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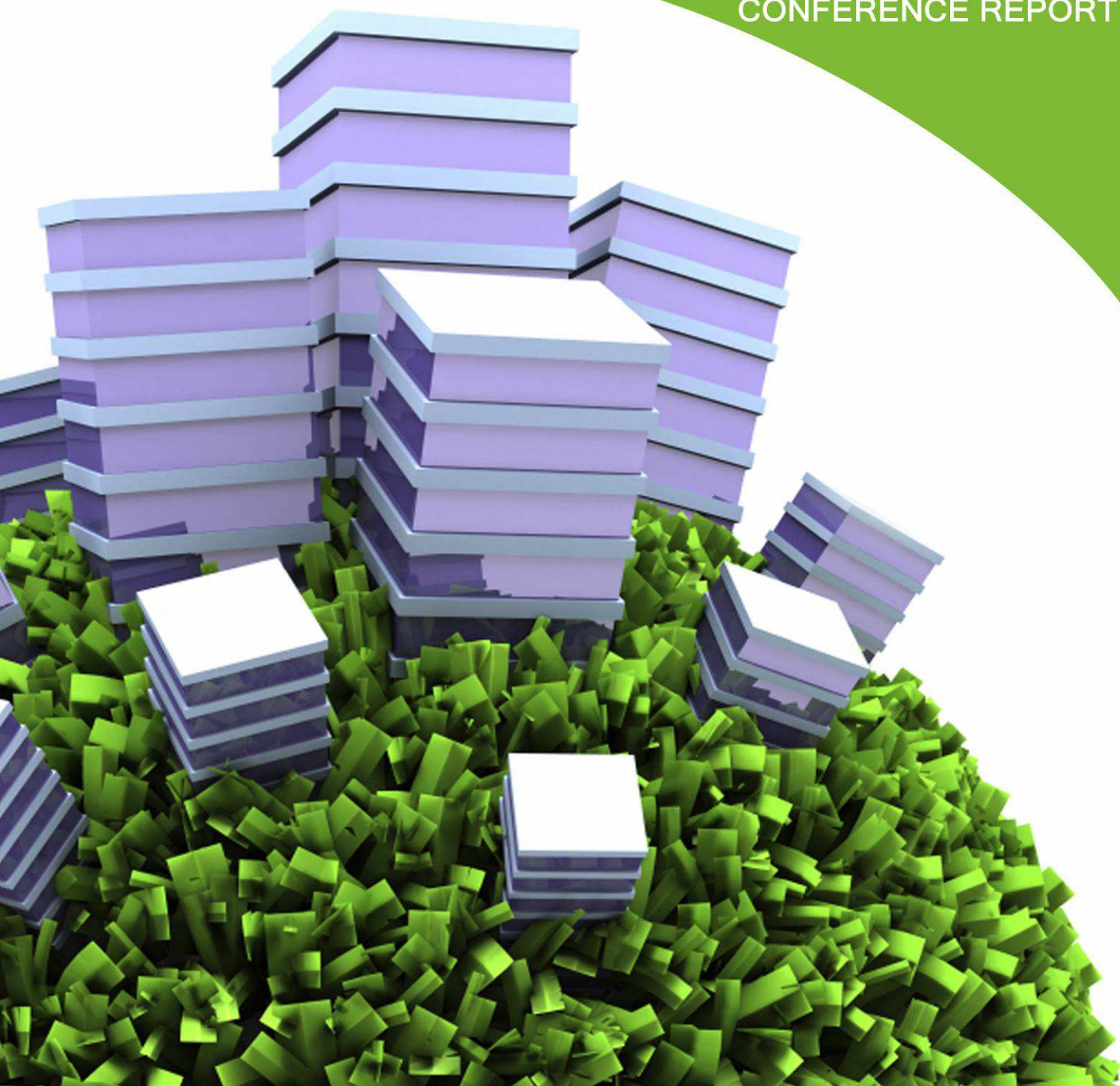
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Europe and Central Asia REGIONAL CONFERENCE ON INDUSTRIAL PARKS as a tool to foster local industrial development

17-18 April 2012
Baku, Azerbaijan

CONFERENCE REPORT



Regional Conference on Industrial Parks 17 – 18 April 2012 • Baku, Azerbaijan



Conference Report

Europe and Central Asia Regional Conference on Industrial Parks

In collaboration with the Ministry of Economic Development and the Ministry of Industry and Energy of the Republic of Azerbaijan

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1 Introduction

Transition economies are often characterised by market imperfections and barriers. They lack access to information, new technological knowledge, and finance. They also face high transaction costs because of a lack of infrastructure and weak institutions. Industrial parks can be used to overcome these hurdles and accelerate economic development. They are a useful instrument for attracting investment, fostering technological learning and innovation, and for creating jobs. With the potential to generate comparative and competitive advantages, industrial parks attract innovative businesses, leading to both more jobs and a larger tax base. They support start-ups, new enterprise incubation, the development of knowledge-based businesses, and offer an environment where local and international firms can interact with a particular centre of knowledge creation for mutual benefit.

A major advantage of industrial parks is that they provide an institutional framework, modern services and a physical infrastructure that may not be available in the rest of the country. Industrial parks use modern services, such as information and telecommunications as well as extension services that are critical for innovation, technological learning and company growth. Costs are reduced through economies of scale in the provision of common services and facilities. Buyers, producers, and suppliers can operate in the same location, thus cutting the transaction costs of economic learning while establishing new standards and norms of entrepreneurial behaviour. Firms located in industrial parks often use the services of local companies, creating not only backward and forward linkages, but also diffusing economic learning to the wider business community. A concentration of certain types of companies attracts innovation and investors and may facilitate the development of clusters. Indeed, from the outset industrial parks should be linked to clusters in the regional innovation system. Successful industrial parks can, therefore, become growth hubs, creating high growth regions and directing national economic development.

Over the decades, industrial parks have become increasingly flexible and have expanded the range of facilities and support services provided to firms and individuals they host. The latest generation of parks promotes new innovative industries and technologies and seeks to provide attractive environments for employees to work and live in innovative clusters. Eco-industrial parks strive for high environmental, economic and social benefits. They bring together businesses that cooperate to minimise resource use and reduce waste. They function according to a shared goal of maintaining the economic viability of industry, trade and commerce while sharing the same core principles of all industrial parks, of creating business niches, supporting business incubation and competitiveness.

The objective of the Regional Conference on Industrial Parks was to contribute to a better understanding of the role of a new generation of industrial parks in economic diversification and job creation in Europe and Central Asia. The ultimate goal was to establish a network of key organisations and institutions in the region for the sharing of knowledge and experience, and for the identification of common challenges and opportunities in the use of industrial parks as an important tool to overcome market and institutional imperfections, facilitate economic learning and catch-up, and accelerate economic development.

The conference focused on the following main topics:

- Current trends and new dimensions in the development and activities of industrial parks.
- Establishment, development, and upgrading of industrial parks; success stories and lessons learned.
- The role of industrial parks in overcoming market imperfections in transition economies, such as imperfect and asymmetric information, and transaction costs.
- Leveraging industrial parks as a policy instrument to foster competitiveness of agglomeration economies and promote local supply chain development.
- The role of industrial parks in facilitating technological learning, innovation, and catch-up processes.
- The role of industrial parks in mobilising domestic and foreign direct investment.
- Strengths of industrial parks in building linkages with financial institutions and venture capital.
- Industrial parks as a development tool to encourage the return of highly qualified human resources, leveraging new technologies and knowledge.
- Potentials of industrial parks to achieve sustainable industrial development.
- The role of eco-industrial parks.

Thematic presentations delivered by the key speakers elaborated on new trends, best practices and success stories in developing different types of parks such as industrial, technology and eco, as important instruments in promoting industrialisation and economic diversification through facilitating technology transfer and endogenous innovation systems, creating new jobs and reversing the 'brain drain', networking with R&D institutions and 'greening' the industrial base. Participating countries, the Government of Azerbaijan and international partners based in Azerbaijan demonstrated great interest in sharing knowledge and best practices.

During the country sessions, participants from selected countries of the region made presentations on the current status and national experiences of developing industrial parks in their respective countries, and elaborated upon potential bilateral and regional cooperation backed technically by UNIDO. The presentations were structured to provide a platform for assessing the baseline situation of industrial park development in participating countries as well as overall industrial performance of industrial parks. The discussions resulted in the design and formulation of regional action plans and activities to be undertaken to enhance investment and technology upgrading in participating countries through industrial parks. Follow-up recommendations will serve as guidelines for project development.

Over 60 participants and speakers attended the conference, including high level representatives and experts from the following countries: Albania, Azerbaijan, Belarus, FYR Macedonia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Serbia, Slovenia, Tajikistan, Turkey and Ukraine. International experts on industrial parks from developed and developing countries, managers of industrial parks and UNIDO staff participated in the event as resource persons.

The Regional Conference was organised in collaboration with counterparts in Azerbaijan: the Ministry of Economic Development, the Department for Cooperation with International Organisations and the Ministry of Industry and Energy. Financial support was provided by UNIDO, the Slovenian Government, and the Government of Azerbaijan.

Evaluated according to its objectives, the conference was regarded by the organisers and participants as a success. The conference gave public and private sector stakeholders of the

countries from the Europe and Central Asia region a better understanding of the concepts, policies, and management of a new generation of industrial parks. Further, an action plan was prepared and agreed upon at the end of the conference. Participating countries also agreed to identify relevant institutions that would cooperate in developing a regional network, and for designing country and region-specific UNIDO services and projects.



2 Overview of issues

2.1 Advantages of industrial parks

Countries in Europe and Central Asia require new industries and technologies to modernise, diversify and to realise the goal of sustainable industrial development. At the same time, these economies face various market and institutional barriers and imperfections preventing firms from easily accessing information, new technological knowledge and finance. Weak institutions and a lack of regulation can increase transaction costs and the risks of doing business, thus inhibiting progress towards realising development objectives.

Industrial parks can be used to overcome these obstacles and accelerate economic development by attracting innovative businesses, leading to both more jobs and a larger tax base. They support start-ups, new enterprise incubation, the development of knowledge-based businesses, and offer an environment where local and international firms can interact with centres of knowledge creation. They act as innovation hubs, promoting interactive learning and the commercialisation of research outputs, and can exploit local entrepreneurial potential.

This section presents a brief overview of industrial parks, from variations on the park model to the advantages and limitations of their use as an instrument to foster economic development. It discusses the evolution of parks and summarises current thinking on the strategies and management techniques that are considered important for success, including management strategies, service provision within parks for tenants and linkages between firms, research institutions and other relevant stakeholders.

Within the context of an overall development strategy, industrial parks can be a valuable instrument to increase regional and national industrial competitiveness, as well as to arrest negative externalities associated with urban congestion and 'brain drain'. They provide an institutional framework, modern administrative services and a physical infrastructure that may not be available elsewhere in the country. They are also designed to meet the needs of industrial enterprises in a particular region or community by offering modern business development services, such as information and telecommunications. Costs are reduced through economies of scale in the provision of common services and facilities. Buyers, producers and suppliers can operate in the same location, thus reducing the transaction costs of economic learning while establishing new standards and norms of entrepreneurial behaviour. Firms located in industrial parks often use the services of local companies, creating backward and forward linkages in the local economy, and diffusing economic learning to the wider business community in the country. A concentration of certain types of industries and industry support services attracts investors. Successful industrial parks can therefore become growth and innovation hubs, creating high growth regions and directing national economic development.

Industrial parks are planned and developed according to a comprehensive plan with provision for roads, transport and public utilities for the use of enterprises (the physical infrastructure). More sophisticated industrial parks offer a wide range of common facilities and support services, such as consulting, financial services, training, technical guidance, information services, joint research facilities and business support services to satisfy the corporate and

technological needs of tenants.¹ They pool resources to make and market goods and to meet large orders. By providing adequate infrastructure and a legal and institutional framework, industrial parks reduce costs and risks. They generate off-shoot companies and provide fertile grounds for the cross-fertilisation of ideas.

Hence, as a place for enterprise and innovation to flourish, successful industrial and technology parks play a key role in the economy. Considering that one of the major causes of small and medium enterprise (SME) failure in industrialising countries is the lack of finance and managerial and entrepreneurial skills, industrial parks can help to stem highly skilled migration ('brain drain') and attract qualified individuals back to their countries of origin in order to plug identified skills shortages – 'brain gain'. Qualified nationals promote innovative entrepreneurship and competitiveness, and industrial parks encourage business creation and supporting companies, especially SMEs, during their start-up and development phase.

2.2 Evolution and different types of industrial parks

UNIDO's broad definition of industrial parks is "a tract of land developed and subdivided into plots according to a comprehensive plan with or without built-up factories, sometimes with common facilities for the use of a group of industries."² While economic or political reasons may mean that nationwide provision of such infrastructure is impossible, the creation of these conditions is feasible within the confines of a park.³ Industrial parks are classified according to different characteristics:

- Park specialisation - a science/technology park, research park, eco-industrial park or export processing zone/free trade zone.
- Ownership - public, private or public-private partnership.
- Land - 'brown' if the park is established on existing but disused facilities of former companies or 'green' if developed in a new area.

The first generation of industrial parks was established in the **early 1970s**. These parks were driven by public sector development and operated with government subsidies for services and facilities. They were basic compared to modern standards, with simplistic architecture offering halls and space for storage. Over the decades the scope of services provided by industrial parks has become more sophisticated and holistic. In the **late 1970s and 1980s**, the new generation of industrial parks was built with greater attention given to the requirements of science, technology and business. During **the 1990s**, industrial parks emerged with greater flexibility in the use of buildings and space, and a wider range of support services supplied to firms. There was a gradual shift from ad-hoc private sector licensing to planned and coordinated public-private partnerships. Private sector involvement led to improved services, greater product differentiation and non-price competition. The most recent wave of industrial parks constructed since the **late 1990s** are designed to promote new innovative industries and technologies, as well as to create attractive environments for employees with facilities such as housing, medical services, shopping and educational establishments. The private sector develops, owns and operates the park on a cost-recovery basis. The authority only regulates activities within the confines of the park and outsources core functions to the private sector.

¹ UNIDO. (2002). *Industrial Development Report 2002-2003*. Vienna: UNIDO

² UNIDO. (1997). *Industrial Estates: Principles and Practices*. Vienna: UNIDO

³ UNIDO. (2002). *op. cit.*

The types of facilities, services and amenities that a park provides depend on the industries and sectors it is targeting, and the obstacles the park is intended to overcome. Science and technology parks are aimed at technologically-advanced industries and emphasise high-level support services, such as marketing, technical consultancy through networking with local R&D institutions, advisory services on finance and venture capital and joint venture partners.⁴ Along similar lines to industrial parks, Export Processing Zones (EPZs) are useful for countries working to establish export-oriented manufacturing sectors while lacking the technical or administrative capacity to develop a countrywide system to allow exporters duty-free access to imported equipment and materials. In some countries, EPZs preceded the establishment of industrial parks. Taiwan Province of China established its first EPZ in the southern port city of Kaohsiung in 1965 as part of an export-oriented industrialisation strategy. It provided basic infrastructure and freedom from red tape. Two other zones were established in 1969 when applications for Kaohsiung EPZ exceeded the space available. A combination of the advantages of a free trade zone, an industrial estate, and all the relevant administrative offices of the government were credited with helping to raise levels of FDI and exports, and led to reform of regulatory procedures.⁵

When successfully managed, industrial parks can provide an environment for enterprises and innovation to flourish. Unfortunately, they can also be dreary, unfriendly places that suffer from problems such as poor environmental management, traffic congestion and pollution. Rather than enhancing quality of life, many of Europe's industrial parks are growing and operating in an unsustainable fashion. They are often run down spaces, marked by social and environmental problems caused by poor planning. These issues have a negative effect on people who work in industrial parks and live nearby. Sustainable industrial parks reflect a desire to address these challenges. Public policy should aim to give such sites a sustainable future by providing town planners with the tools needed to develop more eco-friendly industrial parks. These issues are discussed in greater detail below.

The 'eco-park' or 'eco-industrial park' (EIP) concept seeks to ensure that industrial development in urban areas brings a range of economic, social and environmental benefits to the local community. They enhance relationships between different actors - including municipalities, businesses, and the local community - and optimise the sustainable use of resources. Initiatives to reduce waste, pollution and traffic congestion are likely to be top of the agenda for those involved in managing more sustainable industrial areas. There are benefits for businesses as well - closer relations engendered by the eco-park ethos can allow for benchmarking activities and improved commercial contacts within a park. A well-managed eco-park is also likely to provide good quality recycling facilities, offer good links to local higher education institutions via the provision of internships, and be responsive to community needs.

Eco-industrial parks are a variant of industrial parks that strive for high environmental, economic, and social benefits, as well as business support. EIPs present an opportunity to transform many polluting parks, by hosting environmentally-friendly technologies and companies, aiming at zero waste. They create inter-linkages between manufacturing and service enterprises so that the environment and resources, such as water, traffic, energy and materials are managed sustainably and with minimum ecological impact.⁶ EIPs are based on a

⁴ UNIDO. (2002). *op. cit.*

⁵ UNIDO. (2002). *op. cit.*

⁶ Lowe, E. A., S. R. Moran and D. B. Holmes. (1998). *Eco-Industrial Parks - a handbook for local development teams*. Indigo Development, RPP- International, Oakland, CA.; A.-K. Fleig (2000). 'ECO-Industrial Parks: A

principle of industrial development that is more resource efficient and cleaner than traditional industrial parks or regions, while at the same time they share the core principles of all industrial parks of creating business niches, supporting business incubation and competitiveness. Companies are encouraged to operate in an inter-dependency 'loop' whereby waste and bi-products can be used productively wherever possible. Businesses cooperate to minimise resource use and reduce waste. They function according to a shared goal of maintaining the economic viability of industry, trade and commerce, and play an important role in spreading ideas about sustainable industrial development. Firms work together to raise their productivity and efficiency by developing and/or investing in sustainable technologies and processes. As with all industrial parks, the success of EIPs is contingent on the selection of appropriate environmental technologies based on a thorough needs-assessment.⁷

Eco-industrial parks require an enabling framework and government commitment. Sustainability complements the European Union's commitment to the UN's Local Agenda 21 initiative, which was developed specifically to stimulate local policies for sustainable development through the building of partnerships between local authorities and the communities they serve. The EU's sustainable development strategy (2001) calls for improved urban environments, reduced transport congestion, greater energy efficiency and reduced waste emissions. In the case of new EU accession and candidate countries, framework conditions are already in place to raise environmental performance, thanks to guidelines on incorporating environmental considerations into investment projects.⁸

2.3 Developing and managing a successful industrial park

There is no one-size-fits-all model of industrial parks. Framework conditions for industrial parks differ considerably between and within countries. This makes it difficult to produce general guidelines on how to develop industrial parks. It is important to conduct specific needs-assessments and adapt the industrial park model to the social, economic, cultural and environmental characteristics of each region and community.⁹ Parks should be integrated into a regional innovation framework that recognises characteristics and qualities of the innovation environment in the region, as well as local governance competences and capabilities. As a multidirectional tool for economic development, industrial parks require the involvement of a range of stakeholders, who must carry out a number of diverse functions. The first function is related to governance, strategy and investment decisions. Regional authorities, banks and private companies interested in developing a park must together form an organisational board. Other functions are more technical. To maximise the chances of success, several strategic decisions must be taken during the planning stage. These include the strategic objectives of the park, financing, the type of companies and sectors that the park wants to attract, and the range of services to be supplied to the tenants.

