Small Enterprises (MSE) Cluster Development Programme which offers grants for various interventions to support clusters.

The Micro and Small Enterprises (MSE) Cluster Development Programme

Under the MSE programme, the government subsidises 70% of the costs of up to 150 million rupees for setting up a common facility centre to carry out joint marketing or procurement or product testing activities. The government also covers 75% or up to Rs2.5 million for business training and workshops, as well as 60% of the cost for infrastructure development up to Rs100 million.

The scheme was set up with the help of Unido in 2003 with a programme springing from the then Ministry of Small Scale Industries' technology up-gradation and management programme called Uptech, which was launched in 1998.[202] In August 2003, the scheme was renamed the Small Industry Cluster Development Programme (SICDP) and in 2006 the scheme's guidelines were revised with increased grant amounts to make the cluster programme more broad based. An amount of Rs3.03 billion has been allocated for the 11th Five Year Plan (2007-2012) to boost the sustainability, productivity and competitiveness of MSEs. The measurable outcomes are in the form of the number of enterprises for developmental interventions, increased turnover and employment and enhanced exports.[203] Up to the end of January 2010, 457 clusters across India had accessed the scheme.[204]

Through the scheme government officials and a local association are tasked to work together to first gain the trust of firms in the cluster. The aim is to achieve an initial level of trust through joint participation of businesses in fairs, joint purchase of raw materials and the design of a collective catalogue. The idea is that in time the enterprises that are members of the cluster would be able to then carry on with the programme without the need of outside help.

For example three clusters near Delhi that the government is supporting through its MSME Institute (Delhi)[205] each consist of an average of 50 businesses. Those clusters near Delhi include: the automotive components (Faridabad), garments (Noida) and printing and packaging (Nariana). In these clusters each small enterprise employs about 10 people and has an average turnover of Rs50 million. Each business usually remains in a cluster for three years. Many entrepreneurs struggle in the beginning to work together. They kept their business confidential and feared sharing information with others, before eventually seeing the benefits of and joining the various interventions provided by the institute.[206]

Achievements: Limited impact despite some success

The Indian cluster programme has had some clear success. Faridabad's light engineering cluster is a success story according to one business association head.[207] Given that the cluster received very little government intervention the business association head attributed its success to the Manufacturers Association of Faridabad, which he said was "very active" in leading the cluster. The association had 18 000 members and owned stores where they bought raw materials and goods such as stationary and office materials which were then sold on to members at reduced rates.

Another example is that of 20 textile cluster programmes run between 2002 and 2005 where businesses received training in exporting and marketing during the two-year programme. The training involved 20 members of each cluster who had never exported before to visit 20 countries. In mid-2010 the clusters

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[202] Press Information Bureau, Government of India, http://www.pib.nic.in/release/release.asp?relid=57403&kwd

[203] Press Information Bureau, Government of India, http://www.pib.nic.in/release/release.asp?relid=57403&kwd

[204] MSME ministry Annual Report 2009/2010

[205] According to Suresh Yadavendra, the director of the intitute, the institute is staffed by electrical, mechanical and chemical engineers, as well as hoisery and glass and ceramics, electronics experts.

[206] Interview with Suresh Yadavendra, New Delhi, March 2010.

[207] Bikky Khosla, deputy secretary of the Associated Chambers of Commerce and Industry India (Assocham): interview, New Delhi, March 2010.

were still growing and had orders for between three to six months already. About 200 of the 500 of the businesses in the cluster benefited from the programme[208], and were on average able to double their turnover between 2005 and 2006. In the first year export sales totalled US$26 million.[209]

Despite some successes, the following points summarise the cluster situation in India:
  o Businesses in clusters are not yet sustainable after interventions.
  o Clusters that produce goods, contain independent and old businesses and are spread out over small geographic area are more successful that other types of clusters.
  o Clusters driven by strong industry associations are more successful than others.
  o There is a need for an independent organisation to identify and assist clusters.
  o Trust building is still a challenge.
  o There is a need to monitor long-term, not short-term, impact of cluster programmes and have in place follow-up support.

Yet, after seven years, cluster-support programmes in India have made little impact on improving the productivity of small businesses and questions have been raised on the long-term impact of firms that participate in clusters funded by the government's grant scheme and whether the scheme has been able to help small firms become self-sustaining.

Many firms have yet to gain the requisite trust needed to benefit from clusters and the government is yet to put in place an effective mechanism to monitor clusters. Even Arun Maira, a member of the Indian government's National Planning Commission who is tasked with economic issues, admitted that some clusters "are running very well, some not at all".[210]

An assessment of the scheme in 2009 by the Indian Institute of Public Administration[211] which focused on 26 clusters, revealed that the scheme's ultimate aim, that of assisting clusters to reach a point where they were strong enough to stand on their own, was not always easily achieved. Often associations involved in clusters tended to lean on a sponsoring agency's assistance for longer than was initially envisaged.

The Institute's assessment also found that clusters which produced goods rather than services and consisted of fairly independent firms that had been in operation for five or more years were more likely to be successful. Added to this clusters which were dispersed over a small geographic area, were more likely to perform better, than those dispersed over an area exceeding 250km².

The recommendations of the study also noted the need for an independent organisation without vested interests in a cluster to carry out the initial identification of a suitable cluster to support. For a cluster to succeed, the study also added, requires that each cluster's managing committee should be guided by clear objectives.

