

An Empirical Analysis on Urban-Rural Linkage in Mumbai Metropolitan Area

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Abstract: *The concept of 'urban-rural linkage or continuum' has been developed as a mechanism to better view and understand the inherent differences between the two terms in the field of planning and regional development. Examining consensus between the conceptual approaches in the literature and actual transforming process in some of the most dynamic and least regulated cities in the world – Mumbai metropolitan region, this paper tries to describe the increasing significance of urban-rural linkages in the livelihoods of rural residents, including spatial and occupational transformations and their interdependence on surrounding urban centers and towns. The results of the network analysis suggested the role of small and intermediate urban centers in facilitating exchange between the rural villages and towns by offering employments and markets both for farming and non-farming sectors. This also indicates that urban-rural linkages can be strengthened by the local or regional authorities which transcend traditional administrative boundaries and build an interdependent urban-rural continuum in planning and resource management practices.*

Key Terms: Mega-cities | Urbanization | Urban-Rural Linkages | Livelihoods | Spatial and Occupational Transformation

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Asian mega-cities and peri-urbanization

Asian mega-cities¹ have experienced rapid population growth, and this growth is continuing. The outward expansion of the urban area has brought increasing and more complex interactions with the surrounding rural areas and gradual transformations in their land use and livelihood, transforming them into semi-urban or 'peri-urban' areas (Shaw, 2005). In an early study by Gottman (1960), it is described that Western urbanization causes a massive migration of rural populations to the cities, which has evolved from the initial population centers to mature cities, and later to the formation of a megalopolis. However, the rapid urbanization in Asia during the late 20th century has manifested different development process from that experienced in Western countries. The major

difference is that urbanization in Asian region has taken place in already densely populated rural regions between large cities. Instead of a huge rural-to-urban migration, Asian urbanization is characterized by the economic transformation of the heavily populated areas from agricultural activities to non-agricultural activities (Sui and Zeng, 2001).

This urbanization process in Asian mega-cities has also contributed to the emergence of a unique landscape of chaotic co-existence of urban and rural land uses. The positive aspects of such mixture of land use at the urban-rural fringe are also captured in McGee's concept of 'desakota'², where both regions gain, the rural areas through increased income-generating opportunities and the urban areas through local ecosystem and food security. Asian cities historically place land use patterns of urban and rural characters next to each other. These

¹ Megacities are generally defined as those with more than 10 million inhabitants. According to United Nations figures, in 2015, Asia alone has at least 20 megacities, including Tokyo, Japan (37.9 million people), Jakarta, Indonesia (30.3 mil. people), Seoul, South Korea (26.1 mil. people), Delhi, India (25.7 mil. people), and Mumbai, India (20.7 mil. people).

² McGee defined areas in Indonesia with such land use mixture as desakota, an Indonesian term that expresses the mixture of village (= desa) and town (= kota) (Ginsburg, Koppel and McGee, 1991).

vernacular landscapes have in the past demonstrated a workable relationship between the urban and rural environments (Yokohari et al, 2000). Since the 1990s, however, concerns have been raised about the possible negative impact of spreading urbanization and this has come from scholars working on the environmental impact of the expanding city and its effects on the peri-urban areas (Shaw, 2005). In modern urban planning, the mixture of urban and rural land use had long been typically regarded as a problem to be avoided, whereas the clear separation of urban and rural areas was framed as an ideal situation. Although Western urban planning concepts such as zoning and greenbelt systems have been applied to the cities to encourage controlled urban growth, current landscapes in the fringe of Asian mega-cities indicate that such attempts have not achieved significant success (Yokohari et al, 2000).