The following areas of consideration are crucial for the development and management of industrial parks:

strategy towards industrial ecology in developing and newly industrialised countries'. *Working Papers*. Eschborn: GTZ

⁷ *Ibid.*

⁸ Fleig, A.-K. (2000). *op. cit.*

⁹ Lowe, E. A., S. R. Moran and D. B. Holmes. (1998). *op. cit.*

National development strategy

Industrial parks can only contribute to industrial development in the context of an overall development strategy. Without macro-economic policies ensuring a favourable business climate and without an adequate power and transport infrastructure, investment in an estate may be wasted. It is also crucial that industrial parks benefit from innovation efforts that are developed at the national and regional level where they are located. Some industrial parks are more focused on innovation activities, being either technology parks, or science parks. For the latter, important actors in the field of innovation like universities, research centres, technology transfer offices, and patent offices are located in the park and, therefore, can contribute directly to innovation among the tenants of the parks. Moreover, they contribute to the positioning of the park, emphasising special capabilities and expertise in such parks, and thus attracting similar enterprises.

Clusters

Clusters are defined as groups of interlinked companies, suppliers and associated institutions providing a related group of products and/or services in a specific geographic region.¹⁰ In a globalised economy in which global value chains (GVCs) link companies across borders, clusters have become an important element of regional innovation systems, along with SME networks, research institutes, intermediary institutions and governments. Changes in technology have made it possible to place individual activities in a location that is the most economically beneficial and to reintegrate them again by connecting these locations in real time in GVCs.



Clusters are based on proximity, value creation and business environments. Hence, they are often concentrated in a region or a town, include companies from different industries that are related to each other in the production of goods and services valued by customers, and benefit from cooperation with government agencies, universities and other institutions in the national and regional innovation system.

There are many advantages associated with clusters. First, companies can operate with higher efficiency, drawing on more specialised assets and suppliers with shorter reaction times than when working alone. Clusters collaborate with research institutes, technology labs, productivity centres, venture capitalists and other providers of business development services. Specific locations become the strategic level at which industrial innovations and upgrading take place. Second, companies and research institutions can build connections to better learn and innovate, as tacit information and knowledge are best developed and exchanged locally. Third, business formation tends to be higher in clusters. Start-ups are more reliant on external suppliers and partners. The combination of these potential benefits has a positive impact on the ability of companies to engage in GVCs. Clusters can be a lever to acquire new competences and access international markets through participation in such value chains.

¹⁰ Ketels, C. H. M. and O. Memedovic. (2008). 'From clusters to cluster-based economic development'. *Int. J. Technological Learning, Innovation and Development*. Vol. 1, No. 3.

As with industrial parks, cluster policies should take into consideration local comparative advantages and linkages between higher education institutions and entrepreneurs to facilitate innovation. Industrial parks that are developed in association with cluster projects will often have more of a service-driven approach and this applies to both high-tech clusters and more traditional industrial sectors. Cluster development should be part of a larger strategy to improve overall business environment conditions, by upgrading skills and access to finance, by streamlining government rules and regulations, and by being open to foreign investment and competition. Policies should also reinforce existing and emerging clusters rather than create entirely new ones since many interactions within a cluster are too complicated to be designed and implemented from scratch by government.

Location

Since an industrial park is a type of real estate property, the golden rule for property development also applies. Unless the location is well chosen, an industrial park will fail to attract many firms. The size of the plots of an industrial park/zone and its cost must also be in accordance with business and market needs and expectations. More specifically, industrial parks need to be easily accessible (proximity to a port or an airport, and road/railway transportation to the infrastructure and the nearest urban centre). There also should be a large supply of human resources available at a reasonable cost, and quality of life and personal/cultural services should be taken into consideration.

Infrastructure and service provision

Parks are more than simple physical infrastructure. They are policy tools to foster regional development, investment, competitiveness and partnership. Sector specific parks are more and more common since they can create critical mass and justify the provision of dedicated services, infrastructure and utilities. So-called 'soft services' of industrial parks related to management support of a hosted company are of utmost importance. While the relative importance of each input depends on each firm, an industrial park must offer all of them; Stable supply, high and consistent quality, and low cost are essential for all services. Large-scale infrastructure such as ports, airports, major highways, national power grids and local infrastructure in the immediate neighborhood such as road access, water plants and power substations are all necessary. Firms require various inputs, including electricity, telephone, internet, water, sewage treatment, transportation, and residence. A service-driven approach means that industrial parks will provide a variety of building accommodation to host SMEs and start-up companies, and there might also be a resource centre to host the cluster animation organisation. Joint industrial test or development platforms might also be created to ensure that companies can develop their innovations and, for example, facilitate exchanges between research organisations and SMEs.

Management capacity

The success of industrial parks depends on efficient and responsive management. A park's managing company must provide guidance and support so that business planning is conducted smoothly. This includes marketing, information, procedural support, and trouble-shooting; quick and effective responses to customer demands are key. Initiatives to cut waste, pollution, and traffic congestion are likely to be at the top of the agenda for those involved in managing

more sustainable industrial areas. These issues further justify the need to provide a comprehensive policy framework.

Innovation linkages

The management body should not limit itself to maintenance of the facilities and supervision of activities, but play a dynamic role, promoting the services offered by the estate among local entrepreneurs.¹¹ Support institutions should be established that help firms meet the information, skill, finance and other needs that are difficult to satisfy in open markets. A nurturing environment is required to foster vibrant industrial development. Ensuring access to vital services that support innovation and learning is a critical part of establishing such an environment. Many of these services are supplied through the market in industrialised countries, but even these countries find it necessary to augment what is supplied through the market with subsidised services. Services and organisation should not be the sole responsibility of government; as quickly as is feasible, they should be supplied in public-private partnerships or by private firms and associations - with subsidies, if justified.

Marketing and promotion

The industrial park is essentially an operation of local economic development and, therefore, faces strong competition from other sites. Indeed the main objective of the industrial park is to provide jobs and wealth to a territory in a sustainable way. The main factors that increase the attractiveness of an area are qualified people, research facilities, telecommunications, energy provision, water delivery and treatment, and road, rail and air systems. They are important factors that determine a firm's decision to locate in a park.

The industrial park must target future tenants against the background of a highly competitive market. For this, park managers should promote and market the industrial park and its specialised services at national and international events that suits the needs of the tenants. The park managers also need to ensure that firms are maximising the benefits of proximity to other enterprises, encouraging linkages between them and with service providers. Many successful parks apply guidance to investors in the form of eligibility guidelines to ensure priority sectors and firms are encouraged.

Networking

Industrial parks should develop links with similar organisations existing in local and regional areas. Links can be encouraged by holding regular meetings between innovation organisations and the park developers to share a vision, objectives, mutual knowledge, and to identify future actions. They can agree upon an action plan specifying the means and frequency of interaction between stakeholders and the provision of services to tenants. Attention must be paid to ensure that no conflict of interest results with the managers of the park, or a tenant in the park. The park may also finance a short project between a tenant and an innovation organisation in order to launch a longer collaboration.

¹¹ UNIDO. (1997). *op. cit.*

Networking with other industrial parks located in the same area, or at the national or international levels, is important. Networking increases the spectrum of collaboration (sharing of equipment, transport facilities, security, etc.), increases visibility for investors, increases the quality of services that industrial parks can provide for tenants, and facilitates the exchange of knowledge and best practice, either in the development of industrial parks or in their management. Many international entities such as UNIDO, the World Bank and the EU operate programmes devoted to facilitating such exchange.

2.4 Industrial park case studies

Shannon Development and the National Technology Park Limerick, Ireland

Established by the Irish Government in 1959, Shannon Development is Ireland’s only dedicated regional development company. For several decades the company has worked to develop and strengthen the industry sector in the Shannon region and promote the Shannon Free Zone as a location for international investment.

Established in 1984 as Ireland’s first science and technology park, National Technology Park Limerick (NTP) is managed through a wholly owned subsidiary company of Shannon Development. The NTP has become home to a growing and influential nucleus of high-technology and knowledge-based companies. With some 80 organisations employing over 3000 skilled people, the park has a balanced mix of multinational subsidiaries, Irish technology companies, R&D entities and support services, which occupy more than 30 buildings with a total floor area of approximately 1.5 million square feet.



National Technology Park Limerick

One of the key strengths of the NTP is its proximity to higher education and research institutions and the park takes advantage of the technology resources of the University of Limerick and the Limerick Institute of Technology for the needs of enterprise and economic

development. The potential for collaboration and synergy is a key attraction for businesses setting up in the NTP.

The master plan objective is to promote NTP as a leading international location for businesses representing both national and foreign direct investment. The current strategic planning documents and policies recognise the park's national importance and significance and have policies and objectives which support its future development and expansion. A number of key considerations are important in the continuing development of the NTP. These include the development of infrastructure (broadband and telecommunications in particular), continuing investment in and deepening of R&D programmes, supportive education, and the availability of suitable graduates.

Sophia Antipolis, France

In the early 1960s, an innovative project known as 'Sophia Antipolis' - a 'city of science and wisdom' - was set up in south-east France. The idea was to attract R&D investment to a place renowned for its quality of life and environment, but without any technological and industrial background, where innovators and researchers could succeed and innovation could flourish. The first company located there in 1974 and Sophia Antipolis is now Europe's largest science and technology park. It has proven to be a catalyst for development in the region and operates as a global hub through its companies and R&D institutions. The park extends over 2400 hectares, 900 of which are used for activities, while the rest is green belt. The potential of the park is 2 million m² (with 1.2 million m² in use) and about 50,000 employees.



Sophia Antipolis

In 2008 the park was home to 1414 companies, of which 40 per cent were involved in R&D activities. The park employs 30,000 people of which 54 per cent are executives. There are 5000 students and 4000 public sector researchers. With 13,000 employees, 45 per cent of jobs are in the ICT sector, representing 20 per cent of companies in the park. Foreign-funded enterprises represent 11 per cent of technological companies and 25 per cent of jobs. A range of services are available to enterprises and individuals including a fibre optic network, professional waste

collection and processing, a post office, recruitment agencies, bank branches, schools, cultural and leisure amenities and airport shuttle links.

The park's success is attributed to a number of key factors. The park is policy driven with resourceful R&D institutions helping to attract global companies early in its development. The design and quality of the physical infrastructure have ensured that the original structures are still standing. There has been strong public support and investment by the state and local authorities. The park is linked to a range of education, research and innovation institutions, including higher education and business incubators. Academics are encouraged to become entrepreneurs whilst remaining research scientists and engineers. Management of the park is the responsibility of a single authority that responds to the needs of the tenants. Further, there is a high quality of environmental management.



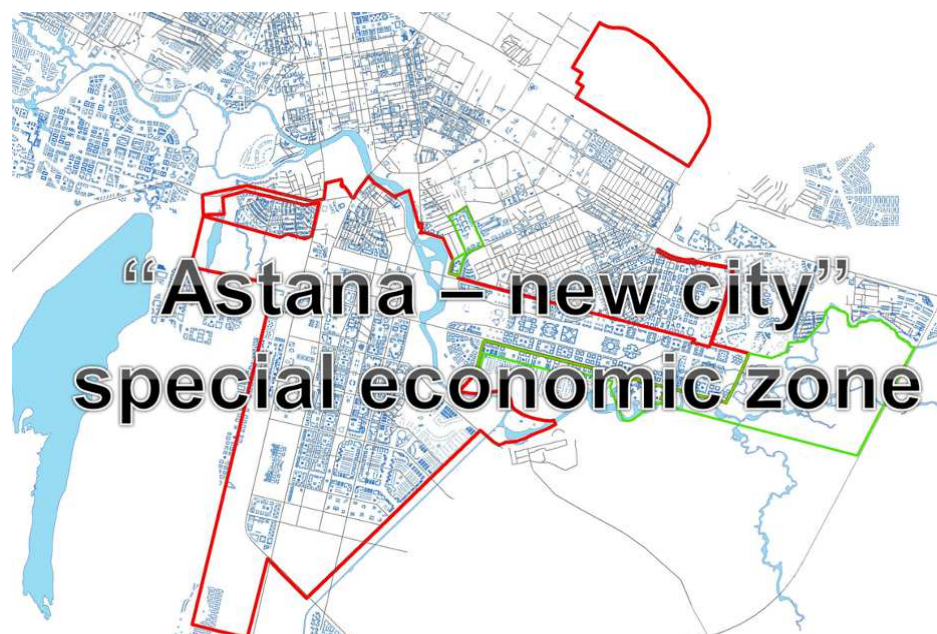
Sophia Antipolis shopping areas

Kazakhstan – Special Economic Zones

Kazakhstan has different types of special economic zones (SEZs), divided according to three types of activities - industrial, service and information development. Spread throughout the country, there are currently nine SEZs and several more in development. SEZs are designed to accelerate regional economic development, raise competitiveness, attract investment, boost exports, nurture new technologies and attract highly skilled professionals.

In the capital, *Astana-New City* is an SEZ that combines an administrative business centre and an industrial park, covering a total area of 6000 hectares. Since it was established in 2001, the zone has attracted investment of US\$ 12 billion, including US\$ 2.8 billion of government funds for the construction of social and cultural facilities and infrastructure. The zone hosts 49 companies employing over 900 people. As in all SEZs in Kazakhstan, tenant firms and employees enjoy a range of benefits, from zero corporate and income taxation, exemptions from property and land taxes and customs duties, to simplified procedures for employing

foreign labour. With many firms already operating, *Astana-New City* industrial park will eventually host various engineering, research and manufacturing activities, including firms involved in the manufacture of machinery and equipment, electrical household appliances, chemicals, food products, furniture, railway locomotives and rolling-stock, air and space aircraft and pharmaceuticals.



Plan of Astana - New City

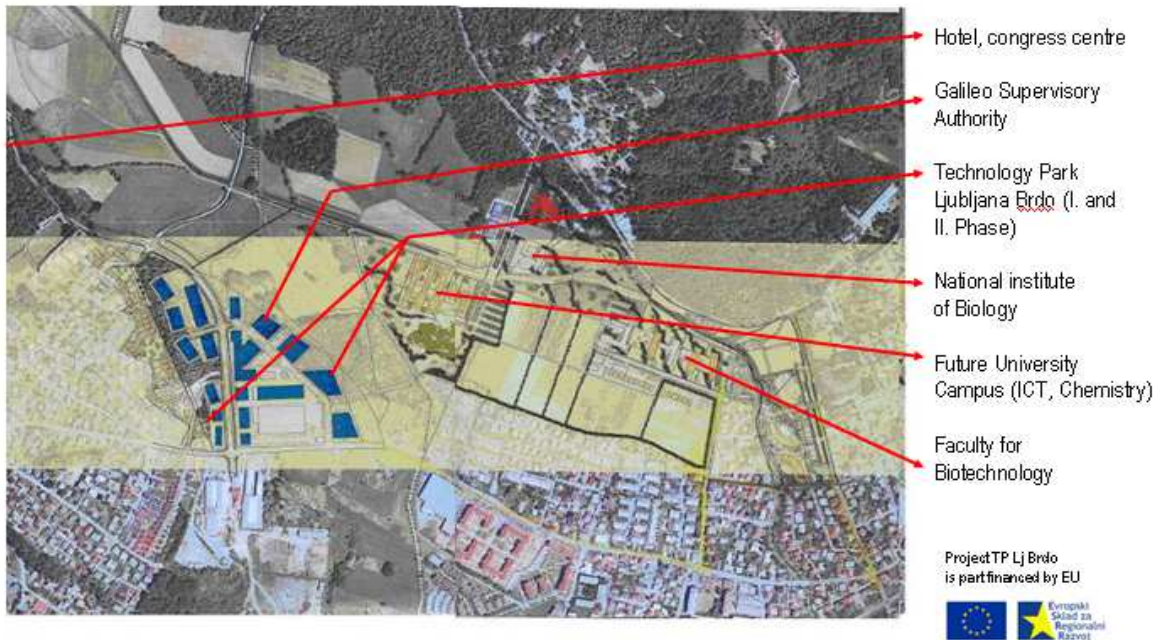
Technology Park Ljubljana, Slovenia

Technology Park Ljubljana was established in 1995 as a collaborative project between several national institutes, companies and the municipality of Ljubljana. The park is designed as a favourable business and innovation environment with specialised business support services for high-technology companies. By providing infrastructure and services, the park is a tool to encourage entrepreneurship, technological innovation and linkages between research institutes, higher education bodies and companies.

The number of tenants is constantly rising. Companies recognise the advantages and benefits of being a member of an internationally-focused entrepreneurial and support environment aiming to establish domestic and international alliances and synergies. In 2012, the park had 295 tenant firms, of which 131 were incubated companies and 164 were associated companies. A wide variety of sectors are represented, including firms specialising in information technology, biotechnology, hybrid and vacuum technology, venture capital and service provision.

The park offers its tenants entrepreneurial support such as business development programmes, strategic partnerships with key regional and national actors (university incubators, technology parks, the Slovenian Technology Agency, the Public Agency for Entrepreneurship and Foreign Investments). It offers business review initiatives, assistance in preparing business plans, business and technology advice, and mentoring. By linking relevant stakeholders (public bodies, research institutes, universities and firms), the park facilitates the flow of new knowledge. Further, the management board actively searches for business and strategic alliances to help tenants access national and international markets.

Micro location of Technology Park Ljubljana



Technology Park Ljubljana

Metutech, Turkey

Metutech Science Park was founded in 1991 as collaboration between Middle East Technical University (METU), the Ankara Chamber of Industry and several private companies. The park covers 1.2 million m², hosts 276 companies, majority are SMEs, and employs almost 3800 people. Within the park, the key industrial sectors are ICT, electronics, defence technologies, biotechnology, telecommunications, energy and environment and automotive.

The governing board promotes global SME collaboration and partnership between the university and industry, providing incubation centres, pre-incubation programmes, technical cooperation programmes and property management. Since 2002, 774 joint R&D projects have been initiated. The simulation and animation sectors work with the Turkish defence industry where their research has many practical applications. Metutech is part of the Enterprise Europe Network, the biggest SME network in the world. The prerequisite for entry in the park is that a company must have at least one R&D project.

