

Chapter 7

Local industrial clusters in Italy

Industrial clusters have traditionally played an important role in Italy's economic development, especially in the central and northern parts of the country, and today account for 30% of manufacturing exports. However, since the 1970s, they have been undergoing major transformations as a result of globalisation and growing competitive pressure from emerging economies. Some clusters (e.g. machine tools) have adjusted to these pressures better than others (e.g. textiles), principally by diversifying towards higher value-added market niches whilst building on their traditional competences (i.e. related-variety diversification). Rather than tying incentives to local networks, cluster policies should respond to the changing context by supporting product upgrading and sector diversification and international connections. Individual strategies should be developed tailored to the context of each cluster, recognising the differences among the various types of cluster actors.

Italian clusters today

A traditional strength of the Italian economy is local clusters of SMEs interacting in the same sectors

Italy's production system is characterised by the predominance of micro and small firms. However, looking at the production system of Italy only through the lens of business size classes can be misleading because it overlooks the key role of inter-firm collaboration. Industrial clusters are the most notable example of business collaboration.¹

Local clusters are a widespread phenomenon in Italy, especially in the centre and north of the country. Since the 1970s, they have frequently been cited as success stories in the academic debate and in public policy practices (e.g. Piore and Sabel, 1984; OECD, 2007). Clusters, also known as industrial districts (*distretti industriali*), are local concentrations of SMEs that adopt different specialisations within the various production phases of a particular industry. One of the features associated with their success has been intensive interactions among their constituent SMEs in areas including supply, marketing, innovation and labour use, supported by shared values and norms and local proximity.

In Italy, the most common definition of clusters, or more precisely industrial districts, is provided by the National Statistical Office, ISTAT.² This classifies a local labour market area as a cluster for purposes of national policy support if it satisfies three requirements: there should be a higher percentage of employees in manufacturing than workers in agriculture; there should be a specialisation in one particular manufacturing industry; and there should be a high concentration of workers in firms with less than 250 employees – all compared to the national average (ISTAT, 1997). Regional governments may choose to adopt other definitions of a cluster for their own support programmes, and the two sets of definitions now co-exist.

ISTAT currently identifies 156 clusters in the country, which tend to be concentrated in the economically-stronger regions: 42 are in the North East, 39 in the North West, 49 in the Centre, and 26 in the South. These clusters have been traditionally important contributors to Italy's international trade performance. In 2011, the exports of Italian cluster firms accounted for approximately 30% of total national manufacturing exports (Intesa Sanpaolo, 2013). Some clusters hold significant shares of world markets, as for example Sassuolo with 27% of world exports in ceramic tiles, Prato with 4% of the textile world market, and Arezzo with 3.5% of world jewellery sales (Fortis and Carminati, 2009). The main markets are in Europe, with Germany remaining the key destination. However, emerging economies, mainly China, Russia and Brazil, are increasingly important trade partners, absorbing 35% of the total cluster exports in 2012, compared to 26% in 2002 (Intesa Sanpaolo, 2013).

The number of clusters has fallen somewhat since 1991, when some 199 clusters were counted. Some vanished because the number of local labour markets, which underlie the definition of clusters, was reduced by ISTAT in order to increase their size. Others have died out because they no longer met the ISTAT classification criteria. In Padua (mechanical industry) and Udine (furniture), the weight of local business services increased due to the

growing importance of outsourcing from manufacturing firms to local service firms. These clusters no longer met the criteria of having a focus on manufacturing. In other clusters, the size of firms increased and thus the criterion of small firm predominance was no longer satisfied. Examples are Sassuolo (tiles) in Emilia Romagna, Florence (leather), Carrara and Pietrasanta (ornamental stones) in Tuscany, Castel Goffredo in Lombardy (tights), and Treviso in Veneto (textile and garments).

There has also been a more recent reduction in the number of firms, total employment and manufacturing employment in Italian clusters in the wake of the global economic crisis. From 2008 to 2010 (Table 7.1), the rate of growth in employment was -4.8% in industrial clusters and -3.2% in Italy as a whole, while for manufacturing employment the decrease was of -9.1% and -8.8% respectively.

