

UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

Compendium of Good Practices in Promoting Knowledge-based Development



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United Nations Economic Commission for Europe

**COMPENDIUM
OF
GOOD PRACTICES
IN
PROMOTING
KNOWLEDGE-BASED
DEVELOPMENT**



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NOTE

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FOREWORD

The 21st century is marked by the dominance of the intertwined processes of globalization and knowledge-based development. The world economy is now predominantly knowledge-driven in the sense that the production, distribution, and use of knowledge are the main drivers of growth, wealth creation and employment. Thanks to the advances of information and communication technologies, the production, distribution, and use of knowledge have also become global phenomena. The emergence of global knowledge-based value chains as the key drivers of global economic growth is both a challenge and an opportunity for businesses and countries, for national and international policymakers.

The UNECE has an important international role in promoting knowledge-based development. The mission of its Subprogramme on Economic Cooperation and Integration is to promote a policy, financial and regulatory environment conducive to economic growth, knowledge-based development and higher competitiveness of countries and businesses in the UNECE region. Through its intergovernmental subsidiary bodies and expert networks, the UNECE is facilitating a policy dialogue leading to policy-oriented normative work in support of knowledge-based development in a number of important policy areas.

This *Compendium of Good Practices* presents some of the outcomes of the work in five thematic areas of the UNECE Subprogramme on Economic Cooperation and Integration, namely: “Innovation and competitiveness policies”, “Entrepreneurship and enterprise development”, “Financing innovative development”, “Commercialization and protection of intellectual property” and “Public-private partnerships”. The Synopses of Good Practices presented in this publication are the results of extensive multi-stakeholder policy dialogue with the active participation of the collaborating expert networks that contribute actively to the implementation of UNECE programme of work. The Synopses of Good Practices reported here have been discussed and endorsed by the UNECE Committee on Economic Cooperation and Integration.

The UNECE region includes countries at very different levels of economic development. In accordance with the mandate of the Subprogramme on Economic Cooperation and Integration, the *Compendium of Good Practices* is mostly oriented towards policymakers in the catching-up UNECE economies. Nevertheless, the synthetic presentation of good practices in promoting knowledge-based development may be of interest to a broader public in the whole UNECE region. I therefore hope that this publication will be useful for all stakeholders and practitioners dealing with the challenges of the knowledge-based economy in the era of globalization.



Marek Belka
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ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
CAD/CAM	Computer-aided design and computer-aided manufacturing
CECI	Committee on Economic Cooperation and Integration
CPC	Capital Pool Company
EPO	European Patent Office
EU	European Union
FDI	Foreign direct investment
GNI	Gross national income
ICT	Information and communication technologies
IP	Intellectual property
IPRs	Intellectual property rights
NIS	National innovation system
OECD	Organisation for Economic Co-operation and Development
PPPs	Public-Private Partnerships
PROs	Public research organizations
R&D	Research and development
RTO	Research and Technology Organization
SBA	Small Business Administration
SME	Small and medium-sized enterprises
TOS-ICP	Team of Specialists on Innovation and Competitiveness Policies
TOS-IP	Team of Specialists on Intellectual Property
UNECE	United Nations Economic Commission for Europe
VC	Venture capital
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

EXECUTIVE SUMMARY

The UNECE Subprogramme on Economic Cooperation and Integration was established with the main objective to promote a policy, financial and regulatory environment conducive to economic growth, knowledge-based development and higher competitiveness of countries and businesses in the UNECE region. To this extent the Subprogramme deals with dissemination and application of relevant experience gained, lessons learned and best practices among member States.

Its programme of work covers five main thematic areas, namely:

- Creating a supportive environment for innovative development and knowledge-based competitiveness;
- Promoting an enabling environment for entrepreneurship and the development of small and medium enterprises;
- Promoting an enabling environment for efficient financial intermediation in support of innovative development;
- Facilitating the effective regulatory protection of intellectual property rights and strengthening their role in innovative development; and
- Promoting best practice in efficient public-private partnerships.

This *Compendium of Good Practices* presents some of the main policy-oriented outcomes of the work under this Subprogramme in 2007. These products are in the form of “soft” regulatory norms, recommendations and guidelines, which provide synthesized expert knowledge and guidance that may be of use to policymakers dealing with various aspects of the knowledge-based economy. The Synopses of Good Practices presented in this publication are the results of the joint effort of the UNECE secretariat and the broad expert networks that collaborate in the implementation of the UNECE programme of work. In the process of the cooperative work, these documents have been subject to a broad discussion and peer review by this expert community.

The Synopses of Good Practices have been endorsed by the UNECE Committee on Economic Cooperation and Integration, the intergovernmental body that oversees the work under this Subprogramme. At its session held on 5-7 December 2007, the Committee invited UNECE member States to disseminate policy recommendations of expert meetings as well as major findings of synopses of good practices and other policy-relevant documents prepared under the thematic areas in their countries and use them in their policy- and decision-making process.

I. SYNOPSIS OF GOOD PRACTICES IN FACILITATING THE GENERATION AND DIFFUSION OF INNOVATION

A. INTRODUCTION

In accordance with the Programme of Work of the UNECE Committee on Economic Cooperation and Integration (CECI) for 2007-2008 in the focus area “Creating a supportive environment for innovative development and knowledge-based competitiveness” and the conclusions of the first meeting of the Team of Specialists on Innovation and Competitiveness Policies (TOS-ICP) held in Geneva on 8-9 March 2007, the Team agreed on an Implementation plan for its main outputs in 2007:

- Comparative Review on “Creating a conducive environment for higher competitiveness and effective national innovation systems. Lessons learned from the experiences of UNECE countries”.
- Synopsis of good practices in facilitating the generation and diffusion of innovation.

The Comparative Review was compiled on the basis of policy documents and other materials submitted to the UNECE by members of the TOS-ICP, as well as other publicly available documents and materials. The full text of the Comparative Review is available on the CECI website (<http://www.unece.org/ceci/>) and will be published as an official UNECE publication.

This Synopsis largely draws on the findings of the Comparative Review with the aim of providing policy-relevant conclusions on good practices in creating a supportive environment for innovative development and knowledge-based competitiveness in the UNECE region. In view of the nature of the document, the Synopsis only provides a summary of these practices and the related country experiences. More detailed information can be found in the Comparative Review.

The UNECE region includes countries at very different levels of their innovative capability. In accordance with the CECI mandate, this Synopsis is mostly focused on the catching-up UNECE economies¹. Nevertheless, it has a broader focus on transnational learning, that is to say the transfer of good experiences and best practices across the whole UNECE region. It thus aims to facilitate further this process and contribute to an improved level of policymaking in policies for promoting technology and technology-based catching up.

¹ Throughout this publication, the term “catching-up economies” is used to define the group of ten new Member States of the European Union (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia), the countries of South-East Europe (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia and the former Yugoslav Republic of Macedonia) as well as the countries of Eastern Europe, the Caucasus, and Central Asia (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan).

B. THE RATIONALE FOR POLICY INTERVENTION

The traditional arguments for public support to research policy are those of “market failure” or “public goods”. The rationale for public intervention in innovation policy is wider as innovation has strong public and private elements. As innovation is a systemic activity rather than one just confined to an individual firm, this raises the possibility of network or system failures. The policy rationales thus include possible failures in institutions like universities, patent offices, financial systems and other public and private bodies.

The rationale for policy intervention as well as the importance of the related policies have been changing and growing with the evolution and growing sophistication of the innovation processes in the modern, globalized economy. Modern innovation emerges from a continuous interaction between firms, their suppliers and buyers and external actors like universities or research and development (R&D) organizations. Firms are not isolated in their innovation activities but rather perform them in networks; these activities are highly dependent on the external environment at the sectoral, regional and national levels. The term “national innovation system” (NIS) characterizes the systemic interdependencies within a given country, which influence the processes of generation and diffusion of innovation in that economy.

The interactive nature of the modern innovation process requires the widespread use of systemic instruments that target simultaneously different components of the NIS. These systemic instruments address newly emerging functions in managing the innovation process such as the management of interfaces; construction and organizing the innovation systems; providing a platform for learning and experimenting; providing an infrastructure for strategic intelligence; stimulating demand articulation, strategy and vision development. The implementation of such instruments requires a considerable degree of coordination among agents and hence calls for public intervention.

Another key rationale for policy intervention to support innovation, especially in the catching-up UNECE economies, is that their national innovation systems exhibit some common structural weaknesses. Among the most important weaknesses are the following:

- Innovation activity is restricted to a few large domestic enterprises which invest comparatively high shares of their revenue into innovation.
- Small and medium-sized enterprises (SMEs) are the weakest part of the national innovation system as demonstrated by a very small share of innovative SMEs.
- Foreign firms are investing comparatively more in R&D and innovation than domestic firms.
- There are very weak linkages between domestic large and small firms, and weak horizontal links between firms dominated by foreign direct investment (FDI) and domestic firms.

Successful catching up requires both the adoption of existing technologies in established industries, and innovation proper. Building the potential for high and sustained long-term economic growth in the catching-up economies calls for actions to reduce these structural weaknesses in order to establish the basis for technology-based growth.

A lesson learned from national experiences is that innovation policy per se cannot compensate for failures of poor business environment and poor investment climate. There should be a balance between the background conditions that ensure the working of competitive market mechanisms and specific activities which fall within the scope of innovation policy. Innovation policy will be effective only if it can rely on a favourable investment climate and a market-friendly business environment.

Innovation policy is not a quick fix to be employed within electoral cycles. To be successful, it requires a long-term view and broad consensus of various stakeholders. As demonstrated by the experiences of both the developed and the catching-up UNECE economies, this policy is easier to establish in periods of growth rather than recession. However, this also reduces pressure for its development and effectiveness.

C. GOOD PRACTICES IN INNOVATION AND COMPETITIVENESS POLICIES

The traditional innovation policy was primarily oriented towards R&D, that is to say, the supply side of innovation. A current mainstream is the second generation of innovation policy which is oriented towards systems and clusters. The emerging third generation of innovation policy assumes that there is a potential for innovation which is embedded in other sectors or policy domains. This potential can be realized by ensuring cross-sectoral optimization of the components of various sectors' innovation policy through coordination and integration.

Good practices in innovation and competitiveness policies can be defined as those public interventions or policy measures that enhance synergies and weak links in the innovation system. Among the most important targets is the horizontal coherence of different policies which ensures that individual, or sectoral, policies build on each other and minimize inconsistencies in the case of possibly conflicting goals.

A major lesson learned from national experiences is the overwhelming importance of the institutional context and specific conditions for the creation of a supportive environment for innovative development and knowledge-based competitiveness. It is essential to ensure autonomy and relevance of R&D and knowledge-based services for the economy but also linkages and synergies to the global economy. An institutional system that nurtures openness, but which also fosters technology-based competition, should thus be the key aim of national innovation and competitiveness policies.

From this perspective, the notion of good practice in innovation policy is somewhat ambiguous as the direct transfer of a "high performance element" from one country or system to another may not necessarily have an impact similar to that in the system of origin. Also, there is no single "optimal" pattern of innovation governance as identical functions could be undertaken by different institutions.

Hence, while there is a lot to learn from intelligent comparisons across national systems (learning-by-comparing), mechanical benchmarking of narrowly defined areas while neglecting the systemic context cannot be considered as “good practice” in a national policymaking context, one should always bear in mind that the relations between framework conditions and public support for innovation are country-specific.

D. THE NEED FOR A LONG-TERM VISION

Broadly agreed national priorities in the form of strategic, long-term policies and visions facilitate coordination by providing a consensus and mutual understanding. In order to be successful, priority setting should be embedded in a broader process of innovation and competitiveness policy formation using an inventory of strategic intelligence tools like foresight, benchmarking, monitoring, evaluation, and assessment. Coordination in priority setting should also involve consultations and activities with key stakeholders and the public at large.

In order to be effective, this embodiment of priorities has to be present at two levels – institutional and strategic intelligence. At the institutional level, policy councils are important in the priority-setting process, but may not be sufficient to develop comprehensive, horizontal policies for innovation and sustainable economic growth. At the strategic intelligence level, it is essential to establish close links to the priority setting process and use tools like foresight in policy learning.

The main purpose of long-term vision is to ensure the coherence of the related actions by public bodies and private actors. Country experiences suggest as a good practice embedding the shaping of this long-term vision into an institutionalized policy process involving key stakeholders and incorporating a process of generating long-term visions (foresight) of the technological and economic development.

Well-designed foresight exercises can enhance the coordination capability of the national and local innovation systems and their ability to respond to external challenges. They can also facilitate coordination among policy bodies dealing with innovation and innovation stakeholders. Foresight helps in generating new insights which are not available to individual stakeholders unless they embark on the process of such collective exercises.

An effective foresight exercise should achieve the following main objectives through a participatory process:

- Achieve a better common understanding of the desirable and feasible visions of the future.
- Bring together different stakeholders that are expected to be involved in the implementation of these visions into a functioning network.

The foresight objectives are mutually related: better common understanding is needed for networking but also better networking is a precondition for generating common understanding. Addressing them simultaneously is an important challenge for foresight practitioners. The Technology Roadmap process in Canada, which is led by industry and facilitated by the

Government, and the United Kingdom foresight exercise could serve as good examples of how to address these challenges.

E. IN SEARCH OF AN ADEQUATE POLICY MIX

National policy portfolios and their effectiveness can only be judged and assessed in the context of the national innovation system, including its strengths and weaknesses. The institutional context within which the innovation policy objectives are defined explains why in most countries these objectives are still defined very ambiguously. A number of countries still do not set clearly defined objectives and do not link them to measures leading to the achievement of these objectives.

The heterogeneity of countries in terms of the development of their NIS also suggests the need for differentiated policy approaches and different policy mixes in the search of a balance between public support for specific innovation interventions or in the requisite institutions that support innovation (framework conditions). There is no general answer to this question that could be used as a criterion to follow one or another approach. Any answer should be country- and context-specific and should be based on systematic evaluation.

A specific policy focus in the catching-up economies is the closure of the so-called “implementation gap”, i.e. the gap between sources and users of innovation. In view of this, the experience of more developed countries with policies to bridge the sources and users of innovation may be relevant.

The policy mix in the catching-up economies is still overly R&D-focused and traditional in the sense that there is a strong bipolar policy model or separation of policy responsibilities between education/science and innovation/industry. The forward-looking policy design, especially in the context of the recent evolution in the understanding of innovation and competitiveness policies, should therefore also strike a balance between different principles and objectives.

Another key policy challenge for the catching-up economies is how to strike a balance between different conflicting principles and objectives in innovation and competitiveness policies, such as the balance between institutional and competitive funding or the balance between world quality and local relevance. In general, there is a need to shift to a greater reliance on competitive allocation of public R&D funds and project-based funding. Also the NIS should contribute to the generation of new knowledge but equally to the diffusion of knowledge throughout the economy.

Finding an effective policy mix is not a trivial task. In this process it is useful to bear in mind the following principles and prerequisites:

- The development of specific innovation-support instruments should be undertaken within the context of an overall strategy that is coherent and well coordinated within a well balanced and feasible policy mix.
- Specific innovation policy programmes should be treated as learning experiments and hence external monitoring and evaluation of programmes are crucial. Ideally,

programmes should be introduced on a pilot basis and then closed if failed or scaled up if proven successful.

- It is essential not to overload strategies with too large a number of under-funded projects.

If the ultimate objective of the innovation and competitiveness policy mix is to create an environment conducive to innovation-based growth, then the policy mix needs to ensure synergies between framework conditions and the key elements of the national innovation capacity. The four dimensions of the innovation capacity – absorptive capacity, knowledge generation, diffusion and demand – interact with each other through the systems of innovation. National innovation systems, which are able to create synergies between different dimensions of innovation capacity, are better in promoting innovation and economic growth based on innovation capacity.

Framework conditions shape each of the elements of the national innovation capacity but they are not sufficient to establish a positive relationship between growth and innovation. Favourable framework conditions therefore need to be coupled with an efficient NIS proper, that is, with developed elements of the national innovation capacity.

F. POLICIES TARGETING THE ABSORPTIVE CAPACITY

The economy's capacity to absorb innovation at the macro level crucially depends on micro-level competences and competence building in workplaces. The catching-up UNECE economies have a relatively high level of education but inadequate systems of training and retraining programmes. Human capital development is thus a key priority area for policymakers. Enterprises also have a responsibility for training more of their employees in-house; this is an investment which will produce returns in the form of productivity gains.

The existing systems for vocational training and re-training need to be reformed. In particular, government schemes should be targeted in priority towards adults with low or obsolete skills. It is important to generate training capacity in enterprises and increase the propensity for workers to undertake training. Governments could consider establishing a more effective training culture by directing existing subsidies on a competitive basis and according to provider performance. Employers should be closely involved in the governance of re-training programmes. In turn, enterprises and employer associations should have meaningful inputs into the design of the government policies so that the training system is responsive to their needs and those of other key stakeholders. Policies should be designed to increase competition in training provision from all providers, both public and private including the employer.

Universities should become key drivers and promoters of human capital development in the knowledge-based economy. Advanced formal training and a strong science base should become the basis for “learning by doing” and advanced “life-time learning” in the knowledge-based economy. This requires establishing a new balance between the universities' three main functions: teaching, research and commercializing knowledge. In countries where universities have been traditionally weak in R&D, greater efforts are needed to stimulate research activities within universities.

A number of countries in the UNECE region have adopted policy programmes targeting the absorptive capacity, mostly through human capital development measures. Examples include, but are not limited to, recent programmes in Belarus, Denmark, Estonia, Israel, Italy, Kazakhstan, Lithuania, Russian Federation, Slovakia, Slovenia, etc. Wider sharing of this experience and learning from other countries' success and failure could provide fertile ground for further improvements in policies and raising their efficiency.

G. POLICIES TARGETING THE GENERATION OF KNOWLEDGE

The catching-up UNECE economies need to increase the general level of R&D expenditures which are relatively low in relation to gross domestic product and are still dominated by public budgetary spending and low participation of in-house funding by firms. Achieving this target – which implies raising both public and private R&D spending – calls for coordinated joint efforts by the public and private sector in accordance with mutually agreed national innovation priorities.

Raising the level of R&D expenditure also requires reform and transformation of national R&D systems. The main direction of this reform should involve a movement towards a mostly enterprise-based R&D system and a shift towards diffusion-oriented activities within the R&D system. A movement towards an enterprise-based R&D system should shift the supply of innovation towards the actual demand for R&D and other knowledge related services of local firms. A shift towards diffusion-oriented activities within the R&D system reflects the importance of adaptation for the catching-up economies.