In addition to the services, training and programmes offered by the park, there are a number of advantages to moving to Metutech. Tenants are exempt from corporate tax and R&D personnel are not subject to income tax. The government also pays half the social security premium. Academics from METU who set up an enterprise in the park or work in the park are also exempt from income tax.



Metutech science park

2.5 Conclusion

Industrial parks can contribute to the realisation of many goals of national innovation and sustainable development strategies. Well-planned and equipped parks stimulate the relocation of industries to semi-urban or rural areas, help to relieve congestion and pollution in metropolitan areas, strengthen the industrial base of small and medium-size towns and reduce rural-urban migration. Additional benefits are a reduction of commuter traffic, increased efficiency of urban land use, and reduced costs of land development and the provision of utilities. The stated objectives of many policies are job creation opportunities, social inclusion (youth and women), poverty reduction, sustainable energy use and support for local research and entrepreneurship.

Industrial parks can also be considered an important tool to support a carbon reduction or an eco-industry strategy. Successful industrial and technology parks play a key role in the urban economy, providing vital employment for SMEs and a place for enterprise and innovation to flourish. The development of industrial park strategies must also form part of the regional economic development framework that reflects regional economic development priorities. Such a strategic approach provides many advantages, including policy transparency, coordination of public sector investment, private sector investment and development of partnership projects, integration with other key policy objectives, such as trading priorities, poverty reduction, and industrial sector support.

Many successful industrial parks are a result of public-private partnerships. As such, they will often have a better chance of success since they should reflect the main economic supply and demand conditions in a given region. The most successful industrial parks have dynamic management and promotional tools to ensure that they remain relevant to company needs, reflect labour force priorities and training, and deliver services that complement the simple delivery of land and property components of industrial parks.

Nevertheless, industrial parks are not always the right tool for economic development in a chosen location. Park developers should carefully weigh up the proposed benefits against the

investments required, which are often substantial and provided by state budgets. Parks need a master plan and must be carefully planned and conceptualised with the needs of the projected tenants identified. The advantages of the industrial park model clearly outweigh any disadvantages, and careful planning and regular monitoring help to transform industrial parks into a tool to foster regional development, investment, competitiveness, and partnership.



UNIDO publications

3 Report of the conference sessions

3.1 Summary of Day One

Opening of the Conference¹²



(l-r) Iztok Lesjak, Sahil Babayev, Niyazi Safarov, Olga Memedović and René van Berkel

¹² Conference agenda in Annex

Opening Statement

Sahil Babayev, *Head, Department for Cooperation with International Organisations Department, Ministry of Economic Development of Azerbaijan*

I would like to welcome the participants to the Regional Conference on Industrial Parks, and to our country. I thank UNIDO representatives, in person Olga Memedović, and the Slovenian Government for their cooperation with the Government of Azerbaijan in organising this high level event. I am sure that the knowledge and experience we will gain from this conference will contribute greatly to the development of industrial parks in Azerbaijan and will widen our perspectives on the role of industrial parks.

The economic reforms carried out in recent years in Azerbaijan have produced good results. A sustainable socio-economic system based on free market forces has been set up in Azerbaijan.

As a result of successful socio-economic policy implementation, GDP has increased 3.7 times, GDP per capita 3.3 times, investment in fixed capital more than 12 times, and state budget revenues have increased 20 times over the last ten years. About US\$ 118 billion was invested in the economy between 1995 and 2011, one of the highest figures among Commonwealth of Independent States (CIS) countries for investment per capita. Strategic currency reserves ensuring the sustainable economic development have reached over US\$ 43 billion.



Sahil Babayev

Comprehensive measures are being taken to achieve high growth rates in the economy as a whole, especially in industry that constitutes its main part, to broaden industrialisation, deepen specialisation, facilitate the activity of highly competitive enterprises, as well as encourage SMEs and develop export potential. The development of the non-oil sector of the economy has always been a focus, and great achievements have been made. Average annual growth of 11.1 per cent has been achieved over the last 10 years in the non-oil sector as a result of policy measures, and non-oil GDP has increased 2.8 times.

One of the main features of this success is that Azerbaijan's economy maintained its growth rate during the global financial and economic crisis, which shows there is no alternative to the current socio-economic policy. Azerbaijan achieved 55th place in the World Economic Forum's *Global Competitiveness Report 2011-2012*, ahead of other CIS countries. Further, Azerbaijan was ranked at 66 among 183 countries according to the World Bank and International Finance Corporation's *Doing Business 2012* report.

Currently, Azerbaijan is developing mutually beneficial economic relations with almost all Central Asia and South Caucasus countries. The Government of Azerbaijan intends to continue with a range of measures for maintaining macroeconomic stability, ensuring sustainable economic growth, and strengthening the country's energy, food and ecological security in the coming years. At the same time, a high priority is given to accelerating the development of entrepreneurship, business linkages and networks, improving business environment, and strengthening information provision.

Azerbaijan cooperates closely with international organisations including UNIDO. Azerbaijan has been a member of UNIDO since 1993 and in 2000 signed a 'Memorandum on Cooperation in the field of industrial development' with UNIDO, and in 2005 'The Framework Programme on Cooperation for 2005-2010'. The following fields are defined as priorities for technical cooperation between UNIDO and Azerbaijan in this programme of cooperation: the environment, including clean technologies and energy; investment and technology transfer; the development of small and medium enterprises; and quality and standardisation. A new programme outlining the future cooperation between UNIDO and Azerbaijan is currently under preparation. In this regard this conference is an important event.

To promote innovative and high technologies, entrepreneurship, sustainable development of the non-oil sector and job creation, the Sumgait Chemical Industrial Park was established by Presidential Decree on 21 December 2011. Balakhani Industrial Park was also established by Presidential Decree on 28 December 2011. The intention is to site waste recycling and service enterprises within Balakhani Industrial Park.

In addition, it should be noted that one industrial park is already functioning successfully in the country. The first phase of Sumgait Technology Park was launched by the President of Azerbaijan on 22 December 2009. This technopark is a great opportunity to develop the power industry in our country, to further strengthen its potential, and to reconstruct and modernise energy establishments. A wide range of products are produced in the park, which consists of 17 factories including a cable factory, plastic pipe factory, a hot galvanising factory, precise processing centres, a heavy machine building factory, an electronic devices factory, a high voltage electrical equipments production factory, a solar collectors and boilers production factory, a copper and aluminum electro-technical rod production factory, and a technical gases production factory.

Azerbaijan needs the experience of developed countries in the field of industrial parks. Discussion at this conference of current trends and new dimensions in developing industrial parks and their operations, the role of industrial parks in attracting local and foreign direct investments, continuous development accelerated by modern technology and industrial parks, and the benefits of industrial parks in relation to financial institutions and venture capital, is important. In addition, presentations by participant countries on the present situation of developing industrial parks and national practices, discussion on possible mutual and regional cooperation for developing industrial parks and establishing a joint network will be very useful for gaining experience. I am sure that our cooperation in this field will continue in the future.

Key note sessions

Olga Memedović, Chief of the Europe and NIS Programme, UNIDO, welcomed the participants, thanked the Government of Azerbaijan for hosting the conference, the speakers and representatives from government, business, and international organisations for attending, and introduced the purpose, key objectives and expected outcomes of the event. The immediate goal of the conference was to identify common challenges and opportunities faced by selected countries in Europe and Central Asia in the use of industrial parks and to contribute to the identification of new areas of cooperation between UNIDO and countries in the region on using industrial parks. The ultimate goal is the development of a network of key organisations and institutions from the region for the sharing of knowledge and experience on the use of industrial parks as an industrial policy tool.



Olga Memedovic

UNIDO has developed a comprehensive perspective and understanding of the role of industrial and eco parks. These can be used as policy tools to overcome diverse market and institutional imperfections, to facilitate economic learning and catch-up, and to encourage economic diversification and sustainable industrial development.

Niyazi Safarov, Deputy Minister of Economic Development, Azerbaijan, gave a word of welcome and thanks to the conference organisers on behalf of the Ministry of Economic Development and spoke about recent progress in Azerbaijan in establishing industrial parks. Azerbaijan is implementing long-term policies to achieve the goals of economic diversification, regional development and innovation promotion. In 2011, the Government passed legislation to support the establishment of Sumgait Industrial Park and Balakhani Industrial Park. The Government is committed to developing industrial parks according to international best practice, and UNIDO expertise in this area is welcome.

Fabrizio Condorelli, Senior Industrial Advisor, UNIDO, presented on *Current trends and new dimensions in the development and activities of industrial parks*, including definitions, trends, factors in planning and management, and risks of failure.¹³

The specialisation, scope and purpose of industrial parks have changed since in the 1970s when UNIDO introduced the definition of an industrial park as “a tract of land developed and subdivided into plots according to a comprehensive plan with or without built up factories, sometimes with common facilities for the use of a group of industries.”

Industrial parks are variously called science and technology parks, research parks, eco-industrial parks, export processing parks and free trade zones. They can be publicly or privately owned, or in a public-private partnership. Parks established in the existing but vacant facilities of former companies are known as ‘brown’ and those developed in new industrial

¹³ For more information see Condorelli, F. and S. Klessova. (2012). *Working Paper: Industrial parks as a tool to attract investment and enhance innovation in selected countries of Eastern Europe and NIS Region affected by the current economic crisis*. Vienna: UNIDO

subsectors and oriented towards environmental sustainability as ‘green’. Infrastructure, management and technology are the three types of services provided and the mix of these services defines the type of park. For instance, if there is management but no infrastructure support, the park is a business centre. Similarly, if there is only infrastructure, generally we have an industrial park that does not involve technology or management support. Technology and management support can be provided by an innovation centre, but this does not necessarily mean that it has to host companies on-site.

The industrial parks that appeared in the United States during the 1960s were designed to promote economic and community development through real estate investment, with a focus on large-scale capital projects. By the 1980s, there had been a shift from simple production bases to more sophisticated, high value added activity and towards greater knowledge and technology-based innovation. In the United States, Silicon Valley is probably the best-known example of a technology park. The idea was to attract R&D investment to a location offering special conditions for work, as well as for high quality of life.

In the current global economic setting, municipalities, regions and countries compete to attract foreign investment, new technologies, and to integrate into global production networks. Governments, local authorities, technology institutions and business communities have to work together to create conducive business environments, supported by physical and institutional infrastructure, logistical capabilities, local skills and specific traditions to attract foreign companies to a given location. In addition, successful parks should offer effective training facilities, and relevant supply chain activities. For instance, there is no point in establishing a car manufacturing plant in a region where there is no tradition of mechanical or engineering industries.

A recent trend is the use of industrial parks to attract ‘brain gain’ of highly qualified and skilled migrants to the country of origin to overcome a lack of local managerial and entrepreneurial skills. Because of the financial crisis in Europe and North America, we are witnessing a reverse migration trend and some researchers and scientists are coming back to their countries of origin. Through the support of an organised business environment, of which industrial parks are an integral part, skilled returnees facilitate the creation and growth of innovation-based companies, ultimately alleviating the effects of economic downturn.

Industrial parks are also a tool to implement the concept of industrial ecology through inter-company collaboration - the eco-industrial park. This is a means of converting threats into opportunities by transforming polluting parks into eco-parks, and by hosting environmentally friendly technologies and companies.



Fabrizio Condorelli

Governance of establishing and managing industrial parks is crucial, because industrial parks are long-term investments that take time to produce results. Several strategic decisions must be made about the development of a park, from financing and the type of companies that the park wants to attract, to the type of services to be provided to the tenants such as water, energy, telecommunications, and waste disposal, which must reflect the needs of companies.

In terms of financing, the public sector is generally the main source during the early development stage. If the public authorities do not fund the park directly, they can provide other incentives, such as cheap land. Other sources of finance can be private developers who have experience of managing real estate or properties, as well as large companies with a network of subcontractors. Moreover, banks can invest in parks based on anticipated added value on the price of the land and real estate, and profitability from rentals. Several international institutions are also giving subsidies or loans to develop parks, such as the World Bank and the Asian Development Bank.

The park manager should have entrepreneurial capabilities and networking capacity, and be able to successfully communicate the park's objectives and advantages. Internally, the manager is the contact person for the executive board, staff and clients. Further common issues are inadequate start-up and cash-flow funds. There are certain tools that help to project the financial strategy of the park. It is important not to have negative cash flow during the park development stage as this will affect the services provided to the tenants. Finally, the criteria of admission must be transparent to avoid problems with different types of companies trying to access the park.

To attract foreign investors, the promotion and marketing of industrial parks at national and international events by the park advisory board and national and local investment promotion agencies is very important. An advisory board can regularly assess the positioning of the park and adapt accordingly to the changing economic conditions. It is also important to share experiences of best practice and to explore opportunities provided by international organisations with programmes that facilitate cross-border networks, especially those that promote exchange among industrial park managers, organise common events for tenants, or develop a common service to the tenants.

There are also risks of failure. Industrial parks run the danger of creating a business support system where business environment conditions in the park are completely different from the rest of the country. The regulatory system should establish rules for encouraging interaction with local actors of the territory and should be clear and transparent, especially on the issues related to waste disposal or emission protection. The industrial park strategy must be consistent with the needs and capacities of the locality it aims to serve. The role of each partner must be as clearly defined as the objectives to be reached.

Olga Memedović presented on *Industrial parks, clusters and regional innovation systems*.

Against the context of current global challenges marked by the financial crisis, climate change, food security, pressure on natural resources, as well as globalisation and increasing interdependence between regions and nations, it is important to mobilise action at the supranational, national and local levels. This is necessary to manage material and energy resources more efficiently and effectively, and to comply with nationally and internationally agreed goals and targets, such as the millennium development goals.

One initiative promoted by international organizations in 2012 is UN 'Sustainable energy for all' (SE4ALL), which aspires to universal access to energy, doubling improvements in energy efficiency, and doubling the share of renewable sources in the overall energy mix by 2030. Another initiative from the EU has the multiple goals of securing jobs through diversification and upgrading, energy efficiency, cleaner air and responsible management of raw materials. The Europe 2020 strategy also aims to meet these challenges through smart, sustainable and inclusive growth. The flagship initiatives are resource efficiency, innovation, skills and job

creation, and a new industrial policy for the globalised era. Europe is also setting targets for a package of energy targets by 2020 and is introducing initiatives and programmes, such as smart cities and communities.

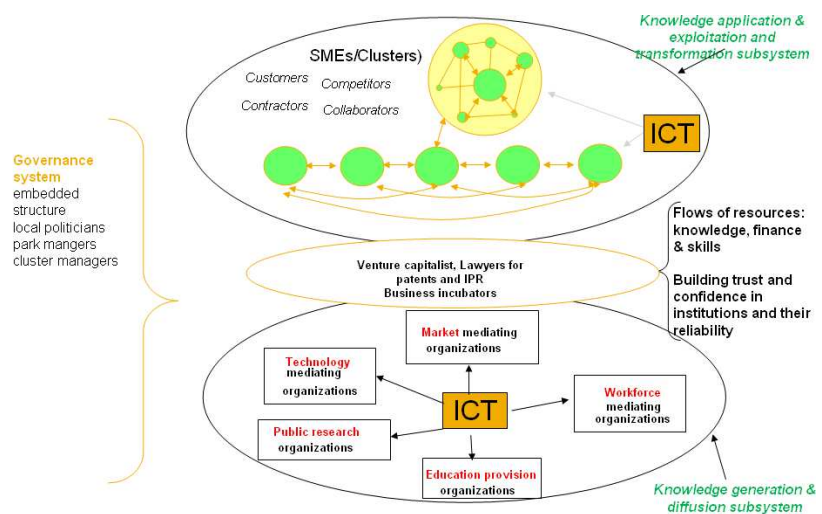
Besides global challenges, transition economies are also facing challenges of developing market-based economies; modernising and diversifying industry, creating new jobs; and reforming government and building its capacity. Dealing with these challenges calls for targeted strategies, goals and policies. In Azerbaijan, for instance, the goal is to generate jobs through economic diversification and also to increase non-oil contributions to GDP.

The question is therefore which policy tools to use to achieve these ambitious strategies, targets, goals and programmes? The answer lies at the local level. Countries compete based on regional/local skills (talent pools), interactive SME and cluster learning processes in collaboration with research institutes, infrastructure and logistics capabilities. Competences in technological interaction between local and global knowledge networks of global and regional value chains are also needed, and this is best achieved at the regional and cluster level.

Regional innovation systems (RISs), knowledge regions, industrial parks, cities, districts and clusters are often used to guide policies for achieving long-term, innovation-driven development strategies. Regions, administratively defined within a country, represent a strategic level at which industrial innovations and upgrading takes place. They have proven to be effective platforms to overcome barriers for technological learning and innovation, necessary for pursuing sustainable industrial development.

In line with new economic growth theory, RISs basically rest upon the provision of public goods, where the market fails to support innovation, through the collective actions of public and private sectors (for-profit and not-for-profit). In practice, this translates on one side to interactive learning processes for SMEs and their clusters in collaboration with research institutes, vocational training bodies, technology labs, productivity and cleaner production centres, and on another side to processes of commercialisation of newly created knowledge for venture capitalists and lawyers. It is important to ensure linkages between these two sub-systems, knowledge creating and knowledge commercialising, through a flow of resources, knowledge, skills and finance.

Regional innovation systems are thus organisational structures with the potential to mobilise local action to achieve innovation-driven growth, and can be used to address various challenges that transition economies face. The new cluster concept also narrows the differences between clusters and regional innovation



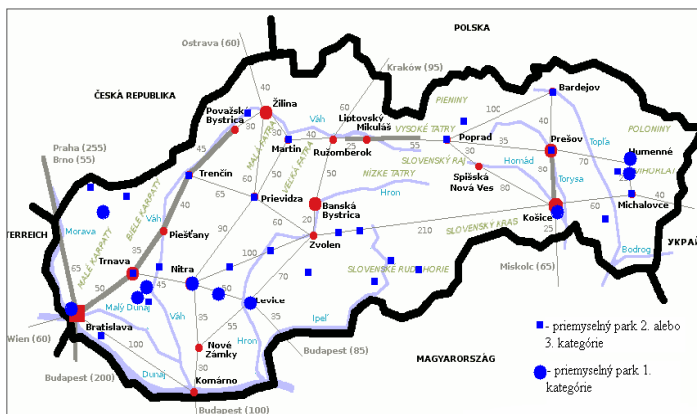
Regional innovation system

Memedovic after Cooke (2006).

