

Challenges concerning Industrial Cluster Building in Jordan

Nasim Barham

The establishment of Industrial clusters is considered a strategy for initiating regional development and enhancing enterprise competitiveness. They enable knowledge transfer, networking, cooperation, competition and enhance productivity. Clusters combine the interaction between private firms of producer and provider with public organizations and research institutions. However, since the 1980s, the establishment of industrial estates in Jordan did not lead to effective interaction between the firms even by inter-related industries. The external economies generated by industrial agglomeration are still the main factor steering the strategy of industrialization. This strategy reached the stage of lock-in despite the worldwide enormous changes in industrial paradigms. The industrial, as well as the social structure, presented themselves as the main obstacles hindering the transition to competitive industry and to establishment of a successful industrial cluster. The following article discusses the main results of the field research conducted during the first half of 2011. The cluster analysis applied is based on individual enterprises located in the King Abdullah Industrial Estate, east of the capital city of Amman.

Since the 1990s, industrial clusters have been considered as a development concept and even emerged as a development pole (Blien and Maier, 2008: 8). Clusters reflect a cooperated and coincided firms' effort within a value chain of a product to increase productivity and competitiveness. Clusters lead to lower production costs, particularly in terms of transaction costs.

The borders of clusters are not well defined. It could either be an industrial location (industrial estate) or a region. The actors related to a given cluster define the borders in accordance with the distance and time they aim to diminish or overcome. Distance counts in decisions of actors due to its importance in enhancing adequate knowledge and information exchange and cooperation between them.

The establishment of industrial agglomeration is based on so-called "hard factors" i.e. high fixed costs (Krugman, 1991) or location of natural resources. Generally, physical factors prevail in explaining the emergence of industrial concentration. Actors seek to invest in locations, where transport and labor costs are at a minimum.

Storper (1997) stressed the role of the human factor in the foundation of industrial agglomerations. For him clusters are "human constructs" that emerged through interaction between the actors on the one side and institutions on the other. Therefore, the analysis of the social structure is of relevance to understand both the emergence as well as the development of clusters, which could be considered a social-network model, also described as the "club model" (Karlsson, 2008:2). Porter, the initiator of cluster research, highlighted the proximity of firms, which are integrated in a product value chain. Clusters are connected to economic and financial institutions and suppliers. As per Porter, the industrial milieu is crucial to clusters. The success of firms in clusters depends in this regard on external partners, especially when they have uneven knowledge (Ketels, 2008). Furthermore, the type of the firm plays a crucial role. Entrepreneurial firms act as leading ones and could be seen as a prerequisite for cluster building. Such firms could act as a flagship for those employees who leave the mother company to establish their own enterprises. Surely, the relationship between the mother company and the newcomers could be either a "parent-progeny relationship" with a parenting process (Ferreira et al, 2009: 92 ff) and lead to cluster-prone interaction, or, as in many cases, to a hostile relationship undermining any further cooperation.

Torre (2008: 32) referred the success of an industrial cluster to aspects of knowledge economy (frequently also referred to as "new economy"), network-

ing on different levels, vertical integration and coincidence with the globalization process with its tough competitiveness.

As mentioned earlier, physical proximity counts, especially when it is combined with cultural and institutional assets. Cooperation, integration and networking are based mainly on trust, which is crucial in building and developing industrial clusters.

Clusters do not always trigger development. Networks could possibly face the process of lock-in, wherein the members stick to their standard and reject more advanced innovations and hinder recruiting new members. Besides, some network members tend to be free riders. In other words, industrial clusters are similar to a product cycle where economic development could decline, too.

The Spatial Distribution of Industrial Estates in Jordan

The industrialization of Jordan started in the second half of the last century and followed the strategy of “inward orientation” to substitute the import of products (Import substituting industrialization: ISI). Small-scale private industries (employing less than 5 workers) prevailed. Moreover, the dynamics of the private sector were mainly confined to larger cities such as Amman and Zarka. Large industries were factor-driven based on natural resources, mainly phosphate and potash, and were state-owned. Despite incentives offered to small enterprises, technological innovation remained relatively meager. The pharmaceutical industry was an exception both in size and development.