The reforms of national R&D systems in the catching-up UNECE economies should also involve support to the nascent sector of new technology-based firms which should become an important segment of R&D activities. These firms operate in a regime of technology-based competition where marketing, technical and financial barriers are higher than in the case of cost-based competition. The innovation and competitiveness policy mix should include measures to reduce such barriers for new technology-based firms in catching-up economies.

The systems of knowledge production in the modern industries entail important roles for users in the innovation process. Changes in policies are therefore needed, in particular in the catching-up economies, to increase support to users as sources of innovation. Policy should encourage user-led innovation, both by publicizing its possibilities and by removing barriers to its introduction. Policy could also encourage users' role in standard-setting processes which contribute to the shaping of newly developed technologies.

Knowledge generation also involves a large set of activities which go beyond R&D, in particular improvements in products and production techniques, software, design and marketing, and active use of new knowledge and new technologies developed elsewhere. The innovation activities that are not reflected in traditional indicators such as investments in formal R&D or patents awarded (the so-called “hidden innovation”) should be assigned due priority in the innovation and competitiveness policy mix. These types of activities require more sector-specific insights and are greatly affected by framework conditions and broader public policies.

H. POLICIES TARGETING THE DIFFUSION OF INNOVATION

The systemic nature of innovation and the related linkages and networks imply an increasing importance of the process of diffusion of innovation, its channels and transmission mechanisms. Among the most important linkages in these processes in the catching-up UNECE economies are those between foreign and local firms, the links between large and small local firms, those between Research and Technology Organizations (RTOs) and industry as well as the linkages established through innovative clusters. Public policies seeking to establish new linkages and strengthen existing ones should be assigned due consideration in the innovation and competitiveness policy mix.

Facilitating the diffusion of new knowledge through the economy calls for policies focused on different forms of partnerships. In R&D, this requires different forms of public-private partnerships which promote knowledge circulation and matching of business needs and R&D expertise. There are different practices in this regard in the catching-up UNECE economies such as joint R&D centres (Poland), long-term cooperation agreements (like the competence centres in Estonia or the cooperative R&D centres in Hungary), networks and clustering schemes (Czech Republic, Hungary), national technology platforms (Poland) and mega- and business-stimulated projects (Russian Federation). Good practices of this sort could be developed further and other countries could learn from this experience.

In today's globalized economy, an important policy challenge related to FDI is to link value-chain foreign-investment firms and national innovation systems. Policy should seek to ensure coupling between FDI and the national innovation process, for example through programmes for fostering innovation-based FDI and local linkages. Among the positive examples in this respect are the Hungarian Integrator Programme and the Israeli Global Enterprise R&D Cooperation Framework whose objective is to encourage industrial R&D cooperation between Israeli firms and multi-national corporations.

The formation of clusters, a critical mass of companies over a certain territory, interlinked by a web of supply and demand interrelations, provides a solid foundation for the emergence of competitive advantages. Cluster policies should focus on the establishment of close relations between all relevant stakeholders from both the public and private sectors. The related public interventions should support the efforts of the private sector to improve performance, in an integrated strategy to build a competitive advantage. There is also a great need for cluster facilitators who could work in regions, raise cluster awareness and improve the culture of cooperation among entrepreneurs. In recent years, programmes for supporting clusters have been introduced in a number of catching-up economies, for example in the Czech Republic, Hungary, Lithuania, Poland, Romania and Slovenia. However, many cluster policies have a strong focus on identifying and linking actors but put less emphasis on the dynamic aspects of such interlinked structures.

There is also a pressing need to reform the sectoral R&D units inherited from the past which are still much higher in number in some UNECE catching-up economies (among others, Poland, Romania, Russian Federation, Ukraine) compared to developed market economies. One possible direction of reform is towards transforming them into networks of innovation support centres offering mainly training, counselling and information services. There is a wide scope for

transnational learning in this area based on examples of countries that have developed successful models of competence centres.

Another related policy issue is the introduction of policy measures seeking to improve the effectiveness of supporting organizations (such as incubators, centres for support to innovation, etc.) and their connectedness into one efficient and effective system. In some cases these measures should seek to transform inefficient supporting organizations from sites of subsidized rents to drivers of knowledge generation and diffusion. In other cases, these measures should convert them from places of general support to business to places of innovation-based growth. The main thrust of these reforms should be to make support organizations demand-driven and relying as much as possible on private sector expertise and skill. Eventual public co-funding should be long-term in nature and based on transparent performance criteria.

There is also significant scope for direct diffusion-oriented policy programmes in the catching-up economies, especially in downstream activities related to production capability. Demonstration projects in areas like quality management, computer-aided design and computer-aided manufacturing (CAD/CAM) systems, or business information systems in specific sectors are worth supporting due to their strong demonstration effects and learning potential. Such projects could be co-funded on the condition that the results of these demonstration projects are made available to other enterprises.

I. POLICIES STIMULATING THE DEMAND FOR INNOVATION

Robust economic growth does not translate automatically into demand for R&D and innovation. For this to materialize, some necessary conditions must be in place, in particular, stable macroeconomic framework, conducive business environment, well functioning and competitive markets, efficient and developed financial system, well protected intellectual property rights, transparent regulations and public procurement, among others. The establishment of an environment stimulating the demand for innovation calls for targeted public policies.

Governments could consider specific policy measures contributing to the development of the financial sector in the catching-up economies into an intermediary of innovation driven growth. In this regard they could consider introducing incentives to mobilize funds for innovation, in particular for SMEs. The public sector could also be instrumental in designing and supporting schemes for sharing the financial risk of innovative activities among various stakeholders.

Reforms are needed to improve the efficiency of the fiscal incentives for R&D and innovation which should target innovation-related activities in a neutral way, and not seek to support specific sectors or groups of enterprises. Public policies in the UNECE region have undergone, and are still undergoing, important reforms in the scope and nature of fiscal support measures and the related policy instruments. Thus recently there has been a trend towards increased importance of R&D fiscal measures in the European Union, especially among the old Member States but also in other countries such as Russia and Israel. Fiscal R&D support measures traditionally play an important role in the United States. There is a scope for UNECE countries to learn from each other in this respect, especially in terms of administrative requirements, forms of incentives, target groups, definition of R&D activities, treatment of foreign firms, etc.

Achieving sustainable development requires increased cooperation between the innovation and environmental policy. Increasingly firms understand that they have to move from regulation compliance and cost reduction to the exploitation of the profit potentials that lies in environmental innovativeness. Equally, innovation policy should give greater attention to environmental innovation both to strengthen economic growth and to reduce the impact on the environment. Given the systemic interdependencies of the firms' innovation processes, harmonizing the environmental demands could improve the introduction and diffusion of environmental innovations. This implies that policies should target value chains and networks rather than individual firms.

J. MEASURES TO IMPROVE INNOVATION GOVERNANCE

The multidimensional and multisectoral nature of innovation activities calls for coordination and collaboration in a large number of different policy areas: economic, financial, industrial, education and science, employment, regional, social and health, and environmental policies. This implies targeted reforms in innovation governance, especially in the catching-up economies, at many levels of the public sector and in different organizations, including interfaces with the business sector and society at large. The main directions of these reforms should be towards contributing to the generation and implementation of integrated innovation and competitiveness policies.

A specific direction of these reforms is related to the improvement of the policy coordination mechanisms, especially in the catching-up economies. An effective coordination process should encourage active participation of all relevant stakeholders, including the business sector, and taking due account of the interests of these stakeholders. Stakeholder participation in all key phases of the coordination process will contribute not only to better designed policies and policy mixes but also to their more efficient implementation.

There is a wealth of country experience in policy coordination in the UNECE region. Examples of establishing successful coordination mechanisms include, among others, the institutional role of the Office of the Chief Scientist at the Ministry of Industry, Trade and Labour in Israel, policy coordination practices in Denmark and Germany and similar experiences in Slovakia and other countries. Learning from these experiences could provide valuable further guidance to policymakers in the whole UNECE region.

Country experiences also suggest that there is not a single "optimal" pattern of innovation governance. There is a range of practices in supporting good overall innovation governance that can possibly be adapted to national specificities. Also, experience shows that governance mechanisms differ over time in accordance with the changing national needs.

An important challenge for the catching-up UNECE economies is to eliminate the existing fragmentation in their national innovation systems and to strengthen both horizontal and vertical coordination. There is also a need for integrating more systematically the different functionally organized public policies and develop a better understanding of how different policy areas shape the innovation performance.

Foresight exercises could also be instrumental in shifting national innovation systems in the catching-up economies from their dominant focus on knowledge generation towards diffusion, absorptive capabilities and improving their relevance to local users (demand component). This does not mean that science foresight is not necessary in the catching-up economies but only that foresight should also address more downstream type activities like innovation and supporting activities as well as knowledge-based services.

The quality of implementation of innovation and competitiveness policies is often more important than the design of policies. The catching-up UNECE economies generally still have a poor implementation record and therefore need to introduce a range of measures to improve the implementation of individual policy instruments in innovation and competitiveness policies.

An increasing number of countries in the UNECE region have assigned the responsibility for implementation of policies to specialized agencies. However, country experiences in the role of innovation agencies differ. Some countries have small ministries and big agencies while others have bigger ministries and do more policy and programme design inside those ministries. A traditional agency form is the mono-principal: an agency, which works for one ministry (for example, Enterprise Ireland, the National Technology Agency (TEKES) in Finland, among others). Another agency model is the “multi-principal”, which acts as an intermediary for several sponsoring ministries.

In the developed UNECE economies, the role of the innovation agencies is changing as they are becoming more like a partner than a regulator or referee. A leading model in this respect is the Swedish innovation agency VINNOVA whose mission is to promote sustainable growth by developing effective innovation systems and funding problem-oriented research.

While a number of catching-up economies have established agencies and organizations in charge of innovation, they still face a number of challenges in this respect. Thus innovation agencies should be delegated sufficient freedom and a strategic role in the national innovation system, especially in policy coordination. In addition, agencies should achieve decentralization, accountability and flexibility needed for coordinating a variety of intersectoral programmes. They should also enjoy more operational freedom to ensure that managing and implementing policies can be relatively independent from day-to-day policymaking and annual fiscal constraints. Other catching-up economies are yet to embark on the path of establishing innovation agencies.

An organized national innovation constituency is another ingredient of an effective innovation governance system. Such a constituency ensures a strong stakeholder involvement in the formulation of innovation policy, including the formulation of long-term objectives, and facilitates consensus-building in policy formulation and implementation. Examples of successful practices of organized national innovation constituencies include, among others, the Globalization Council in Denmark, the institutionalization of German innovation constituency within the national innovation governance system, the Polish Entrepreneurship Council, the Council on Competitiveness in Ukraine, etc. Governments in the UNECE region have a vested interest in such participatory practices and could provide further support to the establishment and strengthening of organized national innovation constituencies.

K. MAIN POLICY TRENDS AND CHALLENGES

There are a number of emerging common trends – and challenges – in policies promoting innovation and competitiveness in the UNECE region:

- A significant policy effort is being undertaken in a number of countries in human capital development aiming to increase the availability and competencies of skilled innovative people.
- Policies seek to address the challenges related to the intensified national and international linkages and knowledge flows, in particular through national and international partnership-based initiatives, clusters, competitiveness poles, etc., and new platforms for policy design and delivery.
- The role of sub-national regions in the implementation of innovation and competitiveness policy initiatives has also been growing, which implies a greater need for coordination with national targets and initiatives.
- An important recent trend has been the thrust to increase the economy-wide intensity of innovation activity through stimulating private enterprises to invest more in R&D, specifically, and in other forms of innovation, more generally.
- Public policy is also placing an increasing emphasis on the role of regulations, public procurement and other factors associated with the business environment influencing the performance of the national innovation systems.
- In the catching-up UNECE economies, policies have been affected by additional factors related to the ongoing transformation processes and driven by pressures to overcome historical legacies. In particular, this relates to the gradual – but sometimes uneven – transformation towards enterprise-based R&D system and the gradual shift towards diffusion-oriented activities within the national innovation systems.

Many catching-up economies have developed a range of innovation and competitiveness policy instruments but their effects in terms of innovation performance are not yet fully visible. In a number of these countries, national policy mixes are still largely dominated by the public funding of research activities. More efforts are therefore needed to move towards a wider range of funding schemes, going beyond the traditional elements of institutional funding of public research institutes and subsidies for project-based research towards instruments such as funding competitions and tenders, loan and guarantee schemes, equity financing, fiscal incentives, instruments such as the procurement of R&D services, etc.

A newly emerging trend in innovation and competitiveness policies is towards a greater role of policy evaluation. The policy push towards more transparent and visible evaluation practices reflects an increasing concern by societies about the role of innovative development in the knowledge-based economy.

While there exist quite elaborate evaluation methodologies, especially in the developed UNECE economies, until recently they were rarely used in practice, and when used, it was mostly in a retrospective vein. Evaluations should become an integral part of a learning-based approach to policymaking and programme formation. To ensure coordination and integration and achieve better governance, policy learning needs to be built into the whole cycle of policymaking. An example of good practice in this area is the United Kingdom, where the initial business case for proposed measures includes indicators facilitating evaluation through this cycle.

An important specificity of the catching-up economies is a stronger need for evaluation of RTOs. This applies not only to the regular annual or medium-term assessments of RTOs but also to an institutional assessment with the objective of restructuring the RTO system by altering the structure and organization of research institutes and their research activities.

A key policy challenge, especially for the catching-up economies, is that of combining the effectiveness of individual policy instruments with and overall coherence of the policy mix. Two main issues need to be borne in mind in addressing this challenge:

- The effectiveness of individual policy instruments should be considered in the context of the national innovation systems, their specific objectives in this system and the wider policy portfolio in which they operate. Such a consideration should seek to identify synergies and interactions that increase the efficiency of individual policy instruments and make for an effective policy package.
- While appropriate governance systems are necessary (or, at least, helpful) for a good performance of the national innovation system, they are not sufficient to guarantee successful performance. Overall innovation performance is the outcome of a broader range of factors and conditions that go beyond innovation policy proper and encompass framework conditions and a variety of non-technological factors.

Raising the overall effectiveness of the innovation and competitiveness policy mix and its relevance to the long-term policy goals and objectives entails the need to address some additional policy challenges:

- It is increasingly necessary to conduct more and more comprehensive systemic evaluations of innovation and competitiveness policies in order to gain a better understanding of their interactions and impacts.
- The agencies and organizations in charge of innovation should be well equipped with strategic and intelligence functions to better coordinate governance levels.
- Governments should pay more attention to improving mutual understanding of innovation-related issues across ministries as fragmented governance structures often represent a loss of strategic capacity.

In the globalized economy, which is abundant in the complexity of linkages between different social and technical subsystems, policymaking for promoting innovation and competitiveness increasingly needs “strategic intelligence”. Country experiences convincingly suggest that

whatever is considered as good practice in innovation and competitiveness policies usually rests on good strategic intelligence. Better innovation and competitiveness policymaking thus calls for a greater role of and significant improvements in strategic intelligence.

In turn, this implies a greater role of and significant improvements in the main strategic intelligence instruments like foresight, innovation indicators, benchmarking, systematic evaluation cycle, and transnational policy learning. Better strategic intelligence instruments can contribute to a more effective policy process, in particular, in aspects such as:

- Understanding the underlying determinants of R&D and innovation;
- Providing possible clues to some immediate policy questions;
- Outlining trends and future developments related to innovation policy;
- Monitoring progress in policy areas and understanding the impact of policy measures; and
- Adapting agencies and other institutions to a changing environment and changing forms of policy measures.

II. SYNOPSIS OF GOOD PRACTICES AND GOOD POLICIES OF INTELLECTUAL PROPERTY COMMERCIALIZATION AND PROTECTION

A. INTRODUCTION

The Programme of Work of the UNECE Committee on Economic Cooperation and Integration (CECI) in the focus area “Facilitating the effective regulatory protection of intellectual property rights and strengthening their role in innovative development” mandates the Team of Specialists on Intellectual Property (TOS-IP) to prepare the following documents:

- Comparative report on “The commercialization of IP assets, on transforming research and development outputs into intangible assets and on the establishment of well-functioning markets for such products”.
- Synopsis of good practices and good policies of intellectual property commercialization and protection.

In consultations following its first meeting held in Geneva on 23-24 November 2006, TOS-IP agreed on a set of priority topics to be covered in these documents. These are:

- the role of intellectual property (IP) in the transfer of technology from public research organizations to the business sector;
- the management of intellectual property in small and medium-sized enterprises (SMEs) ;
- the auditing, valuation of and accounting for intellectual property; and
- the enforcement of intellectual property rights (IPRs).

The Comparative Report is being compiled on the basis of policy documents and other materials submitted to the UNECE by members of the Team, as well as other publicly available documents and materials.

This Synopsis of Good Practices and Policies largely draws on the findings of the Comparative Report and the outcome of an international conference held in Geneva on 25-26 July 2007. Its aim is to provide policy-relevant conclusions on good practices in selected issues of intellectual property commercialization, protection and enforcement in the UNECE region.

The UNECE region includes countries at very different levels of economic development. In accordance with the CECI mandate, this Synopsis focuses mostly on the catching-up economies in the UNECE region. Nevertheless, it also aims to contribute to a general process of transnational learning on good practices and policies for promoting the commercialization and protection of intellectual property and the enforcement of intellectual property rights across the whole UNECE region.

B. THE RATIONALE FOR POLICY INTERVENTION

Intellectual property is a key concern in the quest for growth, development and competitiveness. Advancement in knowledge broadly conceived is a key driver of economic prosperity in the twenty-first century. The ongoing revolution in information and communication technologies (ICT) has dramatically reduced the costs of creating, processing and transmitting knowledge, both nationally and across borders. The pace of innovation has accelerated significantly. These twin developments, of closer international economic integration and more rapid innovation, create new challenges for IP regimes and policymaking.

To be competitive in the globalized economy, the UNECE Member States have to maintain, adapt and create institutional and legal frameworks conducive to the creation of knowledge and its commercialization. Intellectual property rights have a key role to play in this regard.

At the same time, both the innovation process itself, and the production activities of firms are globalizing rapidly. This raises challenges in terms of managing, protecting and enforcing intellectual property rights across borders.

The catching-up economies face additional challenges to integrate into the increasingly global production networks and to find their own niche in the increasingly global value chains. To be successful, they need to assign high priority to developing their own innovative capacities, as well as their ability to absorb and adapt technological innovations from abroad, and to move up the value chain over time. Again, IP regimes have a key role to play in this regard.

Well-designed intellectual property rights systems give temporary exclusive rights to inventors and thereby increase their chances to recover the often substantial upfront investments they need to make to generate innovations and to bring them to market. Intellectual property rights systems should also make it possible for innovators to sell, license or give away the rights to their innovations to others, who may be better placed to exploit them. In other words, intellectual property rights are a key prerequisite for intellectual assets to emerge in markets. Well-designed intellectual property rights systems also encourage innovators to disclose their knowledge so that future innovators can build on it, thereby helping to accelerate the rate of innovation.

