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## Urbanization and Decentralization: The changing urban-rural linkages and opportunities of decentralization of services

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# **“Urbanization and Decentralization: The changing urban-rural linkages and opportunities of decentralization of services”**

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## **Abstract**

This paper explores the relations between urbanization and decentralization. Ever stronger linkages between urban and rural areas represent a challenge for sustainable development. This gives an important potential role to decentralization of government, and decentralization of services in particular. Decentralization is an instrument for efficient and participatory governance. It has emerged as one of the most important governance reforms in recent history: Approximately 80 percent of all developing and transition countries have implemented this reform in past three decades. There is evidence that the poorer segments of societies often do not benefit as much from decentralization as the better-off. An important reason for this mixed experience is the fact that the impact of decentralization on poverty depends on design- and context-specific factors. Urban-rural linkages need more policy attention, which requires that adequate institutional and organizational structures be put in place. Research can assist in that by distinguishing the various types of dynamic flows that exist between rural and urban spaces; Reviewing the transaction costs of all economic activities between rural and urban areas, with an eye toward their optimal reductions; and by focusing on the nontrivial positive and negative externalities of spatial allocation and concentration of economic activities, including services supporting them.

Keywords: urbanization, decentralization, transaction costs, spatial planning, infrastructure, ICT

## Introduction

Urbanization is part of a healthy economic development process and can certainly provide many opportunities for innovation and efficiency (Töpfer, 2005); however, when unguided and too rapid, it may often bring about market- and other institutional failures, resulting in adverse effects on people and the environment. Disappearing distinctions and ever stronger linkages between urban and rural areas represent both a challenge and also an opportunity for sustainable development in the increasingly globalized world. Rural areas and the megacities co-evolve along a continuum involving multiple types of flows and interactions (Tacoli, 1998). Moreover, rapid developments in information and communication technologies (ICTs), and denser and faster infrastructure networks are propelling the urbanization of rural areas. These dynamics are bringing the rural and urban spaces ever closer in livelihood patterns.

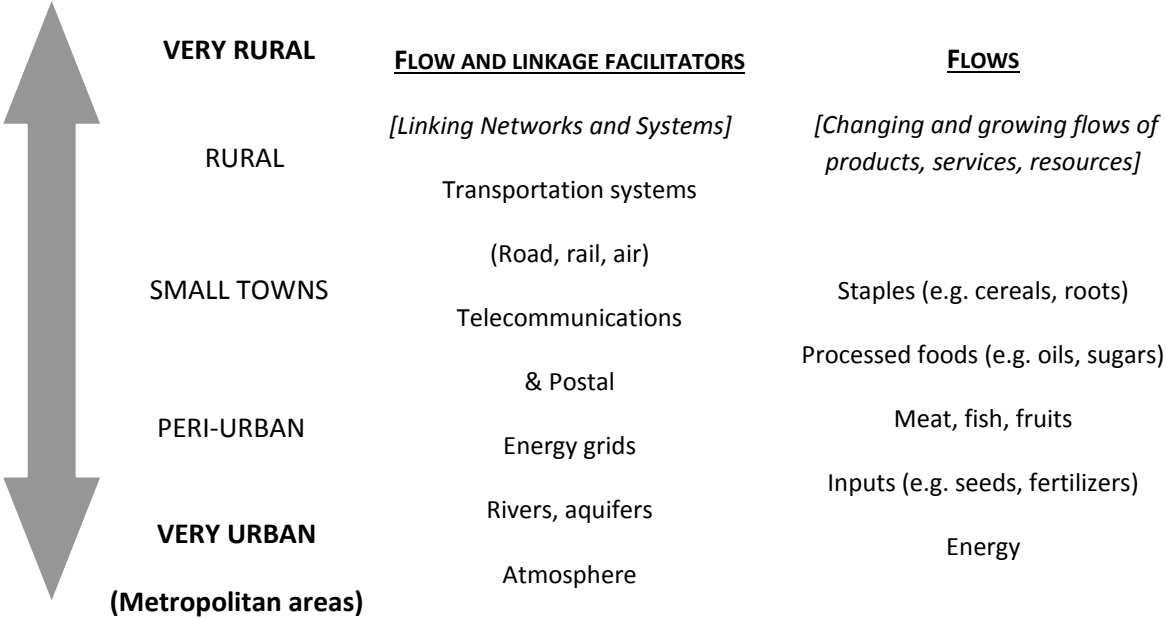
Although poverty remains largely a rural phenomenon, the urban share of poverty is increasing, from around 19 percent in 1993 to almost 25 percent by 2002 (Ravallion, Chen and Sangraula 2007), and 28 percent in 2008. Unsustainable urbanization and rural stagnation also cause negative environmental externalities (von Braun and Virchow, 2001) such as degradation of land, soil and water; air pollution; water and sanitation challenges; health hazards – exacerbating the issues of poverty, inequality and marginalization. Therefore, policies must address the market failures in urbanization dynamics and in rural stagnation, involving failures in labor, services, and goods markets that are attributable to misguided expectations, information gaps, and missing markets (e.g., finance); government failures due to biased taxation, pricing, and investment; as well as local elite capture of public goods and policies.

