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## Economic Commission for Europe

### Committee on Innovation, Competitiveness and Public-Private Partnerships

#### Twelfth session

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Item 4 of the provisional agenda

#### Implementation of the Programme of Work

## Updating the methodology for national Innovation for Sustainable Development Reviews

### Note by the secretariat

#### I. Introduction

1. Innovation for Sustainable Development Reviews, formerly Innovation Performance Reviews (IPR), are undertaken on request from member States to analyse innovation policies and performance in the light of international good practices as developed under the auspices of the Committee, and to make recommendations for policy reforms that could improve innovation performance and competitiveness. Based on the findings and recommendations, ECE offers policy advisory and capacity building services to support Governments in implementing these reforms.

2. National reviews have been undertaken so far for Armenia, Belarus (twice), Kazakhstan, the Kyrgyz Republic, Tajikistan and Ukraine. There is a pipeline of requests from several ECE member States, both for inaugural reviews and for repeat reviews.

#### II. Current methodology – national innovation systems

3. Based on consultations held under the auspices of the Committee when the programme of national innovation reviews was first created, the concept of National Innovation Systems (NIS) was chosen as the state-of-the-art analytical framework for analyzing innovation policies and performance.

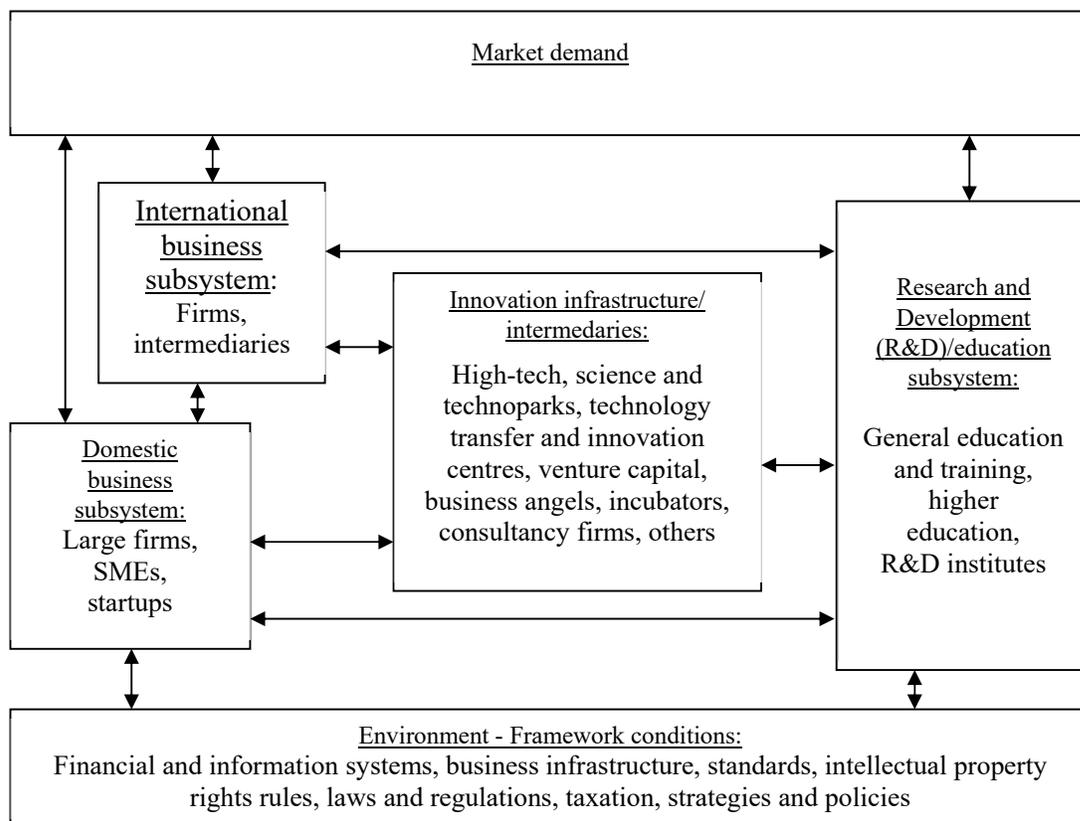
4. This concept reflects the fact that innovation takes place within a system (the systemic view of innovation) where systemic interdependencies influence the processes of generation and diffusion of innovation in the economy. The Innovation System (Figure 1) can be broadly defined as *“the network of institutions in the public and private sectors whose activities and*

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*interactions initiate, import, modify and diffuse new technologies*<sup>1</sup>. The systemic approach to innovation helps to identify specific aspects (strengths, weaknesses, driving forces, etc.) of the innovation process and to identify possible policy actions and measures that could lead to improvements in innovation performance.

**Figure 1 – Stylized National Innovation System**



5. The above conceptual approach was maintained when, starting in 2015, the Committee aligned its work with the 2030 Agenda for Sustainable Development. The national reviews of Belarus and Kyrgyzstan, which have since been undertaken, contain additional chapters analysing the current and potential contribution of innovation to selected national sustainable development priorities and make recommendations for policy reforms to realise this potential.

### III. Rationale and options for updating the current methodology

6. The National Innovations Systems approach has proved its worth as documented by the strong demand from ECE member States with economies in transition for national Innovation for Sustainable Development Reviews and by the impact which past reviews have had on policy reforms in beneficiary countries.

<sup>1</sup> Chris Freeman (1987), *Technology Policy and Economic Performance - Lessons from Japan*, London: Pinter Publishers.

