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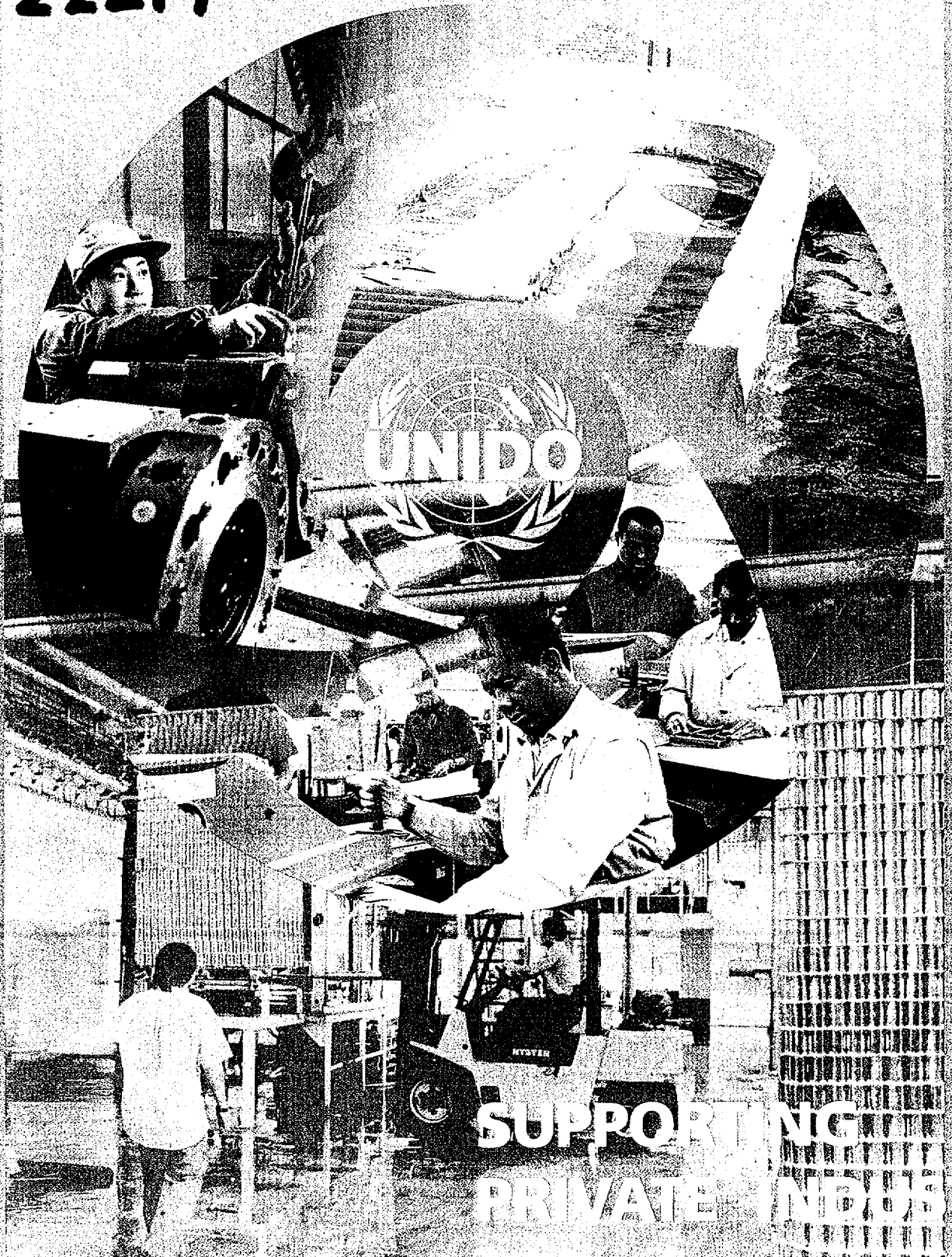
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SUPPORTING PRIVATE INDUSTRY

Working Paper No. 2

**SME Cluster and Network Development
in Developing Countries:
The Experience of UNIDO**

PRIVATE SECTOR DEVELOPMENT BRANCH
Investment Promotion and
Institutional Capacity Building Division

PSD TECHNICAL WORKING PAPERS SERIES

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**SME Cluster and Network Development
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**SME CLUSTER AND NETWORK DEVELOPMENT
IN DEVELOPING COUNTRIES:
THE EXPERIENCE OF UNIDO**

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Private Sector Development Branch
Investment Promotion and Institutional Capacity Building Division

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The PSD Technical Working Papers Series is a series of occasional papers arising from the work of the Private Sector Development Branch of the Investment Promotion and Institutional Capacity Building Division (IPC/PSD) 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, policy-makers and academics. The Branch would welcome comments and suggestions on the issues raised in these papers, which may be addressed to:

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EXECUTIVE SUMMARY

The paper describes the background and experience of the UNIDO technical assistance programme for SME networking. This programme is characterized by an emphasis on the promotion of efficient systems of relations between enterprises and between enterprises and institutions which allow enterprises to overcome their isolation and reach new collective competitive advantages beyond the reach of individual small firms. The programme also emphasizes the development of local institutions to act as facilitators of the networking process.

The experience of four UNIDO projects is presented in the paper. The case of **Honduras** represents a project which evolved from the creation of SME networks into the establishment of a specialized institution acting as a networking promotion agency. Considerations on diffusion and sustainability of impact as well as on funding mechanisms of networking services are made here. The case of **Nicaragua** illustrates three main points: first, how, as a result of its successes with network brokering, a project has achieved significant influence on policy making at the national level; second, the importance of capacity building of local BDS providers, and third, how the principles of economies of scale and scope govern the delivery of support services. The case of **Mexico** highlights a project promoting vertical integration arguing for the direct involvement of large-scale manufacturers into suppliers' upgrading efforts. The case of **Jamaica** presents an example of entry at the top institutional level (whereby the effort to bring about cluster-based development lays at the operational core of the national SME support agency) and a case of creation of specialized service centres (for garments, fashion, furniture, etc.).