Against this broad context, this paper seeks to address a more specific question: how to guide urban–rural linkages toward sustainable development, and more narrowly for eradicating extreme poverty by better managing scarce natural resources through research and innovation, addressing market failures, improving infrastructures and promoting policies for rural transformation. As such, urban–rural linkages need greater policy attention, which requires that adequate institutional and organizational structures be put in place, necessitating appropriate coordination mechanisms between central and local governments (Birner and von Braun, 2013).

## Conceptual Framework

An early analysis of the spatial distribution of economic activity was reported by J. H. von Thünen in 1826. Using the example of demand and supply of agricultural products, von Thünen showed how the interplay of market processes and geography shaped land use decisions in specific locations. Walter Christaller (1933) developed *central place theory* to explain how urban settlements are formed and spatially distributed relative to each other. This model, later refined by Lösch (1954), predicted an urban hierarchy of human settlements around hexagonal shapes with centers of varying sizes. The size of the center is determined by the types of goods and services it provides, whereby larger settlements provide more sophisticated and specialized goods and services, and smaller settlements provide goods and services of a “lower order.” In this framework, since some of the demand for the goods produced in the centers (such as manufacturing) comes from consumers on the periphery, production is tied to agricultural land distribution (Krugman, 1991). However, these models were based on strong assumptions such as homogeneous spaces, uniform consumer preferences, and proportionality of transport costs to distance. Therefore, the applicability of such models to real settings is limited. Nevertheless, they do clarify the gradual nature of the