However, a balance has to be struck between the need to give temporary exclusive rights to innovators so that they can recover their investments, and the need to make new knowledge available for use by future innovators and competitors.

The catching-up economies are in the process of developing and adapting their IP regimes with a view to meeting these challenges. They are undertaking commitments in the framework of the treaties administered by the World Intellectual Property Organization (WIPO), accession negotiations to the World Trade Organization (WTO), and/or Partnership Agreements with the European Union. At the same time, these treaties and agreements still leave significant scope for policymaking at the national level.

C. GOOD PRACTICES AND POLICIES

A well-designed and well-performing intellectual property regime is not an end in itself, but a tool to improve the innovative capacity and competitiveness of the economy. Policymakers should therefore ensure that practices and policies targeting improvements in the intellectual property regime are consistent with and integrated into a larger effort to improve the policy, legal and regulatory framework promoting innovation and competitiveness.²

The effectiveness of the practices and policies proposed in the present document depends in part on progress made in the design and governance of national innovation systems, the creation of suitable framework conditions for the financing of innovation, and the promotion of innovative entrepreneurs and SMEs. While these issues are beyond the scope of the present document, they are being addressed within the other thematic areas of the CECI Programme of Work.³

Given that the effectiveness of IP policies depends on the broader policy, regulatory and legal environment, the good practices and policies outlined below should only be considered as options that have worked well in certain contexts. When considering these options in formulating specific IP policies, policymakers need to base their decisions on a thorough analysis of the relevant conditions prevailing in their respective national economies.

Interdependencies also exist across various IP policies. For instance, policies aimed at improving IP management capabilities at research organizations or small enterprises are unlikely to have a big impact unless the legal protection of IP is sufficiently strong and enforcement of IPRs is effective. Policies aimed at strengthening legal protection of IP and enforcement of IPRs are unlikely to enhance economy-wide innovative capacity and competitiveness if potential innovators lack the awareness, skills or resources to access the legal IP system or to manage their IP judiciously. Policy should therefore address simultaneously weaknesses in the IP regime along the entire spectrum from the management of IP in research organizations, enterprises and financial firms to the legal and institutional system for IP protection, to IPR enforcement.

A broad-based approach to IP policy, aiming simultaneously at strengthening the protection and enforcement of existing IPRs and at improving the conditions for the development and commercialization of new intellectual assets can also help in mobilizing political support from a broad cross-section of stakeholders.

²The World Intellectual Property Organization has developed a National IP Audit Tool which provides a systematic approach for policy makers to assess the strengths and weaknesses of their IP regimes in the context of the overall innovation policy framework.

³See documents ECE/CECI/2007/3, ECE/CECI/2007/6, and ECE/CECI/2007/7.

D. CREATING AN ENABLING ENVIRONMENT FOR THE TRANSFER OF TECHNOLOGY FROM RESEARCH INSTITUTIONS TO THE BUSINESS SECTOR

A key IP policy focus is to better utilize the knowledge generated by public research. This calls for improvements in the effectiveness of technology transfer from universities and other research organizations to the business sector for the successful commercialization of university-generated research results. Better management of IP by both research organizations and industries can be part of the solution.

As only part of the knowledge generated in most public research organizations (PROs) is patentable and hence could be exploited through licensing, policy should avoid an excessively narrow focus on IP protection and management. A broader approach to knowledge transfer (including tacit knowledge, skills and know-how in addition to patentable technologies) is often preferable. This point is of particular relevance in many catching-up economies, where research organizations have a legacy of focusing predominantly on generating technologies to the detriment of knowledge absorption, adaptation and diffusion capabilities.

The focus of IP policies in the context of technology transfer should not be narrowed only to patents. Some universities have considerable commercial success from knowledge transfer, for example through distance or e-learning activities, which require protection through copyright.

Successful innovation in a modern economy is a complex process involving cooperation and feedback between academic research, industrial research and development, as well as marketing and customer relations. Ideally, PROs and firms should forge long-term relationships, where both sides draw benefits that do not depend on the success of any individual research and development project. Such benefits include firms using PROs as recruiting grounds for talented staff, and PRO researchers using collaboration with industry as a source for new ideas for scientific research. Governments can empower and support PROs in partnering with industry by giving PROs sufficient autonomy and resources to be able to recruit experienced technology transfer staff on a competitive basis, by encouraging the pooling of technology transfer resources across universities, and by promoting academic career appraisal criteria that take into account successful technology or knowledge transfer activities, such as patenting and collaboration with industry.

A good practice identified in country experiences is governing knowledge transfer by two principles: maximizing the beneficial use of knowledge generated by research organizations (through excellence in scientific research, protection and use of IP, and cooperation with industry), and responsible use (sustaining the scientific research capability of PROs, making sure the use of the knowledge benefits society). IP management is a tool to be used in the pursuit of these principles, not an end in itself.

By contrast, policies pushing towards IP protection of PROs research, primarily as a source of revenue that would enable them to cut public funding for PROs, cannot be considered good practice. Experience shows that few research results generated at PROs are immediately ready for commercial exploitation. Most require substantial further development and investment by the private sector, and licensing revenues and royalties, if any, only materialize after long time lags. IP revenues can be highly volatile, depending not only on research breakthroughs but also on the

state of the business cycle. PROs therefore need a stable source of public base-line funding. From the point of view of public welfare, technology transfer programmes are investments, the returns to which should accrue to the economy and society at large, and policy should reflect this aspect.

Country experience indicates that PROs usually face several challenges regarding the use of IP in technology transfer to industry, such as perceived conflicts with academic culture and the mission of PROs to do basic research; poor IP management⁴; and conflicts over IP ownership and the distribution of revenues. These challenges are often compounded in the case of cross-border collaboration. Government policy can play a critical role in meeting these challenges.

Professional and industry associations can also play a very useful role in addressing these challenges. For instance, in some countries, associations of technology transfer professionals and industry associations are working together to create model contracts and codes of conduct covering the ownership, management and exploitation of IP in PRO-industry cooperations.⁵ These model contracts and codes of conduct reflect good practice and can be used as starting points for negotiations between PROs and companies on a voluntary basis. Governments can support and encourage the use of these model contracts and codes of conduct, for instance, by giving preference in their public research funding to PROs that document good IP management as evidenced by their compliance with good practice.

There is also significant scope for exchanges of experience and lessons learned in this regard among UNECE Member States. Several national and sub-regional professional technology transfer organizations are offering training and advice in this regard. Policymakers in catching-up economies might consider facilitating the participation of technology transfer professionals in such training by providing funding for such activities and by including the qualification of technology transfer professionals among the criteria to assess the quality of PRO IP management when allocating research funding.

Policymakers can also enhance the quality of IP management in PROs by promoting the recognition and accreditation of professional technology transfer courses.

Another avenue to foster knowledge transfer in the long-term is by strengthening the relationship between PROs and industry. Policy can contribute to this through appropriate regulations enabling business executives to teach at universities, and enabling academics to serve as non-executive directors in companies. More generally, policy could envisage schemes that facilitate the mobility of people between academic and business careers and across national borders.

⁴ At the level of the PRO, effective IP management raises several issues, such as: how to secure adequate funding for IP management and Technology Transfer Offices (TTOs) given that the returns, if any, will materialize only in the long-term (10 – 25 years)? How to provide the right incentives for PRO staff to exploit IP and how to keep these incentives consistent with other avenues for technology transfer? How to avoid or resolve potential conflicts of interest, for example, between using funds for basic versus applied research, open access to knowledge versus exclusion to generate revenue, staff benefiting individually from decisions they take on behalf of the PRO?

⁵ Some examples are the Association of University Technology Managers (AUTM) in the United States, the Association of University Research and Industry Links (AURIL) in the United Kingdom, the European Association of Research and Technology Organizations (EARTO) in Brussels, the Réseau C.U.R.I.E. in France, or the Techtrans Network in Denmark.

As to who should own the IP generated in PROs, the consensus seems to be that as a point of departure, PROs should have the right of first refusal on claiming IPRs to the results of their research. In countries where this is not the case, governments may consider passing legislation to this effect. However, they should allow PROs the flexibility to negotiate alternative ownership arrangements where appropriate (for example, when the industrial partner has made significant contributions to the research).

With the granting default IP ownership rights, policy should at the same time assign to PROs the responsibility to actively work towards the commercialization of the IP, while considering retaining a public right to request a non-exclusive license.

As to the sharing of revenues from the commercialization of IP generated in PROs between the PRO, the researchers involved, and the industry partners, there is no universal rule. But good practices suggest that both sides be realistic about the value of the IP, recognizing, on the one hand, the costs of doing the research that generates the IP and, on the other hand, the costs of turning that IP into a successful product.

Since innovation is increasingly global, it cannot be managed effectively within strictly national boundaries. Overcoming the difficulties of technology transfer and PRO-industry cooperation, which are compounded when they take place across countries (due to variations in IP systems and related legal regulations), calls for increased international cooperation in this regard. There are initiatives and efforts, for example, at the level of the European Union, to push for more harmonization through voluntary codes and other forms of soft regulation, both as far as IPR systems and as far as how PROs do business with industry. Governments of catching-up economies need to pay attention to areas where their own local regulations might be a hindrance to cross-border collaboration among PROs or between PROs and business, and may wish to consider working towards harmonizing those regulations.

E. INTELLECTUAL PROPERTY STRATEGIES FOR ENTREPRENEURS AND SMALL AND MEDIUM-SIZED ENTERPRISES

SMEs account for the vast majority of all jobs and a large share of total business activity in the UNECE region. However, SMEs tend not to exploit the formal IP system to its full potential, a trend which is visible across the whole UNECE region.

In part, this reflects the fact that not all SMEs are highly innovative, and even if they are, they also have alternative means available to protect their IP, such as secrecy, publication, lead time advantages, product complexity, customer relations management, and open source.

Hence the goal should not necessarily be to push all SMEs into using the formal IP system more actively, but rather to make SMEs more aware of the potential use of the IP system and the importance of having an in-house IP strategy in place that responds to their specific needs.

However, country experiences in the UNECE region indicate that SMEs as a group do underutilize the formal IP system for a variety of reasons, including:

- lack of awareness of the IP system;
- excessive costs in obtaining IPRs;
- excessive complexity – both in obtaining IPRs and in availing themselves of the civil and administrative remedies;
- lack of expertise; and
- lack of human and financial resources for enforcement, including the high costs related to litigation.

To address the heterogeneity of SMEs, policy-driven IP management support requires first identifying those SMEs that need it most. To this end, policymakers could consider assigning the delivery of IP support to SMEs to subnational (regional) agencies that are more familiar with the characteristics and needs of potential client SMEs.

Past experience in the catching-up economies reveals additional problems that call for the attention of policymakers, including:

- lack of stable demand for domestic innovative products;
- difficulties in entering global markets;
- declining innovative capacity of many SMEs, partly related to a lack of finance for innovation such as venture capital;
- lack of clarity as to who owns IP (for example, in cases of IP resulting from government-funded research); and
- poor IPR enforcement due to a lack of resources in the legal system.

Policymakers have a variety of options in addressing the problems that SMEs are facing when dealing with IP issues, such as:

- awareness raising and training programmes;
- tax breaks or subsidies or reduced fees for IP protection;
- offering consulting and advisory services or IP audits free of charge or at subsidized rates;
- match-making services (potential licensors and licensees) ; and
- model contracts for licensing.

Support at the national level can be offered by dedicated SME support institutions, such as enterprise development agencies, productivity councils, but also through national IP offices. The

sharing of good practices and guides based on the experiences of such institutions should be encouraged.

Good practices and guides on IP specifically targeting entrepreneurs are also developed by international organizations, such as WIPO and the European Patent Office (EPO). In this regard, it is considered good policy to disseminate good practices and guides prepared by reputable international organizations to SMEs, either directly by the national IP offices and/or the relevant government entities responsible for SME development, or via national SME support institutions.

A first step in the policy design is the thorough assessment of the situation in the specific country to identify the most pressing needs and obstacles faced by SMEs.

Experience also shows that it can be a challenge to get SMEs to participate in training on IP management. One attractive solution might be to offer training that covers IP in addition to other issues that may be of immediate relevance to SMEs.

More generally, IP support to SMEs will not be effective unless the overall business environment is favourable for SMEs. Therefore, a coherent policy approach implies integrating IP support for SMEs into the wider SMEs support policies. Synergies between IP support programmes and wider SME support programmes could be achieved, for instance through cooperation and coordination between the relevant IP offices and SMEs support institutions, and the development of joint programmes.

F. INTELLECTUAL PROPERTY AUDITS, ACCOUNTING AND VALUATION

IP auditing, accounting and valuation are of increasing importance for innovative businesses, public research organizations, venture capitalists and other providers of financing for innovative enterprises. They are the basis for successful IP management, ready access by innovative firms to external finance on affordable terms, and well functioning markets for IP.

IP auditing is a systematic appraisal of the stock of IPRs possessed by a company or a PRO, including how strongly IPRs are protected, and how important they are to the business. IP auditing is the starting point for the development of any IP management strategy.

Putting a value on IP assets becomes indispensable when considering the sale, purchase or licensing of IP assets, mergers and acquisitions of firms with significant IP assets, joint venture arrangements and strategic alliances, litigation over IPR infringement, and for the purposes of financial reporting and disclosure.

It is increasingly important that firms report on their IP in a transparent and informative way and that they communicate their IP exploitation strategies effectively. The reason is that accounting standards currently allow for only a limited recognition of intellectual assets in financial statements. Given that intellectual assets are becoming increasingly important for value creation, this means that financial statements alone are less informative today than in the past for assessing the performance and prospects of innovative companies.

However, IP auditing, accounting and valuation are new, complex and rapidly evolving areas. Therefore, there is currently little factual basis for recommending good practices to policymakers and standard setters.

One problem is that there is no single best methodology for the valuation of IP. Whether to use static or dynamic models, whether to rely on income-based, cost-based or transaction-based methods depends crucially on the purpose for which the valuation is undertaken.

Whichever method is chosen, IP valuation will inevitably involve a large element of subjectivity due to the need to:

- assess the quality and strength of intellectual property rights and the capability of the company's management to protect and enforce them;
- assess market prospects of existing and future IP-based products (which among other things will depend on the quality of the management team of the company owning the IP);
- estimate future royalty streams;
- estimate future development costs to bring IP-based products to market;
- assess the risks surrounding all these estimates; and
- identify comparable IP assets that were recently sold and whose prices a company can use as benchmarks in valuing its own IP.

Another conceptual problem is the difficulty of distinguishing between investments in intangible assets and current research and development (R&D) expenditures, such as the remuneration of R&D employees. These employees acquire skills and know-how in the course of the research and development process, and those skills and know-how constitute important intangible assets for the company. Similarly, the value of various IP assets depends in large measure on the IP management capabilities and business strategy of the firm, which is difficult to measure objectively. For these reasons, it has proved difficult to expand the coverage of IP in accounting standards.

There is some evidence from OECD economies that competition in financial markets encourages companies to improve their reporting and disclosure policies on IP, and that companies with strong corporate governance structures are better at managing, valuing and reporting their IP. Fostering capital market competition and good corporate governance, while important policies in their own right, may also be useful therefore to spur improvements in IP auditing, valuation and accounting.

Industry and financial sector associations are also developing voluntary codes of conducts and standards in this area. Moreover, there are firms specializing in providing IP auditing and valuation services to other firms.

Policymakers should monitor these developments with a view to disseminating and encouraging the adoption of good practice as it evolves. Further extensive sharing of experiences will be needed for the identification of good practices and setting the corresponding standards.

At present, any regulations that might be adopted should preferably be principle-based rather than prescriptive: i.e. they should set out general principles and goals to be reached without prescribing in detail what companies would have to do to comply.

G. INTELLECTUAL PROPERTY RIGHTS PROTECTION AND ENFORCEMENT

Protection and enforcement of IP is key for the effective and systematic commercial exploitation of innovations. The economic considerations of rights holders are an important factor in the process of IP enforcement. However, there are also other fundamental public policy issues at stake where society, as a whole, stands to benefit from the effective enforcement of IP. This is more so considering that breaches of intellectual property rights frequently involve products that might pose health and safety risks to consumers, examples of which include, counterfeit drugs⁶, food, beverages, toys, and aircraft and automobile parts.

Countries in the UNECE region have already a number of legislative and statutory instruments in place in their legal and regulatory framework to effectively protect and enforce intellectual property rights, and most of the policy options discussed in this section are generally meant to supplement rather than replace existing mechanisms.

The main areas of policy intervention concern the IP regulatory and legal framework; cooperation and coordination among various government entities and with the private sector; the importance of ongoing training to public officials involved in IP protection and enforcement; and the role of awareness campaigns targeting the various stakeholders.

The legal and regulatory framework provides the parameters within which IPR enforcement can be pursued. There is no single 'right' model for dealing with IP enforcement, and such models vary from one jurisdiction to the other. In some jurisdictions, for example, the consumer in possession of an infringing product can be charged with a criminal offence. In some jurisdictions, the proceeds from IP-related crimes can be recovered and utilized to finance additional enforcement activities. Some jurisdictions have created specialised IP police units and IP courts to enhance the effectiveness of enforcement actions, while a number of others allow customs authorities to act *ex officio* upon suspicion that infringing goods are destined for export, transit and/or transshipment.

Effective enforcement needs to provide adequate deterrence by means of appropriate civil sanctions, such as compensation to the legitimate right holder, and effective criminal sanctions. Policy intervention within the legal and regulatory framework are generally considered good practices when they:

⁶ The World Health Organization estimates that ten per cent of all pharmaceuticals available worldwide are counterfeits.

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- aim at a reduction in litigation costs for the use of the civil system to enforce intellectual property rights;
 - ensure that civil remedies and procedures, such as effective provisional measures, are in place, and that adequate compensation for right holders through appropriate methods for the calculation of damages is provided;
 - provide for effective criminal sanctions for commercial scale intellectual property rights infringements in order to underline that such infringements constitute serious economic crimes;
 - encourage courts and competent administrative authorities to make use of the criminal sanctions to the full extent of the legal provisions;
 - empower law enforcement agencies with the necessary legal power to effectively deal with intellectual property rights infringement issues;
 - establish legislative standards aimed at prohibiting the movement of infringing products that are either in transit or in the process of being transhipped;
 - explore the possibility of enacting/amending legislation to ensure that the manufacture and distribution of products posing health and safety risks are punishable as serious crimes;
 - establish and implement regulations for wholesalers, distributors and retailers of consumer products to ensure maximum control of the legitimate supply chains of products, such as pharmaceuticals, food, beverages, toys, aircraft and automobile parts, and other products that might pose health and safety risks;
 - maintain a well-equipped and competent national drug regulatory authority that will ensure control and regular inspection of all entities involved in the manufacture, trade and distribution of pharmaceuticals;
 - establish and implement *ex officio* authority for customs officers to act with respect to suspect infringing merchandise, without the need for a formal complaint from the right holder; and
 - ensure that civil, criminal and administrative remedies include destruction of the infringing merchandise.