After describing the projects and their main results, the paper draws some conclusions on the methodological steps and principles which characterize UNIDO's networking initiatives, distinguishing four methodological phases: a) the promotion of networks, b) the restructuring at the firm level, c) the improvement of the institutional environment, and d) the improvement of the dialogue between the public and private sector. Finally, the lessons learned through the implementation of the projects are summarized in the last chapter of the paper. They include the need for a demand-led approach, the characteristics of the SME networks promoted by UNIDO, the need to invest in human resource development, some considerations on funding strategies and sustainability issues.

CHAPTER I:

Introduction

The guiding principle of UNIDO's approach towards small and medium enterprises (SMEs) is that these enterprises can play a key role in triggering and sustaining economic growth and equitable development in developing countries. However, this potential role is often not fulfilled because of a particular set of problems characterizing SMEs which are related to their size. Individually, SMEs are often unable to capture market opportunities which require large production quantities, homogenous standards, and regular supply. By the same token, they experience difficulties in achieving economies of scale in the purchase of inputs, such as equipment, raw materials, finance, consulting services, etc. Small size also constitutes a significant hindrance to the internalization of functions such as training, market intelligence, logistics and technology innovation - all of which are at the very core of firm dynamism. Furthermore, small scale can also prevent the achievement of specialized and effective internal division of labour which, according to classical economic theory, fosters cumulative improvements in productive capabilities and innovation. Finally, because of the continuous and fierce struggle to preserve their narrow profit margins, small-scale entrepreneurs in developing countries are often locked in their routines and unable to introduce innovative improvements to their products and processes and look beyond the boundaries of their firms to capture new market opportunities.

Through networking, individual SMEs can address the problems related to their size and improve their competitive position. On account of the common problems they all share, small enterprises are in the best position to help each other. Through horizontal cooperation (i.e. with other SMEs occupying the same position in the value chain), enterprises can collectively achieve scale economies beyond the reach of individual small firms and can obtain bulk-purchase inputs, achieve optimal scale in the use of machinery and pool together their production capacities to satisfy large-scale orders (Pyke, 1992). Through vertical cooperation (with other SMEs as well as with large-scale enterprises along the value chain), enterprises can specialize on their core business and give way to an external division of labour (Marshall, 1990). Inter-firm cooperation also gives rise to a collective learning space, an "invisible college" (Best, 1998), where ideas are exchanged and developed and knowledge shared in a collective attempt to improve product quality and occupy more profitable market segments. Lastly, networking among enterprises, providers of business development services (BDS), and local policy makers can help to shape a shared local development vision and give strength to collective actions to enhance entrepreneurial strategies.

This paper attempts to reflect upon UNIDO's experience in promoting business development services focused on networking as a strategy to develop small-scale enterprises. Chapter II,

facilitators of the networking process, or "system integrators". These should support the emergence of a joint entrepreneurial vision involving the whole business system - composed by firms, their suppliers, buyers and support institutions - and be able to enact that vision through common development projects. Indeed, it is this emphasis on the whole business system - and not on the individual enterprise - that constitutes the main difference between networking programmes and other traditional technical cooperation programmes.

While highlighting this difference, it should also be pointed out that networking projects are not in competition with other business development services but, on the contrary, usually enhance their use by the enterprises. The collective projects generated by the networks demand, in fact, technical and financial inputs for their execution. This demand is not directly satisfied by the networking project (as it is not part of its core functions) but is channeled, by the "system integrators", to other available providers of technical/financial services. This way the relationships between enterprises and local service providers can be optimized while the usage rate of the services is increased. If gaps are detected in the support system, the networking project can take steps to overcome them by initiating institution building (such as in the case of Jamaica illustrated in the next chapter).

CHAPTER III:

From Theory to Practice

This chapter presents case studies of cluster and network development projects for SMEs implemented by UNIDO in Honduras, Nicaragua, Mexico, and Jamaica over the past five years. These case studies illustrate UNIDO's experience in the field and present some of the more significant features of these projects.

The case of Honduras represents a project which evolved from the creation of SME networks into the establishment of a specialized institution (CERTEC) acting as a networking promotion agency. This case study considers, in particular, issues related to the diffusion and sustainability of impact and to the funding mechanisms of networking business development services (BDS). The case of Nicaragua illustrates three main points: first, how, as a result of its successes with network brokering, a project has achieved significant influence on policy making at the national level; second, the importance of capacity building of local BDS providers; and third, how the principles of economies of scale and scope govern the delivery of support services. The case of Mexico highlights a project promoting vertical integration and argues the case for a direct involvement of large-scale manufacturers in the upgrading efforts of suppliers. And, finally, the case of Jamaica presents an example of entry at the highest institutional level (where the effort to bring about cluster-based development lies at the operational core of the national SME support agency) and of the creation of specialized service centres for garments, fashion, furniture, etc.

A. Honduras: Evolution of a networking project

In 1993, the Honduran Government requested UNIDO to design and implement a technical cooperation project for the development of the SME sector. Due to the initially unsupportive institutional environment for SME development, the project focused directly on the enterprise level, relying on a group of eight national consultants with engineering and management skills under the guidance of the local UNIDO representative.

Initially, the national consultants³ concentrated on identifying groups of enterprises with similar characteristics and growth constraints and helped them establish common development projects. The client base consisted of micro and small enterprises with an average number of employees

³ In the projects described in this paper the consultants promoting networks/clusters are also called 'network/cluster brokers'. The terms *consultant* and *broker* will therefore be used interchangeably.

