Background Note

General Assembly Structured Dialogues on "Possible arrangements for a facilitation mechanism to promote the development, transfer and dissemination of clean and environmentally sound technologies"

Produced by the United Nations Non-Governmental Liaison Service (UN-NGLS)

I. Background on the Call for a Technology Facilitation Mechanism, Stemming from Rio+20

The 2012 UN Conference on Sustainable Development (Rio+20) outcome document, *The Future We Want*, highlights the importance of technology for sustainable development in eight paragraphs (269-276) of Section VI on Means of Implementation. Paragraph 273 requests "relevant United Nations agencies to identify options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies by, inter alia, assessing technology needs of developing countries, options to address them and capacity building." This paragraph also requested the UN Secretary-General "to make recommendations regarding the facilitation mechanism to the sixty-seventh session of the General Assembly." Paragraph 275 recognizes "the importance of strengthening international, regional and national capacities in research and technology assessment, especially in view of the rapid development and possible deployment of new technologies that may also have unintended negative impacts, in particular on biodiversity and health, or other unforeseen consequences."

The resulting report from the Secretary-General, A/67/348, was issued in September 2012. It concludes, "The analysis contained in the present report leaves no doubt that there is a need for a global technology facilitation mechanism under the auspices of the United Nations," and presents lessons learned for technology facilitation, and a set of recommended elements of the mechanism. According to the lessons learned, to be effective, a technology facilitation mechanism needs to promote technology assessment.

Subsequently, in February 2013, in A/Res/67/203, the General Assembly took note of the Secretary-General's report and invited the President of the General Assembly to organize a series of four one-day workshops "on the development, transfer and dissemination of clean and environmentally sound technologies and the connection between clean and environmentally sound technologies and sustainable development." The Secretary-General was requested to submit a report on outcomes from the workshops to the sixty-eighth session of the General Assembly. This report, A/68/310, was issued in August 2013. It found that "accelerating technology facilitation (i.e. dissemination of technologies across national frontiers and economic development levels) is a shared objective of all Member States, international organizations and other stakeholders." It emphasized, however, that views differ on the way forward, and more hard data and evidence must be generated "on what exactly is needed and how best to achieve it."

Following this report, in December 2013, the UN General Assembly decided in A/Res/68/210 to hold a series of four one-day structured dialogues, around the overall theme of "possible arrangements for a facilitation mechanism to promote the development, transfer and dissemination of clean and environmentally sound technologies." As specified in the concept note for these dialogues, they are to enable "the involvement of relevant stakeholders, including Member States, international and regional organizations, multilateral and regional financial and development institutions, universities and research institutions, philanthropic foundations, global partnerships, the private sector and civil society."[1]

The schedule for the structured dialogues is as follows:

29 April – Dialogue 1:
Stock - taking of the debates on development, transfer and dissemination of clean and environmentally sound technologies

30 April – Dialogue 2:
Assessing fragmentation, synergies, areas of duplication and opportunities for cooperation between existing mechanisms and processes, thus improving overall coherence and enhancing interlinkages

4 June – Dialogue 3:
Identifying the potential for development, transfer and dissemination of clean and environmentally sound technologies and identifying options for the way forward

23 July – Dialogue 4:
Possible arrangements to enhance technology facilitation

A summary of the discussions and recommendations emerging from these dialogues will be "submitted by the President of the General Assembly to the Assembly at its sixty-eighth session and for consideration and appropriate action by the Assembly at its sixty-ninth session, with the aim of reaching a conclusion in this regard."[2]

II. References to Technology in Existing International Agreements

Technology plays a critical role as a means of implementation in efforts to address contemporary global challenges and to move towards sustainable development.[3] It is widely acknowledged that science, technology and innovation have key roles to play in achieving the Millennium Development Goals and addressing the sustainability objectives at the centre of the Rio+20 outcome document.[4] The United Nations system could play a leading role in promoting the application of science and technology to sustainable development. Agenda 21, one of the outcomes of the 1992 United Nations Conference on Environment and Development, explicitly cites science and technology as key to the implementation of

[1] Concept note for United Nations General Assembly Structured Dialogues: "Possible arrangements for a facilitation mechanism to promote the development, transfer and dissemination of clean and environmentally sound technologies."

[2] United Nations General Assembly Resolution A/Res/68/210 (December 2013).

[3] UNIDO (2014). "Facilitation mechanisms to promote the development, transfer and dissemination of clean and environmentally sound technologies."