Achieving the right policy mix in the IP legal and regulatory framework is a major challenge for policymakers, given the complexity of the globalized economy. Thus the rapid development in ICT technology poses serious challenges to IP legislation, especially in the area of copyright law. Although a number of instruments at the international level have been devised to address the

situation, keeping up with these developments has proved to be somewhat problematic and there are no universally acknowledged good practices and policies to follow⁷.

The enforcement of IP is typically entrusted to a number of government ministries, departments and agencies. Effective coordination and cooperation between these various institutions is key to strengthening IP enforcement. In a number of countries in the UNECE region, coordination and cooperation among government bodies is carried out either through designating lead agencies, or by setting up special inter-agency working groups. Both options constitute good practices, and as such, a policy option available to governments is to encourage such coordination and cooperation, and to establish measures aimed at avoiding overlap and duplication.

In identifying and fostering synergies between law enforcement agencies, attention should also be paid to the links and overlaps between the enforcement of intellectual property rights and the enforcement of safety and health regulations. One promising avenue of strengthening enforcement is the closer involvement of market surveillance authorities in the fight against counterfeit goods⁸. Such a practice is already being implemented in a number of countries in the UNECE region.

Close cooperation with private sector rights holders in enforcing IP and in the fight against infringing products is generally considered good practice. Rights holders have the necessary technical expertise to distinguish infringing goods from original products, and may possess additional information on the functioning of the various distribution channels. They therefore may be very useful especially in identifying the infiltration of infringing products into legitimate distribution channels. This type of cooperation can help save vital time which is especially crucial when dealing with infringing products posing health and safety risks.

In many countries in the UNECE region, the key bottleneck in IPR enforcement appears to be in the application and interpretation of laws and regulations, rather than in inadequacies in the legal framework per se. To improve IPR enforcement, it is therefore important to ensure that public officers involved in IPR protection and enforcement receive adequate and continuous training. Better training reduces the risks of wrong legal interpretations in civil, criminal and administrative procedures which could undermine the credibility of the legal system. A sound policy mix should therefore provide sufficient resources and ongoing training to the judiciary, the prosecution, police, customs and IP office officials to ensure effective implementation of IP legislation.

It is of utmost importance for consumers, rights holders and policymakers to be aware and understand the multifaceted and dynamic role of the IP system. Besides the need to create an IP culture, rights holders and consumers need to be aware of the IP system's contribution to generate wealth and economic growth, its job-creation potential, its crucial role for the success and prosperity of the innovation industry, as well as the economy-wide effects of counterfeiting and piracy.

⁷ Most notably the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty.

⁸ Policy options in this regard are in the process of being formulated by the UNECE Working Party on Regulatory Cooperation and Standardization Policies (WP.6).

A number of countries in the UNECE region have developed far-reaching training and education programmes aimed at students, the private sector, policymakers and consumers. In some countries in the UNECE region, these programmes are supplemented by media campaigns and public exhibitions to heighten awareness. The IP offices in the countries in the UNECE region play a pivotal role in the formulation and implementation of these campaigns. The following are considered to be good practices and policy options:

- awareness raising efforts at all stakeholder levels, such as policymakers, consumers, students and rights holders;
- targeted campaigns could focus on the possible health and safety risks for the consumer, and the dangers of public order caused by organized crime involvement in the manufacturing and distribution of IP infringing products;
- specific campaigns that address the more vulnerable groups of society;
- evaluating the impact of awareness campaigns, for instance through public surveys; and
- sharing the results of such awareness strategies with all stakeholders to further optimize the effectiveness of such campaigns.

H. MAIN POLICY CONCLUSIONS

Intellectual property is a key concern in the quest for growth, development and competitiveness. To be competitive in the globalized economy, the UNECE member countries have to maintain, adapt and create institutional and legal frameworks conducive to efficient investment in the creation of knowledge and its commercialization. The countries with catching-up economies are in the process of developing and adapting their IP regimes with a view to meeting these challenges.

It is important to ensure that practices and policies targeting improvements in the intellectual property regime are consistent with, and integrated into a larger effort to improve the policy, legal and regulatory framework promoting innovation and competitiveness.

The specific IP policy options should be based on a thorough analysis of the relevant conditions prevailing in their respective national economies.

Policy should address simultaneously weaknesses in the IP regime along the entire spectrum from the management of IP in research organizations, enterprises and financial firms to the legal and institutional system for IP protection, to IPR enforcement.

In public research organizations, a broader approach to knowledge transfer (including tacit knowledge, skills and know-how in addition to patentable technologies) is often preferable to a narrow focus on IP protection and management.

Technology transfer programmes should be viewed as public investments to the benefit of society at large in the form of new products and more and better-paying jobs.

Poor IP management and a lack of appreciation for the importance of IP for successful technology transfer is a significant problem at many PROs. Governments could therefore contribute to more efficient technology transfer by promoting appropriate training of IP for technology transfer professionals and researchers and by establishing incentives for improved IP management at PROs.

PROs should be given the right of first refusal on claiming IPRs to the results of their research. However, they should be allowed the flexibility to negotiate alternative ownership arrangements where appropriate. With the granting default IP ownership rights, governments should impose on PROs a responsibility to actively work towards the commercialization of the IP.

Another avenue for facilitating IP management in technology transfer is the cooperation between governments and professional and industry associations, and policy should encourage this form of cooperation.

To improve the overall policy effectiveness and achieve synergies, IP support for SMEs should be integrated into the wider SMEs support policies.

Targeting IP management support effectively requires identifying those SMEs that need it most. Subnational (regional) agencies that are more familiar with the characteristics and needs of potential client SMEs could be instrumental in this.

Awareness raising campaigns and training programmes on IP for SMEs and entrepreneurs can contribute to their better understanding of the available means for protecting their IP and the benefits this might bring, and to improved IP management.

Well-targeted tax breaks or subsidies for using the formal IPR system can also encourage SMEs to better protect their IP.

The policy mix needs to recognize the increasing importance of IP auditing, accounting and valuation for innovative businesses, public research organizations, venture capitalists and other providers of financing for innovative enterprises.

IP auditing, accounting and valuation are new, complex and rapidly evolving areas, which present a challenge for policymakers, as there is currently little factual basis for recommending good practices.

Fostering capital market competition and good corporate governance - which are important policies in their own right - may also be useful to spur improvements in IP auditing, valuation and accounting.

Industry and financial sector associations are also developing voluntary codes of conducts and standards in this area. Policymakers should monitor these developments with a view to disseminating and encouraging the adoption of good practice as it evolves.

To address the main weakness in the application and interpretation of IP laws and regulations, it is important to ensure that public officers involved in IPR protection and enforcement receive adequate and continuous training.

Effective coordination and cooperation between the various institutions entrusted with IP enforcement is another key to strengthening IP protection.

In enforcing IP, and in the fight against infringing products, it is considered good practice for governments to cooperate closely with private sector rights holders who have the necessary technical expertise and information.

For rights holders, low-cost and fast provisional remedial measures are important, as are manageable litigation costs.

Fighting IPR infringements will remain a difficult challenge, as long as consumers do not perceive buying infringing goods as a serious problem. It is therefore important to mount awareness-raising campaigns to create an “IP culture” deterring consumers from buying IP-infringing goods.

III. REVIEW OF POLICY APPROACHES FOR SOLVING PROBLEMS IN LEGAL AND INSTITUTIONAL FRAMEWORKS WHICH HINDER ENTREPRENEURSHIP AND ENTERPRISE DEVELOPMENT

A. INTRODUCTION

As stipulated by the programme of work of the Committee on Economic Cooperation and Integration (CECI) for 2006-2008 and beyond, the present document reviews policy approaches to solving problems in legal and institutional frameworks, which hinder entrepreneurship and enterprise development. It draws on the findings of the background note prepared by the secretariat for the International Conference on Reducing Barriers to Entrepreneurship and Encouraging Enterprise Development: Policy Options (International Conference) organized on 18–19 June 2007, the outcome of this Conference as well as on contributions by the members of the network of experts on entrepreneurship and enterprise development.

Country experiences in promoting an enabling environment for entrepreneurship and SME development are examined in more detail in a Synopsis of good practices in promoting an enabling environment for entrepreneurship and SME development mandated by the Programme of Work of the Committee for 2008, which is being prepared by the secretariat.

The review of policy approaches is submitted for discussion. The Committee is expected to endorse the recommendations agreed by the above-mentioned International Conference.

B. MAJOR OBSTACLES TO ENTERPRISE DEVELOPMENT

Well-grounded policies aimed at reducing obstacles to entrepreneurship and enterprise development require good practical knowledge of regulatory and institutional barriers faced by would be entrepreneurs, including their scope and importance for the start-ups and already operational enterprises. Company surveys conducted by national associations of entrepreneurs and small and medium enterprises (SMEs), as well as those carried out by the international organizations (Organization for Economic Cooperation and Development, World Bank, European Bank for Reconstruction and Development), and NGOs (Transparency International and World Economic Forum) in the mid-2000s enable a better understanding of outstanding issues in this area.⁹

In particular, the above-mentioned enterprise surveys indicate that entrepreneurs from both developed and catching-up economies, perceive major obstacles to doing business in a similar way. Factors mentioned by company representatives from all regions included inefficient bureaucracy, inadequate access to finance and too high taxes. At the same time, entrepreneurs

⁹ The following studies were used in the preparation of this paper: OECD's SME and Entrepreneurship Outlook (2005), OECD - Asia-Pacific Economic Cooperation (APEC) Member Policy Makers Survey and the Survey of SME's Perceptions of Barriers to Access to International Markets (2006), World Economic Forum's Global Competitiveness Report 2005-2006, UNECE's Trade Finance for Small and Medium-Sized Enterprises in CIS Countries, Doing Business project survey (<http://www.doingbusiness.org/>), EBRD's Micro, Small and Medium-Sized Enterprises Strategy (2006), and Transparency International's Global Corruption Report (2006).

from the catching-up economies of the region also included in the top five impeding factors complicated tax regulations and corruption. Other factors, such as political instability, inflation and foreign currency regulations seem to have been, on average, less important. According to the same surveys, factors such as cumbersome tax regulations and corruption were perceived by entrepreneurs from the catching-up economies as the fourth and the fifth-ranking impediments to doing business.

While the rankings in individual catching-up economies differ, most of the surveyed business executives referred to three clusters of factors inhibiting entrepreneurship and enterprise operation: inefficiency of governance (government bureaucracy and corruption), taxation issues (taxation regulations and taxation rates), and inadequate access to finance.

The participants of the above-mentioned International Conference on Reducing Barriers to Entrepreneurship also emphasized the importance of cultural and psychological barriers, in particular, with regard to women entrepreneurs, entrepreneurs belonging to ethnic minorities and young entrepreneurs. The Conference recommended alleviating these barriers to enterprise growth through a series of measures, which should be gender-sensitive and should inter alia encourage and stimulate entrepreneurial spirit, particularly among young people, and help them understand the opportunities offered by entrepreneurship.

C. LOWERING ADMINISTRATIVE BARRIERS

The administrative barriers faced by entrepreneurs include those encountered when starting a new enterprise or operating an already existing one. In the first case, they relate to a number of steps, stipulated by law, which usually include obtaining an operational permit, notarizing the company deeds, opening a bank account and registering and/or obtaining authorization from various government agencies. Administrative barriers to the already existing enterprises relate to excessive reporting requirements and the associated paperwork, inadequate information on changes in norms and regulations, and ruinous penalties for violations of regulations. While not specific to catching-up economies, the administrative procedures related to the establishment and operation of enterprises are perceived as a major hurdle for entrepreneurs in nearly all countries in that group.

To deal with administrative barriers to entrepreneurship, catching-up economies follow largely similar policies drawing on existing good practices as well as on recommendations of international organizations. They focus on streamlining the legislative basis for enterprise registration and operation, simplifying the procedures to follow and decreasing their number, reducing the amount of time required for entrepreneurs to start operations, lowering the financial burden associated with enterprise establishment and alleviating the supervisory burden incurred by the already operational enterprises.

To these ends, the World Bank and the European Commission inter alia advise governments to:

- create single access points (one-stop shops) to administer the establishment of enterprises;
- standardize paperwork and make enterprise registration electronic;

- eliminate the involvement of courts and notaries in the registration;
- reduce the start-up fees to reflect only administrative costs;
- introduce temporary business licences to ensure the prompt operations' start in 'standard' circumstances; and
- impose 'silence is consent' rule so that once the deadline for processing applications is over, the enterprise should be automatically considered as registered.

Broadly following the above-mentioned recommendations, the catching-up economies put emphasis on various specific means of alleviating the administrative burden.

Several governments have focused on streamlining and harmonizing the regulations which determine the registration and operation of enterprises (Albania, Belarus, Croatia, Moldova, the Russian Federation, Tajikistan, Ukraine, Uzbekistan), simplifying the procedures to follow and reducing their number (Belarus, the former Serbia and Montenegro, Uzbekistan) and introducing the single window approach for start-ups (Lithuania, Romania, the Russian Federation, the former Yugoslav Republic of Macedonia, Ukraine and Uzbekistan). In the Republic of Moldova, for example, the Government, in cooperation with the private sector, has reviewed as many as 1000 relevant laws and regulations, and has repealed 100 and revised 200 of them to render them more conducive to entrepreneurship.

Serbia and the former Yugoslav Republic of Macedonia have eliminated the requirement of a general business permit for most business activities that carry no significant environmental, health or security risks. Several countries (e.g. Bosnia and Herzegovina and Romania) have eliminated the mandatory use of services of both notaries and judges in the process of registration.

Croatia, Moldova and Serbia have introduced electronic systems of company registration that have significantly reduced delays, and Croatia has also adopted and implemented legislation on the use of electronic signature. Montenegro and Serbia currently apply the 'silence is consent' rule to the company registration process.

The efforts of Governments in this area seem to bear fruit. Over the last four years, in many of the catching-up economies the number of procedures associated with enterprise registration has tended to decrease. As a result, during the period of 2003-2006, the average number of days dedicated by an entrepreneur to starting a company decreased by approximately 32 per cent in the new EU members, by 30 per cent in the South-East European countries, and by 26 per cent in the countries of Eastern Europe, Caucasus, and Central Asia. At the same time, in 2006, setting up a company in a catching-up country took on average 32 days, which is twice as long as in 6 developed market economies selected for comparison (15 days on average).¹⁰

¹⁰Data from the following OECD countries were used for comparisons: Finland, France, Germany, Japan, the United Kingdom and the United States.

Policymakers in the catching-up economies also endeavour to reduce the cost of establishing an enterprise. Albania, for example, has undertaken a number of measures to simplify and eliminate redundant procedures in the registration and operation of economic entities. These measures include the modification of the commercial registry law to reduce the time needed for enterprises to be formally registered in court, removal of licensing requirement for companies not engaged in food production and processing, and creation of a one-stop web portal for SMEs featuring the electronic versions of relevant laws and regulations.

During the period of 2003-2006, the average overall cost of establishing an enterprise in a catching-up economy as a percentage of Gross National Income (GNI) per capita¹¹ decreased by approximately 12 percentage points in the South-East European countries, by 6 percentage points in the countries of Eastern Europe, Caucasus, and Central Asia, and by 5 percentage points in the new EU members. Albania, Georgia, Latvia, Romania, the Russian Federation, Slovakia and Ukraine demonstrated the most dramatic reduction of registration costs. In all of these countries, the costs were more than halved over the period of 2003-2006. Other countries, notably Armenia, Azerbaijan, Bulgaria, Croatia, Hungary, Kazakhstan, Kyrgyzstan, Lithuania, Serbia, Slovenia, the former Yugoslav Republic of Macedonia and Uzbekistan, have also shown significant progress in this area. At the same time, by the end of the indicated period, the costs of starting a business in catching-up economies still remained four times higher than in the reference group of selected developed market economies.

The policy approaches towards the minimal capital requirements have varied among countries. According to the World Bank, over the last four years in some countries (such as the former Yugoslav Republic of Macedonia, Ukraine and Uzbekistan), the minimum capital requirements increased, while in others (Bosnia and Herzegovina, Bulgaria, Georgia, Poland and Serbia) they fell significantly. In 2006, in Azerbaijan, Montenegro, Kyrgyzstan and Romania, the capital requirements were either equal or close to zero. However, in Bulgaria, Poland, Tajikistan, the former Yugoslav Republic of Macedonia and Ukraine they ranged from over 90 to 379 per cent of GNI per capita.

Policymakers in Belarus, Tajikistan and Uzbekistan have concentrated efforts on facilitating enterprise operations. In particular, they have extended the validity of operational licences, reduced the number of inspections incurred by operational enterprises and improved coordination between tax institutions. The Government inspections have become fewer and the percentage of inspected SMEs has also decreased. Business operators have had to spend less time on dealing with inspectors.

In this context, the International Conference recommended to Governments to implement consistently measures facilitating enterprise establishment, giving consideration to this end to the recommendations of the World Bank and the European Commission. It also recommended to simplify the procedures governing operational enterprises, in particular through reducing the number of required permits and licences and increasing their validity terms, improving

¹¹ The Gross National Income (GNI) measures the total domestic and foreign income claimed by the residents of the economy. GNI per capita is the Gross National Income divided by the mid-year population. (World Bank website, <http://www.worldbank.org/data/countrydata/aag.htm>).

coordination among various supervisory agencies and reducing the overall number of inspections borne by enterprises.

D. IMPROVING TAX ADMINISTRATION

According to the latest surveys, in the catching-up economies taxation is considered as one of the most important components of the business environment. In particular, governments have to consider addressing both the issue of tax burden and that of associated administrative burden, related to the number of taxes paid and the amount of time companies have to spend dealing with tax obligations.

The limited information available shows that during the 2000s, governments in the catching-up economies have endeavoured to improve tax administration focusing on:

- lowering the tax rates;
- introducing a single tax and/or special taxation schemes for SMEs;
- reducing the number of taxes to be paid; and
- simplifying the tax administration for enterprises, including through administering taxation on line.

According to the World Bank assessment, policymakers in a number of countries have simplified tax regimes in their efforts to create an attractive corporate tax environment.

