PERIURBAN FARMING IN AN ASIAN CONTEXT

Metropolitan processes affecting agriculture in the Shanghai and Hanoi countryside

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DCUN - Diffuse Cities & Urbanization Network

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Periurban farming, considered to be a part of the urban diffusion process, results from the intertwining of local agricultural processes with widening urban interactions that affect rural areas in the vicinity of cities and city regions. Different types of periurban farming have developed in different areas depending on the local context of urban diffusion. The desakota, named after the Indonesian terms for city and countryside, refers to the periurban landscape created in recent decades by rapid urban growth in East and Southeast Asia. Metropolitan development influenced by globalization is, however, the predominant mode of urbanization today, triggering the intensification and rescaling of periurban dynamics. In such context, what farming systems can be found today in desakota spaces in urbanizing Asia?

This article compares periurban farming in Shanghai and Hanoi to shed light on how city-countryside linkages affect farming dynamics along three dimensions: spatial change, economic restructuring and political planning. It raises questions about the suitability of desakota as a geographic model for contemporary rural-to-urban regional transition in Asia, and offers a new conceptualization of city-countryside linkages in an urbanizing world.

Periurban farming, considered to be part of the urban diffusion process, results from the intertwining of local agricultural processes with widening urban interactions that affect rural areas in the vicinity of cities and city regions. The study of periurban farming entails investigation of the changing landscapes of rural settlements due to major transformations in land use, agricultural production, job structure, and livelihood, as affected by market interactions (Bryant and Johnston, 1992). Such investigation raises questions about the trajectory of rural spaces in the context of city-countryside interactions, and, more generally, challenges the prevailing rural-urban dichotomy.

Different geographical contexts display stark contrasts with respect to the pace of urban change brought about by globalization and its impact on periurban farming. Specifically, metropolitan development, as the driving mechanism connecting globalization with urban systems, is causing selective economic transformation and differentiated socio-spatial division both within and between city regions (Dollfus, 2001). This gives rise to the question of how periurban farming is influenced by the regional rescaling of metropolitan dynamics. To this end, a comparison between geographical regions can help to clarify how metropolitan processes intersect with local circumstances to produce distinctive spatial patterns.

In the early 1990s, the geographer T.G. McGee coined the oxymoronic term desa-kota, based on the Indonesian terms for village-city, to describe the countryside in the Jabotabek region around Jakarta, which since the 1980s has been undergoing a process of diffuse urbanization (Ginsburg et al., 1991). The desakota framework has since expanded to refer to the spatial processes of mega-urbanization and industrialization across Asian countries: in the Pearl River Delta and the Yangzi Delta in China (Sanjuan, 1999; Marton, 2000), in Indonesia (Franck, 1993), and, more recently, in the Philippines (Ortega, 2012) and in Vietnam (Fanchette, 2015).

All these places share certain geographical features: firstly, rapid urban expansion, mainly of major coastal cities; secondly, a vibrant economy boosted by globalization; and thirdly, the outcomes of dynamics affecting the surrounding rural hinterlands, which are densely inhabited by peasants primarily dependent on rice-crop cultivation. In McGee’s view, transformation manifests itself not only physically but also functionally, revealing the shift in activities performed
in peasant households and village communities boosted by intense social and economic mobility. In other words, the desakota conceptual framework, in dealing with regional urbanization in tropical Asia, relies on a specific set of historical and geographical factors to explain the rural-to-urban transition of spaces as well as the transformation of systems of activity and livelihood.

To date, it is unclear whether desakota, and its underlying process desakotatasasi, refers to a particular and delimited stage of urban transformation or whether it will remain relevant in the coming decades, describing a lasting reality of the landscape of urban diffusion and a shared trajectory of urbanization in Asia. In recent years, metropolitan development has further deepened the impact of global processes on emerging Asian economies. Research in China (McGee et al., 2007) and Southeast Asia (Webster, 2011; Franck et al., 2012; Chaléard, 2014) has investigated the effects of unprecedented economic concentration on the spatial rescaling and socioeconomic restructuring of metropolitan areas. This focus has come to overshadow earlier discourses on desakota territories, which were primarily concerned with peasant settlements in transition and the realities of farming.