Table 7.1. Key figures for Italian clusters, 1991-2010
Absolute and percentage values

	1991		2001		2008		2010	
	199 clusters	Italy	156 clusters	Italy	156 clusters	Italy	156 clusters	Italy
Number of firms	996,461 (25.7)*	3,872,441	1,180,042 (24.8)	4,755,636	1,205,957 (24.6)	4,908,312	1,186,439 (24.6)	4,828,686
Number of employees	5,213,090 (29.0)	17,976,421	4,929,721 (25.4)	19,410,556	4,672,417 (26.1)	17,875,280	4,448,047 (25.9)	17,305,734
Number of manufacturing employees	2,222,244 (42.5)	5,227,549	1,928,602 (39.3)	4,906,315	1,734,403 (39.5)	4,393,024	1,576,045 (39.3)	4,007,701
Resident population	13,719,657 (24.2)	56,778,031	12,591,475 (22.1)	56,995,764	13,393,260 (22.5)	59,619,290	13,723,235 (22.7)	60,340,328

* In parenthesis % over Italy

Source: OECD based on ISTAT (2012, 2013) Censuses of Industry and Services and Osservatorio Nazionale Distretti Italiani (2012), Terzo Rapporto Nazionale dell'Osservatorio sui Distretti, Federazione dei Distretti Italiani, Venice.

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More recent data, however, suggest that recovery is underway in Italian clusters, especially if export performance is taken as a benchmark. In 2012, the exports of Italian clusters increased by 2.1% on a yearly basis, while in the second quarter of 2013 the increase was by 3.9%, leading to a total volume of exports that for the first time exceeded the pre-crisis levels. The trade surplus generated by industrial clusters reached a new record of EUR 54.3 billion in 2013.

The “cluster effect” appears to be fading

A number of studies on industrial clusters in Italy have indicated the existence of a “cluster effect”, whereby access to knowledge, technology, skilled labour and specialised suppliers enable cluster firms to outperform non-cluster firms on measures such as returns on investment and equity, value added per worker, and propensity to product and process innovation (Fabiani et al., 2000; Cainelli and De Liso, 2005). More recent studies, however, suggest that the cluster-effect may be vanishing; there seems no longer to be a given significant difference between cluster and non-cluster firms in similar sectors and in similar geographical areas (Iuzzolino, 2008; Foresti et al., 2008).

Iuzzolino and Menon (2011) confirm the fading of the cluster effect for the period 1993-2008. Their analysis distinguishes between an agglomeration effect in terms of quality of infrastructures, business services and human capital, which is transversal to all firms in a cluster, and a specialisation effect in terms of knowledge spillovers, specialised labour pool, and high quality inputs, which are available to firms in the main sector of specialisation of the cluster. They find that the specialisation effect is negative over the whole period,

while the agglomeration advantage is slightly positive up to 2006, and then becomes zero or slightly negative. These results are consistent with consolidated evidence that local external economies matter most during the early stages of an industry development cycle (Audretsch and Feldmann, 1996).

In order to maintain their competitiveness, Italian clusters must respond to structural changes in the economy including globalisation and accelerated innovation. As Martin and Sunley (2011) summarise, clusters “come and go; they emerge, grow, may change in complexion and orientation, may undergo reinvention and transformation, and may eventually decline and even disappear. In short, they evolve.” (p. 1300). As a result, clusters that have been considered cutting edge in domestic and global competition may lose ground, whereas others may achieve continued growth thanks to the successful transformation of their incumbent firms or their networks into new organisational forms and new or extended specialisations.

While clusters have been part of the Italian economic landscape for many decades, the first national policy measure aimed at cluster development was only introduced as recently as 1997; the so-called *Legge Bersani* provided public funds matched by private sector investments for the improvement of telecommunications networks inside clusters. Alongside this programme, regional governments have offered various policy measures for networks of firms within clusters, such as consultancy support for technology development or exporting or investment in infrastructures and training programmes that are specific to the cluster needs. However, all these policies remain very locally oriented, focused on local network participants rather than external connections. It is important that these policies support the adaptation of clusters to new competitive conditions and recognise how they now function, rather than seeking to stick strictly to the original concept introduced by Becattini in the 1970s drawing from Marshall (Becattini, 1979).

Current challenges for Italian cluster policies

Policy must be flexible enough to respond to the diversity of firms within clusters

Italian cluster firms are highly heterogeneous in terms of their size and performance and capacities to adapt to competitive change (Bronzini and Piselli, 2013). Three broad company types can be distinguished; each with different policy needs.

A first group of cluster firms consists of small, less efficient enterprises (with a turnover of less than EUR 10 million), which currently seem to be more fragile and less capable of coping with competitive challenges than larger firms (Intesa Sanpaolo, 2013; Bronzini and Iachini, 2013). Many of these firms are unable to survive in the new highly-competitive global context, as is confirmed by their massive exit from the market. According to *Unioncamere* in 2012, 6 500 manufacturing companies were closed in Italy, with the North East, where many clusters are located, being the most affected area in the country (Movimprese, 2013). A recent analysis on the North Eastern clusters confirms that medium-large firms (with a turnover larger than EUR 50 million) are doing better than small firms (Iuzzolino and Menon, 2011). An illustrative example is the Montebelluna cluster (ski boots and sports shoes) where the share of sales from small firms in total cluster sales decreased from 22% to 12% in the period 1993-2008, whereas medium-sized and large companies were able to increase their share from 44% to 68%. The main emphasis of policy for these smaller firms in clusters is to rapidly increase their productivity.