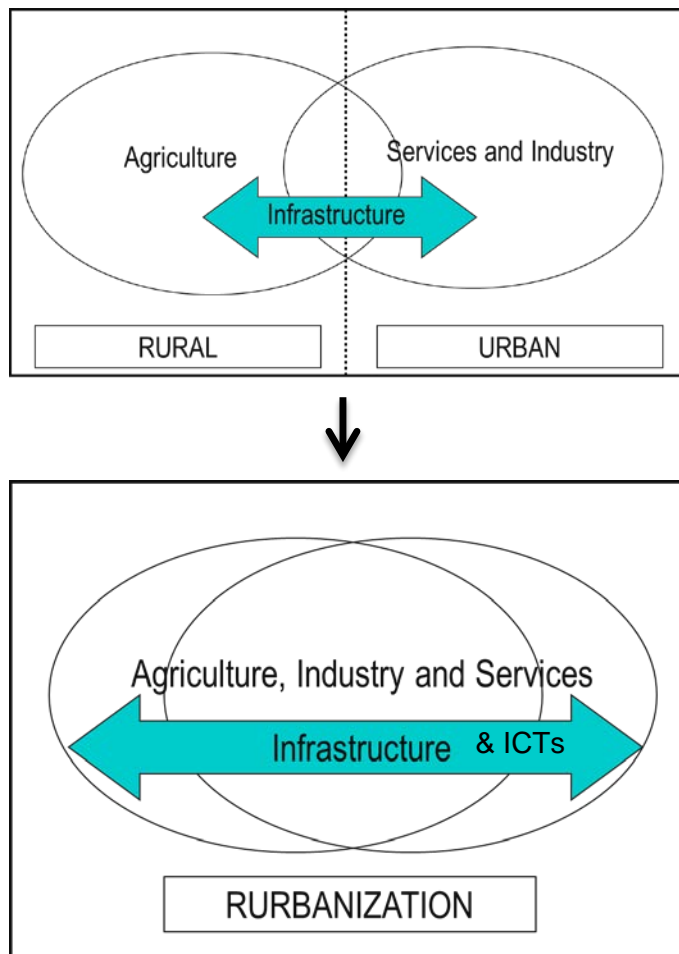
differentiation between urban and rural areas. In reality, the “very rural” and the “very urban” coexist along a continuum with many in-between stages, varying from small towns to peri-urban areas and patterns of rural urbanization (Figure 1), and the sharp conceptual separation of “urban” vs. “rural” areas is not productive in terms of achieving sustainable development goals (Töpfer, 2001). In general, two dimensions can be conceptually distinguished here: flow and linkage facilitators; and actual flows (Figure 1). The first includes infrastructures (broadly defined) in addition to government and other public and private actors; the second includes flows of people, goods, money (such as in the form of remittances), knowledge, information, and waste. In biophysical perspectives, flows of water, biomass products, and nutrients are relevant, as are land and soil utilization.



**Figure 1: Stylized rural–urban continuum with its spatial flow-facilitating elements, and flows of products, services, and resources**

Source: Devised by author

It has also been shown that previously held distinctions between urban and rural livelihood activities (with rural areas engaged only in agriculture and urban areas in services and industry) are less sharp than imagined, pointing at strong sectoral interactions (Tacoli 2004). Denser and faster infrastructure networks, advancement of information and communication technologies, and the extensive application of industrial zoning in urban planning are further blurring these sectoral distinctions (Figure 2), whereby the rural areas will increasingly be less distinguishable from urban in terms of key sources of livelihoods.



**Figure 2: Changing dynamics of urban–rural distinctions**

Source: devised by author

A major trend of the last two decades was the historically unprecedented acceleration of economic growth in the developing countries worldwide. To illustrate, from 2000 to 2010 the developing countries as a whole experienced average growth rates of 4.6 percent per annum, with African countries growing by around 2.7 percent per annum during the same period (UNCTAD, 2012). At the same time, the level of interaction between urban and rural areas has intensified, with both positive and negative implications.

#### **Resource and environmental flows: urban ecological footprint**

The intensification of rural–urban linkages with respect to environmental flows has occurred as a result of increased urban demands for rural resources such as land, water, and air. The most visible change is associated with the physical expansion of urban areas, as urbanization has led to the extension of urban space onto rural space to accommodate growing populations and levels of economic activity. Demand for land around cities has increased in order to build residences, industries, and transport corridors such as roads and highways, as well as for the disposal of urban waste (both industrial and household) (McGranahan et al. 2004).

Urbanization also creates pressure on agriculture production as urban demands grow in terms of both quantity and diversity of agricultural outputs needed, but also as urban expansion encroaches into often highly productive tracts of agricultural land. Such urban-induced pressure can impose a

significant environmental footprint upon rural areas as the agricultural frontier is expanded through land conversion, or as production on existing agricultural land is intensified (Millennium Ecosystems Assessment 2005). Both areal expansion and the unsustainable intensification of production often result in the loss of natural biodiversity, increased greenhouse gas emissions, reduced quantity and quality of available freshwater resources, and accelerated soil erosion and nutrient cycling (impacting soil fertility and water quality). By degrading the rural natural resource base, i.e. overdrawing on natural capital, the negative environmental footprint and externalities of urban-induced demand for greater exploitation of rural resources imposes sustainability risks on both rural livelihoods as well as on the future food security of both rural and urban populations. Moreover, cross-sectoral aspects of such urban–rural tradeoffs are revealed when enhancing agricultural output diminishes the contribution of rural areas to the supply of other ecosystem services and products that are also required in increasing amounts by urban populations (i.e. fresh water supply, flood protection, fuel wood, and lumber).

