

RECONCILING INDUSTRIAL CLUSTERS AND URBAN SYSTEMS THROUGH REGIONAL NETWORK GOVERNANCE: A CASE OF CENTRAL JAVA PROVINCE ¹

Prihadi Nugroho

Faculty of Engineering, Universitas Diponegoro
(prihadi.nugroho@yahoo.com)

ABSTRACT

The location distribution of industrial clusters is often associated with their proximity to production factors geographically and economically. Many studies show how industrial clusters can maximise inter-firm social and economic benefits through a process of collective efficiency and flexible specialisation. Particularly this condition can be achieved with a support of well-articulated urban systems where the integration of public service provisions can be established to reduce total transactional costs. In fact, most regions in Indonesia fail to present appropriate urban systems for ensuring the delivery of resources across regions. Moreover, the practices of decentralised developments since the past few years have been neglecting the importance of strengthened urban system following the tendency of governments to look after local developments. As a result, the industrial clustering approach which is implemented by some local governments only creates institutional obstacles and additional costs due to the lack of intergovernmental cooperation. Regarding this issue a regional network governance should be encouraged to provide coordination milieu between governments in developing industrial clusters altogether. This attempts may be useful to cutting off the regional differences of transactional costs that the respective clusters must cope with.

Keywords: industrial clusters, urban systems, regional network governance

INTRODUCTION

Many research and literature have agreed upon common problems that are inhibiting the progress of industrial clusters in developing countries, i.e. the lack of (physical) capital, uncertain supply of raw materials, limited production technology and innovation, limited market, and insufficient support of public policies and government assistance. It is very common that firms within typical clusters hence overcome internal capacity obstacles

through inter-firm cooperation. In some regions sometimes we can see the support of local institutions which is intertwined with firm organisations to create a friendly business environment necessary to foster cluster development. With the same way clusters can build social capital useful to promote endogenous development through the cultivation of what Schmitz & Nadvi (1999) called a joint action and flexible specialisation. These processes provide a sustaining pathway for ensuring the progress of human development and knowledge economy locally. Firms within cluster hence are not merely recognised as a machine of economic growth but also of social

¹ Paper Presented at the Second Indonesian Regional Science Association Conference (IRSA Institute) Organized by IRSA. Bogor, July 21-22, 2009.

networking of trust-based relationships that can reduce geographical constraints of value chains (Maskell & Malmberg, 1999).

Despite the internally embedded strengths of clusters to adapt themselves into undesired business environment, the advancement of value chains remains rely on the services of existing urban system. A simple definition of urban system refers to an agglomeration of interconnected urban centres that promotes the functioning of certain socioeconomic activities in a region (Simmons, 1978). Urban system provides typical urban facilities and infrastructures to delivery of goods and services, factors of production, knowledge and innovation, political and administrative control, and socio-cultural relations. A well-articulated urban system creates an interface for promoting local development through transmission of forward and backward linkages of sectors across regions. Conversely, a dysfunctional urban system is likely to increase regional disparities and inhibit opportunities of regions to grow. In this sense, the role of urban system in affecting to cluster activities relates to its suitability to support cluster development. This requires comprehensive understanding on the dynamics of inter-sectoral linkages within and between clusters with regard to distinguished nature of clustering in certain locations.

Unfortunately, the Indonesian Government has sustained urban bias development for decades. Many policies and projects are designed to support the development of large cities in order to provide sufficient facilities and infrastructures for urban manufacturing industries in particular. As a result, urban sectors have been more favoured to achieve development goals, creating greater regional disparities between urban and rural regions. Moreover, the practices of local development during recent decentralisation era still have relied on central government assistance financially and technically, producing sustained dependencies of local governments in

directing urban system development. In contrast, the location distribution of industrial clusters is not only concentrated nearby urban centres and representing (large) manufacturing sectors *per se*. Mostly industrial clusters locate scattered surrounding smaller towns and rural regions, producing a wide range of commodities and utilising combined traditional and modern technology. In some regions sometimes certain clusters also create gradually economic transition from agriculture-to industry-based activities that induces endogenous development, while others encourage enclave economy that inhibits the creation of backward linkages to local sectors.

At the same time the government indeed has assisted industrial clusters to tackle their internal capacity problems ranging from financial assistance to marketing and technical support. However, such effort could not dismiss the problems entirely following its effectiveness to overcome institutional obstacles and additional costs in each region. In practice, many clusters are built under a deep structural patronage as manifested in subcontracting patterns, a situation that makes smaller firms tied up with large firms (exporters) and intermediate traders socially and economically (Tambunan, 2008). Furthermore, each local government applies taxes and retributions differently to local clusters that add on burdens to firms when they also have to compete with other clusters in different region. Therefore, this study aims to find out the reconciliation of limited government support resulting from both direct capacity building programs and indirect urban biased development and the nature of inter-firm linkages. The focus will be placed on whether the existing urban system getting improved to promote the betterment of industrial clusters. In the end I would like to address the issue of regional network governance as an alternative solution to overcome the abovementioned problems.

The Characteristics of Industrial Clusters

The Location Choice of Clustering

Originally, clustering activities are perceived as a concentration of firms that locate in proximate location, consisting of core and supporting industries which produce similar products in certain region. The advantages of business concentration in certain location are associated with the concept of external economies which suggests that the spillovers of benefits and capital accumulation are likely to occur when firms working simultaneously in adjacent locations instead of widely dispersed (Brenner & Gildner, 2006). According to classical industrial location theory, industrial agglomeration may create intensified efficiency through total reduction of production costs for both producers and consumers. The transaction costs between firms can be cut off due to 'locally standardised' prices of exchanged production factors and final products and minimised transportation costs. For individual firms agglomeration is also beneficial to create a pool of high skilled-labour market in which more specialised and productive labour force can be maintained. For local government industrial agglomeration will redirect public policies in providing facilities and infrastructures specific to clusters' needs more suitably. On the other hand, such clustering may benefit consumers in terms of saving of spent money and time to obtain desired commodities. Also consumers may collect additional benefits in forms of knowledge transfers of recent product differentiation and innovation (Dawkins, 2003).

Despite its usefulness there have been some critiques regarding such clustering conception. The first is pointed to overrated emphasis on geographical proximity of firms as a key feature of clustering. Actually, physical distance in recent times does no longer matter in determining competitive prices relating to inputs, outputs and transport

costs. Of course for some rural and remote areas this problem remains disturbing, but following the broader use of updated information and communication technology (ICT) the distance-related transactions costs can be reduced. In this sense, the ICT application can diminish differentiated determinants of prices among regions. However, it should be notified that physical distance is still influential in the distribution and marketing of materials and products in terms of quality not quantity of channels of transmission.