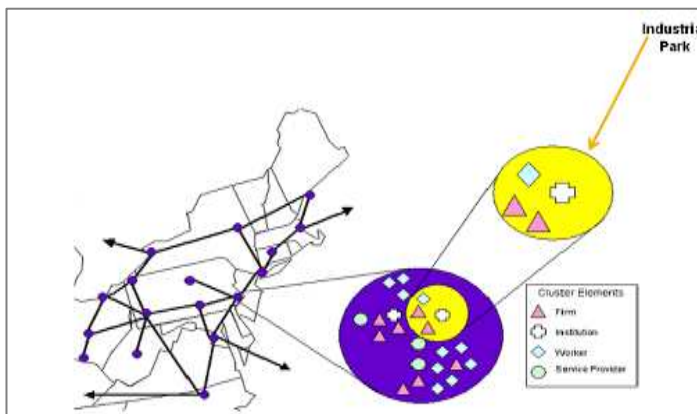
Regional Innovation Systems as Public Goods. UNIDO

systems, defining the clusters as “groups of companies and institutions co-located in a specific geographic region and linked by interdependences in providing a related group of products and/or services.”¹⁴

Regional innovation systems may host industrial parks, high tech zones, eco-parks and clusters. Clusters and RISs can thus coexist in the same territory, but a cluster is not the same as an RIS. The governance structure in clusters and an RIS is different. Clusters may have some kind of governance such as cluster associations but this has a more informal character. The governance structure of an RIS is more formal with a meso-governmental body having responsibility for policy coordination and resources to facilitate system coherence.



Slovakia: A region may host several parks and clusters



Northeast United States: Industrial parks may host one or more clusters

Why should regions and countries use industrial parks? Industrial parks are important because, if carefully planned and designed, they can meet the specific needs of local industrial firms and clusters. They can respond to a demand for quality business environments and can help to reduce costs through the provision of common services shared among enterprises and hence to benefit from economies of scale. Industrial parks and firms in industrial parks can create backward and forward linkages in the local economy by using the services of local companies and diffusing economic learning to the rest of the community. Industrial parks can also lower risks by offering a transparent and effective legal framework, fiscal incentives, modern management practices and governance mechanisms. In sum, industrial parks can bring institutional change by building trust, norms, standards and entrepreneurial culture, and can be fertile grounds for new technologies, industries, jobs and markets.

¹⁴ See M. Porter. (1990). *The competitive advantage of nations*. New York: The Free Press

In the early 1970s, the development and operation of industrial parks tended to be driven by the public sector. Over time, the private sector took on a greater role and this evolved into a coordinated public-private partnership model, with a focus on science and technology. Subsequently, in the late 1990s, industrial parks started to focus on the commercialisation of new knowledge and technology. Parks provided a wider range of services to tenants and strived to be not just good places to work, but also good places to live. Since 2000 we have a new generation of eco-parks.

<p style="text-align: center;">First generation: early 1970s</p> <ul style="list-style-type: none"> • Public sector driven development and operation • Government subsidies for services & facilities • Dedicated public body established that develops, operates and regulates the park/zone • industrial activity: typically assembly in halls and storages • Rather simplistic architecture • Market pull
<p style="text-align: center;">Second generation: 1975-1985</p> <ul style="list-style-type: none"> • Built with greater attention given to the requirements of science, technology and business • Science and technology push
<p style="text-align: center;">Third generation: late 1990s</p> <ul style="list-style-type: none"> • Greater flexibility in the use of buildings and space • A wider range of support services for firms • Creating attractive place to work and leave • Technology push and market pull • Public-Private Partnership: Gradual shift from ad-hoc private-sector licensing to planned, coordinated partnership approach • Private sector involvement led to improved services, greater product differentiation and non price-based competition
<p style="text-align: center;">Latest generation 2000s</p> <ul style="list-style-type: none"> • Private developer develops, owns and operates the park/zone on a cost-recovery basis • Zone Authority only regulates activities within the zone / Outsourcing of core functions to private sector • Eco-parks: strive for high environmental, economic and social benefits

Industrial parks through the decades

When considering investment decisions, the drawbacks of industrial parks should also be considered. For instance, in the life sciences few self-sustaining clusters have emerged, despite substantial amounts of investment. If managed improperly, because of a lack knowledge or poor infrastructure, there is the possibility that a park may have, among others, high operational costs, poor environmental practices, and cause pollution and traffic congestion. It is crucial to align industrial park and cluster strategies and identify the needs of targeted strategic industries (firms and their clusters) beyond the physical infrastructure.

What relations are needed between clusters and RISs to trigger the emergence of new industries (clusters) and how can we leverage parks and clusters for industrial diversification? Cluster literature implies specialisation but this can be risky for economic development - exposing countries to external sector-specific shocks. Many dynamic regions have a diverse portfolio of specialisations (clusters), and unrelated and related varieties of industry. The

unrelated variety generates a portfolio effect that helps to spread risk, while the related variety is important for spillover effects and innovation-driven growth. The development of modern economies is based on inter-related sectoral connections and knowledge spillovers of the 'related variety' of industries, where there is swift adaptation of innovation to nearby related industries and where 'absorptive capacity' of related sector management is high.¹⁵

The coexistence of many clusters with various knowledge bases, knowledge-creating and intermediary organisations and representatives from regional government forms a complex organisational structure within the regional innovation system. This calls for sophisticated developed governance structures to secure, plan and systematically coordinate strategies for industrial parks and clusters with those of regional innovation systems.

Networking among parks in the same location is about systemic collaboration between businesses, local government and academia, using local capacity to pool stakeholders together. Success rests on building institutions, norms, standards, shared values, attitudes to ensure coherence and nurture the culture of innovation, knowledge capture and SME entrepreneurship.

Luc Sollier-Bresset, Senior Industrial Zones Specialist, UNIDO, presented on the *Role of industrial parks in facilitating technological learning, innovation and catch-up processes*.

Over the past 30 years industrial parks have become increasingly numerous and competitive; there are now more than 20,000 parks in the world. Industrial parks have gradually evolved into science parks with a significant value added in terms of partnership with (public/private) entities of research and development.

This worldwide evolution of industrial parks is a response to the basic idea that without innovation there is no development, which in turn makes economies and industry vulnerable. Industrial parks themselves must also innovate, and parks today are gradually integrating science, innovation and environmental dimensions. This trend started with Silicon Valley in the United States, and in Europe with examples such as Sophia Antipolis in France.

What is a science park? A science park is an organisation managed by specialised professionals, whose main aim is to increase the wealth of the community by promoting a culture of innovation. A science park stimulates and manages the flow of knowledge and technology among universities, R&D institutions, companies and markets. It facilitates the creation and growth of innovation-based companies through incubation and spin-off processes, and provides other value-added services together with high quality space and facilities.



Luc Sollier-Bresset

A science park, technological park or technopark is based on endogenous and exogenous development and allows for the diversification and competitiveness of enterprises and the

¹⁵ P. Cooke and O. Memedovic. (2006). *Regional Innovation Systems as Public Goods*. Vienna: UNIDO

creation of start-ups. It also generates value added for the geographical area where it is located, increasing the attractiveness at the regional and international levels. Parks can also provide jobs for highly qualified and skilled people in the core industrial sector, and can at the same time generate (induced) jobs in service support sectors.

Parks are a tool to increase a location’s international competitiveness and attractiveness. They are based on visibility and promotion and private-public partnership collaboration involving the three pillars: higher education and research (academia), industry, and institutions. A prerequisite for an innovative park is a strong (and sustainable) political will combined with a long-term vision. This is especially important if you consider that industrial parks take around a decade to produce results. Such foresight requires commitment from politicians. In Montpellier about 25 years ago the mayor decided to build a technology park. He subsequently became the president of the district, then president of the community of municipalities and after that president of the region. During these years he fought a host of reluctant politicians and scientists. Today the park he established attracts many foreign high-tech companies and is recognised as one of the best in France.

A technology park needs a defined purpose. It needs ‘champions’ who help to move the project forward and attract additional interest. The founder of Sophia Antipolis industrial park in France, Senator Pierre Laffitte, was an important figure in the science world, and he attracted higher education institutes to the park, as well as major international companies. It also needs an open-minded and flexible education environment that encourages cooperation between higher education researchers and companies. This approach needs to be systemic and must incorporate social aspects.

However, obstacles exist to this interaction between institutions, industry and research. First, the financial risks for the private sector are great so we need the support of the public sector in infrastructure investment. Second, there are differences in culture and interest between researchers and businessmen. The former may be focused on publications while the latter are money-oriented. We have to build bridges between these worlds. In the United States, for instance, researchers are interested in business opportunities. In France, on the other hand, researchers gain prestige from publications. In the United States, researchers produce publications and then explore how to make money, with the support of businessmen, or they become businessmen, supported by their university. This behaviour led to the creation of the first business incubators on university campuses in the United States during the 1950s. A further issue is the risk of making poor choices, from the location to the type of tenants. For instance, if the companies or laboratories do not complement each other, reciprocal opportunities will not arise. This is often the fault of a bad strategy and weak park management.

Technology park: the comprehensive innovation ecosystem



Technoparks have a number of tools and assets at their disposal that can facilitate interaction between higher education and research institutions and industry. The higher education system stimulates innovation and entrepreneurship. There are business schools that offer master’s

degrees integrated with business incubators. We also have junior enterprises, which are departments within schools that simulate companies and can provide services to companies within the park. There are collaborative programmes that support industry's needs, providing tailor-made research and diplomas. The private sector can sponsor students and research, support research teams, integrate doctoral students and post-docs, and foster academic spin-off. In terms of employment, proximity between students and companies means that they can offer internships.

Parks allow companies, research laboratories and education institutions to develop synergies on projects and enable companies to take a leading position in their field. The park can host technology, productivity and information centres, offering services to enterprises that are often too costly and complex when provided in an open market. Parks are thus a useful tool to establish value added links between academic research and industry.

The business incubator or business innovation centre (BIC) is a key institution within a science park. By supporting entrepreneurial innovation, BICs ensure that the work produced in laboratories, by doctoral students and others has spin-off applications in innovative companies. There is in Europe, for instance, a network of 165 business and innovation centres (EBN) that assess projects and advise entrepreneurs how to set up their own companies. This is one of the main tools of a science and technology park.

In brief, we need to develop gateways and osmosis between the users of industrial parks - the tenants and sponsors - in order to encourage the development of innovative projects. Parks help to create a sense of belonging to a common dynamic of development. As such, branding is also key. Technology parks can be considered as a factory of innovation.

AFTERNOON SESSION 1 – INDUSTRIAL PARKS AND SUSTAINABLE DEVELOPMENT

Why industrial parks can fail?

Eugene Brennan, Director, Shannon Development, Ireland, presented on the *Potentials of industrial parks to achieve sustainable industrial development*.

Previous speakers mentioned the reasons why industrial parks can fail, and many countries have created parks that have not produced the expected benefits. In many instances, two main constraints have led to limited private sector participation: high factor costs and high transactions costs. In terms of mitigating or reducing the impact of factor costs, economic development strategies should be consistent with a country's comparative advantage so that the factor that is in relative abundance, such as labour or resources, is used extensively. Businesses attracted to invest should make good use of low-skill labour and quickly establish effective backward linkages with the rest of the domestic economy.

High transaction costs can also be reduced if large numbers of firms are attracted from industries where economies of scale, intra-industry knowledge spillovers, forward and backward linkages, good supply chains, logistics, and other agglomeration effects can be achieved. Multiple firms bring a particular critical mass to the process of investment and industrialisation. This inevitably leads to the development of clusters, and cluster-based industrial parks can bring both economic and social dividends.



Eugene Brennan

When we talk about sustainable economic development we often think about opportunities to save energy, or to reduce pollution and this has led to the growth of eco-industrial parks. These parks bring together businesses that cooperate with each other and with the local community to reduce waste and pollution, to share resources efficiently and to help achieve sustainable development to increase economic gains and improve environmental quality. Kalundborg in Denmark is an example of an eco-park that reduces pollution and shares resources with the community and with other industries. At Kalundborg, the power plant generates excess heat that is used to warm homes. The steam from the process is used by an adjacent pharmaceutical company. The effect of this sharing of resources means that the thermal pollution from a power plant is significantly cut.

What are the features of sustainable industrial development? You cannot discuss competitiveness without considering sustainability, and the European Union is taking a view through its 'New European' (2011) corporate social responsibility policy. To fully meet their social responsibilities, enterprises should have in place a process to integrate social, environmental, ethical and human rights concerns into their business operations and core strategy in close collaboration with stakeholders. Through this policy the EU is attempting to achieve the integration of social, environmental and ethical elements of business.

What action is Europe taking to ensure the proper implementation of this policy? It has been raising awareness through education and by fostering improvements in disclosure and self-regulation, with the ultimate aim of aligning European practices with global approaches to corporate social responsibility. Europe is also looking at productivity in companies. This ultimately means squeezing productivity from the systems you apply. Europe at this point has got roughly 3.5 million people working in environmental manufacturing and service companies, and those businesses generate about EUR 300 billion a year in sales.

The European Union has adopted a joined-up framework for industrial modernisation, low carbon business and policies for the green economy. How does all this relate to foreign direct investment (FDI), given that so many industrial parks rely on FDI at least in part for growth and development? It can facilitate technology transfer, manufacturing competitiveness, and, if applied as an element of regional policy, it can provide local jobs. Local jobs can offset migration from the countryside to the cities. For the best chances of success, FDI needs to be linked with the domestic economy, with local businesses and universities.



Some business parks include incubators, which can help to increase the number of home grown companies, and diversify industry. This depends on the extent to which park developers provide active management to create incubation projects in parks. The incubation process starts with the generation of ideas that will drive new business, leading to the formation of those companies and the creation of programmes to help develop entrepreneurial talent. The final part of the process is the mobilisation of finance and accessing markets for new and emerging products.

Another important issue is how to protect investors. Innovation and product commercialisation are linked through the strength of a country’s investor protection or intellectual property rights (IPR) programmes. The stronger a country’s IPRs, the greater the opportunity will be for increased technology investment. Strong IPR equals opportunity for increased investment. Without this, the potential to capture more sustainable levels of investment may not be fully realised.



How can we ensure that a business park remains up-to-date and reflects best standards and practice?

Business parks must reflect changes in the economy as a whole and adapt over time. Parks that launched in the 1960s, grew over the next few decades and matured in the 1980s, found that they had to reinvent themselves in the early 1990s. Most business parks have a master plan that needs to be continually updated. Some parks have created a brand and identity that is quickly and easily recognised. Many have a strong industrial sector focus. Master plans should be

promoted to the markets the industrial park wishes to serve, using a brochure or a website to let people know what the future might look like for this particular location.

Finally, on industrial sector and clusters, it is important to create a portfolio of sectors formed from convergence, from the joining up of other sectors, or indeed from cross-over between sectors. Inter-related clusters provide fertile ground to enable companies to grow and also to diversify. They can be vehicles for economic diversification involving both the private and public sector.

In conclusion, industrial parks will continue to change with the economy around them and will remain an important tool for integrating indigenous and foreign investment together to create the linkages that stimulate industrial and economic development.

René van Berkel, Chief, Cleaner and Sustainable Production Unit, UNIDO, presented on *Eco-Industrial Parks: Industrial parks as a nexus for resource efficiency, industrial symbiosis and eco-innovation*.

The up-coming Rio+20 Global Conference will discuss the next steps at the global level on sustainable development and the green economy. One of main points that will come from Rio+20 is strong support for resource productivity. The agenda will focus on squeezing more value out of every tonne of material or every barrel of oil.

UNIDO has a strong programme on resource efficiency and cleaner production, having established cleaner production centres in many countries in the region that are helping enterprises to achieve eco-innovation. Another point that will come from Rio+20 is corporate social responsibility. The global community will decide that corporations listed on stock exchanges will be responsible for their economic, social and environmental performance. A third point will be the emphasis on facilitating and fostering technology transfer, and in this area the global debate is moving away from the perspective of IPRs. Whilst there is still consensus that IPRs are important, there is a shift towards the use of intellectual property to address climate change and other resource challenges.



René van Berkel

The idea behind eco-industrial parks or technology parks is very simple. In nature, the waste or bi-products of one organism are used by other organisms. In society, in contrast, everything is ultimately wasted. Materials are extracted, processed into products, consumed and disposed, causing waste at each stage of the life cycle. Is it then possible to organise industrial production in a synergistic manner that mimics the natural system so that waste from one company becomes a resource for another?

Kalundborg in Denmark, Kawasaki in Japan and Kwinana in Australia are three examples of industrial symbiosis. In Kalundborg during the 1960s, plans for a refinery were put on hold due to a lack of water. The problem was solved when the local power station and industries collaborated to develop a new water supply. Over the next 35 years, industry gradually expanded and new synergies and collaborative projects were developed. Annual savings based on 2003 figures show that companies together saved US\$ 3.5 million a year, 23 gigalitres of

seawater, three gigalitres of surface water and 40,000 gigajoules of heat. This illustrates both the economic and environmental benefits.

Kawasaki in Japan was an industrial cluster success story of the 1950s and 1960s. In the 1970s, however, the authorities were accused of failing to protect the health of the local population. Following a court case, the local community and authorities started to conceptualise alternative approaches. Today, four companies in Kawasaki together divert 565,000 tonnes of waste a year and save around half a million tonnes of materials. The example of Kawasaki has to be viewed within the context of Japanese legislation which created business opportunities.

Definition: Eco-Industrial Park

An Eco-Industrial Park is a community of manufacturing and service businesses located together on a common property. Members seek enhanced environmental, economic, and social performance through collaboration in managing environmental and resource issues

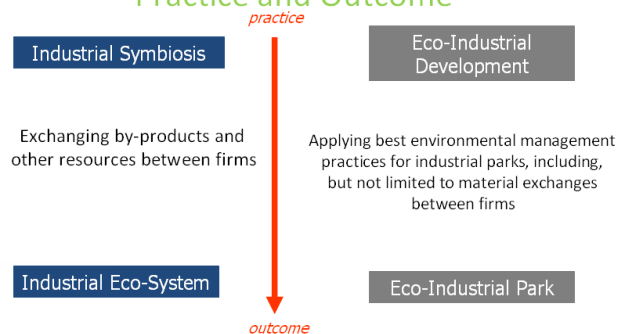


The third example is Kwinana, Western Australia, an economic development zone created in the 1960s to develop aluminium, gas and nickel industries. The synergies achieved in Kwinana include utilities where steam, water and waste materials are exchanged between companies.

These three examples demonstrate how companies can work together. As in nature, industrial symbiosis occurs when traditionally separate industries adopt a collective approach to competitive advantage, to gain market advantage, cost savings, and physical savings of energy, water and other bi-products. Such synergistic opportunities arise because of geographic proximity.