A range of measures has been implemented to this end. Recently, Croatia, for example, has put in place an e-Government project enabling on-line submission of income and other taxes. Legislation allowing for on-line tax filing has been approved in the former Yugoslav Republic of Macedonia and is currently under consideration in Bosnia and Herzegovina. In the Russian Federation, the calculation of the corporate tax base has been made more transparent and the VAT rate was lowered.

The country efforts to reduce the overall tax burden on enterprises are reflected in company survey results. The company tax rates have decreased in many catching-up economies and, as a result, the percentage of business operators perceiving tax rates as a problem has dropped recently in all groups of catching-up economies.

The data provided by the World Bank show that in 2006 the profit tax rate in the catching-up economies was half as high as in the six leading market economies selected for comparison. However, the payroll taxes as a percentage of gross profit were significantly higher in the first group of countries as compared with the OECD countries (with the exception of France).

Belarus, Georgia, Latvia, Tajikistan and Uzbekistan have reduced the number of taxes to be paid by enterprises, while Albania and Uzbekistan have introduced special tax regimes for SMEs.

Overall, however, the number of tax payments in the catching-up economies remains significantly higher than in the OECD countries. While the new EU-members seem to have been

closing this gap, in the mid-2000s the number of taxes to be paid by enterprises in South-East Europe and the countries of Eastern Europe, Caucasus, and Central Asia was 2–3 times higher than in OECD countries. The same applies to the amount of time companies have to spend to comply with the taxation requirements, which in the same period, as compared with the OECD economies, was particularly elevated in the countries of Eastern Europe, Caucasus, and Central Asia.

The above-mentioned discrepancies may indicate further directions for policy action aimed at aligning the taxation systems to the needs of enterprises. The International Conference also emphasized the need to consider, where appropriate, implementing targeted measures of tax incentives for SMEs.

E. FINANCING OF START-UPS AND SMEs

Access to finance is regarded by enterprises as one of the three most important factors influencing the business operations. At the same time, adequate financing for SMEs is known to be constrained by the perceived high credit risk by banking institutions. The commercial banks often reject project proposals by SMEs because of inadequate collateral, poor financial state of the applying enterprises, and insufficient clarity of business plans. Barriers to bank finance are particularly high for those start-ups whose competitive strength is based on research and development and innovation, because those companies often lack physical assets which can be used as collateral. In the same way, in some countries of the region, women entrepreneurs face difficulties in fund-raising because they don't have property of their own to be used as collateral.

In order to facilitate access to finance to emerging enterprises, countries use a variety of policy measures such as:

- modifying the legal requirements to facilitate the use of company assets as collaterals;
- creating the legal basis for sharing the information on borrowers among financiers;
- developing alternative sources of financing;
- facilitating the development of leasing; and
- promoting micro-financing.

Regulators in Ukraine, for example, have introduced changes in credit legislation. In particular, it has introduced a new collateral law, allowing enterprises to use a broader range of assets as collateral and allowing creditors to appropriate those in case of non-payment without a lengthy court trial.

The introduction of credit registers accumulating all information on financial obligations of enterprises not only improves the enterprise access to finance but also facilitates its exit from the market in case of bankruptcy. In recent years, Kazakhstan has introduced new laws to encourage sharing of information on borrowers, and Bosnia and Herzegovina, Bulgaria, the Russian Federation and Ukraine have established credit registers (bureaux) and created a legal basis for banks to share information with those institutions.

While recently, banks in catching-up economies have increasingly provided finance to start-ups and SMEs, given the persisting weakness of the financial system in those countries, some governments have developed alternative sources of financing for small and medium-sized enterprises.

In particular, Governments of Armenia, Kazakhstan, Kyrgyzstan and Uzbekistan have developed, in cooperation with the private sector, special programmes, which include loan guarantees and loan facilities for SMEs. Similar services are also extended in cooperation with international financial institutions and private funds.

Governments have also drawn on the assistance of international institutions to foster the development of leasing facilities for SMEs. In Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan they have introduced a number of laws and taxation rules making the leasing operation more attractive for domestic and foreign investors.

In a number of catching-up economies governments have introduced legislative and regulatory changes, which facilitate the supply of micro-finance for SMEs. Tajikistan has created an enabling legal and regulatory framework for this sector, while Georgia and Uzbekistan have adopted legislation to strengthen the lending capacity of micro-finance institutions, including those not belonging to the banking sector (credit unions).

The growing sophistication of financial systems in the catching-up countries as well as the development of alternative sources of financing for SMEs have contributed to the alleviation of the access to finance problems and this is reflected by company surveys conducted by the EBRD and the World Bank. During 2002–2005, the percentage of companies considering the access to finance as a problem decreased in all groups of catching-up economies, and most importantly in the countries of Eastern Europe, Caucasus, and Central Asia. However, according to the World Economic Forum 2006 survey, in the mid-2000s entrepreneurs in these countries still found it more difficult to obtain a bank loan without collateral as compared with their counterparts from developed market economies.

The International Conference recommended to governments to design, in consultation with banking institutions, measures facilitating the access of SMEs to bank finance, in particular special credit schemes for long-term investment financing with prolonged grace periods, loan guarantees provided via public-private SME-focused programmes, and more favourable collateral acceptance rules. Governments were also advised, drawing on assistance from international financial institutions, to develop alternative forms of funding for start-ups and SMEs, in particular financing from specialized public-private funds, leasing, micro-financing, etc., as well as to support the “investment readiness” of enterprises through training and other awareness-raising initiatives that enhance their ability to attract finance.

F. FACILITATING THE EXPANSION OF SMEs ABROAD

Foreign expansion of enterprises in general and SMEs in particular is considered as one of the prerequisites of enhanced economic efficiency in today's global economy. At the same time, surveys by international organizations, OECD in particular, show that SMEs are under represented in the internationalized sector of the economy, and international trade in particular.

Exporting and investment abroad by SMEs are hindered by a number of barriers, which relate both to internal weaknesses of enterprises and external conditions of their operation. The former include inadequate access to financing and shortage of working capital, insufficient information on business opportunities and markets abroad, and lack of communication with potential customers, while the latter include home and host country regulations unfavourable to exporting, importing and cross-border investment, and the lack of relevant incentives from governments.

The government actions aimed at reducing these barriers focus on facilitating the access of foreign traders and investors to information on markets and relevant regulations. The findings from the OECD - Asia-Pacific Economic Cooperation (APEC) Member Policymakers Survey and the Survey of SME's Perceptions of Barriers to Access to International Markets (2006), emphasize also the importance of promoting the SME participation in global value chains and clustering as a means of overcoming trade barriers.

Throughout the UNECE region, government regulations that companies have to apply when operating outside their home markets are complex and change frequently. In order to address this issue, in the United Kingdom, for example, all changes in regulations enter into force only twice a year, which significantly reduces the amount of time required to find out which of them apply at any given moment. The United Kingdom Government has also created an online trade "single window", which integrates information provided by the relevant departments (revenue and customs, trade and industry, and environment). Along the same lines, in Sweden a one-stop information centre has been set up to provide access to information on Swedish trade rules and regulations to potential exporters from developing countries.

Several catching-up countries have promoted enterprise cluster development at regional, interregional and cross-border levels. In 2005, Slovenia created the National Centre of Clusters and Technology Network, providing a platform for cooperation between companies, technology networks, investors and the Government. Similarly, the Czech Republic offers financial grants to create an infrastructure enabling the establishment of clusters, including those with foreign partners.

It was argued at the International Conference that further assistance to foreign traders and investors by governments can focus on providing them with additional information resources, including measures facilitating the intellectual property rights protection for SMEs, foreign traders' innovation and technological capacity, as well as costs of applying the international standards for exporters.

In the context of facilitating the SME expansion abroad, the International Conference recommended to member States, in line with the OECD recommendations, to create mechanisms that facilitate the participation of SMEs in the trade policy process, assist exporting enterprises in

diagnosing and understanding the business environment they face in host countries, and design programmes that help firms to overcome trade barriers.

G. REDUCING CORRUPTION

Enterprise surveys conducted in the early 2000s provided evidence of high corruption perceptions in the catching-up economies and signalled that illegal payments during the business registration and operation were quite common. The 2002 and 2005 company surveys showed that about a quarter of the interviewed companies in the countries of Eastern Europe, Caucasus, and Central Asia and in South-East Europe considered unofficial payments frequent, and this finding is confirmed by the data provided by Transparency International.

Recently, the catching-up economies have endeavoured to improve overall public governance and intensified their fight against corruption in a number of areas. In particular, this concerns:

- the reform of the judicial system;
- tax reform;
- institutional reform, including the establishment of new anti-corruption advisory bodies; and
- enhanced accountability of civil servants.

In Belarus, Ukraine and Kazakhstan, for example, comprehensive state programmes to fight corruption have been put in place, aiming inter alia at enhancing the efficiency of law-enforcing agencies and establishing effective mechanisms for the prevention of corruption, i.e. law enforcement.

Georgia, Kyrgyzstan, Ukraine and Kazakhstan have started reforms of their judicial systems intended to increase the independence of courts and ensure adequate remuneration for judges in order to reduce the incentives for bribe taking.

Tax reform has also contributed to reducing the incentives of tax authorities to accept bribes. Albania, Bosnia and Herzegovina, Georgia, Poland and Slovakia have introduced new tax systems that intend to contribute to reducing corruption by ensuring greater transparency, increasing the capacity and incentives for enterprises to pay taxes and limiting tax officials' ability to abuse their prerogatives and collect bribes. A number of member States, notably Belarus, Kazakhstan, Kyrgyzstan and Ukraine, are considering simplifying taxation procedures and introducing on-line systems of interaction between Government officials and companies in order to reduce possibilities for tax evasion and bribes.

The reform of institutions in the catching-up economies has contributed to fighting corruption through establishing specialized anti-corruption advisory bodies. Croatia has set up a special office for fighting corruption and organized crime. Georgia has established an anti-corruption working group composed of Government officials and NGOs with the goal of developing an anti-corruption strategy. In other countries (e.g. Armenia, Bosnia and Herzegovina, and Serbia) the

anti-corruption activities are coordinated among several ministries, agencies and prosecutors' offices. In Kazakhstan, the Government has streamlined the functions of enforcement agencies to avoid duplication in investigating corruption cases. Montenegro's Ministry of Finance has signed a Memorandum of Understanding with business associations to ensure their participation in drafting the relevant legislation.

Finally, an effort has been made to increase the transparency of operation and the accountability of civil servants. Policies aimed at raising the effectiveness of civil service include recruitment through competitive exams and continuous professional training of civil servants. In 2004, the Parliament in Kyrgyzstan adopted a law, according to which civil servants could be temporarily suspended from duties in case of a conflict of interest resulting in an improper benefit for a third party. At the same time, the legal requirements to declare incomes by public officials also have been strengthened in a number of countries. Both in Poland and Romania, public employees disclosing breaches of the law inside the institutions in which they worked were provided legal protection.

At the international level, all countries of the UNECE region have become parties to at least one of the major conventions related to fighting corruption. The United Nations Convention against Transnational Organized Crime has received the largest number of ratifications by the catching-up countries. All the new EU Member States have ratified the Council of Europe Civil Law Convention on Corruption and the Council of Europe Criminal Law Convention on Corruption. These two conventions have been also ratified by about half of the countries of Eastern Europe, Caucasus, and Central Asia. Finally, the OECD Anti-bribery Convention has been ratified by seven of the catching-up economies, including the Czech Republic, Hungary, Poland and Slovakia, which are OECD members, and also by Bulgaria, Estonia, and Slovenia.

To summarize, the recent years have borne witness to intensified government action against corruption. However, its effects on enterprise development are not easy to quantify. While longer time series are not available, the limited data for 2002 - 2006 from the EBRD-WB Survey and from Transparency International attest to a certain improvement in the corruption situation in the new EU members in the first place, while in the countries of Eastern Europe, Caucasus, Central Asia and South-East Europe progress seems to have been less significant.

In this context, the International Conference recommended to central and local governments to implement systemic measures aimed at improving public governance, and alleviating corruption and unofficial payments by enterprises. Strengthened independence of judges, enforcement of taxation rules penalizing illicit payments, the establishment of anti-corruption public-private advisory bodies and enhanced accountability of civil servants should serve the interests of emerging entrepreneurs and enterprises. At the same time, the Conference recommended to encourage business operators to embrace and enact the ten principles spelled out by the United Nations Global Compact.

H. CONCLUSIONS

The available information provides evidence that recently governments of catching-up countries have endeavoured to reduce the administrative barriers to enterprise establishment through the simplification of registration procedures, introduction of standardized forms and a “single window” approach for business registration, facilitation of online registration, reduction of administrative costs and minimal capital requirements for start-ups, and introduction of the “silence is consent” rule in registration. In order to facilitate the operations of the already existing enterprises, governments have reduced the number of required permits and licences, increased their validity terms, improved coordination among various supervisory agencies and reduced the number of inspections imposed on enterprises.

The efforts of governments have borne fruit resulting in a considerable reduction in the number of days required for an entrepreneur to set up a company and lower costs associated with business registration. While progress in reducing administrative barriers is to be recognized in all groups of catching-up economies, they still remain an important impediment. The number of days an entrepreneur has to spend to set up a company in an average catching-up country is still twice as high while the cost of starting a business four times higher than in a group of developed market economies selected for comparison. Further policy action by governments could focus on consistent implementation of international good practices in this area summarized in the recommendations of the World Bank and the European Commission.

A number of catching-up countries have undertaken to simplify the taxation procedures, reducing the number of taxes to be paid and lowering the tax rates for enterprises. In 2006, the profit tax in the catching-up countries was half as high as in the group of leading market economies selected for comparison. However, the payroll taxes in the catching-up countries were significantly higher, and the same applies to the number of tax payments and the time required to companies to comply with taxation requirements. In this area, governments could continue simplifying the tax administration and reducing the number of taxes to be paid by enterprises. They might also consider assessing the impact of payroll taxes borne by companies on the development of entrepreneurship.

Governments have endeavoured to improve the access of start-ups and SMEs to financing through facilitating the use of a broader range of assets as collateral, setting up credit registers, developing non-bank loan and guarantee facilities for SMEs, leasing and micro-financing. As a result, the percentage of companies considering the access to finance a problem has decreased in all groups of catching-up economies. Further policy action in this area could focus on designing special credit schemes for long-term investment financing of SMEs with prolonged grace periods, and introducing more relaxed collateral acceptance rules. At the same time, governments may wish to support the “investment readiness” of enterprises through training and other awareness-raising initiatives that enhance their ability to attract finance.

In order to reduce barriers to SME expansion abroad, governments have facilitated the access of foreign traders and investors to information on markets and relevant regulations. To this end, they have increasingly provided the relevant information on line and assisted exporters in improving their understanding of business environment in home and host countries. In the future, in line with the OECD-APEC recommendations, governments might consider strengthening their

information support for SMEs in the area of IPR protection and international standards, further facilitating the involvement of small and medium-sized enterprises in trade policy design and implementation, as well as enabling their participation in global value chains.

In order to reduce the potential for corruption during the process of enterprise registration and operation, governments have strengthened the relevant law enforcement, increased the independence of courts and judges, rendered the taxation systems more transparent and strengthened the accountability of civil servants. While the effects of these policy actions are not easy to quantify, the limited data available attest to a certain improvement in the corruption situation in the new EU countries, while in the other sub-regions the survey results are less convincing. Future anti-corruption measures should be consistent and complement each other in all areas concerned, and should benefit from the strengthened cooperation of governments with other stakeholders.

The research by the secretariat as well as the outcome of the International Conference also attest to the need for enhanced public-private cooperation in the design and implementation of enterprise development policies at national and sub-national levels, and more active participation of all relevant stakeholders in the drafting and implementation of normative and regulatory acts in this area.

The information on good practices in reducing barriers to enterprise development could also be used in demand-driven capacity-building programmes for government officials, company managers and would-be entrepreneurs within requesting member States.

IV. SYNOPSIS OF GOOD PRACTICES IN FINANCIAL INTERMEDIATION IN SUPPORT OF INNOVATION AND KNOWLEDGE-DRIVEN DEVELOPMENT

A. INTRODUCTION

The Programme of Work of the Committee on Economic Cooperation and Integration (CECI) for 2007-2008 in the focus area “Promoting an enabling environment for efficient financial intermediation in support of innovative development” envisages the preparation of the following documents:

- Comparative Review of financial intermediation supporting the knowledge-driven development and of national practices facilitating access of innovating entrepreneurs to domestic and foreign finance.
- Synopsis of good practices in financial intermediation in support of innovation and knowledge-driven development.

The Comparative Review of national policies and practices, drafted in consultation with the CECI network of experts and stakeholders, is available on the CECI website (<http://www.unece.org/ceci/>) and will be released as an official UNECE publication under the title “Financing Innovative Development: Comparative Review of the Experiences of UNECE Countries in Early-Stage Financing”.

This Synopsis is based on the findings of the Comparative Review and the outcome of an expert meeting, which took place in Geneva on 3-4 May 2007 (ECE/CECI/FID/2007/2). It focuses on the provision of early-stage financing to innovative technology-based enterprises with a view to identifying policy options and recommendations to facilitate the access of these enterprises to early finance.

The experiences of the UNECE countries constitute a fertile ground for transnational policy learning. The diversity of national economic and institutional conditions and the related experiences provide valuable lessons to policymakers for further improvements in public policies dealing with the related policy issues.

B. FINANCING INNOVATIVE ENTERPRISES

Innovative enterprises lack a track record, tangible evidence of product or service feasibility as well as market potential. Entrepreneurs are uniquely positioned to perceive business opportunities and anticipate their market potential. However, the financial resources needed for these efforts are beyond the means of the founders, who require external support while innovative enterprises usually face severe constraints in raising finance from mainstream financial intermediaries.

Potential investors find it difficult to verify the soundness of proposals and distinguish between high- and low-quality opportunities. In consequence, investors either set prohibitive financing costs or withdraw entirely from this early-stage enterprise space. Given the intangible nature of

its assets, the value of an innovative enterprise is based on the long-term growth potential derived from scientific knowledge and intellectual property. This creates unproven and unpredictable patterns of cash generation, which may be a deterrent to external investors.

To fill this financing gap, specialized intermediaries need to emerge in order to provide financial support to innovative enterprises in their most uncertain development phases. The availability of informal individual investors and formal venture capital financing and the management and technical skills they can contribute are critical for innovation and knowledge-driven development.

The emergence and growth of a financing infrastructure for early-stage support of innovative enterprises is a complex process, depending on many enabling conditions and requiring efficient allocation and recycling of capital. The development of national venture capital industries has often received government support as a component of general innovation policies. Well-targeted public interventions play an important role in shaping a vibrant venture capital industry.

