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**Sustainable development: implementation of Agenda 21,
the Programme for the Further Implementation of Agenda 21
and the outcomes of the World Summit on Sustainable
Development and of the United Nations Conference on
Sustainable Development**

Summary of the four one-day structured dialogues on possible arrangements for a facilitation mechanism to promote the development, transfer and dissemination of clean and environmentally sound technologies

Note by the President of the General Assembly

I. Introduction

1. Four structured dialogues were convened by the President of the sixty-eighth session of the General Assembly, in accordance with Assembly resolution 68/210, to consider possible arrangements for a facilitation mechanism to promote the development, transfer and dissemination of clean and environmentally sound technologies. The dialogues were held at United Nations Headquarters on 29 and 30 April, 4 June and 23 July 2014. Upon the invitation of the President of the Assembly, the dialogues were moderated jointly by the Permanent Representative of Switzerland to the United Nations, Paul Seger, and the Deputy Permanent Representative of Brazil to the United Nations, Guilherme de Aguiar Patriota.

2. The present note provides a summary of the discussions and recommendations that emerged from the structured dialogues, including on the possible modalities and organization of such a mechanism, as stipulated by resolution 68/210. Section II summarizes the tenor and evolution of the discussions in each of the dialogues. Section III outlines recommendations on the way forward, based on the considerable convergence of views observed by the end of the fourth dialogue. All papers and statements presented at the dialogues are available from <http://sustainabledevelopment.un.org/index.php>.



II. Dialogues

Dialogues 1 and 2: stocktaking and review of recent developments (29-30 April 2014)

3. The first two dialogues were focused on taking stock of the consideration by the United Nations of a possible technology facilitation mechanism, as well as reviewing recent developments regarding existing mechanisms and processes. Participants also discussed the scope and extent of fragmentation among them and options for enhancing synergy and coherence.

4. At the first two dialogues, experts presented recent developments in technology facilitation, building on the body of evidence and ideas submitted to the membership of the General Assembly through the workshops on technology facilitation held in 2013,¹ as well as the reports of the Secretary-General on the subject since the United Nations Conference on Sustainable Development was held ([A/67/348](#) and [A/68/310](#)). Recent developments of note included:

- The evolution of CGIAR, which strives to transform itself from a “technology push” agricultural research and extension system focused on raising agricultural productivity to a more participatory system for innovation that is demand-driven and seeks to promote sustainable agricultural production, taking advantage of the latest advances in information and communications technologies (ICTs).
- The changing role of the Commission on Science and Technology for Development, which aims to move from being principally a torch-bearer on science and technology to also being a “horizon scanner”, helping countries in terms of anticipating disruptive technologies and harnessing ICTs for sustainable development.
- The launch of the Climate Technology Centre and Network’s beneficiary-driven advisory services activity, which helps countries to address identified technology needs relating to climate change mitigation and adaptation. A key difficulty that the Climate Technology Centre and Network seeks to address is not a lack of information as to what is on offer but rather the huge amount and fragmented nature thereof.
- The World Bank’s Climate Investment Funds, a collection of distinct programmes with separate boards providing highly concessional financing for the pilot demonstration of clean and environmentally sound technologies, in particular renewable energy technologies. The Funds’ support is targeted at the intermediate stage of the technology cycle, demonstrating the feasibility of such key technologies as concentrated solar power generation in middle-income countries.

5. Dialogue participants also learned about experiences on capacity-building, including:

- The experience of Malaysia with strong public investment in science and technology (and engineering and mathematics education) in order to advance towards a knowledge-based economy, including lessons from difficulties that it

¹ See <http://sustainabledevelopment.un.org/technology/2013>.

faced in obtaining high returns to public investment in research and development (5 per cent in the case of Malaysia).