### Labor, financial and knowledge flows

Urbanization is accelerating across the developing world—from 2005 to 2010, the rate of urban population growth among developing countries averaged 2.6 percent per annum, compared to 0.3 percent for rural population growth (UNDESA, 2013). The reclassification of areas from rural to urban plays an important part in this change. The average annual rate of urban population growth is even higher for Sub-Saharan Africa, at 3.7 percent, compared to 1.8 percent for rural population growth (ibid). This trend is expected to continue over the coming decades, with urban populations in less-developed regions surpassing rural populations by 2020. In Sub-Saharan Africa, this will occur around 2040, when the urban and rural populations are predicted to reach 810 million and 777 million respectively (UNDESA, 2013).

The causes and dynamics of rural-to-urban migration are complex. The economic thinking behind migration decisions dates back to the Harris–Todaro model (1970), which asserts that an individual's decision to migrate is based on the expected income differential between one's rural home and that of the formal urban sector. Subsequently, economic theory has evolved to focus on families as a unit of analysis, as opposed to just the individual. Stark and Bloom (1985) found that migration is a household decision, and that families invest in a migrant (or migrants) in return for future receipt of remittances. More broadly, however, migration is determined by push and pull factors. Push factors include droughts, land scarcity, and low wages or the absence of wage labor in out-migration areas, and pull factors include better job opportunities and/or the possibility of higher income, and lower or different risk profiles in destination areas (von Braun 2005).

Much of the *global* change in labor allocation is related to inter-sectoral shifts due to enhanced growth in other sectors (manufacturing, industry, and services) in rural and urban areas. Between 2005 and 2020, the economically active population is projected to increase from 3 billion to 3.5 billion, and while farm employment may decline by approximately 300 million, employment in services and industry—both in urban and rural areas—is estimated to grow by an additional 400 million people each. It is noteworthy that much of the employment growth is expected in rural (including small town) services and industries (see Table 1). Such significant decrease in rural employment will necessitate radical increases in farm labor productivity if the food demands of the growing world population are to be met. However, progress in labor productivity within the agricultural sector has so far been uneven (World Bank, 2013).

**Table 1. Global employment change, 2005 to 2020 (in billions)**

	Farm	Services and industry: rural areas	Services and industry: urban areas	Total
2005	0.9	0.6	1.5	3.0
2020	0.6	1.0	1.9	3.5
Change 2005 to 2020	-0.3	+0.4	+0.4	+0.5