In 1980, Jordan applied the concept of “Industrial Estate building” on “external economies” to support small and medium scale enterprises in the manufacturing sector, regardless of regional aspects and production factors. Industrial estates have been located in most Jordanian governorates as a result of political rather than economic considerations. King Abdullah Industrial Estate with its 352 enterprises is the largest industrial estate in Jordan, comprising 65.5% of all industrial estates’ enterprises in the kingdom. It is located south east of Amman.

The main question posed in this article is: is there a tendency towards the building of an industrial cluster in the above-mentioned estate after more than 30 years of its establishment?

Questionnaires and interviews were carried out in the engineering industries (46) in the first half of the year 2011 to measure the level of integration, networking and knowledge transfer.

Role of formal institutions in cluster building

The Ministry of Industry and Trade is the main formal institution to organize the industrial sector in the country. Since the industrialization strategy that prevailed from the 1950s to the end of 1980s was the protection of national industries (Import substitution), small and medium enterprises (SMEs) grew horizontally. Their technological level and degree of competitiveness were limited. Learning by doing and imitation are the main factors of survival as research on development is non-existent. As I have described previously (Barham, 1993), small and medium scale industries in Jordan can be seen as “catalogue industries” in that they copy production design from international companies’ catalogs rather than producing ideas of their own.

The majority of the enterprises (92%) employ less than 10 people. They are family businesses and sustain a livelihood survival function. The medium and large industries (6.7% and 1.3% respectively) start up by the last stage of the product cycle, namely standardization, where research and development is only slightly applied. Medium and large industries provide input components for other industries (forward linkages), build the main part of industrial export goods, alongside covering the needs of the Jordanian market.

The recently released strategy of the Ministry of Industry & Trade (2010 – 2014) does not include the policy of cluster establishment (Ministry of Industry and Trade, 2010). Rather, the report focuses on two aspects; the first one is traditional and stresses the need to generate jobs, enhance exports, invite more foreign investors, protect the environment and alike. The second aspect could be described as “rational” or “hybrid”, where improving or adjusting the industrial production is supposed to create forward or backward linkages. Yet, this procedure seems to be lacking a consideration of spatial dimensions needed for close cooperation and exchange of knowledge.

Furthermore, discussions with the key persons in the “Jordan Industrial Estate Corporation (JIEC)” revealed that the concept of “cluster” is not on their agenda. Instead, equal or balanced distribution of industrial estates to all governorates of the country (irrespective of regional potential) is applied.

The shift of the industrialization policy from inward to outward orientation animated the Ministry of Industry to search for new markets by joining the World Trade Organization and signing a large number of treaties with European and Arab Countries. Indeed, the export of industrial products increased since then, yet efforts to establish industrial clusters in order to improve productivity and competitiveness remained negligible.

Even the establishment of the so-called “Qualifying Industrial Zones” as an instrument in support of the peace treaty between Israel and Jordan, signed in 1994, by enhancing joint ventures and cooperation in industrial production

(mainly clothes) to ease free export in the USA, failed to construct industrial clusters.

What is noteworthy is the effort of the Ministry of Industry and Trade with support of European aid programs to establish industrial networking and cooperation without clusters. The results are promising but are dependent on continuous foreign aid due to transport and transaction costs.

Industrial actors in the King Abdullah Industrial Estate

Similar to the efforts of the Jordanian Ministry of Industry and Trade in 1990, the owners of the industrial enterprises (mostly managers) established the "Jordan Investors Association" that includes members from within and outside the Industrial Estate. The association negotiates the estate managers' issues regarding rent and cost of services. It carries out bargaining with the government to ease the red-tape procedures for start-ups, customs, import, export and alike. Yet, constructing networks to improve the members' industrial products, building a comprehensive value chain or gaining advanced information on marketing and technology are not part of their agenda.

