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TECHNICAL PAPER

THE UNIDO APPROACH TO CLUSTER DEVELOPMENT

Key Principles and Methodologies



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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THE UNIDO APPROACH TO
CLUSTER DEVELOPMENT

Key Principles and Methodologies



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Vienna, 2013

TABLE OF CONTENTS

UNIDO'S CLUSTER DEVELOPMENT APPROACH	7
THE RATIONALE BEHIND THE UNIDO'S CLUSTER DEVELOPMENT APPROACH	8
CLUSTER DEVELOPMENT	10
CLUSTERING HELPS ISOLATED SMES TO OVERCOME BARRIERS TO GROWTH	12
THE UNIDO APPROACH TO CLUSTER DEVELOPMENT	14
PROVIDE TARGETED SUPPORT TO THE CLUSTER'S INSTITUTIONAL NETWORK	16
ACTORS IN UNIDO'S APPROACH TO CLUSTER DEVELOPMENT	18
UNIDO PROJECT EXAMPLES	20





THE RATIONALE BEHIND THE UNIDO'S CLUSTER DEVELOPMENT APPROACH

WHY Clusters have gained increasing prominence in debates on economic development in recent years. Governments worldwide regard clusters as potential drivers of enterprise development and innovation. Cluster initiatives are also considered to be efficient policy instruments in that they allow for a concentration of resources and funding in targeted areas with a high growth and development potential that can spread beyond the target locations (spillover and multiplier effects).

Examples of internationally renowned clusters, such as that of the Silicon Valley cluster in California, the information technology cluster of Bangalore in India, or the Australian and Chilean wine clusters demonstrate that clusters are environments where enterprises can develop a competitive and global edge, while at the same time generating wealth and local economic development in the process.

However, the mere fact of geographical agglomeration of enterprises is, in itself, no guarantee of strong economic performance; that is, the advantages associated with clustering do not always emerge automatically. Relatively few clusters in the developing world have been able to achieve high and sustained growth rates. In many cases, they are trapped in a cycle of cut-throat competition, stagnation and poverty and are unable to spontaneously achieve the transition to innovation and growth.

Consequently, appropriate policy support and assistance are often required. UNIDO has developed an approach to cluster development that tackles the underlying causes of cluster stagnation and helps seize growth opportunities and overcome obstacles to development.

What are clusters?

In the UNIDO context, clusters are defined as “geographical concentrations of inter-connected enterprises and associated institutions that face common challenges and opportunities”. This definition highlights two essential features of clusters: - they consist of a critical mass of enterprises located in geographical proximity to each other and enterprises within them share many common features:

- ◇ Cluster as a critical mass of enterprises located in **geographical proximity** to each other. There is no universally accepted way of establishing the exact boundaries of a cluster. What is perceived as close in one location may represent an insurmountable distance in others; distance can be influenced by the availability of transport facilities, as well as by cultural identity and social values. Moreover, the number of enterprises necessary to be considered as constituting a cluster can vary depending on the size of a country.
- ◇ Enterprises within clusters share many **common features**. Cluster-based enterprises share one or more of the following characteristics:

First, they may use the same suppliers of raw materials and other inputs, especially when they are active in the same industrial sector.

Second, they may cater to the same markets and clients (e.g. the local handicraft market), even when producing different goods.

Finally, all enterprises share the same territory, its infrastructure, services and, in many cases, a common cultural identity. Enterprises within a cluster also often face common obstacles and challenges including, for example, a lack of infrastructure or limited access to capital.

Besides enterprises, clusters also include **support institutions**, such as:

- ◇ business associations;
- ◇ business development service (BDS) providers;
- ◇ financial service providers, including banks;
- ◇ public authorities such as local, regional and national governments and regulatory agencies;
- ◇ training agencies such as vocational schools, universities, etc.