In an attempt to address the second theme, long-term sustainability, a process of project "privatization" was implemented. A foundation was established whose employees comprised the team of national consultants and whose members consisted of local private and public institutions. The foundation, called CERTEC (Centro de Recursos y Tecnología), started working within the UNIDO project in 1997. After one year of operation, during which US\$ 60,000 in revenues were generated, representing more than 50% of total annual costs, the institution became independent from UNIDO and is now managing its own budget and strategy.⁴

Finally, two elements of the Honduras experience are worth highlighting: First, it should be stressed that the type of BDS provided evolved from *direct assistance* to the enterprises to *higher-level functions* of training other intermediaries (network brokers), improving the intervention methodology and devising new integration modalities. This resulted in a substantive multiplier effect: For example, between 1997 and 1998, CERTEC trained 71 brokers who have since organized 59 networks and/or clusters with the participation of 1,200 enterprises.

Second, a consideration should be given to the type of funding requested by a BDS provider like CERTEC, which has to draw from a combination of *public and private funds*. In the case of CERTEC, a three-tier funding scheme is envisaged for the next years of operation, comprising a) service fees, such as funds generated by the sale of networking and other services given to enterprises and to institutions (associations, local and central government for services such as training of network brokers), b) membership fees, and c) public funds which, in the case of CERTEC, will be contributed by an international donor.

As will be mentioned in the final section, "Lessons Learned", the investment of public funds in institutions such as CERTEC is justified by the fact that CERTEC aims at implementing development measures for the SME sector. This sector is predominantly populated by enterprises that, as clients, are not in a position to fully fund the operating costs of the organization. Pushing CERTEC to survive under purely commercial conditions would entice the Centre to look for wealthier clients, thus giving second priority to the demands of small enterprises for whose promotion the institution was created.

B. Nicaragua: Broadening the scope of networking

The project in Nicaragua began in 1995 with PAMIC (Programa Nacional de Apoyo a la Micro Empresa) which has, since 1998, become INPYME (Instituto Nacional para la Pequeña y Mediana Empresa) as the counterpart. During the first phase of the project, the strategy has been similar to the one described in the Honduras case. Some 20 horizontal networks were created by a team of seven national consultants assisted by short-term international consultants. One example of these networks is described in Box 3.

The main difference vis-à-vis the Honduras case is that the Nicaragua project has had a public-sector counterpart from the beginning. This has had three distinct consequences: Firstly, the project has had an *easier entry into local policy dialogue and formulation*. As a result, the project has had leverage in proposing the networking strategy as a key SME development strategy. Networking promotion has now become one of the main axes of the government approach for private sector support. Secondly, the project has also played a more prominent role

⁴ Revenues have been generated by selling services to the networks and to client institutions especially for the training of network brokers. It should be noted that while, as mentioned above, the fees paid by the networks do not cover entirely the cost of those services, the fees charged to institutional clients fully cover the cost of the services plus a certain amount of overheads which are used to subsidize the other services that are only partially covered.

in *inter-institutional coordination* and has had greater access to local people and resources (channeled through the counterpart). Thirdly, the Nicaraguan project, from the onset, displayed a much *clearer prospect of sustainability*. The long-term prospect is that the project, with its team, will be taken over by the counterpart and will become one of its strategic branches. At the moment, however, the project is maintaining its autonomy in operational terms and is managed independently although in close consultation with the counterpart. This will guarantee that the project team acquires the necessary skills and experience ensuring the needed maturity in its dialogue with the counterpart and, in general, with the public sector.

Box 3. EcoHamaca: Handicraft hammock sector

EcoHamaca is a network of 11 enterprises operating in the handicraft hammock production sector. While the network members all compete with one another in the local market, they are trying to collaborate in an attempt to break into foreign markets. Prior to UNIDO's assistance, none of the local producers had direct exporting experience. Through the project the producers were assisted in standardizing their production in order to collectively reach quantities suitable for export and, at the same time, improve the quality and design of the products and the pricing systems. The group selected an ecologically friendly strategy and, therefore, focused on changing the wood used for the poles (from cedar wood which is close to extinction, to other more abundant exotic species). It also shifted from the use of chemical dyes to natural ones. This strategy proved to be very successful since it permitted the group to penetrate important markets like the EU and USA. To date, the producers have exported on eight different occasions to destinations such as Sweden, Finland, USA, and Peru and over 3,000 hammocks are exported on average every month. In order to consolidate results and further common work, the group has acquired legal status and has hired a manager whose tasks presently include the identification of more formal training schemes for the workers, the research of other technical and financial assistance inputs from a variety of local SME support institutions, and the strengthening of their marketing strategy. EcoHamaca now has a presence on Internet.

Further and complementary to the above, three other points are worth emphasizing with regard to this project, which has now entered its second three-year phase with a budget of US\$ 1.3 million financed by the Government of Austria.

First, as mentioned above, the project is actively promoting *inter-institutional networking* at two levels. Through the establishment of an inter-institutional committee, the project shares activities with other local BDS providers (including other multilateral and bilateral donors). This committee is presently cooperating on a variety of issues including improving loan access for SMEs, coordinating the design and application of evaluation criteria for SME assistance intervention, transferring network development methodology to other service providers and executing specific joint projects in localities or sectors of common interest (for instance, wood and furniture in Masatepe, leather and shoes in León, etc.). On a more comprehensive scale, the project has been invited to assume an important role in the National Committee for Competitiveness and Sustainable Development (formed by high-level policy makers and main representatives from the private sector as well as the main economics university of Nicaragua) and is contributing to the dialogue to design an overall SME development policy.

