



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org



Cluster development for pro-poor growth: the UNIDO approach



Business, Investment and Technology Services Branch
Programme Development and Technical Cooperation Division

Cluster development for pro-poor growth: the UNIDO approach



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna, 2010

Copyright© 2009 by the United Nations Industrial Development Organization (UNIDO)

This technical paper has been produced by the United Nations Industrial Development Organization (UNIDO) under the general guidance of Giovanna Ceglie, Chief of the Cluster and Business Linkages Unit of UNIDO, and with support of Anna Stancher, UNIDO Consultant. The authors are thankful to Michele Clara, Manuel Albaladejo and Margareta De Goys for their contributions and valuable comments on the draft paper.

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

BIT Technical Papers Series

The Technical Papers Series is a series of occasional papers arising from the work of the Business, Investment and Technology Services Branch of the Programme Development and Technical Cooperation Division (PTC/BIT) of UNIDO. It is intended as an informal means of communicating important insights and findings from the technical cooperation and research activities of the Branch to a wider public of interested development practitioners, policymakers and academics. Comments and suggestions on the issues raised in these papers may be addressed to:

Mr. Mohamed Lamine Dhaoui
Officer in Charge, PTC/BIT
UNIDO
P. O. Box 300
1400 Vienna

Tel: (+43-1) 26026 5183
Fax: (+43-1)
E-mail: M.Dhaoui@unido.org

Previous publications in this series:

- Paper No. 1 Case Study on the Operation of Three Romanian Business Centres
- Paper No. 2 SME Cluster and Network Development in Developing Countries:
The Experience of UNIDO
- Paper No. 3 Capacity-Building for Private Sector Development in Africa
- Paper No. 4 Financing of Private Enterprise Development in Africa
- Paper No. 5 Assistance to Industrial SMEs in Viet Nam
- Paper No. 6 Cluster Development and Promotion of Business Development Services
(BDS):UNIDO's Experience in India
- Paper No. 7 Women Entrepreneurship Development in Selected African Countries
- Paper No. 8 Thailand's Manufacturing Competitiveness:
Promoting Technology, Productivity and Linkages
- Paper No. 9 High-Tech Incubation Systems as Drivers of Innovation:
The Case of Central European Transition Countries
- Paper No.10 Credit Guarantee Schemes for Small Enterprises: An effective Instru-
ment to Promote Private Sector-Led Growth?
- Paper No.11 Reforming State-Owned Enterprises: Lessons of International
Experience, especially for the Least Developed Countries
- Paper No.12 Malaysian Electronics: At the Crossroads
- Paper No.13 Corporate Social Responsibility and the Development Agenda: Should
SMEs care?
- Paper No.14 Combining Strengths: Synergies between Cluster Development and
Microfinance
- Paper No.15 Private Sector Development: The Support Programmes of the SME
Branch
- Paper No.16 Better Access to Growth. Mainstreaming Gender in Cluster
Development
- Paper No.17 Global Value Chains, Local Clusters and Corporate Social
Responsibility:
A Comparative Assessment of the Sports Goods Clusters in Sialkot,
Pakistan and Jalandhar, India

CONTENTS

Acronyms	vi
Executive summary	vii
1. Origins and objectives of the approach	1
2. The determinants and pro-poor potential of cluster development	3
3. UNIDO's approach and services for cluster development	5
3.1 Trust and governance building	6
3.2 Institutional capacity-building	7
3.3 Unlocking pro-poor effects	12
4. Lessons learned and conclusions	15
References	18

Boxes

1. Collective efficiency gains in the surgical instrument cluster of Sialkot, Pakistan	3
2. Building capacities for cluster development: evidence from the cluster of Rivas, Nicaragua	7
3. Network and subcontractor development to boost the competitiveness of metal and woodwork producers in Mekelle, Ethiopia	8
4. Enhancing buyer–supplier collaboration in the livestock cluster of Chontales, Nicaragua	9
5. Tuning training offer on private-sector needs in the hosiery cluster of Ludhiana, India.	10
6. The garment cluster of Atuntaqui, Ecuador: a successful example of institutional engagement for cluster development	10
7. Access to credit for SMEs: the case of mutual guarantee cooperatives in Senegal	11
8. Empowerment of women through a cluster approach in Barpalli, India	13
9. Health-care improvements to help women weavers increase their productivity	13
10. Public-private partnership in the dairy cluster of Chontales, Nicaragua	14
11. From cluster initiatives to policy reform: UNIDO experience in the State of Orissa, India	16

Acronyms

AICTE	All India Council for Technical Education
APLARI	Asociación de Productores de Plátano y Guineo de Rivas
BDS	Business development service
BOTIT	Bureau of Trade, Industry and Transportation
CAD	Computer-aided design
CDA	Cluster development agent
DFID	Department for International Development
GPW	Government Polytechnic for Women
MDGs	Millennium Development Goals
MGC	Mutual guarantee cooperative
MIE	Mesefin Industrial Engineering
MPVHA	Madhya Pradesh Voluntary Health Association
MSMEs	Micro, small and medium enterprises
SHG	Self-help group
SME	Small and medium-sized enterprise
UNICEF	United Nations Children Fund
UNIDO	United Nations Industrial Development Organization

Executive summary

The cluster concept has gained prominence as an economic policy tool aimed to foster innovation and the growth of a competitive private sector in developing countries.

More recently, donors and development agencies have paid increasing attention to the potential of cluster initiatives to bring about pro-poor effects. Generally speaking, thriving clusters can generate employment, income and opportunities for the local community and become drivers of broad-based local economic development.

This paper builds on the experience of UNIDO (United Nations Industrial Development Organization) in identifying good practices for and lessons learned from the implementation of pro-poor cluster initiatives.

It starts by reviewing the origins of the approach (section 1) and explaining why cluster initiatives have attracted the attention of scholars and development agencies as a route to foster private sector development (section 2).

It then presents the main components of UNIDO's assistance to cluster development, which include the promotion of trust and governance as well as institutional capacity-building activities (section 3). Further, it argues that if it is to contribute to poverty reduction, a cluster initiative needs to undertake explicit investments to strengthen the poor's capabilities and allow them to take advantage of emerging economic opportunities. Otherwise economic growth may not automatically generate benefits for the poor.

This paper concludes (section 4) that a set of trade-offs may affect pro-poor cluster initiatives and that development agencies, donors and governments need to be clear on the expected impact of their support and avoid the attempt to meet too many objectives at once. Taking an informed choice and being aware of the implications will improve the design and management of a cluster initiative and enhance the sustainability of the triggered changes.

An earlier version of this paper was published in G. Beccattini, M. Bellandi and L. De Propis (2009) *A Handbook of Industrial Districts*. Edward Elgar, Cheltenham, United Kingdom.