Secondly, the static dimension of conception cannot entirely apply for all types of clusters. The certainty of firms in producing particular products in fact may be different between those in advanced and developing countries. In general, industrial clusters in advanced countries foster a highly specialised environment where each firm only creates single products required by core industries while in developing countries each firm could be flexibly specialised. In the starting-up period firms only produce a small amount of specified products, but in turn they can expand the types of products as they grow and vice versa in response to market change.

Thirdly, the creation of external economies of industrial clustering is not only resulted from 'unexpectedly spillovers of benefits of agglomeration', but according to Schmitz & Nadvi (1999), also from 'intentional joint actions' between firms. In developing countries, many clusters exist from natural and social setting of production from which inter-firm cooperation built. These firms initially have faced internal capacity to create value added of products, so that through joint actions they can reduce institutional obstacles and barriers to entry to targeted markets.

The location choice of industrial clusters thus far is determined by combined factors of physical, economic and social milieu. Within this framework we cannot analyse the existence of industrial clusters, mainly in

developing countries, as a product of open market competition and economic rationalism. Although cost-and-benefit considerations are still influencing individual firms to decide the best place to start up their businesses and to whom they had better build transactional relations, the more powerful forces that create inter-firm linkages emanate from sustaining social institutions. This argument is to counter against the proposition of classical industrial location theory which suggests the industrial clusters to locate nearby raw materials sources or market destinations, and of (Western) capitalist perspectives which suggest that open market competition will increase the competitiveness of firms and regions. This discussion is not intended to forward the debates of socialist and capitalist economic systems but to look further at the alternatives for promoting economic development. Some previous research have shown that industrial clusters in developing countries is unique and associated with comparative advantages of locations, and this cannot be explained with conventional economic growth theories. For instance, how we can explain the progressive existence of rattan industry in Tegalwangi Village Cirebon Regency while the sources of rattan suppliers and exported market destinations are far away from respective clusters location? At the same time this industry can also encourage collaborative competition between firms, providing a ladder for firms to grow and compete with existing producers (Widyaningrum *et al.*, 2003).

Socially Economic Rationality of Clustering

Basically when discussing the notion of industrial clustering nowadays, we should better neither confine our perspectives to the form of industrial agglomeration nor the practices of conventional economic rationality. Such positioning will mislead our understanding on a broad conception of industrial clustering and fade away our awareness on the rise of alternative approach to promoting

(endogenous) economic development. According to Gordon & McCann (2000), there are three models of industrial clustering: i) the pure agglomeration model, ii) the industrial complex model and iii) the social-network model. The first model explains that the increase of external economies of clustering is mostly determined by the pool of specialised labour market in certain location, from which the more efficient job matching process can be created and the exchange of non-traded inputs, product innovation and market knowledge can be generated in response to market. This model requires the importance of geographical proximity of expertise to promote local development. The industrial complex model is related to Weberian optimal location theory of firms which suggests that the location decision of firms is associated with the reduction efforts to total production costs resulted from transport costs and prices of production factors. In this model firms maintain trading links among them in order to support individual input-output production processes, hence all firms within the complex share relatively equal benefits of spatially concentrated enclave economy. Finally, the social network model necessitates the significant role of hierarchical organisations and institutions as a rational response to overcome the problems of transaction costs. This suggests that close relationship between firms is internally induced by trust-based relations. It must be interpersonal trust among firms which determines the boundaries of inter-firm linkages rather than rational economic thinking *per se*.

In developing countries prevailing social structures and institutions are inherently embedded to individual choices of production (Altenburg & Meyer-Stamer, 1999). This means that the thickness of social capital does matter in determining production patterns and inter-firm linkages rather than access to and ownership of physical capitals and the ability to compete in open market, a process so-called 'socially economic rationality'. Industrial

clusters in these countries in fact can facilitate an accumulation and transfer of tacit and codified knowledge of value chain production by preserving socially constructed vertical and horizontal relations between core and supporting firms. Tacit knowledge occurs in proximate neighbourhood of firms, while codified knowledge may occur in distant range of firms connecting firms with distant buyers and markets. An advanced cluster can maintain both knowledge with support of better communication and social networking. In contrast, incipient cluster usually maintain tacit knowledge only due to limited support of communication and social networking caused by inappropriate support of existing urban system to link clusters with broader market (Markusen, 1996; Bathelt *et al.*, 2004).

The presence of socially constructed industrial clusters requires special attention from policymakers in facilitating the empowerment of cluster's special needs and the provision of spatially interconnected nodes of facilities and infrastructures where clusters take place. Since clusters carry out particular social structure in value chain production the government needs to identify hierarchical patronage and cumulative inter-firm relations inside respective clusters to obtain common feature of transactional links and input-output production closeness. Some clusters maintain exclusive boundaries which inhibit related industries and suppliers to connect to other core industries, export firms or buyers. Others, in contrast, allow subjugated firms from being isolated to broader value chains and in some cases the leading firms promotes the progress of related firms instead. The deepened understanding on different types of vertical and horizontal linkages between and within clusters is important for ensuring policy appropriateness to support cluster development. And this effort would be more effective if the members of respective clusters are also getting involved directly into policy making. Because the failure in empowering cluster members in

policy process is likely to occur when policymakers only focus on the demand from leading firms, which is not entirely reflecting overall cluster demand. This will lead to sustained excessive control of leading firms over related firms and suppliers, where the opportunities of cluster members to grow is determined from above.

Meantime, the co-location of interrelated firms in clusters requires differentiated facilities and infrastructures which can be jointly utilised by cluster communities. This condition relates to limited production capacity of firms to handle market demand and the nature of social networking of clusters in order to overcome institutional obstacles resulted from either market economy or distortive policies. The patterns of joint actions nurtured within clusters thus require the provision of certain facilities and infrastructures suitable to accommodate inter-firm cooperation. For instance, furniture industry may require spacious workshop and warehouse for allowing firms to assemble intermediate products and store the packaged final products before picked up by traders to transport to exporter firms. Moreover, in some cases the furniture cluster also requires sufficient road and dry port facilities to support pick-and-go services properly. In contrast, handicraft cluster may not require similar facilities since the production pattern is based on small household business units which only produces a small amount of products in compliance with market order. In this industry sometimes there is a collecting trader who comes to each unit to pick up their products. Afterwards, this trader can sell them directly to consumers or deliver them to larger producers to be re-assembled and labelled. Unfortunately, the original producers often have no idea where their products are marketed, so it is not surprising if we can find similar products in some other clusters where the local expertise has not already existed. As a result, imitation or re-labelled products are distributed freely in

the market, creating declining competitiveness values of original products. To tackle this, perhaps the establishment of trading houses is more required to support cluster development than road improvements.