The second group is that of medium-sized and large domestic firms, which have demonstrated a greater capacity to cope with competitive challenges given their dynamism, relatively strong international orientation and technological capabilities. Medium-sized firms also seem to better cope with financial bottlenecks and overcome credit limitations with other sources of financing (Accetturo et al., 2013). These firms have extended their commercial, supply and knowledge networks well beyond the cluster borders. Some have also joined business groups to grow, expand and diversify their activities (Cainelli et al. 2006, Randelli and Boschma, 2012). Others have merged with foreign multinational corporations. There is a risk that these firms progressively relocate their business activities away from the cluster. The key challenge for public policy with regard to this group is to maintain their local engagement with the cluster.

The third group involves leading cluster firms that consider the local supply chain as core to their business success. Such leading high-end local companies prefer local suppliers, because of the combination of better quality, lead times, and easy monitoring and control, which would not be guaranteed by distant suppliers (McCaffrey, 2013). To this end, leading firms invest in training and innovation and sometimes also set up training and research facilities that are accessible to their suppliers. Other common strategies for these firms are multi-year contracts and other incentives for local suppliers to follow the leading companies in their internationalisation strategies. Public policy interventions should therefore target both the leading firms and the firms in their local supply chains, supporting the knowledge flows between them, and assisting supplier firms to extend their networks outside the cluster, which is likely to enhance their performance up to final-firm level (Giunta et al., 2012).

Particular attention should be paid to promoting high-potential growth firms in clusters. This will require a process of identification of the most promising firms. The assignment of grants and incentives for innovation to high-potential cluster firms could follow a process of assessment of applications carried out by a committee of independent experts, who assign scores based on objective and measurable criteria. Box 7.1 provides an example of such an approach.

Product upgrading and sector diversification should be priorities

Since the 1990s exporting cluster firms have progressively upgraded the quality of their products, trying to avoid direct competition with products from emerging economies. In some cases, this strategy has proved successful. The Biella cluster in Piedmont is an example. After a severe crisis characterised by a large number of firm exits and the lack of (skilled) labour, several firms successfully took the lead in re-orienting their production towards very high quality, luxury fabrics (e.g. cashmere, alpaca and vicuna) and increasing their branding efforts. However, many other clusters are still under the competitive threat of emerging economy producers, especially from China, that are rapidly upgrading the quality of their exports (Giovanetti et al., 2013; Bugamelli et al., 2010). The prolonged presence of Italian firms in traditional sectors such as textiles, furniture or white goods will depend on the degree to which they can maintain their competitive edge with respect to these new market players, by specialising in high-end niche products.

As well as shifts to higher quality products, there has been a tendency for clusters to change their specialisations over time. From 1991 to 2001, 21 industrial clusters changed their industry specialisation, with one third of them moving into the mechanical engineering industry (Rabellotti et al, 2009). Examples are Schio and San Bonifacio in Veneto previously

Box 7.1. Italian good practice: Mechanisms for awarding R&D incentives, Emilia Romagna

Description of the approach

In 2003, the government of Emilia-Romagna implemented the “Regional Programme for Industrial Research, Innovation and Technological Transfer” (Regional Law no. 7/2002, art. 4) with the aim of sustaining firms’ industrial research and pre-competitive development – i.e. the activity necessary to convert the output of research into a plan, project or design for the realisation of new products or processes or the improvement of existing ones – in the region. Through the programme, the regional government subsidises the R&D expenditures of eligible firms through grants. The grant may cover up to 50% of the costs for industrial research projects and 25% for pre-competitive development projects; the 25% limit is extended by an additional 10% if applicants are SMEs. Eligible firms – including temporary associations or consortia – are those that have an operative main office and intend to implement the project in the region.

The grants are assigned after a process of assessment of the applications carried out by a committee of independent experts appointed by the Regional Government. In the evaluation process the committee may involve independent evaluators. The committee examines the projects and assigns a score based on each of the following elements: a) technological and scientific (maximum 45 points); b) financial and economic (maximum 20 points); c) managerial (maximum 20 points); and d) regional impact (maximum 15 points). Each of these points includes a number of very specific items, which are evaluated rigorously. Only projects assessed as sufficient in each profile, and obtaining a total score equal to or more than 75 points receive the grants. For the evaluation process, both the committee and the independent evaluators must comply with the general principles for the evaluation of research specified by the Ministry of Education, University and Research of the Italian Government and the European Commission.