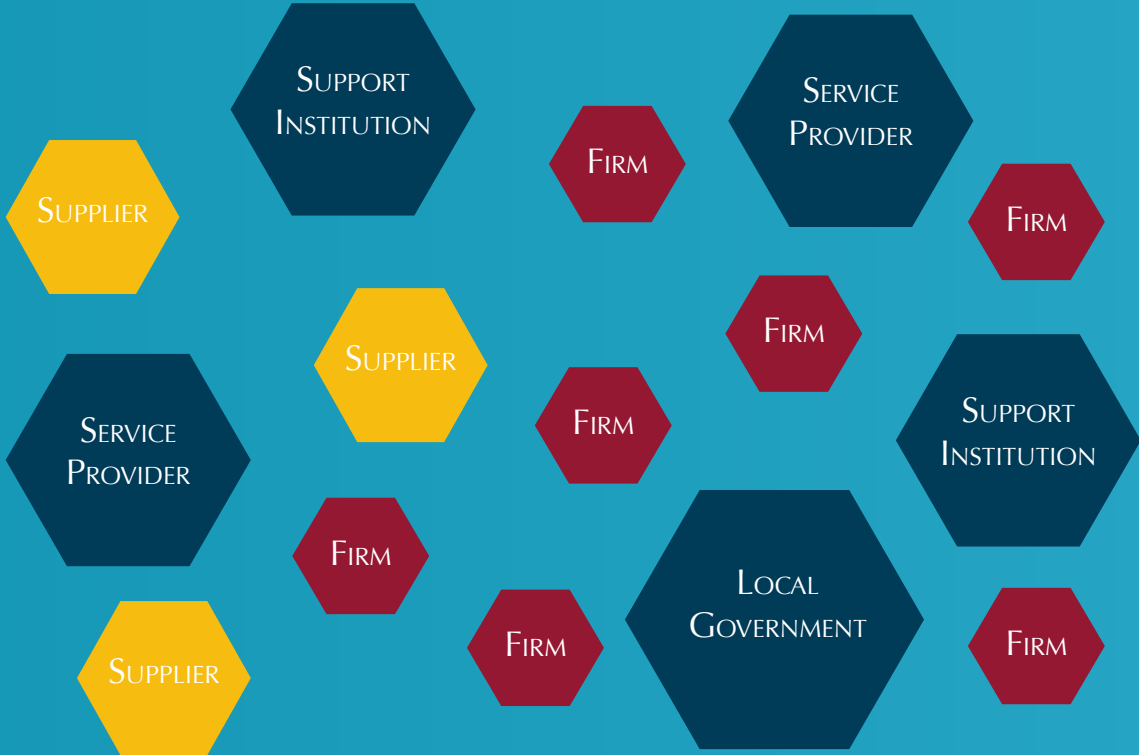


CLUSTER

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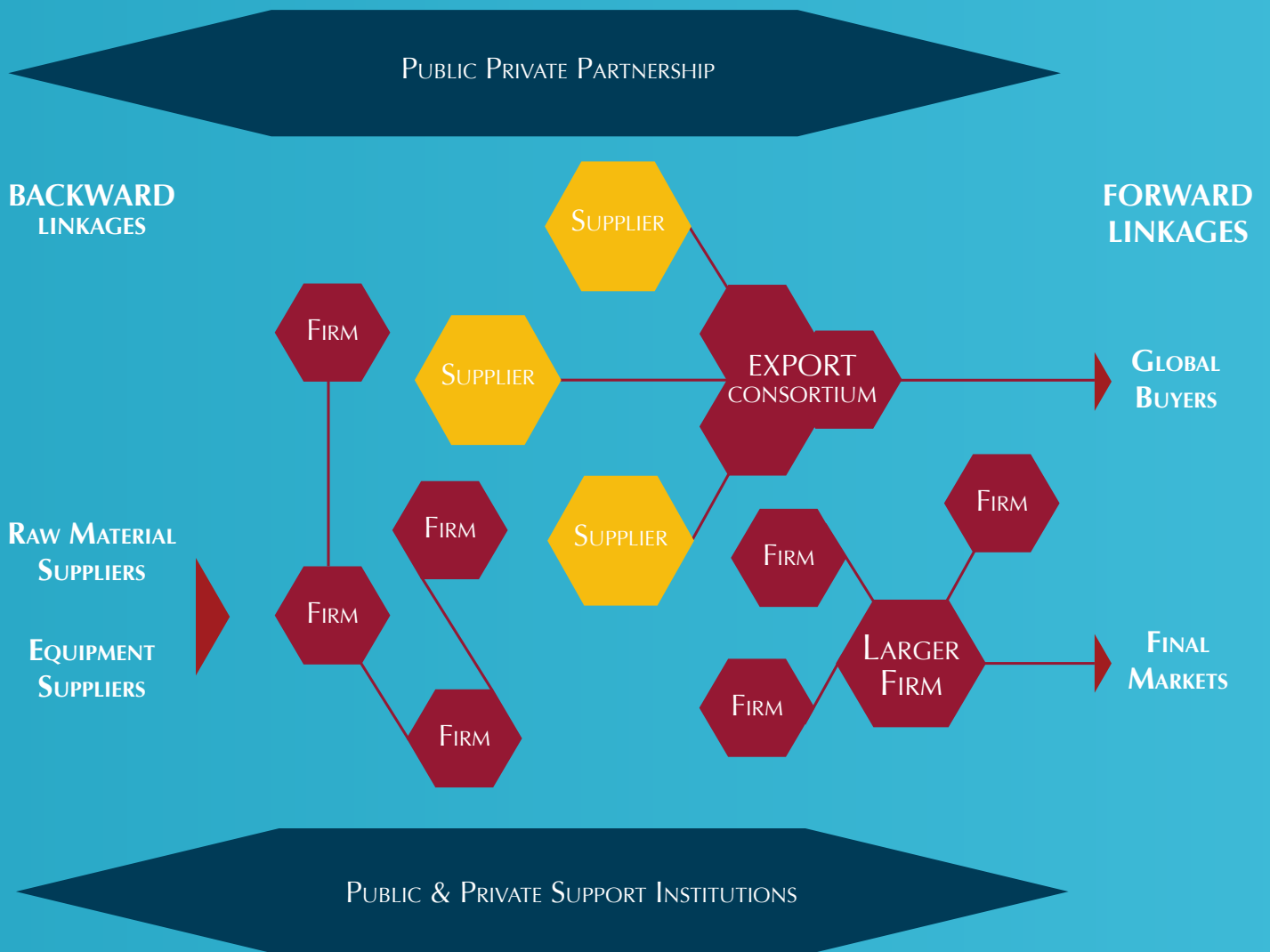
UNDER-PERFORMING CLUSTERS

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DEVELOPMENT

PERFORMING CLUSTERS





CLUSTERING HELPS ISOLATED SMEs TO OVERCOME BARRIERS TO GROWTH

Clusters are particularly promising environments for SME development. Due to their small size, SMEs individually are often unable to realize economies of scale and thus find it difficult to take advantage of market opportunities that require the delivery of large stocks of standardized products or compliance with international standards.