1. Origins and objectives of the approach

The cluster concept has gained increasing prominence on the agenda of international development organizations over the last decade. The foundations of this paradigm can be traced back to the work of the economist Alfred Marshall, who in *Principles of Economics* (1890) described the phenomenon as “the concentration of specialized industries in particular localities” and noted that these agglomerations of small-scale businesses enjoyed economies of scale comparable to those of large firms. In the late 1970s, the concept was highlighted again as a new model of industrial organization after the relative decline of Fordist mass production. In particular, studies on the so-called Third Italy illustrated the flourishing of cities and communities on the basis of concentrations of small and medium firms belonging to the same industry.¹ More recently, Michael Porter popularized the concept of industry clusters in his book *The Competitive Advantage of Nations* (1990). Thereafter, there has been a surge of interest in clusters as drivers of economic growth and hubs of innovation.

In industrialized countries, this literature stream has motivated a shift toward the design of industrial and innovation policies focused on territorial factors. Industrial poles, clusters and local production systems have become one of the central themes to encourage entrepreneurship, learning and productivity improvements (McDonald and Belussi, 2002). In the last two decades, hundreds of cluster initiatives have been launched, involving virtually all regions of the world and their number is growing. A case in point is Europe, where two-thirds of European Union countries have introduced the cluster approach in their innovation policy, while several European initiatives are based on the provision of incentives and funding to boost competitive territorial advantages.²

The interest in geographical concentrations of firms has not gone unremarked in developing countries. A body of research has shown that clusters are also a widespread phenomenon in developing economies and can display levels of dynamism and innovation similar to those in industrialized countries.³ The high-tech industry of Bangalore, India, the Chilean wine clusters and the Sialkot, Pakistan, surgical instruments cluster are examples of many successful cases. These dynamic clusters have achieved high growth levels, gained a stable foothold in the international market and generated wealth and prosperity at the local level.

Yet, this is only one part of the story. A considerable number of clusters in developing countries are lagging behind, trapped in a vicious circle of cutthroat competition. Although representing substantial pockets of entrepreneurial activities and providing a living to entrepreneurs and workers, when clusters are unable to shift from stagnation to growth, their potential to contribute to the development of local communities remains largely untapped.

¹See Pyke, F., Becattini, G. and Segenberger, W. (eds.) (1990). *Industrial districts and inter-firm co-operation in Italy*, International Institute for Labour Studies, Geneva.

²OxfordResearch AS (2008). *Cluster Policy in Europe. A brief summary of cluster policies in 31 European countries*. Kristiansand, Norway.

³See Oyeleran-Oyeyinka B. and McCormick D. (2007); Giuliani E. and Bell M. (2005); Weijland H. (1999); Tewari M. (1999); Knorrinda P. (1999); Schmitz H. (1998); McCormick D. (1998), Nadvi, K. and Schmitz, H. (1994), Nadvi K. (1998); Schmitz H., and Nadvi K. (1999), Knorrinda, P. (1999), among others.

The United Nations Industrial Development Organization (UNIDO) has been actively assisting clusters in developing countries since the mid-1990s. Its engagement has been shaped by the observation that developing countries' clusters can flourish if the root causes of underperformance are tackled. While this approach is similar in its rationale to many of the cluster initiatives promoted in industrialized countries, the challenge for UNIDO has been to match economic growth objectives with wider concerns for local economic development and poverty reduction.

This concern has gained increasing prominence with the adoption, by the international community, of the Millennium Development Goals (MDGs) that call for halving poverty by 2015.⁴ In this context, private-sector development initiatives have been identified as an effective strategy towards the promotion of the pro-poor agenda,⁵ since a thriving private sector “can alleviate poverty by contributing to economic growth, job creation and poor people’s incomes. It can also empower poor people by providing a broad range of products and services at lower prices”.⁶

The present chapter builds on the experience of UNIDO in its worldwide project activities to show how cluster development can be used to achieve a number of pro-poor outcomes.

⁴In September 2000, world leaders came together to adopt the United Nations Millennium Declaration, committing their nations to reduce extreme poverty and setting out a series of targets—with a deadline of 2015—that have become known as the Millennium Development Goals (MDGs). See: www.un.org/millenniumgoals/

⁵On the concept of pro-poor growth, see OECD (2004): Promoting pro-poor growth: private sector development. OECD, Paris

⁶The United Nations Commission on Private Sector and Development (2004). Unleashing entrepreneurship. UNDP, New York, page. 1.

2. The determinants and pro-poor potential of cluster development

In the framework of private-sector development initiatives, cluster-based interventions have gained momentum. Three main arguments can be advanced to explain the focus on clusters as targets of development assistance:

- (a) Collective efficiency gains;
- (b) Spatial proximity effects; and
- (c) Pro-poor potential.

To start with, clustered enterprises can achieve levels of competitiveness that reach beyond the potential of individual enterprises. While the growth of individual small-scale firms is constrained by limited access to resources and inability to achieve scale and scope economies, firms within clusters benefit from collective efficiency gains, i.e. “the competitive advantage derived from local external economies and joint action”.⁷ External economies include the availability of a specialized labour force, machinery and input suppliers, the attraction of traders and buyers as well as an industrial atmosphere where information and knowledge are easily shared.⁸ Joint actions range from collaborative relations between individual firms to the establishment of multilateral institutions such as associations, cooperatives or political lobbies.

Therefore, cluster enterprises are able to achieve higher and sustained growth rates, for synergies and collaborative linkages allow them to pool resources and efforts together for the achievement of shared economic goals. Collective efficiency gains can be further enhanced when the institutional and policy frameworks are responsive to the firms’ needs and supportive of their efforts. An example of collective efficiency gains is offered by the analysis that Nadvi (1997) makes of the Sialkot surgical instrument cluster.

Box 1. Collective efficiency gains in the surgical instrument cluster of Sialkot, Pakistan

The surgical instrument cluster of Sialkot (Pakistan) encompasses about 300 SMEs located in the Punjab province of Pakistan. Sialkot producers have gained Pakistan the position of second major exporter of surgical instruments in the world, since 90 per cent of their output is exported, which accounts for 20 per cent of global trade in this sector. Moreover, a large share of their production is absorbed by the European and North-American markets, confirming that Sialkot is supplying the world market with high-quality products. Nadvi reports that the growth of this cluster rests on the benefits deriving from the presence of specialized suppliers that ensures ready availability and quick

⁷Schmitz, H. (1997). Collective efficiency and increasing returns. IDS Working Paper 50.

⁸Bellandi, M. (2002). “External economies and local public goods in clusters and industrial districts: Some views”, 6th International EUNIP CONFERENCE, Turku, Finland, 5-7 December.

delivery of inputs at competitive prices. Thus the flexibility of producers is increased, since they can respond rapidly to new orders. The presence of global couriers accounts for stable linkages to existing and potential buyers. A widespread network of subcontractors allows for the achievement of scale and scope economies through division of labour and specialization. The concentration of skilled labour ensures reasonably low wages and availability of employees, whose credentials are easily proved. Formal and informal meetings account for the spread of market/export/technical information among producers. Finally, inter-firm cooperation and a good understanding with subcontractors and inputs suppliers allow the cluster to satisfy large orders and achieve steady improvements in the production process.