This definition of industrial symbiosis is different to what you would normally see for industrial parks, which are defined as a community of manufacturing and service businesses located together on a common property. Members of the eco-industrial park seek an enhanced environment with collaboration and joint management of environment and resource issues. On one side, you have industrial symbiosis of material and energy flows between companies in an eco-industrial system. On the other side, you have eco-industrial parks where companies want the best environmental management practices. The Japanese example is about integration of urbanisation with industrial symbiosis, the use of bi-products from industry combined with urban symbiosis. Cities create large volumes of waste and this can be used in industrial plants as input material. This urban and industrial symbiosis is known as an eco-town.

Practice and Outcome



Recent work has examined how eco-industrial parks evolve over time. Typically, companies in proximity to each other have started exchanging resources - as in Kalundborg - in order to cut costs or to solve a resource problem. Environmental concerns are not always the motivation for this cooperation. A limited network of flows, which could be called kernels, will then emerge, followed by gradual embeddedness and institutionalisation of linkages in which environmental performance becomes a core element binding companies together. An institutional entity then

develops - a management company or association of plant owners who commit to improved environmental performance.

A great deal has been said about replicating eco-industrial parks, but results have been mixed, leading to criticism of the industrial symbiosis concept. Looking at examples where the model has worked, however, generates some key recommendations. Eco-industrial parks need to be planned with a clear goal, and not left to spontaneous interaction between companies. National industrial symbiosis programmes can be seen in the United States, the United Kingdom and the Republic of Korea. The US programme was based on the eco-industrial park model directed at identifying companies from different industries and locating them together to share resources. In the United Kingdom, the approach was more on supporting eco-industrial networks, bringing companies from different sectors together on a regional basis to talk about their waste, and opportunities for the three ‘Rs’ solution: reduce, reuse and recycle. And this was very successful. In the first three years only three UK regions were supported and this was then extended to the whole country. In the West Midlands region, there are now 330 companies participating in an eco-industrial park, half of which are involved in resource exchange, diverting 1.1 million tonnes of waste from landfill. The focus has been on linkages and information exchange; typically, environmental performance becomes a non-competitive issue because companies do not compete at this level.

RELEVANCE OF INDUSTRIAL PARKS
Meet the needs of companies and users, consider the evolution of attractiveness factors

NEW ATTRACTIVENESS FACTORS	Rate of 14/20 scores
Access, movement & infrastructures (including broadband Internet)	70 %
Skilled and trained workforce	70 %
Services to companies and families	70 %
Network of SME s/ SMLs (subcontracting and co-contracting)	65 %
Local governance (coherence of actors et PPP)	60 %
Corporate events and business networks (animation)	55 %
Quality of life: environment, education, culture, sports, leisure	50 %
Professional land offer inexpensive and flexible	50 %
TRADITIONAL FACTORS	TAUX
Presence of leaders companies	45 %
Geographical position	40 %
Technology, Research & Development environment	40 %
Local tax system	35 %
Public grants and financial support	25 %

KPMG 2005

The Republic of Korea uses a hybrid of these models, in which they improve the environmental performance and increase the business competitiveness of ageing industrial parks. Some industrial parks that have been there for 30 years are starting to age and they need to find new competitive advantages. Synergetic innovative business opportunities were explored and nine resource exchanges identified, generating savings in excess of US\$ 34 million and cuts in CO₂ emissions of 140,000 tonnes. Since 2009, the model is being replicated at a national level.

Turning to lessons learned, eco-industrial parks require innovation of business relations, means of collaboration and of resource flows. These innovations have spill-over benefits, as companies dealing with waste issues turn to new environmental technologies. They learn from each other and adopt new product services and businesses. The identification and realisation of such innovations involves networking and a continuous debate whether this should be directed or ad-hoc. Many industrial parks have a club where environmental managers meet. Local governments are also becoming involved in setting regulations such as legal emission rates. We need to encourage networking in eco-innovation and a long-term cultural shift in which environmental issues are mainstreamed and knowledge is shared through network yields and mutually profitable transactions.

Luc Sollier-Bresset presented on the *Establishment, development and upgrading of industrial parks: Success stories and lessons learned.*

There are lessons to learn from the historic evolution of industrial parks, from their strategic evolution and from success stories. Early clusters were based on the presence of raw materials, suppliers, sub-contractors, clients and a workforce. Then, clusters emerged following technical innovations, such as the development and modernisation of transport. In the 1900s, the first planned industrial district in Chicago was attracted by the railways, as well as the presence of electric and steam power. Modern industrial districts were developed in the 1950s and 1960s in the United States. Acting as a central administration, the National Industrial Zoning Committee controlled the development and regulation of industrial parks in the United States. The Dartmouth College Conference in 1958 defined the necessary compatibility of industrial zones with surrounding communities. After the crisis years of the 1970s and at the end of the twentieth century, the trend moved away from heavy industry towards technology and high value added productions. These changes were precipitated by the advent of industrial ‘graveyards’ in the United States and Europe, pollution and environmental concerns, and the evolution of economic and social needs. At the same time, the change was spurred by a strong evolution of technologies, significant reductions in the duration and costs of transportation, and the growing need for services and welfare.

Moving to the strategic evolution, there are two levels of focus. The first is the national approach of economic development, for instance town and country planning and administrative and financial partnerships between the state and local authority. Second is the international level. There are 20,000 parks in the world, which means huge competition. To compete, a park must prove itself to be better than other parks and must show that it is right for the area where it is located.

Companies consider a range of factors when deciding to move to an industrial park and these criteria are evolving. Key traditional factors were the presence of lead companies, geographical position, technology, the R&D environment and the fiscal (tax) system. The new top factors include geographical access, transport and logistics, physical and institutional infrastructure, a skilled workforce, services to companies and families, quality of life and local governance. Fiscal incentives are not the main issue. Surveys show that the criteria of choice depend on the country, the type of company and business, and the investment climate. A 2012 survey in France found that a major asset of parks is collective research or solutions to individual problems. In sum, the park must put the success of its tenants first. Second, the park must help tenants to reduce the impact of their activities on the environment, and third the park must facilitate access to jobs and improve working and living conditions.



Policy of differentiation

The industrial park must attract, organise and coordinate various resources and opportunities. Resources are not only financial - technical resources and skilled employees are also important. The park should be coherent, effective and efficient. An industrial park can offer an attractive

setting and location with incentives, but if the actors are not organised, they will not be able to attract investors nor root them in the park. Faced with competition, industrial parks must differentiate themselves, by promoting specific assets of their location, an image and a brand, to generate pride in being a tenant of the park, and a feeling of being part of a community. They must promote significant competitive advantage and, above all, highlight innovation. They have to show that they have a business plan. The park must assess the needs of the tenants and benchmark these against other regions and countries. The infrastructure and services must anticipate companies' expectations.

A good example of a competitive industrial park is Sophia Antipolis in France. The park was established by a politician and implemented by a semi-private, non-profit organisation in partnership with the local French municipality. Since its inception, the park has grown to over 2400 hectares and now hosts 140 foreign-funded enterprises. The local and municipal authorities built and funded the park, with early state help and the strong involvement of the local municipalities. The key success factors were the vision of Senator Laffitte, the avant garde design, public support and investment, and the establishment of long lasting structures. The developers also sought to attract 'champions' - leading international companies. Other important factors were a comprehensive higher education system, business incubators, high quality environmental management, and proximity to transport hubs. Sophia Antipolis offers high quality equipment and amenities to companies, including optic fibre networks, a professional post office, dedicated fire rescue, waste collection sorting and processing, and a public employment agency. There are also banks, kindergartens, an international high school, restaurants, shops, a one-stop-shop, and sporting and cultural facilities.

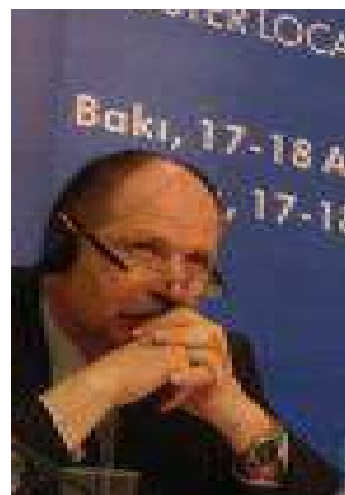
We can learn from Sophia Antipolis. The park founders had a vision that combined business, R&D, and social and environmental objectives. Because of the huge investment, the park needed strong public sponsors. The operator manages the park in permanent dialogue with tenants. The park is concerned with the selection of companies, ensuring quality rather than quantity. Higher education partnerships target the development of innovation and the park provides quality infrastructure and services to enterprises and individuals. The park also has high environmental standards and services.

AFTERNOON SESSION 2: THE ROLE OF PARKS IN ATTRACTING RESOURCES

What are the strengths of industrial parks in building linkages with governments and venture capital?

Iztok Lesjak, Director, Technology Park Ljubljana, Slovenia, presented on the *Strengths of industrial parks in building linkages with governments and venture capital.*

A science park is an organisation managed by specialised professionals, the main aim of which is to increase the wealth of its community by promoting a culture of innovation and competitiveness among its associated businesses and knowledge-based institutions. To achieve these goals, a park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets. It facilitates the creation and growth of innovation-based companies



Iztok Lesjak

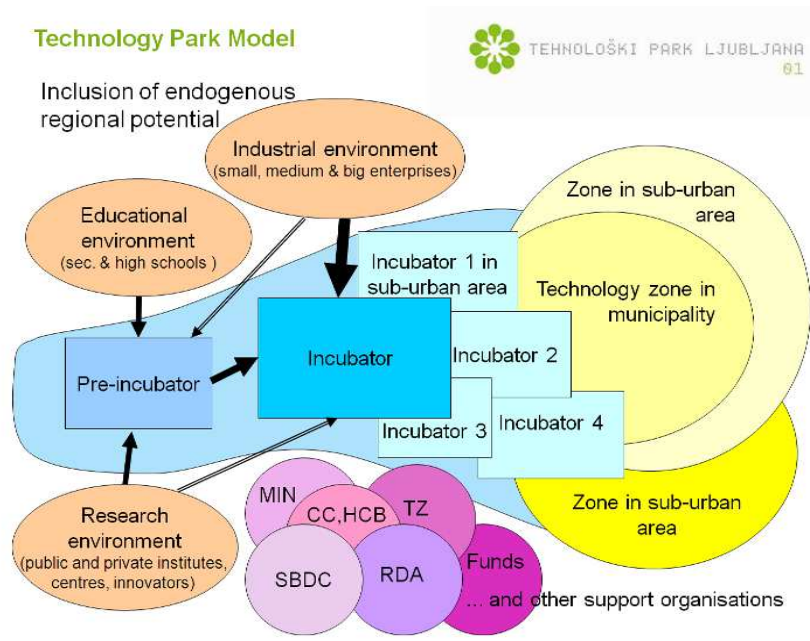
through incubation and spin-off processes, and provides other value-added services together with high quality space and facilities.

We are living in a global world and the science and technology park concept must adapt to a changing environment. From the regional perspective, it is important to exploit parks' endogenous potential, their role in regional development and contribution to the knowledge-based economy. There is a new generation of industrial parks that is responding to the challenges of the global economy.

Universities, institutes and other research units are some of the main drivers of innovation. Slovenia has three universities and several research institutes. The average level of knowledge in the region is high, though this is spread unevenly among various disciplines. In terms of entrepreneurship, the support infrastructure is excellent; there are five technology parks and a network of 15 incubators, including three university incubators.

Parks have various stakeholders, including tenant companies (entrepreneurs, clients and customers), financial institutions and investors, service technology providers, R&D and educational institutions, national and local government, and also park founders. Parks can have four types of governance actors: a specialised company accountable to shareholders; a university; a public agency; and key stakeholders managed according to a statute. There is also the possibility of elected representation in which shareholder members elect a governing board. The system in Slovenia combines investment from the government, the chamber of commerce and clusters. In Technology Park Ljubljana, venture capital funds are important tenants within the park. Another important player is the national association of science parks and business incubators in Slovenia.

A strategy for the park was first drawn up in 1993 and today the infrastructure is well developed. The park has buildings covering 65,000 square metres providing space for 300 companies, 131 of which are incubated companies. Tenants include the national research institute, and firms from information technology, biotechnology, and energy, among others. Several companies have been particularly successful in attracting venture capital, expanding into international markets and presenting business ideas in Silicon Valley. The park's goal is to encourage innovation, nurture start-up companies and promote globalisation. The intention is to build a community, to create a list of members who can contribute to growth. The park offers tailored business development programmes. It encourages strategic partnerships with key regional and national actors including universities, R&D institutions and national agencies for entrepreneurship and innovation. We help them to reach peak performance on the market as soon as possible.



Two programmes were launched last year designed to help companies access world markets - *Start-up Centre* and *Go: Global Slovenia*. Start-ups often lack finance and knowledge and the aim of the *Start-up Centre* is to strengthen entrepreneurial culture and provide innovation through the provision of support services. *Go: Global Slovenia* is based on a worldwide partnership network of science and technology parks. It provides tailor-made services to support start-ups. The programme supports companies in four fast-growing sectors - ICT, life sciences, CleanTech and creative industries. There is practical mentoring in business and administration. This is the model for incubation activities at Ljubljana University. The same quality of services is also available outside Ljubljana in the surrounding areas and in smaller towns. In conclusion, Technology Park Ljubljana is an example of a pilot project that has been instrumental in globalising Slovenian business and launching successful start-up enterprises.

Using examples of success and failure, there are important lessons to be learned. A well integrated innovation support system involving industrial parks, the government, agencies and venture capital should act as a catalyst in the following areas:

- Start-up businesses (business plan, market research, evaluation) should be based on marketable products or services.
- Profits should be used for innovation (product evaluation, first time user testing, follow up sales, etc.).
- Each phase of company growth requires individuals with specific skills (company growth plan, additional experts if needed).
- Investment in quality assurance, research and development projects (financial incentives, collaboration with local industry).
- Education and training is a constant process (for owners, managers and workers).

Tolga Özbolat, Director of University Industry Collaboration, Ortadoğu Technopark, Turkey, presented on *Industrial parks as an instrument to foster competitiveness of agglomeration economies and to promote local supply chain development*.

The presentation focused on the specific experience of Metutech, the first and biggest science and technology park in Turkey. The park is owned by the Middle East Technical University (METU) and covers an area of 1.2 million square metres close to the centre of Ankara. The park hosts 276 companies, of which 75 per cent are SMEs. Almost 3800 people work at the park, 75 per cent of whom are engineers. In addition to the university, Metutech has several strategic partners that all part of the park's governing board, including the Turkish Secretary of Defence and the Ankara Chamber of Industry.

There are a number of advantages of locating in the park. The first is exemption from corporate tax. The second is that R&D personnel are not subject to income tax. Third, half the social security premium is paid for by the government. Fourth, academics from the university can establish a company in the park or can work for a company in the park and are also exempt from income tax.

- ICT
- Electronics
- Defense Technologies
- Biotechnology
- Telecommunication



- Energy
- Automotive
- Chemistry
- Advanced Materials
- Environment

Prioritised sectors at Metutech

The park provides services for university-industry collaboration, including incubation centres and pre-incubation programmes, technical cooperation programmes and property management. Other advantages are the presence of incubation centres directed at micro-electromechanical systems and telecommunications. In this model, the anchor company is located at the centre of one incubation centre and small companies surround it. This benefits both the anchor company and the small companies. The second part of the model is incubation programmes that teach entrepreneurs to prepare business plans. Another incubation programme directly targets animation technologies and the gaming sector, globally worth around US\$ 20 billion annually. This is a step towards the defence industry where simulation and animation technologies have practical research applications. There is collaboration between university and industry, and financial support and advice for patent applications.

The park aims to increase global SME collaboration. Metutech is part of the Enterprise Europe Network, the biggest SME network in the world. A further programme is support for writing and managing EU-funded projects. All the programmes mentioned exist to increase the success of companies in the park. The prerequisite for entry in the park is that a company must have at least one R&D project. The park has initiated 50 projects in 2012 and cooperates with almost all departments of Metutech technical university.

Following the presentations, **Olga Memedović** opened the floor for discussion on the topics raised by the keynote speakers.

Omar Aliyev, Head of the Legal Department at the Ministry of Economic Development, Azerbaijan, thanked the presenters for providing overviews of industrial park concepts and models. Given the Government's decision to establish industrial parks in Azerbaijan, it is very important to learn from international best practice. Mr Aliyev's question concerned the provision of public services by management and administrative units of industrial parks; what examples from global practices are there?

René van Berkel responded using the example of environmental infrastructure, which is also a public service. There are different models but typically management companies start by providing water, energy, and waste water treatment services. In some places, particular in Asia, they also invest in facilities that serve multiple companies, which would otherwise be private investments, like energy co-generation. The model can be extended. For example, in India, there are special enterprises half funded by the government and half by the private sector that deliver environmental services such as waste recycling for several companies. Another example is the establishment of a common facility to produce critical inputs, for instance if several companies require a certain chemical, they can set up a company to produce this chemical with support from the government.

Luc Sollier-Bresset shifted the discussion to public funding of industrial parks at the development and launch stage. Public investment is necessary to prepare the provision of services, not only public services, but also private services. After the initial period, the public sector can make way for private developers. The public funding of a multi-purpose building dedicated to hosting new companies coming from abroad is known as 'soft landing'. This is an investment to prepare for the arrival of international companies that want to explore the possibility of locating their business in a particular location, and can lead to a long term commitment to the park. Public investment to provide services in the early stages of a park's development is necessary because typically, at the very beginning private sector investment is lacking.

Eugene Brennan remarked that there are often significant problems relating to the type of site to be developed, the type of buildings and the rationale behind the creation of a park. If, for example, the state decides to use public funds to initiate a park, then the state will also provide public services. If a park is developed as a public-private partnership, for instance using a build-operate-transfer model where the private sector commences development of the park, then there could be issues related to the provision of the services to the park, and services provided within the park. In several countries, this question has been a problem. In our experience, as business park developers, we tend to ensure that services are provided to the perimeter of each site within a park and, where there are multi-purpose buildings, we ensure that there is competition among service providers to provide telecommunications and broadband within those buildings. It is a combination of public private sector motivations versus economic development state-driven motivations. In all situations it is important to have a very clear understanding of what is required at the outset. That has been a problem in the Kingdom of Saudi Arabia, where the authorities were keen to encourage private sector investment in industrial parks, but it was not defined who should provide these services to the perimeter of the park.

Dumitru Griciuc, Ministry of Economy of the Republic of Moldova, asked whether tax exemptions offered to the tenants of industrial parks created unequal conditions in a country's internal market, such as has been the experience in Moldova.

Fabrizio Condorelli remarked that best practice guidelines for public services can be downloaded from the UNIDO website. On the question of tax exemptions, these can distort the market but if the policy decision is to support certain innovative sectors then these incentives are justified. The problem is that a park should not be developed for its own sake, but must have an objective. If the objective is innovation in certain sectors then applying a certain number of incentives, such as tax exemptions, is a valuable tool.