They also tend to have limited bargaining power in inputs purchase, do not command the resources required to buy specialized support services, and have little influence in the definition of support policies and services.

The existence of a cluster per se does not automatically ensure that entrepreneurship will flourish or that enterprises will generate sustained returns. Even when located within a cluster, small and medium-sized enterprises (SMEs) face barriers to growth. Although these barriers are often considered to relate to the size of the enterprises, on closer examination they are frequently revealed as having more to do with isolation.

In non-performing clusters, these constraints often manifest in unhealthy competition based on lowering wages, disregarding the welfare of workers, minimizing investment in technology and depleting natural resources. This form of competition results in stagnant clusters, with local stakeholders reaping few benefits.

Evidence from strongly performing clusters, by contrast, demonstrates that it is possible for SMEs to achieve high levels of growth by achieving steady quality improvements and adding value, while at the same time respecting environmental, social and labour standards.

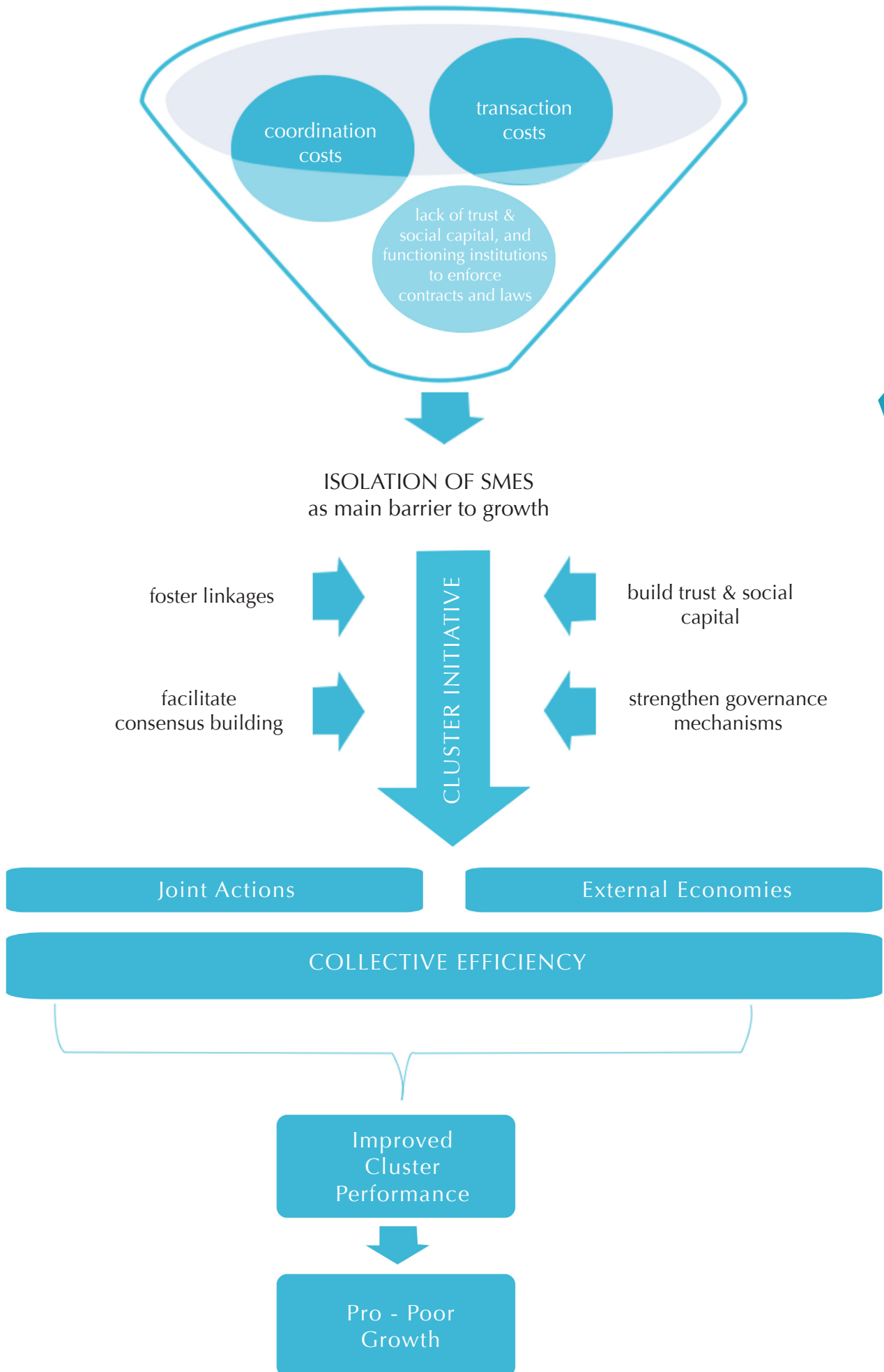
Spatial proximity and shared strategic interests allow enterprises and their support institutions to realize shared gains through the organization of joint actions between cluster enterprises (e.g., joint bulk inputs purchase or joint advertising, or shared use of equipment) and between enterprises and their support institutions (e.g., provision of technical assistance by business associations or investments in infrastructure by the public sector). The advantage accruing to the cluster from such collective efforts is referred to as collective efficiency.

Evidence suggests that the willingness of entrepreneurs to engage in joint actions is a critical success factor to unleash their growth potential. However, despite the potential benefits deriving from joint actions, entrepreneurs often choose a go-it-alone strategy. Several factors can hinder cooperation between enterprises including:

- ◆ transaction costs,
- ◆ coordination costs, and
- ◆ adverse business culture.