Factors for success and obstacles

The programme was successful in triggering additional investments only in the case of small firms, whereas it proved ineffective for large firms. It also increased probability of patenting by SMEs. These results are explained by a lack of alternative methods of innovation financing for smaller Italian firms. It may also be tied to the way in which the grants are allocated, and the extent to which the most promising projects are selected.

Source: Bronzini R. and Piselli P. (2013), “The Impact of R&D Subsidies on Firm Patenting”, mimeo, Banca d’Italia, Rome; Bronzini R. and Iachini E. (2011), “Are Incentives for R&D Effective? Evidence from a Regression Discontinuity Approach”, *Banca d’Italia Working Paper*, n. 791.

specialised in the textile sector and now in the production of textile machinery; Canelli located in the wine region of Piedmont, which is now a centre for production of machinery for the wine sector; and Mirandola in Emilia Romagna, which shifted from textiles to mechanical and biomedical industries.

This diversification tends to emerge in closely related activities to the cluster core (Hidalgo et al, 2007). This is because the creation of new industries is often a path-dependent process, arising from the re-use and upgrading of existing technological, knowledge, organisational and commercial capabilities and/or assets. Thus an important area that Italian policy needs to facilitate is branching of clusters into related fields in order to ensure their longer term adaptation and survival.

The development of the new battery cluster in Michigan, USA is an illustrative example of how public policy can support diversification strategies (Box 7.2). It shows how a declining automotive cluster was transformed into a cutting edge cluster specialised in new batteries through a successful orchestration of public measures targeted at promoting local high-level research, facilitating the take-up of research results by local firms, and enhancing skills development and employment creation.

External connections for innovation should be encouraged

In the past, the widely supported view in the literature was that product and process innovation in clusters was facilitated by technological externalities that occur among the local actors of the cluster itself. These externalities occurred through the diffusion of tacit knowledge, the ease of transmission and exchange of ideas and information, labour mobility between firms, intense user-supplier linkages, and the pressure exerted by a competitive-cooperative relationship among clustered firms. Learning and innovation in Italian clusters were considered to be a collective, social process involving people, who share strong social and cultural values.

However some of these assumptions have been questioned. Exploring the mechanisms of knowledge production and exchange in the Brescia mechanical cluster, Lissoni (2001) finds that knowledge circulates within a few knowledge communities that do not correspond completely to the boundaries of the cluster. Thus some key knowledge actors are external to the cluster, and not all cluster firms are party to the knowledge circulation by simple virtue of their location. Furthermore, there is evidence that when firms are too embedded in their local network, their innovative performance falters, as they become entrenched in redundant and therefore poorly innovative ties (Giuliani, 2013). Extra-cluster connections are therefore vital to the cluster competitiveness. This raises questions about differences in the capacities of cluster firms to absorb external knowledge and suggests a need for targeted support to facilitate the local absorption of external knowledge and its connection with local and mostly idiosyncratic knowledge.

Extra-cluster links typically take place through formal or informal linkages with other firms such as connections facilitated by subsidiaries of multinational companies located in the cluster and participation of cluster firms in global value chains, which may both act as a bridge between local and global knowledge. They can act as knowledge gatekeepers, who possess both local and global knowledge ties and allow small firms to access non-local knowledge (Morrison, 2008; Giuliani, 2011). Their presence can have a major effect on the innovation capacity and the nature of knowledge transfer within the cluster, avoiding the risk of lock-in and, at the same time, allowing firms to exploit proximity advantages in diffusing knowledge to a large variety of local actors. In practice, however, there seems to be a bottleneck in the ready availability of such bridging capacity.

There is limited foreign direct investment activity in Italian clusters, which could provide an additional or alternative mechanism for knowledge transfers. Inward foreign direct investments are confined to a few clusters and currently only 1.6% of all cluster firms have foreign ownership; the exception is white goods clusters with 8.5% (Intesa Sanpaolo, 2013). Furthermore, only 9% of cluster firms are involved in outward foreign direct investment, although there are notable differences amongst sectors; the proportion of cluster firms involved in FDI reaches 24% in the white goods industry, where global re-organisation of production follows the rationale of cost reduction, and 14% in the mechanical sector, where FDI mainly consists in sale and post-sale activities (Intesa Sanpaolo, 2013).