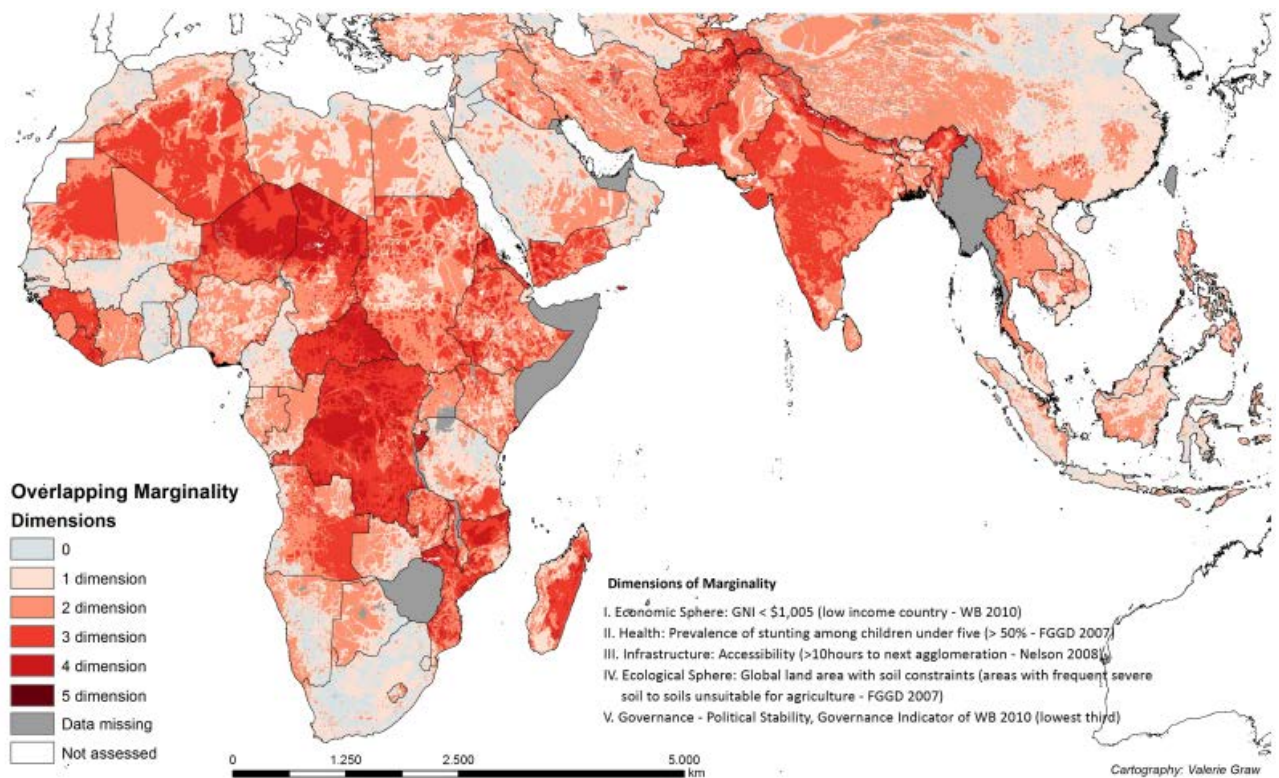
Source: Author's estimates of sector shares based on ILO projections of economically active population.

### The rural–urban divide remains relevant

Despite increasing levels of rural–urban interaction, major rural–urban disparities persist across the developing world (Liu et al., 2013). As a result of adverse terms of trade between agricultural and nonagricultural product prices—as well as urban biases in government spending on health, education, and physical infrastructure across the developing world—major inequalities between urban and rural areas persist, not only in terms of income but also in asset endowment and human development (Eastwood and Lipton 2004). Thus, while inequality exists separately within the rural and urban spheres, the largest differences are between urban and rural areas; most of the poor live in rural areas and depend for their livelihoods on agriculture and related trade, services, and processing activities. Additionally, in many countries, rural inhabitants do not have the same level of access to social services, such as health and education facilities and infrastructure, as their urban counterparts, thereby further perpetuating existing inequalities while marginality becomes also a phenomenon of both rural and urban spaces (von Braun, Gatzweiler 2014, and Figure 2).

An issue of concern is that the rural–urban divide seems to be widening in parts of the developing world (Eastwood and Lipton 2004). China and India provide illustrations: both countries have experienced sustained economic growth over the last decade (on average 10.3 percent annually for China and 7.6 percent for India between 2003 and 2013) and have achieved major success in poverty reduction. However, economic growth and poverty reduction have been distributed unevenly. In both countries, the bulk of the poor still live in rural areas and are concentrated within certain regions. In China, the difference in the average monthly per capita income between urban and rural areas almost doubled between 1994 and 2004, from US\$99 to US\$161, and the percentage of total inequality (measured using general entropy) due to inequality between inland and coastal areas increased from 6.5 percent in 1990 to 11.6 percent in 2004. Similarly in India, the difference between average monthly per capita income in urban and rural areas rose from US\$21 to more than US\$27, and the percentage of total inequality attributed to North–South disparity increased from 2.6 percent in 1990 to 15.9 percent in 2003 (Gajwani et al. 2006). At the same time, this trend of growing urban–rural income disparities exacerbates perceptions of relative deprivation, from which violent political unrest can result.