The Problems between Places and Inter-firm Linkages

Similar to the problems of hierarchical patterns of inter-firm linkages, naturally resources are distributed unevenly across regions, a concept that refers to comparative advantages. Places with abundant resources endowment or better facilities and infrastructures are ranked higher than those with less accumulation of capitals and basic services. The higher order of places is more attractive to industries to increase the value added of products and economies of scale. These places also stimulate the creation of high-skilled labour market and intensified exchange of production factors. In turn, these places provide better opportunities for industries to expand their businesses following the improved soft and hard infrastructures. Conversely, the lower order of places is usually featured by limited resources belongings and provisions of basic services, creating heightened capital and institutional constraints that impede industries to grow. The main difference rests on the forces that produce unequal positions between firms and between places. When the inter-firm linkages are determined by prevailing social constructions behind transactional relations and closeness between firms, the interrelated places are determined by politically economic decisions of development. Following this proposition, the development policies are generally directed to places which offer rapid economic growth. Therefore, it is no wonder finding out that urban-biased developments have been promoted for very long time due to the promise of better welfare achievements of urban growth.

However, the initial recognition of the importance of urban places for development can be dated back to 1950s when Perroux introduced growth pole theory. His observations on the development processes resulting from interrelated firms and industries showed that initially the economic benefits are shaped by a few larger propulsive firms, which in turn will be transmitted to lower related firms and industries as their outputs expand. Hirschman (1958) argued similarly to Perroux viewpoint by adding the presence of forward and backward linkages that ensure development transmissions between related firms and industries. Later, Boudeville (1966) credited the growth pole theory by giving additional explanation pointing out the importance of urban places to support propulsive firms in spreading out the economic benefits across regions. Meantime, Myrdal (1957) also highlighted the relative importance of urban firms and industries in the process of so-called cumulative causation, through which (physical) capitals across country will be concentrated in urban regions for a while (polarisation effects) before the economic benefits are transferred downwards subsequently (spread effects). Friedmann (1966) through his notable centre-periphery model also recognised that large urban centres play as core regions that have initial advantages in the competition for new growth due to declining cost benefits of urbanisation economies (Dawkins, 2003).

Aside from debates surrounding these theories, these theorists have come to overarching conclusion pointing out three things: *firstly*, resources and opportunities to grow are unequally distributed across regions so that regions and of course firms and industries will experience unbalanced growth depending on where they locate; *secondly*, urban centres play a key role in determining whether development will be converged or diverged; and *thirdly*, political and economic decisions of leaders and entrepreneurs in urban

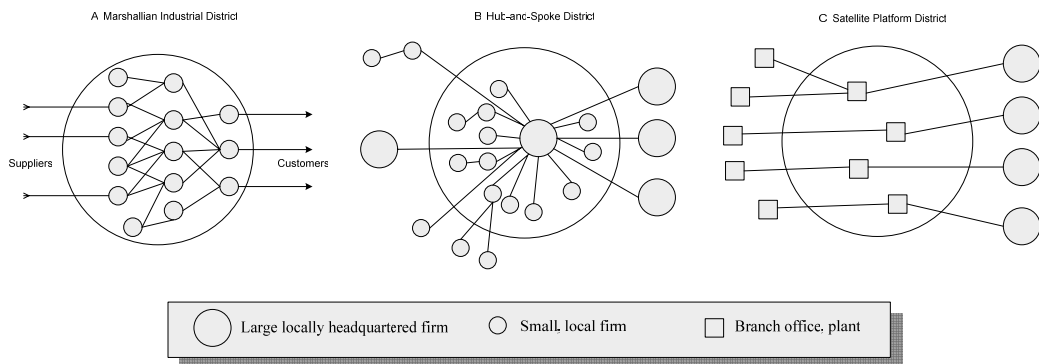
regions contribute much on the design of development initiatives. The interplay of these things has formed the existing spatial structure of development, which may be more suitable to support urban manufacturing development than industrial clustering. Actually, the development of industrial clusters especially in developing countries are mostly based on natural setting of production chains involving

a large number of small and medium industries with a few large firms acting as the leading sector. The economic rationality for maintaining transactional relations and inter-firm linkages in clusters is influenced by the presence of prevailing social structure and political hierarchy in society, resulting the patterns of inter-firm linkages inside clusters (see Table 1 and Figure 1).

Table 1. Typology of Industry Clusters

Cluster type growth	Characteristics of member firms	Intra-cluster interdependencies	Prospects for employment
Marshallian	Small and medium-sized locally firms	Substantial inter-firm trade and collaboration, strong institutional support	Dependent on synergies and economies provided by cluster
Hub and Spoke	One or several large firms with numerous smaller suppliers and service firms	Cooperation between large firms and smaller suppliers on terms of the large firms (hub firms)	Dependent on growth prospects of large
Satellite Platforms	Medium and large-sized branch plants	Minimum inter-firm trade and networking	Dependent on ability to recruit and retain branch plants
State-anchored	Large public or non-profit entity and related supplying and service firms	Restricted to purchase-sale relationship between public entity and suppliers	Dependent on region's ability to expand political support for public facility

Source: Markusen (1996)



Source: Markusen (1996)

Figure 1. Typology of Industry Clusters

Regardless of the types of clusters that apply on certain regions, generally these clusters can be found nearby villages and small towns instead of large urban centres. By maintaining input-output production process closely to their locally natural setting, these clusters can bring together the advancement of clustering activities as well as social capital institutionalisation. This requires appropriate spatial structure to facilitate the increase of social networks as the economic production grows. As exemplified by clustering patterns in Indonesia (Table 2), most clusters emanate from and foster traditional social networks.

This will imply on the recreation of existing urban systems which can accommodate the special conditions of clusters, where more than 90% clusters locate adjacent to villages and small towns comprising small and medium industries in majority (Tambunan, 2000). However, the existing urban system in Indonesia cannot support the evolutionary growth of clusters, and in contrast, it promotes urban-biased development which is more beneficial to the development of large urban manufacturing industries. As a result, up to now the cluster development remains retarded, isolating clusters to their origins.

