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Review of Work Team of Specialists on Innovation and Competitiveness Policies

Updating the methodology of the ECE Innovation for Sustainable Development Reviews

Note by the secretariat

I. Introduction

1. In 2011, ECE under the auspices of the Committee on Innovation, Competitiveness and Public Private Partnerships and the Team of Specialists on Innovation and Competitiveness Policies initiated a programme of national Innovation Performance Reviews.

2. Based on requests from Governments, these Reviews, which are undertaken by international expert teams in close cooperation with national focal points, provide an analysis of national innovation policies and performance in light of international good practices as developed by ECE, derive recommendations for improving innovation policies, and then offer follow-up policy advice and capacity building to facilitate implementation of policy reforms.

3. In 2015, the United Nations adopted the 2030 Agenda for Sustainable Development in 2015, a clarion call to action for all Member States to achieve, by 2030, economic prosperity, within planetary boundaries, for all. Innovation has been identified in this Agenda as one of 17 Sustainable Development Goals, and also as a key means of implementing the Agenda as a whole. Inter alia, the 2030 Agenda includes a number of specific quantitative targets pertaining to innovation, that the international community is called upon to achieve on the road to Sustainable Development by 2030.

4. In response, ECE began to incorporate sustainable development aspects into its work on innovation, including the Reviews, re-positioning them as Innovation for Sustainable Development Reviews. The new approach was applied for the first time to Belarus in 2016, and then to Kyrgyzstan in 2017.



5. So far, the approach has been to add a dedicated chapter to the Reviews on selected sustainable development issues and the possible contribution which innovation policy can make to solving them. Apart from that, the methodology underlying the earlier Innovation Performance Reviews has largely been maintained.

6. At its eleventh session, the Team of Specialists on Innovation and Competitiveness Policies held a discussion on possible modifications to the Review methodology with a view to (i) mainstreaming sustainable development more fully into the reviews, and (ii) incorporating recent advances in thinking about innovation policy, including lessons learned from past Reviews, while ensuring consistency with new lines of work to be undertaken by the Team, particularly the sub-regional Innovation Policy Index and Innovation Policy Principles.

II. Current methodology

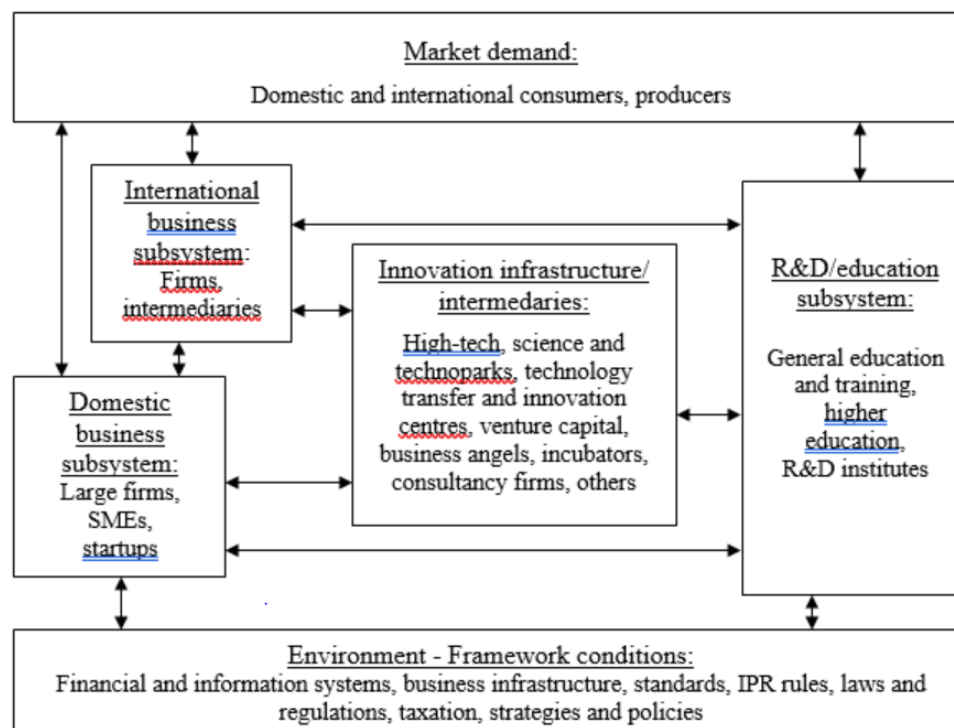
8. The current methodology is based on the concept of a National Innovation System. Prior to the launch of the programme of national Reviews, the Team had identified this concept as the leading and best practice approach to analysing national innovation policies and performance.

9. The concept reflects the understanding that the innovation process takes part in a system (the systemic view on innovation), and characterizes the systemic interdependencies that influence the processes of generation and diffusion of innovation in the economy. The National Innovation System (Figure 1) can be broadly defined as *'the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies'*¹. 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 innovative performance.