Another significant feature of Asian cities' urbanization comes from recent statistics which shows that smaller cities still continue to experience infilling development, while the large metropolitan regions mostly show declining growth in the urban core and continue to expand outwards encroaching smaller towns and villages in the surrounding area. These phenomena are better described by the term 'urban agglomeration', which denotes a continuous urban expansion and generally comprises of a town/city and its adjoining outgrowths (Shaw, 2005). The result is that an increasing proportion of economic activity and population in a country concentrates in rapidly growing small and intermediate urban centers. This distribution pattern is expected to continue, and it is estimated that by 2015 over 27 percent of the world population will reside in centers of less than 500,000 inhabitants³ (UNFPA, 2007). These figures give a clear indication of the demographic significance of small and intermediate urban centers.

³ There is also no universal consensus of small and intermediate urban centers, since this depends largely on the national urban structure. In large countries such as India, a 'small' town can have a population of several tens of thousands and an intermediate center as many as 500,000 inhabitants. In smaller nations, the largest city's population can be less than 500,000. Thus, It is probably more useful to consider small and intermediate urban centers on the basis of their functions, including the provision of services, facilities and infrastructure to their own population and that of their surrounding region. (Tacoli, 1998).

Regional perspectives on the urban-rural integrated development policy

Since the early 1960s, small and intermediate urban centers have attracted the attention of policy makers and planners. Early view of small towns is as centers from which development and modernization would trickle down to the rural population, therefore, various theoretical approaches have emphasized such attention and the related policy interventions as follows. The relations between towns and rural areas, and between towns and large cities, have been classified in many different ways not only as an important field of analysis but as a basis for identifying the most promising intervention possibilities (UN-ESCAP, 2002). Rural towns are not only smaller than intermediate cities; the roles and functions of rural towns (a permanent or periodic market, lower-level and simple manufacturing and service clusters) are clearly different from those of 'intermediate' or 'secondary' cities (market towns, manufacturing and trade centers).

Policies to strengthen the role of small and intermediate urban centers or to serve as viable alternatives to an overburdened metropolitan area have often gone under the name of growth center or growth pole policies. These were expected to have "trickle-down" or spread effects, but growth centers generally provided much less benefits and stimulus to their surrounding areas than expected, they were often criticized as exploitative "backwash effects" (Friedmann, 1992).

It is probably true to state that most urban researchers and policy makers have been so preoccupied with the issues of urban cores and large cities, that the spatial and sectoral planning approaches for lower level than metropolitan region have been neglected. It is generally agreed that the top-down approach can underestimate the local characteristics such as social/cultural value and traditional ecological knowledge. Another problem may arise in the same fringe areas located far away from the jurisdictional authority. Often without any official urban status, a large part of these areas is not governed by municipal administration but by rural bodies in spite of the rapidly changing configuration of areas adjoining the metropolitan region. This means they generally lack the institutional and governance capacities to enable them to respond to the processes of change in a positive way.

Therefore, indeed there needs to be new policy options for regional development by taking a more holistic approach that recognizes the interdependency of cities, towns and rural areas and their roles in improving relationship. Although it is not easy to find good examples of policies that have been implemented, one approach to achieving the “virtuous cycle” of regional development is to create a new set of typologies for small and intermediate cities.

Typologies can be useful for grouping towns and villages with strong linkage and interdependency. This would be more useful for informing appropriate policy responses than one simply based on hierarchical urban structure. Regional development would result from well-coordinated policies on both the urban and rural sides of development, Hence, those centers and surrounding rural communities have to be undertaken inclusively through micro-level area-based rural-urban integrated planning which specifically takes into account socio-economic variables and characteristics of the area.

Urban-rural linkages and their influence on rural livelihood
 Urban and rural areas are getting more interwoven physically, financially, and culturally. The linkages between urban centers and the countryside, including flows of people, goods, information, and other social transactions, play an important role in processes of urban and rural change. But the ways in which nations define what is urban and what is rural can be very different. The demographic and economic criteria on which definitions of urban and rural areas are based can vary widely between different nations (Leeuwen, 2006).