Leveraging collective efficiency lies at the core of the UNIDO approach to local development through clusters. In order to strengthen collaboration between cluster stakeholders, UNIDO promotes inter-firm networking and encourages public and private sector institutions to improve their portfolio of services. Additionally, it assists policy-makers to reform regulations and policies in tune with private sector needs. The idea is to provide cluster stakeholders with an enabling business environment that paves the ground for sustained growth.

Although enterprise networking, especially in a globalized environment, has no territorial boundaries, it has been observed that the achievement of collective efficiency gains is facilitated by spatial proximity such as among firms within clusters. By means of reputation effects as well as a shared work ethos and attitudes, proximity moderates the moral hazard associated with the performance of economic transactions. On the one hand, risk is decreased when firms know their partners and can easily gather information on their reliability. On the other hand, firms have fewer incentives to engage in opportunistic behaviour since this will affect their future ability to acquire economic partners as well as attract social stigma. More generally, proximity may facilitate the development of trust-based relations that lower transaction costs and support collaborative interactions.

In the experience of UNIDO, spatial proximity also enhances the effect of technical cooperation, as it stimulates “crowding in” or “spontaneous replication” effects among a number of stakeholders higher than the recipients of direct assistance. Indeed, the extensive web of relationships shared by cluster stakeholders facilitates the dissemination of information, knowledge or commercial gains from directly assisted enterprises and institutions to the cluster at large.

With respect to pro-poor growth, UNIDO has learned that a cluster approach can be a valuable tool to tackle poverty and lay the ground for a process of broad-based growth. This is partly due to the fact that clusters are also socio-economic systems where the population of firms overlaps with the community of people and their families, living and working in a delimited territory. Not only do entrepreneurs and workers share a similar social, cultural and political background, but also norms of reciprocity and collective practices of self-help are common among employers and employees. Overall, this accounts for a distribution of the benefits of growth that is likely to be more inclusive than in other economic systems.

However, to maximize pro-poor gains, cluster initiatives need to take on an explicit focus and undertake specific investments in favour of the poor, as will be outlined in the next section.

3. UNIDO's approach and services for cluster development

The competitive advantage produced by collective efficiency is often out of reach for developing countries' clusters, where firms operate in isolation and institutions are not receptive to their needs.

In spite of the potential benefits of clustering illustrated in the previous sections, the propensity of enterprises and supporting institutions in a locality to work together is constrained by a number of obstacles. First, engaging in collaborative ventures entails high transaction costs related to gathering and assessing information on, for instance, whether partners are reliable and the relationship beneficial or less. Also, small-scale firms usually operate under a short-term horizon, which leads them to magnify short-term costs while it prevents them from identifying longer-term benefits.

The costs related to collaboration increase in contexts, such as developing countries, where institutions are weak and unable to exercise control and enforce sanctions that reduce the risk of default and opportunistic behaviour between the partners of a contractual agreement. Low levels of trust also hamper interaction between cluster firms and their support institutions, reduce their propensity to information exchange and hinder the development of business partnerships. In many cases the entrepreneurial population is constituted by a few large-scale enterprises (often foreign owned) and a large number of local micro-enterprises, with few medium-size actors. This determines a large imbalance of power and a wide technological gap among these two types of enterprises that makes the integration of the industrial fabric difficult to achieve.⁹

Looking at the institutional environment, business associations, in which firms should find a forum for dialogue and coordination, are often weak, politicized or dominated by a few large enterprises. Similarly, local governments can be unresponsive to the needs of the private sector, particularly when this is mainly constituted by micro- and small firms. Finally, financial institutions, training and business development service (BDS) providers are unable to deliver services and assistance that are customized to the needs of small-scale firms.

To address these challenges, UNIDO cluster development initiatives rely on the engagement of facilitating agents who operate as impartial brokers among cluster actors and help them share information and coordinate their endeavours. These brokers, known as cluster development agents (CDAs), are professionals working on a daily basis in the cluster, who support all stages of a technical assistance initiative, from the formulation of a diagnostic study to planning and implementing private sector development activities. A core task of the CDA is the promotion and coaching of business networks. Providing network members with training, operational support, incentives and motivation as well as encouraging knowledge diffusion and providing exposure to best practices are major determinants of the success of a cluster initiative.

⁹Meyer-Stamer, J. (2003). Obstacles to cooperation in clusters, and how to overcome them. *Developing Alternatives*, Vol. 9, No. 1. Meyer-Stamer, J. and Harmes-Liedtke, U. (2005). How to Promote Clusters. *Mesopartner Working Paper 8*.

Given that the end-objective of UNIDO assistance is to generate endogenous and sustainable changes in the clusters, the CDAs are not meant to substitute for the role and performance of cluster actors. On the contrary, they provide assistance and support to cluster actors in the organization and coordination of collective activities. By adopting a participatory and empowering approach, they aim to mobilize existing resources and competences, strengthen them and enhance their impact on cluster performance by channeling efforts and resources to the attainment of collective goals.

Through the employment of CDAs, UNIDO initiatives assist developing countries' clusters by:¹⁰

- Building trust and governance in order to remove obstacles to and reduce the costs of collective actions;
- Strengthening the capacities of local institutions that support entrepreneurial and productive capacities of the cluster; and
- Unlocking pro-poor effects.

3.1 Trust and governance building

Trust is a precondition for the development of collective activities in that it decreases the risk associated with the achievement of common business goals. It also enhances information exchange, thus facilitating learning and innovation, and encourages private–public sector cooperation for the establishment of appropriate services and infrastructure. Trust-based relations can also offset institutional weakness, by, for instance, supporting a reputation mechanism instead of contractual control, when the legal basis for the latter is insufficient.

It is not only the propensity of cluster actors to work together that matters, but also how interactions are supported by formal and informal institutions, which is captured by the concept of cluster governance. Governance can be understood as the capacity of the cluster to start and sustain joint actions in a systematic and strategic fashion. A sound governance system allows the cluster actors to identify shared objectives, agree on a common strategy for their achievement, articulate collective actions and solve related problems, monitor outcomes and ensure their sustainability over time.

When left to the market, investments in trust and governance are unlikely to be performed, due to their strong public goods features. This means that no private actors can take exclusive possession of the benefits deriving from an investment in these goods, even if they have invested in it far more time and resources than anyone else. Nor can other actors be prevented from free-riding on their benefits. It follows that the willingness of cluster actors to pay for their provision is limited.