- A case study of EARTH University (Escuela de Agricultura de la Región Tropical Húmeda) in Costa Rica, a partnership promoting a type of higher education that enables students from underprivileged backgrounds to transform themselves into entrepreneurs building ethical businesses focused on sustainable innovation.
- The European Union's multilateral approach and resources put in place to facilitate the development and transfer of technologies, many relevant to sustainability concerns, with programmes open to participation by developing countries.
- The experience of the World Intellectual Property Organization with building innovation capacity within beneficiary countries, which underlines the importance of international platforms that promote knowledge transfer and provide technical assistance to help countries to understand and manage intellectual property issues.

6. At the first two dialogues, it was confirmed that there was a shared understanding among participants that, while a wide range of activities regarding the development, dissemination and transfer of clean and environmentally sound technologies existed, more needed to be done to address fragmentation and strengthen synergies of efforts in this area. As the Secretary-General said, the scale of efforts had yet to match the scale of the challenge.

7. Also at the first two dialogues, the range of the debate on key questions that needed to be answered was clarified before an agreement could be reached on the way forward. This included:

- The scope of a possible technology facilitation mechanism: some delegations maintain that it should include only clean and environmentally sound technologies, while others highlight the importance of technologies that can facilitate a transformative shift in the area of sustainable development, including its economic and social dimensions.
- The nature of fragmentation in existing facilitation efforts: there are several dimensions to fragmentation, including geographical (different needs of different countries), among international bodies engaged in technology facilitation, between finance providers and technology facilitators, and at different stages of the technology cycle. Fragmentation within and among donor Governments and in the earmarking of funds also contributes to that fragmentation. Similar issues exist on the side of beneficiaries.
- The stages of the technology cycle that should be addressed by technology facilitation: many delegations and experts maintain that it should address the full cycle, from research, development and demonstration to market formation and diffusion, whereas others maintain that it should focus on the stages where the needs are highest.
- In this regard, there is repeated recognition of differences in needs at the national, regional and country-group levels. It is also often observed that international collaboration on upstream research and development is only imperfectly served by current international initiatives. In addition, inadequate

attention is paid to bridging the gap between technology development and deployment on a large scale. Much international cooperation happens at the technology diffusion stage of the cycle, where there is room for greater coordination.

- Urgency versus prudence: while many delegations underlined the urgency of responding to a mandate to discuss options for a technology facilitation mechanism, others underlined the need to gather more detailed information on technology facilitation efforts under way to be able to discuss the question of a technology facilitation mechanism in a more informed manner. More genuine efforts need to be undertaken in mapping.

8. During the debates, participants suggested a number of additional proposals that could be taken into account as the way ahead is discussed at subsequent dialogues, including the following:

- The challenge at hand is much broader than technology transfer and, while the transfer of commercially viable technologies is a private sector issue, Governments can do much by facilitating an enabling regulatory framework, including good economic governance, the rule of law and the effective enforcement of rules, including on intellectual property rights.
- It is crucial to include non-State actors (academia, civil society, business) on a regular basis in further discussions on technology facilitation at the United Nations.

9. Dialogue participants also heard an update on preparations for the launch of a technology bank for the least developed countries, the modalities of which were to be determined on the basis of a feasibility study soon to be undertaken. The technology bank was understood as a time-bound mechanism that would logically reach its conclusion with the graduation of all countries out of least developed country status.

Dialogue 3: identifying areas of convergence (4 June 2014)

10. The third dialogue was focused on identifying possible functions that could be undertaken by technology facilitation and options for the way forward, on the basis of discussion notes proposed by the co-moderators. The statements delivered at the meeting by Member States and other participants on these issues, while building on positions presented at earlier dialogues and workshops on the subject, revealed a certain alignment of assessments and proposals in a number of areas. These included:

- Improving synergy and coherence: while proposing different modalities and formats, a wide range of participants called for an improved framework for system-wide coordination and cooperation in the area of technology cooperation, while respecting the rules and/or mandates of existing institutions, frameworks and processes.
- Improving data and information: while using different terms to describe it, a wide range of delegations called for promoting better mapping, sharing and dissemination of knowledge and information on existing technology facilitation activities and/or technologies themselves across the United Nations system and beyond through electronic or other platforms.