Second, an important component of this project consists of *local capacity building*. The national consultants working in the project are local professionals with no international experience and no direct knowledge of cluster or network practices or policies. The project is, therefore, investing in training them in order to upgrade and specialize their skills, which should result in improved services to the enterprises. Training is provided by international consultants and UNIDO staff via thematic seminars and on-the-job training. As further explained in the section "Lessons Learned", other forms of training are also being implemented such as joint learning programmes abroad or best practices of cluster/network development.

Third, the Nicaragua project, like the project in Honduras, is now *diversifying its activities* to also include, in addition to the promotion of horizontal networks, the training of new network brokers, the promotion of industrial integration along production chains (through subcontracting links between SMEs and large enterprises with emphasis on supplier upgrading) and the promotion of industrial districts (in Nicaragua the term 'industrial district' is used to mean 'clusters' as defined in the introduction of this paper). This evolution has come about quite naturally while realizing that economies of scale and scope can extend beyond the boundaries of horizontal networks. As exemplified in the following box on Masaya, the task is to find "the right equilibrium" in scale and scope of the joint action, and to direct common development projects to achieve maximum economic efficiency and return. In Masaya this has translated into a progressive evolution of the scale of the common project from networks to sector to cluster to national level, as schematically described in the box below.

Box 4. Masaya handicrafts

Masaya is a town south-east of Managua with a strong handicraft tradition with hammocks as one of the main local products. Initially, the project assisted networks of hammock producers to upgrade their products for export (see box "EcoHamaca", above). While implementing the networks' projects, it became evident that the main factor influencing hammock prices was the cost of the cotton yarn used as raw material. After studying the relationship of the cost of cotton yarn to quantities purchased, it became clear that the best prices could be obtained for quantities greater than those required by the single networks, i.e. coordinating the purchase of yarn at the level of the whole hammock sector of Masaya. The broker, therefore, focused on creating a local purchase centre offering raw material to a large number of Masaya hammock producers.

Another important factor which was identified for improving the performance of the hammock sector was the design. In response to this, the project is working towards improving the design according to market trends and creating new products (for instance hanging chairs, deck chairs, cribs, etc.). The new products, in order to be successful, are being designed in cooperation with the wood and furniture sector. At the same time, since the most interesting market for this line of products is the export market, the need to build-up an export promotion strategy has arisen. The resulting common brand, "Made in Masaya", was developed to promote local identity accompanied by activities to increase the quality of local products. This brand will be extended to all handicraft products from Masaya and, therefore, to the entire cluster.

Finally, other initiatives will have a national dimension. For instance, actions to facilitate export transactions which are part of the export strategy for Masaya, will obviously extend their effect to all Nicaraguan enterprises.

The conclusion emerging from the experience in Masaya is that the concepts which guide the implementation of network/cluster-based projects, are demand orientation and a creative solution design. Brokers should look at the entire business system, tap all available resources, and design the intervention in order to take maximum advantage of economies of scale and scope.

C. Mexico: Promoting vertical integration

In the second half of 1997, the Programme of Industrial Integration (PII) was launched by the Mexican Confederation of Industrial Chambers (CONCAMIN), the Fundación para la Transferencia Tecnológica a las Pequeñas y Medianas Empresas (FUNTEC), the United Nations Development Programme (UNDP) and UNIDO. Through a flexible and decentralized set of initiatives, the PII aims at stimulating and supporting local projects to promote networks of SMEs as well as subcontracting networks between small- and large-scale enterprises.

The two projects initiated in the states of Chihuahua and Jalisco, over the first six months of the programme, focus on this second feature⁵ and aim at increasing the competitiveness of local SMEs by stimulating a deeper and broader integration with the locally established multinational corporations.⁶ In the case of Chihuahua, the counterpart has been the association of "maquiladoras" firms. In the case of Jalisco, the participating association is the Camara de la Industria Electrónica. In both Chihuahua and Jalisco, the private sector counterpart covers one third of the operating costs; another third has been contributed by the state government; while the remaining third has been funded by the PII.

Both projects are in the process of establishing two technical centres (Centres for Supplier Development) with the following aims: a) helping enterprises to identify subcontracting opportunities; b) cooperating with the technical personnel of the lead firms on the definition of support programmes targeted at upgrading the capabilities of the identified subcontractors; c) identifying and channeling technical support, training and loans (when required) from locally available institutions to the subcontractors to assist them in meeting the needs of the main contractors.

While both centers are still in their initial phase, some lessons can, nevertheless, be learned from the experience gained during their design and initiation.

1. Despite the well known scepticism that many foreign multinationals, and especially those operating in the "maquiladoras", have towards local producers, the fact that lead firms are playing an important role in both centres in terms of providing direct (financial) support and sensitizing other partners, proves that the willingness of large firms to establish linkages with small firms is improving in Mexico.
2. The benefits that a Centre for Supplier Development present for the client enterprises are twofold: First of all, such a centre can coordinate the demand for the goods and services of the main contractors. It becomes possible, therefore, to achieve significant economies of scale that not only lower the prices of production inputs but can also justify new investments by the subcontractors to meet the demands of a pool of lead firms. Second, such a centre can coordinate supply and help establish horizontal networking among subcontractors. This type of action is crucial when there is a significant gap between the lead firms and their subcontractors, especially in terms of production capabilities, technology and management. The creation of a network, with the task of organizing and improving the offer of a group of subcontractors, can provide an efficient measure to fulfil an intermediate position that is frequently missing in the supply chain.
3. In spite of the advantages previously mentioned, the idea of a centre implies a collective action by the main contractors which can often be extremely complex. The establishment of a consensus over the design of the centre and the coordination of the technical inputs for its management are all initiatives characterized by significant transaction costs which are often high enough to freeze or to radically slow down the development of any collective project. It is precisely the reduction of such transaction costs that justify the existence of a PII whose main added value is, therefore, to speed up the decision-making

⁵ According to the programme document, 12 projects will be initiated over the three years of the programme.