Evidence from thriving clusters shows that trust and governance-building functions are most often performed by public sector agencies or not for profit institutions, such as the local government, a local development bank, a public-sector SME support agency, a regional development agency, etc. Given their non-profit orientation these or similar

¹⁰Ceglie, G. and Dini, M.(1999). "SME Cluster and Network Development in Developing Countries: The Experience of UNIDO." Private Sector Development Branch, Vienna, 2001.

organizations have a mandate to invest in public goods. In developing countries, however, a shortage of skills and suitable operational and financial means limit the effectiveness of such institutions. This is where international development organizations such as UNIDO can help by launching cluster development projects to showcase the effectiveness of the approach, while also providing assistance to local institutions to enable them to sustain and replicate the initiative. To this end, developing countries' institutions receive support in the diagnostics of cluster needs, planning of strategic activities as well as in the promotion of business linkages and public–private partnerships.

Box 2. Building capacities for cluster development: evidence from the cluster of Rivas, Nicaragua

The cluster of Rivas, Nicaragua, is made up of about 4,000 banana producers, mostly small-scale enterprises selling to the local or regional market. About 500 producers are affiliated to APLARI, an association providing enterprise development services to its members. When UNIDO started assisting the cluster, the CDA identified in APLARI a potential leading agency for cluster development, given its large membership, the legitimacy it enjoyed in the cluster and its good implementation capacity.

In order to strengthen its capacity, the CDA trained three staff members in the cluster development methodology. They were taken on exposure visits to well performing clusters and received regular handholding. The CDA also assisted APLARI in identifying and sensitizing local and national support institutions that were involved in the process of cluster diagnostic and action planning.

Thereafter, APLARI took the lead of the initiative and facilitated the establishment of working groups, including representatives of the relevant institutions and cluster entrepreneurs, each of them in charge of coordinating one or a few cluster development activities. By the end of the project, the informal working groups had bundled together within a permanent Cluster Commission whose constituents, including APLARI, are representatives of all cluster actors. The Commission is networked with a number of other local and national institutions. Overall, APLARI has assumed a leading role in formulating and assisting the implementation of joint activities, while its broad and open membership ensures that the benefits are spread among all cluster stakeholders.^a

^aSee: UNIDO (2008). Fomento de conglomerados en Nicaragua: estudios de caso y aprendizajes.

A key element in ensuring the sustainability of a cluster initiative rests in fostering cluster governance. This refers to organizations, norms and values that facilitate joint actions and sustain collaboration over time. Therefore, the CDA makes considerable efforts to strengthen the management capacity of organizations, or networks thereof, and the degree of representation of all categories of cluster actors. Similarly, the CDA promotes the adoption of norms that regulate interaction and transactions between the economic actors (e.g. contracts, standards but also statutes and collaborative agreements) and fosters business ethics based on compliance to commitments and collaboration.

3.2 Institutional capacity-building

Within this second broad area of activities, UNIDO's main targets are policymakers, BDS providers, business associations and training institutes. Capacity-building activities pursue a two-fold objective. On the one hand, they aim to enhance dialogue and collaboration

between entrepreneurs and support institutions. On the other hand, they seek to strengthen the latter's capacity to provide efficient and effective services.

In what follows some examples from UNIDO projects are presented.

- (a) *Development of enterprise networks and business linkages.* This is a crucial feature of cluster development, since networks and linkages are the building blocks of collective efficiency. Horizontal networks are alliances of enterprises engaged in the same or similar products or processes that seek synergies in pursuing shared commercial goals. They allow producers to reap the benefits of economies of scale and of a larger and more diversified product offer. Vertical linkages refer to relationships between enterprises located at different levels of a production chain. They can be forged backwards and forwards, and include subcontracting agreements, supplier development initiatives as well as the establishment of linkages between producers and buyers, both domestic and international. Initiatives aimed at improving communication between actors located at different levels of the production chain are likely to increase the quality of the produced goods or services as well as to improve producers' performance in terms of timely delivery and reliability.

Box 3. Network and subcontractor development to boost the competitiveness of metal and woodwork producers in Mekelle, Ethiopia

The city of Mekelle in the Tigray National Regional State of Ethiopia is home to a metal and woodwork cluster. This includes more than 250 metal and wood workshops and 24 cooperative associations. Most workshops manufacture household equipment, office furniture, agricultural implements, construction materials, and simple machines. Mekelle also hosts one of the largest manufacturers of metal products in Ethiopia, the Mesefin Industrial Engineering (MIE), a leading equipment manufacturing and industrial engineering company in East Africa.

The cluster experienced an exponential growth in the period 2001 to 2005 thanks to public procurement measures and to the growing demand for machinery fuelled by a boom in agricultural production. Also, MIE had started providing subcontracting arrangements to a few metal workshop enterprises. More recently, however, the cluster underwent a significant decline mainly due to shrinking market access. As well as an overall decrease in demand, micro and small workshops faced increasing difficulties in meeting quality requirements which excluded them from participation in tenders and public procurement. Furthermore, poor product quality meant a decline in the orders placed by MIE. In order to help the cluster regain competitiveness, UNIDO has promoted the development of SME networks and the revitalization of subcontracting agreements with MIE. To do so, a cluster working group was established which provided the framework for SMEs, MIE and local institutions, particularly the University of Mekelle and the Bureau of Trade, Industry and Transportation (BOTIT), to discuss bottlenecks and design a shared development strategy.

This has led to the adoption of a two-pronged approach. On the one hand, MIE is providing training within its facilities to SMEs in welding, drawing, design and quality control among others, with support and co-funding BOTIT. On the other hand, the University of Mekelle is collaborating with MIE on the development of new prototypes of machinery that can be manufactured using locally available inputs. Designs formulated by the College of Engineering are tested by MIE, which will then undertake production and subcontract the manufacturing of small metal and wood parts and tools to SMEs.

Finally, BOTIT, which is a government agency, facilitates the participation of micro-and small-scale firms in tenders for public procurement and provides collective working premises.

Through these collaborative agreements, the cluster has produced 24 new prototypes that can substitute for previously imported machinery and SMEs are again benefiting from stable market linkages.^a

^aUNIDO (2008). Report on the Mekelle cluster - Ethiopia.

Box 4. Enhancing buyer–supplier collaboration in the livestock cluster of Chontales, Nicaragua

The livestock cluster of Chontales, Nicaragua, encompasses about 7,000 farmers and a handful of slaughterhouses processing meat and selling to supermarkets and end-consumers. Despite its high production capacity, the cluster was unable to provide the market with quality products, mainly due to the lack of coordination between its actors. The farmers were unaware of the requirements of the meat industry, which led to irregular supply and low quality. On the other hand, the slaughterhouses felt little commitment towards their suppliers, who lamented a non-transparent pricing policy and delays in payment. In order to increase the coordination capacity between producers and processors, UNIDO facilitated the drafting of a supply agreement between farmers' cooperatives and a leading processing company, and sensitized the farmers to its time and quality requirements. As a result, the farmers' cooperatives have defined a supply calendar to ensure regular delivery of cattle to the industry. The slaughterhouse, on its part, has devised a clear payment system. Overall, this has led to regular payments to the livestock producers and an increased and steadier processing capacity for the slaughterhouse vis-à-vis competitors.^a

^a UNIDO (2008). Fomento de conglomerados en Nicaragua. Estudios de caso y aprendizajes.