Dumitru Griciuc

Luc Sollier-Bresset remarked that tax exemptions are often limited to a defined territory and a specific timeframe, as part of an economic catch-up programme. Some regions lag behind the rest of the economy, and in this case it is useful to propose the creation of an industrial park with tax exemption to attract foreign companies. As an example, 20 years ago the EU proposed the creation of enterprise zones all over Europe in poorly developed geographical areas, and tax exemptions for a period of ten years were proposed in these areas.

The main rationale of tax exemptions is that, even after they expire, companies stay because they have developed roots in the location. The problem arises when, after 10 years, companies leave because they have established no roots. Hence technical park operators should propose new incentives, not financial or fiscal, but technical and technological, to motivate firms to stay.

Eugene Brennan commented that the provision of incentives must be short term and limited to a defined area. In many ways, tax incentives are counter to current thinking across Europe. While there has been a proliferation of free zones and activities focused on exporting that give tax holidays to investors, the current EU is that this represents an incentive that is not available

to all companies and is therefore discriminatory and not desirable for a level playing field of competition. In areas outside Europe, however the growth of special economic zones continues. The choice for investors in those locations is whether to take advantage of reduced taxation for the period of its availability, and subsequently to align with the normal tax rates of the country where they are located.

Niyazi Safarov asked about the procedures for issuing construction and service provision permits in industrial parks, specifically whether park operators, in order to minimise bureaucratic challenges, employ facilities such as the ‘single window system’.

Luc Sollier-Bresset commented that good examples of ‘one-stop-shops’ exist throughout the world, including in many developing countries. There is a great deal of information available on the subject but there are many competing definitions. The appropriateness of the one-stop-shop system should be based on an assessment of the needs of the companies and the regulations in the country. If regulations are complex, the one-stop-shop should offer specific services that meet these demands. In Morocco, the Regional Investment Centre has well-organised one-stop-shops helping with construction permits and bank loans, among others, and gives advice to investors. However, one-stop-shops should be designed to fit with the country context and offer services that are country relevant. UNIDO can provide assistance here.

Olga Memedović drew the first discussion to a close and introduced the final two keynote presentations.

Eugene Brennan presented on *The role of industrial parks in mobilising domestic and foreign direct investment*.

Industrial parks come in many shapes and sizes. The Chinese have taken the original free zone and export processing zone models and expanded them to a whole new scale, as can be seen in the Pudong district of Shanghai.

The old model has been replicated the world over, but a new industrial park model has emerged in response to a new globally competitive environment. Investors today have a lot of information at their disposal with which to make site location choices.

	Number of start-up procedures ¹⁶	Days required to start a business
Albania	5	5
Azerbaijan	8	6
Belarus	5	5
FYR Macedonia	3	3
Kazakhstan	19	6
Kyrgyzstan	19	6
Moldova	9	7
Russian Fed.	30	9
Serbia	13	7
Tajikistan	24	5
Turkey	6	6
Ukraine	24	9

Number of days and procedures needed to establish a business (2011)

¹⁶ Start-up procedures are those required to start a business, including interactions to obtain necessary permits and licences and to complete all inscriptions, verifications, and notifications to start operations. Data are for businesses with specific characteristics of ownership, size, and type of production. Time required to start a business is the number of calendar days needed to complete the procedures to legally operate a business. If a procedure can be speeded up at additional cost, the fastest procedure, independent of cost, is chosen. Source: World Bank (2012). Doing Business project (<http://www.doingbusiness.org/>).

If we look from the perspective of investors in Azerbaijan, the World Bank has a system of country scores for a range of indicators, such as the number of set up procedures that a business has to go through. In Azerbaijan the number of procedures is eight and the number of days it takes to set up a business is six.

What does a successful industrial park look like and what can you expect a successful park to offer? It should have straightforward licensing and registration processes, and a clear land titling and property registration system. For exporting companies, it should have clear exporting zones and customs administration. Other elements include the participation of local government in the provision of one-stop-shop facilities, the size of the domestic market and proximity to foreign markets, natural resource availability, innovation potential and a skilled workforce.

It is good practice within industrial parks to be transparent and to treat all potential investors equally. Linkages with the domestic economy must also be developed. Using some examples, Bahrain is viewed as a competitive location that offers attractive land rentals and long-term renewable leases. It has an international investment park with an effective one-stop-shop facility and a dedicated on-site management team running the park. The management are particular about the type of companies they want, inviting only those with the potential to add the highest value. The park was selected as a best practice example of a high quality location attracting value added industry and service activities.

Kulim Hi-Tech Park in Malaysia is another example of a fully integrated high-tech park with six zones, including industrial, residential, commercial, R&D and training, institutional and amenity/recreational zones. The park is designed to be a place where people can live, work and spend leisure time.

Many industrial parks are established at airports, which have very high barriers to entry. Due to the high capital investment required, there is little competition from other airports and modes of transportation. China has worked on the airport model by linking airport and seaport logistics. The city of Tianjin has two connected ports offering multi-modal logistics - Tianjin Port Free Trade Zone and Tianjin Airport Industrial Park. The result is heavy industry alongside light sophisticated sectors, as well as regional company headquarters that bring knowledge intensity.

Fabrizio Condorelli gave the final presentation of the first day on *Industrial parks as a development tool to encourage the return of highly qualified human resources, leveraging new technologies and knowledge.*

The presentations and discussion have highlighted financial capital and investment incentives, but innovation is dependent on human capital. Almost 200 million people live in countries other than where they were born. The movement of people across international borders has social, cultural and economic implications, in both sending and receiving countries. Millions of highly educated people are moving from developing countries to developed ones, depriving the latter of human capital and skilled workers. Highly skilled migrants are often positively selected; they possess leadership qualities, enterprising attitude and are more creative. Migration has a major impact on local development and contributes to an increased gap between rich and poor countries. The potential for people who have gone abroad, who have developed their expertise, who have studied abroad, to return to their country of origin is great. But what can be done to encourage highly skilled return migration?

The challenge is to develop a strategy at both the macro and micro levels to facilitate the establishment and participation of returning qualified migrants in both their home and host countries. At the macro level, the business sector, government and knowledge institutions need to cooperate to create a favourable business environment for young people to develop business ideas. At the micro level, there needs to be certain services, especially for researchers and scientists, including favourable rents, business advice, training, networking and access to financial facilities. Industrial parks can offer such a range of services and facilities.

Research conducted on a group of highly qualified returnees has found that the availability of space and improved market access were the most important factors in encouraging return. Access to finance was relatively far down the list at sixth place. In third and fourth place were access to business and technical information and access to technological equipment. The returning migrants also cited the benefits of an established reliable business and technology network, lower risks of initial investment, visibility of their business and professional capacities in their country of origin, and selection of an appropriate business and technology partner, foreign and local.

Industrial parks can thus be regarded as a development tool to encourage the return of highly qualified human resources, leveraging new technologies and knowledge. At the same time, there is a human component in each economic movement. People are happy to return but family issues can be problem. Migration is never a simple economic or profit issue and actors such as the International Organisation for Migration (IOM) can provide assistance in reestablishing families in the country of origin. Many countries are establishing brain gain programmes, especially in the IT sector, and industrial parks provide the services to achieve this.

Countries should develop an operational strategy to encourage highly qualified return migration, including mapping diasporas in host countries and organising outreach activities.

Further, they should organise investment promotion events in host countries for interested diaspora members and business communities, and identify candidates who have successfully completed the training and have a financially viable business plan. Industrial parks in the country of origin should support the set-up of new innovative businesses by expatriates and in turn the creation of qualified job opportunities for young graduates, and support reintegration of returnees and their families in the country of origin.



Iztok Lesjak, Sahil Babayev,
Niyazi Safarov and Olga Memedovic

Olga Memedović opened the floor for a second round of discussion.

René van Berkel commented that there is too much emphasis on laws, legal systems and physical infrastructure as motivations for choosing investment locations. In eco-industrial parks companies decide based on opportunities first and location second. They are interested in low cost skilled labour, a resource base, energy, proximity to markets, innovation potential and the existence of other suppliers. If you take an energy-intensive company, it will go where

energy is free, which is why companies locate in Bahrain. In Bahrain, however, there are labour restrictions. Thus, for certain sectors, free energy is very attractive. Malaysia has an advantage over other countries in the region in speaking English, which makes it easier to do business there.

Airports are normally connected to commercial parks, hosting companies that benefit from logistics. The Chinese authorities told Airbus that they would only buy the company's aircraft if they were manufactured in China, and they provided an airport where the company could establish a manufacturing base. In China, there are industrial parks producing components and also a large workforce. Chinese industrial parks often start with a town first, erecting skyscraper apartments, which are sold and the money invested in attracting industries. This set up and dynamic could be replicated elsewhere.



Olga Memedovic and René van Berkel

Hagani Sayev, Minister of Economic Development, Azerbaijan, asked about policies to prevent brain drain and attract highly skilled return migration.

Iztok Lesjak talked about the problems facing a small country like Slovenia in keeping and attracting talented people. It is important to be competitive and to offer individuals the possibility to develop their careers and skills. Brain drain involves not just the loss of professors but also the loss of entrepreneurs. Policy makers can attract foreign talent or develop domestic skills.

Olga Memedović commented on public-private partnerships and the provision of services in industrial parks. If the market is not developed enough, the private sector cannot be expected to provide these services and the government must intervene. The question is how long these services should be provided by the government and when the private sector should participate. This must be strictly monitored. Ultimately, services should be provided by the private sector. Eco-parks, on the other hand, can produce a lot of positive externalities and public goods such as knowledge creation, or protection of environment, which cannot be provided through market forces. In this case, the public sector has a strong role to play in investing and providing these services. These are the rationales when dividing the roles of private or public service provision.

Public Private Partnership (PPP) Approach

- ☀ The State and Private Sector co-operate.
- ☀ State may provide both off-site and on-site infrastructure to private sector developer at low/no cost to:
 - ☀ Enable developer to provide land/buildings and maintenance services to industrialists at low cost
 - ☀ Enable developments in marginal/high risk areas to proceed.

Eugene Brennan talked in greater detail about public-private partnerships. There are industrial and policy trends influencing the future development of industrial parks. The key trends that will shape the future of industrial parks relate to global value chains and networks and supply chains. Once, investment meant that a company came to a park and performed an assembly activity. This has changed and new functions are being added to industrial development, including R&D and sales and marketing. It is important that the companies in a park are directly in touch with the markets they serve. At the policy level, the focus is on sustainable development.

In terms of public-private partnership, two criteria drive the development of industrial parks. The first is economic development. The state decides that it wants to develop the economy. The second is commercial criteria, where the provision of an industrial park is undertaken by the private sector for profit. Very often there is confusion about which of these two criteria is more important. When governments promote economic development they establish industrial parks and provide buildings in advance of demand so that investors know they can move into a building quickly. Operational maintenance is provided by the state directly or by the municipality. State leadership on industrial parks, however, is expensive. Financing construction and maintenance can be a drain on resources. It means that over time, unless the state is wealthy, infrastructure may degrade. In some countries, this experience encourages a commercial approach, whereby the private sector is encouraged to build and maintain industrial parks. The downside to this model is that the private sector is primarily interested in commercial opportunities and will not locate where there is no commercial return, even if mandated by the state. The private sector requires a profit and charges higher rents and maintenance costs. With this model it is difficult to encourage construction ahead of demand. The commercial sector responds rather than anticipates. Developers themselves will only reflect on market demand on the locations they wish to develop rather than those the state would like to prioritise.

A public-private partnership is a partial solution to some of the drawbacks that exist in commercial or state driven investment. The state is the provider of the site and of services up to the perimeter of the site. The private developer provides the other functions. The state can provide financial subsidies to developers. More importantly, many states have an investment promotion agency that can actively promote new parks in the international market place, relieving the private sector from this expensive long term function. This arrangement provides an acceptable risk-sharing proposition to both sectors.

In the Kingdom of Saudi Arabia, there are two relevant organisations, one for promoting foreign direct investment and another with responsibility for attracting the private sector to build and operate industrial parks on government-owned property. They use a 'build operate transfer' model. A key challenge for the Saudi authorities was that investors did not see some of these developments as commercially viable. The message from the Saudi experience is that responsibility for delivery of essential off-site infrastructure must be agreed upon between the private sector and the state. Before the state decides to implement mechanisms for industrial estate development it needs to consult widely with the commercial sector and with the developer sector so that the policies are acceptable. The state should work to attract major developers who will be able to undertake large projects and this should be done in a bid process with scope for negotiations as the process advances.

3.2 Summary of Day Two: Working group sessions

MORNING SESSION – COUNTRY PRESENTATIONS AND DISCUSSION ON SELECTED TOPICS

The second day started with the first set of structured country presentations, prepared by participants from Russia, Serbia, Tajikistan, Albania, Azerbaijan, Belarus and Ukraine, on national experiences of developing industrial parks and the potential for bilateral and regional cooperation, backed technically by UNIDO (see Annex).¹⁷ Following the first round of presentations, **Olga Memedović** opened the floor for 15 minutes of discussion, structured around two topics:

- i. Attracting financial and human resources
- ii. Facilitating technological learning, innovation and catch-up

Haydar Sulstonov, Deputy Head of the Science Development, Ministry of Energy and Industry, Tajikistan, asked about potential problems that might arise if enterprises from different industries are located in the same industrial park, and how these can be avoided.

Luc Sollier-Bresset cited the example of Sophia Antipolis industrial park in France, which was not a success during its early days because, although the founders envisioned cross fertilisation between firms, this was not a reality. The problem was that no consideration was given to linkages between companies in the park. When an industrial park strategy is being developed, it is important to provide linkages. Otherwise, the park will be a simple area without soul, activity and added value. This is the main problem during the inception stage of an industrial park.

Fabrizio Condorelli commented on potential issues beyond the physical perimeter of an industrial park that planning frameworks must also address. One problem could be an unreliable electricity supply. Another issue mentioned during the first day was accommodation for workers around industrial parks, as highlighted in the Chinese experience. The solution is to develop a master plan that goes beyond on-site facilities.



Group discussion

¹⁷ A summary of the country presentations can be found in the Annex.

Luc Sollier-Bresset mentioned the importance of careful positioning of industrial parks within the region they serve. At the beginning, the master plan should consider how the park interacts with the regional economy and the rest of the country. Otherwise, the park will become an economic ivory tower, isolated from its surroundings.

Alexander Startsev, Russia, added that a good starting point from which to establish linkages between firms is to collaborate on cutting costs for shared services, such as cleaning. Firms in a park can also benefit from each others' expertise, for example companies in the biotech sector can use the services of ICT companies to promote and sell their products.

Jana Ilić, Ministry of Economy and Regional Development, Serbia, asked the experts about the best models and policies to attract skilled human resources to under-developed regions. In Serbia, most of undeveloped areas of the country are depopulated with a low labour supply.

Olga Memedović replied that regions that have suffered economically have to approach recovery incrementally. Authorities need to attract a key strategic partner to a region that will act as a stimulus for other firms to locate there. There are also many examples of visionary key players such as policy makers, business leaders and celebrities, who have a vision and means to realize it, acting as a driving force, taking the initiative in the municipality or city, and moving the development process forward.

René van Berkel stressed that industrial parks are not the only development tool available. In remote areas with poor transport links and no human resources, it is better to consider other options to kick start development, such as tourism or agriculture projects. It is not necessary to build a large chemical plant in such areas. Industrial parks should be built where the factors are most favourable, for instance, where transport infrastructure and a skilled workforce are available.



Kyzzhibek Ryszhanova

Eugene Brennan raised two points. First, there needs to be more discussion on the importance of marketing and promotion of industrial parks. All parks need a strategy and vision that they have to be able to sell, even in advance of having significant physical infrastructure. It is an opportunity to test the market, to develop a pipeline of potential projects that allows you to measure success and plan the next steps of park development.

Second, industrial parks do not suit all areas. For example, a tourist area in Ireland was initially considered appropriate for an industrial park but the land had more value as a golf resort. The resulting resort generated 200 jobs and about EUR 250 million in investment.

A second set of **country presentations** was given by Moldova, Turkey, Kazakhstan, Kyrgyzstan and FYR Macedonia, followed by ten minutes of discussion on:

- iii. The role of good governance: park management, public private partnerships, cooperation with dedicated government bodies; and
- iv. Achieving sustainable development through strategies, policies and programmes.

René van Berkel called for a regional initiative on industrial parks focusing on green and sustainable industry. There are two components to this: physical infrastructure and ‘soft’ components, such as labour, policies and strategies. We should differentiate between activities focused on brown field sites, for instance, existing industrial conglomerates from Soviet times that can be refocused, as we see in Germany, Hungary and Slovakia. These old industrial areas can be transformed from long-term liabilities and environmental hazards to useful purposes. The discussion so far has focused on building new parks on green field sites, but there is also a legacy of old industrial conglomerates. The region stretches from Vladivostok to Tirana, and from Baku to St Petersburg, so it will be difficult to mobilise any significant action at this scale. A solution would be to look at two or three sub-regions, such as the Balkans and Central Asia, and maybe the Eastern Partnership area (from Belarus to Azerbaijan). In the latter group, it is likely that support will be available to work with international organisations, such as UNIDO, the OECD and UNECE, on sustainable industrial development.

Olga Memedović picked up on the issue of regional groupings and explained that the ultimate goal is to establish a networking platform for all countries in the region to share experiences and knowledge gained on using industrial and eco-parks.

AFTERNOON SESSION

During the working lunch, the participants were divided into two groups corresponding to the country presentation groups. Group One included Albania, Azerbaijan, Belarus, Russia, Serbia, Tajikistan and Ukraine, and Group Two included FYR Macedonia, Moldova, Turkey, Kazakhstan and Kyrgyzstan. The groups were tasked with drawing up a list of recommendations for technical cooperation activities with UNIDO.

- Group One on: (i) attracting resources (financial and human) and (ii) facilitating technological learning, innovation and catching up; and
- Group Two on: (iii) the role of good governance: park management, public private partnerships, cooperation with dedicated government bodies; and on (iv) achieving sustainable development through strategies, policies and programs.



Presentation of recommendations following group discussions

The work of the two groups was supported by UNIDO staff members, Farrukhbek Alimdjanov and Solomiya Omelyan.

During the afternoon session each group made a presentation of its recommendations.¹⁸

¹⁸ A summary of the recommendations from the group sessions can be found in Section 4 (Action Plan).

Olga Memedović briefly summarised the groups' recommendations, highlighting key issues, such as integration of firms and service providers, the distinction between brown and green field investment in industrial parks, and the role of eco-parks and the greening of industry. The latter is likely to feature on the agenda of the international community after the Rio+20 Global Conference. The most important issue, however, is how to mitigate the risk of park failure, as well as how parks avoid creating a dual economy in countries where they are located.