Obstacles to cooperation can also arise between enterprises and support institutions. While spatial proximity on its own can reduce some of the costs associated with cooperative activities between enterprises and institutions, other obstacles need to be consciously addressed for a cluster to become dynamic and growth-oriented. The UNIDO approach to cluster development thus focuses on removing obstacles to joint actions with the objective of encouraging collective action.

The result chain or intervention logic underlying the approach is depicted to the right.



THE UNIDO APPROACH TO CLUSTER DEVELOPMENT

KEY PRINCIPLES

To promote private sector based pro-poor, UNIDO has developed an approach to cluster development based on the following principles:

Focus on existing clusters

An essential feature of the UNIDO approach is its focus on working with existing clusters, rather than creating new ones. While existing clusters often demonstrate significant unrealised potential, the creation of clusters from scratch is likely to lead to a top-down process, with private sector having limited incentives to assume a leading role.

Promote private sector based, pro-poor growth

The private sector plays a central role in promoting growth in general, as well as pro-poor growth in particular. Growth per se does not necessarily lead to a reduction in poverty. To be pro-poor, economic growth must be broad-based, inclusive of all categories of stakeholders, sustainable and gender balanced.

To enhance (labour force) productivity, innovation and participation in economic life, non-economic issues such as limited human and social capital also need to be addressed by empowering marginalized groups, promoting improved access to employment opportunities and improving the health and education of the labour force.

Encourage collective efficiency through joint actions

The UNIDO Approach to cluster development focuses on initiatives that encourage enterprises and institutions to undertake joint actions that could ultimately yield benefits to the cluster as a whole and the communities in which they are embedded.

Measures to help cluster stakeholders reduce barriers to cooperation and help them overcome their isolation include:

- ◇ Foster linkages between cluster stakeholders
- ◇ Facilitate consensus building
- ◇ Build relationships
- ◇ Encourage trust building
- ◇ Strengthen governance mechanism
- ◇ Support the cluster's institutional network

Strengthen cluster governance mechanisms

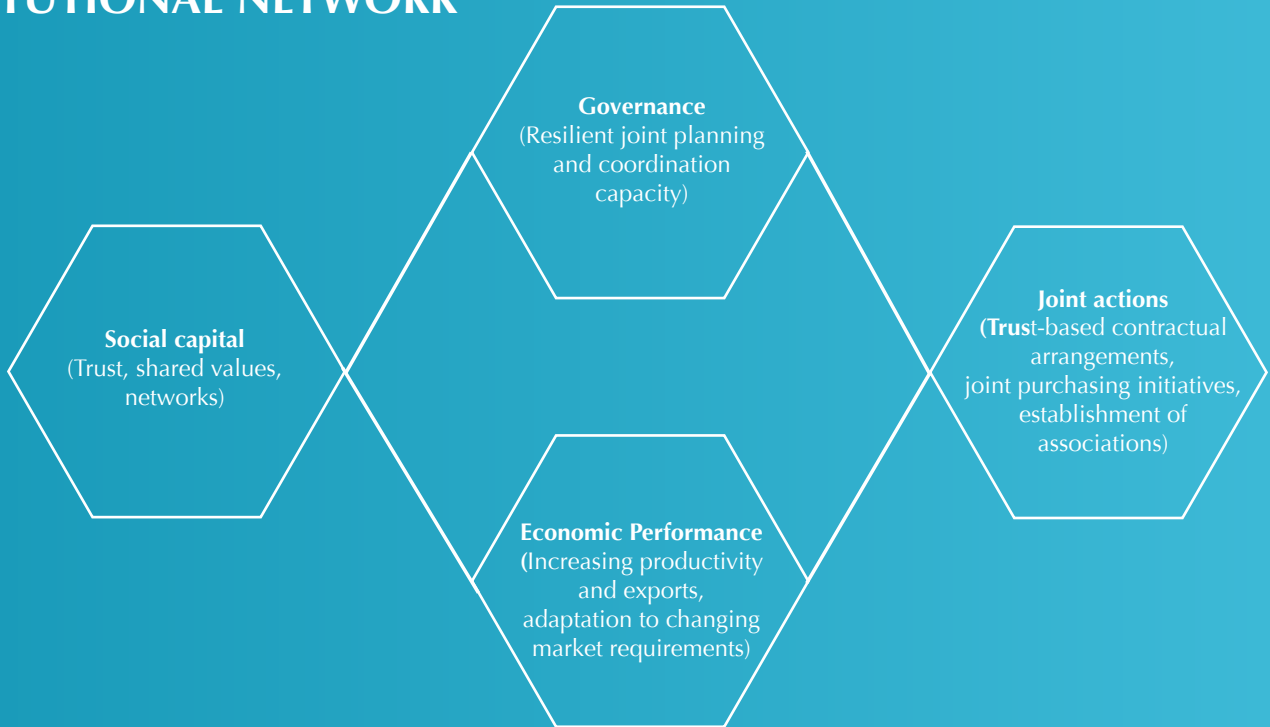
As has been noted before, cooperation can be strengthened by investing in trust-building activities. In the context of cluster development, not only the propensity of individual cluster stakeholders to engage in joint actions important, but also how these interactions are organized and embedded into the local economic system.

Any formal or informal organization or arrangement that plays a leadership role in initiating and managing joint actions for the improvement of cluster competitiveness can be identified a governance mechanism. UNIDO's approach to cluster development places great importance on strengthening the cluster's governance mechanisms by changing patterns of interactions among cluster stakeholders and establishing or reinforcing institutions that can lead and coordinate joint action.