10. The performance of the System is generally determined by the strengths of several key subsystems and by the strengths of the linkages between them. One such subsystem is the presence of the (national and international) market for innovative products and services, as innovative products ultimately need to reach the market. Another key subsystem is the (national and international) business sector both as supplier of innovative products and as an important driver of the demand for innovation. A third key NIS component is the subsystem of knowledge generation, which includes academic and R&D institutions. The subsystem of innovation intermediaries providing various innovation support services helps different stages of the market uptake of innovative ideas. Finally, there exists a subsystem of the business environment and framework conditions that shape the incentives and motivation of all participants in the innovation process. The network of linkages which is a precondition for collaborative interaction between innovation stakeholders is also an important building block of the NIS.

Figure 1. A generic rendering of a National Innovation System

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



11. Based on this concept, the Reviews are currently structured into five to six chapters covering the various aspects of the National Innovation System and the institutions and policies supporting them, and the performance of the system.

12. A typical review might have chapters on:

- An introductory chapter describing the current economic situation in the country as a backdrop to the following analysis
- National Innovation System and innovation governance
- Framework conditions, innovation policies and instruments
- Knowledge creation, transfer and absorption
- Industry-science linkages and cooperation on innovation
- Entrepreneurship and the financing of innovation
- Cross-border cooperation on innovation and the role of innovation in cross-border economic integration
- Innovation for sustainable development

The structure would vary somewhat depending on the country under review, and on whether it is being reviewed for the first time or is undergoing a second Review.

13. The analysis draws on qualitative and quantitative data available in the country, as well as on secondary data compiled by other international organizations, such as the World Bank Doing Business data, or more recently the WIPO Global Innovation Index.

14. The follow-up to the Reviews consists of tailored capacity building and policy advisory missions offered to the receiving country on request. Subject to resources and time constraints, the process envisages second round Reviews after a period of about five years

which provide an opportunity to take stock of achievements and to make additional policy recommendations. In 2016, Belarus became the first country to receive a second Review.

III. Avenues for modifying the methodology

15. Modifications can be envisaged in the underlying conceptual approach, in the chapter structure, in the way sustainable development is incorporated, and in the follow-up process.

Underlying conceptual approach

16. The Team discussed whether the National Innovation System is still the best practice concept for analysing national innovation policies, particularly in countries with economies in transition, and in light of the sustainable development imperative.

17. The concept does have some obvious limitations. In its generic form, it describes a mature system such as might be found in an advanced economy. By emphasizing the systemic interdependencies between the sub-systems, the concept tends to accord equal weight to all elements and therefore does not easily lend itself to identifying policy priorities in countries where many of the sub-systems and linkages may be weak. The concept of a “national” innovation system suggests that in order to innovate successfully, a country would need to be strong in all parts of the system. The concept does not readily lend itself to discussing modern innovation processes in an increasingly inter-connected world. In particular, the concept in its generic form seems to be focused more on generating globally new innovations than on importing, adopting and adapting innovations already proven elsewhere. And the concept was not developed to incorporate sustainable development considerations.

18. The Team reflected on questions such as how the National Innovation System concept can be better adapted to the analysis of innovation policies and performance in economies that are not at the global knowledge frontier; how it can be adapted to innovation in an inter-connected world; and how sustainable development aspects could be integrated.² The Team agreed to further analyse these issues, while retaining the underlying concept of National Innovation Systems, considering that currently there are no alternatives that are generally recognized as superior.

Chapter structure

19. As indicated above, it will be important to ensure that the methodologies used for national Reviews, the planned Innovation Policy Index, and the planned Innovation Policy Principles are aligned.

As further detailed in document ECE/CECI/2019/INF.2, the planned Innovation Policy Index will have three main pillars, dealing with

- a. Innovation Governance
- b. Policy Process for Innovation
- c. Innovation Policy Instruments

20. Each main pillar is then divided into several sub-pillars. The *Innovation Governance* pillar covers the legal and institutional framework within which innovation policy is undertaken, and the processes and institutions in place for coordinating the Government ministries and agencies involved, and ensuring efficient cooperation. The *Policy Process* pillar covers the design and implementation of innovation policies, but also the agenda setting

² Cristina Chaminade, Bengt-Åke Lundvall, Shagufta Haneef (2018), *Advanced Introduction to National Innovation Systems*. Edward Elgar.

process, including stakeholder engagement, and processes for policy monitoring, evaluation and learning. The *Policy Instruments* pillar covers policy instruments geared towards promoting technology absorption and diffusion, domestically generated innovation, linkages and cooperation between the different elements of the National Innovation System, and others.

21. The Team discussed that the Reviews could thus begin with an overview chapter, followed by three “standard” chapters covering the above issues.

22. In addition to these standard chapters, which it will be important to maintain in order to preserve a common basis for comparing policy experiences across countries, it would be useful to expand the scope for responding in a flexible manner to specific innovation policy issues facing the country being reviewed, by adding one to three chapters on selected issues, which would vary from country to country and Review to Review. Such chapters could cover for instance issues like reforming existing academic and research organizations to strengthen their capacity to contribute to innovation; foreign technology transfer; promoting high-growth enterprises; technology foresight; and others, depending on priorities agreed with the requesting Government.