- (b) *Skills upgrading.* Skill deficits are common among underperforming clusters and range from scarce technical competence and low levels of education of the workforce (i.e. industrial skills), through poor business management capacities (i.e. entrepreneurial skills), to weak capabilities of the staff of local institutions and policymakers (i.e. governance skills). These hamper the capacity of the cluster to learn, innovate and upgrade. Skills shortages also reflect the inability of the local training system to supply the cluster with the qualifications required by an innovative private sector. Therefore, UNIDO works with local training providers to improve the skill base of the clusters, facilitates contact building with external sources of expertise and knowledge, and helps skills providers to re-orient their training offer towards the provision of skills that match the needs of the cluster.

Local governments and municipalities are also primary targets of institutional capacity-building activities, since they play a crucial role in sustaining the momentum of collective activities. They are thus sensitized to the relevance of cluster dynamics for economic development and exposed to international good practices on cluster promotion.

Box 5. Tuning training offer on private-sector needs in the hosiery cluster of Ludhiana, India.

The competitiveness of the hosiery cluster of Ludhiana, India, was severely affected by the insufficiency of the trained labour force. Several technical support institutions existed in the cluster but had no interaction with the industry and could not match the skill needs of the cluster. With UNIDO's support, a network of exporters (APPEAL), created a committee that documented the various mistakes workers made which led to production loss or rejection. Based on these inputs, five training modules were elaborated. These included industrial stitching and tailoring, linking, cutting and pattern making, designing and merchandising and overall supervisory skills.

The Government Polytechnic for Women (GPW), an existing technical institution, was entrusted with the provision of this demand-based training and formulated a training course that became progressively tuned to the needs of the industry. APPEAL and GPW thus obtained support from the All India Council for Technical Education (AICTE) to create a skill development centre on the GPW premises.

The improved match between skill demand and training is illustrated by the increase in the number of GPW students now working in the industry. Finally, the programme's success laid the groundwork for establishing of a fully-fledged design centre within GPW.^a

^a UNIDO (2002) End of project report. Knitwear cluster of Ludhiana, India

- (c) *Strengthening support institutions.* BDS providers (technical institutions, industry associations and NGOs among others) are an important recipient of UNIDO's assistance since they play a crucial role in improving the access of cluster enterprises to financial and non-financial services. They can do so directly by developing or updating their service portfolio, or indirectly by providing information to cluster firms on service availability and facilitating access to them. The services that can be offered or facilitated include counselling, information dissemination, training, business plan development for credit access, advice on technology, and establishment of shared facilities. Overall, the focus of UNIDO is on the development of a competitive BDS market. This implies increasing the outreach of existing services as well as developing new ones to meet the demand of cluster firms. It also entails efforts to foster the demand for BDS, by making firms aware of available support services and their usefulness.

Box 6. The garment cluster of Atuntaqui, Ecuador: a successful example of institutional engagement for cluster development

The garment cluster of Atuntaqui, Ecuador, had based its competitiveness on low-cost production. However, with the adoption of the dollar as the regular currency, prices increased to the extent that producers lost access to their traditional export market in Colombia. In order to overcome the crisis, the cluster needed to regain competitiveness via quality and productivity improvement. One of the initiatives promoted by UNIDO was the establishment of a CAD centre and a library of accessories within the local Chamber of Commerce. Today both services are provided to local enterprises at cost recovery rates. Another initiative focused on workers' technical skills and identified a striking mismatch between the needs of garment producers and the training offered by local

educational and vocational institutes. By strengthening communications between these institutes and the enterprises, the project has contributed to improving the skill base of the cluster through the establishment of an apprenticeship scheme, the updating of curricula and the training of teachers.

A third activity focused on developing a territorial marketing strategy which was endorsed and taken on by the municipal government of Atuntaqui. Territorial marketing aimed, in the first place, at linking garment production with the identity and heritage of the town. However it also turned into a means of promoting other economic activities performed locally (i.e. tourism, agro-industry and handicrafts). This was possible thanks to the organization of an annual fair and fashion show, which has strengthened the image of Atuntaqui as a centre for the production of quality garments while also attracting hundreds of visitors to the benefit of the local tourism and food industry.^a

^aMaria Piedad Velasco (2007). Casos sobre la promoción de redes horizontales de confecciones en Atuntaqui y calzado en Ambato en Ecuador.

Institutional strengthening can also extend into financial service provision, as shown in the example below on Senegal.

Box 7. Access to credit for SMEs: the case of mutual guarantee cooperatives in Senegal

Access to credit is a concern for most SMEs in Senegal. Financial institutions charge high interest rates and tie loans to the provision of consistent asset guarantees, which penalizes small and medium enterprises. Also, loans are mostly disbursed in the form of short-term credit, to be repaid within one year. This can be used to fuel day-to-day operations but it is inadequate to finance long-term investment such as equipment and services purchase.

In order to tackle this bottleneck, UNIDO partnered with local banks and credit associations to establish a new scheme providing mutual guarantee funds for SME networks. Initially, assistance focused on the creation of mutual guarantee cooperatives (MGC) in ten municipalities. These are associations whose members, i.e. SMEs and SME networks, are jointly liable for other member's debts. SMEs submit their loan application to the MGC first. The MGC reviews the proposal and, if found suitable, provides a financial guarantee that complements the asset guarantee of the applicant. Furthermore, MGCs are part of a national federation that can be requested to review and endorse the application by offering an additional guarantee covering up to 50 per cent of the loan. By this means applicants are able to access credit from the national bank on more favourable terms. The system of multiple checks and screening set up under the UNIDO project ensures that only viable investment proposals are submitted to the bank for funding. Additionally, the municipality supports SMEs at the stage of formulation of investment proposals. As a result of the peer pressure and monitoring among MGC members, loan repayment occurs timely and promptly. In the timeframe of the UNIDO project, about 80 SME networks attained access to loans directly and through the MGC scheme, for a total of € 610,000. Credit was disbursed at an interest rate approximately 5 points lower than what is usually charged and most applicants benefited from a considerably longer repayment schedule (of two years or more).^a

^aUNIDO (2009) Project report on Senegal.

3.3 Unlocking pro-poor effects

In the earlier sections of this paper we have seen that clusters are conducive environments for the growth of a thriving private sector. Yet, private sector development does not automatically contribute to poverty reduction.

The experience of UNIDO shows that the pro-poor growth potential of cluster development can be unlocked when assistance is provided along two self-reinforcing lines oriented, respectively, at:

- (a) Generating economic opportunities for the poor; and
- (b) Tackling other (non-economic) dimensions of poverty.

With respect to the first (a), the challenge for a cluster development initiative is to gear collective efficiency gains towards the poor, so that they can increase the productivity of their assets and deploy them to respond to emerging demands and market opportunities.