Good governance in a cluster allows for coordinated and effective planning. Through coordinated joint actions the cluster can reach a higher level of performance. Good performance in turn increases the cluster's "social capital stock" (embodied e.g. in the trust, shared values). This raising "social capital stock" tends to reinforce the good governance in the cluster. UNIDO approach to cluster development attempts to set this virtuous cycle in motion (see page 13).



PROVIDE TARGETED SUPPORT TO THE CLUSTER'S INSTITUTIONAL NETWORK



The UNIDO approach focuses on providing incentives for public and private sector bodies to more effectively promote cluster development and to build their capacity to do so.

Relevant local, regional and national institutions, including chambers of commerce, local governments, NGOs, producer associations, universities, training institutions and regional as well as local economic development agencies are assisted to gradually assume a strong supporting role in the development of the cluster.

Activities include establishing and/or providing support to business networks, building public-private partnerships and promoting dialogue among service providers and/or policy makers.

UNIDO also technically assists financial and non-financial service providers (e.g., business development service (BDS) providers, vocational schools etc.) to make their services more responsive to the demands from within the cluster.

Phase 1: Cluster selection

A well-designed and participatory selection process based on clearly defined criteria is a precondition for a successful initiative as it allows the identification of those clusters, where the impact of planned interventions can be maximized given the available time and resources.

UNIDO's role in the selection process is to recommend criteria and variables most appropriate for the achievement of the development objective agreed upon.

Upon request, it may also provide technical inputs and can act as a facilitator to encourage the participation of national and regional actors. These are, together with the donors, the final decision-makers in the cluster selection process.

Phase 2: Cluster selection

Once a cluster has been selected for support, the a Cluster Development Agent (CDA) or cluster broker, is appointed to facilitate the process of cluster development in the different target clusters.

After undertaking a cluster diagnostic study (see phase 3), the CDA will work with the cluster to enable the cluster stakeholders to work together to take the cluster from an underdeveloped one to a performing cluster, and to ultimately establish and operate a cluster governance structure.

Phase 3: Cluster diagnostic

Once the cluster is selected, a diagnostic study is undertaken for each selected cluster. The diagnostic helps to

- ◇ develop an understanding of the socioeconomic and institutional environment of the cluster;
- ◇ detect potential leverage points for the intervention;
- ◇ provide a baseline for monitoring and evaluation; and
- ◇ build initial trust between the CDA and the cluster stakeholders.

The cluster diagnostic is a participatory exercise, carried out under the supervision and with the participation of the CDA, in which the cluster stakeholders are the principal informants. It frequently offers the first opportunity for the CDA to establish a relationship with the stakeholders and to introduce the concept of cluster development.

Phase 4: Vision building and action planning

Vision building and action planning are not one-off processes but develop in feedback loops through the life of a cluster initiative. Starting with a discussion on the results of the diagnostic study, cluster stakeholders formulate a shared vision for their future cluster performance or the overall cluster development path, which will be periodically reviewed and, if necessary, refined with time to take into account changes in the cluster or related framework conditions. Action planning then relates to the translation of the vision statement into a realistic and achievable development strategy over time and can be understood as a roadmap.

Action plans are also revised periodically and by all cluster stakeholders based on a sound monitoring and evaluation framework

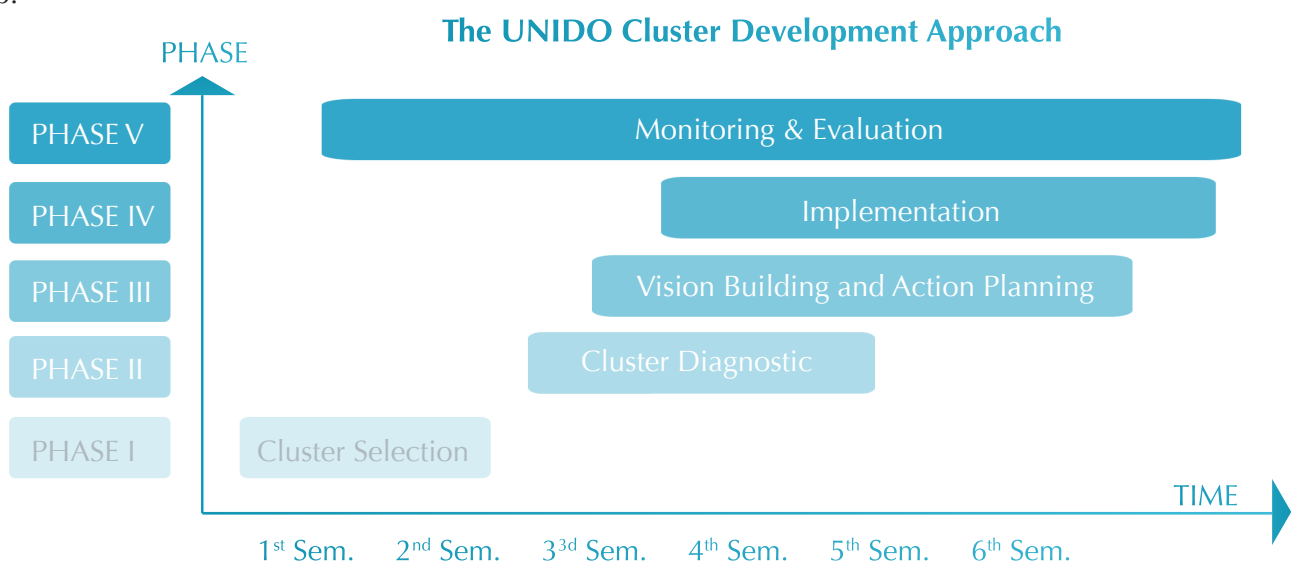
Phase 5: Implementation

Implementation refers to the execution of the activities described in the action plan and management thereof. The Cluster Development Agent facilitates this process, but does not engage in direct service provision or resource disbursement to cluster stakeholders. The CDA does not substitute for functions that can be performed by existing private or public sector organisations but rather builds their capacity for implementation and enhance their responsiveness to the needs of the cluster.