Desakota, the “space-economy nexus”, has rather been reconceptualised to describe the conflicting dimensions of spatial transition, raising normative issues of modern governance and environmental sustainability, and opposing external forces with local, culturally variable sociopolitical organizations (McGee, 2008). As periurban fringes have been spatially integrated and consolidated into fully built-up suburbs, even more far-flung spaces have gradually come under the influence of metropolitan dynamics.

One way to examine the role of periurban farming is by way of its link with urban food consumption and food supply, which are now firmly on the agenda of urban policymakers in both the Norths and the Souths (Mougeot, 2005; Poulot, 2012). The term urban agriculture has been used to emphasize the links between food production and consumption in developing countries, pointing out the economic struggle and social inequality of producers and the need for efficient market organization, praising the benefits of food security for the urban poor, or calling for the resolution of food safety and environmental issues (Moustier, 2005; Pulliat, 2015). In Northern countries, the debate has come to focus on environmental management, land planning, and leisure amenities or community building, which is seen as a resource for urban sustainability (Soulard et al., 2017). I intend to build on a geographical approach investigating the regional scale and dynamics of farming systems linked to rural settlements in metropolitan areas.

What farming systems can be found today in desakota spaces in urbanizing Asia? The comparison of farming dynamics in the rural outskirts of Shanghai, China, and Hanoi, Vietnam, presented in this article interrogates the suitability of desakota as a geographic model for contemporary rural-to-urban regional transition in Asia, and offers a relevant conceptualization of city-countryside linkages in an urbanizing world.

This study builds on the primary idea behind the geographies of development of the 1990s, which saw desakota as a landscape in tropical Asia created by globalization, where rural settlements and a peasant economy met a booming urban economy on the cusp of the modern industrial stage. From the 2000s, metropolitan development has accelerated urban growth and furthered the spatial integration of desakota areas. This comparison of periurban farming dynamics in Shanghai and Hanoi hence supports the notion of parallel trajectories of integration, as revealed by city-agriculture linkages and social changes among peasant societies in desakota areas.

In the next section, I firstly depict the rural settlements in Shanghai and Hanoi, in relation to the urban restructuring of regional space, territorial organization and demography. The paper then turns to the respective farming systems, their economic role in the cities’ food supply, and the strategies adopted by farmers and village communities in adapting their activities. Finally, the industrialization of agriculture and metropolitan policies are analysed in order to shed light on the changing farming landscape of the desakota.

**DESAKOTA COUNTRYSIDES IN SHANGHAI AND HANOI**

Urban development in Shanghai and Hanoi reflects, to different degrees and in different sociopolitical contexts, the metropolitan transformation of the regional environments of these two cities. Shanghai has developed into a prime city hub for China and a global metropolis (Sanjuan, 2009). It lies at the heart of the Yangzi Delta megalopolitan region, which extends across the coastal plain bordered to the north by the Yangzi estuary and to the south by Hangzhou Bay, and connects in the west with the central Lake Tai delta (Map 1). By contrast, Hanoi, the political capital of Vietnam, is of secondary importance for the economic rise of the country, lagging behind Ho Chi Minh City. It is located in the centre of the Red River lower basin, upstream of its delta. Compared to Shanghai, the urban expansion of Hanoi has so far been comparatively modest (Map 2).

The Shanghai and Hanoi municipal territories extend far beyond their urban core. The rural hinterlands range from 10-30 to 40-60 kilometres away, respectively (maps 1 and 2).
Urban diffusion in Shanghai has rapidly accelerated since the 2000s. The outskirts of the city have expanded to encompass satellite towns, resulting in a scattering of rural areas inside the municipality. Urban densification is less pronounced around Hangzhou Bay and on Chongming Island than to the north, where Shanghai forms an urban corridor with the cities of Kunshan and Taicang in Jiangsu province. Source: Landsat 8, 2015.