- Analysis of needs and gaps: many delegations appeared to support further analysis by the United Nations to draw a more complete picture of technology needs in relation to sustainable development and identify any important gaps in addressing those needs.
11. There were other functions that a number of delegations thought essential for further consideration:
- Capacity-building: articulate capacity development programmes and knowledge platforms within the United Nations system that facilitate access to existing capacity-building initiatives.
 - Knowledge-sharing and networking: build and expand open international networks of collaboration in research, development and demonstration that allow for the participation of all countries, including the poorest.
 - Technology access and transfer: promote technology access and transfer to developing countries on preferential and/or concessional terms, especially in the context of publicly funded technologies, and encourage the expansion of clean and environmentally sound technologies in public domains.
12. The third dialogue was enriched by a number of complementary perspectives on technology and innovation issues presented by a number of experts:
- The Organization for Economic Cooperation and Development presented lessons from a large body of national innovation system reviews for developed and developing countries that underlined the importance of building national capacities (investment in skills, research and development and innovation) in order to be able to make good use of technology transfer and facilitation, and the role of multinational enterprises and participation in global value chains as major conduits for technology acquisition (hence the importance of such framework conditions as competition and entrepreneurship, among others). It presented its Innovation Policy Platform, an online learning tool on innovation and innovation policies developed jointly with the World Bank that includes significant content relevant for developing countries.
 - Very supportive of a United Nations technology facilitation mechanism as proposed in the 2012 report of the Secretary-General on the subject ([A/67/348](#)), the South Centre underlined the importance of such a mechanism to promote technology in a broader sense, going beyond clean and environmentally sound technologies, and throughout the full technology life cycle, from research and development to demonstration, market formation and diffusion. The South Centre was of the view that developing countries participated in global value chains at the lowest levels of technology and that getting framework conditions right did not necessarily lead to the transfer of technologies or the capacity to benefit from them. Regarding intellectual property issues, there was a great deal of technology in the public domain that could be used for sustainable development, and one should not hesitate to make greater use of compulsory licensing for privately owned intellectual property.
 - The International Centre for Trade and Sustainable Development was convinced of the need to set up a technology facilitation mechanism under the auspices of the United Nations. The key function of such a mechanism should be to coordinate existing facilitation activities within the United Nations

system and beyond, which are currently scattered, splintered and carried out inside separate sectoral “silos” (energy, biodiversity and hazardous wastes, among others), thus weakening the efforts. The participation of all relevant stakeholders in such a mechanism was considered very important. In their view, if the mechanism was to be effective, any mapping or database activities thereof ought to be backed by concrete knowledge-sharing and capacity-building activities.

- Providing a civil society perspective, the representative of the ETC Group was convinced of the need for a United Nations technology facilitation mechanism backed by activities on “horizon scanning”, as well as technology assessments.
- The European Union underlined that any possible technology facilitation mechanism put in place by the United Nations should avoid being static. In its view, technology solutions required more knowledge and its wider dissemination; therefore, the process was an important contributor. It was also important to go beyond increased efficiency (such as resource efficiency) and seek breakthrough solutions, which justified the scale of the resources allocated to science, technology and innovation in Horizon 2020, the research and innovation programme of the European Union. The representative of the European Union also underlined the importance of using innovative tools, such as more modern use of public procurement, innovation prizes and “crowd funding”.

13. Dialogue participants heard a proposal by two independent experts from academia and the private sector aimed at significantly enhancing institutional capabilities to develop technologies to meet sustainable development challenges and consisting of several elements, including:

- An advanced research projects agency for sustainable development that provides thought leadership and targeted funding to fill the gap between the research/proof-of-concept and demonstrable prototype stages (thus overcoming the “valley of death”) to create successful outcomes that can then find applications at scale.
- A global research and development facility for sustainable development that provides a long-term perspective in research and development efforts performed by talented individuals from all over the world on limited-term assignments within a lean, state-of-the-art institutional design, to maximize effectiveness.
- Crowdsourcing solutions, including a platform for prize-driven innovation for sustainable development, which can potentially leverage technological expertise (and resources) from multiple individuals or organizations and is results-based (i.e. the prize is awarded only if the goal is met).