Similarly a 2008 study[212] by business consultancy Milagrow Business and Knowledge Solutions which focused on 11 clusters, found that the government's cluster support scheme was only working in very few cases – where industry associations are efficient and local politicians actively work with clusters. Milagrow founder director Rajeev Karwal believed the cluster scheme had simply turned into a "real estate game" where subsidised land was being handed out to small firms. He believed the majority of companies that had accessed the scheme would continue to remain "very small".[213]

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[208] The Ministry of Textiles is funding Cluster Pulse to continue monitoring these textile clusters. The programme is being implemented by GTZ, World Bank and Sidbi.

[209] Skype interview with Jagat Shah, founder and mentor of NGO Cluster Pulse, May 2010.

[210] Interview with Arun Maira, New Delhi, March 2010.

[211] Indian Institute of Public Administration, 2009. "Evaluation Study of Micro and Small Enterprises Cluster Development Programme", New Delhi.

[212] Milagrow's 11 Cluster Study involved 3 000 MSMEs in four states, 2008.

[213] Interview with Rajeev Karwal, New Delhi, March 2010.

Karwal suggested that the Indian government devise an integrated structure which looks at developing quality labs and improving technology and infrastructure at clusters, as there was often no machine operators and no properly trained people at businesses in a cluster.[214]

Sanatan Sahoo[215], from the government's MSME Development Institute in Mumbai said that three years on from the initiation of the cosmetic cluster that he oversees, high trust levels remained the biggest hurdle standing in the way of the cluster becoming a success. This was despite his institute having held group visits and getting cluster members to participate together in fairs to facilitate trust among the SMEs.[216] A major challenge was that members of the cluster were too spread out geographically and smaller businesses found it difficult to spare the time for programmes, he said.

However, despite these challenges, the cluster did enjoy some successes according to Sahoo. For example technology upgradation workshops held by the cluster had proved successful as more business owners were making use of new chemicals in their cosmetic products.

But Mukesh Gulati, the executive director of Foundation for MSME Clusters, cautioned that when it came to looking at whether a cluster was successful or not, that it was a matter of what one measured and defined as a success and when one measured it. "In the short term, the organisation of a range of activities and getting immediate outputs as a consequence could be regarded as a success, within the project duration period which can be as short as 12 to 18 months," he pointed out. However he cautioned that recording an impact in such a short time might be "impossible". "Besides, an agency that is judged by its results in the short term is likely to ignore the long term issues that face a cluster and focus on something that can be reflected as success quickly," he added.[217]

He further noted that since most industry associations in Indian clusters are "extremely weak", the focus tends to be on getting external consultants to quickly achieve some quick wins by for instance obtaining ISO certification, productivity improvements or energy audits, to the neglect of strengthening the respective industry association (which he pointed out takes a lot of investment in terms of time but may not produce quick results).

Gulati said another problem was that of conducting follow-ups, where because the implementing agency is concerned about available funds to organise meetings, it desists from holding follow-ups especially as none of the schemes provides for post project follow up support. He believes that of the 441 clusters, only between about 10% and 20% of these have benefited from cluster programmes. However, he said that as no comprehensive study of clusters had yet been conducted, it was not easy to gauge the exact percentage of success stories: "In my opinion what happened to the failed projects (80%) is that ad hoc short-term activities are carried out with some results in the short run but no cementing and little focus on the most strategic issues facing the cluster". He said in some cases clusters might prove only successful in the immediate aftermath of an intervention, but may not necessary prove sustainable in the long-term.[218]

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[214] For example, he commented that "Ludyana which has skills for machinery, textile hosery and light machinery, exports almost Rs75 billion crore of goods, but doesn't have an airport – the nearest one is 130km away in Amristar. Added to this the roads around the cluster were also potholed and transporting goods to the nearest port would add a further two to 2.5% onto a finished product's price." Building the requisite trust needed for businesses to participate in support interventions and work together remained a key challenge.

[215] Interview with Sanatan Sahoo, Mumbai, April 2010.

[216] At Sahoo's cluster, which consists of 90 businesses and collectively employs about 1 500 people, a centre for joint procurement had still not been set up "because members didn't yet trust one another enough", he said. Only about 10 member businesses participated in common fairs held by the institute, with not more than 20% of cluster members taking part in the various workshops. "Many of the smaller firms just didn't have the time to sit and waste in Delhi traffic if they wanted to take part in a workshop", he added. Moreover, despite 8 or 10 businesses having registered, 75% of those in the cluster remained unregistered.

[217] Interviews over email with Mukesh Gulati, May-August 2010.

[218] One such example said Gulati was the Bangalore Machine Tools Cluster, which ran from 2003 to 2005. Initially the cluster was set up by six machine tool companies based in Bangalore. The cluster later expanded to 14 members. The group

Box 5: Cluster support – Focus on quality drives CII's approach

While the performance of cluster support in India is questionable, a private sector cluster initiative by the Confederation of Indian Industries (CII) demonstrates that a focused approach on quality businesses can help small firms to increase their productivity.

Since the inception of the first CII cluster started in 1998 – an auto manufacturer cluster with 20 suppliers serving Maruti set up by Professor Y. Tsuda – 2 135 SMEs have benefited from support to become globally competitive by focusing on improving cost management, energy management and quality systems through 196 clusters. About 1 400 small businesses are presently benefiting from training.[219] Interventions run for between six to 18 months and are aimed at 10 to 15 members with clusters often targeting a certain sector and geographic location. Many are driven by an Original Equipment Manufacturer (OEM) or tier-one customers. Interventions, which have taken place in food processing, automobile and light engineering, help participants to secure ISO 9001 accreditation. Around 60 clusters are still on the go and companies meet every month to share and learn from various implementation practices.