[4] Ely, A., Van Zwanenberg, P. and Stirling, A. (2011). *New Models of Technology Assessment for Development, STEPS Working Paper 45*, Brighton: STEPS Centre.

sustainable development objectives, along with finance, human resources, and capacity building.[5] In Agenda 21, the term "technology" is prominently featured: it is in every single chapter, totalling 691 references, and chapters 16, 31, 34, and 35 are dedicated to science and technology.[6]

In the areas of environmental, health and safety technologies, at least 17 international agreements, conventions, and protocols contain technology provisions, including the following:

- Convention on the Transboundary Effects of Industrial Accidents
- Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to the Convention on Long-range Transboundary Air Pollution
- Protocol on Persistent Organic Pollutants to the Convention on Long-range Transboundary Air Pollution
- Protocol on Heavy Metals to the Convention on Long-range Transboundary Air Pollution
- Convention on the Protection and Use of Transboundary Watercourses and International Lakes
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Convention on Biological Diversity
- Cartagena Protocol on Biosafety to the Convention on Biological Diversity
- Convention on Nuclear Safety
- Convention on the Law of the Sea
- Vienna Convention for the Protection of the Ozone Layer
- Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer on Substances that Deplete the Ozone Layer
- United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa
- International Undertaking on Plant Genetic Resources
- International Treaty on Plant Genetic Resources for Food and Agriculture

In response to paragraph 273 of the Rio+20 outcome document, the members of an expanded UN Executive Committee on Economic and Social Affairs (ECESA Plus - comprised of 53 UN organizations) made proposals on the functions, format and working methods of a potential Technology Facilitation Mechanism (TFM). Twenty-two organizations and bodies provided contributions/suggestions, including: ECA, ECE, ESCAP, ECLAC, ESCWA, DESA, IAEA, IMO, ITU, OHRLLS, UNCDF, UNCTAD, UNESCO, UNFCCC, UNIDO, UNOPS, UNDP, UN-Women, UNEP, the World Bank, WIPO, and the WTO.[7] Submissions also came from Member States, intergovernmental organizations, and Major Groups. A list of the majority of the submissions can be found here. Several of the aforementioned entities drew on existing institutional knowledge and expertise in their respective realms of technology policy making. UNCTAD, for example, suggested that lessons learned from its Commission on Science and Technology for Development could contribute to structuring a future Technology Facilitation Mechanism.

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[5] National Research Council (2002). *Knowledge and Diplomacy: Science Advice in the United Nations System*. Washington, DC: The National Academies Press, p. 21.

[6] United Nations General Assembly Resolution A/67/348 (September 2012). *Options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies, Report of the Secretary-General*, p. 12.

[7] United Nations Sustainable Development Knowledge Platform (2012). *Options for a technology facilitation mechanism – follow up to the UNCSD outcome*.

III. References to Technology in Outcome Document – Open Working Group on Sustainable Development Goals

In the Outcome Document - Open Working Group on Sustainable Development Goals (SDGs) released by the Open Working Group Co-Chairs on 19 July, "technology" is referenced explicitly in the targets for eight of the seventeen goals [1, 2, 4, 5, 6, 7, 9, 14], and less directly across four others [8, 11, 12, 15] - for example, in terms of reference to "technological upgrading," "technical assistance" or supporting "technical capacity." In addition, mention of technology features prominently in the cross-cutting goal #17 to "Strengthen the means of implementation and revitalize the global partnership for sustainable development." The reference to technology assessment that appeared in the 2 June draft document [target 17.33 for proposed goal 9 on sustainable industrialization: "build science, technology and innovation capacity in developing countries, including to undertake technology assessment and research, development and adaptation of clean and environmentally sound technologies"] was not included in the final Outcome Document. Also lost in the Outcome Document was the reference in proposed goal 3 in target 3.7 to ensure "medical technologies for all."

Goals #10 "Reduce inequality within and among countries"; #13 "Take urgent action to combat climate change and its impacts"; #15 to "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"; and #16 to "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels," which currently do not directly mention technology, or technology assessment, could be spaces to re-think and better define broad-based, inclusive technology assessment protocols that advance ecosystem, social and economic benefit for all.

IV. The Technology Facilitation Mechanism Should Include Technology Assessment

Despite the variety of multilateral agreements that contain technology provisions, "there is no comprehensive global framework, agreement, assessment or monitoring mechanism for science and technology for sustainable development, as paragraph 27 of General Assembly resolution A/67/348 identifies. As mentioned in section I of this note, paragraph 275 of the Rio+20 outcome document recognizes "the importance of strengthening international, regional and national capacities in research and technology assessment...." The Secretary-General's September 2012 report A/67/348 on components of a Technology Facilitation Mechanism contains a summary of proposals for components of the mechanism in paragraph 51. This listing includes, "An international network of technology assessment centres and/or national and global advisory groups on technology assessment and ethics."[8]

The current lack of a comprehensive global framework for technology assessment particularly affects developing countries, as they can be offered technologies that may not be suited for their particular social, economic or environmental realities. Without an independent assessment capacity (at national or multilateral levels) countries with weaker economies are sometimes left to assess technologies according to the terms of those that provide them.

Promoters of a technology, in the North and South, particularly those backed by venture capital, are not necessarily in the best position to evaluate the social, economic or environmental benefits of

[8] Report of the UN Secretary-General to the UN General Assembly A/67/348, *Options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies.* (September 2012).

technology. A multilateral, democratic, participatory technology assessment mechanism, as an integral component of a Technology Facilitation Mechanism, could offer countries in the South a rigorous evaluation tool for discerning the potential risks and benefits of a technology, independent of the interests of technology promoters and investors.