Phase 6: Monitoring and Evaluation (M&E)

The Monitoring and evaluation (M&E) of cluster initiatives is a continuous process, which starts with the drawing up of a clear result chain. A result chain outlines how specific inputs and project activities are linked to the expected outputs and outcomes and how they contribute to the impact or overall development objective of a cluster project or programme. In line with the information needs of various stakeholders, key performance indicators, data collection methods, and reporting responsibilities and frequencies are defined and integrated into an overall monitoring framework.

At the heart of the UNIDO's entire cluster development process are institutional capacity building and trust-building activities. These begin with the diagnostic study, continue during the design of the action plan and are reinforced during implementation and monitoring and evaluation.





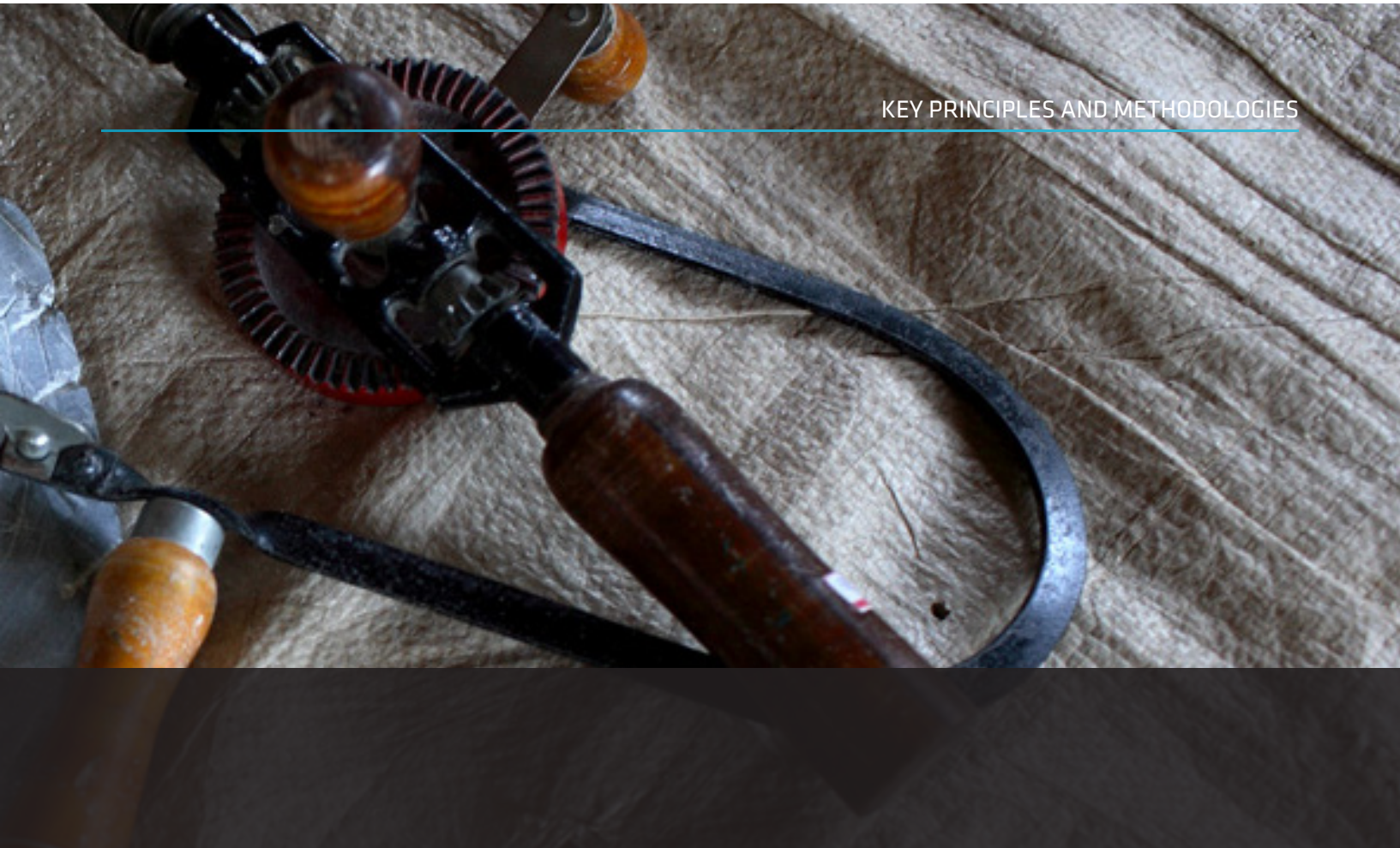
ACTORS IN UNIDO'S APPROACH TO CLUSTER DEVELOPMENT

Under the framework of a cluster development project, UNIDO identifies and trains institutional counterparts in the beneficiary country and project staff that will be engaged in project formulation and implementation.

