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Development and transfer of technologies

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Development and transfer of technologies

**Strategy paper for the long-term perspective beyond 2012, including
sectoral approaches, to facilitate the development, deployment,
diffusion and transfer of technologies under the Convention**

Report by the Chair of the Expert Group on Technology Transfer*

Summary

This note provides an executive summary of the report by the Chair of the Expert Group on strategy paper for the long-term perspective beyond 2012, including sectoral approaches, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention (FCCC/SB/2009/3).

* The document was submitted after the due date owing to the timing of the meeting of the Expert Group on Technology Transfer, held from 13 to 14 May 2009.

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Executive Summary

A. Long-term vision and goals

1. Effective technology development, deployment and transfer will play a vital role in global efforts to reduce greenhouse gas (GHG) emissions and decrease vulnerability to the adverse impacts of climate change. Technology innovation and demonstration reduce the costs and improve the performance and availability of technologies for mitigation and adaptation, while deployment and diffusion programmes increase investment in and use of these technologies in all countries and regions. International technology cooperation can accelerate the pace of innovation, increase the scale of demonstration and deployment, and ensure technology diffusion and access in all countries.
2. A robust technology transfer programme under the Convention is required to catalyse the transition to low emission and climate resilient development. Potential contributions of a technology transfer programme to this transition by 2030 are summarized below:
 - (a) **Expanded** public and private research, development and demonstration (RD&D) programmes, resulting in new technologies and **dramatic cost reductions and improved performance** of technologies for mitigation and adaptation, along with stronger centres of innovation, particularly in developing countries;
 - (b) **Enhanced** technology deployment and diffusion programmes, along with private-sector investment flows, resulting in up to **USD 1 trillion per year** in investment in technologies for mitigation and adaptation around the world;
 - (c) **Technological and institutional capacity and enabling environments** are strengthened so that all developing countries can sustain technology development, deployment and diffusion activities in a cooperative framework.
3. This paper discusses three potential goals for achieving this vision:
 - (a) **Accelerate innovation** of environmentally sound and affordable technologies for mitigation and adaptation in all countries and regions;
 - (b) **Scale up deployment** of environmentally sound and affordable technologies for mitigation and adaptation, especially in developing countries;
 - (c) **Speed up diffusion** of environmentally sound and affordable technologies for mitigation and adaptation, especially in developing countries.

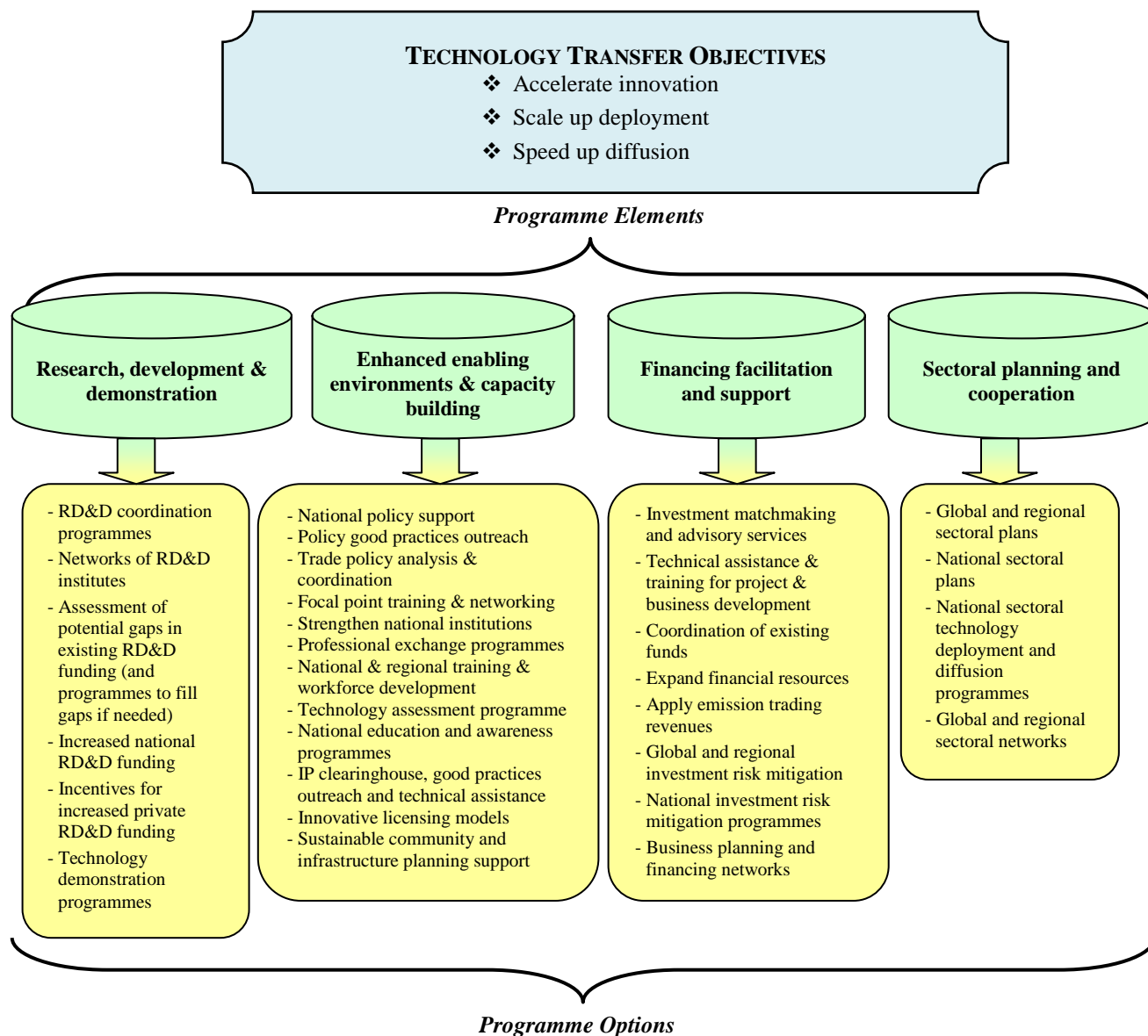
B. Options for enhancing technology development and transfer

