

INDUSTRIAL PARKS PRINCIPLES AND PRACTICE

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Under the impulse of globalisation and world trade liberalisation many countries have scrapped efforts to promote import-substitution and are now emphasising export-led development strategies. In this context, industrial estates are viewed as important instruments of local industrial development. By clustering into industrial parks, small, medium and even large enterprises can take advantage of public infrastructures, economise on construction and common facilities, and gain access to nearby skilled labour markets, research and educational facilities and other critical inputs. This paper examines the origin, nature, size and type of organisation of industrial estates, their distinguishing features, their common elements, the benefits that can be derived from them and the negative impacts they may have on the environment. It also describes UNIDO's role in fostering industrial development in the underprivileged regions of the world conceptually and at the level of concrete projects.

1. BACKGROUND

Sweeping technological changes, particularly in communications, trade liberalisation, emerging financial markets, and declining transportation costs have propelled globalisation. It is now quite feasible for enterprises to decentralise their production and distribution activities on a global basis. For example, electronics firms can conduct research and development activities in England, design software in India, produce computers in Malaysia and manage the entire operation from California. Advances in manufacturing control technologies, modularisation of production equipment and the upgrading of manufacturing skills and standards make it now far easier for firms to shift

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production offshore. But there are other reasons: now it is far easier to engage in cross-border trading because the political climate is more conducive to trade; countries have shifted from central planning to market-based systems of economic policy; and many countries have scrapped efforts to promote import substitution and are now emphasising export-led development strategies.

The United Nations Industrial Development Organisation, or UNIDO for short, is a Specialised Agency of the United Nations System responsible for the fostering of industrial development in the underprivileged regions of the world. Today this has come to mean far more than promoting industrial investment, technical assistance in engineering and manufacturing operations, technical and vocational training, etc. UNIDO, through its full participation in the series of important UN conferences from Rio to Beijing, from Cairo to Copenhagen, and last at the City Summit in Istanbul a little more than a year ago, has broadened its approach to industrial development to encompass the major themes of these conferences: the environment, women's role in development, population issues and social responsibility, and sustainable urban development. Under the last-mentioned title, we also include the development of industrial estates and science and technology parks.

Globalisation and the liberalisation of economic systems are contributing towards the levelling of the economic playing field for most countries and regions. At the same time, these forces are underlining the interdependence of industrialised and developing countries and regions and the countries in economic transition. The on-going economic transformation has also greatly reduced the role of national and central governments in society and created a renewed opportunity for local and regional development within national economies. Thus, globalisation has two dimensions: one international and one local.

An important aspect, or instrument of local industrial development is that of the industrial estate or park. This concept emerged in the industrialised countries some one hundred years ago, primarily as a means to promote and manage industrial development and to provide cost-effective infrastructure and communal services. It took rather long to really catch on but since the 1970s, there has been a massive increase in the number of parks world-wide, especially in the newly industrialising countries. By one account, there now are more than 12 000 of these parks in the world. They come in a variety of flavours: their size, type and organisation vary a great deal. But, they also have essential elements in common: they cluster a number of often small and medium scale enterprises within one defined physical area, and they are administered and/or managed by a single authority having a defined

jurisdiction with respect to the tenant companies. They often are alternatively referred to as industrial estates, districts, zones, or parks. UNIDO, however, distinguishes between estates and parks as tracts of land developed, subdivided and serviced, and industrial zones as raw land set aside for industrial use, and industrial districts as an organisational vehicle for administering a certain set of parks and/or zones.

The globalisation of economic activities is profoundly altering the world's economic landscape. As the globalisation process has accelerated, cities and regions benefiting from global structuring have grown rapidly, while other, less economically competitive areas have stagnated. Obviously, the very same goes for industrial parks. Let me now turn to the principles and practices that matter in this context.

2. PRINCIPLES

The main variables causing improvements in the economic and financial fortunes of a given industrial park are economies due to outsourcing, productivity gains, and economies of scale. The main causes for decline are (in decreasing order of importance): international competition, obsolescence, and company relocation.