⁶ Multinationals in Mexico have very little interaction with local subcontractors. In the case of Chihuahua, for example, the integration level (which is slightly higher than the national average and has grown over the last years) barely reached 3% in 1997.

process at the enterprise level, minimize the time wasted in negotiations, promote the emergence of a consensus, and coordinate the contributions at various levels.

4. The experience of the Mexican project indicates that a support measure focusing on subcontractors has the best prospect for maximizing its impact when the lead firms participate not only in its funding but also commit their own technical personnel to the selection of the potential subcontractors and the design of the support initiatives. This type of participation ensures not only that the initiatives are genuinely demand-led but also that the knowledge base accumulated by the main contractors is transferred to the subcontractors.
5. Lastly, it needs to be noted that, in spite of numerous similarities, the two centres established in Jalisco and in Chihuahua are profoundly different from the traditional subcontracting exchange schemes that operate in many countries with the aim of linking the demand and the supply of subcontracting services. The centres in Jalisco and in Chihuahua do not operate on the idea that the main obstacle to the creation of such links is an information failure (which is at the basis of traditional types of subcontracting exchanges). While instruments that tackle the information gap are used (like the creation of databanks on demand and supply), the centres concentrate mainly on technical support initiatives trying to address the basic problems of capacity failure and difficulty in establishing relationships based on trust.

D. Jamaica: An example of institutional networking

The Jamaica project is another example of entry at the institutional level. It was initiated in 1994, with the second phase having been launched in 1997 for a duration of 3 years. The total budget for the two phases amounts to approximately US\$ 1.5 million, which was contributed by the United Nations Development Programme (UNDP). The project was requested by the Government of Jamaica to assist the public development agency, JAMPRO, in implementing a support strategy for the local SME sector.

The Productivity Centre, located within JAMPRO, is the focal point for project implementation. Unlike the other projects described, the activities of the Jamaican project are directly implemented through the staff of the Productivity Centre. An international chief advisor, funded by the project, has been requested by JAMPRO to assist the local team. Two main features of this project are particularly noteworthy: institutional capacity building and network promotion. The institutional capacity building component consisted of strengthening the capabilities of the Productivity Centre to act as a networking promotion agency, and of creating specialized centres, coordinated by JAMPRO, to provide "real services" to the SMEs. As a result of the project, the Productivity Centre is now performing the following functions: identifying SME needs and designing the public institutional answer to meet these needs; networking and coordinating actions with other local institutions active in SME-related fields (such as HEART [Human Employment and Resource Training], the national training agency, community colleges, the University of West Indies, vocational schools, specialized service centres, etc.); favouring streamlining and specialization of services; acting as an information hub on issues related to SMEs; and acting as a network broker. Specialized centres have been created and upgraded (mainly within existing institutions) by the project in fields such as garments and fashion, furniture, food processing, handicraft, and in the metalworking sector. The centres provide technical services to the entrepreneurs (see Box 5 as an example) and act as "second-level" networking institutions, also linking the entrepreneurs with other service providers for services they do not offer.

What should be emphasized about this project is that the entry at the top institutional level has guaranteed the highest degree of local ownership of the initiative and, in turn, good prospects of sustainability. Moreover, JAMPRO is ideally positioned to develop a coherent structure of services for the SMEs, playing the role of system coordinator. The challenge of this project is now to help the support institutions to formulate and implement a coherent fee structure to recover, at least, part of the service costs from the client enterprises.

Box 5. Network support system for the fashion industry

An institutional support network has been established involving educational, training, and technical institutions to help the Jamaican SMEs operating in the fashion sector. At the heart of the network is the JAMPRO Design Centre which offers the following services through its fashion division: Information on fashion trends, advice to manufacturers on design improvements using CAD systems, linkages between manufacturers and local and foreign designers, and information on suppliers of inputs for the fashion industry. Other important actors in the networks are the two Apparel Technical Centres - one in Kingston and one in Montego Bay - to provide training and technical assistance to producers in areas such as computerized pattern making and grading, product development, and flexible manufacturing systems. These centres have the function of both diffusing best manufacturing practices and stimulating SMEs to network for joint purchase of raw material, joint marketing, etc.

emergence of groups and of group leaders. In this first stage, the network brokers normally organize large and open meetings to introduce the principles of networking and to indicate their possible applications. As a result of this promotional initiative, entrepreneurs group around issues (problems and/or opportunities) that they have in common. There appears to be no such thing as an optimal selection criterion for enterprises to be part of the same network. The entrepreneurial characteristics that appear to be most conducive to collective actions, and which need to be stimulated by the network brokers, are a willingness to learn and an openness to discuss and develop relationships with other people. Similarly, there appear to be no general rules concerning size or location of the groups. Nevertheless it should be noted that a limited number and geographical concentration reduce coordination costs. The viability of a collective project depends, in other words, on the trade-off between the critical mass of enterprises which is necessary to sustain the joint action and, inevitably, its coordination costs.

Once groups have emerged, it becomes possible to move to the *strategic planning phase* which involves the following elements: a) an analysis of common problems and opportunities; b) the establishment of a common work plan; and c) an organizational structure for the group. For the identification of common problems and opportunities, it is necessary that the network brokers carry out an in-depth analysis of the growth constraints of the enterprises and of their causes and that they do not rely exclusively upon the perception of the entrepreneurs. Often, the entrepreneur is biased toward short-term needs, for instance, a shortage of working capital, not realizing the causes of those needs which could be, in the case of working capital, inappropriate cash-flow management. A crucial component in delineating a group work plan is to reach a consensus concerning the definition of the evaluation criteria for the collective action to be applied in the short, medium, and long term. Such criteria need to be both quantitative (like those described in the Honduras case) and qualitative, easily understood, computed and, needless to say, in line with the objectives that the group has selected. An important function of the network brokers is to inject the group with a mind-set founded on continuous improvement based on periodical evaluation of the results obtained and setting up of new objectives. From this point of view, the monitoring system needs to be perceived by the entrepreneurs as a useful tool in evaluating the performance of their partners (and of the network brokers) and to keep track of the evolution of the project, also evaluating the return on investment and time. From the viewpoint of the network brokers, the criteria are the key instrument to evaluate the performance of the network and decide on whether or not to continue assistance. Finally, it is during this phase that the group selects its legal status and the rules which govern its internal organization such as the key features of its representative bodies (function, duration, etc.), the fines to be levied upon "free riders" and the affiliation fees. These rules can be characterized by different degrees of formalization but, above all, they need to be thoroughly transparent and be readily understood and implemented.