**Figure 2: Marginality in Sub-Saharan Africa and Asia**

Source: Graw and Husmann in von Braun, Gatzweiler ed. (2014)

### Facilitating urban–rural linkages for sustainable development

Three major areas alluded to in the conceptual discussion above – R&D combined with technology, ICT, infrastructure, and market institutions – play key roles in stimulating rural–urban linkages to promote sustainable development, create employment, and reduce poverty.

#### R&D and technology

Technologies work through factor- and output markets; processing; and consumption linkages. Here, two types of technologies that have had a substantial impact on rural growth and poverty reduction are explored: innovations arising from agricultural research and development (R&D), and improvements in information and communication technologies (ICTs). Science and technology are fundamental to rural–urban linkages, and in this context, agricultural research is fundamental. The Green Revolution experience, especially in Asia, has shown that agricultural R&D can result in technological breakthroughs that enable considerable improvement in agricultural productivity, resulting in agricultural growth, which in turn can translate into substantial rural development and poverty reduction. Today, technological innovations in agricultural production continue to be significant sources of growth in agricultural productivity, which can in turn translate into rural growth and poverty reduction. For instance, it is estimated that in Asia and Latin America, for each additional dollar of agricultural income, an additional \$0.6–0.9 and \$0.4–0.6 respectively is generated in the local rural non-farm economy (Haggblade, Hazell, and Reardon 2007). The multipliers are lower for Sub-Saharan Africa, due to agro-climatic conditions and the lack of infrastructure and sound policies.



### *Information and communication technologies expanding markets and reach of services*

ICTs can lower transaction costs by reducing information asymmetries<sup>1</sup> and opening-up market possibilities for rural inhabitants, which can result in additional network externalities. Indeed, at the macro level, tele-density is positively associated with growth. Waverman et al. (2005) found that 10 more mobile phones per 100 people increased GDP by 0.6 percent. But there seems to be a minimum threshold of about 15 percent coverage to achieve the strongest growth effects (Torero and von Braun 2006). At the micro level, the welfare gains derived from access to ICTs are large, because the alternatives (sending a messenger or letter) are much costlier and more time consuming. For instance, in Bangladesh and Peru, the effective welfare gains from a telephone call range between US\$1.62 and US\$1.91. As such, the willingness to pay for access to telephones is also relatively high and typically exceeds the actual prevailing tariff rates (Torero and von Braun 2006).

If information asymmetries persist between producers and consumers based in two spatially separated locations, intermediaries emerge who facilitate transactions between urban and rural areas; therefore, any change in information asymmetry can lead to a change in the intermediation process, and can lead to the demise of existing (traditional) intermediaries and the rise of new (modern) intermediaries, as is currently happening in the modern food value chains in many developing countries. If not corrected, the lack or differential access to market information can create direct barriers to mutually beneficial exchange and greatly increase the costs associated with trade. The consequences of asymmetric information are that equilibrium may or may not exist; or if equilibrium exists, resources are used less efficiently than they would be if there was symmetric information. Thus, the availability of efficient and reliable market information is key to fostering rural–urban linkages. Information and communication technologies (ICTs) are also providing new opportunities for improving local governance and increasing the benefits of decentralization for the poor (Birner and von Braun, 2013).

### *Infrastructure for linkages and service delivery*

Infrastructure works as a bridge between the rural and urban worlds, and between agriculture and others sectors of the economy. In particular, in situations characterized by a wide dispersion of production and consumption centers, transport costs account for a significant proportion of the total costs of linking urban and rural areas. For sustainable development and inclusive green growth, it is therefore critical to develop new infrastructures with environment-friendly characteristics from the outset, so as to avoid costly technological lock-ins to unsustainable forms of infrastructure (World Bank, 2012). An improvement in rural road quantity (length or density) and quality reduces travel time and vehicle operating and maintenance costs, which in turn lowers the actual costs of marketing produce and of delivering inputs, thereby facilitating inter-linkages between urban and rural areas. But beyond reduced transport costs, infrastructure improvements have important indirect benefits for the flow of goods, services, and information. The large returns in terms of growth and poverty reduction from investment in rural roads are well known. For example, in China, in terms of national income, the return on investment in rural roads is more than three times that for urban roads—for every yuan invested in rural roads, the return is around 6 yuan, versus 1.55 yuan for urban roads. This investment in road infrastructure produces even greater disparities in terms of poverty reduction: 5.67 persons per 10,000 yuan invested in rural roads versus 0.31 persons for urban roads (Fan and Chan-Kang 2005). However, the study also finds that returns on road investments vary by