Table 2. Different Types of Clusters in Indonesia

Type	Characteristics
Artisanal	<ul style="list-style-type: none"> ▪ Mainly micro enterprises, low productivity and wage ▪ Stagnated (no market expansion), increased investment and production, improved production methods and management, organisation and production development, local market (low-income consumers) oriented, many producers are illiterate and passive in marketing (producers have no idea about their market) ▪ The role of middlemen or traders is dominant (producers are fully dependent on middlemen or traders for marketing) ▪ Low degree of inter-firm cooperation and specialisation (no vertical cooperation among enterprises) ▪ No external networks with supporting organisations
Active	<ul style="list-style-type: none"> ▪ Use higher skilled workers and better technology ▪ Supply national and export markets ▪ Active in marketing ▪ The degree of internal as well as external networks is high
Dynamic	<ul style="list-style-type: none"> ▪ Trade networks overseas are extensive ▪ Internal heterogeneity within clusters in terms of size, technology and served market is more pronounced ▪ Leading/pioneering firms play a decisive role
Advanced	<ul style="list-style-type: none"> ▪ The degree of inter-firm specialisation and cooperation is high ▪ Business networks are well-developed between enterprises and the suppliers of raw materials, components, equipment and other inputs, business services providers, traders, distributors and banks ▪ Good cooperation with local, regional or even national government, as well as with specialised training and research institutions (universities) ▪ Many firms are export-oriented (mainly through trading houses or exporting companies)

Source: Sandee and ter Wingel (2002) in Tambunan (2008)

The Urban System Pattern in Question

In this section I would like to analyse the existing urban system pattern in Indonesia with reference to Central Java region. Theoretically, urban system facilitates the transmissions of production factors, political influences, social relations, knowledge and innovation, and communication and technology across regions. Sometimes urban system can also be an interface of traditions and beliefs exchange. All of these things are made up in order to achieve certain goals of both local/regional and national developments (Simmons, 1978). A well-articulated urban system is expected to ensure mutually beneficial interconnections between large cities and smaller towns and between urban and rural regions to promote development. This can be observed through the fulfilment of sufficient urban functions in interrelated nodes reflected by the performance of required facilities and infrastructures of development (Rondinelli, 1983; UNCHS, 1985). Therefore, the redistribution of unequal resources belongings can be attained and interregional cooperation can be organised to overcome a variety of institutional obstacles resulting from both market and government failures (Pred, 1974). This means that on the one hand a well-articulated urban system lubricates the transfers of economic benefits useful to the improvements of capacity building of local entities. On the other hand, this system may strengthen interregional flows, which in turn will lead to the recreation of regional or national competitiveness.

In reality, the performance of existing urban system in Indonesia still heavily relies on the dominance of large urban centres, reflected on the fact that only a few large urban centres, usually metropolitans (more than one million people) or larger cities, outlying at the top of urban hierarchy while a plenty of small towns (20,000 – 200,000 people) or rural centres (less than 20,000 people) are widely dispersed across regions.

These primary urban centres are capital cities or prominent political or economic urban centres which function as the core for entire regions. Within these centres capital accumulation and political influences are highly concentrated, in which the decision making of resources utilisation and social welfare redistribution is determined. In contrast, small towns and rural regions are perceived as peripheral regions, which primarily function as the major sources of production inputs for larger cities and environment preservation.

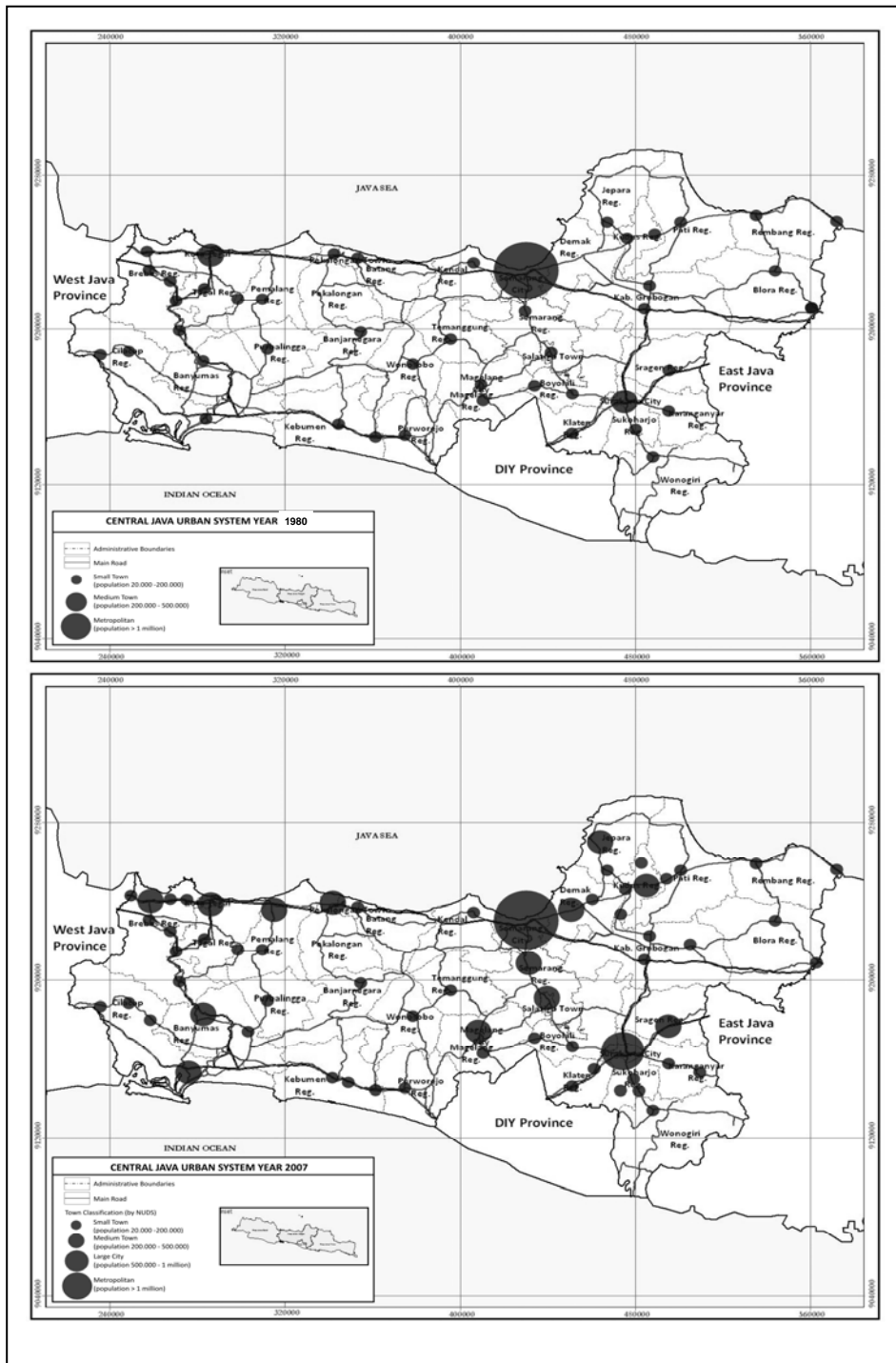
However, the prolonged dominance of large cities in redirecting the functioning of urban system in fact only creates broader regional disparity instead of promoting local developments. This occurs mainly because of the absence or little support of secondary cities to intermediate connections between large cities and small towns and rural regions, a situation which is known as primate city distribution pattern. Regarding this pattern the large cities will experience both advantages and disadvantages of polarised resources to these cities. The advantages are obtained from the increasing returns of scale resulted from intensified physical capital inflows, skilled migrant workers, knowledge and innovation, and technology transfers. In turn, this situation will lead to further developments of basic services required to support the growth of urban sectors. On the other hand, the greater improvements in living standards will increase burdens to urban services development. The over-urbanisation phenomenon in these large cities may cause the excessive demand on urban housings and other basic services, acute traffic congestion, pollution, increasing educated unemployment rate and threatening urban crimes. On the contrary, small towns and rural regions are facing deepened backwardness due to the over-exploitation of local resources by the large cities. Further, the development projects for agriculture and rural sectors are neglected following the greater emphasis of development to urban sectors.