In order to understand such complex relations, multiple types of linkages can be distinguished as a basis for quantitative and qualitative analysis. By dividing the components of rural-urban relations into structures and flows, figure 1 suggests that rural

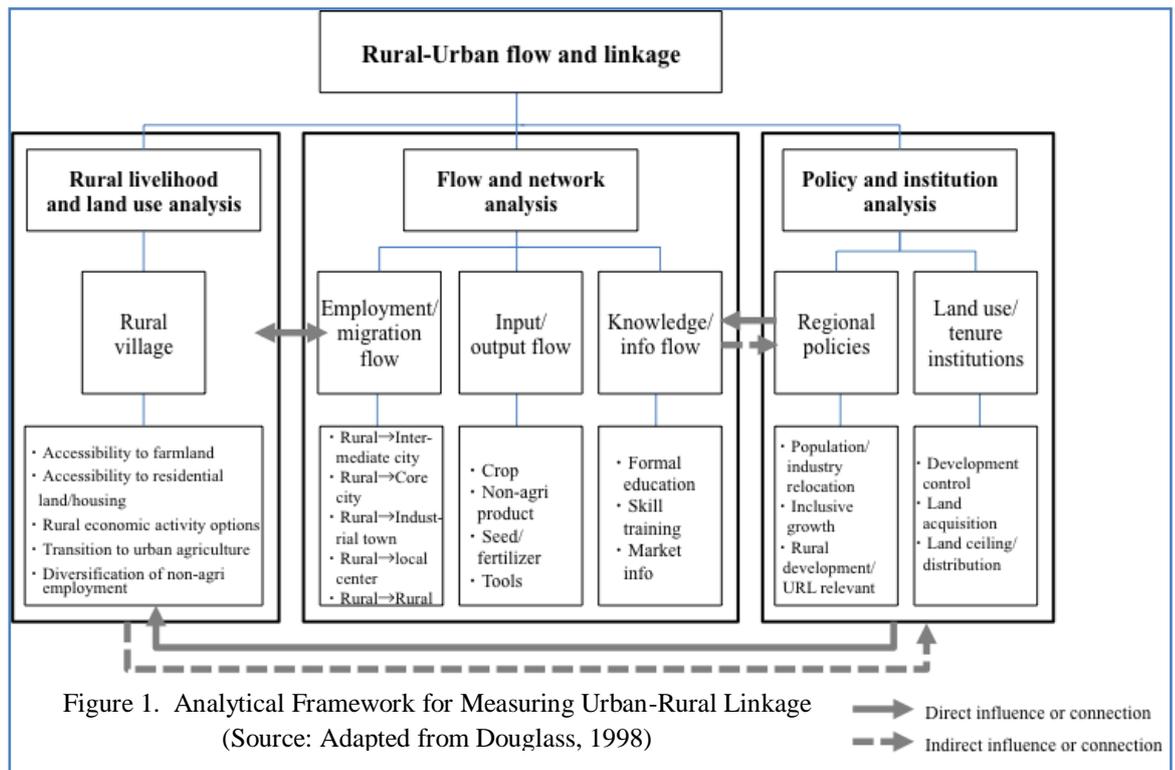


Figure 1. Analytical Framework for Measuring Urban-Rural Linkage
 (Source: Adapted from Douglass, 1998)

structural change and development is linked to urban functions and roles through a set of flows between rural and urban areas. Three types of flows are identified: people (employment and migration), production and commodities (agricultural input and output), and knowledge and information. Each has multiple components and impacts that may have diverse spatial linkage patterns as well as variable benefits to rural and urban areas. Physical connections such as roads, railways and other transportation and communication networks are closely related to economic linkages as well as to consumption and service linkages. The social and innovative relationships are less obvious but more intricate. Also, the methods for tracing and quantifying such invisible networks are far more difficult, and are often ignored by policy-makers (Zeleeke and Trutmann, 2006).