Box 7.2. International inspiring practice: Diversification in the Michigan New Battery Cluster, USA

Description of the approach

Once the US leading industrial area for automobile manufacturing, Michigan experienced a steep decline in its automobile industry, with approximately 800 000 jobs lost over the past decade. In reaction to this major crisis, state development officials launched a set of cluster policies aimed at nurturing industry diversification into related and promising sectors, such as that of advanced batteries (e.g. lithium-ion batteries) – considered to be “core technology of future automobiles” (Wessner and Wolff, 2012: 446).

At the time of launching the support initiative in 2006, advanced batteries were mostly manufactured in Asia. In fact: “although [US] researchers ... made crucial contributions to the development of the rechargeable lithium-ion battery in the 1980s, US firms at that time declined to pursue the industry, leaving it to better established electronics companies in Japan.” (Lowe et al., 2010: 6) In a bid to regain a competitive advantage in this strategic industry, the State of Michigan developed a set of policies that leveraged the locally accumulated research strengths in automobile and manufacturing and mobilised the efforts of more than 370 vehicle-related R&D and technical centres, more than 87 000 engineers, and some world-class engineering schools.

The cluster now hosts more than thirty firms working on advanced batteries. State representatives declared that Michigan “is well on its way to becoming the advanced battery capital of the world” (c.f. Wessner and Wolff, 2012: 445). Furthermore, the Michigan Economic Development Corporation (MEDC) believes that the State needs more than battery assembly plants and front-end R&D to build a competitive industry: it needs to create at the local level an entire supply chain of materials and core components. Investments made in this direction by the MEDC are expected to generate more than 60 000 Michigan direct jobs over the next several years.

Factors for success

The Michigan approach is characterised by a comprehensive strategy that includes investment in R&D, generous tax incentives, extensive training programmes for engineers and skilled production workers, and public-private partnerships bringing together university, industry, government agencies, and the US Army. Specific examples of such policies include:

- Centres of Energy Excellence (COEE): In 2008, the Michigan State established a COEE programme to promote the development, acceleration and sustainability of energy excellence sectors in the State (USD 43 million to six centres in 2008 and USD 30 million in 2009). The grants provided through the COEE programme can only be awarded to for-profit companies. The participation of at least one qualified company and at least one institution of higher education or a national lab is required to operate a COEE.
- No Worker Left Behind (NWLB) free tuition programme. To allow the retraining of local workforce and enable the diversification process, the NWLB programme provides grants of USD 10 000 to cover two years of college tuitions to any person laid off or about to be laid off.
- Anchor Credits and Technology Collaboration Tax Credits: Provision of refundable tax credits to: a) high technology businesses that attract investment to Michigan from their customers or suppliers (Anchor Credits); and b) to develop strategic partnerships between emerging technology companies and larger/established businesses (Technology Collaboration Tax Credits).

Box 7.2. International inspiring practice: Diversification in the Michigan New Battery Cluster, USA (cont.)

Relevance for Italy

- This case portrays an example of a diversification strategy and exploitation of related variety that could help renew several Italian industrial clusters that are declining and losing competitiveness.
- The retraining programme is of great interest in a situation of high and increasing unemployment characterising many Italian clusters.
- The programme for attracting FDIs from related businesses operating in the value chain could help bring leading technologies and access to global value chains to more Italian clusters.

Source: Lowe et al. (2010), *Lithium-ion Batteries for Electric Vehicles: The U.S. Value Chain*, Centre on Globalization, Governance and Competitiveness, Duke University and Wessner, C. and Wolff A. (2012) (eds.) *Rising to the Challenge: U.S. Innovation Policy for Global Economy*, The National Academy Press, Washington, DC.

Nevertheless in some clusters, the presence of multinationals has been significant to their development. Examples are the sports goods cluster in Montebelluna, with the local presence of Nike, Salomon and Rossignol, and Louis Vuitton Moët Hennessy (LVMH), a French luxury goods group, that acquired Rossi Moda, one of the flagship companies in the Brenta shoe cluster, and Loro Piana, a family-owned cashmere and fine-woollen business located in Biella, Piedmont. A recent phenomenon is inward investment by emerging market corporations, such as Jac Motors and Chang'an from China, which established product design, development and testing centres in Turin's automotive cluster (Pietrobelli et al., 2011).