This holds true throughout a cluster initiative. To start with, a pro-poor initiative will select clusters that offer the greatest potential to generate economic opportunities for the poor. This could be because of the nature of employment (e.g. preponderance of unskilled workers, presence of women or home workers) or of the sector (e.g. highly labour-intensive production with low capital requirements or activities based on artisanal skills) or based on geographical considerations (e.g. rural areas).

When it comes to activity implementation, the adoption of a pro-poor focus means, on the one hand, that greater attention is devolved to promoting productive activities that facilitate a fairer distribution of income. This implies, for instance, supporting the diffusion of appropriate technology rather than capital-intensive equipment, investing in upgrading the skills and employability of marginalized segments (such as women, migrants, minorities), and encouraging the production of goods and services affordable by the poor.

Considering the trust and governance-building processes, emphasis will be placed on establishing or strengthening representation and voice mechanisms for the poor segments of the cluster, in order to facilitate their participation in decision making. Thus, institutional actors such as NGOs, village councils, women's federations and self-help groups will play a key role.

The second component of this two-fold strategy (b) acknowledges that poverty cannot be equated only to the lack of material assets. Taking the view of Amartya Sen¹¹ (1999) it recognizes that poverty is a multidimensional concept encompassing economic deprivation but also lack of political, socio-cultural, human and protective capabilities. The poor may be unable to take advantage of economic opportunities, if additional constraints are not removed. A few examples follow:¹²

- The lack of voice mechanisms reduces the capacity of the poor to advocate the provision of services, infrastructure or assistance necessary to enter the market for labour and products/services;

¹¹Sen, A. (1999). *Development as Freedom*. Oxford University Press. Oxford, United Kingdom.

¹²ODI (2008). *Pro-Poor Growth and Development. Linking economic growth and poverty reduction*. Briefing Paper 33, January 2008.

- The lack of human capital, i.e. low levels of basic education and high incidence of illnesses, hampers the capacity of the poor to deploy their assets in the most productive way or to access better paid jobs;
- Exclusion or discrimination on the basis of race, ethnicity, language, religion, caste or gender constrain access to land, capital, services and opportunities; and
- A high degree of vulnerability (for instance to natural disasters) increases the risk faced by poor entrepreneurs when investing, innovating or specializing.

Thus a cluster initiative needs to integrate practices and efforts specifically designed to strengthen those capabilities that affect the poor's ability to seize economic opportunities. To start with, the adoption of a participatory approach, openly oriented at empowering the poor fringes of the society contributes to reducing their marginalization and encourages their active participation in the economic life of the cluster by improving their self-confidence and social status.

Box 8. Empowerment of women through a cluster approach in Barpalli, India

In the handloom cluster of Barpalli, India, women were confined to their houses and had no control over household income despite their substantial participation in pre-loom activities. In order to promote the participation of women in the economic life of the cluster and help them gain recognition vis-à-vis their male partners, the UNIDO project promoted the establishment of a federation of women. As a first step in building their self-confidence and overcoming the reluctance of men to allow women step out of the houses, UNIDO promoted the organization of social activities such as sanitation and literacy camps. Once their confidence increased, UNIDO facilitated their engagement in economic activities. On the one hand, the members of the federation have started saving and inter-lending activities to help members in financial distress and prevent borrowing from informal moneylenders. Additionally, the federation oriented efforts on the provision of capacity-building to its members especially in the areas of self-management, leadership development and financial management. At a later stage, the women started jointly to undertake weaving activities while the federation provided them with support services such as joint training in design, market exposure and assistance for new product development.^a

^aUNIDO (2008). End of Project Report. MSME Cluster Development Programme in the State of Orissa 2005-2007, India.

A further aspect is represented by investments in capacity-building activities aimed to improve the human capital of the poor, which allows them to better manage their business, plan investments and to utilize their limited assets in the most productive way.

Capacity-building in poverty-related contexts needs to be multifaceted, therefore UNIDO seeks the partnership of specialized agencies that have a mandate to address education, social or health related issues.

Box 9. Health-care improvements to help women weavers increase their productivity

In the handweaving cluster of Chanderi, India, women suffered from very poor health since men (husbands and fathers) discouraged them from using available health facilities and they were themselves reluctant to seek medical assistance. This greatly affected their capacity to participate

in income-generating activities. UNIDO identified the necessity to introduce awareness-raising initiatives related to health issues as a first crucial step towards women's empowerment and poverty reduction. Thus, the Madhya Pradesh Voluntary Health Association (MPVHA) was identified as a possible partner to implement this activity. UNICEF Bhopal agreed to finance a health awareness package including community, reproductive, adolescent, mother and child health care. As a result, workshops were organized for 200 women to disseminate health-related information. At the end of the project, a survey was held which found that the workshops had increased female awareness of the need for cleaner personal habits, and had delivered more information to teenagers on health issues and reproductive health. Women weavers gained confidence in seeking health services from the local government. As a result, women's self-esteem, mobility and capabilities have increased with positive impact on their participation in the weaving industry.^a

^aUNIDO (2005). End of Project Report - Handloom Cluster of Chanderi, Madhya Pradesh - Under the project Thematic Cooperation between UNIDO and SDC in the Areas of SME Networking and Cluster Development.

Besides the above, a cluster approach can contribute to improving the access of the poor to utility supply, basic services or social provisioning. A direct intervention in this area falls beyond the mandate of UNIDO. However, significant spillover can follow from the joint actions undertaken by cluster actors in pursuit of shared economic objectives. In other words, although animated by an economic rationale (e.g. improving roads to facilitate market access), investments in services and infrastructure produce effects that reverberate on the entire local community, particularly the poor, who would otherwise lack resources to access private services (e.g. clean water, electricity or energy) or the political weight to lobby for their provision.

Box 10. Public-private partnership in the dairy cluster of Chontales, Nicaragua

In the framework of the UNIDO project for the development of the dairy products cluster of Chontales, Nicaragua, cluster entrepreneurs identified limited energy supply as one of the main factors affecting their capacity to store and process milk. In order to overcome this obstacle, a committee representative of the cluster brought the issue to the attention of the National Energy Commission, with the support of UNIDO. The intense lobbying by the cluster was met by a government-sponsored initiative to build 337 km of new energy lines, which would ensure steady energy supply to the cluster producers. In the framework of the infrastructural improvements, energy supply was extended to the local communities and, within them, to schools, located along the cooperatives' supply network.^a

^aUNIDO (2008). Fomento de conglomerados en Nicaragua. Estudios de caso y aprendizajes.

4. Lessons learned and conclusions

The experience of UNIDO in the delivery of cluster-based technical assistance to developing countries offers a number of insights that can be useful for other organizations dealing with clusters and local development. As with all private sector development projects, the sustainability of a cluster initiative is highly dependent on the full involvement of private sector actors.