C. THE LEVERS OF EARLY-STAGE EQUITY FINANCING

Any policy targeting the development of an effective infrastructure for financing innovative enterprises needs to be based on a sound understanding of the motivations of the major private players in the early-stage financing process as well as the “levers” that affect the smooth functioning of this process. Business angels and venture capital firms play central and complementary intermediary roles in the early-stage financing of enterprises, providing capital, expertise and legitimacy to ventures that the traditional financial intermediaries find too risky. While business angels invest their own money, venture capital firms need to raise funds from other sources (such as institutional investors), which also affects the development of the industry.

The early-stage financing process can be regarded as a self-reinforcing cycle consisting of four main stages:

- Fund-raising;
- Investing;
- Managing / value-adding; and
- Exiting.

For business angels and venture capital (VC) firms to be effective and self-sustaining in their intermediary roles, they need to operate in an environment that allows them access to funds, investment opportunities, and exiting possibilities that in turn enable them to generate returns commensurate with the risk they undertake and to re-deploy their capital in the different stages of this cycle.

All four stages need to be developed and active for the early-stage financing process to function properly, avoiding possible bottlenecks. A preliminary policy action would be to map out the financial landscape to identify areas of intervention. There is a certain degree of overlap between

the various instruments targeting these different stages, which should be borne in mind when designing policy interventions in order to maximize synergies. In addition, because each lever engages differently with business angels and venture capital firms, it needs to be attuned to the operating specifics of each of these players.

The fund-raising stage of the cycle pertains to the availability of funds for allocation to innovative enterprises by specialized financial intermediaries. For business angels this means overcoming the opportunity costs of alternative wealth allocations by making such investments attractive. For venture capital firms this involves access to institutional investors with long-term perspective as a source of funding and structuring of funds.

The investing stage of the cycle includes the flow of investment opportunities to business angels and venture capital firms as well as the availability of requisite investment skills to evaluate these opportunities and select projects suitable for funding. The flow of investment opportunities reflects a country's innovative environment, entrepreneurial culture as well as the existence of early-stage support infrastructure (for example, feasibility grants, science parks, incubators) that help make such opportunities "investment ready". The evaluation and selection skills result from the development and sharing of knowledge as a result of experience.

The value-adding stage of the cycle concerns the availability of requisite skills for the oversight, management, and development of innovative enterprises through providing proper incentives to management, strategic and operational advice, access to external managerial, technical and marketing expertise as well as providing contacts with potential suppliers and customers. Many of these skills are honed by the investors' prior experience, either as investors or in relevant market or industry fields.

The exiting stage of the cycle pertains to the opportunity for investors to convert the value-added into funds that can be deployed in another wave of innovative enterprises. Key in this stage is the presence of capital markets open to financing small and young enterprises with high-growth potential. Acquisitions by existing firms represent another form of exit.

A review of the early-stage equity financing landscape in the UNECE region reveals important differences across countries. Their understanding could serve as a background for policy discussions in individual countries:

(a) The scale and intensity of business angel activity, given sufficient supply of potential deals, is sensitive to the tax and economic environment in a country. Policymakers therefore need to identify and alleviate the perceived barriers to business angel investing.

(b) The absence of regulatory hurdles does not guarantee sufficient investment by institutional investors in venture capital funds as this depends also on expected investment returns. The venture capital industry needs to be given a chance to develop and mature to show evidence of positive performance.

(c) There are wide variations in entrepreneurship attitudes and availability of early-stage financing and support for innovative enterprises. These interact with other aspects of national economic policy, such as labour laws and taxation to influence the supply of high-

quality innovative firms and, consequently, the demand for business angel and venture capital investment. Policy efforts to develop the venture capital industry (supply side of financing) should be complemented by initiatives fostering entrepreneurship (demand side).

(d) Critical business skills are needed for value-added management of equity investments. While many of these skills emerge through hands-on experience, the industry learning effects are generally slow to materialize. The formation of networks and industry associations, the mobility of VC managers, interaction with experienced VC funds, and recruitment of experienced managers from a variety of industries should be encouraged to accelerate the industry learning curve.

(e) The VC industry in Europe is currently faced with a fragmentation of venture capital markets along national lines. As a result, cross-border VC investments are limited and hampered by divergent national VC frameworks. Ongoing policy efforts to reduce this fragmentation should be continued to fully reap the potential of VC funds for investing in innovative small and medium-sized enterprises (SMEs).

(f) Historically, the NASDAQ market in the United States has provided the most viable exit route for VC investments and thus given a significant boost to the development of the VC industry in the United States. The European stock-market segments designed for relatively young firms have also made a positive contribution to increasing exit possibilities. The Alternative Investment Market in the United Kingdom has developed into a fairly accessible platform, including for non-European companies. Reducing regulatory burdens and fragmentation across national frameworks can also help other exchanges emerge as attractive capital markets for small, innovative, high-growth firms.

D. GOOD PRACTICES IN EARLY-STAGE EQUITY FINANCING

The equity financing cycle interfaces with several major aspects of a country's institutional and innovation environment and is sensitive to government policies that affect institutional investing, capital markets, innovation and entrepreneurship. Governments have played a key role in the development of VC industries, either indirectly, by affecting the conditions that influence the equity financing cycle or directly, by providing capital and incentives to innovative firms, business angels, and VC funds.

Governments have played major roles in jump-starting or facilitating the development of the VC industries in Denmark, Germany, Ireland, Israel, Norway, the United Kingdom, and the United States, among others. More recently, strong policy initiatives to develop early-stage financing have been implemented in Kazakhstan and the Russian Federation.

Countries vary in their economic and innovation history, in the conditions and institutions that support the cycle of innovation finance and in the nature and sequence of measures to address the deficiencies of that cycle. The transferability of national experiences cannot be taken for granted and needs to be carefully considered. On the other hand, cross-country comparisons can serve to better appreciate the importance of framework conditions and establish causal relations between instruments and outcomes.

Evaluating or imitating the experience of individual countries requires sufficient understanding of the context in which it has been enacted, in particular the set of initiatives preceding it as well as the degree of development of each of the components of the equity financing cycle within the particular country.

The identification and understanding of good practices is hindered by the relative lack of monitoring and formal evaluations of implemented programmes. The impact of particular programmes is often assessed only by the amount of capital allocated or the number of supported enterprises. More elaborate programme monitoring and evaluation should be a policy priority in order to provide learning opportunities for programme design and implementation.

The policy interventions in the area of early-stage financing can be distinguished according to:

- Goal and focus
- Mode of delivery
- Comprehensiveness
- Sustainability.

Policy schemes vary significantly in their espoused focus. Whereas most programmes aim to support innovative enterprises, there may be additional restrictions regarding the size, stage of development, industry sector, origin (for example, spin-offs from universities and other public research institutions), and geographical location of the recipient enterprises.

The specificity of the goal and focus of each initiative has important implications for its implementation and ultimate effectiveness. It is important to target exactly the enterprises that face problems in their access to financing in order to avoid allocating funds to firms that do not face such problems. Programmes need also to take into account how the future financing needs of the targeted companies would be covered, beyond the initial support, including the likelihood of raising private resources.

Government programmes can allocate resources either directly to the target enterprises, through publicly managed investment funds or grant agencies, or indirectly, through specially selected intermediaries such as private individuals (business angels), venture capital funds (including seed capital funds), incubators, and technology transfer offices. The choice of intermediary is typically related to the specific focus of the programme.

One form of engagement with intermediaries is based on funding their establishment and initial capital through loans, business development grants or equity. In some cases, the funding of venture capital funds requires a matched participation by private investors. There is wide variation across countries and programmes in terms of the amount of public funding provided as well as the matching private funds. Another form of engagement encompasses the provision of debt or equity guarantees to private investors as well as tax incentives to individual, corporate or institutional investors for investments in specific types of enterprises.

A major issue to consider in regard to the mode of delivery of each programme is whether the government assumes the funding decision or delegates it to private operators. If funding decisions are handled by the government, attention should be paid to the implications in terms of possible political interference and bureaucratic efficiency of using a central single agency versus multiple local agencies.

While central agencies may be more resistant to political capture in some contexts, regional delivery is more suitable to overcome the information problems involved in investment decisions. The regional dimension is crucial in the design of public programmes of support, particularly for large countries. At the very early stages of the financing cycle, proximity between investors (private and public) and target companies is highly desirable.

Achieving synergies and complementarities among programmes needs to be assigned high priority in the policy formulation. The effectiveness of a country's set of initiatives depends on whether all stages of the equity financing cycle are properly addressed. Regulation, tax, innovation, and early-stage financing policies could be used to target the existing gaps in the equity financing cycle.

There are great variations across countries in the comprehensiveness and coordination of the various programmes within the country as well as the governments' sensitivity to the changing needs of the early-stage financing market. In some countries (for example, Finland, Israel, the United Kingdom, the United States), there is continuous learning from the experience with previous programmes, whereby new programmes are designed to address the deficiencies of their predecessors. The ability to learn from previous experience and continuously track and evaluate the market impact of a programme should be considered an integral part of the design of effective policy interventions.

The experience of individual countries shows ad hoc approaches in which public resources are provided (typically through grants) without consideration for the conditions in which the recipient enterprise will operate before and after receiving the grant. In contrast, coordinated approaches introduce series of schemes, each building on the experience of previous, or seeking to complement concurrent, schemes in addressing new constituents or providing increased support for existing constituents.

In Europe, the United Kingdom is a clear example of a coordinated approach, in which efforts to encourage business angel investing and university-related entrepreneurial activity are followed by initiatives to promote venture capital funds with a different focus regarding sectors, regions and stage in financing. Similarly, Denmark, Finland, France, Ireland, Norway, and Sweden are examples of countries in which large-scale public venture capital activity is complemented by support for seed-stage and incubator activity. Recently the Portuguese FINICIA Programme targeted the creation of regional platforms with universities, incubators, local partners and formal and informal VC investors.

Where national programmes aim to foster the creation of a national VC market, their success depends on their ability to leverage private funding. The economic viability of small seed funds has long been in question, as there is a delicate balance between the size of a fund and the practicality of making seed- or early-stage investments. Creating larger funds runs the risk of

their moving towards expansion-stage financing; creating smaller funds runs the risk of their being unsustainable.

Many government-sponsored fund-of-funds programmes address the size and sustainability issue by leveraging private capital as well as providing an appropriate compensation structure, such as capping the returns on the government funds, with excess returns accruing to the VC managers. Such an approach increases both the fund's ability to provide follow-on financing and the VC managers' potential returns from early-stage investments. In addition, it links the fund with institutional investors, which can serve as the basis for future fund-raising activity.

Sustainability has also a regional dimension as many of the SME financing programmes have an explicit regional focus. The state's provision of equity finance alone cannot resolve issues such as, for example, the local level of entrepreneurial experience, the quality of intellectual property and the role of local universities in the development process. Integrated interventions may be required to address these problems.

E. FUND-RAISING

Good practices can be considered in different aspects of the fund-raising stage of the VC cycle such as enhancing the availability of risk capital, improving relations between private fund providers and VC firms and providing incentives for VC managers to invest in early-stage, innovative firms and identify and select commercially feasible, high-potential firms.

The provision of public funds for venture capital activities is among the most widespread practices seeking to increase the availability of risk capital. Two main approaches exist:

- Publicly managed funds
- Privately managed funds.

In several countries (Canada, Denmark, Finland, Norway, Portugal, Spain, and Sweden), funds are placed in special agencies, typically affiliated with institutions promoting business or industrial development, with a mandate for direct investing in new, small or innovative enterprises. Publicly managed funds may serve as an important initial source of capital that allows for the accumulation of investment knowledge and expertise that can gradually flow into the private sector. Funds that have an explicit focus on early-stage, high-risk projects may be particularly relevant.

However, special care should be taken to establish an adequate system of incentives and eliminate political interference into the activity of publicly-managed funds. Evaluations of such public programmes have shown that the investments made through these programmes tend to be less risky and oriented towards more established companies.

As market mechanisms begin to emerge, public funds are best used to complement and support such mechanisms. In this regard, the programmes involving publicly managed funds have moved towards a greater involvement of private investment managers, either by shifting their focus to

fund-of-funds allocations, privately managed funds (Canada, Denmark, Finland, and Norway) or through outright privatization (Sweden).

As privately managed funds take precedence and government venture capital activity is reduced, the Scandinavian countries have shifted their direct involvement towards nascent, seed-stage enterprises by establishing incubator programmes or seed funds. Such programmes can be seen as complementing the existing market mechanisms by increasing the deal flow of “investment ready” firms.

Another approach to the provision of public funds for venture capital investment activities has been through engaging private investment managers and leveraging additional private funds. In a typical scenario, the government (or its agency) acts as a cornerstone investor, providing a certain percentage of the fund’s capital. This approach is now widely followed in a number of countries: Canada, Denmark, Finland, France, Germany, Ireland, Israel, the United Kingdom, United States, and, more recently, Kazakhstan, Latvia, and the Russian Federation, as well as by the European Investment Fund. Governments’ investment includes both straight equity and subordinated loans.

The main logic behind privately managed funds is that professional VC managers have clear interests in identifying and backing commercially successful enterprises. Where there is a careful selection of the funds to be supported (through competitive bidding or detailed evaluation of applications), the government’s involvement plays an important legitimacy role for establishing relationships between VC firms and institutional investors.

In addition, such government programmes pay increasing attention to ensuring that the risk-return profile that VC managers face is appropriate for undertaking early-stage investments and encouraging managers to pursue the investments’ upside (that is to say, its appreciation). Providing downside protection – through outright guarantees or through refinancing investments with subordinate loans – has been counterproductive, as the experience of Germany, Israel, and the Netherlands has shown.

The experience with the Small Business Investment Company (SBIC) programme in the United States exemplifies the importance of incentive structures for promoting early-stage investments. In the early period of the programme, the need to service the loans provided by the Small Business Administration (SBA) to the participating investment companies made it impractical for these companies to invest in enterprises without immediate cash-generation ability. The change from loans to participation through preferred securities, deferring early interest payments in exchange for subsequent profit participation, created a significant shift towards seed-stage investments.

The Yozma programme in Israel is another example of upside incentives to VC funds: each fund had the option to purchase the Government’s shares for up to five years from the inception of the fund. To a similar effect, recent programmes launched in the United Kingdom (Enterprise Capital Funds), Latvia (through the Latvian Guarantee Agency) and the Russian Federation (Russian Venture Company) cap the returns accruing to the Government’s share with all excess returns going to the investment managers and limited partners. Such arrangements create an asymmetric allocation of the returns from successful investments, making them more commensurate with the higher risk of early-stage investments.

Tax incentives of various types and with different targets have been used to increase the availability of risk capital. Several countries have been offering tax incentives for individuals who invest in private businesses. Schemes can also target pre-angel sources of finance, notably founders themselves or their friends or relatives. A few programmes have explicitly targeted existing companies investing in innovative SMEs. Some tax incentives have been designed to encourage individuals to invest in venture capital funds.

The review of policy initiatives in the area of fund-raising suggests as an overarching principle that government involvement should be designed to complement and support rather than displace market mechanisms for allocating capital to innovative enterprises, while fostering the development of the local formal and informal venture capital industry.

As a basic condition, national regulations on investments by pension funds, insurance companies, and other institutional investors in venture capital funds and the tax treatment of investment vehicles need to be in line with those in countries with leading VC markets. Some of the regulations that may need to be reviewed include the existence of quantitative restrictions on allocations to “alternative” asset classes as well as “safe haven” and “prudent man” rules that guide investment decisions.

Where the local pool of institutional capital is insufficient or inappropriate, policy efforts should target the creation of conditions attractive to capital from foreign institutional investors. Such conditions include aligning the local tax and regulatory framework with those available in countries competing for foreign institutional capital.

Some countries have developed dedicated fund structures for raising venture capital. In doing so, attention should be paid to ensure that these structures retain the most effective features, such as those of the Limited Liability Partnership – fixed life, flow-through distributions, deferral of tax liabilities until securities are sold and lack of interference by limited partners. In countries where such dedicated structures do not exist, policymakers may consider their introduction.

Government initiatives to encourage venture capital investments need to pay close attention to providing proper incentives for private investment managers to select and develop high-growth, commercially viable enterprises:

- Downside protection does not create such incentives;
- Providing asymmetric allocation of the gains on successful investments – through options to buy the government’s stake or capping the returns accruing to the government – provide such incentives by improving the risk-return profile of innovative enterprises; and
- A clear programme focus can be more easily translated into proper incentives.

Tax incentives, including tax relief, loss relief and capital gains relief, are generally effective in encouraging individual and corporate investments in private enterprises. However, fiscal rules need to be unambiguous in ensuring that the recipient enterprises are those for which the scheme

is intended and that the investments would have not taken place in the absence of fiscal advantages.

Even when the regulatory environment is favourable for raising VC funds, local institutional investors may stay at bay due to insufficient knowledge of the VC industry. Programmes to educate managers of institutional funds and build relationships with the local VC community can help address such issues. Promoting the establishment of specialized investment advisors could give additional boost to the consideration of venture capital as an institutional investment class.

When institutional investors are open to investing in VC funds but have insufficient information about particular funds, governments may act as cornerstone investors, providing the necessary certification to fund managers. Information service agencies or financial intermediaries, promoted with the participation of public authorities, could serve to disseminate key data facilitating investors' decisions.

To smoothen interruptions to VC cycles, government fund-of-funds programmes may be introduced in periods when VC fund-raising slows down. This would ensure that existing VC firms are able to raise additional funds for follow-on financing to their portfolio companies and would also help them in building a track record that will be instrumental for the next wave of private fund-raising.

F. INVESTING

Good practices at the investing stage concern the following areas of intervention:

- Improvement of the entrepreneurial climate;
- Increasing the supply of investment ready enterprises;
- Improving the information flow between entrepreneurs and investors; and
- Providing investors' guarantees.

Programmes can be deployed to facilitate the investing process by promoting the creation of new enterprises, particularly those based on the commercialization of scientific knowledge generated in public research institutions, thus increasing the flow of "investment ready" enterprises to private investors and professional venture capital firms.

Among the most prominent initiatives in this area have been the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programmes in the United States, providing early-stage research and development (R&D) grants to small technology companies. The programmes provide crucial funding for feasibility studies (stage I) and prototype development (stage II), thereby "graduating" enterprises with strong commercialization potential that are able to attract private capital.

In addition to the staged nature of the funding, the effectiveness of these programmes stems from its decentralized decision structure, spread among 11 federal agencies and actively supported by

technology-transfer offices in individual research universities. Technology-transfer offices not only make researchers aware of the existence of the R&D grants but also work with potential entrepreneurs to develop and appraise their ideas as well as prepare their grant applications.