Eugene Brennan congratulated the groups for producing a comprehensive list of recommendations, adding that market-facing actions are an important consideration leading to the creation and ongoing success of industrial parks. Recommendations on labour, financing and simplification of legislation are crucial because these ultimately need to be incorporated into any review of conditions that will contribute to the success of industrial parks.

CONCLUSION OF THE CONFERENCE

Olga Memedović praised the participants for their contribution to the conference and for providing valuable insights from theoretical and country perspectives. Discussion of industrial parks continues to be relevant and information needs to be shared. UNIDO will work towards establishing an electronic network platform where publications can be uploaded and made available to all. A platform can also help to attract investors. UNIDO will also try to find potential funding for cooperation at the regional level and devise programmes for technical cooperation based on recommendations outlined during the conference. UNIDO will work through countries' development assistance priorities to see where industrial parks have a role to play in improving social inclusion and poverty reduction.



Farrukhbek Alimdjanov, in his capacity as Project Manager and on behalf of the UNIDO technical team at headquarters, thanked the participants for their work in producing tangible practical results and constructive suggestions, as well as counterparts in Azerbaijan for the warm welcome and also for providing outstanding support that fostered successful organisation of the conference.



Farrukhbek Alimdjanov

Sahil Babayev thanked everyone for attending and for sharing views. The conference is very important for Azerbaijan and such cooperation and participation of many states, including international organisations and donors, will contribute to the future development of the region and towards regional cooperation and partnership. The main objective during the conference was to create a network among the countries and with international organisations in the region.

Day one of the conference was dedicated to information and experiences of establishing industrial parks, including those related to internal and foreign direct investment and the possibility of attracting skilled people and workers to return to their countries. On the second day country representatives gave presentations on their experiences of industrial parks. The conference will play an important role in attracting investment for different countries through the establishment of industrial parks and sustainable development industry. To develop environmentally friendly industries it is important to have links between country and regional organisations. The draft framework programme proposed by UNIDO for 2013-2018 will cover many spheres, including ecology, renewable energy, technology transfer, SMEs and free economic zones.

4 Action Plan

Background

The objective of the Regional Conference was to share knowledge and experiences among selected countries from Europe and Central Asia on the use of industrial parks as a tool to promote investment and competitiveness, overcome market and institutional imperfections, and foster economic learning and catch-up. The conference was intended to contribute to a better understanding of the role of a new generation of industrial parks in economic diversification and job creation with the ultimate goal of identifying common challenges and opportunities for the development of different types of parks in the region to be consolidated in an action plan for UNIDO's potential technical assistance at regional and national levels.

During the conference, the working group sessions resulted in the design and formulation of a regional Action Plan on strategy formulation, institutional capacity-building and networking levels. There was general agreement that the proposed format of the Action Plan will serve as an effective guideline for the formulation of national and regional technical assistance projects.

Proposed Action Plan

As a result of the two day discussion and group work, the country participants agreed on the following technical cooperation actions to be provided by international organisations in cooperation with national counterparts:

At the strategic level

1. To enhance the development of national and regional innovation systems by supporting the interaction between knowledge organisations, such as universities and research institutes, the private sector (industry) and government, and to link them to regional development strategies.
2. To support the formulation of a national strategy of support infrastructure, including development tools, such as industrial, technology, science and eco-parks.
3. To guide and assist support for investment in the region, in line with the industrial innovation system.
4. To assist the design of a balanced strategy between endogenous, local investment driven development, and exogenous or FDI-driven development.
5. To assist in harmonising related national legislation and incentive systems, through analysis of relevant existing legislation, and adapting this in support of parks at regional and international levels.
6. To assist in the formulation of strategies and legal frameworks for Public Private Partnerships (PPP) models of development and implementation of industrial parks projects.
7. To assist with formulating parks' marketing strategy and branding.
8. To assist with the development and implementation of strategies to reverse the 'brain drain' and to build capacities of qualified specialists involved in park development.
9. To provide assistance in the development of entrepreneurship programmes, business angel networks and mentoring.

At the institutional level

10. To assist in the development of a one-stop-shop ('single window') approach for parks to simplify procedures for the provision of administrative services related to issuance/provision of:
 - a. Business registration and licences
 - b. Permits and other obligatory certificates
 - c. Granting of fiscal and financial incentives
 - d. Access to utilities
11. To support the creation and strengthening of national institutions and organisations (those based on public private partnerships) in charge of park development.
12. To assist in conducting a feasibility study and business plan (master plan) of new industrial parks in accordance with the newest international standards (such as environmental standards, energy efficiency standards, including eco-industrial parks) with clear distinctions between physical utility infrastructure and soft infrastructure.
13. To assist with the design and development of the implementation phase of the master plan.
14. To assist in the identification and creation of methodologies and tools to access financing for a park.
15. To assist in the design and implementation of mechanisms for assessing and monitoring the impact and achievements of industrial parks, and remediation plans for improvement.

At the capacity-building level

16. Capacity-building for awareness raising of public and private sector stakeholders.
17. Capacity-building of industrial park managers and staff.
18. Capacity-building in market analysis for attracting new investments in industrial parks.

At the networking level

19. To develop tools and methodologies (Regional Industrial Park Platform hosted by UNIDO) to improve awareness and knowledge sharing through the exchange of international experiences on good practice and successful experiences in the creation and management of parks.
20. To develop partnership and linkage programmes among park stakeholders, including businesses, universities and government representatives, aimed at using university resources more effectively for knowledge creation and commercialisation in fully-integrated industrial parks (benefiting from R&D, etc.).
21. To assist in benchmarking successful schemes related to park development and to identify criteria to be met by parks.

5 Visit to Sumgait Technology Park

At the end of Day Two of the conference, the attendees were taken on a tour of Sumgait Technology Park, an example of a successful park that, through the provision of high quality infrastructure and services, has attracted a range of industries involved in the production of plastics, chemicals, electronics, cables, hydro-turbines, water pumps and power engines.

Sumgait Industrial Park was established on 21 December 2011 by Presidential decree and was designed to contribute to the development of the non-oil sector, as well as to create jobs, raise exports, encourage investment, generate clusters and accelerate technological development. Sumgait covers 167 hectares, with the potential to reach 500 hectares, and is located 27 km from Baku.

The park offers new and modern infrastructure, professional and effective management, cluster connections and proximity to transport links, being 48 km from Haydar Aliyev International Airport. The park also provides access to international markets via ports in Kazakhstan, Turkmenistan, Iran and Russia. A proportion of goods produced in the park are exported, and neighbouring countries are significant markets for these products.







The park is home to range of industries including plastics, chemicals, electronics, cables, hydro-turbines, water pumps and power engines. Some goods produced in the park are for the export market, namely neighbouring countries

6 Annex

6.1 Agenda

DAY ONE

11:00-11:40 Opening

- Official opening and welcome remarks by the Ministry of Economic Development of the Republic of Azerbaijan
Mr Niyazi Safarov, *Deputy Minister of Economic Development*
- Introduction by UNIDO
Ms Olga Memedović, *Chief, Europe and NIS Programme, Bureau for Regional Programmes, Programme Development and Technical Cooperation Division, UNIDO*

11:40-12:00 Coffee break

12:00-13:00 First Session: *Industrial parks and technological learning and innovation*

- Current trends and new dimensions in the development and activities of industrial parks
Mr Fabrizio Condorelli, *Senior Industrial Advisor, Programme Development and Technical Cooperation Division, UNIDO*
- Industrial parks, clusters and regional innovation systems
Ms Olga Memedović
- The role of industrial parks in facilitating technological learning, innovation and catch-up process
Mr Luc Sollier-Bresset, *Senior Industrial Zones Specialist, UNIDO*

13:00-14:30 Lunch

14:30-15:30 Second Session: *Industrial parks and sustainable development* (20 minutes per presentation)

- Potentials of industrial parks to achieve sustainable industrial development
Mr Eugene Brennan, *Director, Consultancy Services Group, Shannon Development*
- Eco-Industrial Parks: industrial parks as a nexus for resource efficiency, industrial symbiosis and eco-innovation
Mr René van Berkel, *Chief, Cleaner and Sustainable Production Unit, UNIDO*

- Establishment, development and upgrading of industrial parks: Success stories and lessons learned

Mr Luc Sollier-Bresset

15:30-15:50 Coffee break

15:50-17:10 Third Session: *The role of parks in attracting resources*

- Strengths of industrial parks in building linkages with financial institutions and venture capital

Mr Iztok Lesjak, *Director, Tehnološki park Ljubljana*

- Industrial parks as an instrument to foster competitiveness of agglomeration economies and to promote local supply chain development (with the focus on the specific experience of Teknopark Inc.-METUTECH)

Mr Tolga Özbolat, *Director of University Industry Collaboration, Ortadoğu Teknopark, ODTU Teknokent Idari Binası*

- The role of industrial parks in mobilising domestic and foreign direct investment

Mr Eugene Brennan

- Industrial parks as a development tool to encourage the return of highly qualified human resources, leveraging new technologies and knowledge

Mr Fabrizio Condorelli

DAY TWO

09:30-11:00 Presentations and discussion on selected topics

- Seven country presentations (10 minutes per presentation):
Russia, Serbia, Tajikistan, Albania, Azerbaijan, Belarus, and Ukraine
- Discussion on the two topics (20 minutes):
i) Attracting resources (financial and human)
ii) Facilitating technological learning, innovation and catch-up

11:00-11:15 Coffee Break

11:15-12:30 Presentations and discussion on selected topics

- Five country presentations (10 minutes per presentation):
Moldova, Turkey, Kazakhstan, Kyrgyzstan and FYR Macedonia
- Discussion on the two topics (25 minutes):
iii) Role of good governance: Park management, public private partnerships, cooperation with dedicated government bodies
iv) Achieving sustainable development through strategies, policies and programmes.

Identification of five recommendations on technical cooperation needs and fora discussion for which UNIDO can provide assistance (at the regional and national level):

GROUP I.

Chairs: Russia (Mr Alexander Startsev), Albania (Ms Ujvara Ponari)

Supporters: Mr Luc Sollier-Bresset, Mr Fabrizio Condorelli, Mr Farrukhbek Alimdjanov

Participating Countries:

Russia, Serbia, Tajikistan, Albania, Azerbaijan, Belarus and Ukraine

GROUP II.

Chairs: Turkey (Mr Tolga Özbolat), Moldova (Mr Dumitru Griciuc)

Supporters: Mr Eugene Brennan, Mr Iztok Lesjak, Ms Solomiya Omelyan

Participating Countries:

Moldova, Turkey, Kazakhstan, Kyrgyzstan and FYR Macedonia

12:30-14:00 Lunch

14:00-16:00 Afternoon/Closing Session

- Discussion and validation of an Action Plan for national and/or regional technical cooperation on industrial parks development and networking.
- Closing statements by the representatives of the Ministry of Economic Development of the Republic of Azerbaijan and UNIDO.

16:00-18:30 Visit to Sumgait Technology Park

6.2 Overview of country presentations

Albania

Legal framework and documents	<ul style="list-style-type: none"> – Law No.9789 (19 July 2007) ‘On the establishment and functioning of economic zones’ – Decree of Council of Ministers No. 860 (10 October 2007) ‘On the approval of regulation for the establishment and functioning of economic zones’
Current situation	<p>In total, 10 economic zones have been approved:</p> <ul style="list-style-type: none"> – Nine economic zones have ‘industrial parks’ status and one economic zone is a “free zone” (‘Free Zone’ Vlorë)
Incentives	<ul style="list-style-type: none"> – Fiscal facilities are applied only to the free zone – The term economic zones consist of industrial parks and free zones, the latter are exempt from customs duties and VAT – The government offers infrastructure up the borders of the economic zone: electricity, water, sewage, roads, railroads, telephone, etc. – Economic zones are for 35 years and cost a nominal one euro
Problems to be addressed	<ul style="list-style-type: none"> – Attraction of investors – Increasing the promotion of industrial parks from institutions and agencies inside the country and foreign embassies in Tirana
Expected assistance	<ul style="list-style-type: none"> – It would be preferable to receive increased assistance and funding from the government and international community

Azerbaijan

Legal framework and documents	<ul style="list-style-type: none"> – Decree signed by the President of Azerbaijan on 21 December 2011 on the establishment of Sumgait Technology Park – Decree signed by the President of Azerbaijan on 28 December 2011 on the establishment of Balakhani Eco-Industrial Park
Current situation	<ul style="list-style-type: none"> – Sumgait Technology Park – Balakhani Eco-Industrial Park
Incentives	<ul style="list-style-type: none"> – Tax holidays – Subsidies – Concessionary credits for small and medium enterprises – Bilateral Investment Treaties, non-discrimination policy, government co-financing mechanism for investment projects
Problems to be addressed	<ul style="list-style-type: none"> – Inadequate technical and managerial skills of IP personnel to ensure efficiency of operations
Expected assistance	<ul style="list-style-type: none"> – Support the creation and/or strengthening of a national institution/organisation (public or private) – Assist the feasibility study and/or business planning phases of new industrial parks according to international standards – Assist the design and development of the implementation phase of planned IPs

Belarus

Legal framework and documents	<ul style="list-style-type: none"> – Decree of the President of the Republic of Belarus No. 1 (3 January 2007) – Decree of the President of the Republic of Belarus No. 518 (23 October 2009) – Decree of the President of the Republic of Belarus No. 252 (17 May 2010)
Current situation	<ul style="list-style-type: none"> – As of January 2012, there are nine IPs
Incentives	<p>Existing support infrastructure for the development of IPs:</p> <ul style="list-style-type: none"> – Reduction rate 0.5 for leased area – 10 per cent income tax – Possibility to finance activity arrangement and development of material and technical basis, including capital expenditure from the state budget – Real estate tax exemption and land tax exemption until January 2016 – Possibility of exemption from local taxes and duties on decisions made by local authority
Problems to be addressed	<ul style="list-style-type: none"> – Imperfect legislative basis for IPs – Lack of efficient funding of IPs – Lack of efficient interaction system between innovation structures and universities – Shortage of human resources – Insufficient innovation activity of scientific organisations – Low innovation of enterprises
Expected assistance	<ul style="list-style-type: none"> – Expanding the types of actors in the innovation infrastructure – Permits for interested bodies of the state to be the founders of IPs – Enhanced opportunities to acquire the status of resident of IPs – Give innovation infrastructure actors the right to lease land to non-residents – Financing the activity of juridical entities as innovation actors – Structure at the initial stage, except financing of capital costs

Kazakhstan

Legal framework and documents	<ul style="list-style-type: none"> – State Law to regulate the development and functioning of industrial zones is in progress. The basic concept of the law is developed and under consideration by the relevant state authorities.
Current situation	<p>Four operating industrial zones:</p> <ul style="list-style-type: none"> – ‘Damu’ (90 hectares) in south Kazakhstan – logistics and machinery industry – ‘Ondyrys’ (92 hectares) in east Kazakhstan – metallurgy and construction industry – ‘Shymkent’ (200 hectares) – all types of industry – ‘Ordabasy’ (143 hectares) in south Kazakhstan – light machinery and construction industry – Creation of 13 new industrial zones in nine regions
Incentives	<p>Government support for the development of industrial parks:</p> <ul style="list-style-type: none"> – Providing infrastructure (gas, water, heat and electricity) – Fast connection of industrial zones to utility services – Providing services to investors through a ‘single window’ that allows an accelerated registration of investors in the territory of industrial zones and the necessary documents – Assistance in attracting investments in the industrial zones
Problems to be addressed	<ul style="list-style-type: none"> – Low investment attraction – active investor attraction tools are not applied – Lack of project funding – high interest rates and bureaucracy – Lack of attractiveness in arranging projects in industrial zones – lack of preferences and state support
Expected assistance	<ul style="list-style-type: none"> – Develop strategy and action plan based on SWOT analysis – Provide technical assistance (educational) – Provide necessary resources (human and finance)

Kyrgyzstan

Legal framework and documents	<p>'High Tech Park' (HTP) is a project designed to support existing and emerging information technology companies and to create an environment for programmers and the IT-industry, in a special regime zone exempt from tax. In order to create conditions for the effective administration of the project, the following laws have been passed:</p> <ul style="list-style-type: none"> - 'On High-Tech Park Kyrgyz Republic' (8 July 2011) N. 84 - 'On Amendments to Certain Legislative Acts of the Kyrgyz Republic' (8 July 2011) N. 8 - These laws define the legal basis for state support for IT-industry business software developers, residents, and simplification of taxation for 15 years
Current situation	<ul style="list-style-type: none"> - The most important instrument of state policy in shaping innovative entrepreneurship are innovation centres, technology incubators, as well as national and regional parks, which will act as a stand alone unit or as part of local technology and industrial parks. - One of the tools of investment is the creation of industrial zones providing special conditions for doing business. Industrial areas are also the platform for the creation of clusters. In Kyrgyzstan, there are several major areas of industrial facilities, which are gradually falling into disrepair. We develop special provisions that suggest investors to convert them into new industrial (industrial) zones with the possible participation of the state. <p>The above mentioned HTP has the following main objectives:</p> <ul style="list-style-type: none"> - Develop a software market for economic development opportunities through the use of new IT-technologies - Support existing and emerging companies in information technology - Attract investment for the future development of innovative and high technology (medicine, nanotechnology, etc.)
Incentives	<p>State support for the creation of the HTP:</p> <ul style="list-style-type: none"> - Special legal and tax regime for HTP - In accordance with the Law 'On High-Tech Park KR' HTP residents are exempt from all corporate taxes including value added tax, income tax and customs duties - Individual income tax for employees-HTP <ul style="list-style-type: none"> - Land and premises HTP - Government orders
Problems to be addressed	<ul style="list-style-type: none"> - Attracting investment
Expected assistance	<ul style="list-style-type: none"> - Enhancement of opportunities to acquire the status of IP resident - Support the creation and/or strengthening of a national institution/organisation - Assist the design and development of planned parks

FYR Macedonia

Legal framework and documents	<ul style="list-style-type: none"> – Law on Technological Industrial Development Zones (TIDZ), harmonised with EU state aid legislation. (The Law and its Amendments are published in the <i>Official Gazette of the Republic of Macedonia</i> No.14/2007, No.103/2008, No.130/2008, No.139/2009 and No. 156/2010)
Current situation	<ul style="list-style-type: none"> – Five TIDZs are established and six more are in the process of being established
Incentives	<p>Investment incentives in TIDZs:</p> <ul style="list-style-type: none"> – Ten year tax holiday for personal income tax (PIT) and corporate income tax (CIT) (according to the terms, conditions and procedures described in the Law) – State aid for construction costs in accordance with investment and employment plans (breakdown in the Law), and training aids (as defined in the Law) – Symbolic land lease prices; land building permits fee exemption – Construction land utility tax exemption; free connection to gas, sewage, and water supply network – Green customs channel – Trade in goods and services in TIDZs, except trade intended for end use, is not subject to VAT. Also, imports of goods in the TIDZs are exempted from VAT, provided that the goods are not placed in free circulation, i.e. are not intended to the end use (according to the terms, conditions and procedures described in the Law). Free from customs duties for equipment intended for activity performance (according to the provisions of the Law)
Problems to be addressed	<ul style="list-style-type: none"> – PPP legal framework – Lack of national experience in PPP in TIDZs
Expected assistance	<ul style="list-style-type: none"> – International community technical assistance in the development of legislation relating to the PPP model – International community support in strengthening the capacity of the Directorate for TIDZ in attracting investments to the zones – Sharing experience at the international level in order to strengthen the capacity of the Directorate for TIDZ in developing and implementing a PPP model