Urban-rural network analysis and role of rural & urban centers for rural livelihood

Through case study in Panvel block, Raigad district in Mumbai metropolitan area, one of the world's fastest growing cities in South Asia, this paper describes the increasing significance of urban-rural linkages in the livelihoods of rural residents, including spatial and occupational transformations and their interdependence on surrounding urban

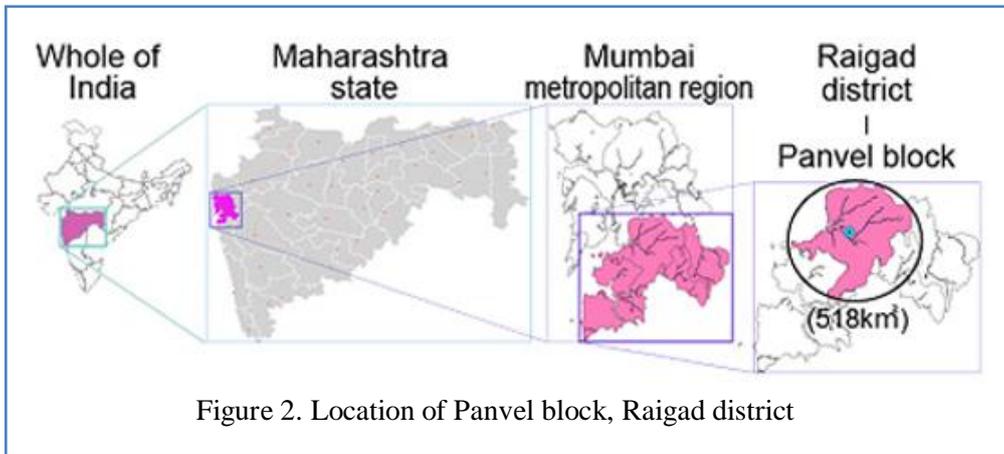


Figure 2. Location of Panvel block, Raigad district

centers and towns. Network analysis between rural village, town and urban centers was conducted to quantitatively identify the role of small & intermediate centers for rural livelihood in the region. Panvel block is located in east-central part of Raigad, characterized by the region's strategic transport and logistics hub as well as extensive land use change from agricultural to urban land use in the last two decades (Kim, 2012).

To identify service and trade network, agricultural production and commodity flow was identified by a questionnaire survey to farmers about their destinations where they purchase basic inputs such as seed, fertilizer and tools, as well as sell their agricultural products (Figure 3). Knowledge and information network was identified in the form of villagers' designation for their higher education opportunities in the region (Figure 4). Services and trade typically provide a much larger share of employment and of income, and both tend to concentrate in small and intermediate urban centers. Therefore, small and micro-enterprises, where low-income groups concentrate, need access to markets, capital sources, information, skills and management capability, and institutional support to identify local opportunities and respond to competition from imports.

In regard to the relationship with the superior urban centers, main destination for out-migrants tends to be relatively vicinal cities and local centers. The significance of urban core and secondary cities as an urban destination for out-migrants is, however, negligible (figure 5, 6). This indicates limited employment linkages with the main urban centers and considerable potential role of town centers in rural livelihood. Migrants from the surrounding rural areas who give up their farming assets and have no access to alternative economic activities, in many cases, prefer to live in their home villages and

reap the benefit from the opportunities provided by the local town centers. Since they often lack the networks and financial means to reach larger, more distant urban centers, better local transport facilities and increased mobility are a key element of livelihood strategies based on diversification of activities and reliance on both rural

and urban resources (Kim, 2012).

Livelihood change and its relationship with land-related issues

The survey revealed that traditional modes of securing livelihood such as farming, fishing, charcoal producing, etc. have been changing rapidly. Main activities of villagers presents that employment in secondary and tertiary industry is now prevailing in the region, in contrast to the 1970s, when most of villagers were involving in primary sector of the economy. These factors considered, it might be said that urbanization has led to the diversification of rural non-agricultural economy, and now being incorporated into the bottom of the urban economic hierarchy. However there is much more remains to be accomplished to enhance the livelihood strategies of the people through strengthening linkages rather than assuming villagers to be farmers and urban dwellers to be service providers. Moreover, when non-agricultural activities in rural settlements are not well developed yet, it is necessary to slow the pace of the abandonment of agriculture through the intensification of farming systems. Many non-farm activities revolve around local urban centers, and activities based on backward and forward linkages with agriculture are more likely to stimulate regional growth and benefit all groups.