In Europe, several programmes are engaged in relatively centralized provision of coaching and seed funding in the form of grants or loans to technology entrepreneurs in order to make the recipient enterprises better prepared and more attractive to potential private investors. Examples of such programmes can be found in Austria (Seed Funding and “LISA” programmes), Belgium (Flemish Innovation Fund), Finland (TULI, TEKES, and Start Fund Vera programmes), Germany (High-Tech Start-Up Fund), the Netherlands (Techno Starter programme), the Russian Federation (START programme) and Spain (New Technology Firms programme).

Business angel networks play an important role in bringing entrepreneurs and private investors closer and could therefore also benefit from public assistance. In order to overcome information problems and enhance investment readiness, policymakers could also consider programmes that facilitate presentation forums and investment negotiations for businesses in search for initial funding and private investors, such as the marketplace (INTRO) operated as part of the PreSeed Finance programme in Finland. Another example is the Centre for Innovation and Business Development in Spain (Catalonia), which functions as a “one stop shop” for feasibility studies, funding, and project development.

Many countries have programmes that provide some type of guarantee in order to facilitate the access of SMEs to bank lending. These programmes need to have a clear focus on innovative enterprises in order to increase their impact. One of the longest running programmes, the Small Firms Loan Guarantee Scheme in the United Kingdom, is notable for shifting its focus at the end of 2005 towards newer businesses. Such an approach is also present in the new FINICIA programme in Portugal.

Several guarantee schemes offering equity guarantees subject to certain limitations have an explicit focus on innovative enterprises. Such programmes exist in Austria, France (OSEO-France Active Garantie), Italy (Guarantee Fund for Digital Technologies SMEs), and Portugal (New Technology Based Companies programme). To the extent that they cover early-stage innovative companies, these programmes resemble feasibility grants with the added supervision by the private investors receiving the guarantees.

There are a number of policy implications that can be drawn from the review of the experience of UNECE countries in this area:

- The supply of innovative enterprises depends on the existence of a well-established entrepreneurial culture and awareness, particularly in education and research institutions;
- Grants represent an important and potentially effective source of financing for feasibility studies and product development. Staged distribution of grants could be used as an effective tool for dealing with the uncertainty inherent to the commercialization of scientific knowledge and for ensuring that more funds are allocated to projects with increasing commercialization promise. Decentralization and the active engagement of

research institutions in the grant giving process foster higher programme awareness and more effective decision-making; and

- There has been limited focus on the availability of investment skills among local private investors. There is much room to facilitate skills development and knowledge transfer from regions with more established infrastructure for early-stage innovation finance.

Education plays a major role in the promotion of entrepreneurship. Governments could consider introducing the teaching of entrepreneurship not only in higher education institutions but also in secondary education as well as in institutions for post-educational qualifications.

Educational programmes can also address the specifics of the venture financing process. Increasing the awareness of potential entrepreneurs of the various financing options as well as their understanding of what private investors look for and how they make decisions is likely to increase the demand for private capital. Industry bodies, such as business angel networks and venture capital associations, should be involved in these efforts.

Where the focus is on technology entrepreneurship, governments can facilitate the establishment or strengthening of technology transfer offices or other agencies that bring together the scientific and business worlds. Such agencies can be located around major research institutions and should seek to educate faculty and researchers on identifying possible entrepreneurial opportunities and developing their commercial potential.

Governments also have a role to play in facilitating the information exchange between all relevant stakeholders in order to improve the flow of information to reveal potential innovative opportunities.

Incubator and seed capital programmes represent major sources of early-stage capital and viable avenues for making high-potential firms ready to be taken on by professional investors such as business angels and VC firms. Where such programmes are lacking, governments could consider their introduction.

For the governments' involvement to have credibility in the eyes of private investors, public seed capital programmes should be infused with the elements that make the venture capital investment process effective: careful selection, incentives, monitoring, staged financing, strategic and managerial support.

The funding provided by early-stage support programmes should be staged in order to allocate capital more efficiently, and continue to fund enterprises that show increasing promise. The initial stage should provide small grants for feasibility study and market analysis. A second stage, for which enterprises apply upon successful completion of stage one, provides larger funds for product development and initial marketing. Upon completion of that stage, enterprises would be well geared for large-scale commercialization and should be able to attract private expansion capital.

The oversight and support of the recipients of financing is an important component of programme effectiveness. To this end, agencies should not only have proper business expertise but also

develop an attitude of strategic flexibility, ready to accommodate strategy or market changes that become necessary as the enterprise deals with its uncertain environment.

Private informal investors are critical at the very early stage of innovative enterprises, when information costs and size considerations make them unattractive to formal venture capitalists. Facilitating investment by business angels and supporting the establishment of business angel networks are therefore crucial in the equity financing cycle. Countries with the most developed business angel markets do offer tax benefits to business angels and other private investors. Such tax incentives can be developed not only to increase informal investment but also to encourage investors to take a long-term perspective and become serial investors.

Formal training of informal investors on the private financing process as well as current market and technology trends could be provided to increase the investors' market awareness and financing potential. This could include sectoral training for some specific industries. Governments can cooperate with educational institutions and industry associations to provide such training to new or potential business angels and VC managers.

Another avenue for increasing industry learning involves formal and informal cooperation with more experienced foreign VC firms. Such cooperation can be made a pre-condition for government financing, as implemented in the Yozma programme in Israel.

To further facilitate deal sourcing, relationships should be built between the technology and innovation community (including incubators and seed capital funds), business angels, and the VC sector. Such relationships should focus on the exchange of relevant technology or market information, sharing of experience as well as referring promising investment deals.

G. VALUE-ADDING

Policymakers need to pay explicit attention to the value-adding stage of the innovation financing process to ensure effective governance of early-stage innovative enterprises. The frequent neglect of this issue reflects the assumption that there exist proper market mechanisms for allocating and accessing the necessary skills. However, this is often not the case.

An early assessment of the SBIC programme in the United States concluded that the sponsored funds were unable to attract high-calibre investment managers. In some countries, value-adding skills may be in limited supply. In such cases, it is necessary to facilitate learning and knowledge transfer for the benefit of local investors.

The design of privately managed venture capital funds influences the attraction and selection of skilled investment managers. A bidding process allows for proper evaluation of the investor's expertise, provided there is a sufficient amount of private competition. The preferential allocation of the returns accruing to the government's stake provides compensation incentives that may attract skilled managers. Programmes in Israel (Yozma), the Russian Federation (Russian Venture Company) and the United Kingdom (Enterprise Capital Funds) exemplify this approach.

While there have been no programmes aimed at facilitating the learning by local VC investors, the approaches by two countries, Israel and the Russian Federation, in the design of their fund-of-funds programmes is notable for their explicit goal of harnessing international venture capital expertise. In Israel, each Yozma fund had to engage one reputable international financial institution and one domestic institution. In the Russian Federation, the recently established Russian Venture Company has retained the services of expert policymakers from Israel and Finland.

There are two main policy implications that can be drawn in this area:

- Early-stage investors in innovative enterprises are expected to provide not only financing but also management and technical expertise. Availability and access to proper skills for the governance and development of such enterprises is an essential component of the financing infrastructure. Learning and knowledge sharing are the primary mechanisms for countries and regions lacking in such expertise to acquire it; and
- Incentive stock option compensation is an important tool through which early-stage innovation enterprises attract and retain skilled managers and align their interests with those of the early-stage investors.

Public authorities could promote contractual arrangements and company structures that foster the ability of formal and informal venture capital investor to monitor and transfer their expertise to innovative companies, creating the right sort of incentives. This also concerns those situations in which public authorities appear as co-investors.

The VC funds' ability to provide follow-on finance to companies that successfully meet their development milestones and need capital for further development and expansion represents an important added value. Public programmes financing small early-stage funds should take into account the need for further financing for the companies they are backing. Bridges between the various investors (public, business angels, venture capitalists) need to be built to avoid the emergence of bottlenecks in the financing process. The synergies of instruments such as "sidecar funding", where business angels invest alongside the venture capital fund, should be encouraged.

A strong support network of professional services attuned to the needs of young, innovative or technology-intensive businesses is essential for the value-adding abilities of VC firms, which can draw on this external expertise for their managerial decisions. Many of these emerge as the VC industry grows. Access to such services in the early stages of the VC industry development may prove crucial for the success of the first VC funds and should be also borne in mind in the design of policy initiatives.

H. EXITING

Few programmes exist with explicit focus on improving the exit stage of the innovation finance process beyond initiatives focusing on regulatory changes concerning stock exchanges.

One of the examples of schemes facilitating exit is the Capital Pool Company (CPC) Programme in Canada. The programme allows the formation of a “Capital Pool Company” with no assets other than a small amount of seed capital to be listed on the Toronto Stock Exchange Venture Exchange to raise additional capital. The CPC then seeks an investment opportunity in a growing business and uses the raised funds to acquire the business in a “qualifying transaction”. Following this, the shares of the CPC continue to trade as a regular listing on the Exchange.

Special stock market listing rules and regulations, tailored to the specific needs of small, growing companies, are important instruments for enhancing the access of such companies to growth capital and for improving the exit opportunities for the private investors backing them. Stock markets should be inviting of new listings of small, high-growth companies and provide trading liquidity in their secondary markets.

Existing stock markets, or specially created alternative investment markets, should be more accommodating of small, high-growth companies, for example by lowering their listing and disclosure requirements, reducing the hold periods and escrow requirements for new listings as well as providing listing preparation services.

More flexible regulations should be weighted against the signalling effects that lower listing requirements may have in the confidence of investors. An alternative or complementary approach is nurturing the development of a community of analysts for technological companies, as done by InvestBX in the United Kingdom, providing independent research on which investors can base their decisions.

Where Initial Public Offerings do not represent viable exit options, due to underdeveloped local capital markets or lack of access to foreign markets, an improvement to the acquisition infrastructure – especially in regard to foreign buyers – is another avenue for boosting exit opportunities for local equity investors. Such improvements may include tax incentives, streamlined regulations of domestic acquisitions or high-level networking and promotion activities for the leading domestic sectors.

As in the value-adding stage, policy efforts should be devoted to the development of a support network of professional experts that understand and properly convey the risk-return profile of such companies to mainstream investors, so that existing or specially created stock markets can effectively serve to provide capital to small, growing companies.

I. GENERAL POLICY CONCLUSIONS

Any policy recommendations geared towards improving the environment for early-stage financing of innovative enterprises and, more specifically, the development of a local formal and informal (business angels) VC industry, should consider the fundamental challenges associated with creating markets for private financing and the more general limitations or potential challenges of public intervention.

The development of markets for entrepreneurial finance for innovative activities requires capital, specialized financial intermediaries and entrepreneurs. However, none of these elements is likely to emerge in the absence of the other two. Specific recommendations should therefore not be implemented without due consideration to the complementary elements of the private financing cycle. Policy initiatives should be preceded by an assessment of the country's potential venture capital landscape, highlighting both the conditions favourable to the emergence of a VC industry and the areas that need to be nurtured simultaneously.

Government programmes that involve financing of private businesses are susceptible to political and bureaucratic influences that may interfere with sound business decisions. Bureaucratic interference occurs when programme managers are concerned with claiming credit for positive programme results that may have occurred without the public sector's involvement. An example of such a situation is supporting firms that do not need financing but are more likely to be successful, thereby ensuring that the programme will show positive results.

In addition to the specific recommendations regarding the different stages of the equity financing cycle, there are a number of general policy conclusions that can be drawn from the review of the country experiences in the UNECE region:

- The policy goals related to innovation finance need to be realistic, taking into account the prevailing background conditions in respect of the four stages of the innovation finance cycle and the links between the various supply and demand factors. Efforts should be made to gather reliable data that supports effective evidence-based policies;
- The policy goals need to be specific in terms of the types of enterprises they wish to support: innovative, new, growing, successful, etc. Each type of enterprise has different prospects for engaging private investors;
- Learning from the experience of other countries and thus the implementation of programmes that have proven successful in those countries calls for understanding the implications of past actions and historical legacies on innovation capabilities and market development. Better monitoring and formal evaluation of programmes would facilitate the exchange of experiences;
- Public programmes work best as complements and supporters of market mechanisms related to innovation finance. Governments are best placed to shape the parameters within which private investors make decisions – through the provision of proper incentives – rather than to make the decisions themselves; and

- Direct investment decisions made by governments should be made in a decentralized way, engaging agencies close to the recipient companies and preferably covering projects at their earliest phases of the development. The release of resources should be made in stages and tied to the achievement of particular outcomes.

The development of a vibrant venture capital industry requires a wide range of supporting conditions, in particular those concerning the general economic, tax and regulatory environment, the innovating capability of the economy, the entrepreneurial culture and the intellectual property regime. Policies targeting the area of entrepreneurial finance need to be grounded on the awareness of these additional influencing factors. These complementary issues are covered in other focus areas of the CECI Programme of Work.

V. SUMMARY OF THE GUIDELINES TO PROMOTING GOOD GOVERNANCE IN PUBLIC-PRIVATE PARTNERSHIPS

A. ATTRACTIVENESS OF PUBLIC-PRIVATE PARTNERSHIPS

Public-Private Partnerships (PPPs) are very attractive to governments who are seeking resources to improve their infrastructure and public services.

1. What are Public-Private Partnerships?

Public-Private Partnerships are partnerships between public and private sectors that involve private investment in public infrastructure, a long-term service provision and the transfer of risk to the private partner. There are various types of PPPs, established for different reasons, across a wide range of market segments, reflecting the different needs of governments for infrastructure services. Although the types vary, two broad categories of PPPs can be identified: the institutionalized kind that refers to all forms of joint ventures between public and private stakeholders and contractual PPPs.

Recently, the contractual type has come to the fore. One model of this type is the concession where the ‘user pays’. Most PPPs outside the United Kingdom are concessions. Another model of the contractual type in the United Kingdom is the Private Finance Initiative (PFI) where the public sector pays and where a contract agreement is signed between the private partner and the public sector. This model has now been adopted by parts of Canada, France, the Netherlands, Portugal, Ireland, Norway, Finland, Australia, Japan, Malaysia, the United States and Singapore (amongst others) as part of a wider reform programme for the delivery of public services.

2. Why Public-Private Partnerships?

PPPs offer a number of benefits:

- *Better value.* The decision by a government to pursue PPP delivery is often based on analysis to determine that the PPP approach will deliver value to the public through one or more of the following:
 - (i) Lower cost
 - (ii) Higher levels of service
 - (iii) Reduced risk
- *Access to capital.* PPPs allow governments to access alternative private sources of capital, allowing important and urgent projects to proceed when otherwise they may not be possible.
- *Certainty of outcomes.* Certainty of outcomes are increased both in terms of ‘on time’ delivery of projects (the private partner is strongly motivated to complete the project

as early as possible to control its costs and so that the payment stream can commence) and in terms of ‘on-budget’ delivery of projects (the payment scheduled is fixed before construction commences, protecting the public from exposure to cost overruns).

- *Off balance sheet borrowing.* Debt financing that is not shown on the face of the balance sheet is called ‘off balance sheet financing’. Off balance sheet financing allows a country to borrow without affecting calculations of measures of indebtedness¹².
- *Innovation.* By combining the unique motivations and skills of both the public and private sectors and through a competitive process for contract award, there is a high potential for innovative approaches to public infrastructure delivery with PPPs.

3. Growth of Public-Private Partnerships worldwide

Many governments have been attracted to this model and a number of growth patterns and trends are already apparent:

- 15-year pattern of growth and development – spreading steadily to emerging markets;
- High level of maturity and sophistication in some countries – Western Europe (United Kingdom, France, Portugal, Spain), Australia and New Zealand;
- Some 450 billion pounds financed in the United Kingdom – 750 deals;
- Impressive track record in Canada, South Africa and South East Asia;
- Strong interest in the Middle East;
- Significant initiatives in countries in transition; and
- Clear policy direction in Central and Latin America and South Asia.

B. IMPORTANCE OF GOVERNANCE

As seen in the Table below¹³, countries tend to go through a number of distinct phases before a PPP programme becomes fully operational. Only at the third phase, where relatively few countries are currently situated, does the programme become really significant.

¹² As of 11 February 2004, Eurostat defined the treatment of Design, Build, Operate and Finance (DBOF) projects as being eligible for off balance sheet borrowing, which was clarified in the February 2005 report ‘Standing Committee on the impact of Investment on the GGB’.

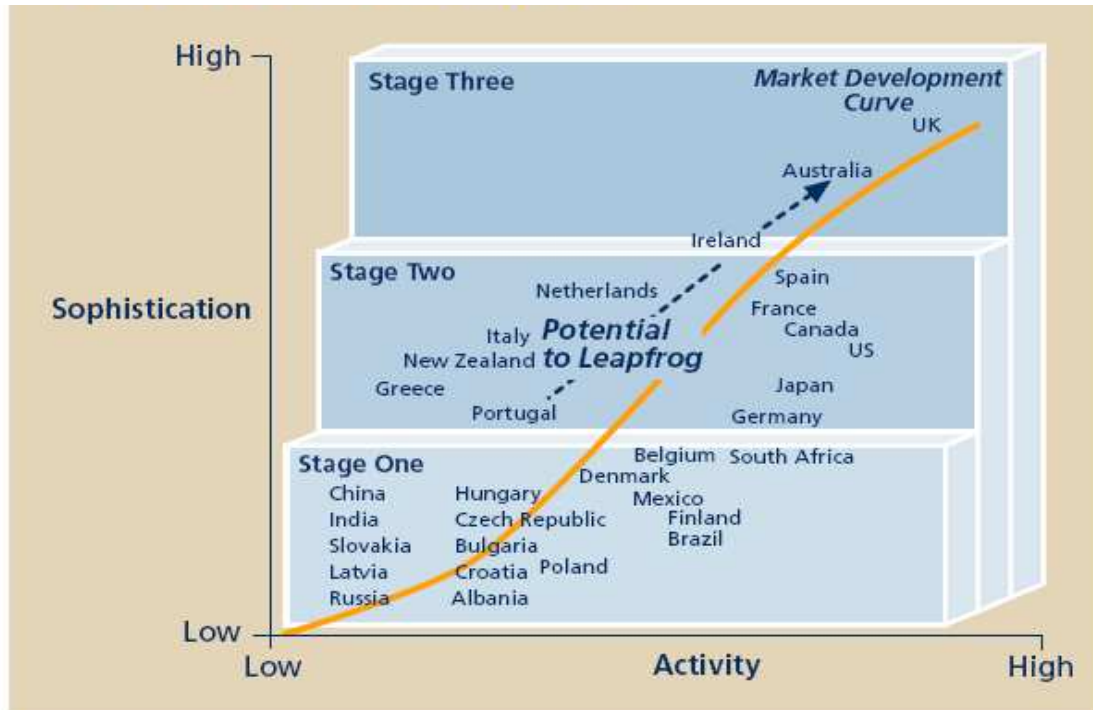
¹³ One of the misconceptions about PPPs is that they require less public sector involvement. In reality they entail more. They require for example, a strong public sector, which is able to adopt a new role with new abilities. In particular, strong PPP systems require managers who are not only skilled in making partnerships and managing networks of different partners, but also skilled in negotiation, contract management and risk analysis. Indeed, asking private partners to deliver government services places more, not less, responsibility on public officials.