In Central Java region the existing urban system also presents primate city distribution. For nearly thirty years, Semarang as the provincial capital has sustained its dominance on respective urban system (see Figure 2). Since 1980 Semarang has performed as the largest urban centre of the region with population size of more than one million people, followed by the second largest city of Surakarta (Solo) with about 500,000 people. Compared to Surakarta, the urban size of Semarang has increased 30% given period of time while Surakarta is less than 20%. In the meantime, a subset of third largest cities comprising medium towns with 200,000 to 500,000 people is only performed by seven towns, i.e. Tegal, Purwokerto, Cilacap, Pekalongan, Magelang, Kudus and Salatiga. These towns, however, except Cilacap locate in two major development belts of the region: the northern coast development corridor and Joglosemar (Jogja-Solo-Semarang) growth triangle. Unlike those two largest cities, the growth of urban size in these towns varies ranging from declining rate of 4-5% (Magelang and Cilacap) to sharp increase exceeding 100% (Pekalongan and Salatiga). The remaining towns of Kudus, Tegal and Purwokerto have experienced increasing growth rates of 6%, 18% and 27% consecutively.

Interestingly, the major sources of urbanisation trend are continuously based on the urban growth of Semarang, Surakarta and Tegal. During 1980-2007 these urban centres could create intensified urbanisation and the spread of urbanisation to adjacent peripheral regions (see Figure 3). This means that these centres remained influential as the major sources of both centrifugal and centripetal urbanisation, which is associated with their locational advantages in primary development belts and frontier regions. However, the pace of urbanisation in Surakarta and Tegal was lagged behind Semarang growth rate, so the increasing urban size was not large enough to reduce polarisation effects to Semarang.

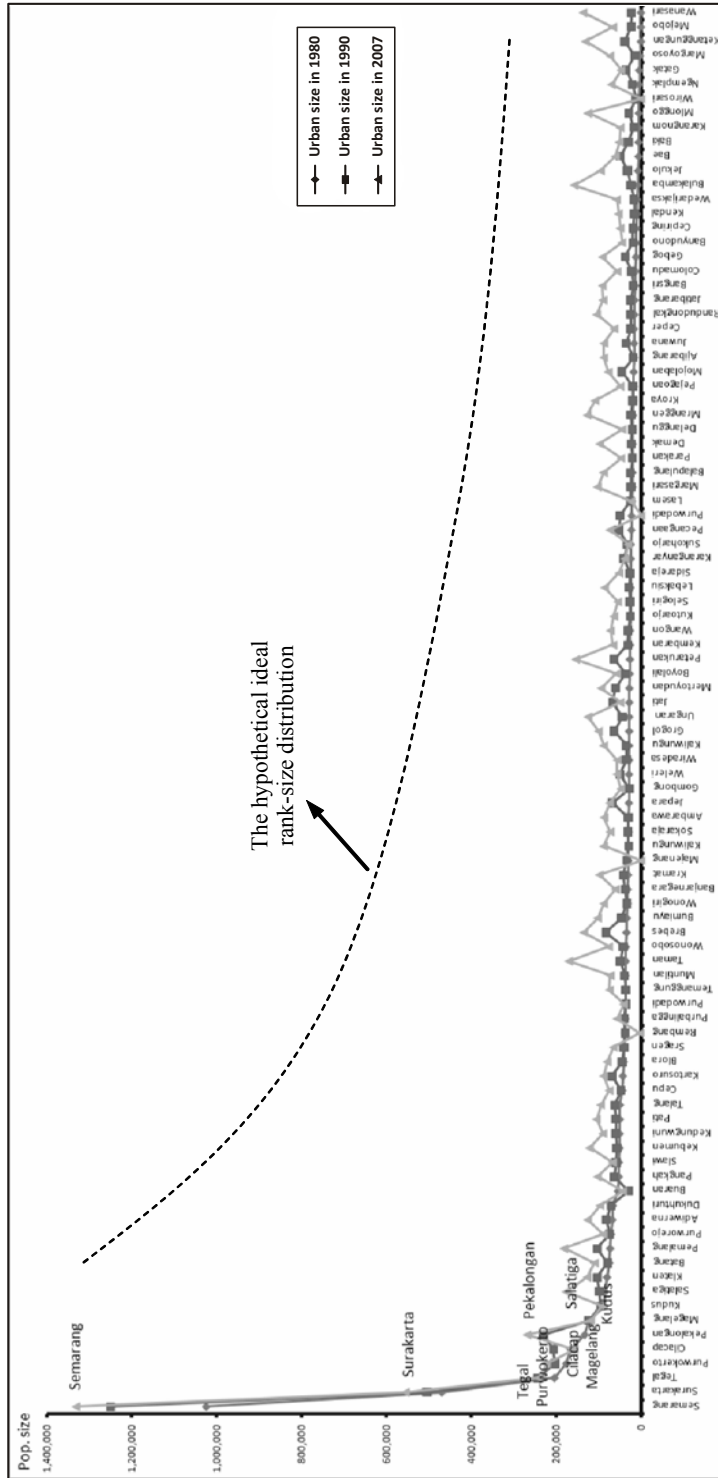
Furthermore, as Semarang has been more dominating in the existing urban system, there was a plenty of new small and medium towns emerged during the given period. Although their presence was still adjacent to three major urban centres, in some regions such as Kudus, Pati and Jepara (north-eastern region) and Banyumas and Cilacap (south-western region) there were some new small and medium towns that had grown. This trend gives a signal for altering the direction of urban development to not only focusing on northern coast development corridor and Joglosemar growth triangle. The emergence of these new towns is indeed promising for encouraging local development. The reasons are *firstly*, they could theoretically provide urban services required to support agriculture and rural sectors development surrounding these urban centres, and *secondly*, they might play a key role for countering urbanisation process directly to the large urban centres like Semarang, Surakarta and Tegal in particular. Nevertheless, we must be aware of that there is a tendency of extended urbanisation outwards from these three major centres.