Moldova

Legal framework and documents	<ul style="list-style-type: none"> – Law on IPs (2010)
Current situation	<p>10 projects for establishment and operation of IPs:</p> <ul style="list-style-type: none"> – Two based on joint stock companies with majority state ownership – Four based on public property assets – Three based on private property assets – One within sub-zone no.3 of the Balti free economic zone
Incentives	<ul style="list-style-type: none"> – Free of charge change of land use from agricultural to industrial – Free of charge transfer of state-owned land and assets with the purpose of establishing industrial parks – Right to privatise state-owned land at below market prices – Right of IP administrators to charge a reduced rental payment for state-owned land and assets, applying a reduction coefficient of 1 to 0.3 of the tariff set by the annual state budget law
Problems to be addressed	<ul style="list-style-type: none"> – Improvement of legal and regulatory frameworks in order to enhance the attractiveness and functionality of industrial parks – Continuously improve IP infrastructure – Training of qualified personnel at all levels to ensure functionality of IPs – Ensuring a high safety level of investments in industrial parks
Expected assistance	<ul style="list-style-type: none"> – Using the experience of foreign partners in the creation and development of IPs – Ways of overcoming obstacles at the initial stages of IP development – Determination of funding opportunities at the initial stage

Russia

Legal framework and documents	<ul style="list-style-type: none"> - 'On the Innovation Centre Skolkovo' (244-FZ from 28 September 2010) - Changes in Russian legislation documents in connection with the adoption of the Federal law 'On the Innovation Centre Skolkovo' (243-FZ from September 28, 2010).
Current situation	<ul style="list-style-type: none"> - More than 50 IPs created in 37 regions (St Petersburg, suburban areas of Moscow, Ulyanovsk, Kaluga, Ivanovo, Orel, Volgograd, Ekaterinburg, Belgorod; Tatarstan; Trans-Baikal region) - In 2010, the Association of Industrial Parks (AIP) was established to support and integrate separate IPs systems. A priority field of AIP activities includes providing favorable conditions for investors to promote development of the Russian economy - At the session of 'Business Russia' General Council in October 2010, the Russian Prime-Minister announced support for an AIP programme and governmental orders aimed at IP development in Russia. AIP policy is aimed at the establishment of: <ul style="list-style-type: none"> - legislation background for IPs - methodological background for the analysis of IP-related projects - standards of IPs for corresponding non-obligatory certification
Incentives	<ul style="list-style-type: none"> - Tax relief, including double taxation - Private sector initiatives
Problems to be addressed	<ul style="list-style-type: none"> - Current government policy should be changed as soon as possible to eliminate uncertainties - IPs should be defined as leaders of modernisation and environmentally sustainable regional development in the overall economic strategy of the Russian Federation - A system of incentives to support IPs should be guaranteed by the government based on specially allocated resources - A system of local management should be developed involving the most active and IP development experts
Expected assistance	<ul style="list-style-type: none"> - A national integrative idea (what are our goals and supporting factors) should be defined in Russia as soon as possible - The main strategic partners; approaches to reasonable management of available resources (including human resources) and the definition of sustainable development should be clarified - An programme 'Industrial Parks for Green Industry' should be initiated under the UNIDO flag - The existing national legislation should be modified in respect to technical cooperation with UNIDO and other UN agencies in order to promote IPs based on the modernisation of industry and transition to a new technology platform

Serbia

Legal framework and documents	<p>Strategic framework for development of economic infrastructure and IPs</p> <ul style="list-style-type: none"> - Strategy for Regional Development Republic of Serbia (2007-2012) - National Strategy for Economic Development (2006-2012) - Strategy for the Development of Competitive and Innovative SMEs (2008-2013) - Strategy for the Development of Free Zones in Serbia (2011-2016) - Industrial Strategy (2011-2020) - National Plan for Regional Development (NPRD) <p>Legal framework</p> <ul style="list-style-type: none"> - Law on Free Zones - Decree on Conditions and Attracting Foreign Direct Investment
Current situation	<p>In 2010 there were:</p> <ul style="list-style-type: none"> - 63 industrial zones and parks located in 51 local self-government units supported by the National Investment Plan (NIP) - Seven operational Free Zones (2010) with 211 users/companies, 106 of those being domestic and 105 foreign - Few operational IPs, one example is the Economic and Technological Park Subotnica
Incentives	<p>Government programmes for financing</p> <ul style="list-style-type: none"> - NIP - Annual programme of support for project development at the local level <p>Fiscal incentives</p> <ul style="list-style-type: none"> - Tax holidays, tax credits, tariff concessions and financial incentives for manufacturing investors and international services per new employee
Problems to be addressed	<ul style="list-style-type: none"> - Development of a strategic and legal framework for IPs (types of IZ and IP that should be supported) - Preparation of finance and co-finance schemes - Institutional framework, established body or institution for IPs - Reduction of administrative barriers - Establishment of cadastre of business/ economic infrastructure - Promotion of investment in joint actions at all government levels and institutions and agencies - Capacity building for local government and regional development agencies
Expected assistance	<ul style="list-style-type: none"> - Integrated planning principles for the development of IPs and economic infrastructure - Development of an institution or body for IPs - Development of effective instruments (incentives) for the implementation of strategic framework - Setting responsibilities of local –regional – national actors - PPP and other models for the planning, construction and management of IPs - Capacity building for monitoring IP development and all other economic infrastructure

Tajikistan

Legal framework and documents	<ul style="list-style-type: none"> – Law ‘On Science and State Science and Technology Policy’ (1998) – Law ‘On Technology Parks’ (2010) – Decision of the Government of the Republic of Tajikistan on the ‘Programme of innovation development of Tajikistan for 2011-2020’ (2011)
Current situation	<ul style="list-style-type: none"> – The Tajik government provides services of local consultants, the right to use land, buildings, equipment, communications systems and infrastructure, tax breaks, exemption from customs duties levied on importation of technological equipment
Incentives	<ul style="list-style-type: none"> – Tax relief – Investment allowances – Relief from double taxation
Problems to be addressed	<ul style="list-style-type: none"> – Amendments to the law ‘On Technology Parks’ to ensure equal conditions for public and private entities to build IPs – Take steps to integrate enterprises of industries and their integrated activities within a specific IP – Recruitment and training of human resources – Provision of infrastructure and high-tech equipment – Availability of resources in the region – Improving infrastructure – Need for production support services
Expected assistance	<ul style="list-style-type: none"> – Tajikistan established a legal framework for the establishment and operation of IPs. To enhance the development of IPs, the Government will continue to take steps to improve this framework, to take all necessary measures to attract not only domestic, but also foreign investors, capital, technology, and advanced technology – as shown by the current preparation of a new law ‘On innovation activity’ – Assistance from the international community: Active work with international organisations, including UNIDO, in order to attract foreign companies to mutually beneficial and effective cooperation to create a technology park in Tajikistan – Tajikistan is also actively exploring the experiences of some countries to establish technology parks, especially in countries such as China, the Republic of Korea and Kazakhstan

Turkey

Legal framework and documents	<ul style="list-style-type: none"> – Law on Organised Industrial Zones
Current situation	<p>Technology Development Zones – Technoparks</p> <ul style="list-style-type: none"> – TDZs are areas designed to support R&D activities and to attract investments in high technology fields – There are 39 TDZs, of which 27 are operational and 12 have been approved and are currently under construction <p>Organised Industrial Zones (OIZs)</p> <ul style="list-style-type: none"> – OIZs are designed to allow companies to operate within an investor-friendly environment with ready-to-use infrastructure and social facilities – The existing infrastructure provided in the zones includes roads, water, natural gas, electricity, communications, waste treatment, and other services – There are 263 OIZs in 80 provinces, of which 148 are currently operational, while the remaining 115 OIZs are being constructed throughout Turkey <p>Free Zones</p> <ul style="list-style-type: none"> – Free zones are special sites considered to be outside the customs area, although they are within the political borders of the country. These zones are designed to increase the number of export-focused investments – Legal and administrative regulations in the commercial, financial, and economic fields that are applicable within the customs area are either not implemented or partially implemented in the free zones – There are 20 FZs in Turkey (19 are operational) adjacent to major Turkish ports on the Mediterranean, Aegean, and Black Seas, with easy access to international trade routes
Incentives	<ul style="list-style-type: none"> – Existing support infrastructure for the development of industrial parks - availability of support from the government, specialised agencies, technical institutions, private sector, international development partners and related services/utilities, etc. – Incentives directed to the income and corporation taxpayers located in organised industrial zones are mentioned in the Law on Incentives for Investment and Employment – Taxpayers in these regions are exempt from income tax, employer contributions, free land allocation and energy support
Problems to be addressed	<ul style="list-style-type: none"> – Specific incentives – Occupancy rates – Energy costs – Qualified workforce – Knowledge based network – Sustainable strategies
Expected assistance	<ul style="list-style-type: none"> – Increasing the incentives – Increasing the technology transfers – Sector-based International Collaboration Platforms – Transfer of experiences

Ukraine

Legal framework and documents	<ul style="list-style-type: none"> - In 2006, the Cabinet of Ministers accepted the ‘Conception on the creation of IPs’, which defines the principles for developing IPs - In the Conception, Ukraine used the experience of IPs in Eastern Europe, including Hungary, Slovenia and the Czech Republic - In 2012, parliament adopted the Law on industrial parks (currently under revision after suggestions from the President of Ukraine) <p>Government bodies involved in formulating state policy concerning IPs:</p> <ul style="list-style-type: none"> - Ministry of Economic Development and Trade (Department of investment and innovation policy and developing of public private partnership) - State Agency for Investment and National Projects (InvestUkraine)
Current situation	<ul style="list-style-type: none"> - 16 technology parks, registered according to the legislation - Ten unregistered technology parks - One science park ‘Kyiv polytechnic’
Incentives	<ul style="list-style-type: none"> - Tax relief - Subsidies - Relief from double taxation
Problems to be addressed	<p>Steps to improve conditions for establishing IPs:</p> <ul style="list-style-type: none"> - implementation of legislative mechanisms of IPs activity - attracting technical support for founding of IPs (for example, in collaboration with UNIDO) - legislative implementation of public-private partnership in founding IPs - support for transferring new technologies in base sectors of the Ukrainian economy
Expected assistance	<ul style="list-style-type: none"> - Ukraine's cooperation with UNIDO is extremely important for both bilateral and regional cooperation with other countries - Ukraine expects to establish much closer cooperation on the issues of developing activity in IPs frames with UNIDO (technical support) and countries represented at this event (practical experience)

6.3 Summary of SWOT analysis from country presentations

Strengths	Weaknesses	Opportunities	Threats
Investment			
<p>Mobilisation of domestic investment and FDI through incentives and equal legal treatment</p>	<p>Lack of financial resources / unattractive to investment</p> <p>Low opportunity for investment in small and medium businesses</p> <p>Need for capacity building for absorption EU Instrument for Pre-Accession (IPA) funds</p>	<p>Financial support for investment (national programmes, EU funds, international development partners)</p>	<p>International financial institutions have high standards for assessing creditworthiness</p> <p>Low availability of finance</p> <p>Lack of investment funds (national/international)</p> <p>Economic crises affecting the whole industrial process</p> <p>High cost of financial products (credits, loans etc.)</p> <p>Globalisation and increasing international competition/ capital outflows abroad</p>
Legal/ Public-Private Partnership/ Framework/ Government/ Institutions			
<p>Legal framework for creation and establishment of special economic zones</p> <p>Exemption from customs and export tax</p>	<p>Weak links between technical institutions, the private sector, international development partners and related services/utilities, etc.</p> <p>Need for legal framework/ lack of related legal experience</p> <p>Lack of single definition and recognition of IP, zones, etc.</p> <p>Difficulties in obtaining required government and financial support at the local level/ bureaucratic obstacles</p> <p>Absence of simple and transparent legislation on IPs</p>	<p>PPP model implementation/ possibility of establishing IPs through PPP mechanisms</p> <p>Optimisation of state controls on residents' activities by determining a specific schedule, approved by the government</p>	<p>Uncertainty of current governmental policy/ potential for increases in tariffs</p>
R&D			
<p>Technological catch-up and manufacturing R&D intensity growth/ changes in national industrial structure/ instrument to foster non-price competitiveness on the international market considering export orientation of investors</p>	<p>Lack of R&D and innovation</p>	<p>New technologies/ technology upgrade in different industries/ modernisation and transition to new technological platform</p> <p>Growing share of business R&D (BERD) in national R&D expenditure;</p> <p>Government measures to support BERD</p>	<p>Low levels of R&D in the business sector</p>

Capacity (human)			
<p>Job creation and skilled employment growth (quantity and quality employment)/ system of skills training and professional development/cheap work force</p> <p>Tailor-made education programmes at universities and vocational secondary schools, high rate of enrolment in university, growth in graduate numbers, investment in education to meet investors' demands for skills</p>	<p>Shortage of specialists/ absence of highly qualified specialists during the organisational stage of establishing parks/ lack of national experience</p>	<p>Local development and job creation</p> <p>Access to highly qualified labour force</p>	<p>Large and sustained loss of high qualified individuals - 'brain drain'</p>
Infrastructure			
<p>Infrastructure/ availability of land and buildings with access to necessary communication infrastructure</p>	<p>Obsolete technical base/ outdated infrastructure</p>	<p>Ongoing projects to construct transport infrastructure</p> <p>Awareness building on potential for renewable energy resources</p>	<p>Dependency on polluting energy sources</p> <p>Transportation and infrastructure deficiencies</p>
Management/ Production/ Costs			
<p>Management efficiency</p> <p>Low utility prices (gas, electricity, water, etc.)</p>	<p>Lack of single data base of IPs and industrial zones</p> <p>Inefficient enterprise and human resource management</p> <p>Weak marketing/ export promotion in firms</p> <p>High input costs</p>		<p>Lack of information about successful investment examples</p>
Liberalisation			
<p>EU integration/ proximity to neighbouring markets</p> <p>Large internal markets</p>		<p>Liberalisation of international financial and trading systems</p> <p>Access to new markets/ geographic location/ markets in neighbouring countries</p>	<p>Lack of market (demand) analyses on local and regional level/ high competition</p>

6.4 List of participants

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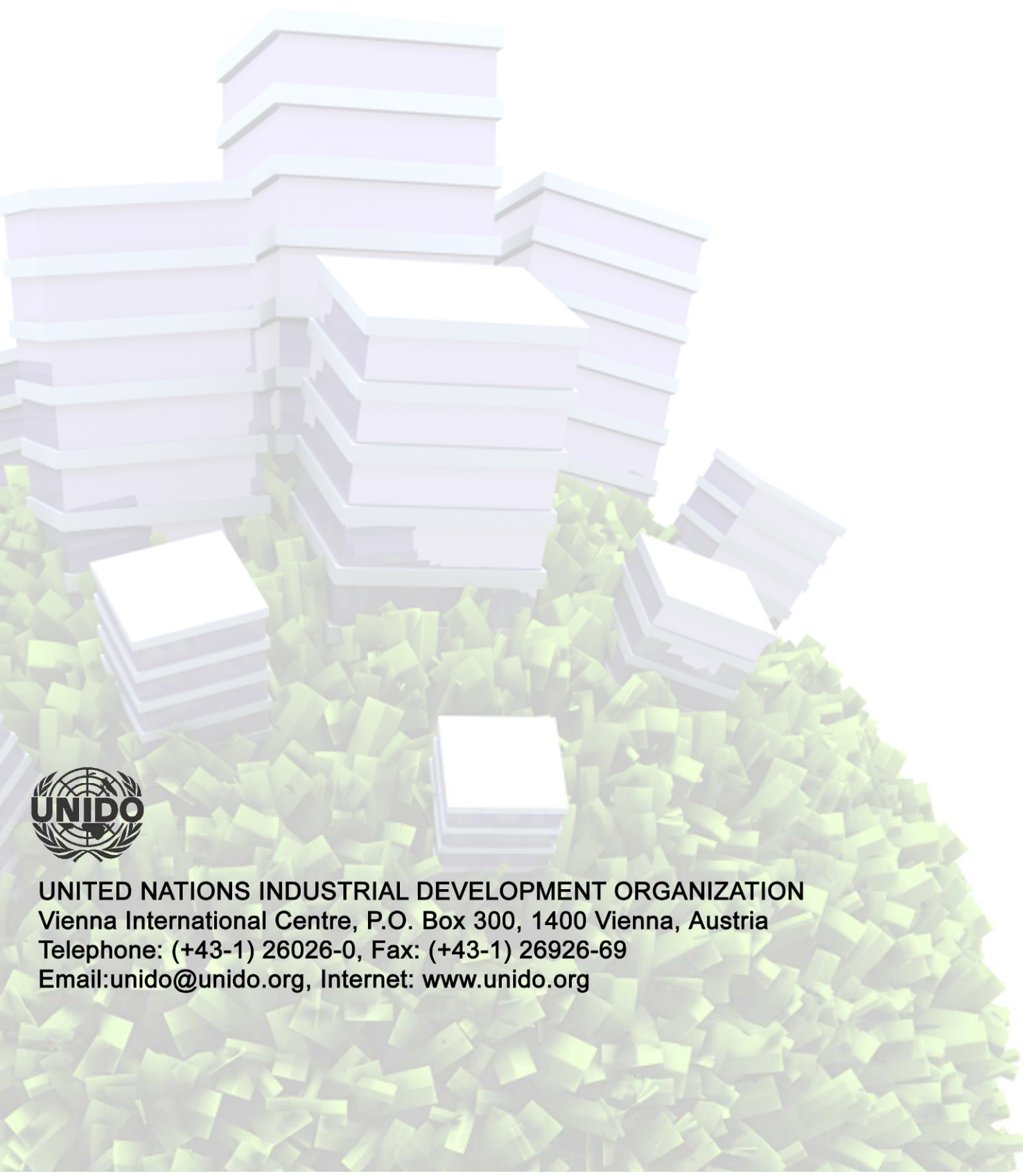
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