Table 1. Three Stages in PPP Development

<i>Stage 1</i>	<i>Stage 2</i>	<i>Stage 3</i>
<ul style="list-style-type: none"> • Define policy framework • Test legal viability • Identify project pipeline • Develop foundation, concepts • Apply lessons from earliest deals to other sectors • Start to build marketplace 	<ul style="list-style-type: none"> • Introduce legislative reform • Publish policy and practice guidelines • Establish dedicated PPP units • Refine PPP delivery models • Continue to foster marketplace • Expand project pipeline and extend to new sectors • Leverage new sources of funds 	<ul style="list-style-type: none"> • Fully defined, comprehensive “system” established • Legal impediments removed • PPP models refined and reproduced • Sophisticated risk allocation • Committed deal flow • Long-term political consensus • Use of full-range of funding sources • Thriving infrastructure • Investment market involving pension funds and private equity funds • Well-trained civil service utilizes PPP experiences

Source: Deloitte and Touche, USA LLP

Figure 1. PPP Market Maturity Curve



Source: Deloitte and Touche, USA LLP

Moreover, countries climb up the ‘maturity curve’ as the methods of PPPs become more sophisticated and activity is high (see Figure). Thus, although there are attractions to using PPPs, their implementation is not easy and moving up the maturity curve is far from automatic.

The key challenge is the difficulty in developing the institutions - both formal and informal - and ‘rules of the game’ related to PPPs, which is reflected in the following:

- Protracted negotiations between public and private partners;
- Slowness of reaching closure;
- The lack of flexibility in risk sharing;
- The cancellation of many projects with all the resultant waste;
- Lack of transparency of the selection of partner;
- The failure to use competitive tenders; and
- The emergence of ‘conflict of interests’.

Poorly constructed, non-transparent deals also lead to disappointment. This can also lead in turn to a backlash against the concept and generate political opposition towards PPPs as a whole.

The goal, therefore, in moving up the maturity curve is developing the required institutional strength or good governance, specifically:

- A coherent PPP policy: providing clear direction and leadership;
- Institutional capability: with skills in identifying, instigating and delivering and monitoring projects;
- Legal and regulatory framework that offers clarity, simplicity and predictability in legal processes;
- Transparency, openness and fairness in selecting the best partners. This will enhance confidence between the partners;
- Accountability to citizens and other stakeholders for performance and delivery. Stronger participation of stakeholders in PPP decision-making along with the accountability of their performance to members of the public will improve the reputation of PPPs and in turn, generate more political support; and
- Sustainable development: ensuring the outcomes have the maximum developmental impact and respect for the environment.

Clearly, countries are at vastly different levels of understanding and sophistication and each needs to find its own path. They need to develop their own systems in the context of their own economic development, relying on their own experiences, legal framework, political climate and strength of the business community and commercial environment. However, fully designed PPP ‘governance systems’, as shown above, work best.¹⁴

C. SEVEN PRINCIPLES OF GOOD GOVERNANCE IN PUBLIC-PRIVATE PARTNERSHIPS

The purpose of the UNECE Guidelines is to assist governments to realize the benefits from PPPs through strengthening their governance.

The guidelines set out seven ‘principles’, described below.

¹⁴ Looking back to when countries were being assisted to establish PPP programmes at the start of transition in the 1990s, it was assumed that once a single viable PPP project had been implanted in a country further deals would flow automatically. However, even while many individual projects were started, these single projects never translated into a deal flow. The reason for this disappointing performance is that other actions and processes need to be developed. Specifically, a holistic approach is required, which involves the integration of policies and institutions surrounding the project.

Principle 1: Policy

Typically, most governments fail to elaborate an overall PPP policy. This lack can lead to confusion over the goals of PPPs, which increases the likelihood of failure. A coherent PPP policy on the other hand sets down a 'roadmap' for implementation, identifying clear objectives and principles, the pilot projects, realistic targets and the means of achieving them. Improved policy coherence can increase the support of the population for the PPP approach.

While governments should have clear goals and objectives in their PPP policies these goals will vary according to their own economic development. For high-income countries the preferred goals of PPPs are to enhance economic efficiency and provide the taxpayer with the best value for money. In contrast, in low-income countries, PPPs need not only to increase efficiency but also improve accessibility of basic services to citizens, especially those who are economically and socially disadvantaged¹⁵.

In fixing the policy objectives, governments should also consult closely with the beneficiaries and with the stakeholders. Some states have only embarked on a PPP policy once the key players had agreed on the PPP approach. Ireland, for example, set out its PPP policy only after a signed agreement with the Irish associations of employers and trade unions respectively. Achieving inter ministerial consensus in PPPs is also a critical challenge and developing an inter-ministerial working group to evaluate PPPs is often a good starting point.

Principle 2: Capacity-building

PPPs involve complicated structures that require new skills, which are found more in the private than the public sector. Governments need to find the necessary skills to develop PPPs. Governments can build the necessary skills in a combined approach which internally establishes new institutions and brings together the skills required and also at the same time uses external consultants to advise on financial and legal issues related to projects.

A critical aspect of building the necessary capacity is to create a PPP unit. The goals of the PPP unit are to:

- Establish a project pipeline.
- Support the regional and local authorities in implementing their PPP programmes.
- Defend the process both within government and outside.
- Build the capacity within the market place in order to create a wide choice of competent private sector partners.

There is a strong correlation between having a PPP unit and PPP success. Those countries, which have established PPP units, tend to have a more extensive PPP programme and a larger number of projects. Thus, a PPP unit is a part of the PPP 'governance system' and is a key factor in a

¹⁵ Even in high-income countries, however, there is a strong view that economic efficiency goals are too close to commercial criteria and that social goals should be more prominent in shaping policy.

successful programme. But the PPP unit should, however, not be itself a cause of governance concern. It is therefore important that in designing such units to ensure that they are located at ‘arms length’ to the private sector and that their performance is evaluated by independent bodies.

Principle 3: Legal framework

Legal processes in many jurisdictions are insufficient and complex and fail to provide sufficient security and incentives to investors in PPP arrangements. Investors in PPPs need predictability and security in legal frameworks, which means fewer, simpler and better rules. In addition, the legal framework needs to take account of the beneficiaries and empower them to participate in legal processes protecting their rights and guaranteeing them access in decision taking.

One of the key challenges in many countries at the initial stages of developing PPPs was the failure of the law to adequately define the framework for PPPs. This led to many projects being started without competitive tenders and with clear conflicts of interest. It also failed to prevent, in some cases, the private sector from raising sharply the prices of services to the consumer who was often not in a position to pay. This led to the introduction of new regulation and controls.

These new rules, however, in some cases went too far and raised the cost of entry so that only large firms had sufficient resources to compete for tenders. SMEs, for example, could not afford the cost of preparing lengthy documents, prospectuses and feasibility studies. On the government side the stiffer requirements for due diligence, feasibility studies, etc. proved difficult as they did not have the necessary expertise to conduct the analyses themselves. Nor had they the resources to pay the legal and financial consulting firms to carry out this work. As a result of the new rules in some countries, the PPP process has become very complex and few, if any, PPP projects have since been started in these jurisdictions. One solution to overcome such an impasse is to simplify the law and remove the over burdensome restrictions. While legal regulation is necessary and desirable, it needs to be carefully implemented as the law can make PPPs more complex and less transparent.

Principle 4: Risk sharing

Theory in project finance suggests that risks should be borne by the party best able to manage them, but many PPP projects often fail to come to fruition because the parties have failed to agree on the allocation of risk, with each side trying to shift the risk to the other. It is also difficult to calculate risks, especially in transition economies when the rate of economic growth is sometimes less predictable, which makes forecasting demand, especially in transport projects, a difficult exercise. PPPs allow risks - which are most able to be managed by the private sector - to be transferred to them. However, governments also need to accept their share and help to mitigate those allocated to the private sector in mutual support.

At the beginning of the transition process in Central and Eastern Europe and the Commonwealth of Independent States, PPPs were often promoted as offering assets to governments, such as roads and bridges, etc., at virtually no cost and no risk. Some projects were undertaken as fully private ventures. For example, in 1994, the M1 motorway, that covered a stretch of road from Vienna in Austria to Budapest in Hungary, was the first fully private motorway in Europe built without any taxpayers’ money. However, problems occurred and the state was obliged to re-

nationalize the project. The lesson from this experience, and others in this period, is that the cost and risk for infrastructure projects that require major capital expenditures is too high for the private sector to assume alone and the public sector must therefore assume its share and provide certain types of subsidies. Accordingly, there is a wide range of different subsidies, which governments might provide to make the project attractive to the private sector. The use of subsidies, however, has to be tempered as one of the important benefits of PPPs is the transfer of risk to the private sector and the placement of its revenue ‘at risk’ in case it does not meet its obligations to the project. It is important therefore that the government designs the partnership in order to continue to use the risk to its investments as an incentive to the private sector to perform well.

Principle 5: Public-Private Partnership procurement

The governance challenges regarding procurement include the lack of capacity in organizing competitive tenders especially at local levels, the public suspicion at non-transparent PPP deals, and the poor administrative procedures for competitive tendering that exclude SMEs. The selection of the bidder should be undertaken following a transparent, neutral, and non-discriminatory selection process that promotes competition and strikes a balance between the need to reduce the length of time and cost of the bid process and, acquiring the best proposal. Along these lines, there should be zero tolerance for all forms of corruption.

Governments realize that as PPPs become more commonplace, they need to go further to ensure total transparency in the selection of partners. In Canada, for example, the use of ‘fairness and process auditors’ – third party independent experts – provides a level of assurance to government sponsors, bidders and the public that the procurement process was fair, equitable, and appropriate. The most challenging areas of procurement for emerging markets are to ensure that there is a sufficient number of companies willing to bid. Competition amongst a number of companies is the most effective way to achieve successful results. In emerging markets however there may be too few private companies ready to enter into partnerships. In such cases it is best to halt the project and to undertake it, if possible, by more traditional means.

Many countries see in PPPs means of attracting foreign direct investment (FDI). Ensuring a highly efficient and effective competitive procurement process will attract foreign lenders, investors and contractors that will strengthen the market. Some countries, with a view to attracting FDI, undertake “outreach” surveys to obtain feedback on the PPP procurement procedures. The primary goals of these surveys are: to reduce time taken for the procurement process; to reduce procurement costs for both public and private sectors; and to maintain consistency in standardizing procurement documents.

Principle 6: Putting people first

Often, members of the public are not sufficiently consulted in PPPs in order to determine their interest in the projects and whether they meet their needs. This lack of transparency and accountability has led to a governance challenge that must be confronted in order for PPPs to move forward. The PPP process should put people first by increasing accountability and transparency in projects and through these improving people’s livelihoods, especially the socially and economically disadvantaged.

Although it might appear at first hand self-evident that the designers of PPPs would wish to put people at the heart of the project, in the 1990s in some PPPs this was not often the case. The project was considered too ‘technical’ for ordinary people to understand while the challenge to bring the various partners to agreement so difficult that the interests of the general public tended to be overlooked. This state of affairs, however, cannot be described as good governance. There needs to be established a mechanism to test whether the projects are socially acceptable.

To ensure that the interests of people are taken into account the government needs to set the required criteria in the contract. If the private partner fails to meet the standards set, then the government should proceed to penalize the company. It is important moreover to make these penalties sufficiently high so that the private partner cannot ignore them.

One of the issues that arise is which body should do this evaluation: the public sector or an independent body? Generally speaking, it should be the public sector, which evaluates whether the contract has been respected. However, an independent body is best charged to evaluate the performance of the project in meeting the public interest as a whole.

While public accountability in PPPs needs to be enhanced to ensure that people are put first, it should not go too far and lead to over-bureaucratic control and poor as opposed to ‘good’ regulation. Generally, an even handed approach needs to be adopted and the same rules applied to the partner, domestic or foreign, public or private.

Principle 7: The environment and social concern

PPP projects must contribute to sustainable development and protection of the environment by balancing the public’s current needs with the responsibility of not diminishing the ability of future generations to meet their needs as well. Responsibility of PPP projects rests often with the economy, finance and transport rather than the environment ministries. These ministries tend not to be well versed in environmental issues, whilst the environment ministries often lack the understanding of the economic and business basis of PPP projects. The PPP process should integrate the principles of sustainable development into PPP projects, by reflecting environmental considerations in the objectives of projects, setting specifications and awarding projects to those bidders who fully match the ‘green criteria’.

The key challenge is to determine whether the PPPs can reconcile the dual objectives of economic efficiency with respect for the environment. There is no doubt that already there is strong evidence that PPPs can have major benefits to the environment. The private sector’s ability to manage resources efficiently can save on material inputs to projects and avoid waste from leakage. Everything, however, depends on the public sector side. They are the agent, which will include in contracts the obligations placed on the private partner to meet ‘green criteria’.

D. DEMONSTRATING SUCCESS

By applying good governance principles the chances of success are increased. The following cases show that well governed projects can achieve real benefits. These cases were selected both for their sectoral variety and geographical spread:

- Vancouver Land fill project, which transformed a site producing gases (including methane, a green house gas that contributes to global climate change) to generate electricity subsequently sold to a local utility;
- Centre Hospitalier Sud Francilien which is constructing a fully equipped hospital serving a large area south of Île-de-France;
- The Cross-Israel highway (Highway 6) is a 300 km highway along the eastern part of Israel from Beer Sheva to the Galilee in the north;
- The Pamir Private Power Projects (in eastern Tajikistan) is designed to contribute to the country's poverty reduction strategy by providing reliable electricity supply to poor isolated habitants of the region; and
- The Chesapeake Forest project (covering the largest estuary in the United States) aims to restore the Bay's environmental habitat by generating revenue from the commercialization of its natural resources.

These cases are applying the principles of good governance presented above in the following way:

Principle 1: Policy

Linking policy to clearly defined goals and enhanced efficiency was apparent in the French hospital project. The policy was fixed by central government and the framework implemented by the local authorities and national partners. Policy coherence was enhanced by the use of a previous model – in this case a prison project – that had been successful. It took just 6 weeks from start to closure.

Principle 2: Capacity-building

With the exception of France none of the countries mentioned in the case studies at the time of the project had established fully operational PPP units. Thus it might be suggested that there is no necessity to establish PPP units in order to carry out projects. The advantage of establishing a PPP unit is nevertheless demonstrated. The PPP unit is, it can be argued, helpful not only in undertaking a project, but also in transferring the knowledge and experience that can be used in delivering similar projects, e.g. the case of the French Hospital was based on a successful prison project. PPP units thus are conduits of information with an institutional memory and as such are important mechanisms to turn individual deals into a flow of successful projects.

Principle 3: Legal framework

The flexibility of the PPP legal process is necessary so that the law does not constrain but enables the success of the partnership. The French hospital project showed such flexibility. Realizing that new legislation was needed to match the emerging opportunities presented by PPPs, the Government of France instituted measures that made it easier for the public and private partners to reach a deal. The case of Pamir moreover shows the need and desirability to include all the actors in the negotiation process leading to the agreement. By including the relevant players, there is far less chance of the agreement being overturned afterwards.

Principle 4: Risk sharing

Almost all the projects demonstrate the value of achieving successful risk allocation. In the Vancouver case the city guaranteed the provision of land fill gases to the project, i.e. the ‘supply risk’ but it minimized the risk by retaining the responsibility for the management and operation of the gas collection system. In the French hospital project most of the risks were transferred to the private sector at the early stage of the deal. This was clearly appreciated by the lenders to the project and allowed for one of the lowest financing conditions offered for this type of deal to date. The Government of Israel who took on some of the demand risks to encourage private sector participation in the highway project chose a slightly different track.

Principle 5: PPP procurement

The case studies show that the selection process needs to be transparent. This is not just for the sake of ensuring good practices but because open procurement is the best way to select the right partner and thus the best guarantee of success. In the French hospital project, for example, the selection process identified the “right” project for the deal. The selected partner had a great deal of expertise that allowed the transaction to occur more expeditiously than would have been otherwise possible. The same is true for the Vancouver Land fill project where there were five different projects from five different partners. Here again the choice proved to be the right one and contributed directly to the project’s success.

Principle 6: Putting people first

A critical component of “putting people first” is to ensure the project is affordable to the population, which is a particular challenge in poor countries. In the case of the Pamir project in Tajikistan, income levels were so low that achieving even a modest return on investment required tariffs that most of the population could not afford. Therefore a social protection clause was placed in the contract and the World Bank, with support from the Government of Switzerland, contributed a 10 million US dollar subsidy, which will support the project by keeping tariffs within the narrow limit of what people in the region can pay. Another aspect of “putting people first” is providing them with full information of the project. While there remains a view that the detailed information on PPP contracts over payment, etc. should remain private between the government and the private sector partner, the case studies demonstrate the value of full involvement of the public. This is particularly the case of the Chesapeake Forest Project which involved the public to the full and had as one of the partners a ‘not for profit’ public interest group which helped in the design of the project’s Sustainable Forest Management Plan.

Principle 7: Environment and social concern

The main challenge is to determine whether PPPs can both contribute to economic efficiency and respect the environment. The case studies suggest that both objectives can be met. In the Vancouver Land fill project, the environmental goals were achieved using a carefully designed project whose goal was to reduce green house gases. The project in fact reduces gas emissions by approximately 200,000 tons per year of carbon dioxide, the equivalent of the emissions of about 40,000 automobiles. The private sector was moreover critical of this success. It possessed the technology to turn waste into energy; the public sector did not. The critical feature in ensuring PPPs meet environmental standards is the contract: it is here where the private sector is given the incentive to comply with environmental standards. In the cases of the Chesapeake forest and the Vancouver Land fill projects, the contracts were arranged to ensure that environmental targets were met. A further key ingredient of the success in the latter was the important role played by the Vancouver City Government which was fully informed and committed to improving the environment with the project.

E. CONCLUSIONS

There is an infrastructure deficit in many transition economies and PPPs are a possible instrument to fill this gap. The key goal for governments is to improve their governance. To assist in this regard the Guidelines highlight seven interrelated principles of good governance in PPPs. A number of case studies demonstrate that improving governance increases the chance of success. However, building this capacity cannot be achieved overnight. In some respects governments will have to devote efforts to training their public administrations in PPPs and to develop national PPP training programmes.