Hanoi is located on the downstream plain of the Red River, which flows into the Gulf of Tonkin. Besides the port city of Hai Phong, other urban centres have experienced minimal development and the basin area remains predominantly rural. Source: Landsat 8, 2015.
each bearing the typical characteristics of Asian deltaic plains and river basins. For centuries, two of the densest peasant populations in the agrarian world engaged here in intensive rice cultivation, fostered by land levelling and water control. The farmland also supported cash crops, such as mulberry trees, which were used to feed silkworms, and cotton crops in the Yangzi Delta, which were traded in local market towns, contributing to the rise of eminent urban centres (Elvin, 1977; Fei, 2010). This rural legacy was transformed under communist collectivization, national reforms and opening-up policies, rural industrialization and, finally, globalization, leading to stark contrasts in development.

Around 2010, approximately one third of Shanghai municipality was made up of rural areas, down from two thirds in the 1980s (Table 1). Half of this decline occurred between 2000 and 2010, a period of deliberate urban expansion.1 Hanoi’s expansion, by contrast, has been concentrated, such that rural spaces still account for 60% of the territory of Hanoi municipality. Moreover, the merging of Hanoi with the neighbouring province of Ha Tay in 2008 increased the proportion of rural spaces in Hanoi (Labbé and Musil, 2011). Rural areas are also home to village populations. The intensity of rural-to-urban transition has been considerably higher in Shanghai compared with Hanoi due to the sheer number of people involved and their relative proportion in the city’s overall population. The registered rural population of Hanoi is 4.5 million, accounting for two thirds of the total population (General Statistics Office of Viet Nam, 2015), compared to 3 million inhabitants in Shanghai, which accounts for only 12% of the population (Municipal Bureau of Statistics of Shanghai, 2016). The rural population of Shanghai has halved since the 1980s, whereas its urban population more than tripled. Nonetheless, rural density remains remarkably high, as is typical of Asian cities.

Urban diffusion around the two cities reflects the differences between them in the hierarchy of metropolitan development.2 However, similar differences can also be seen between rural and urban areas within the two metropolises in terms of economic production or revenue per capita. Rural income is usually half of urban income. Locally, the transformation of the rural layout depends on the location of the rural area: its interface with the urban system and its proximity to the heart of the city and nearby towns.

Rural landscapes around the two cities bear the traditional layout of villages and farmland in agricultural plains (figures 1 and 2, identical scale). The flat farmlands are divided by waterways and delimited by levees and dykes, used for irrigation control as much as for protection against flooding. Village settlements tend to be either split into parts or spread out, as in Shanghai, where small hamlets are stretched along waterways (Figure 1), or more compact, as in Hanoi (Figure 2). In Shanghai, until the 1980s, waterways served as the main mode of transport, connecting villages to market towns. Also, the road networks were gradually extended and today form a comprehensive system connecting the peripheries (Monin, 2012).

Table 1. The importance of rural settlements in Hanoi and Shanghai around 2015

<table>
<thead>
<tr>
<th></th>
<th>Hanoi</th>
<th>Shanghai</th>
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</thead>
<tbody>
<tr>
<td>Total municipal population (millions)</td>
<td>7.7</td>
<td>24.1</td>
</tr>
<tr>
<td>GDP per capita (US$)</td>
<td>4,030</td>
<td>17,500</td>
</tr>
<tr>
<td>Total area of municipality (km²)</td>
<td>3,330</td>
<td>6,340</td>
</tr>
<tr>
<td>Farmland (km²)</td>
<td>1,970</td>
<td>1,890</td>
</tr>
<tr>
<td>Farmworkers (millions)</td>
<td>–</td>
<td>0.39</td>
</tr>
<tr>
<td>Rural residents (millions)</td>
<td>3.7</td>
<td>3</td>
</tr>
<tr>
<td>Proportion of rural residents in municipality (%)</td>
<td>51</td>
<td>12</td>
</tr>
</tbody>
</table>


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1 - Rural areas can be defined spatially by the relative dominance of farmland cover and prints of village settlements, observed with satellite imagery or aerial photography. They are also identified by their administrative layout, and recorded in statistics. However, social mobility and changes of residence mean population statistics can be inaccurate.