4. The Expert Group on Technology Transfer (EGTT) delivered this paper to provide an expert evaluation of options for enhancing the development, deployment and diffusion of technologies for mitigation and adaptation. The paper was developed through an in-depth review of a diverse portfolio of options for strengthened technology cooperation based on the literature and on proposals from Parties to the Convention. These options were defined and evaluated for the three primary phases of the technology life cycle: research and development of innovative technologies; demonstration and deployment of near-commercial technologies; and diffusion of existing commercial technologies. Information on these options is presented in detail in this paper and in the respective background papers.¹

¹ Three background papers were prepared for internal discussion by the EGTT on the identification and assessment of effective means and ways that could scale up diffusion and transfer of existing technologies for mitigation and adaptation, accelerate deployment and demonstration of technologies for mitigation and adaptation and accelerate research and development of technologies for mitigation and adaptation.

5. In this paper the options associated with the three primary technology life cycle stages are organized into four distinct programme elements, which can start to provide a potential framework for integrated implementation. Note that these elements should be treated as alternatives that can be combined and modified in various ways. Figure 1 presents the four potential elements and the primary options under each element.

Figure 1. Potential objectives, framework elements, and programme options for an integrated UNFCCC technology transfer strategy



Abbreviations: RD&D = research, development and demonstration, IP = intellectual property.

6. The paper describes potential programme options that can be implemented for each of these four elements and characterizes the scale of resources, expected effects and feasibility of each. It also highlights examples of relevant performance indicators.

7. The portfolio of options presented in this paper will have the greatest impact if the implementation of the options that are selected by Parties is conducted in a cohesive and coordinated fashion. The paper presents two complementary facets of a complete operational framework: functional approaches and administrative arrangements. A fully operational framework will combine the administrative arrangement and functional approach selected by the Parties. An example of such