Many developed countries, especially in Europe, have recognized the need for this kind of technology assessment and are building their capacity to do this. However, there are virtually no such public institutions in countries of the global South.[9] When technology assessment has been deployed in the global South, it has often served the interests of Northern governments, firms and donor driven projects.[10]

The enabling environment for the development, adaptation, dissemination, and transfer of environmentally sound technologies, particularly in the global South, must involve assessment of "environmental soundness" as well as social and developmental benefits. Technology assessment can constitute a set of practices that attempt to anticipate and analyze the broader social, environmental, and economic implications and limitations of technological projects, and to investigate the consequences of the options available to decision-makers—in the North and South.[11]

A Technology Facilitation Mechanism is a key dimension of Rio+20 follow-up on means of implementation and could become an important component of the post 2015-development agenda to address some of the present global inequities in technology assessment capacity, as well as offer new avenues for North-South, South-South and triangular clean technology diffusion, adoption and cooperation.[12] Technology assessment capacity can better equip and enable developing countries to achieve the Millennium Development Goals, the emerging Sustainable Development Goals, and ultimately contribute to the post-2015 development agenda overall. Such assessment capacity would enable countries to appropriately adapt and diffuse new technologies to particular social, economic or environmental realities.

[9] Coates, Joseph F. "Technology assessment as guidance to governmental management of new technologies in developing countries." *Technological Forecasting and Social Change* 58.1 (1998): pp. 35-39.

[10] Ely, A., Van Zwanenberg, P. and Stirling, A. (2011). *New Models of Technology Assessment for Development, STEPS Working Paper 45*, Brighton: STEPS Centre, p. 19.

[11] Ely, A., Van Zwanenberg, P. and Stirling, A. (2011). *New Models of Technology Assessment for Development, STEPS Working Paper 45*, Brighton: STEPS Centre, p. 11.

[12] Ribeiro, S. (2014). "Contributions of North-South, South-South, Triangular Cooperation, and ICT for Development to the Implementation of the Post-2015 Agenda," New York, 21 May 2014.

ANNEX

Mentions of Technology in the 19 July 2014 Sustainable Development Goals

Goal 1 - End poverty in all its forms everywhere

Target 1.4 - by 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance

Goal 2 - End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

2.a - increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries

Lost the following target that was included in the 2 June draft SDGs:

Goal 3 - Ensure healthy lives and promote well-being for all at all ages

Target 3.7 *- by 2030 ensure universal availability and access to safe, effective and quality affordable essential medicines, vaccines, and medical technologies for all*

Goal 4 - Ensure inclusive and equitable quality education and promote life-long learning opportunities for all

4.b - by 2020 expand by x% globally the number of scholarships for developing countries in particular LDCs, SIDS and African countries to enrol in higher education, including vocational training, ICT, technical, engineering and scientific programmes in developed countries and other developing countries

Goal 5 - Achieve gender equality and empower all women and girls

5.b enhance the use of enabling technologies, in particular ICT, to promote women's empowerment

Goal 6 - Ensure availability and sustainable management of water and sanitation for all

6.a - by 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

Goal 7 - Ensure access to affordable, reliable, sustainable, and modern energy for all

7.a - by 2030 enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies

7.b - by 2030 expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, particularly LDCs and SIDS

Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target 8.2 - achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labour-intensive sectors

Goal 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Target 9.4 - by 2030 upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities

Target 9.5 - enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, particularly developing countries, including by 2030 encouraging innovation and increasing the number of R&D workers per one million people by x% and public and private R&D spending

9.a - facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, LDCs, LLDCs and SIDS

9.b - support domestic technology development, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities

9.c - significantly increase access to ICT and strive to provide universal and affordable access to internet in LDCs by 2020

Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable

11.c - support least developed countries, including through financial and technical assistance, for sustainable and resilient buildings utilizing local materials

Goal 12 - Ensure sustainable consumption and production patterns

12.a - support developing countries to strengthen their scientific and technological capacities to move towards more sustainable patterns of consumption and production

Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.a - increase scientific knowledge, develop research capacities and transfer marine technology taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to

enhance the contribution of marine biodiversity to the development of developing countries, in particular SIDS and LDCs

Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target 15.6 - ensure fair and equitable sharing of the benefits arising from the utilization of genetic resources, and promote appropriate access to genetic resources

Goal 17 - Strengthen the means of implementation and revitalize the global partnership for sustainable development

Technology

17.6 - enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation, and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, particularly at UN level, and through a global technology facilitation mechanism when agreed

17.7 - promote development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

17.8 - fully operationalize the Technology Bank and STI (Science, Technology and Innovation) capacity building mechanism for LDCs by 2017, and enhance the use of enabling technologies in particular ICT

Systemic issues: Multi-stakeholder partnerships

17.16 - enhance the global partnership for sustainable development complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technologies and financial resources to support the achievement of sustainable development goals in all countries, particularly developing countries