2 - Shanghai’s gross domestic product (GDP) was US$400 billion in 2015, 14 times that of Hanoi and twice the national GDP of Vietnam. The average individual revenue was US$7,700 in Shanghai and US$3,600 in Hanoi, higher than the national averages (in Shanghai, 2.5 times the Chinese national average of US$2,800, and in Hanoi 1.5 times the Vietnamese average of US$2,000). There are also differences in the distribution of wealth within the two cities. In Shanghai, for example, the rural revenue of US$3,570 is less than half of urban revenue (Municipal Bureau of Statistics of Shanghai, 2016; General Statistics Office of Viet Nam, 2015).
The urban restructuring of Shanghai’s rural outskirts reveals a spatial pattern of decreasing urban density, radiating concentrically from the city centre, and expanding around neighbouring cities and along built-up corridors. In the urban fringes, villages and fields are encircled and scattered, whereas in the municipal margins farmland predominates, especially around Hangzhou Bay, in the central deltaic area, and on Chongming Island, 60 kilometres from the city centre, in the middle of Yangzi estuary. By contrast, Hanoi’s urban restructuring is not on the same scale: the edges of the urban area meet the rural countryside just 10 to 20 kilometres from the historical urban core.

Desakota areas are composed of different spaces shaped by different degrees of urban density, connected by means of road and town networks to rural settlements on the plains. These general observations, which do not take into account local changes in land use and activities, invite different interpretations of the metropolitan space. Urban development in Hanoi is mainly clustered around the city, with little diffusion into the rural basin. It is characterized by the development of “new urban areas” (Labbé and Musil, 2017) and by the urban growth of villages located on Hanoi’s fringes (Fanchette, 2016). By contrast, around Shanghai and within the delta region, the degree of density depends of the urban network.3

Figure 1. Aerial view of Chongming countryside, Shanghai, with a dense network of village settlements on an ancient, reclaimed plain.

Hamlets on Chongming Island stretching along the waterways, with tiny plots of farmland.

Source: GoogleEarth, 2017.

Figure 2. Aerial view of Hanoi countryside, with dense farmlands shaped by the water network.

Hanoi’s village settlements show two different spatial patterns – either clustered or stretched along a main waterway – and are denser than those in Shanghai.

Source: GoogleEarth, 2017.

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3 In this interpretation, desakota refers to the spatial designation of a megalopolitan area (Milhaud, 2014).
As demonstrated by the two cases, city-countryside linkages are shaped by dynamics at both a local and a wider scale, as well as their interplay with territorial settlements. Farming in desakota areas is anchored in villages and peasant societies, which are subject to urban and economic changes.

“RICE-BOWL” COUNTRYSIDE, “FLYING GEESE” DESAKOTA

From the 1950s both countrysides around Shanghai and Hanoi – were subject to the state economy and collectivism under Communist rule. The transition from State control to market liberalization irrevocably changed the peasants’ relationship with farmland and agricultural production.

Shanghai, which has developed into China’s main industrial centre, is particularly significant for the country’s Communist regime. The rural territories have long been responsible for ensuring the city’s food supply and grain security, which by the 1950s had some 6.5 million inhabitants (Howe, 1981). For this purpose the municipal territory was extended by nine rural districts, which were taken from Zhejiang and Jiangsu provinces and which today form its suburbs.

Grain production took advantage of the natural fertility of the land and abundant supply of workers, but also benefited from the introduction of new technologies, marking the advent of the Green revolution in the delta. From the 1960s, local industry and village workshops provided production teams with fertilizers, small engines and electric machinery (Huang, 1990). Collective manpower was mobilized to dig waterways, rebuild the water network and equalize land plots. From the 1970s, modern agricultural techniques were introduced, including new cultivars and cropping mechanization. Attempts were also made to diversify agricultural production to keep pace with urban demand.

Vietnam did not reach the same level of systematic political collectivization, but, following the country’s independence, land reform, grain procurements and peasants’ cooperatives were present in the north from the early 1950s, influenced by the example set by the Chinese. However, the conditions for modern agricultural development were barely met before the country regained a productive economic system in the 1980s and opened up to foreign capital. Since then, the massive rural population has relied on traditional subsistence farming.

In China, the reforms of 1978 were quickly followed by village decollectivization. Farmland was returned to individual peasants, who were authorized to grow their own crops. From 1985, market liberalization stimulated the production of vegetables, meat and other non-staple food products, resulting in a dense food belt on the fringes of the city, separated from the rice-bowl area.