7. There is still no alternative paradigm that has clearly superseded the NIS as a conceptual framework for analyzing innovation policies and performance. Therefore the NIS paradigm should remain the conceptual basis for the national reviews.

8. Nonetheless, the experience we have accumulated since the inception of the programme, and the recent orientation of the reviews on sustainable development, may warrant an updating of the underlying methodology in order to ensure that it remains fit for purpose and reflects best practice.

9. There are several issues which such an updating could address.

(a) *A stronger focus on cross-border linkages and international cooperation in innovation.* On the one hand, it is appropriate to focus on the “national” innovation system, since the purpose of the reviews is to provide advice to national governments on how to improve their policies. On the other hand, virtually no country has the market size and critical mass to achieve excellence in all facets of the innovation system and all economic sectors on its own. The principles of comparative advantage, division of labour and exchange apply to innovation just as they apply to production and trade. In many instances, it is more efficient and effective for a country to import, adapt and absorb knowledge and technology from abroad than to generate it at home. This is true for all countries, but particularly is true for less advanced countries, including economies in transition (cf. below). By the same token, the relevant market for innovations developed nationally is often regional or even global rather than national. So while the primary responsibility for policy is national, the objective of policy should not be limited solely to developing the elements of the national innovation system at home and the linkages between these elements. Rather, the objective of policy should also be to develop stronger links with research networks, innovative companies and financial markets abroad. Incidentally, cross-border cooperation can be an effective way to compensate for weaknesses in the national innovation system. This broader policy objective may also imply that governments should do more to coordinate their national policies or develop joint innovation support programmes. The above issues were covered in past reviews, often in separate chapters. In an updated methodology, they could be integrated more fully into all chapters.

(b) *Incorporating more explicitly recent conceptual advances allowing to further adjust the analysis to different stages of economic development.* The concept of a National Innovation System as originally developed can be considered an attempt to describe an ideal system such as it might exist in advanced economies, and which developing and transition economies might aspire to. More could be done to incorporate into the concept the specific legacies and institutional challenges existing in transition economies. On the one hand, their education and research systems are often stronger than those of other countries at similar income levels, and pockets of excellence may exist in the industrial sector. The challenge then is to find ways to preserve and build on these existing advantages. On the other hand, transition economies often suffer from relatively poor business environments, high costs of finance and short investment horizons, and weak linkages between research and industry. Under these conditions, the main focus of innovation policy should be on improving the capacity of the NIS to absorb, adopt and adapt innovations originally developed abroad. While past reviews have emphasized this point, the exposition could benefit from incorporating this more explicitly in the conceptual framework underlying the analysis.

At the same time, there are also considerable differences across transition economies. The introductory chapters of the reviews, which provide a general overview of the economic situation and structure of the country, could be used as a basis for identifying the major constraints that the subsequent analysis of the elements of the NIS needs to take into account.

(c) *Strengthening the conceptual basis for prioritizing among recommendations for innovation policy reforms in view of limited capacities and resources.* The “systemic” view

of innovation and innovation policy embedded in the concept of the NIS implies a priori that all elements of the system are equally important, as are the linkages between them, and that any weakness in one part of the system will compromise the innovation performance of the whole. In the real world, policy makers have limited capacities and resources, and they expect an analysis of the innovation policies and performance of their country to identify priority areas for policy reform. The experience with past reviews shows that in transition economies, where several elements of the NIS may be weak, and where the entire system is often fragmented, the NIS concept per se does not readily lend itself to identifying policy priorities in a coherent way. To facilitate this, the methodology could be updated to embed the analysis of innovation policies in a structured discussion of economic development scenarios, based on the analysis of the overall economic situation in the introductory chapter. Subsequently, a distinction between short-term and longer-term policy recommendations could be developed.

(d) Further developing the conceptual basis for recommendations on *improving the quality of innovation policy design and delivery*. The experience with past reviews shows that innovation policies often prove less effective than expected because of weaknesses in the institutions and processes that govern policy design and delivery. A key issue here is that innovation is inherently very risky, whereas public administrators are typically risk-averse. Strong institutions and governance mechanisms are needed to ensure that policy support does not go to innovation projects which already have a market and are therefore safe but not worthy of policy support, and that support for innovation projects that fail the test of the market is withdrawn quickly.

(e) *Mainstreaming sustainable development*. Past reviews contained dedicated chapters on innovation for sustainable development, mostly focusing on the contribution innovation can make to improving environmental sustainability. More could be done to develop an integrated approach allowing to discuss how innovation can reduce the need to trade off economic growth against environmental protection. At the same time, more could be done to integrate a discussion on how to manage possible short-term adjustment costs arising from the “creative destruction” accompanying disruptive innovations, and to ensure that innovation-driven economic development is socially inclusive.

(f) Further strengthening the *follow-up and support for the implementation* of recommended reforms. To complement the offer for policy advisory and capacity building assistance, a process of periodic voluntary reports on reform progress could be created under the auspices of the Committee as a standing item on the agenda. Such reporting could be done by the government agencies who acted as national focal points for their countries’ respective reviews. Such a periodic voluntary reporting process could also further facilitate peer learning and improve the evidence base for future policy analysis and advice. The monitoring of reform progress could also be facilitated through a sub-regional Innovation Policy Index, which would analyse innovation policy developments for several countries in a comparative perspective at a higher frequency than is possible with full-fledged national reviews (cf. accompanying document ECE/CECI/2018/INF.1)