Incorporating sustainable development

23. One of the key challenges of sustainable development is to manage the trade-offs between its three main dimensions, i.e. economic prosperity, environmental sustainability, and social inclusiveness. One of the key promises of innovation is that it opens up the prospect of overcoming the need for trading off progress in one dimension against progress in another, and that it can create double or even triple dividends by advancing two or even all three dimensions simultaneously.

24. Countries are expected to create and follow national Sustainable Development strategies. In order to harness the full benefits of innovation for Sustainable Development, it will be critical to align innovation policies with national Sustainable Development priorities and with other relevant policies.

25. For these reasons, The Team agreed that it would be preferable to mainstream Sustainable Development into the structure of the Reviews, reflecting it in all chapters, rather than appending a separate, dedicated chapter. One prerequisite for doing this is to identify and describe national Sustainable Development priorities and gaps in the Reviews.

26. To implement the 2030 Agenda, quantitative indicators are being developed at the global level, including indicators that pertain to science, technology and innovation. These indicators will be used to measure currently existing gaps and progress towards Sustainable Development. Therefore, the Reviews will, depending on data availability, incorporate an analysis of these quantitative indicators.

27. Some of the specific challenges of innovation policy for Sustainable Development that could be reflected in the Reviews include the following:

- (i) ***Governance***: innovation policy per se is already a cross-cutting issue which requires coordination and cooperation across policy spaces. This challenge is exacerbated when it comes to sustainable development, where not only various economic policies, but also environmental and social policies will be affected. International good practice in this regard is still in the process of being developed, and the Team may wish to contribute to this effort.
- (ii) ***Identifying new innovation policies that are specific to sustainable development challenges***: we have learned a lot about “generic” innovation policies which promote innovation in any field, and which, like a rising tide lifting all boats, may also encourage innovations in areas critical for sustainable development. There is

also a lot of experience with “traditional” environmental and social policies, which may, by raising the costs of non-sustainable products and consumption patterns, may indirectly encourage sustainability-enhancing innovations. But neither generic innovation policies nor traditional “non-innovation” environmental and social policies offer *new* insights into the question of how to steer innovation efforts into areas that are critical for sustainable development. Again, international good practice in this area is still in the process of being developed. But among the approaches that fall into the category of “innovation policies for sustainable development” are grand societal challenges, policies promoting social innovation, or policies promoting innovation for the circular economy.

- (iii) ***Demand side policies***: strengthening the demand for innovation is an objective for traditional innovation policy. It becomes even more important in the context of Innovation for Sustainable Development because such innovations typically address issues where externalities or public good characteristics are particularly pronounced, or where a change in consumer behaviour is required. Under those circumstances, the risk is particularly high that innovations, once developed, will not be adopted at a sufficient scale and pace to make a difference to sustainable development. This in turn may discourage would-be innovators.
- (iv) As indicated above, the measurement of innovation for sustainable development is an issue that needs more work, and policy support may be required to create an evidence base.

Follow-up process

28. The current format of offering tailored capacity-building and policy advisory services to facilitate the implementation of policy recommendations has been taxing the financial and human resources of the secretariat. But it is also one of the elements that can ensure a lasting impact of the Reviews. While this offer should be maintained subject to resource constraints, in the future, some of the follow-up could be done as part of the Innovation Policy Outlook process. To the extent that similar policy recommendations emerge from the Reviews of several countries, joint capacity building and policy advisory events could be organized. Moreover, a modular, standing training on the fundamentals of innovation policy could be offered, including as part of the preparations for a national Review. UNCTAD has developed such training modules, and the two secretariats are in the process of exploring possible cooperation.

29. Similarly, demand for second round follow-up Reviews has outstripped the capacity of the secretariat. Again, the Innovation Policy Outlook could provide a way to monitor reform progress in the interim period between two full-fledged national reviews.

30. In addition, member States could take advantage of the annual sessions of the Team or the Committee to report on progress with innovation policy reforms and to receive additional feedback from their peers.

IV. The way forward

31. In its discussion of possible modifications to the methodology for the ECE Innovation for Sustainable Development Reviews, the Team of Specialists on Innovation and Competitiveness Policies considered:

- that the National Innovation System still a useful paradigm to organize the analysis and discussion;
 - that the methodologies of the national Reviews and the new Innovation Policy Outlook should be aligned;
 - that in future reviews there should be several generic chapters describing the country's national innovation system and policies and benchmarking it against international good practice, followed by several elective chapters providing in-depth analysis of selected issues of particular relevance to the innovation system and policies of the country being reviewed;
 - that a more systematic process of follow-up and review should be built into the projects, with voluntary progress reports by countries at the sessions of the Team of Specialists or of the Committee on Innovation and Competitiveness Policies, and possibly using the new sub-regional Innovation Policy Outlook as a tool to assess reform progress;
 - that the question of how to mainstream Sustainable Development into the Reviews would require additional conceptual work, including on question such as which new specific innovation policies are needed to drive sustainable development, what are good practice governance arrangements, or how to measure innovation for Sustainable Development.
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