Some of the CII's recent results include: helping 14 small and medium-sized firms in two Munjal Showa vendor clusters located in Faridabad and Gurgaon (in Haryana state), the members were able to secure combined savings of more than Rs15 million after completing various interventions which were concluded on January 16, 2009; 10 supplier companies of ABB Faridabad were able to reduce accident frequency by 77% and machine breakdown hours and frequency by 20% after a one-year programme on adopting best manufacturing practices which ended in 2007; and, 10 participating companies in a LMW vendor cluster, Coimbatore, reported a 86% drop in customer complaints and a 95% decline in customer returns after an 18-month programme which ended in 2008.

Vippul Ray who runs Elmex Control, which manufactures electrical connectors, has been participating in CII cluster programmes for two-and-a-half years. He employs 200 people and some contractors. The business was started by his father in 1963. About 15% of his turnover is from exports. Since starting the CII's lean-manufacturing programme which looks at shop floor practices, ways to improve production, reducing wastage and returns, his turnover has increased by 30% and his contract labour force has grown by about 10%. It has also brought on a "100% cultural change" in the workplace with enhanced employees' involvement. He has been able to clinch 25% more new business as employees' productivity has sharply increased. Deliveries have also improved and the number of customer complaints and of returns has dropped. The programme also helped him to prepare for the auditors that visit his factory from Europe.

The programme divides the workplace into teams, with each team taking charge of a different zone inside the business and benchmarking itself against other teams in the cluster. His business has since graduated to the advanced cluster which consists of firms of different sizes and from different industries. He has enrolled two of his factories in the programme because he likes it so much. He stressed that the programme proved a great motivation for the workforce as other companies visited the workplace. There is a "peer pressure" effect from working with other business owners. Says Ray: "You recognise that you are facing the same problems". He does not fear other business owners stealing his secrets and points out that if someone wants to find out about his factories they can

represented 70% of machine tool production in India in the organised sector. Six machine tool and four vendor consortia were formed. Various working groups were also formed, on designers, electrical design and common procurement. In all 76 projects and planning meetings were conducted by the cluster. The idea was to bring together key groups of suppliers to form networks, while increasing the capacity for innovation, reducing costs and improving productivity. Another aim was to stimulate the formation of new businesses to support the innovation and expansion of the cluster. An excel spreadsheet provided to the author by Gulati reveals that every one rupee invested in the Bangalore Machine Tool cluster, yielded an average of Rs4.2. Yet the cluster did not conclude all the interventions and several projects did not take off because of a lack of leadership amongst the cluster members. However the cluster did benefit in May 2003 from joint negotiation in procuring paints on behalf of 20 companies; paint cost the buyers only Rs75 000 instead of Rs6 million, 80 times cheaper. Also, training during May 2003 of 11 people at the cost of Rs80 000 later saved the cluster members a total of Rs200 000 (Presentation by Srinivas G. Shirgurkar, then managing director of Ace Designers).

[219] Interview with Manish Whorra , CII director, New Delhi, March 2010.

always do so by searching on the internet. He said he was also able to learn how another company packed their material and stored their moulds.[220]

Ravinder Verma[221], managing director of Ganga Acrowools said because other companies visit your workplace, the programme was "like having free inspectors and auditors".

NS Bhogal of Bhogal said that while he was "reluctant initially" about trusting other business owners, this changed after CII explained the benefits of the programme. He undertook TQM and cost management and he has been in two different programmes for two years. Because of the programme he was able to reduce his workforce from 250 to 180 and free up 190m² (out of a total of 2 200m²) of shop floor. His turnover has increased by 10% year on year following a shift away from outsourcing (equivalent to 30% to 40% of his production) to manufacturing all his bicycle parts inhouse following increases in the productivity of his workforce, lowered absenteeism and by renovating old machines. He said he had learned from other members in his cluster how to reduce overload and control the power on his machines. He said the Rs250 000 cost for the programme initially seemed too high, but as his profit grew from the increased productivity, he was able to recoup this by savings he made amounting to Rs7.4 million.[222]

The CII hopes to obtain 80% of its funding for its lean cluster scheme from the government. Presently companies have to pay for the programme themselves: each CII cluster consists of 10 companies that together set up a trust of society (Special Purpose Vehicle – SPVs). Cluster members then deposit their fees into the SPV's own bank account. Following this, consultants then bid to take on the various interventions. Fees can range from Rs200 000 for a single one-year intervention or Rs350 000 for a one-year intervention covering four areas of lean manufacturing and energy efficiency.[223]

Clusters in Brazil

Brazil has developed a cluster support policy which helps the private and public sector to partner together to identify existing support measures to target priority clusters. The government is hoping that by supporting existing clusters it can undo the country's significant regional economic disparities and promote small business development.

Cluster support has for some time existed in Brazil at a state level[224], but lacked any clear policy driven from the federal government. Clusters however form an important part of the federal government's 2008-2011 Plano Plouri-Anul, which the Planning Commission uses to guide and review key policies and, since the setting up of a working group in the Ministry of Development, Industry, and Trade in 2004, to drive cluster policy. Since then cluster support has become far more co-ordinated. The Ministry of Development, Industry, and Trade's cluster (or as they are termed in Brazil, Arranjos Produtivos Locais or just APLs) working group essentially prepares guidelines for cluster development.[225] The group is composed of 33 members, with 11 members drawn from government and 22 from the private sector. Added to this each state government has its own cluster working group (Nucleo Estaduais) of which the first was set up in 2006. These ensure that the various development priorities of each state are attended to and are composed of various roleplayers, including: representatives from Sistema S (including Sebrae and training agency Senac among others), the state government, financial institutions, workers and science and technology institutions. The Ministry's Productive Development Plan, released in May 2008, establishes targets for development plans for clusters in 10 states in 2009 and another nine in 2010.[226]

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[220] Telephonic interview with Vippul Ray, May 2010.