Landlessness also risks potential conflict among landless and landowners in the community. Even if the aforementioned problems such landlessness, small farm size, and uncertain ownership encourage urban-rural linkages in terms of the flow of people, they weaken them in terms of the flow of agricultural produce from rural to urban areas and the potential of farmers to purchase industrial goods from urban areas. Thus, land shortages can have both positive and negative effects on urban-rural linkages.

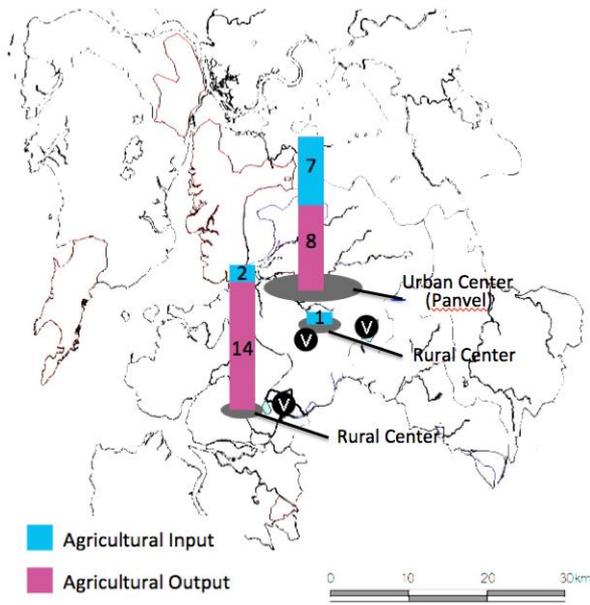


Figure 3. Agricultural input/output flow in the region

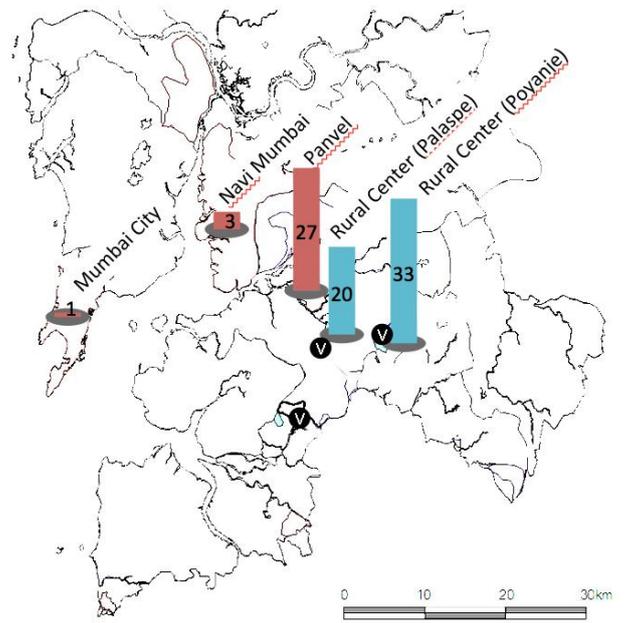


Figure 4. Knowledge and information flow in terms of educational destination in the region

