihoods: As rural-urban linkages intensify through movements of people, commodities, information and money, their importance as sources of livelihood grows. In sub-Saharan Africa, for example, many urban-based households try to retain ownership or control over village land as a supplementary source of income. In Gaborone, Botswana's capital, migrants maintain these ties for many decades, travelling frequently between city and village, and rural assets are consequently valued both in monetary and social terms; disruption of these important ties may pose a threat to the survival of urban households (Krüger, 1998).

Temporary or permanent migration to the city in search of jobs by some members of rural and peri-urban households is an age-old and well-known mechanism of increasing household earnings and reducing vulnerability. Depending on the cultural context and individual circumstances, young sons or daughters will be encouraged to migrate, as might at times fathers or mothers, giving rise to a growing phenomenon of 'multi-spatial' households and enterprises. In South Asia, the Middle East and most of Africa, men constitute the majority

of rural-urban migrants, while in Latin America and the Caribbean younger women made a greater proportion than men of rural migrants especially in the decades of the 1960s and 1970s when migration reached its peak (Chant, 1998; Cardona, 1976). In Taiwan, the Philippines, Indonesia and Thailand, for example, parents prefer daughters to migrate because they are likely to send back a larger part of their earnings as remittances than sons to cover the needs of their parents and siblings (including education). In some regions of Africa it is increasingly acceptable for young rural women to work (and study) in cities, though under close supervision from relatives. The presence of relatives is an important determinant in the choice of destination, but migrants who engage in menial occupations or prostitution often prefer more distant locations (Okali, Olawove and Okpara, 2001).

Peri-urban men and women may benefit differently from the increased opportunities created by greater proximity to the city. In the village of Dialokorodji near Bamako, capital city of Mali, in West Africa, while men's earnings have suffered as a result of drops in available farmland, increased competition between traders, and joblessness from industrial restructuring, women (for whom access to farmland cultivation is traditionally restricted) have benefited from the proximity to Bamako's markets and opportunities for small-scale trading of agricultural products from nearby villages. The short distance to Bamako's markets has also benefited women in the village of Baguinéda, where they are also engaged in trade and horticulture. Government retrenchment and forced

early retirement following structural adjustment policies have led to the appearance of a new type of farmer, mainly guards and teachers in search of additional sources of revenue to supplement their state income (GRAD, op. cit.).

In other contexts, cheap and efficient transport infrastructure encourages peri-urban workers to commute daily to the nearest city. Examples are the cities of Aba and Port Harcourt in southeast Nigeria, where commuters travel as much as 100 km, women to work as cleaners and gardeners, and men in the construction and oil industries; but this has also led to the decline of traditional non-farm activities such as cloth weaving by women from competition from cheaper imports, as well as an inadequate support framework such as electricity supply and lack of technological innovation (Okali *et al.*, op. cit.).

Proximity but restricted accessibiliy can also create (limited) livelihood opportunities. A captive labour market has been developing in recent years in the low-density peri-urban Tuy Valley which is separated by hills from Caracas, Venezuela's capital, but increasingly linked to it by a growing transport network. Relative isolation from the city and the concentration of a growing population of low-income households re-located there from Caracas through subsidised housing programmes, has created a labour pool for Caracas-based firms attracted by the low wages to contract out components of manufacturing production (such as trouser sewing). This isolation has also generated a local market for street

hawkers while the arrival of middle income inhabitants in search of cheaper housing has opened job opportunities in domestic help (Lacabana and Cariola, 2001).

b. Access to services: one additional advantage of urban expansion and the associated improvements in basic infrastructure for rural or peri-urban dwellers is that access to services such as health and education can substantially improve. This will of course be determined by geography, national economic circumstances and individual strategies, as some households may decide for example that they cannot afford school fees and would rather have children work in the fields or as paid labour (decisions such as these, although producing savings in the short term, may in the longer run increase household vulnerability). But in many documented cases, urban expansion has created improved opportunities for children to study and for members of the household to benefit from more specialised health care. Average infant and child mortality and malnutrition rates appear to be lower in urban than in rural areas, in part because of the greater availability of health facilities and basic utilities like piped water supply and sanitation, but also due to the fact that urban diets tend to be more diverse and rich in energy and micro-nutrients. Notwithstanding this, in some countries malnutrition can be a more serious problem in poor urban and peri-urban neighbourhoods than in rural areas, as higher urban averages are skewed by high indicators among wealthier groups (Birley and Lock, op. cit.). Recent research on HIV/AIDS and other infectious diseases in Africa has also shown

that intense rural-urban interactions in the form of frequent travel of family members contribute to shared patterns of disease and risk factors for disease among poor urban and rural populations (UNCHS, op. cit.).