[221] Telephonic interview with Ravinder Verma, May 2010.

[222] Telephonic interview with NS Bhogal, May 2010.

[223] Telephonic interview with Harinder Jeet Singh, who oversees CII's cluster programme, May 2010.

[224] Such as the Sistemas Productivos Locais before 2000 in Rio Grande de Sul.

[225] Interview with Margarete Maria Gandini, the Co-ordinator General of clusters at the Ministry of Development, Industry, and Trade, Brasilia, August 2010.

[226] "Innovation Production and Dissemination Programme for Local Cluster Competitiveness in the State of Pernambuco", document of the Inter-American Development Bank.

The ministry's cluster policy provides for the identification of certain geographic regions in the country where firms have already clustered and where the government could possibly form a cluster to channel support to. In 2005 the first attempt was made to identify clusters and 957 were identified, covering 295 141 enterprises and 28 million employees. An updated list of identified clusters is expected to be released in 2010 and the number of mapped clusters is expected to exceed 957 and could be as high as 1 400, going on a recent BNDES study.[227]

Of the total clusters identified in 2005, the country's states have nominated 267 as priority clusters, demanding special attention. In total, 125 plans of action had been developed through the various Nucleo Estaduais to assist priority clusters. After a plan is approved by the Nucleo Estaduais, a cluster's governance will try to present projects for each action in order to get funding. The Permanent Group for Clusters (GTP-APL) also identifies 142 priority clusters.[228]

Support for clusters is divided into five areas: capacity building and governance, innovation, market access, productive capacity and finance. A technical team is currently looking at how many of these plans have been implemented, she said.[229]

After the identification of clusters in 2005, the federal government ran a pilot project for two years to support several clusters. The pilot also helped to better formulate how the federal government would work with clusters and two documents were drafted from this, which form an important part of policy decisions, namely:
- o A manual for partners (Manual de Instuitições Parceiras) detailing what the various institutions can offer in supporting clusters (such as export assistance, capacitation, business training, access to finance) and how they should work with one another to ensure co-operation in supporting clusters;
- o The terms of reference (Termo de Referencia) for cluster policies.

Clusters help develop poor regions

The example of a cluster Pernambuco state in the country's' Northeast, demonstrates that by supporting the government and local authorities can promote regional growth and equity. Residents in three small towns in the north-eastern state of Pernambuco are today enjoying better houses and the area has more schools and jobs to go around after a cluster support programme was carried out in the area. The programme, Oficina de Moda, was implemented by Sebrae in 2004 in the towns of Caruaru, Toritama and Santa Cruz do Capibaribe – 140km or so inland from Recife.

Thanks to the programme 30 clothing companies saw their turnover grow by about 110% in just eight months after getting assistance in areas such as planning and production, marketing, trademark protections and design, through a cluster programme sponsored by the Brazilian small business support agency, Sebrae. Some of the firms grew from employing 30 people to 300 today. The agency is currently conducting research to ascertain how the area and businesses in the cluster have improved since 2003.[230]

The programme helped Luiz Carlos Bezerra[231] to grow the annual turnover of his firm, Michelle Lingerie, by 40%. Bezerra, who runs his 20-year-old company with his wife Marie José, said Sebrae consultants helped introduce him to innovative ways to market his company. Before the assistance, which also led to a 20% increase in his staff complement, he often adopted a wait and see approach to sourcing clients –

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227 Interview with Gandini.

228 These include furniture, wood, ecological tourism, textiles, fishing and aquiculture, swino culture, fruit, software, horticulture, mineral water, meat and aerospace.

229 APLs Prioritarios GTP 2008-2010, GTP-APL, 2007

230 Interview in Caruaru with Mário Cesar Freitas Lins, Sebrae's project manager of the textile project in the Agreste region of Pernambuco, August 2010.

231 Interview with Luiz Carlos Bezerra, Caruaru, August 2010.

simply setting up at a street fair, but today he actively goes out in search of new clients and now also conducts business in neighbouring states of Brazil.

The textile cluster in the region sprung up about 50 or 60 years ago in the area and Sebrae's support for the textile businesses in the region began 16 years ago when the agency began presenting courses to the firms in issues such as business management, costing and pricing and legislation. In 2000 a local union that represents both employees and employers Sindicato das Industrias do Vestuário de Pernambuco (Sinvest) approached the city of Caruaru in a bid to get support to upskill textile firms based there. Sebrae was asked to assist and developed a business support project which ran for two years.

But the cluster has not solved all the problems textile companies in the region face, including confronting cheap Asian imports. On top of this despite the cluster support, most firms still do not co-operate with one another. A Sinvest member said it was also difficult to secure the involvement of the government and institutions in the cluster. Despite this, however, he added that the cluster was able to in 2000 get valuable support from BFZ, a German private company which sourced funds from the German government. BFZ helped Sinvest to organise itself better. The improved degree of organisation, according to the Sinvest member, insured members could meet more easily with other partners. [232]

Tax breaks spur tenfold growth in Recife cluster

In Recife, tax breaks and government funding have helped 130 information and technology businesses based at Porto Digital, an IT cluster, to increase their turnover tenfold between 2000 and 2009, while helping to create a more innovative state. Today the companies – 60% of which have less than 10 employees – generate a total turnover of US$500 million.