The involvement of cluster firms in global value chains (GVCs) also enhances their innovation performance through the quality and product variety requirements that they will have to comply with when entering a high-value market chain. This may also involve disinvesting from and outsourcing ancillary activities, which allows GVC firms to shift resources towards core activities as illustrated by Capasso and Morrison (2013) with the Castelfreddo textiles and shoes cluster. The number of Italian cluster firms participating in the GVCs is growing, although foreign outsourcing tends to be greater among clusters operating in low-end market segments, which are currently facing strong international competition on costs, than clusters operating in high-end market segments, which are maintaining stronger local supply relations since the advantages of quality and short lead times are often considered more important than a possible reduction of costs (Capasso et al., 2013; Amighini and Rabellotti, 2006). In both cases, however, the involvement of cluster firms in GVCs is primarily limited to individual, often medium to large, firms, rather than small firms or networks of small firms (Bronzini and Piselli, 2013; Chiarvesio et al., 2010). There is scope for policy to encourage the most dynamic local suppliers to internationalise as well as the leading firms, thus building an independent position in GVCs, while also seeking to upgrade the productivity of some of the small firms offering low-skilled services, which appear to be hit hard by the discontinuation of local subcontracting relationships and the rise of extra-cluster outsourcing (Iuzzolino and Micucci, 2010).

Local public research and technology centres can also play a core role in enhancing the access of external knowledge in the cluster. This is particularly important given the limited degree of foreign investment and GVC participation in Italian cluster firms and the

limitations of relying on knowledge transfer from these firms, which may not all be willing to play the role of a gatekeeper to their external knowledge network and may not have sufficient incentives to share knowledge and form mutual linkages with ‘weaker’ cluster firms (Giuliani, 2011; Morrison et al, 2013). There also appear to be some weaknesses for policy to address in this area.

The case of a textile firm in the Biella textile cluster illustrates the issue with respect to R&D centres (McCaffrey, 2013). The firm is successfully engaged in collaborative research with the US Pentagon on new fabrics. However, according to the CEO there is no research laboratory in Italy with the capacity and international credibility to certify the quality and properties of the new fabrics, which means that the Biella firm has to revert to United States research centres at higher costs. Besides this anecdotal evidence, there is growing acknowledgement in the literature that R&D centres in clusters have insufficient capacities to support firms in their innovation and internationalisation efforts (Camuffo and Grandinetti 2011; McCaffrey, 2013).

As well as building the capabilities of technology and research centres within clusters, it is also relevant to buttress connections between cluster firms and national and international universities and research laboratories as a way to enhance firms’ R&D and innovation capabilities, and promote university spin-offs and technology-oriented start-ups in clusters.

CSR is a strategy for cluster firms to upgrade production capacities and increase market shares

Corporate Social Responsibility (CSR) strategies are a voluntary self-regulatory behaviour that firms undertake. The principal purpose is to follow “*an obligation to constituent groups in society other than stockholders*” (Jones, 1980: 59) in order to positively contribute to environment and society by minimising any harmful environmental and social impacts of their business operations. However, CSR strategies can at the same time support cluster firms to upgrade their production capacities and increase market shares. Policy can therefore have twin benefits when encouraging CSR efforts by cluster firms.

There are formal and informal approaches to implement CSR. The adoption of formal, or explicit CSR policies, such as participation in the United Nations Global Compact, certification initiatives (e.g. Forest Stewardship Council; ISO 26000) and reporting initiatives (e.g. Global Reporting Initiative) may imply significant financial and managerial capabilities, which can make it difficult for smaller firms to engage. Informal CSR practices, also often referred to as ‘silent’ or ‘implicit’ CSR includes a range of activities, which often are locally focused, such as community engagement activities, supply chain development, reduction of pollution or promotion of eco-efficiency measures, which are very open to SMEs (e.g. Jenkins, 2006).

CSR strategies are of particular relevance to cluster firms, which have greater community embedding than non-cluster firms, and often consider CSR as a licence to operate in their own community. Russo and Tencati (2009), based on a cross-sector analysis, find for example that especially in small and micro-sized firms, the moral values of the individual entrepreneur steer firm behaviour in a highly personalised business-community relationship. Medium-sized firms are, however, more able to orchestrate sustainability efforts in their local value chains. They engage more in community volunteering, but less in firm-specific measures, such as hiring of disadvantaged employment seekers. Local

intermediary institutions, such as trade associations, business consortia and chambers of commerce and crafts also play a crucial role in promoting CSR in small firms and cluster-wide practices (Battaglia et al., 2010).

An interesting example of how CSR also can also increase the local and international market shares of Italian clusters is the approach taken in two fashion clusters in Tuscany – Santa Croce (tanning and leather) and Empoli (clothing). These clusters were severely hit by the growing competition from low-cost countries at the end of the 1990s. Their CSR strategy implied both formal and informal CSR behaviour, such as flexi-time, extended holidays for non-EU workers, child-care facilities in the cluster as well as adherence to the Eco-Management and Audit Schemes (EMAS), a EU-sponsored multi-stakeholder initiative (Testa et al., 2012). The strategy was successful in promoting demand for their products, which offered high ethical, environmental and quality standards, and Santa Croce is now one of the nine Italian EMAS certificated clusters.