To understand the obstacles facing the establishment of industrial clusters in Jordan, two aspects are to be examined: the industrial structure and the social dimension.

The industrial structure

Most notable is the lack of the needed assets for cluster foundation, such as modern technology and research based industries. On the one hand, industrialists of the King Abdullah Estate attributed the lack of research and development units to the high costs and the effect of franchise businesses prevailing in some engineering enterprises. On the other hand, technological knowledge, for instance, is transferred easily from the mother firms in South Korea to Jordan. In this regard, dependency on imported technology is criticized due to the fact that it will continue to hinder the building of local capacities and the constructive use of national resources. Therefore, linkages in the engineering industries remain very rare. Out of the surveyed 46 enterprises, only 9 of them have interrelation with other firms in the estate. The examination of these linkages and relations reveals that they are limited to market relations. In other words, the collaboration excludes any essential steps and parts of the structure of value chains.

The lack of innovation lowers the competitiveness of the firms. Just three out of 46 enterprises are undergoing some improvements (import of new machines and/or shifting to new products).

The social dimension

An unfortunate consequence of a Rentier-state system and its dependency on and its grappling with foreign aid is reflected in the lack of trust in the behavior of the Jordanian society. Rentier states support the building of human capital yet neglect social capital. Therefore, civil societies, political parties, labor unions and alike are considered a factor of imbalance for the state's hegemony. Lack of trust has therefore become normalized and presents a grave dilemma hindering the establishment of larger companies. The issue of trust has proven itself to be limited to the parameters of personal relationships; therefore, most enterprises are small and family-owned businesses.

In King Abdullah Estate, for instance, coordination, cooperation and exchange of business information are at the minimum. 53% of the respondents declared that they did not discuss business issues amongst one another. 68% of enterprises in the surveyed sector do not produce any input components for others. Subcontracting is not considered a suitable option.

The consequences in terms of social capital and affairs are failed cooperation, mistrust and disintegration. Thus, building social capital could potentially reduce transaction costs and reduce business risk. For example, every enterprise in the estate possesses a maintenance department even though it would significantly reduce cost if one were shared. Moreover, the role of external economies is limited to infrastructure in the Jordanian case. Thus, 76 % of the managers of the surveyed enterprises pointed out that they would not lose anything if they were to relocate their businesses- the production costs would increase by merely 3–10 % (mainly for additional transport costs).

Furthermore, industrial entrepreneurs often refuse to deal with employees, who have left and established their own businesses.

Conclusion

Industrial clusters are considered a tool for sectoral and regional development. Joining clusters leads, *inter alia*, to creativity, increase of productivity, more competitiveness and cut of transaction costs. The benefit of clusters could be achieved in cooperation with advanced industries, a high level of innovation and a short product cycles. Such advanced industries are important to lead the process of cluster building. In addition, social assets such as trust, social capital and capability to act within networks (reducing opportunism) are prerequisites in establishing successful industrial clusters. Moreover, supportive public and private institutions (formal and informal), including state or regional bureaus,

research centers, suppliers etc. are necessary to enable the establishment and the sustainability of clusters.

In Jordan, the structure of the industry (scale and scope), the social structure and the needed institutions are not in unison with the requirements of a sustainable development process. This is why the “traditional” industrial estates did not turn into industrial clusters.

With European financial aid, the Ministry of Industry and Trade recently started to build production value chains outside these industrial estates irrespective of location. The results are promising, yet unsustainable. The whole process is dependent on foreign financial aid, which is under constant threat to dry out at any given time. Donors finance and supervise projects within short to medium periods as their priorities are project-bound and not sector oriented. Besides, the public incentive deals are signed with the enterprises individually and not collectively. Building long-standing networks among industrial actors with the involvement of research centers, financial institutions, marketing agencies and alike, appears to be a necessary step forward.