Companies benefit not only from a 60% tax break from the city and a 90% tax break from the state, but also from free training offered through Porto Digital, according to the cluster's administrative and finance manager Guiseppe Regina Jr. Some of the companies on the island have also received funding from Finep's Juro Zero (zero interest rate) programme.[233] The cluster, which takes up half of a small island in the city centre of Recife and was set up 10 years ago as way to retain the state's top IT talent, not only helps to produce state of the art companies. It also helps to develop innovative solutions to help the state's other clusters such as those in the shipyard, textiles and dry wall sectors.[234]

Porto Digital's Porto Desembarca programme has seen several companies in the cluster develop an innovative solution to boost pupils performance at local schools. Until recently school pupils were being distracted from doing their homework because they were spending too much time playing computer games. The answer was the creation of a computer learning game by six companies who formed a joint venture in 2008 after a meeting between IT companies, teachers and state school authorities. The game required pupils to enter various clues before they could advance to the next stage. The clues were given out to pupils in answer to homework assignments the pupils had been tasked to complete. The JV even created another version which allowed pupils from different schools to challenge one another, with the chance to win prizes such as Playstations and computers. So successful has the project been that 5 000 schools now take part, up from 400 in its first year. Companies involved in the project have also had to double their staff complement in just two years. The state of Rio de Janeiro is also now implementing this strategy.

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[232]   Interview in Caruaru, with Fredi Maia, a member of Sinvest's board who served as president of the union when the project was first mooted, August 2010.

[233] Interview with Guiseppe Regina Jr, Recife, August 2010.

[234] The clusters Porto Digital is supporting in the state include a textile cluster in the Agreste Central region which has about 13 000 small and micro businesses, a milk and diary cluster in the Agreste Meridonal regions with about 2 000 businesses, a sheep and goat farming cluster with 12 000 businesses in the Sertão Central, a fruit cluster in Sertão São Francisco consisting of 3 500 producers can be found in this area (Interview with João Cavalcanti an economic analyst for Sebrae Pernambuco, Recife, August 2010).

More importantly however, is the fact that the cluster has helped the city to retain local IT graduates. The cluster's administrative and finance manager Guiseppe Regina Jr said because the Federal University of Pernambuco produces some of Brazil's top IT graduates, many had been drawn away to other states or overseas. Regina said the high demand for the graduates meant that 70% of all Brazilians that work for Microsoft, came from the state's university.

IT is an important component of the state's economy – making up 3.5% of the state's GDP, compared to just 1.2% of Brazil's GDP. It was for this reason that the state government decided to retain its IT talent by setting up public policy to retain the IT expertise in the state, while getting IT companies to boost the state's economic growth and meet its development goals. The state therefore decided to fund the setting up of Porto Digital. Today 50% of funding comes from the Federal government and 40% of it from the state government, while 10% is drawn from the private sector.

The cluster this year opened incubation facilities in an old brick warehouse where established companies – big and small – can work on specific projects or innovations while receiving business support such as marking, financial management and legal assistance.[235] The incubator does not cover or subsidise rental fees that businesses housed there must pay. The idea says Regina Jr is that the incubator must be self-sustaining, but that businesses based there will benefit by getting access to free training and consulting.

What has the impact of clusters been like in Brazil?
- o Brazilian government is still evaluating the impact of clusters.
- o Problems with financing clusters.
- o Decision making must involve businesses in cluster.
- o Need for a credible organisation to lead a cluster.
- o Innovative monitoring system tracks progress of cluster interventions.

So what has been the impact of clusters in Brazil so far? How have they fared in assisting small enterprises and uplifting underperforming regions?

Little evaluation of clusters has been carried out in Brazil. MIDC's Gandini said the ministry's researchers were busy setting up an information system to help manage clusters. The system will include indicators to measure the performance of a cluster receiving support and to help determine the effectiveness of cluster support. She expects the research to be completed by the end of 2010 and added that the system will also contain a national database of those clusters identified and a library for cluster support. She believed the government had done a good job in mobilising actors to take part in cluster support, but said that more partnerships were however still needed. Knowledge on how clusters worked was needed and indicators and an ecosystem of support needed to be constructed. She however emphasised that because it is not always easy to isolate the effect government support has on a cluster from that of other measures, it was not easy to determine the impact of cluster support.

Cristiane d'Avila Garcez[236] an advisor who oversees clusters at Brazil's development bank BNDES, said some clusters in Brazil struggled to perform because associations which the development bank advanced funding to were not sufficiently organised to deal with funding. D'Avila Garcez said BNDES had a programme to lend to associations and co-operatives, but said it often battled because it had no agencies in state capitals, meaning it had to work with state banks and the government of each state.[237]

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[235] The incubator has been running since March this year and the 14 spots were contested by 62 applicants. By August 2010, eight spots had been taken at the moment. Porto Digital started up after a company called Cesar, down-sized its incubator recently after running for eight years.

[236] Interview with Cristiane d'Avila Garcez, Rio de Janeiro, August 2010.

[237] From January 2010 up till August 2010, the programme had earmarked R$100m in eight states in the Northeast, to state governments, however the finance was yet to be approved.

A key lesson by Sebrae when it came to supporting clusters, is that the decision-making process must follow a bottom-up strategy with the participation of all cluster members, according to Adalberto Durau Bueno Netto, a Sebrae consultant and a member of the Board of Directors of the Paraná Network for APL Clusters Support. A second lesson is that the success of any effort in cluster development essentially stems from having a credible institution lead the process which can attract other support organisations to join in.