The strategic planning phase opens the door for the implementation of a *pilot project phase* through which cooperation should start bearing concrete results to the participating enterprises. In general, the projects undertaken over this phase are of a commercial and/or promotional kind: joint participation in fairs, joint purchase of raw material, design of a collective catalogue, etc. The idea is to generate visible results (although of a short-term nature) in order to engender optimism and trust and consolidate the network's willingness for furthering cooperation.

When successful, pilot projects are expected to give way to *strategic projects* - those focused on specialization and complementation at the production level. Strategic projects commonly involve one or more of the following components: a) an increase in the degree of specialization, by process and by product, of the network members, b) the provision of common facilities also through the creation of new enterprises (as in the case of Emasim described above), or c) the launching of new product lines and common brands (as in the case of EcoHamaca also described above).

The final stage of the network-building exercise, the *self-management phase*, coincides with the group of enterprises gaining greater autonomy from the network brokers and the capability to carry out further joint activities independently. Self-management is not always an easy step and it has been observed that networks often tend to lean on a broker's assistance for a longer time than initially envisaged. In order to avoid dependency, two rules apply: The first is that the work plan established by the network members and the broker must have a specific time frame and must not continue for an undefined time period. In this way, the network knows from the beginning that they can count on the broker only for a limited period of time and must use this time wisely. The second rule is that the fees which are normally charged to the network for the assistance given by the broker, and which are quite low at the beginning, must be progressively increased to encourage network autonomy and, from the broker's point of view, allow investment in new target beneficiaries.

The last element worthy of emphasis in such a process of enterprise network establishment, is the role and profile of the network leaders. In the initial phases of group establishment, the network brokers are the real leaders. As groups mature, the function of the network brokers must shift towards softer coordination and a progressive transfer of responsibilities from network brokers to entrepreneurs must be ensured. Often, in order to balance the reduction of the assistance by the broker, networks contract a manager to assist in the implementation and upgrading of the work plan (see the EcoHamaca case as an example).

B. Restructuring at the firm level

In addition to engendering a collective competitive advantage, network creation often also brings about a transformation within the individual member enterprises aimed at adapting their production and organizational capabilities to the requirements of the common objectives. If, for instance, the network embarks upon process specialization whereby the network members subcontract each other, the individual enterprises will be pushed to improve their internal organization to respect the quality standards, production schedules and pricing levels decided by the group. Group pressure will stimulate individual enterprises to fully commit to implementing the necessary improvements and will sanction members for failing to accomplish common objectives.

While networks can generate positive changes in the individual enterprises, the opposite also holds true: enterprise restructuring can greatly contribute to improve network prospects. Therefore, the objective of individual improvements should also be kept in mind by the network broker who should help to orient the efforts of the enterprises and liaise with the various BDS providers operating in the surrounding environment.

C. Improving the institutional environment

Two types of BDS institutions are involved in the network programmes of UNIDO: Institutions that play a direct part in project implementation (i.e. have a primary and pro-active role) and those that play an indirect role (i.e. support the implementation of actions designed by the first type of institutions). The cluster/network brokers and the networking unit belong to the first type of institutions and play a pivotal role at the level of direct assistance to the enterprises. They are the agents (institutions and consultants) who facilitate the generation of the networks as described above. The networking unit is the actor playing the strategic role within the networking projects: it a) bears the responsibility of designing and promoting the networking strategy in a given country, b) identifies the sectors/regions to address depending on their potential, c) carries out extensive awareness building among the small-scale enterprises and the

local institutions, d) trains network brokers, e) manages the available funds, devising and implementing a sustainability strategy, f) monitors the development and impact of the networking initiative, and g) provides feedback to the various actors involved.

At the beginning of a networking project, the functions of both the networking unit and the network/cluster broker are usually assumed by the same institution/team of professionals. As the scale of activities of the project increases and there is a need for specialization, the two functions are progressively split and assumed by different actors, as described in the case of Honduras.

The external institutions, on the other hand, essentially support the realization of the networks' work plans requiring a wide range of technical and financial services. It is the task of the networking unit to ensure that networks can draw the assistance they require from within the environment that surrounds them. In a relatively weak institutional environment, this task often implies upgrading the capacity of specialized service centres or, in some cases, even bringing about their establishment, which the case of Jamaica illustrates.

D. Improving the dialogue between the private and public sector

Finally, a fundamental component of a networking/cluster project concerns the establishment of cooperative relations between the public and the private sector. The aim of such relations is to promote the emergence of a coordinated industrial policy and identify, develop and implement coherent actions to support the entrepreneurial effort.

In each of the UNIDO projects described above, the creation of a public/private Project Advisory Committee, or the participation in existing coordinating bodies such as the National Committee for Competitiveness in Nicaragua, has contributed to sensitizing policy makers on the benefits of clusters and networks, thus favouring the internalization of the key principles of networking development within the strategy of public SME support agencies. At the same time, this coordination also allowed the projects to convey to the policy makers issues of concern to the private sector (such as reforestation policies in Nicaragua to guarantee regular supply of raw material to the local furniture sector; banning illegal imports of leather goods in Honduras; or improving the SME sector's access to credit in Nicaragua). On each of these issues, the projects have contributed to the formulation of proposals for the consideration of the public decision makers.