At the outset, a project team is established including a Project Coordinator and one or a team of Cluster Development Agents (CDAs) and specialist consultants. These tend to be employed by UNIDO initially, but usually work within or side-by-side with local institutions to promote the dissemination of the approach and ensure its appropriateness to local conditions.

The wide participation of cluster stakeholders is encouraged by establishing a Cluster Commission and inviting representatives of the different interest groups in the cluster to participate in this Commission. Launching a cluster development initiative also requires wide political support and the building of institutional commitment to promote an environment conducive to its success. This role is performed by a Steering Committee in which UNIDO participates along with national and regional institutions.





PROJECT COORDINATORS

Project coordinators have a deep understanding of the cluster development process and coordinate all cluster development activities in any given country. Among other tasks, their responsibilities normally include the overall management and monitoring of the initiative, the training, support and monitoring of the performance of the CDAs and building a network of contacts with strategic counterparts.

CLUSTER DEVELOPMENT AGENTS

Most of the field activities are coordinated and overseen by Cluster Development Agents, the professionals who work on the ground in the cluster and accompany the process of cluster development from its initiation to phasing out. CDAs perform the role of impartial brokers or facilitators who provides guidance and support to the cluster in the organisation and coordination of joint activities.

THE CLUSTER COMMISSION

The Cluster Commission is a network or forum of representatives of the key cluster stakeholders. Its role is to formulate the strategic objectives for the cluster and to launch and coordinate joint activities among cluster stakeholders. The Cluster Commission does not get involved with micro-management or administrative issues.

THE STEERING COMMITTEE

The Steering Committee consists of major national stakeholders that have a direct interest in the cluster development initiatives being undertaken and can provide useful inputs to them. These normally include the Ministry of Industry and Trade, the Ministry of Education, sector-specific line ministries, industrial promotion organizations, export promotion agencies, research institutes and universities and development finance institutions and banks. The Steering Committee is normally responsible for promoting and launching the cluster development project, supporting the process of cluster selection and articulating development priorities. As in the case of the Cluster Commission, the Steering Committee usually does not get involved in micro-management and administrative issues.

IMPLEMENTATION MODALITIES

The UNIDO approach can be applied in any client country across the globe and with respect to any sector or location. For more information, please visit the UNIDO website featuring additional case studies and related UNIDO experiences and consult the <http://www.clustersfordevelopment.org> website for more background information, details on our approach, as well as training and best practice materials. For any additional information, please contact UNIDO's Cluster and Business Linkages Unit within the Business, Investment and Technology Services Branch.



UNIDO project examples

The following experiences based on UNIDO cluster and network development projects being implemented across the globe, illustrate how the methodology was adapted to the local context and/or integrated into a project with wider or more complex private sector development objectives.

CLUSTER DEVELOPMENT IN ATUNTAQUI AND AMATO, ECUADOR

In 2003 at the request of the Government of Ecuador, UNIDO launched a cluster development initiative with the support of the Ministry of Industry and Competitiveness (MICIP). A joint assessment carried out by UNIDO and MICIP led to the selection of two sectors that accounted for a significant share of employment and income generation in the country and in which clusters are a common form of organisation for manufacturing activities – garments and footwear. Within each of these sectors, it was decided to identify one cluster to receive assistance: the garment cluster of Atuntaqui and the footwear cluster of Ambato. As a first step of project implementation, a diagnostic study was carried out for each cluster that included an analysis of the clusters’ strengths, weaknesses, opportunities and threats. Next, the CDAs assisted the cluster stakeholders in the identification of shared problems and the drafting of an action plan addressing the clusters’ main growth constraints and opportunities. In the case of Atuntaqui, the stakeholders developed a common vision of improved competitiveness in national and export markets by:

- ◆ enhancing enterprises’ technological capacities by improving access to the providers of training and other BDS; and
- ◆ formulating a joint marketing strategy.

Subsequently, the CDA facilitated the establishment of enterprise networks that could collaborate on the achievement of these objectives. In parallel, capacity building activities were undertaken with a range of institutions that could assist the enterprises in the process of technological upgrading, including a university, the local chamber of commerce and a vocational school. As levels of trust grew among the cluster enterprises, these were better able to collaborate with the support institutions in drafting updated training curricula and negotiating the purchase of equipment made available by the chamber of commerce for the shared use of cluster enterprises.

Over time, the CDA persuaded the municipality of the Atuntaqui to launch a regional marketing strategy with the participation of all relevant stakeholders to promote the city as a centre for quality garment production.

As activity implementation progressed, the CDA started monitoring results and delivering regular reports to UNIDO and its counterpart institutions. Towards the end of the initiative, the CDA delegated responsibility for implementation and transferred tools and methodologies to local stakeholders, which allowed him to withdraw without affecting the sustainability of the achievements.

CLUSTER-BASED POLICY ADVISORY FOR MONTENEGRO

In 2009, five United Nations agencies developed a joint project with a focus on the development of SME clusters. UNIDO’s role was to support the Ministry of Economy in the development and implementation of a national cluster strategy, containing a concrete set of measures for systemically increasing the competitiveness and market access of SME clusters and networks in the country.