Sebrae's method of cluster support precludes the existence of at least 20 enterprises linked to one common specialised production and that these enterprises employ at least a total of 100 people. The cluster must also be capable of effectively contributing to increase exports or to competitively substitute imports, must have market potential, and be able to generate jobs and income.

The agency uses a monitoring and evaluation system (Geor – Gestão Orientada para Resultados) and a set of governance rules that have already been adopted in several international organisations such as the UNDP, Unicef and the World Bank. While a consultant is responsible for constructing and managing the project, the agency uses an open result based management system to communicate, integrate and control the project development towards the achievement of the results (see:www.sigeor.sebrae.com.br). Using the system practical results such as clear objectives, a strategic focus, premises, results and actions and defined roles, contributions and scheduled dates, can be drawn.

Reflections for South Africa's cluster experience

Discussion 1: Dismal performance of past cluster support in South Africa

South Africa's short experience has yielded some key lessons for the country's policymakers, namely:

o   There is no clear funding from government.

o   Clusters need to retain sector-specific staff.

o   Government must not set overt political agenda.

In South Africa clusters gained importance in the early 1990s when the post-democracy government was interested in developing national-level clusters. The 1995 White Paper on Small Business among other things outlined the importance of strengthening cohesion between small enterprises.

In the 1990s the Department of Trade and Industry invested heavily in studies on how to support clusters from various sectors, even commissioning cluster expert Micheal Porter's consulting company to carry out several such reports.[238] The department set up the Sector Partnership Fund, Workplace Challenge Programme and Competitiveness Fund to boost intra-firm and inter-firm co-operation which at the time were lacking in the country. The department then began analysing sectors and interacting with roleplayers such as industry associations. The department worked to popularise the cluster approach through workshops with key sectors in main manufacturing regions, through Spatial Development Initiative projects.

Yet, these studies did not always translate to sustained collective action by the stakeholders concerned. A key criticism was that the government did not have a clear funding programme to use to back up the formation of clusters.[239] The department was however able to improve working relationships between firms involved and officials at the department and officials were exposed to more knowledge about industry while businesses and other role players gained a better understanding for the department. But this was effectively cancelled out by the inability of the department to retain its sector-specific staff.[240]

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[238]   Telephonic interview with Glen Robbins, of the University of KwaZulu-Natal's School of Development Studies, October 2010.

[239]   "The Role of Government in Fostering Clusters: the South African Automotive Sector", Mike Morris, Glen Robbins and Justin Barnes, in *The Development Decade? Economic and Social Change in South Africa, 1994-2004*, edited by Vishnu Padayachee, HSRC Press, 2006, pp. 206 - 207.

[240]   *Ibid.*, p207.

In turn, while the Sector Partnership Fund gave out a matching grant of 65:35 to assist groups of five or more firms that co-operated on projects, the bulk of applications resulted in one-off projects rather than in sustained networking. Where networking did take place this failed to go beyond single-issue processes, such as the Port Elizabeth auto cluster where the sole focus was on logistics.

Mike Morris, Glen Robbins and Justin Barnes believe the department's dedicated clusters team, "yielded little more than analytical studies and workshops". Participants complained that the department was obsessed with setting agendas for clusters and that it failed to build trust and a shared governance of processes. For example in the Durban cluster initiative in chemical industry, government wanted the focus to be on exports whereas industry wanted it to be on resolving environmental management.[241]

Participants point to several weaknesses in the South African government's approach to clusters, namely:
  o The Department's attempts imposed agenda on firms.
  o A lack of trust building.
  o Little evidence of quick wins.
  o A cluster model founded on national, rather than on regional priorities, leaving firms disconnected from agenda.
  o Department of Trade and Industry facilitators' lack of credibility.

Glen Robbins, of the University of KwaZulu-Natal's School of Development Studies said the department had been keen to rather follow a one-size-fits-all approach which meant the cluster programmes the department implemented were rather simple and generic. But because of this the programmes ended up having little relevance for participants which resulted in poor buy-in from businesses. Robbins said that on top of this, provinces seemed to "toss money around at random things" when it came to cluster development. The brand of the Department of Trade and Industry was not taken to the local level he added. The department had sought to copy what was a trend when it came to industrial programmes, but when it came to how to organise and network with institutions Robbins said the department was "probably 30 years beyond the curve".[242]

The Department therefore took less of interest in clusters. This was partly because of a loss of skilled staff who had acquired knowledge and contacts. Said Mike Morris, Glen Robbins and Justin Barnes: "The DTI (department) seemed to have drawn the wrong conclusion from the failure of its short-lived policy emphasis on clustering – namely, that the fault lay with clustering per se – rather than reflecting on the role of its own mistakes in the way it formulated the cluster programme." At the turn of millennium the department under went restructuring and the focus shifted away from clustering.[243]

Discussion 2: How does one create effective clusters?
Rosabeth Moss Kantor[244] believes clusters grow because of three things:

  o Increased access, to new innovations and information, and spin-offs of new enterprises.

  o Improved connections and networks, that can speed the movement of ideas, innovations, and information from firm to firm throughout the economy, and

  o Better competencies, such as a more skilled workforce, leaders committed to learning and improving their community and the recruitment and retention of talent and tacit knowledge.[245]

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[241] *Ibid.*, p207

[242] Telephonic interview with Glen Robbins, October 2010.