14. The presentation of the preliminary outline of this proposal was welcomed by some delegations as a thought-provoking idea that should be discussed further as part of deliberations on the way forward regarding a technology facilitation mechanism.

Dialogue 4: recommendations on deliverables and the way forward (23 July 2014)

15. At the fourth and final dialogue, concrete options regarding the possible functions, modalities and organization of a technology facilitation mechanism were discussed on the basis of notes proposed by the co-moderators. These included:

- (a) Better information on and mapping of existing facilitation activities;
- (b) Improving coherence and synergy between existing facilitation activities;
- (c) Conducting analyses of technology needs and gaps in addressing them;
- (d) Promoting the development, transfer and dissemination of clean and environmentally sound technologies through a technology facilitation mechanism.

16. The co-moderators welcomed the increased participation by Member States and other participants in the dialogue and emphasized its link to the successful conclusion of discussions on the sustainable development goals, in which fostering innovation figures in one goal and technology is mentioned in several targets. In this regard, it is important to be mindful of coherence in the way forward, given the close linkages between technology facilitation and the sustainable development goals within the post-2015 process.

17. The final dialogue's deliberations benefited from interventions by resource persons representing different types of agencies that could participate in the functioning of a possible technology facilitation mechanism:

- The Department of Economic and Social Affairs of the Secretariat underlined that hardly any sustainable development goal could be achieved without significant progress in the availability of technologies, and discussed the possible implications of the co-moderators' proposed options in terms of institutional design and resources.
- The Office of the Assistant Secretary-General for Policy Coordination and Strategic Planning briefed participants on the United Nations experience with operating multi-stakeholder partnerships, such as the example of the Global Pulse initiative making use of an institutional model based on open software and "big data", and underlined that the time that it took to build such partnerships should not be underestimated.
- Providing a perspective from the private sector, a representative of the International Chamber of Commerce underlined key considerations in building a successful innovation-based partnership, including: (a) the ability of the private sector to link with local universities and research and development; (b) the existence of adequate infrastructure and a stable political and regulatory environment (e.g. contract law); (c) significant investment in education and capacity-building; and (d) the reduction of market barriers (including tariffs) to clean technologies.

18. Interventions from Member States and civil society representatives suggested broad support for further discussion and consideration of some or all of the elements of the first three options put on the table by the co-moderators, with some delegations underlining the need for a more detailed analysis of needs and gaps prior to discussing concrete next steps. While a large number of delegations expressed support for all four options proposed by the co-moderators, several delegations emphasized that it was too early for substantive deliberations on some

or all elements of the fourth option and that further information was needed on the elements therein. Some delegations once again underlined during the dialogue that there was difference of opinion regarding what precisely was mandated by the United Nations Conference on Sustainable Development. There was some discussion on the merit of an incremental approach beginning with deliverables, which received wide support.

19. There was also an inconclusive debate as to whether a procedural resolution was needed during the remainder of the sixty-eighth session of the General Assembly to ensure the continuation of the discussions on the technology facilitation aspects of sustainable development, with some delegations generally supporting this and others arguing that it was implicit in resolution 68/210, which was the mandate for the dialogues.

20. The co-moderators concluded the meeting by stating that they would provide their report on the four structured dialogues to the President of the General Assembly, including recommendations (see sect. III below), based on their notes and discussions at the meeting.

21. The co-moderators also stated that their report to the President of the General Assembly would include elements of a procedural resolution on the continuation of discussions on technology issues during the sixty-ninth session of the Assembly, noting the divergent views voiced during the fourth dialogue on its merits, and sought guidance from the President of the Assembly on the matter. Following the publication of the President's own report on the structural dialogues, and for practical reasons, any further discussions on the subject would not take place before September 2014.