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Figure 3. Peasant houses lining a paddy field in the Shanghai countryside

The open field in the foreground, planted here with winter wheat, consists of several fields grouped into one larger one to support irrigation and crop mechanization. The peasant houses in the background date from the 1990s, when villagers’ rising incomes were used to improve rural livelihoods. Source: Monin É., 2011.
In the geography of globalization, the term “flying geese” refers to the path of Asian-Pacific countries in successive industrial take-off, led by Japan from the 1950s, followed by the four “Dragons” and the five “Tigers”. Following this industrial growth, which has mainly taken place in major metropolises, desakota areas might be said to be undergoing an economic take-off of their own.

In Shanghai, township and village enterprises managed by rural collectives* multiplied in the 1980s, subcontracting with State companies to produce urban goods (Oi, 1999). Rural bases evolved in the 1990s, when State planning promoted the establishment of economic and technological development zones and other industrial parks, making use of available land and cheap labour and accelerating the economic integration of periurban areas (Marton, 2000).

Rural industry in Yangzi delta, which forms the backdrop for the desakota landscape, can be said to have brought the peasant “off the land, but still in the countryside”. By 1990, the vast majority of peasants, including women, had transitioned to industrial work. Agricultural tasks became supplementary, relying on collective organization to provide surpluses and grain procurement (Huang, 1990). Peasants quickly moved out of the villages, starting businesses or seeking employment in nearby towns or in the city. This fostered individual careers and social mobility, and monetarized the peasant economy, creating a new social stratification that rapidly deepened as economic growth accelerated.

Around Hanoi, the desakota landscape formed instead around local clusters of villages specializing in craft industries which developed from the 1980s onwards (Fanchette, 2014). Factories and small shops linked one village to another in the production of domestic goods made of raw materials, such as traditional arts and crafts, furniture, textiles, and agro-food products. Other clusters focused on intermediary goods, construction or recycling activities, employing 17% of the rural workforce in the 2000s and testifying to the multifarious nature of village economic activity.

In Hanoi province. Manufacturing zones are expanding, supported by the authorities, competing directly with village-based clusters for land and resources and at the same time increasing environmental pressure (Moustier, 2015). They also rely on migrant workers from outer provinces, producing a more concentrated population and accelerating urbanization.

With the clustering of craftwork in Hanoi and rural industries in Shanghai, desakota has drawn peasants off their land. At the same time, it has kept the population in villages and, from the 1980s onwards, yielded economic rents for rural collectives. Urban restructuring in the 2000s destabilized these local activities, accelerating the transformation of village societies. Farming activities, once the basis of the peasant economy in the villages, have also had to adapt to the mechanisms of the urban market.

**DESAKOTA FOOD BELT: PEASANT FARMING GEARED TO THE URBAN MARKET**

One main driver of periurban farming is the demand for food products in the nearby city. Periurban farmers gear production towards this urban market, making the outskirts of cities function as a food production belt in a way not seen in the more remote countryside.

Mitigation of land rents, transportation costs, and the manoeuvrability of farm products (Huriot, 1994). Farmers in the food belt specialize in fresh products, providing the city with vegetables or cows’ milk on a daily basis, which yield higher returns than grain and other staple crops that need to be stored and transported across longer distances. At the same time, the higher the land rent, the more intensive the production and the smaller the farms. Farms in more remote areas tend to be larger and support more extensive farming. Farm productivity is dependent on economies of scale, resulting in farmland concentration.

In Hanoi, an illustration of the fresh food supply can be seen at Long Biên market in the city centre, near the river and the railway bridge, where producers’ trucks and trolleys converge by night from all over the basin to meet with retailers. Shanghai’s major produce markets in the inner city were replaced from 2000 onwards by larger suburban facilities, some of them specialized, selling local or imported food products. Vegetable self-sufficiency is is as high as 50% with 2.7 million tons of vegetables produced in 2011, compared to 20% for grain (1.3 million tons). Municipal

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peripheries also produced over 200,000 tons of meat and aquatic products, contributing significantly to the market supply (Sun, 2012).