Empowering project beneficiaries by engaging them in decision-making and encouraging them to take on responsibilities for the accomplishment of cluster development activities will increase their commitment to the initiative. Additionally, cost-sharing practices and the payment of fees to access services are important means to prevent the emergence of dependency or over-reliance on external assistance. To this regard, it cannot be overemphasized that the role of UNIDO or other support agencies is not to substitute for services that can be provided by local institutions, such as business associations or business development services providers. Rather technical assistance shall focus on improving the capacity of the latter to meet the needs of cluster firms by providing services on a cost recovery mode.

Emphasizing private-sector leadership should not prevent us from recognizing the role of the public sector. The very fact that cluster development hinges upon the provision of public goods calls for a strong involvement of public-sector institutions. These are crucial to the performance of trust and governance-building functions as well as to the continuation of cluster development initiatives, once the support agency withdraws. Widespread institutional weaknesses, however, call for considerable efforts to be made on strengthening institutional capacities at the local, regional or national level, which makes public sector institutions main targets of assistance.

As we have seen, the UNIDO methodology of cluster development is based on the strengthening of trust and governance. These processes cannot be accomplished overnight nor imposed on the cluster in a top-down fashion by bringing in rules and patterns of interaction that are not shared by the local community. On the contrary, trust and governance building will benefit from the adoption of a participatory approach and the ability to leverage local values and nurture local social capital. The same holds true when it comes to the generation of institutional ownership for the cluster approach, since sustained investments are necessary to coordinately build up the capacities of stakeholders and policymakers. This has important implications in that a cluster initiative is not a swift process, it rather requires long-term commitment to produce endogenous change and therefore sustainable pay-offs. At the same time, it is clear that the motivation of the entrepreneurs can only be safeguarded if they see tangible benefits in the short-term. This is why a cluster initiative needs to move quickly into action to maintain momentum by generating visible benefits. Progressively, as the strategic priorities of the cluster are identified and trust levels increase at the local level, the initiative can move into longer-term, higher-risk activities. Also, at this stage some key but complex issues may need to be broken down into small-sized tasks and milestones that can be more easily achieved by the cluster.

The objective of a national cluster initiative goes beyond strengthening governance and propensity to joint action within one or a few selected clusters. It also seeks to ensure the sustainability of the approach as part of a country's private sector development policy. However, an impact at the policy level does not immediately trickle up from the implementation of pilot projects.

In spite of the challenges it poses in terms of rethinking scale and scope of the project (among other factors), a purposeful strategy for dissemination becomes thus necessary. This can entail two components: (a) scaling up the initiative by increasing the number of clusters that are provided with assistance and (b) mainstreaming the principles of cluster development into other private sector development policies (e.g. investment promotion, infrastructural improvement, vocational education).

In UNIDO's experience it is the combination of both that yields the greatest impact, as shown in the example below.

Box 11. From cluster initiatives to policy reform: UNIDO experience in the State of Orissa, India

In the state of Orissa, India, clusters are a widespread phenomenon and employ a considerable share of the population, particularly among the poor. To support pro-poor growth, UNIDO implemented a cluster development initiative based on a two-pronged strategy. On the one hand, it assisted directly four clusters, on each in the sectors of handlooms, engineering, non-timber forest products and handicraft. On the other hand, it assisted the government of Orissa, particularly the Departments of Handicrafts and Cottage Industries, Handlooms and Industry, to replicate cluster development projects across the state. The Government Departments were exposed to the achievements recorded within UNIDO-assisted clusters, received training in the UNIDO methodology and were supported in the implementation of the approach in other clusters under their jurisdiction. At the same time, UNIDO facilitated the review of other SME policy schemes to harmonize them with cluster development principles. New tools and procedures were also formulated and a dedicated budget created for cluster development activities within each Government Department. Finally, knowledge resources were transferred to a business school, based in the capital city, and its personnel trained, in order to establish a focal point for the dissemination of the concepts and methodologies of cluster development. As a result, an increasing number of clusters, 150 by 2008, have received assistance from the government of Orissa based on the UNIDO methodology, wherein the adoption of an explicit focus on poverty is expected to trigger a process of equitable and inclusive economic growth.^a

^a UNIDO (2008). End of Project Report - MSME cluster development programme in the State of Orissa 2005-2007

With respect to pro-poor growth, cluster initiatives are affected by a range of trade-offs that are worth highlighting. Some are common across private sector development policies such as (a) depth versus breadth (i.e. compromising between the scale and the intensity of assistance) and (b) today versus tomorrow (i.e. tackling the immediate needs or addressing their root causes for longer-term, yet slower to manifest, impact).

In addition to these, a pro-poor cluster initiative is called to choose between inclusiveness and speed of economic growth. The adoption of a strong pro-poor angle may lead, for

instance, to value employment generation over technological innovation or to work with the informal sector, although this displays lower growth rates, instead of with more dynamic segments of the formal economy. Thus, in order to be inclusive, a cluster initiative may need to compromise on the pace of economic growth. On the contrary, a strategy designed to pursue growth tends to be selective in that it identifies and assists champions and it promotes innovation, even when this comes at the cost of limited participation of vulnerable or low-skilled segments of the local community.

In brief, striking a balance between long-term growth and short-term pro-poor impact is not always easy and there is no one-size-fits-all approach that neutralizes the possible trade-offs. Thus, support agencies, donors and governments shall be clear on the expected impact of a cluster initiative and avoid the attempt to meet all objectives at once. Taking an informed choice and being aware of the implications will improve the design and management of a cluster initiative and enhance the sustainability of the triggered changes.

Clarity on expected impact and focus of a cluster initiative shall also be reflected in monitoring and evaluation (M&E) practices. Coherently with the pro-poor framework described above, indicators shall measure not only improvements in income-based variables but also in non-economic capabilities, in line with the initiative's objectives. Also, coherent and regular M&E practices are a necessary path to prove and improve results, since they offer information and lessons that, in a loop guise, can feed back to activity implementation and allow to optimize the approach. This is why greater attention should be devoted to setting up and running an M&E system that is result-based rather than focusing on the input/output dimension alone.

A last lesson learned concerns the fact that, in spite of their territorial focus, cluster initiatives shall not lose sight of the broader environment. Rather they shall be inspired by an open and dynamic development vision. Putting it into practice, this means that administrative boundaries and regional borders do not limit the opportunities to foster cross-regional joint action and collective efficiency. At the same time, to define a sustainable upgrading strategy, the cluster needs to be seen as part of a value chain or chains which often transcend territorial boundaries.¹³ Sectoral specialization is also to be looked at in a dynamic and visionary way, as it can change over time when entrepreneurs are able to reinterpret traditional skills and crafts to move into new production activities such as a furniture-producing cluster evolving into an ecological housing hub or a local community shifting from artisanal fishing to a hub for sailing. Finally, the performance of a cluster depends on the wider business environment in which it operates. Cluster initiatives that lose sight of the broader national and international context are doomed to produce a limited impact. Also, cluster initiatives often need to be complemented with other private-sector support policies (for skill development, business regulation, entrepreneurship development, etc.) and should not be considered as all-inclusive solutions for private-sector growth. Rather, the capacity to look beyond the cluster boundaries both in the sense of business opportunities and policy complementarities is a key ingredient of the success of a cluster-based approach to economic development.