From a national perspective, the projections of urban population growth in most any middle- and low-income country provide a very troubling picture. The implications for employment creation, provision of housing and physical infrastructure, education, health and social services, and pollution control are staggering. Large-scale manufacturing is likely to play only a limited role in providing employment. Small- and medium-sized firms in manufacturing, services and trade, as well as micro-enterprises will provide most of the jobs. Many of these will benefit greatly in exactly the just-mentioned critical variables for success by locating inside a well-functioning industrial park: outsourcing based on efficient division of labour is facilitated, scale economies may be achieved, and productivity thereby is enhanced. By clustering into industrial parks, small, medium and even large enterprises can take advantage of public infrastructures, economise on construction and common facilities, and gain access to nearby skilled labour markets, research and educational facilities and other critical inputs

The challenge for the public as well as the private sector is to facilitate the creation and maintenance of industrial parks that are competitive in the global as well as the local context. The ability to compete in national, regional as well as international markets is the hallmark of successful private enterprise and the

paramount prerequisite for sustainable economic development. To achieve this, the most effective mechanism will be to enhance the productivity of urban areas and further encourage private-public-sector partnerships.

The changed emphasis in development strategies from reliance on public sector manufacturing and import substitution to private sector entrepreneurship and open economies means a radical shift in the role of government agencies in many developing countries and economies in transition. Their number will decline, and the size of those that remain will diminish, but their new task to support a viable and sustainable private sector will be ever so important. This holds true for the administration and management of industrial parks just as it does for other governance structures.

Different roles demand different skills and mentality. Centrally-planned economies put heavy emphasis on technical and administrative skills. Now, with the emphasis on markets, competition, and customers, economic and business skills are needed more than before. The mentality of civil servants has to change if they are to become enablers and stimulators of private business. Central administrators must learn to value and respect decentralised decision making. Better service to private business and individual entrepreneurs, reductions in staff and other resources mean that public and private agencies will have to operate efficiently. Remuneration and promotion schemes will have to incorporate skill and merit elements while retaining the important feature of independence.

3. PRACTICES

So how do these principles translate into practice? Industrial parks offer developed land and collective services such as roads, telecommunications, and utilities, and often a range of common facilities such as recycling, waste collection, and effluent treatment, tool rooms, testing, standard quality control and heat treatment, refrigerated storage, even security services, recreation areas, and an infirmary and a post office. They offer managed and serviced workspaces such as buildings, halls, or parts of such, or serviced plots on which to build. Some parks have technical libraries, engineering (mill wright) services, even housing for workers.

Many industrial parks have grown up around ports, capitalising on the proximity to not only water but usually also to good rail and road transportation. In fact, the largest industrial park in the world is the Jebel Ali Free Zone in Dubai where some 800 companies are located. Today, however, physical access as well as such mundane material as bricks, cement and steel may be less important than electronic access and concepts such as voice, data and video.

Many of the common facilities are particularly efficient if the tenant firms are engaged in similar activities. However, this advantage may be relatively small compared to the synergy benefit firms get when they operate in close proximity to related (up-stream or downstream) manufacturing or service firms. Such closeness encourages not only co-operation but often fruitful sharing of technologies, special skills, and last but not least: ideas. In practice, though, most industrial parks tend to have a fairly heterogeneous mix of tenants.

This mix can, often does, have a temporal dimension as well. Some firms operate in the park on a more or less permanent basis whereas others use the park for starting up, or as a temporary solution. In fact, some parks are deliberately geared towards an incubator function. These aspects often are particularly valuable to small- and medium-scale enterprises that cannot muster the capital necessary for individualised access to all the services and facilities an industrial park can offer. In this sense, these parks also offer a valuable contribution to equitable and sustainable industrial development.

An industrial park can be owned and operated by a public agency, a semi-public one, or a purely private organisation. Regardless of which form is used, professional management with private sector experience is essential for success. The responsible agency should not limit itself to merely maintenance of the facilities and supervision of common areas and space, but play a dynamic role promoting the services offered by the park among local and regional entrepreneurs. Depending on the development objectives and the particular circumstances, a park may be marketed also elsewhere in the country, even abroad.

Sometimes industrial parks serve as the stepping-stone towards more advanced industrial infrastructure such as export processing zones and science and technology parks. An EPZ need not be constrained to a single location and, contrary to an industrial park, it derives its usefulness not from maximising the usefulness of commonalties but from its linkages to export markets. But, even more so than in the case of an industrial park, an EPZ must develop linkages to the domestic industry in order to add value to a nation's output and serve as a catalyst to the domestic industry.