Despite some progress being made in this area, there is still significant heterogeneity across the Italian clusters, informal CSR practices are more frequent than formal ones (including because of the costs of regular audits, etc.), and CSR is still mostly linked to personal or individual activities rather than anchored in business strategy. More can be done in these areas to support the take up of CSR among SMEs in clusters. This may include developing policies to address pressing local issues related to the cluster, such as community services for redundant employees, child care facilities, and addressing pollution and contamination problems.

In particular, there is a clear need to increase efforts with respect to social and environmental standards, not least because Italian cluster firms are competing with firms from emerging countries, which have made substantial progress in securing production linkages with large global players and in adopting their social and environmental standards (e.g. Lund-Thomsen and Nadvi, 2010). Early steps in this area have been taken by the government, for example through the adoption of the European EMAS labelling system to certificate sustainable production.³ These efforts need to be continued on to assist firms in clusters to adopt CSR policies that, in turn, can help them to participate in global value chains.

The case of a dyeing cluster in Korea (Box 7.3) illustrates the transformation of a highly polluting textile dyeing cluster into an eco-industrial park. The approach was successful because of its long-term approach to building and maintaining a multi-stakeholder partnership seeking strategic participation of the local community. From the management of environmental challenges, new economic opportunities have arisen in the areas of alternative energy sources, waste re-use and recycling activities.

Conclusions and recommendations

During the past two decades Italian clusters have undergone profound structural change. There has been a fading away of the cluster effect and a breaking up of cluster boundaries, with adverse consequences for smaller cluster firms and new opportunities and challenges related to cluster internationalisation, diversification and innovation. There is a clear role for public policy to facilitate these structural changes in order to promote the upgrading and diversification of clusters, allowing them to evolve in line with their environment, rather than insisting on seeking to preserve their traditional local boundaries and specialisations.

Box 7.3. International inspiring practice: Diversification of a dyeing cluster to an Eco-Industrial Park, Korea

This case illustrates how a dyeing cluster fraught with environmental problems has managed to transform itself into an Eco-Industrial Park (EIP).

Description of the approach

Prior to the 1970s, most Korean textile dyeing plants were located in the capital city of Seoul. The concentration of these contaminating activities in a densely populated area resulted in the forced relocation in the mid-1970s of most of the activities into the more remote area of Banwol-Sihwa, which became known as the “industrial cluster of polluters.” After relocation (completed in 1993) a set of negative environmental events took place in the area. First, the building of an embankment at the bay of Sihwa caused massive environmental damage over the period 1996-1999 (with a level of cadmium in an artificial lake 760 times higher than allowed). Second, over the same period some dyeing firms had illegally dumped effluent into Lake Sihwa. Third, the smell emanating from the industrial site undermined local residents’ right to a decent life (e.g. children could not undertake outdoor physical activities at local schools).

The local reactions of communities, NGOs and academics played a critical role in addressing this problem, prompting the government to establish the Sihwa Regional Committee for Sustainable Development, which in turn led to a set of agreed actions that were implemented by cluster firms.

Factors for success

- The role of local business associations: local business associations with the active collaboration of local firms played a critical role in the solution of the problem of the smell stemming from the industrial site. The Government also played a role by designating two local universities as environmental technology centres, and by installing in the area a few public bodies specialised in environmental management. In 2005 the government also implemented the Odour Prevention Act to address environmental issues on a legal basis.
- Global pressures and state-level support: the Banwol-Sihwa dyeing cluster is export-oriented, with international apparel firms requiring suppliers in the cluster to meet ISO, Eco Labels, and BLUESIGN standards. To support compliance with such standards, a national-level R&D project (DYETECH21) was developed led by the Korea Institute of Industrial Technology (KITECH) with the involvement of local suppliers. In 2006 KITECK, together with other government agencies, promoted the transformation of the Banwol-Sihwa cluster into an Eco-Industrial Park (EIP). The EIP project favoured the development of a number of related activities: (i) the use of wastewater heat as a source of energy (since 2011); (ii) the exchange of textile effluent sludge between the dyeing cluster and a cement manufacturer (since 2007) and (iii) the collection and reuse of oil in the emissions of the textile dyeing mills (under implementation and validation).