Indeed, the food belt capacities of the Shanghai countryside provide a textbook case of market effects on the structure of periurban farming. Before 1980, the vegetable belt was located 10 km from the city centre. It later expanded to a range of 20 km, covering vegetable farms, pig farms and cattle. In the 1990s poultry farms and peach orchards spread further to the south and the west, 40 to 50 km from the city, while the lake area and shores of the islands developed aquatic husbandry and fishing fleets. In the 2000s, crop production was reshuffled yet again when urban expansion resulted in the dismantling of the inner food belt (Xue, 2011). Meanwhile, new trends in consumption have prompted farmers to invest in new crops, from strawberries and watermelons to dessert grapes and cut flowers.

In the outer food belt two different trajectories can be seen: farming areas specialized early on and remain concentrated in local production clusters, or they recently diversified away from grain and embarked on intensive production of scattered crops of different types. These two patterns demonstrate not only the facilitating role of proximity and access to different pools of production, but also the local factors, such as community leadership, technical diffusion, and collective innovation, that influence the market adaptation of peasant farming.

The shift from rice cultivation and the commodification of peasant production bring about changes to farming systems and peasant units. In Hanoi, rice crops remain dominant among village households, who rely on them for self-subsistence and sell the surplus to supplement their main source of income. Local farmers, however, run intensive and specialized economic plantations, usually with few resources. As more peasants leave the land, productive land can be informally rented to farms or grouped by collectives into larger units. Increasingly, farming companies, backed by external private capital, are replacing peasant farming in villages.

Land rent is exacerbating the economic divide created between labour market and farm wages. Over the last two decades, a growing number of migrant peasants have taken up farm work in Shanghai. They represent half of all vegetable producers and one-fifth of grain cultivators, either as smallholders operating on half to one hectare, as tenants in fruit orchards, or as commercial farm workers. Various fruit and vegetable crops, such as watermelon, are supported by itinerant labour systems whereby groups of producers move their shelters from one field and village to another depending on the season. Migrant farming also contributes to demographic issues

![Figure 4. A migrant farmer grows dessert grape in Minhang district, Shanghai](image)

Introducing labour-intensive crops, such as dessert grape, is one way that smallholders adapt to the consumption market. The low revenue from land cultivation means that migrant peasants, as pictured here, are increasingly replacing local farmers. Source: É. Monin, 2011.
in villages, where the original local populations have been abandoning their homes. In more remote areas, villages empty out entirely and are left inhabited only by elderly people and ageing farmers (already three quarters of Shanghai’s farmers are older than 50 years of age), ultimately developing into pockets of poverty.

Peasant farming rooted in villages, with products traded in wholesale markets, is only one face of the urban food supply. Agro-industry is rapidly transforming the food system, supported by the public authorities, which are keen to promote agricultural modernization geared towards the urban economy.

PLANNING FOR AN AGRO-INDUSTRIAL DESAKOTA

The food belt in decollectivized economies has succeeded in meeting massive consumer demand despite the loss of farmland and decline of the labour force. Industrial dynamics, however, bring about new interactions between farmland and the food system.

Company farms on leased farmland in villages close to the consumption centre and benefiting from its communication systems are one illustration of the impact of the food industry and investment of capital in periurban farming. In Shanghai, company farms can cover up to 100 hectares and employ hundreds of people, supplying supermarkets and brand-name stores. Another example is the flower industry, with large plants equipped with advanced technology, supported by international partnerships and joint ventures, and supplying standard products to high-end customers (Figure 5). The vast majority of the food industry, however, relies on local companies that emerged from the 1990s onwards and are supplied by local producers.

Despite the loss of administrative control over the agricultural supply, public assets are actively involved in the food production system. In Shanghai the Guangming group, a State company, runs several large grain and vegetable farms as well as milk factories. It also has interests in key sectors (food processing, distribution and biotechnology) and, as such, is considered a strategic partner in Shanghai’s metropolitan agricultural future. Having become a leading brand in China’s food industry, the Guangming group is now aiming at international expansion (Monin, 2016).