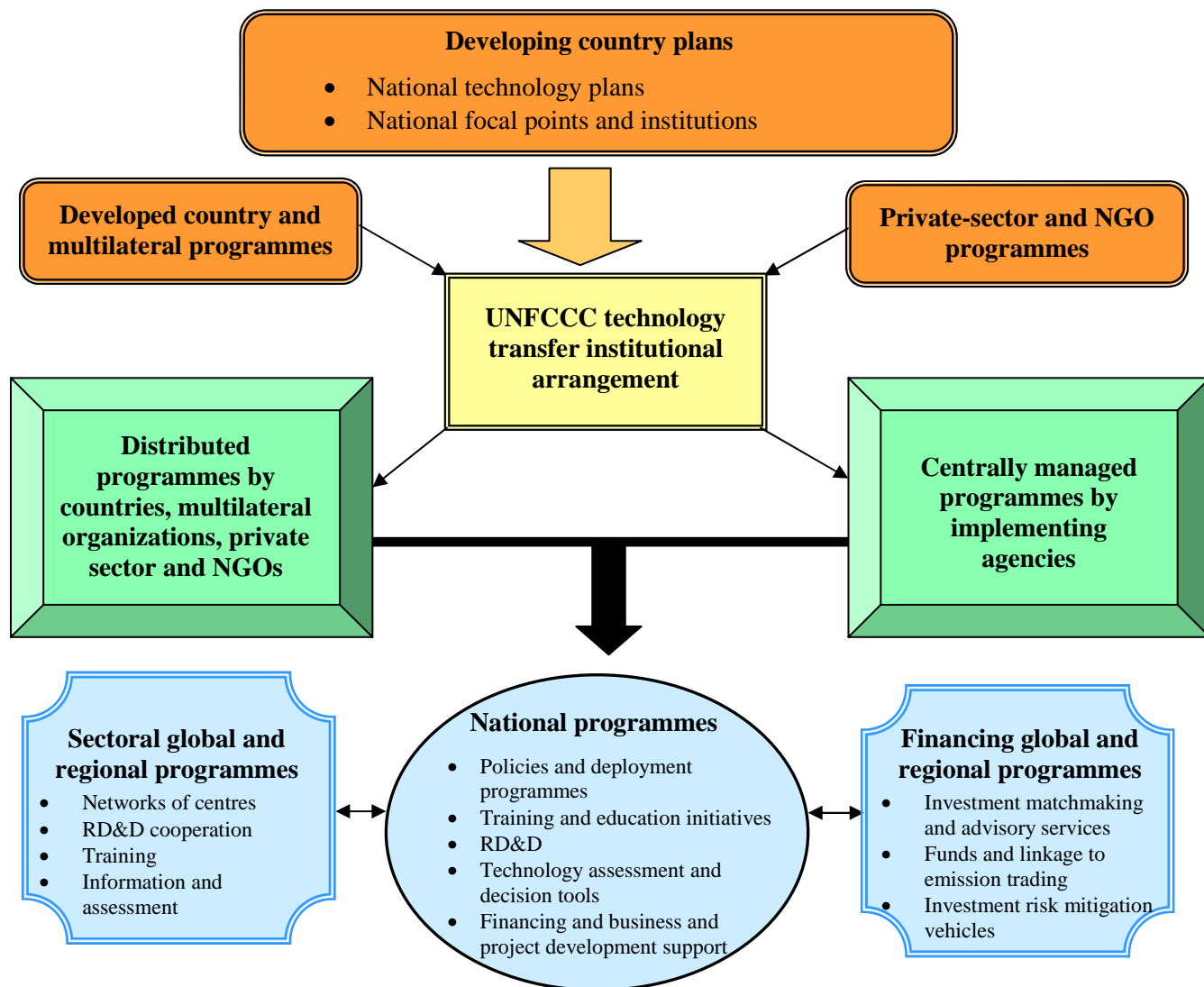
an operational framework is provided in figure 2. The paper does not provide an exhaustive treatment of potential implementation frameworks; there are other approaches that merit consideration.

8. Four options for functional organization are presented in this paper, with each option focusing on one theme as the primary technology transfer delivery mechanism. These functional options involve approaches that emphasize national plans and programmes, sectoral activities, technology transfer programme elements or selected specific initiatives from these programme elements.

9. Under a national plan and programme driven approach, the technology priorities of developing countries would be the primary determinant of the scope of technology transfer programmes and implementation would take place mainly at national levels with support from global and regional initiatives. Under a sectoral approach, implementation of programmes would be organized and conducted according to economic sector (e.g. energy, agriculture, industry) at global, regional and national levels. A programme element structure would conduct implementation according to the key elements of a technology transfer programme under the Convention, such as the four potential elements presented in this paper (RD&D, enabling environment, financing, and sectoral programmes). Another alternative is a structure that emphasizes selected key initiatives that are expected to have the greatest impact in driving technology transfer. This would focus on a select number of programmes (e.g. national plans and programmes, sectoral networks, financing services, technology demonstration partnerships) rather than providing comprehensive support, and can be viewed as a dynamic structure that changes over time.

10. Three options for administrative arrangements are also presented: a centralized, a decentralized and a hybrid option. Under a centralized approach, programmes are funded, managed and implemented through one common structure by a small number of organizations. A decentralized structure fosters distributed implementation and support by a larger number of diverse organizations operating at global, regional and national levels. Elements of a centralized and/or decentralized approach can be combined in a hybrid structure where programmes are coordinated through one organization and implementation of programmes that would benefit from a common structure are conducted centrally and programmes that would benefit from a diversity of approaches are implemented in a distributed fashion.

Figure 2. Example of an operational framework combining an administrative arrangement with a functional approach



Abbreviations: RD&D = research, development and demonstration, NGO = Non-government organization.