Relevance for Italy

- Many environmental challenges have to be addressed in Italian clusters.
- Environmental management requires multi-stakeholder partnerships and participation.
- New economic opportunities may arise from the management of environmental challenges (e.g. alternative energy sources, waste reuse, recycling activities).

Source: Lowe E.A. (2001), *Eco-industrial Park Handbook for Asian Developing Countries*, A Report to the Asian Development Bank, Environment Department, Indigo Development, Oakland, CA; Nadvi K. and Yoon S-J. (2012), “Industrial Clusters and Industrial Ecology: Building ‘Eco-Collective Efficiency’ in a South Korean Cluster”, paper submitted to the Conference on “Global Value Chains: Industrial Clusters and the Future of CSR in the BRIC Countries”; Taddeo R., Simboli A. and Morgante A. (2012), “Implementing Eco-Industrial Parks in Existing Clusters: Findings from a Historical Italian Chemical Site”, *Journal of Cleaner Production*, 33, 22-29.

Italian cluster firms are highly heterogeneous in terms of their size, capabilities, networks and performance. They pursue different strategies and are likely to react differently to incentives. The current policy rationale of targeting networks of firms, instead of individual firms, is based on an understanding that cluster success is rooted in the capacity of firms to interact, share knowledge and be socially and productively embedded in their local context. However, firms only interact with others locally when they have an interest to do so, and in the new competitive environment, the imperative to collaborate locally has weakened. Therefore tying public subsidies to local interactions is likely to be ineffective. Furthermore, there is a risk that such an approach will constrain the most dynamic firms in the cluster, which may get dragged into unproductive local relationships, rather than investing their resources into more valuable activities.

Rather than seeking to perpetuate existing cluster networks and behaviours, policy should seek to develop a long-term strategy that will assist Italian clusters to respond to the structural challenges that they are facing. Such a strategy should identify potential development avenues for the clusters including enabling product upgrading and sector diversification, facilitating internationalisation, foreign direct investments and integration into global value chains, and enhancing environmentally and socially sustainable pathways. This will require the development of a long-term plan for each cluster and the development of a series of specific interventions that differentiate across different types of cluster firms.

The following policy recommendations are offered to help ensure that industrial clusters maintain their vital role in the Italian economy.

- Permit strong flexibility in partner selection in network support programmes, enabling firms to collaborate with capable partners outside cluster boundaries.
- Promote the diversification of clusters into related industries and high-end activities. This may be facilitated by shifting existing subsidies and incentives onto “new” activities with diversification potential, such as support for strategic research projects, innovation collaboration networks involving companies and/or researchers that belong to different sectors and/or fields of specialisation, and labour mobility between related industries.
- Strengthen the external knowledge and innovation connections of clusters by promoting inward and outward foreign direct investment in clusters, the participation of cluster firms in global value chains, including by helping them meet the necessary quality and certification requirements and identify new market opportunities, and reinforcing links between cluster firms and capable public technology and research centres.
- Tailor policy to different types of cluster firms, focusing on rapidly increasing the productivity of small inefficient enterprises, maintaining the engagement of medium-sized firms with their clusters, and supporting the knowledge gatekeeper role of leading cluster firms within their supply chains. Offer selective support targeted at those cluster firms that demonstrate the strongest potential to grow in domestic and international markets.
- Promote the competitive award of incentives for the adoption of socially and environmentally sustainable standards and certifications, and other formal corporate social responsibility policies in clusters.
- Develop long-term strategies for clusters to be supported by national and regional governments with the participation of expert working groups at the local level.

Notes

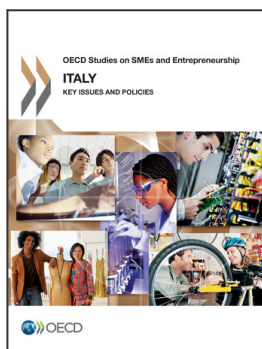
1. Enterprise groups are another common reality. Eurostat defines an enterprise group as an “association of enterprises bound together by legal and/or financial links whose main feature is that it can have more than one decision-making centre, especially for policy on production, sales and profit”. According to ISTAT estimates, there are 82 000 enterprise groups in Italy, involving more than 185 000 companies and 5.6 million employees, which is one-third of the total labour force.
2. The terms “district” and “cluster” are often used interchangeably, although at times the two concepts are defined differently, with industrial districts being given a strict definition by the Italian statistical office, whereas the term clusters is often used more loosely to cover a range of agglomerations of linked firms.
3. The Eco-Management and Audit Scheme (EMAS) is a system to which public and private organisations, including businesses, can adhere in order to have their environmental performance assessed and obtain guidelines to improve this performance.

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