Science and technology parks are in many ways very similar to ordinary industrial parks in that they provide the same kind of infrastructure and services, only they are intended for technologically advanced industries, firms experimenting with new technologies and financed by venture capital. They emphasise high-level support services such as consulting through networking

with local research and development institutions and universities; advisory services on finance and venture capital; marketing; 'head hunting'; and searching for joint venture partners.

Well-planned and serviced industrial parks stimulate the location of industries to socially desirable areas near but not in urban centres. Thereby they help relieving congestion and pollution in the built-up areas, strengthen the industrial base in small- and medium-sized places, and arrest rural-to-urban migration. Additional benefits include reduction in commuter traffic, increased efficiency in urban land use, and reduced cost in servicing land and industry.

But, industrial policies and practices that encourage the concentration of industrial activities in confined areas such as industrial parks can have major impacts on the environment, and on human health and safety. These typically include rapid depletion of groundwater supplies, pollution of both surface water and groundwater, air and noise pollution, contaminated soil, damage to fisheries and other natural habitats, and increased costs for medical treatment of affected individuals¹.

Of course, negative impacts can be prevented, mitigated and even eliminated through informed and responsible environmental management in conjunction with the planning and operation of industrial parks. This is in itself a vast subject area. Suffice it here to say that

- development and land preservation are not necessarily conflicting objectives;
- development need not negatively affect adjacent areas;
- responsible and sustainable methods can be applied to utilise resources without exhausting them;
- clean production methods can be used; and
- effluents and emissions can be treated.

In fact, industrial parks have a significant advantage over individual enterprises trying to adopt sustainable operation practices. They can provide cost-effective environmental management services for individual tenant companies. For example, water and sewage services, and the treatment of effluents and hazardous wastes can be done much cheaper and more effectively per unit when it is done in bulk.

¹ For a full treatment, see UNEP, *The Environmental Management of Industrial Estates*, Paris 1997; UN Publication ISBN:92-807-1652-2.

4. WHAT UNIDO DOES

UNIDO's support to the development of the private manufacturing sector focuses on three levels: government policy making, institutional capacity; and entrepreneurial and technological capability. It reinforces training in management and decision making and it assists in the elaboration of national and regional policies to contribute to the fostering of a conducive business climate.

The scope of the Organisation's assistance is determined by the effective demand for its services from the developing countries and the economies in transition, the supply capacity of UNIDO, and the availability of financial resources. The focus of the activities are on:

- a) services in support of industrial development strategies, policies and programs, as well as institution building; and
- b) capacity building that concentrates on increasing the ability of (i) governments and regional bodies to formulate and implement industrial strategies, and (ii) private sector organisations to deliver services to industry and participate in the national dialogue on industrial and regional policy.

The main services offered by UNIDO are: industrial policy formulation and implementation; interactive policy formulation arrangements; regional development; seminars on the functioning of market economies; industrial restructuring; organisational enhancement of government agencies; advice on industrial estates, science and technology parks, and export processing zones.

To further develop its approach to private sector support, and to adapt its operational activities in this area, UNIDO undertakes conceptual work that takes the form of internal seminars, participation in appropriate events organised by others, and occasional notes and papers, and publications.

Thus, we published our first guidelines for the establishment of industrial parks back in 1978. Then, developments in manufacturing, technological advances, and renewed emphasis on private sector efficiency has made a thorough revision necessary so ten years later we issued guidelines and specifications for the construction of small scale industry estates. Next, throughout 1995 and 1996, UNIDO commissioned a series of studies on **industrial estates** to form the base for the new publication entitled *Industrial Estates: Principles and Practice* that was published in 1997.

In 1996, we published the document *Export Processing Zones. Principles and Practice*. It, like the just mentioned *Industrial Estates* publication, has been distributed to regional development offices, industrial organisations, governmental agencies, etc., in developing countries and economies in transition. Work has begun on the development of a system for (self) Assessment, Quality Improvement and Certification of science parks (called the AQC Program). Linked to this program are especially designed programmes for knowledge development and training, and a handbook containing guidelines for the creation and operation of science parks. If there is sufficient demand, similar efforts can be mounted for industrial parks.