¹³Kaplinsky, R. and Morris, M. (2002). A Handbook for Value Chain Research: p. 4. Institute for Development Studies.

References

- Albu, M. (1997). *Technological Learning and Innovation in Industrial Clusters in the South*. SPRU Electronic Working Paper Nr 7.
- Barder, O. *What is Poverty Reduction?* (2009) Working Paper Number 170. Center for Global Development. Available at: www.cgdev.org.
- Bellandi, M. (2002), "External economies and local public goods in clusters and industrial districts: Some views", 6th International EUNIP CONFERENCE, Turku, Finland, 5-7 December. At: <http://web.abo.fi/fc/eunip/fp/Marco-Bellandi.pdf>.
- Ceglie, G. and Dini, M. (1999). "SME Cluster and Network Development in Developing Countries: The Experience of UNIDO." Private Sector Development Branch, Vienna, 1999.
- DFID (2005). Making Market Systems work better for the poor. An Introduction to the concept. Available at: www.dfid.gov.uk/news/files/trade_news/adb-workshop-conceptualapproaches.pdf.
- McDonald, F. and Bielarussi, F. (2002). Industrial Districts: A State of the Art Review. Available at: www.west-east-id.net/download/Deliverable.pdf.
- Giuliani, E. and Bell, M. (2005). *The micro-determinants of meso-level learning and innovation: evidence from a Chilean wine cluster*. In: Research Policy 34 p: 47–68.
- Humphrey J. and Schmitz H. (1995). Principles for promoting clusters and networks of SMEs. UNIDO, Vienna.
- Kaplinsky, R. and Morris, M. (2002). A Handbook for Value Chain Research: p. 4. Institute for Development Studies. Available at: www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf.
- Knorringa, P. (1999), *Agra: An Old Cluster Facing the New Competition*. World Development, vol. 27, no. 9, 1587-1604.
- Maria Piedad Velasco (2007). Casos sobre la promoción de redes horizontales de confecciones en Atuntaqui y calzado en Ambato en Ecuador.
- Marshall, A. (1890). *Principles of Economics*. Macmillan and Co., Ltd., London.
- McCormick, D. (1998). *Enterprise Clusters in African: On the Way to Industrialisation?*, IDS Discussion Paper 366. Institute of Development Studies, Brighton.
- McDonald F., Belussi, F., Borrás S. (2002). Industrial Districts: A State of the Art Review. Available at: www.west-east-id.net/download/Deliverable.pdf.
- Meyer-Stamer, J. (2003). *Obstacles to cooperation in clusters, and how to overcome them*. Developing Alternatives, Vol. 9, No. 1.

- Meyer-Stamer, J. and Harmes-Liedtke, U. (2005). *How to Promote Clusters*. Mesopartner Working Paper 8.
- Nadvi, K. and Schmitz, H. (1994). *Industrial Clusters in Less Developed Countries: Review of Experiences and Research Agenda*. Institute of Development Studies, Discussion Paper, Nr. 339. Sussex: Institute of Development Studies.
- Nadvi, K. (1997). *The Cutting Edge. Collective Efficiency and International Competitiveness in Pakistan*. Discussion Paper No. 360. Brighton: Institute of Development Studies, University of Sussex.
- Nadvi, K. (1998). *Knowing Me, Knowing You. Social Networks in the Surgical Instrument Cluster of Sialkot, Pakistan*. Discussion Paper No. 364. Brighton: Institute for Development Studies, University of Brighton.
- Nadvi, K. and Barrientos, S. (2004). *Industrial Clusters and Poverty Reduction*. UNIDO. Vienna.
- ODI (2008). *Pro-Poor Growth and Development. Linking economic growth and poverty reduction*. Briefing Paper 33, January 2008.
- OECD (2001). *The DAC Guidelines. Poverty Reduction*. Paris, OECD.
- OECD (2004). *Accelerating Pro-Poor Growth through Support for Private Sector Development*. OECD, Paris.
- Oyelaran-Oyeyinka, B. and McCormick, D. (2007). *Industrial Clusters and Innovation Systems in Africa*. United Nations University Press.
- Oxford Research AS (2008). *Cluster Policy in Europe. A Brief Summary of Cluster Policies in 31 European Countries*. Kristiansand, Norway. Available at: www.clusterobservatory.eu/upload/Synthesis_report_cluster_mapping.pdf
- Pyke, F., Becattini, G. and Segenberger, W. (eds.) (1990). *Industrial districts and inter-firm co-operation in Italy*. International Institute for Labour Studies, Geneva.
- Porter, M. (1990). *The competitive advantage of nations*. Free Press, New York.
- Schmitz, H. and Nadvi, K. (1999). *Clustering and Industrialization: Introduction*. World Development 27 (9): 1503-1514.
- Schmitz, H. (1997). *Collective efficiency and increasing returns*. IDS Working Paper 50.
- Schmitz, H. (1998). *Responding to Global Competitive Pressure: Local cooperation and Upgrading in the Sinos Valley, Brazil*. IDS Working Paper no. 82, IDS, Brighton.
- Sen. A. (1999). *Development as Freedom*. Oxford University Press. Oxford, UK.
- Tewari, M. (1999). *Successful Adjustment in Indian Industry: the Case of Ludhiana's Woolen Knitwear Cluster*. World Development, vol. 27, no. 9, 1651-1672.

The United Nations Commission on Private Sector and Development (2004). *Unleashing entrepreneurship*. UNDP, New York.

United Nations Millennium Development Goals. www.un.org/millenniumgoals/

UNIDO (2001) *Development of cluster and networks of SME*. The UNIDO Programme. Private Sector Development Branch, Vienna.

UNIDO (2005). *End of project report. Thematic Cooperation between UNIDO and SDC in the Areas of SME Networking and Cluster Development*.

UNIDO (2006). *End of Project Report. Clusters of Atuntaqui and Ambato, Ecuador*.

UNIDO (2008). *Fomento de conglomerados en Nicaragua. Estudios de caso y aprendizajes*.

UNIDO (2002). *End of Project Report. Knitwear cluster of Ludhiana, India*.

UNIDO (2008). *End of Project Report. MSME Cluster Development Programme in the State of Orissa 2005-2007, India*.

UNIDO (2008). *Report on the Mekelle cluster—Ethiopia*.

UNIDO (2009) *Project report on Senegal*.

Weijland, H. (1999). *Microenterprise Clusters in Rural Indonesia: Industrial Seedbed and Policy Target*. *World Development*, vol. 27, no. 9, 1515-1530.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Telephone: (+43-1) 26026-0, Fax: (+43-1) 26926-69
E-mail: unido@unido.org, Internet: www.unido.org