CHAPTER V:

Lessons Learned

The experiences gained during five years of UNIDO's involvement in network/cluster-related projects permit certain conclusions to be drawn. The nine 'lessons learned' presented below do not purport to represent the totality of prescriptions to be applied in networking projects but rather a selection of some observations that may prove useful in designing future projects:

1. An important principle in the design and provision of networking development services is *demand orientation*. In UNIDO's experience, project strategies must be flexible and vary from network to network and from cluster to cluster, depending on the nature of the constraints/objectives of the client base. One important requirement is that the intervention must be designed after a thorough analysis of the needs of the client base and the surrounding economic environment from which resources can be tapped to satisfy those needs.

Consideration should be given to the type of demand orientation used in these projects. While projects are initiated on the basis of a beneficiary's demand, beneficiaries should be helped in formulating these demands based on an analysis of their growth constraints. In this sense, demand orientation is not passive but proactive with the brokers playing an important role in helping the strategic planning process of the enterprises. Especially in developing countries, where small enterprises have a weak capacity to develop a strategic response to market challenges, this approach has proven the most suitable in UNIDO's experience.

2. Three principles guide UNIDO's work with respect to networks, namely, they need to be a) business-oriented, b) production-grounded, and c) targeted at SMEs. *Business orientation* refers essentially to two components: first, networking must aim at visible improvements in the economic situation and prospects of participating SMEs; and, secondly, it must grant the group a new competitive advantage which the enterprises alone could not reach. While the first point might seem an obvious one, it has been repeatedly observed that networking can often be interpreted as pure exchange of information or as an end in itself rather than as a means to achieve concrete economic advantages. In the Honduras case, for instance, it took great efforts to change network meetings from social events to business talks. A further step is to translate business talks into action and ensure that the actions are profitable and lead to positive structural, as opposed to temporary, changes in the enterprises. The second point emphasizes the fact that, while other technical cooperation schemes promote the network concept as purely applied to groups of enterprises participating in the same activity, in UNIDO's approach a network should also have a further scope. Although common activities are useful, as in the case of joint training which reduces the fixed cost of training, in UNIDO's experience networks should also aim at generating a new competitive advantage translating into the generation of new business without which the networks do not fulfil their whole potential (as in the case of

EcoHamaca where the participating SMEs were able to enter the export market thanks to the joint action).

The second principle, *focus on production*, points to the importance of process and product innovation and structural improvement as opposed to, for instance, an increase of sales resulting from an occasional participation in a fair. While activities like information exchange and joint participation in fairs are important parts of a network work plan, they are not the ultimate objective of UNIDO's approach, which is rather to improve the business prospects for SMEs by helping them to achieve long-term changes in their production capability and organization. It could be argued that a new market opportunity stemming from, for example, the joint participation in a fair, might spur the creation of networks and the development of cooperative relationships among members. In UNIDO's experience, however, such a transition rarely occurs automatically. In some projects, the networks have been exposed to market opportunities (especially for export) which they could not fulfil due to a lack of organizational capabilities and production capacity. Supporting a network, therefore, should involve not only the search for new market opportunities, but also provide the assistance required to restructure the network's production organization to respond to new markets in a timely manner, with the right quantities and quality.

Finally, the *focus on SMEs* refers to the fact that, even though networks may involve other partners (such as large-scale firms, retail chains, etc.), the primary beneficiaries need to be the SMEs. For instance, in the case of Mexico, while multinational industries are among the main actors involved in the project, the focus is clearly on supplier development and local development.

3. Networking is a *multidimensional concept* and does not apply only to enterprises. Institutional networking, networking between the private and public sectors, and country networking (as in the case of the Joint Learning Programme outlined in point 5, below) are equally important concepts in UNIDO's activities. The idea is to specialize and cooperate to the maximum extent, so that each actor in the economic system can dedicate itself to core functions and perform them to the best of his or her abilities. In practice, this principle translates into the natural evolution of the networking units which, as described in the cases of Honduras and Nicaragua, specialize into strategic functions, decentralizing the implementation functions to other network brokers, after an initial period, when they centralize all such functions. By the same token, this principle implies a suitable division of labour among network brokers and BDS providers, whereby the network brokers do not pretend to solve all problems of the enterprises but help the enterprise to identify other service providers which may be of assistance - as is the case in Jamaica where JAMPRO is working towards diffusing the specialized function to other institutions.
4. The key resource in networking initiatives is the *people involved* (policy makers, brokers, and other service providers). With this in mind, it is important to distinguish four factors that can increase the likelihood of project success: people's ownership, empowerment, skills, and incentives. At all levels, the project actors must:
 - a) own the project, and feel it is in their interest to execute it. To this end, it is important to invest adequately in raising awareness at all levels, to involve local actors in project design, and encourage their continual feedback for improving project implementation;
 - b) be empowered to act. In other words, all the actors involved must have the leverage, credibility and resources to play their role. If, for instance, counterpart

institutions do not have credibility vis-à-vis the beneficiaries, project activities will not have the desired impact;

- c) have the right skills to act. In addition to an appropriate academic and professional background, the skills of network brokers must encompass such invaluable “extra-curricular” skills such as the capacity to build teams, deep knowledge of local social rules and an openness to establish contacts. Network brokers must possess a rare combination of technical background, business mentality and “social sensitivity” to produce market feasible projects for collective benefit;
- d) have the right motivation and incentives. The issue at stake is that, in addition to the leverage and skills to act, network brokers must also have the right motivation to look for clients and help them improving their business. UNIDO’s experience indicates that appropriate incentive schemes can enhance brokers’ motivation and channel their efforts into projects that hold the possibility of higher impact and longer-term gains for the networks. However, what types of incentives work best in achieving the desired results, and what types of results should be encouraged? On the latter issue, while incentives anchored to the financial gains of the networks assisted may seem to be a sound idea, there lurks the danger that this could bias the choice of projects/firms leading network brokers to select relatively ‘easy’ targets (i.e. larger enterprises) or promote relatively ‘short-term’ activities with quick returns rather than longer-term but more structural changes. In UNIDO’s experience, the incentives must be anchored not only to financial performance of the networks but to more comprehensive criteria involving qualitative assessment. The qualitative assessment is made based on the achievement of the objectives indicated in the work plans agreed upon by the network broker, the network and the overall project coordinator (depending on the various cases, this can be the UNIDO project manager or the director of the project counterpart).