UNIDO undertakes a number of advisory services and other projects, in co-operation with government agencies and often private sector organisations, too, to lend support to the development of a strong and sustainable private sector in client countries. They aim at the creation of an enabling environment for industrial development in general and regional development in particular. A fact-finding situation analysis coupled with conceptual work at the outset, the involvement of the stakeholders in all phases, and the creation of a true feeling of ownership are key features in all such operations. Sustainability is the aim.

Among concrete projects in the field of industrial estates are the drafting of the law on free economic zones under which the **Sumgait Special Economic Zone** will be constituted, support to the **Yemen Free Zones Development**, and a feasibility study of an industrial free zone in **Benin**.

In Peru, The Conosur Estate at Villa El Salvador was rehabilitated with UNIDO assistance. Common services were established for the more than 800 small enterprises in the park, and the entrepreneurs were advised to organise themselves for purposes such as collective purchasing. Assistance with branch-specific know-how on quality control, process improvements, etc., was also provided.

In **Pakistan**, a business incubator project is providing sites with workshops for newly established small enterprises along with common space for shared support services. New entrepreneurs are advised to share experiences for mutual benefit and establish a mentor service to provide training in management techniques.

In **Kenya**, the Kenya Industrial Estates Ltd. has been given support to improve its extension services in provincial areas where this para-statal has

conducted several hundred workshops and made available a range of support services to SMEs.

UNIDO's Unit for Integration of Women in Industrial Development has several on-going programmes that contribute significantly to the Organisation's overall efforts to assist in the development of competitive, sustainable private sectors in the developing countries and the economies in transition. The **Women Entrepreneurship Development** program directly addresses the problems and constraints faced by women entrepreneurs with the objective of improving their competitiveness. The clients of this program include governments that adopt programs to support the economic role of women in the development process, including entrepreneurship, and local institutions that want to strengthen their capacities to provide the services required by women entrepreneurs.

In developing a competitive and sustainable private sector in countries that have hitherto been dominated in many ways by the public sector, a meaningful dialogue between the public and the private sectors is crucial. To introduce ways and means for carrying out such a dialogue, UNIDO has carried out training workshops in **Uganda, Ghana, Kenya, and Sierra Leone**.

Management training for managers from individual firms has been conducted under the UNIDO regional projects in **Kalingrad and Azerbaijan**. Without such training it often is very difficult for such managers from economies in transition to adapt quickly enough to the demands of a competitive, private market.

In many countries, a strong interest exists in the lessons to be learnt from the industrial successes of the East Asian countries, especially the Republic of Korea. Recognising this, UNIDO organises workshops and seminars where the experiences of SE Asia, Latin America, and the OECD countries are compared and discussed. For the same reason, we arrange study tours for policy makers, operators of industrial parks, and also individual entrepreneurs to institutions and installations that are, for one or another reason, instructive. In **Uruguay**, a team of Korean, Chilean and Spanish experts participated in a seminar organised to promote an effective dialogue between the Ministry of Industry, Energy and Mines and the private sector. In **Peru**, public and private policy makers from 16 Latin American countries took part in a four-day conference on the Korean industrialisation strategy, organised by UNIDO together with the Korean International Co-operation Agency. In **Mexico**, the private sector, national federation of industries, CONCAMIN, requested UNIDO to make

presentations at its annual meeting on comparative industrialisation experiences.

The industrialisation of western Europe and North America during the late 19th and early 20th centuries literally transformed the landscapes of these two developed regions. Now the modernisation of the economies in the developing world is dramatically reshaping cities and urban regions. The extent to which these trends can be sustained and the degree to which these newly energised economies can generate employment for growing labour markets largely depend on how well the cities and regions respond to rapid industrialisation and economic growth. They need to be made more economically productive. This means strengthening the linkages between manufacturing and services, research and development, and improving the quality of physical and social infrastructure and human capital. Here the industrial estates can, and indeed are playing significant roles.

In a knowledge economy, ideas rather than goods and services are being produced. We miss a big piece of the total picture if we look only at manufacturing per se and ignore knowledge-based services, especially those that exist to support a modern manufacturing facility. Similarly, we must be concerned with economic development and only within that, with industrial development. The paradigm has to change. Sustainable development and industry require that we focus on how and where we can add value but in so doing we have to take a broader view that encompasses not only industry itself and national governments but also the environment where industry operates.