Literature

- Barham, N., (1993), *Producyzyklus und Industrieentwicklung am Beispiel Jordanien*. In: Ruppert, R. und Stork, K-L., (Eds.), *Festschrift fuer Wigand Ritter zum 60. Geburtstag*. Nuernberg.
- Bathelt, H. (2001), *Warum Paul Krugmans Geographical Economics keine neue Wirtschaftsgeographie ist!*, *Die Erde*, 132, 107 – 118.
- Bergman, E.M., (2008), *Cluster Life-Cycle: an Emerging Synthesis*. In: Karlsson, C. (Edt, *Handbook of Research on Cluster Theory*. Cheltenham, UK and Northampton, MA, USA.
- Blien, U. and Maier, G. (2008)(eds), *The Economic of Regional Clusters – Networks, Technology and Policy*. Massachusetts, USA.
- Blum, U. (2008), *Institutions and Clusters*. In: Karlsson, C. (Edt.) *Handbook of Research on Innovation and Clusters*. Cheltenham, UK.
- Cordon, I. R., and McCann, P. (2000), *Industrial Clusters: Complexes, Agglomeration and/or Social Networks*. *Urban Studies*, Vol. 37, No. 3, 513 – 532.
- Dohnhauser, S., (2006), *Aktivierung von Wachstumspotenzialen durch Netzwerke – Clusterbildung in Baden – Wuerttemberg*. *Statistische Monatsheft Baden – Wuerttemberg*, 4/2006.

- Ferreira, M. P. et al (2006), Evolution of Industry clusters through Spin-offs and the Role of Flagship Firms. In: Travers, A.T. and Teixeira (eds), *Multinationals, Clusters and Innovation . Does Public Policy Matter?*, New York.
- Jappe-Heinze, A., et al (2008), Clusterpolitik: Kriterien fuer die Evaluation von regionalen Clusterinitiativen. Arbeitspapiere Unternehmen und Region Nr. 3/2008, Karlsruhe.
- Karlsson, C. (Edt.) (2008), *Handbook of Research on Cluster Theory*. Cheltenham, UK and Northampton, MA, USA.
- Karlsson, C. (Edt.) (2008), *Handbook of Research on Innovation and Clusters – Cases and Policies*. Cheltenham, UK.
- Ketels, C.H.M.,(2008), Clusterpolitik fuer Deutschlands Wettbewerbsfaehigkeit. 1. Deutsche Clusterkonferenz, Leipzig.
- Ketels, C.H.M.,(2003), The Development of the Cluster Concept – Present Experiences and Further Developments. NRW conference on Clusters, Duisburg, Germany, 5 Dec 2003
- Krugman, P. (1991), Increasing Returns and Economic Geography, *Journal of Political Economy*, 1991, vol. 99, no. 3. P. 1 -17.
- Kuah,T.H.A., (2002), Cluster Theory and Practice: Advantage for small Business Locating in a Vibrant Cluster. *Journal of Research in Marketing and Entrepreneurship*, Vol. 4, Issue 3, P. 206 – 228.
- Mossig,I. (2006): Netzwerke der Kulturoekonomie – Lokale Knoten und globale Verflechtungen der Film- und Fernsehindustrie in Deutschland und den USA. Bielefeld.
- PORTER, M. (2001), Locations, Clusters and Company Strategy, in: Clark/Feldman/Gertler (Hrsg.): *The Oxford Handbook of Economic Geography*, New York, S. 253-274.
- Rosenfeld, S.A.,(2002), Just Clusters – Economic development strategies that reach more people and places. A Synthesis of Experience. Carrboro (North Carolina).
- Storper, M. (1997), *The Regional World*, New York.
- Torre, A. (2008), First steps towards a critical appraisal of clusters. In: Blien, U., and Maier G., (Eds.), *The Economics of Regional Clusters – Networks, Technology and Policy*. Cheltenham, UK , Northampton, MA,USA.