As can be seen in Figure 4, there is an expansion of built-up areas indicating the growth of urban regions from centre to peripheral regions. Some studies have concluded urban sprawl phenomena as one of main causes, explaining the rise of randomly dispersed new urban settlements. Other studies have suggested the contribution of improved facilities and infrastructures alongside the regional main roads and uncontrolled land-use conversions that accelerate the expansion of urban areas. Regardless of the causing factors which predominantly determines the expansion process, sooner or later such circumstance is likely to create urban conurbation at least stretched out from north to south axis joining Jepara, Kudus, Semarang, Grobogan, Salatiga and Surakarta regions, and west-to-east axis joining Brebes, Tegal, Pemalang, Pekalongan and Batang regions.



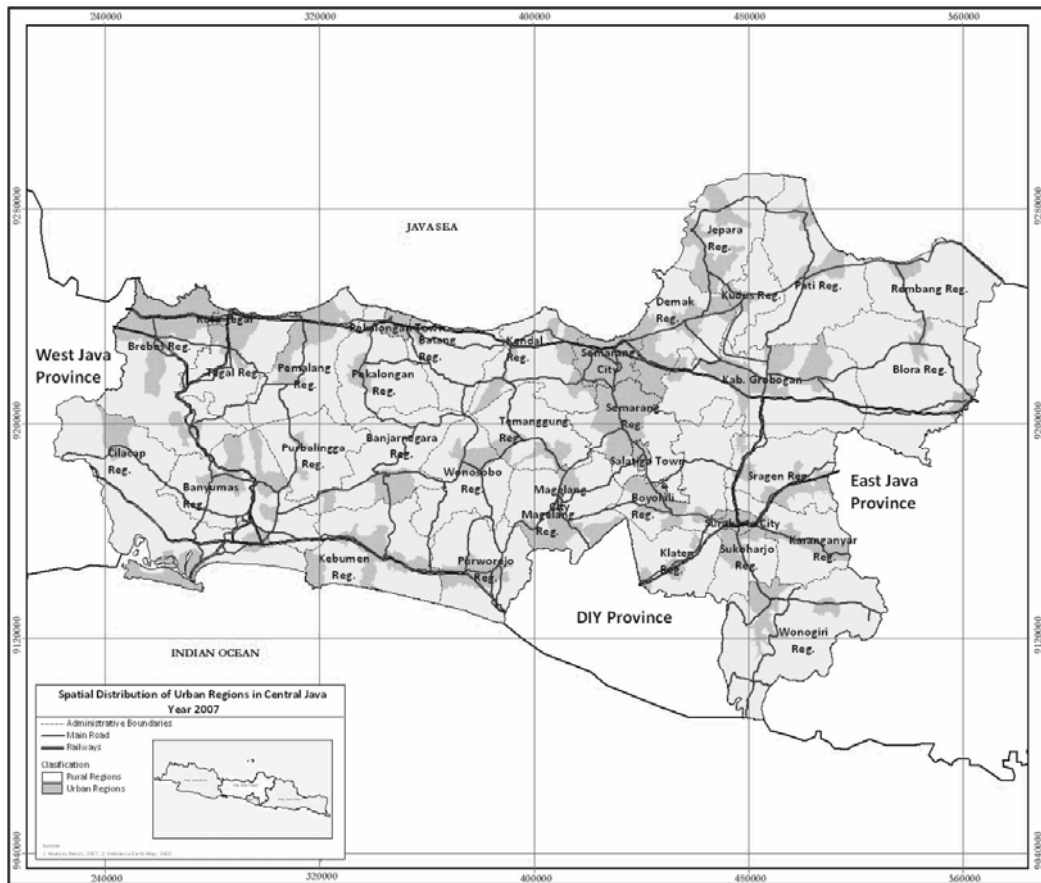
Source: Author's modelling (2009)

Figure 2. Primate City Distribution of Urban System in Central Java



Source: Author's modelling (2009)

Figure 3. Central Java Urban System 1980-2007



Source: Author's Modelling (2009)

Figure 4. Spatial Distribution of Urban Regions in Central Java Year 2007

Such urbanisation trend in fact plays like a double-edged sword for promoting local development. The more urbanised area is likely to bring improvements in urban facilities and infrastructures towards small towns and rural regions. The process may create greater opportunities to agriculture and rural sectors to get connected with broader market access following the increasing supply flows of production factors and government assistance to reach local producers. In this sense, urbanisation can carry out accelerated development across the region, resulted from the advancement of road access, public transportation, telecommunication and technology necessary

to stimulate rural development. In contrast, the urbanisation process also brings new threats for local development. Since the process is externally induced by expansive growth of large urban centres rather than formed by endogenous rural-to-urban transformation, the improved condition of basic services transmitted to peripheral regions could not be relied to facilitate local development.

There are some issues regarding such parasitic process: *first*, that the pushing factor of extended urbanisation is the greater demand for urban settlements which encourages the outflows of urban dwellers due to the

increasing inconvenient living quality in densely populated urban centres; *second*, this process leads to the increasing land-use conversion in peripheral regions from agriculture fields to built-up areas, a process which reduces the productivity levels of agriculture and rural sectors; *third*, that the transmission of improved basic services is much more beneficial to further growth of urban sectors, indicated by relative increasing growth of (retail) trade and service sectors contrasted to declining agriculture sector contribution to Gross Domestic Product (GDP); *fourth*, that the process cannot create proper structural transformation for inducing local development, indicated by retarded rural industrialisation in peripheral regions; and *fifth*, that the emerging urban services in small towns and rural regions tend to accelerate greater consumption and commercialisation of urban commodities rather than providing support to increase the value added of agriculture and rural products, so this process leads to the malfunctioning of small towns to foster local development.