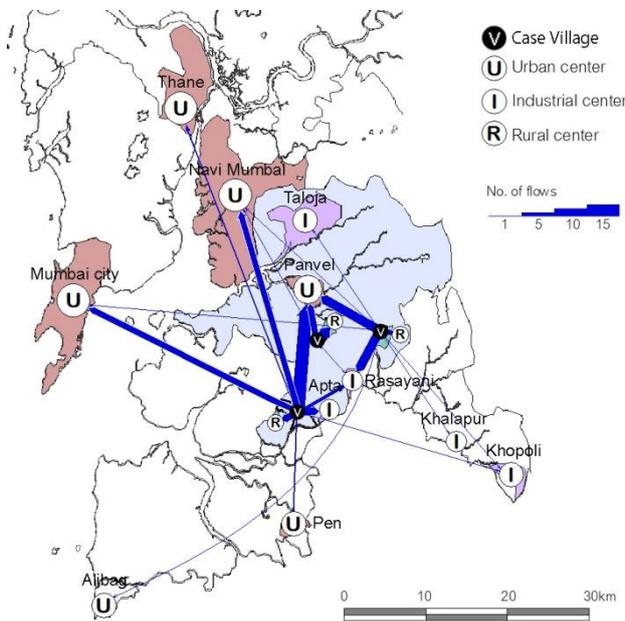


Figure 5. Employment flow in the region

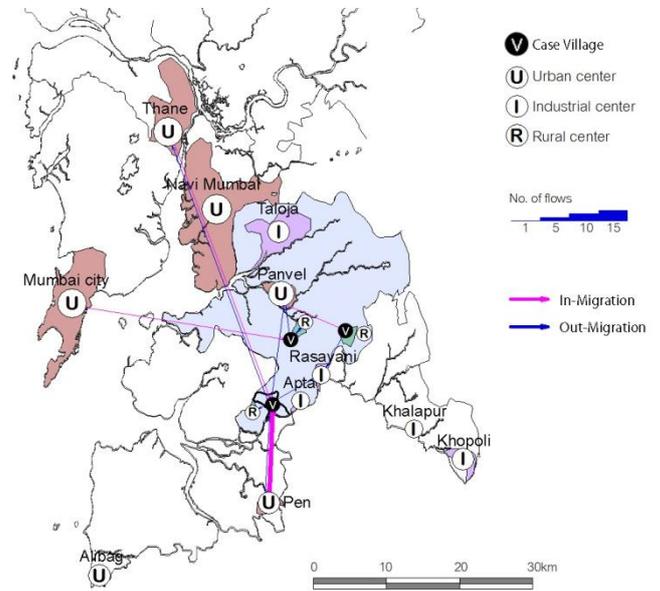


Figure 6. Migration flow in the region

Conclusion

‘Development’ implies change and transition processes, including the overall rural-urban transition that is likely to be completed within the next fifty years (UN-ESCAP, 2002). Therefore, the nature of rural-urban linkages is generally changing, and even within the same country, they can be regionally very different. Their capacity to prompt equitable regional development is much influenced by the region’s internal characteristics. Therefore, what is needed are broad and carefully tailored

policy packages, rather than standardized solutions because they would never fit all regions.

Small and intermediate urban centers can help overcome such constraints, and may stimulate the growth of local enterprises by offering markets large enough to capture economies of scale and agglomeration for many types of non-farm enterprises. This fit well with the current growing interest in clustering industrialization and in local economic development, where local and rural

institutions, usually located in small and intermediate centers, should play a key role in supporting local actors and connecting them across sectors and borders.

Empirical evidence shows that diversification of income sources is not a transitional phenomenon, but a persistent one with potential for poverty reduction. This means that while support is necessary for the development of non-farm activities, it is also important to ensure that at the same time, households are able to retain a foothold in farming. What these policies neglected yet again is the need to address more fundamental issues of land tenure and security especially for marginalized farmers. In addition, policies need to ensure that natural resource management responds to the needs of both farming and non-farm activities. In many instances, there is latent or even open conflict in the use of natural resources such as land and water for agriculture or for urban residential and non-farm productive activities.

Especially for small urban centers in the proximity of large cities, competition for natural resources can benefit large urban-based firms and higher-income urbanites, at the expense of low-income peri-urban and rural residents. In a policy and planning point of view, at the local level, decentralization has great potential for contributing to more efficient and accountable development. However, it should involve real local decision-making power and budgetary control (currently rarely the case) (Tacoli, 1998). What is important in local governance is adequate resources and capacity that is essential to identify local needs and priorities and respond to them. Policy and planning, therefore, should include supporting and strengthening forward and backward linkages between agriculture and other industries located in local urban centers.

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