The process that led up to the development of this strategy focused on: (a) mapping of existing business clusters and networks in Montenegro; (b) undertaking diagnostic studies of 15 selected sample clusters to identify the key challenges and problems faced by the local businesses; (c) undertaking a demand assessment for key cluster products with a focus on potential buyers in the food and tourism industries; (d) undertaking a capacity-building and testing interventions in selected pilot clusters that have been diagnosed; (e) carrying out a capacity assessment of key support institutions and municipalities; and (f) drafting and implementing the “Strategy for Sustainable Economic Growth in Montenegro through the Introduction of Business Clusters by the end of 2016” with a view to increasing the contribution of selected clusters and networks to employment retention, import substitution, export promotion or new business and job creation.

The adopted strategy envisages contributing to a more balanced regional socio-economic development by enhancing the competitiveness and employment capacities of SMEs, and ensuring that the benefits deriving from the EU integration process and the further opening of markets are spread more equally across the different economic actors within the country.

CREATING NETWORKS OF COCOA PRODUCERS IN NICARAGUA

As part of a joint UN project, UNIDO promoted productive activities in integrated agro-forestry systems - a combination of cocoa, the main cash crop, and native forest trees with food plantations in the Bosawas Biosphere Reserve in the North Atlantic Autonomous Region (RAAN) of Nicaragua.

The main UNIDO activities included the establishment of agricultural and forestry structures, the improvement of the production and storage infrastructure for cocoa, the improvement of the organization of local families that are involved in cocoa production in producer networks, as well as the capacity of cocoa producers to market their product and to establish relevant business and market linkages.

In total, 266 producer families organized or integrated into 18 producer networks; relevant local stakeholders in the target region mapped; capacity of local stakeholders in the field of network development built. Now, producers work in an organized manner. Each producer community (or network) has its leader who represents them. The same applies on a territorial level, where leaders were appointed who represent different groups of networks from one and the same region at a higher level.

Through the established networks, cocoa producers now work in a more organized and collaborative way, particularly when it comes to the management of plant nursery areas. Organizational work also led to the more effective delivery of technical assistance to groups of producers and facilitated an exchange of experiences, sharing of materials and equipment, as well as joint marketing activities and engagement with local produce markets and larger scale buyers across these producer groups.

DEVELOPING CLUSTERS OF AUTOMOTIVE COMPONENT SUPPLIERS IN THE SAMARA REGION OF RUSSIA

This UNIDO project, implemented between 2009 and 2012, aimed at strengthening automotive component suppliers, optimizing the local supply chain, providing the region with an industry-specific and institutional development concept, and creating access to international markets, in particular the European Union.

Within the context of the project framework, the capacity of support institutions and local organizations were built and linkages to other automotive clusters were facilitated through cluster twinning.

In addition, a number of initiatives were implemented, such as formation of the Association of Automotive Suppliers in the Samara Region, which was originally established with 17 members to:

- ◆ Support component manufactures to integrate into global supply chains
- ◆ Enhance public-private dialogue through acting as the industry's communication centre
- ◆ Promote the effective use of scientific, technological and innovative capacities of the Samara region through active collaboration

Cluster twinning efforts with the Automotive Cluster of Slovenia resulted in a number of business partnerships and enhanced the communication between the two clusters through establishment of the Russian-Slovenian Business Club with 43 members that successfully explores business cooperation in automotive, energy efficiency and tourism sectors. Furthermore, 3 joint ventures (Russia-Slovenia) have been established.

DEVELOPING TEXTILES CLUSTERS IN POOR REGIONS OF TURKEY

UNIDO was engaged in a joint UN capacity-building programme for the Turkish textile sector from 2009 until 2012, with a focus on integrating small textile producing firms in poorer regions of Turkey into domestic and global value chains, thereby providing better job opportunities. More specifically, 26 experts have been trained on the UNIDO cluster development methodology and two cluster development agents (CDAs) were capacitated to assist textiles clusters in Adiyaman and Kahramanmaraş. Those CDAs conducted cluster diagnostic studies as well as a social network analysis (SNA). The latter is a valuable tool for decoding the relational information embedded in clusters, for making strategic decisions about cluster management, and for evaluating cluster development.



The CDAs also helped to establish a cooperation platform with a university to provide part time work for the Textile Engineers at the companies. Similar cooperation was established with the state organization for employment to find, recruit and train workers for 10 companies. Some cluster companies confirmed their readiness to establish a joint facility for cutting of garments. Furthermore, an association was established in one of the clusters. Finally, an analysis assessing the current environmental conduct of 100 SMEs, 10 buyers and 10 business support organizations in the Turkish textile industry has been conducted. Pilot SMEs in the target clusters were supported in introducing CSR principles in their business operations.

UNITING OILSEED PROCESSERS IN ETHIOPIA

This UNIDO cluster development project, which was initiated in 2010, aimed at enhancing the productivity and competitiveness of private sector-led production and processing of oilseeds and improving access to markets. To this end, issues of quality, hygiene, packaging and productivity needed to be addressed.

Based on the cluster methodology, horizontal networking between edible oil producers has been facilitated by the Cluster Development Agent in order to encourage joint actions such as joint raw material purchases, joint oil production or testing. In May 2011, fifty MSME edible oil producers (92% of direct beneficiaries) united to form the Right Edible Oil Producers (REOP) plc. - a business association aiming at setting up a refinery plant.

The project also strengthened backward linkages with raw material suppliers to improve availability and quality of raw material supply. The CDA organized exposure to raise awareness about the quality issues of the cluster producers and organized trainings on productivity and quality addressing issues of storage, cleaning and grading of oil seeds.

Furthermore, the project strengthened the linkages with support institutions in the region to increase the cluster members' access to available and customized (business development) services.



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