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<sup>1</sup> Information bottlenecks hinder effective rural–urban linkages by raising transaction costs comprising search, screening, and bargaining costs.

region, with those regions with better road networks benefiting most. In the last decade, although many developing countries have invested heavily in rural roads, leading to better access to markets composed of more than 50,000 inhabitants, overall market access from rural areas in developing countries remains patchy and uneven (World Bank. 2009).

Diversification of rural economies is greatly helped by denser infrastructure networks linking them with urban and other rural areas. The majority of urban dwellers in developing countries do not live in a megalopolis but rather in medium-sized cities. Consequently, small and medium-sized towns play an important role as an intermediary point along the rural–urban continuum, linking and benefiting both rural and urban areas through consumption, production, and employment patterns as well as various types of economic and social provisions (e.g., Satterthwaite and Tacoli 2003; Wandschneider 2004). Small and medium-sized market towns and cities are extremely important to the economic activities of rural households because they provide the economic space for rural households both to purchase their inputs and household items as well as to sell their final products at local markets, thereby linking rural producers to the national and global economies. For example, apart from remittances, rural households in Ethiopia were found to have few direct links to more distant urban centers or the capital, with intermediary cities being the main urban locations where rural households undertook economic activities (Hoddinott and Dercon 2005). Consequently, the development of small and medium-size town infrastructure has the potential to reduce transportation costs and improve access to markets for both urban and rural consumers and producers. Small towns can also serve rural residents seeking opportunities outside the agricultural sector, by absorbing some of the agricultural labor, thereby alleviating the pressure on already congested metropolitan centers while at the same time contributing to the growth of the national economy and transformation of agriculture. Furthermore, many higher-level rural services in health and education depend on urban locations. Access to such services depends on infrastructure that links rural and urban areas. This affects, for instance, access to secondary education, and many of the more complex health services in rural areas are delivered through hospitals and clinics located in small and medium-size towns.

## Conclusions

The paper highlights the need for renewed attention to the spatial dimensions of development and to urban–rural linkages for sustainable development. The nature of such “attention” by policy and advisory communities includes:

- Distinguishing the various types of dynamic flows that exist between rural and urban spaces;
- Reviewing the transaction costs of all economic activities between rural and urban areas, with an eye toward their optimal reductions; and
- Focusing on the nontrivial positive and negative externalities of spatial allocation and concentration of economic activities, including services supporting them.

One must keep in mind that policy and investment priorities for fostering urban–rural linkages cannot be “one size fits all.” They depend greatly on initial conditions, and require a dynamic analytical framework. These policy issues pose new *challenges for research*:

1. Much progress has been made in regionally disaggregated analysis and economic modeling. Integration of spatial analysis through, for example, the use of GIS technologies can be useful for the visualization and understanding of changing realities (Wood et al. 1999). Many of the economic models on which the rural–urban framework is based are static, simplistic, and do

not take into consideration spatial realities such as ecological conditions and growth potentials.

2. The development analyses of practitioners also need a broader perspective. Agriculture programs should not be planned and evaluated in isolation from infrastructure—the planned incremental output may go nowhere; Vice versa, infrastructure investment, such as roads, should not be planned and evaluated in isolation from agriculture and industry investments—the road might lead nowhere.
3. In addition, consideration is required of historical, social, and cultural settings, as well as the types of institutions governing space. Blending aggregate modeling with information systems that capture local knowledge is a challenge. Sector-specific and domain-oriented economic research (e.g., agriculture economics, infrastructure economics, and services-related economics research) needs to come together to jointly address the opportunities of urban–rural linkages via a nexus-perspective.

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