c. Access to solid and liquid waste: However paradoxical though it might seem, opportunities from increased rural-urban linkages are to be found in the growing flows of liquid and solid waste out of the city into surrounding peri-urban and rural areas. Although this might also be associated with health problems, as illustrated earlier, it represents opportunities for reducing the use of commercial fertilisers in horticulture (or indeed urban agriculture), or for re-cycling solid waste for re-sale in the city. In Hubli-Dharwad, as in many Indian cities, there is a long tradition of auctioning solid waste to farmers at dump sites, with garbage from municipal disposal sites composted and sold as soil fertiliser. In recent years increased presence of plastic, glass and construction debris in urban solid waste has made composting more difficult. Similarly, agro-industrial waste (dung, poultry manure, sawdust, rice and oil waste) is widely used in agriculture as well as for fuel, while nightsoil from pit latrines and septic tank waste are used as fertilisers (Universities of Birmingham, Nottingham and Wales, op. cit.).

d. Greater access to information and decision-making structures: A final overall set of opportunities created by increased rural-urban linkages arise from rural and peri-urban communities gaining greater access to information as well

as to political decision-making structures, which tend to be better represented in urban than in rural areas. Although more difficult to assess, increased flows of people and information are important ways of widening the knowledge horizons of relatively isolated village communities, and improving their opportunities for realising a fair price for the product of their labour (e.g. agricultural products) as well as responding effectively to consumer preferences. Perhaps more important are mechanisms for making effective representations to instances of local or regional power which might be some hours or even days away from remote villages[8]. In all this, frequent rural-urban linkages, however informal, can make an important contribution to improving farmers' lives.

## TOWARDS A MORE SUSTAINABLE URBAN AND RURAL FUTURE?

Few doubt that the world will continue to urbanise inexorably for some decades yet. Barring major social, environmental or economic crises, cities around the world will continue to house a greater proportion of national populations. A growing share of private and public efforts will focus on providing or maintaining the necessary infrastructure to keep cities and metropolitan regions moving, to sustain their function as major national, regional and international centres of

[8] Although the Internet is successfully being used to convey important information about weather forecasts and prices of agricultural products to remote villages in India (see UNCHS, op. cit.), this medium is still far from having realised its full potential in improving access to a scattered and poorly educated rural population, let alone as a medium for conveying political wishes or putting pressure on the instances of power.

production and consumption. And so it should be, as many cities, especially large metropolitan areas, will continue to be net contributors to their regional and national economies. And yet, a focus on urban infrastructure, urban governance and basic needs ought not detract from the more long-term concerns with the regional and planetary ecological balance needed if future generations are to enjoy what nature has offered mankind for thousands of years.

Cities occupy only about two percent of the world's land surface but are major consumers of natural resources, and produce more than 70 per cent of wastes that return to nature in the form of pollution (Allen and You et al., 2002). But experiences in a few places around the world demonstrate that there need not be such a marked ecological separation between the city and its hinterland. Some initiatives seek to create more environmentally sustainable linkages between them, by for example allying more closely plans for future expansion with the demands this is likely to place on scarce resources like water or environmental services in areas that go well beyond the all too often narrow administrative boundaries of municipalities. Other initiatives promote greater integration between urban waste generation and rural demands for nutrients by diverse means, such as recycling organic waste (Allen and Dávila, 2002). In all this, given favourable political, legal and planning frameworks, the ties that bind rural, peri-urban and urban populations of the kind examined in this article can and should form an important foundation for a more sustainable urban and rural future.

Future urban growth will necessarily demand a growing proportion of a nation's resources. But this should not be taken to mean that cities should be isolated, conceptually and politically, from the countryside and its inhabitants. As this article has argued, the social and environmental ties that bind them are too strong to ignore, and will probably continue to strengthen. Frames of mind that overcome the traditional epistemological and professional barriers between urban and rural politicians, planners and other practitioners are likely to lead not only to more rational use of resources but also to more equitable and less exclusionary forms of development.

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