III. Recommendations for the way forward

22. The fourth structured dialogue provided a forum for interactive discussion among Member States and other stakeholders on concrete next steps in the area of technology facilitation, based on the notes proposed by the co-moderators. It was widely expressed that one important next step was to facilitate the launch of the technology bank and science, technology and innovation supporting mechanism for the least developed countries, as mandated in General Assembly resolution 68/224.

23. The co-moderators drew two conclusions from the fourth structured dialogue: first, there is support for initial tangible deliverables and, second, further discussion is needed regarding other actions.

24. These measures could be initiated concurrently or in a phased way and could constitute a basis for further incremental action in the future.

25. Consequently, the co-moderators believed that the Secretary-General could come forward to the General Assembly with a concrete proposal without further delay regarding the following deliverables:

1. Develop an online platform to undertake a thorough mapping of existing technology facilitation mechanisms, frameworks and processes for clean and environmentally sound technologies

26. The creation of an online knowledge-sharing platform would include the continuous mapping of and linking to existing facilitation activities, as well as the dissemination of open and publicly available information and knowledge on clean and environmentally sound technologies themselves. Such a platform could be maintained by an appropriate United Nations entity, supported through a collaborative partnership with relevant international bodies, the private sector, non-governmental organizations and other relevant stakeholders, and be backed by an advisory group consisting of both users and suppliers of information, the public and private sectors and key international agencies/organizations. It would have to operate through a process which ensures that information provided is kept up-to-date and accessible and meaningful in terms of promoting the uptake and impact of technologies by end users.

2. Improve coordination within the United Nations system on clean and environmentally sound technologies

27. Make better use of the existing United Nations infrastructure through increased coherence and synergies among technology transfer initiatives, programmes and mechanisms already operating within the United Nations system and under the Rio Conventions.

28. As views differed on how to improve coordination, the co-moderators were of the view that the Secretary-General could present several options in order to have a better basis on which to move forward.

29. Elements that the Secretary-General might want to consider include enhancing dialogue among relevant actors through regular meetings and creating an inter-agency coordination mechanism for technology broadly along the lines of UN-Energy, strengthening coherence and synergy among ongoing technology facilitation activities within the United Nations system and under the Rio Conventions. Such a mechanism could also enhance coordination among international initiatives for science, technology and innovation capacity-building in developing countries. Coordination and synergy could benefit from better transparency and aggregation of information on work programmes and budgets, while respecting the mandates of existing bodies and programmes. It could be backed by a network of universities, research organizations and national science, technology and innovation and technology transfer bodies participating on a voluntary basis.

30. Progress on the deliverables above would contribute to more focused and substantial discussions with regard to the following option.

3. Analysis of technology needs and gaps in addressing them

31. A United Nations inter-agency technology coordination mechanism could also promote the sharing of existing analyses of technology needs and gaps in addressing them, as well as encourage new such analyses where clear needs and gaps are identified. In particular, such a coordination mechanism could foster inter-agency cooperation on focused capacity-building initiatives to assist countries, especially

the least developed countries and other countries in special situations, in gaining access to technology and know-how and deploying them effectively to address their sustainable development needs and challenges. Such inter-agency coordination could also extend to innovation policy reviews that support the strengthening of national innovation systems, possibly in cooperation with other relevant intergovernmental bodies and international organizations.

4. Elements for continued discussions

32. As the structured dialogues have shown that views differ on the question of establishing a technology facilitation mechanism as contained in the fourth option proposed by the co-moderators, the co-moderators recommend continuing the discussion on the following elements and functions that have been proposed as part of future United Nations actions on technology facilitation:

- Developing capacity development programmes and technology needs assessments.
 - Conducting technology assessments.
 - Building public-private partnerships, including on collaborative intellectual property systems and licensing.
 - Setting up a technology development fund to strengthen global research and development, demonstration cooperation and technology transfer and developing countries' participation therein.
 - Setting up a management and coordination structure within the United Nations, including regional and subregional cooperative mechanisms and national coordination units that actively facilitate and promote the transfer of technology.
 - Reviewing the proposal for creating a global advanced research projects agency for sustainable development with a view to identifying synergies between the concrete deliverables proposed above and this proposal.
-