Regarding the nature of the incentive, in UNIDO’s experience the most effective incentive for network brokers has been training - such as the study tours discussed below in point 6. Study tours, and the possibility to learn from successful experiences of other countries and regions, has proven to be, especially among young professionals, a very positive stimulus to improve performance. A less tangible but effective motivator is simply the existence of a framework that allows network brokers to work together and exchange ideas thus fostering a sense of teamwork. The positive atmosphere created when such teamwork is encouraged and the sense of “not going it alone” not only applies to enterprises in a network but also is a key element in supporting, encouraging and motivating the brokers.

5. The importance of investing in people has been emphasized in the point above. What warrants further expansion is one of the critical ways to support these key actors through providing the necessary *training and exposure to best practices*. The importance of continuous training, as well as the need to diffuse information related to best practices to orient networking agents’ decisions, is most important. In UNIDO’s experience, the kind of training that has emerged as valuable and effective in transferring knowledge on the “nuts and bolts” of networking, is to rely heavily on concrete cases of successful networks and clusters and let networking agents hear directly from other agents who have implemented successful networking projects. To this end, UNIDO has developed the concept of “Joint Learning Programmes” aimed at giving first-hand exposure to cluster and network agents from developing countries to successful cluster/network experiences. To date, this programme has been run in the Emilia Romagna region of Italy and focused on

the experience of Italian industrial districts. This programme will be expanded to the overall European experience by inviting other countries to participate. A second programme is being planned in Chile based on the Latin American network/cluster promotion experiences. In addition to this specific training, a series of working tools, such as the "NET-tool" (see the Honduras case) are also being systematized to facilitate the work of the network brokers and accelerate the transfer of knowledge to new networking agents. Other instruments are being developed such as a practical manual for network brokers and a set of monitoring and evaluation indicators for networking projects. All these instruments are constantly evolving and are meant to stimulate creative thinking rather than impose rigid boundaries.

6. A combination of private and public investment appears to be the best way to finance networking development services. The main elements which appear to militate against an exclusive reliance on the market is that networking development services aim at balancing some market failures, as described in this paper's introduction, and, therefore, the market cannot be expected to entirely cover their costs. Such a realization should not, however, lead to believe that networks need to rely entirely on public funding. The elements which diminish the appeal of exclusive reliance upon public funding are, first, the limits it is likely to impose upon the accountability of project managers to market feedback, and, therefore, clients' satisfaction; secondly, the fact that clients' co-financing ensures selectivity of clients on an objective basis (or, from another angle, less discretion on the part of the service provider in targeting one or another beneficiary). Finally, the balance between private and public funding needs not be the same over time. As the initiative progresses and the impact becomes more visible, it normally changes in favour of a higher market share.
7. Evaluation criteria for networking development services need to be carefully designed as seen in the Honduras example. While quantitative evaluation indicators are always auspicious, there are three aspects to consider: a) the scarcity of reliable and comparable data on the performance of small firms; b) the understandable unwillingness of the entrepreneurs to release confidential data about their businesses; c) purely quantitative measures often fail to take into consideration results like institutional capacity building as well as indirect results such as those resulting from the work of second (or third, etc.) generation brokers. On the other hand, in spite of the difficulties related to quantitative measurement of service impact, gathering of objective data is essential not only for evaluating the return on the investment made by the donor but also to indicate the possibility of charging private sector beneficiaries who, understandably, require to know with a certain degree of objectivity what benefits they can expect from buying certain services. In UNIDO projects, a combination of both qualitative (related to the specific objectives of cluster/network work plans) and quantitative criteria (of the type mentioned in the country cases) are used for evaluating networking development services.
8. The introduction of elements of *market cost recovery* should be pursued as early as possible in order to avoid that the beneficiaries become accustomed to full subsidies and risk that the enterprise becomes dependent on the service provider. Progressively increasing the share of the costs that enterprises have to cover is one way to reduce such a risk. It is the task of the network brokers to lead the networks towards a process of self-management (as described in Chapter IV) and to develop an autonomous capacity to identify new collective strategies, implement the joint projects and liaise with SME support institutions. By the same token, in UNIDO's experience, the long-term impact of networking development projects may be endangered unless networking institutions and cluster brokers can free themselves from dependence on the continuous assistance provided by UNIDO and develop an autonomous "strategic thinking" capability to improve and upgrade their services continually in line with the dynamics of the entrepreneurs.

9. Lastly, there is *no single and pre-defined path* to be followed in the implementation of cluster/network promotion initiatives that can be effortlessly replicated across countries, regions and industrial sectors. These initiatives need to be flexible and in tune with the characteristics of the environment where SMEs operate. While the elements that comprise the intervention are always those described in Chapter IV (network, firm, institution, and policy) the “dosage” and “sequence” need not be the same for all projects and all countries. A bottom-up approach, centred on fostering an entrepreneurial vision and supporting local actors’ initiatives to realize it, appears to be the best in UNIDO’s experience.

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