[243] *Ibid.*, p208

[244] Rosabeth Moss Kantor, *World Class*, New York: Simon & Schuster, 1995, cited in Rosenfeld, 2002

[245] *Clusters: Balancing Evolutionary and Constructive Forces*, Orjan Sölvell, Ivory Tower Publishers, Karlavägen 70, Stockholmm, (www.cluster-research.org), 2008, pp. 7 – 9.

Douglas Comrie, Managing Director at B&M Analysts, which facilitates five clusters, four of them private-public partnerships[246], says it's not common in South African culture for companies to co-operate with one another, as the country's business culture does not have high trust levels. The problem with low levels of trust was that the cluster tended to look at external issues, resorting to lobbying for instance, rather than on improving workings inside their own individual companies. He said this meant cluster facilitators had to play a big role in building trust. B&M Analysts' approach was to focus on getting members to trust the facilitators, rather than to get members to trust one another first.

Noting the above position, Trusha Pillay[247], who owns Maritzburg Engineering and is a member of a chapter of the Durban Automotive Cluster[248] said she was never concerned about sharing information on her business with other cluster members. This was largely because her business offers services unique to those of other members. Her business, which has 38 employees, supplies various mechanical engineering services, manufactured bracket holders and parts for trucks and trailers. Her business has also benefited from cluster's the benchmarking programme. She estimated that she had been able to increase her turnover by over 30% since joining the cluster five years ago – mainly through being exposed to big business concepts and being benchmarked against other companies in the cluster. She also benefited from a training programme which twined her business with a large company. She pays R300 a month in membership fees.

Robbins said if clusters in underperforming regions were to prove successful that it was essential that a "more capable" state and private-sector institutions partner with one another. He nevertheless cautioned that the department's cluster policy could be short-sighted if it was limited to supporting only clusters in underperforming regions, rather than those where a higher number of businesses had set up. He cautioned against the department simply creating clusters where there was no pre-existing relationships between firms in a certain sector. For example firms were best able to work together if they were already involved in a supply chain together or shared issues around the local environment for example.

If the department wanted to create successful clusters it had to demonstrate that it could provide useful assistance to firms. Robbins pointed to one example in the automotive sector cluster in Durban where local authorities involved in the cluster had helped to source funding from the Department of Science and Technology for firms to meet a need identified by members of the cluster improve their employees knowledge on supply-chain standards.

Robbins said it was easier to share issues around absenteeism or HIV/Aids or those around benchmarking or common practice, which he referred to as low risk issues, than such things as export assistance. Here firms felt the risks of sharing information were high, as there was a fear that a competitor might use such information to "squeeze itself back into the market".

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[246] The five clusters B&M Analysts run are the Durban Automotive Cluster, the KwaZulu-Natal Clothing Clothing and Textile Cluster, the Cape Clothing Cluster, the Durban Chemicals Cluster and the Benchmarking cluba national association with about 50 members from the automotive industry. Members ordinarily pay half of the cost of a normal interventions, while the remaining half is covered by a local or provincial government. The two clothing clusters had a considerable number of small businesses, while small firms make up about a quarter of the 40 members of the Durban Automotive Cluster. A further 110 small suppliers benefit from enterprise development and supply-chain initiative benefits through 12 of the cluster's members, he said. Only about two of the firms in the chemicals cluster were SMEs, as the cluster committee has been focusing on securing the participation of substantive players in the sector, having only set up in 2009. B&M Analysts are mostly focused on aligned value-chains, where a supply chain was set up in the way that the introduction of one factor or product would influence the whole chain. For example in the automotive sector one had OEM, then tier 1, tier 2, tier 3 suppliers. By setting up a cluster in these sectors it was easier to find common needs for the various members, but not always so in a non-aligned sector such as chemicals sector. Here one had different types of chemicals. But Comrie said there were some commonalities in that all made some form of chemical.

[247] Interview with Trusha Pillay, October 2010.

[248] The KZN Auto Benchmarking Club was set up in 1998 and accessed the Department of Trade and Industry's Sector Partnership Fund (65% funding from government and 35% from auto members). The aim of the the cluster is to improve firms' performance. They led to increased knowledge sharing as firms shared experiences and learning and newsletters diffused to other layers of management within firms.

He said if the government and a sector weren't able to get buy in from a broad cross section of partners and firms from the sector, the cluster risked becoming ineffective.

Robbins pointed to the furniture cluster in KwaZulu-Natal, set up in 2009, which has a low level of firm participation. As not one person on the cluster committee has a strong industry background, could the committee is not able to carry any weight and gain the trust of member firms. The cluster has set up an incubator, but most of the members were micro-firms. The "dynamic" firms in the industry weren't included. Robbins said it was premature for the cluster to set up its own entity, but that a decision was taken to do so after provincial government indicated that this was necessary so that it could allocate funding to the clusters. At one cluster meeting businesses however expressed a reservation about setting up such an entity, so much so that only a "tiny number" came to the following cluster meeting. So it was left with "marginal" businesses and provincial government and Seda; the full value-chain of the industry was not represented and export agents did not even find it credible. Robbins said members in the furniture industry also felt they had wasted their time when government asked them for advice and then did not listen to its recommendations. He said the cluster had looked at minor things like whether it could promote the supply of school desks, rather than at bigger issues which would help improve the overall supply chain and sector. He termed this the "dumbing down of the potential of a cluster".

Discussion 3: How to win trust?