In supporting the food industry, the Shanghai authorities have two aims. The first is to boost growth by means of policies such as the “rice bag” and “vegetable basket” programmes, which provide subsidies for farms and investments in infrastructure. These have simply switched to market regulation and administrative

Figure 5. Flower greenhouse systems are at the forefront of agricultural modernization in Shanghai

Consumers walk through a modern greenhouse with decorative plants, Shanghai Flower Port.
Source: É. Monin, 2011
supervision, now striving for international food and safety standards and quality control. The second aim, in the context of industrial modernization, is to improve farm efficiency and environmental labelling. In this way, the municipal government aims to build a competitive sector, with leading companies capable of modernizing food production in the metropolitan environment.

Capitalist development in China and Vietnam takes place under the control of the Communist governments. Farming modernization is thus a political matter, organized by means of central planning and implemented in a top-down fashion, from the province and municipality to districts and counties. Indeed, the “development of modern agriculture” has been an official slogan in Shanghai since the 2000s. In many cases, governmental authorities intervene directly to develop land and pilot large projects. Modern agricultural parks host experimental farms, greenhouses and food processing plants. Local governments finance their own industrial facilities and promote local agricultural specialties as commercial brands.

Village collectives have little power within this overarching system, but as land holders and intermediaries who can organize land use and mobilize farmers, they are necessary middlemen. They occasionally serve as a buffer against the municipal authorities, representing the villagers’ interests. Villages are indeed the main level at which the peasantry is transitioning towards modern agriculture. For instance, the Chinese national policies in the 2000s encouraged fellow villagers to merge plots into larger farms. Similarly, in Hanoi, farming collectives are acquiring the equipment and technical skills needed to motorize rice cultivation. These collectives are a key-target for policy makers and development agencies (Moustier, 2015).

Today, environmental policies are adding new constraints to farming activities, industrial pollution and urbanization having gone ignored for decades. In some cases, conflicts with villagers have arisen from land requisition or environmental pollution, leading to intervention from higher levels of government (Fanchette, 2015). Environmental protection has become a planning priority in Shanghai’s suburbs since the 2000s. Ecological zones now encompass water resources, leading to the closure of workshops and husbandries. Forest reservations have displaced villagers to nearby towns, with authorities compensating them for the loss of their land. In recent amendments to the Land Law, farmland preservation has become mandatory, subject to a quota system and included in the master plan of the city.

Adding to environmental concerns is the emergence of rural tourism and leisure activities as a service industry in desakota areas. As farming areas are integrated into metropolitan tourism, new links are forged between the periphery and the city centre: visitors consume rural resources, engage in fruit picking and gardening, visit rural retreats, and so forth. Country inns and guest houses have multiplied, reflecting their increasing economic importance for many villages, especially in remote areas where the agricultural landscape is largely intact. In this way, rural tourism becomes a useful planning tool for the multifunctional character of rural resources.

Finally, the many agro-ecological and industrial opportunities of metropolitan space - imagined and planned as an urban garden - are also contributing to the rapid remodelling of the desakota landscape.

CONCLUSION

This study of periurban farming in Shanghai and Hanoi has explored the spatial trajectories of desakota areas from the late XXth century to agricultural diffusion shaped by metropolitan forces in the early XXth century, illustrated by farming dynamics and peasants’ interactions. It has led to two interpretations of desakota: firstly, as a transitional space (McGee, 2008), a canvas on which the factors of change interact with people and resources; and secondly, as a regional space with differentiated local processes, influenced by their proximity to the city centre. Metropolitan interactions were analysed along three dimensions – spatial change, economic restructuring and political planning – to address the cumulative effects of globalization on urbanizing Asian territories, thereby challenging prevailing discourses on “rice civilization” peasantry.

Rural settlements surrounding the two cities encompass thousands of hectares and hundreds of villages, where peasants grow crops and raise animals for themselves and the city. Rural industries and craft activities, which emerged during the period of reform, have driven the excess supply of peasant labour off the land, allowing for more productive growth and farm specialization. In this way, desakota areas have come to play the role of food belt for city consumption. Contemporary urbanization has pushed farming even further to the fringes (indeed, farmland declined by 100,000 hectares over a ten-year period in Shanghai), surrounded by urban corridors and connected towns. The mixed desakota landscape has shifted from 20 to 30 km from the city centre towards the remote
Anh. Professor Nguyen Tuan with data provided by literature combined on existing academic research, while the Hanoi case is based on the findings of PhD study of Shanghai rests unbalanced: this case comparison is somewhat

Though the comparison is somewhat unbalanced: this case study of Shanghai rests on the findings of PhD research, while the Hanoi case is based on existing academic literature combined with data provided by Professor Nguyen Tuan Anh.

countryside, part of a pattern of decreasing density that affects agricultural dynamics.