Such circumstance is also daunting for industrial cluster development in particular. The mismatch of provided urban facilities and infrastructures with those required to assist cluster development raises problems to industrial clusters. These problems may include:

- 1) *The absence of local markets for material supplies, intermediate goods, tools and machineries.*

As mentioned earlier, the emerging urban regions in small towns and rural regions tend to increase consumption levels of urban products. This is indicated by the new establishments of retail stores, kiosks, street hawkers, shopping malls and commercial properties alongside the expanded urban regions. Even though these facilities to some extent are beneficial to local residents, ironically their existence cannot contribute to promoting agriculture sector

and rural industries. As a result, the procurement of these inputs is still highly depending on the role of 'traditional' suppliers, intermediate traders (brokers) and (large) export firms. This will only create intensified inter-firm vertical dependencies instead of encouraging industry self-reliance.

- 2) *The absence of a pool of expertise and research and development institutions.*

Clusters in most peripheral regions are facing prolonged difficulties in collecting new knowledge and technology, including business and marketing strategies, necessary to upgrade their internal capacity. Usually cluster communities develop their own expertise and build methodologies and machineries suitable to fulfil the ongoing production demand. Basically they are adaptive to discover appropriate technology and innovation in response to market change. At cluster level, this process is easily shared and accumulated within clusters, which in turn will create so-called local genius. However, such local initiatives sometimes cannot meet market expectations, mainly in the case of international standards of commodities and production process and intellectual property rights. On one hand, these clusters tend to ignore these requirements because they are not applicable in the prevailing practices of social networks. On the other hand, the access to research and development institutions is quite far from clusters location, therefore any technical assistance from related government agencies, universities, research institutions or non-governmental organisations usually lasts temporarily.

- 3) *The lack of shared workshops, storage facilities and trading houses.*

Most clusters in Central Java are formed by small and medium industries, and in

some regions also involve cottage industries (microenterprises). The common practices of clustering rely on subcontracting mechanism, through which smaller firms getting job order from large firms, exporters or intermediate traders. These firms then produce required products in their own workshops or houses. However, due to limited spaces of production they have, their production capacity relatively low resulting from their inability to produce bigger size or more complicated products. In addition, generally they also do not have proper storage facilities so that their products will be immediately picked up by the job givers. In this sense, smaller firms are likely to be trapped into never-ending subcontracting patronage that inhibits their business opportunities to step up higher and also be deprived from market channels. The latter is manifested in recent conditions faced by batik clusters of Pekalongan, for instance, where their original products are re-labelled with higher prices, mostly by those large firms who already have good brand image to be marketed both in domestic and export markets.

4) *The lack provisions of rural roads, telecommunication and energy.*

Since the past a large number of projects aimed at improving the provision of rural infrastructures have been increasing. However, their support is insufficient to meet cluster's special needs. For instance, many road improvement projects only cover up to rural centres, usually *Ibukota Kecamatan* (Subdistrict Capitals), and do not consider the minimum road width requirements that allow big-sized vehicles to enter to the centre of clusters. In the case of copper industry in Tumang Village (Boyolali Regency) and wooden furniture industry in Tahunan Subdistrict (Jepara Regency) the rural roads provided are too

narrow for 12-feet container trucks to get entered directly to furniture producers. Most large firms then have relocated their exhibition stores nearby main roads or picking up their products frequently from their workshops inside village settlements by using smaller vehicles. In some traditional food industries they are facing the problems of energy in relation to production process. Sometimes we can find that these industries are still using firewood instead of other forms of energy to support their businesses. In some cases these problems relate to the availability of electricity transmission and supply of alternative energy, but others relate to price affordability.

After all, we may obtain bad impressions explaining the negative impacts of extended urbanisation. This is partly true in terms of the failures of the existing urban system to ensure the enlarging access of industrial clusters to increase value chains. Furthermore, physical approaches that the government use in providing facilities and infrastructures actually cannot resolve the shortage of required demand by clusters. It should be provisions by quality not by numbers, which may recognise the nature of social networks of industrial clusters. The commonality and complementarity principles of the use of resources should be taken into account if basic services providers intend to support cluster development. If such requirement is neglected, this condition is likely to create additional costs for clusters to sustain their businesses. For instance, many domestic furniture producers are complaining that their products are less competitive than those imported products due to the additional transport costs they should bear along production process. However, some clusters on the contrary are obtaining positive externalities of existing urban system. The extended urban regions somehow contribute to the enlargement of domestic market to certain products. For instance, in the case of batik

cluster in Pekalongan currently there are some special batik marketplaces built alongside the pathways of extended urbanisation. These marketplaces locate just off the main road of northern coast development corridor, which are more attractive and accessible to potential buyers outside the region.

4. The Search for Regional Network Governance

Regarding abovementioned findings the limited support of existing urban system in Central Java region has worsened the internal capacity of respective clusters to overcome the sustained problems of unequal distribution of resources. Recently, clusters must not only deal with classical issues ranging from the shortage of production inputs to the limited market penetration and distortive policies that have structurally marginalised cluster development for long time, but also the effects of over-urbanisation outwards peripheral regions. The inability of emerging small and medium towns to provide urban services suitable to rural cluster development has weakened rather than encouraged the improvement of cluster capacity to grow more independently. Instead, the ongoing urbanisation process has somehow contributed to the isolation of respective clusters to their localities. As a result, these clusters must burden additional costs resulting from intensified difficulties associated with urbanisation effects such as limited access to alternative material inputs, insufficient support of basic services, and traffic congestion.

In response to such circumstance, the direction of cluster development should not rely on government initiatives or private sectors only. With respect to the potentials of clusters in fostering social networks and trust-based relationship within input-output production chains, so regional network governance concept might be applied to tackle these tensions. The concept definition refers to the redistribution of cumulative resources

owned by related stakeholders through the creation of collaboration between government, private sectors and civil society focusing on the search for appropriate problem solutions. This concept suggests direct involvement of related stakeholders in identifying shared problems and formulating policies and actions to tackle them. This concept emerges from the reactions over the failures of government policies to overcome particular problems, either related to policy incoherence to special needs of targeted groups or the effectiveness of policy implementation. Actually, policy process constitutes the tensions between bureaucratic procedures and policy pragmatism in nature. On one hand, government officials keep asserting the obedience over persisting rules and regulations from policy consumers. On the other hand, there is a number policy beneficiaries and interest groups which are competing each other to forward their desired goals (Meyer-Stamer, 2004). By adopting the concept of regional network governance the greater cooperation between related stakeholders can be shaped and maintained to find out desired solutions. In addition, this approach would be useful to relaxing the rigidity of government bureaucracies and conversely increasing government flexibility and responsiveness to deal with emerging problems (Bogason & Musso, 2006).