Jajat Shah, founder and mentor of Indian NGO Cluster Pulse said he wins member companies over by showing them research from a diagnostic study carried out of the cluster. This helped members to relate better to the consultants and to take them seriously. The participation of members is also secured by getting them to be involved on sub-committees and consortia made up of about 10 businesses. However, Shah, who has assisted 80 or more clusters, stressed that these methods often took time and pointed out that it was important to produce quick wins.[249] He believes that a successful cluster is not one in which everyone succeeds in any case. For example, Shah said he once assisted 20 textile clusters through Cluster Pulse between 2002 and 2005 and that in this case only 200 of the 500 of the businesses in the cluster benefited from the programme.

Discussion 4: Evaluation mechanisms

One challenge which is clear in both the Indian and Brazilian cluster policies and initiatives, is the lack of evaluation. Orjan Sölvell points out that many European countries do not evaluate their cluster activities and programmes.[250] When conducting an evaluation, he said it was necessary for clusters to have a "carefully planned impact". But, since cluster support programmes often created unintended side-effects, any evaluation, he said, should be able to assess the unanticipated side-effects outside of goal areas.[251] Sölvell, like Gandini in Brazil, points out that the evaluation of clusters and cluster programmes is a complex proposition. Some clusters are affected by several policy instruments in parallel, including regional policies, science and innovation policies and so on. It is thus difficult to separate out the effects from a particular cluster instrument.[252]

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[249] By, for instance, helping members to produce proper business cards and putting the cluster's logo and name of cluster on the cards.

[250] Sölvell, Orjan, 2008. *Clusters: Balancing Evolutionary and Constructive Forces*, Ivory Tower Publishers, Karlavägen 70, Stockholmm, (www.cluster-research.org), p.88.

[251] *Ibid.*, p.86.

[252] The following are some points about cluster evaluation in various countries: Canada's National Research Council Canada demands that every initiative must be evaluated after a programme has come to its conclusion; Sweden's state innovation authority Vinnova requires that each cluster initiative hire an external partner to follow the project and make evaluations that can also serve to legitimise membership and participation.[252] Scottish Enterprise, which adopted clusters in the 1990s, uses national statistics, to measure the number of firms in a sub-sector to determine the success of a cluster or not. Some specific sector studies were also commissioned to analyse the global sector context and broader economic influences. Indicators used included turnover, employment, gross value added, and net capital expenditure (Ibid, p100).

Discussion 5: Can clusters promote underperforming regions?

Douglas Comrie is sceptical of the South African government's idea to set up clusters in outlying areas. He said it would take "massive" rebates, tax exemptions or land incentives to lure firms to these regions. He said most businesses had already clustered in a particular area to take advantage of a cheap labour pool – such as clothing firms that were situated near the Lesotho border – to be near manufacturers, such as the automotive sector, or to be near the market – such as companies in the chemicals sector clustered near the Durban port.[253]

There is no clear-cut evidence internationally of the role clusters can play in promoting underperforming regions. In Europe regions with strong clusters are innovative leaders, according to Sölvell (2008). The author refers to data from the European Cluster Observatory (www.clusterobservatory.eu) which indicates that regions with no clusters or isolated research facilities have fallen behind other regions. Sölvell says globalisation has increased the benefits of strong clusters and raised the costs for regions which fail to develop some level of clustering.[254] Stuart Rosenfeld adds a nuance to this position and points out that the ability for clusters to promote underperforming regions is often limited because of a number of things. These include:
- o Weak infrastructure
- o Poor access to capital, technology, innovation, and capital.
- o Regional insularity and isolation
- o Low educational levels and skilled workers.

For Rosenfeld,[255] the most successful clusters are those that include firms that are part of global networks, that are exposed to global market opportunities, and that employ people active in international professional associations and networks.[256] Yet, he establishes that most of the world's successful clusters came about as accidents of circumstance. Although public policies may have been the catalyst of the success they have rarely been with the intent of starting a cluster. The growth of the largest clusters has been driven by market demand and entrepreneurial spirit. Some began as large companies that originally located in less populated areas to take advantage of low wages and surplus labour markets and that later disintegrated into smaller firms. Examples of regions that looked at transplanting clusters to weak economies via recruitment and incentives, have shown that this was usually only achieved at a very high cost.[257]

For Sölvell, clusters emerge because of the existence of natural factors (such as a particular climate, soil, ore deposit, forest resource) or because of a transportation route or node such as a port. Clusters have also been driven by "historical accidents" where an entrepreneur in a particular location happened to start a business, which in due time led to increasing local demand, new firm formation, spin-off firms and so on, and ultimately to a cluster[258] although other factors can also be important.[259]

Rosenfield points out that there is no "single recipe" for less favoured regions to follow that will meet the needs of all clusters. Nevertheless, those that take into consideration the following might prove successful:

- o Understand and benchmark regional economies.

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[253] Telephonic interview with Douglas Comrie, October 2010.

[254] *Ibid.*, p.34

[255] Rosenfeld, Stuart A, 2002. "Creating Smart Systems: A guide to cluster strategies in less favoured regions, European Union-Regional Innovation Strategies", Regional Technology Strategies Carrboro, North Carolina.

[256] *Ibid.,* pp. 9 - 10.

[257] *Ibid.,* p.11.

[258] *Ibid.,* pp. 54, 55.

[259] For instance, Sölvell says Silicon Valley is the result of federal legislation and allocation of research grants through the Bayh-Dole act in 1980, the setting up of world-class research facilities and the setting up of Stanford University which drove some of the clusters early initiatives (Op. Cit. pp. 67 – 68).

- o Engage employers and institutions.
- o Organise and deliver services.
- o Build a specialised work force.
- o Allocate and attract resources and investments.
- o Stimulate innovation and entrepreneurship.[260]

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[260] Op. Cit, p.14.