Periurban farming, performed by peasant smallholders, has been characterized by a switch from rice cultivation to diversified commercial crops and the supply of the mass market, facilitated by proximity to the city and dense trading networks. However, the low financial yields of smallholding as compared to urban incomes threaten agricultural development in the villages, as in Shanghai, where ageing farmers are increasingly being replaced by migrant workers. Land transfer by rural collectives also accelerates the reorganization of farming by providing rents to villagers endowed with land rights, overturning the peasant system inherited from decollectivization in the 1980s and opening the door to industrial farming.

The restructuring of the urban food supply thanks to industrial and retail capital has triggered economic competition among local producers, who are now expected to meet international food standards. Agro-food businesses catering to middle class consumers cooperate with international partners, national brands, and local industries. The rise of food sector in Shanghai has encouraged specialization in the form of large production clusters, encompassing several townships in each district. Private farms and greenhouses, supported by domestic and foreign investment and making use of modern technologies, sell high-quality products. The upgrading of farms, the introduction of modern equipment and increasing levels of mechanization are all changing the landscape of production as initially shaped by peasants.

Meanwhile, the role of the authorities has evolved, moving away from production quotas and the goal of self-sufficiency towards market regulation and food standardization and supervision. The respective governments are pursuing the political goals of rural reform and agricultural modernization. At the same time, territorial planning systems provide for land transfers, industry subsidies and investment in tourism. This has enabled the State food company in Shanghai, for instance, to retain a central position in the municipal food system. Confronted with degradation and pollution of the deltaic plain, metropolitan policies seek to protect rural resources, introducing ecological zoning and farmland reservations. Although these do little to limit land conversion and rapid urban extension, they can become landmarks of the metropolitan gardens envisioned by planners.

The aim of this comparison of the desakota of Hanoi and Shanghai was twofold. First, the discussion situated the trajectories of the desakota in the historic process of globalisation in Asia, which has brought about structural changes in peasant society. Second, it considered the spatial dynamics of the desakota in their function as a food belt serving the metropolitan market. Meeting the food demands of millions of urban consumers is the main driver of both intensive crop cultivation by peasants and the agro-industry in villages and towns. The spatial diffusion of periurban farming has been gradual and concentrated around the urban fringes. Meanwhile, metropolitan development has accelerated the economic integration of the more remote outskirts of the cities, triggering the development of agricultural specializations and, more recently, tourism. The different adaptive strategies of local farmers and collectives are shaped by their geographic location and steered by political planning.

Finally, the comparison invites us to consider the differences between Shanghai and Hanoi in terms of the scale of the metropolitan processes at work and the resulting territorial power. The transformation of rural society and the development of towns around Shanghai is not only more advanced than in Hanoi, but also benefits from the greater financial and technological means of local governments and stakeholders, such that farmers can be provided with subsidies, villagers compensated and modern structures financed. This illustrates the hierarchy in metropolitan development, while also illuminating the regional intensity of the restructuring of the desakota. Shanghai’s agricultural belt surrounds a megapolis and shares its space with an immense megalopolitan area, whereas Hanoi has no such regional system, with urban growth predominantly centred within the city limits. Lastly, issues revolving around political ambition and government leadership are exacerbated in Shanghai and magnified by the international status of the city. The Shanghai agro-food complex is held up to other Chinese cities as a showcase not only of agricultural modernization but also of industrial might.

Looking beyond individual cases and national idiosyncrasies, this investigation of the desakota model in Hanoi and Shanghai has highlighted the importance of the transformation of peasants’ settlements in Asian countries. Also, it has identified and described the differentiated spaces of production emerging from diffuse urbanization, capitalist development and metropolization in Asian countries.

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