In the context of cluster development, the adoption of regional network governance may be useful to promoting more friendly environment for intensified cooperation within cluster and between cluster members, government officials and nongovernmental actors. The application of regional network governance is likely to reduce the differences between local regions, especially in terms of competitive prices of production factors, public service treatment, and other kinds of nontariff barriers. With regard to the services of existing urban system, the concept adoption may help strengthening the capacity of local

governments to provide shared facilities and infrastructures required to promote cluster development. For instance, some local governments may collaborate in establishing representative trading houses of certain products which are produced by some clusters in different regions. Or, combined cooperation between governments and private sectors may build some marketplaces for specified materials in certain locations to facilitate respective clusters having regular access to material supplies. The manifestation of regional network governance like this in short-term is likely to assist respective clusters in dealing with the problems associated with value chain process. In the long-term this approach may strengthen inter-firm linkages and cooperation useful to create cluster self-reliance and to increase both cluster and regional competitiveness.

However, to make concept adoption successful we had better be aware of the pitfalls of primordial ties which are residing on both cluster and government institutions. In most developing countries, primordial ties are intertwined with social structure creating hierarchical power relations in many facets of development activities. The presence of asymmetrical power structure and relations due to the exercise of these two factors is somewhat problematic for ensuring a fairly redistribution of resources between involved stakeholders and proper participation of involved stakeholders in decision making. Bogason & Musso (2006) has notified that the concept adoption may raise the issues of equity, accountability and legitimacy. The first issue may emerge when some actors are being discriminated in policy making and resources redistribution. The second relates to the assessment of regional network governance practices in compliance with a set of performance indicators, mainly for public institutions. The last issue relates to public acceptance over the practices of regional network governance, especially associated

with clear separation between public administration routine and intensified facilitation of government officials in promoting cluster development. The ignorance over such hidden problems may undermine initial efforts to realise this concept. If not recognised and anticipated since the beginning, the power abuse may appear increasingly to hijack the concept adoption for the sake of certain interest groups (Meyer-Stamer & Harnes-Liedtke, 2005). Therefore, the application of regional network governance only create additional institutional obstacles for cluster development.

CONCLUSION

Since the greater attention to cluster development has come to public policy arena, there is a latent conflict inherently rests on the nature of industrial clusters. The strong appearance of social networks and trust-based relationship in shaping the economics of clustering creates long-lasting disputes in determining the significance of respective clusters in promoting local development. In conceptual terrain, some people may criticise that clusters, especially in developing countries, tend to create economic disorder following the disobedience of cluster members to adapt the practices of conventional (capitalist) economy in forms of appreciation to intellectual property rights and monetary cost-benefit transactions, for instance. In practical terrain, industrial clustering is often disregarded due to difficulties in accommodating intensified social capital inside clusters into decisive policy rationalism. Despite the presence of problematic measurement to outweigh the contribution of both tangible and intangible outcomes of clustering to society, the attention would be better to redirect to the search for appropriate regional network governance to reconcile issues emanating from industrial clusters and urban system development. In line with sustaining debates on the demand for promoting cluster development

into policy process, this effort might be useful to creating better platform of inter-firm linkages and broader cooperation between governments, private sectors and nongovernmental actors required to increase the value added of local products and regional competitiveness.

REFERENCES

- Altenburg, T. and J. Meyer-Stamer., 1999. 'How to Promote Clusters: Policy Experiences From Latin America'. *World Development*, 27 (9), 1693-1713.
- Bathelt, H., A. Malmberg and P. Maskell., 2004. 'Clusters and Knowledge: Local Buzz, Global Pipelines and the Process of Knowledge Creation'. *Progress in Human Geography*, 28 (1), 31-56.
- Bogason, P. and J.A. Musso, 2006. 'The Democratic Prospects of Network Governance'. *American Review of Public Administration*, 36 (1), 3-18.
- Brenner, T. and A. Gildner, 2006. 'The Long-Term Implications of Local Industrial Clusters'. *European Planning Studies*, 14 (9), 1315-1328.
- Dawkins, C.J., 2003. 'Regional Development Theory: Conceptual Foundations, Classic Works, and Recent Developments'. *Journal of Planning Literature*, 18 (2), 131-172.
- Gordon, I.R. and P. McCann, 2000. 'Industrial Clusters: Complexes, Agglomeration and/or Social Networks?'. *Urban Studies*, 37 (3), 513-532.
- Markusen, A., 1996. 'Sticky Places in Slippery Space: A Typology of Industrial Districts'. *Economic Geography*, 72 (3), 293-313.
- Maskell, P. and A. Malmberg, 1999. 'The Competitiveness of Firms and Regions: 'Ubiquitification' and The Importance of Localized Learning'. *European Urban and Regional Studies*, 6 (1), 9-25.
- Meyer-Stamer, J., 2004. "Governance and territorial development: policy, politics and polity in local economic development". *Mesopartner Working Paper 07/2004*. Duisburg: EuroMedSys.
- Meyer-Stamer, J. and U. Harmes-Liedtke, 2005. "How to promote clusters". *Mesopartner Working Paper 08/2005*. Duisburg: Inter-American Development Bank.
- Pred, A.R., 1974. "Industry, information and city-system interdependencies", in F.E.I. Hamilton, eds., *Spatial Perspectives on Industrial Organization and Decision Making*. London: John Wiley & Sons Ltd., 105-131.
- Rondinelli, D.A., 1983. *Secondary Cities in Developing Countries: Policies for Diffusing Urbanization*. Beverly Hills: Sage Publications.
- Schmitz, H. and K. Nadvi, 1999. "Clustering and industrialization: introduction". *World Development* 27 (9): 1503-1514.
- Simmons, J.W., 1978. "The organization of the urban system", in L.S. Bourne and J.W. Simmons, eds., *Systems of Cities: Readings on Structure, Growth, and the Policy*. New York: Oxford University Press, 61-69.
- Tambunan, T., 2008. 'Development of Rural Manufacturing SME Clusters in a Developing Country: the Indonesian Case'. *Journal of Rural Development*, 31 (2), 123-146.
- United Nations Centre for Human Settlements, 1985. *The Role of Small and Intermediate Settlements in National Development*. Nairobi: United Nations Centre for Human Settlements.
- Widyaningrum, N., R. Dewayanti, E.E. Chotim, and I. Sadoko, 2003. *Pola-pola Eksploitasi terhadap Usaha Kecil (The Exploitative Patterns on Small Businesses)*. Bandung: Yayasan AKATIGA.