

Lessons learnt from the start-up phase of the UN Technology Facilitation Mechanism
(10/2015 – 12/2019)

Informal note for discussion

to guide the work of the Interagency Task Team on Science, Technology and Innovation for the SDGs

New York, 15 December 2019

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1. Executive Summary

The present informal IATT working paper takes stock and draws lessons from the start-up phase of the UN Technology Facilitation Mechanism (TFM) from 2015 to 2019, also against the background of recent socio-technical and socio-economic changes, in order to support decision-making on the way forward. It aims to stimulate the internal discussions among IATT and TFM partners and to shape a collective vision of the future of the TFM. The paper was prepared by senior UN staff with expert knowledge of the topic and of the history of the TFM and its political debate since 2011. Inputs were solicited from current and former 10-Member Group, interested IATT members, and selected TFM partners.

There is a wide range of perspectives on what the TFM should be and how it should operate. Science, technology and innovation (STI) issues are firmly back on the agenda at UN Headquarters after a break of four decades, which has spurred a significant number of interesting STI activities across the UN system. Yet, political sensitivities around intellectual property rights and new technologies remain.

The TFM has become an unprecedented new UN entry point for science and technology communities, but there are remain many areas for improvement of this new science-policy interface, especially in terms of effectiveness and reach.

It is insufficient to look at only past trends and current TFM performance, since ample evidence exists for a significant change in the conditions for achieving the SDGs since they were adopted in 2015. Many of the changes have been spurred – directly or indirectly - by the rapidly advancing science and technologies and their implications for the SDGs, including in institutional terms. STI roadmaps for the SDGs and capacity building are essential means for all countries – developing and developed - to make sense of the ongoing, disruptive changes.

Against this background, we propose seventeen recommendations for consideration in five areas: (a) strategic and programmatic approach; (b) institutional architecture; (c) funding and resources; (d) participation; and (e) substantive areas for works, including at the national level (see Table).

DRAFT Recommendations for consideration	
Strategic and programmatic approach	Recommendation 1: Develop TFM vision and document guiding principles
	Recommendation 2: Quantifiable TFM targets and key performance indicators
Institutional architecture	Recommendation 3: Improve the fragmented institutional system
	Recommendation 4: Refine the role and working methods of the 10-Member Group
	Recommendation 5: Refine the role and working methods of the Secretariat and IATT
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Substantive areas of work	Recommendation 12: Monitor and analyse the impacts of new and emerging technologies and rapid technology change on the SDGs
	Recommendation 13: Carry out a significant number of pilot applications of STI roadmaps for the SDGs
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at national level:	Recommendation 16: Provide knowledge and capacity building support for the establishment of independent and permanent national mission-innovation councils
	Recommendation 17: Provide knowledge and capacity building support for the creation of a multi-sector, multiregional STI information and evaluation system that is integrated under a national STI body (existing or newly created)

Source: based on suggestions by IATT and 10-Member-Group. This is work in progress and feedback is welcome. Status: May 2019.

2. Context

The *United Nations Technology Facilitation Mechanism* (TFM) was created by the *Addis Ababa Action Agenda* and launched by the *2030 Agenda on Sustainable Development* in September 2015. It comprises the Multi-Stakeholder Forum on Science, Technology and Innovation for the SDGs (STI Forum); the *UN Interagency Task Team on Science, Technology and Innovation for the SDGs* (IATT) and the *10-Member Group of High-level Representatives of Science, Civil Society, and Business* (“10-Member Group”); as well as an online platform. Since 2015, the TFM has been coordinated by DESA, UNEP and UNCTAD.

The creation of the TFM was of historic significance, as it brought back substantive STI discussions to UN Headquarters in New York, after decades of political gridlock over intellectual property rights and technology transfer issues. In the past three years, the TFM has explored a new multi-stakeholder model of work for the UN system, which to-date has engaged 42 UN entities, more than 100 expert staff of the UN system, and thousands of scientists and stakeholders to facilitate STI for the SDGs. The TFM's STI Forum also holds a special role, as it reports formally to the *High-level Political Forum on Sustainable Development* (HLPF) in support of its formal review of SDG progress and its explicit function to "*strengthen the science-policy interface*".

In 2019, the HLPF will meet at the level of the UN General Assembly and review progress towards the SDGs and the 2030 Agenda, including in terms of trends and progress on science, technology and innovation for sustainable development. It is thus timely to take stock and draw lessons from the start-up phase of the TFM.

In its meetings, the IATT has regularly reflected on its work direction and on the relationship to participating UN system entities and to the TFM's 10-Member Group. At the same time, UNCTAD as the Secretariat for the *Commission on Science and Technology for Development*, the UN Regional Commissions, the IATF, UNEP, the World Bank, UNESCO, WIPO, ITU, FAO, and many other participating UN system entities have issued documents on trends and policy options and proposed findings on science, technology and innovation in their areas of expertise. In addition, several organizations beyond the UN system have started cooperating and contributing to the TFM work. The high-level review of 2019 is an opportune time to take stock, self-reflect, and compile all these ideas and outputs into an accessible format and derive from it well-informed guidance for the future work of the TFM, including specific elements of a work plan for 2019-2023. The present informal working paper aims to provide a contribution to just that.

The *objective of this paper* is to take stock and draw lessons from the start-up phase of the UN Technology Facilitation Mechanism (2015 to 2019), also against the background of socio-technical and socio-economic changes, in order to support decision-making on the way forward. The primary purpose is NOT a performance assessment or evaluation. Instead, it aims to stimulate the internal discussions among IATT and TFM partners to shape a collective vision of the future of the TFM.

The *primary audience* comprises the IATT and the 10-Member Group. The secondary audience includes government officials from relevant Ministries, scientific and technological contributors, partners and donors.

The working paper was prepared by senior UN staff with expert knowledge of the topic and of the history of the TFM and its political debate since 2011. Inputs were solicited from current and former 10-Member Group, interested IATT members, and selected TFM partners and participants from science and engineering communities.

A range of data and materials sources were considered. This includes written inputs from IATT and 10-Member Group; inputs from IATT sub working groups; data from scientific and academic sources, complemented with official data where appropriate; and academic journals.

The present DRAFT is only the first step in a process of reflection and deliberations in the coming months in 2019. In the next phase of this paper, further inputs from TFM partners and potential users might be sought, including from organized science and engineering communities, such as the

International Science Council, the World Federation of Engineering Organizations, Academies of Sciences and Engineering, Future Earth, the Sustainable Development Solutions Network, STI Forum participants, and others. In this process, the STI Forum from 14 to 15 May 2019 was a good opportunity to encourage stakeholders to provide further feedback.

3. Broad issues and observations

a) Challenges

Contributors to this paper expressed a wide range of perspectives on the TFM, its context and aspirations. In fact, they differ greatly in terms of the time frame and expectations they adopt for stock-taking and especially for assessing progress. Typical key benchmark years that they refer to were 2011, 2012, 2015, and 2019.

One group of contributors – most of which have been engaged in the TFM process for a long time - typically emphasized the enormous positive changes from 2011 to 2019. They note a veritable “avalanche” of new STI activities by relevant UN entities, which are increasingly difficult for the IATT to monitor and coordinate.

A second group of contributors typically compared current TFM achievements to the expectations for the TFM that prevailed at the time of the adoption of the 2030 Agenda. They noted the general progress and greater UN cooperation including with stakeholders, but also emphasized unfulfilled promises, especially with regard to the operational elements of the TFM such as the online platform.

A third group of contributors – most of which joined most recently - tends to compare the TFM with other well-resourced technology facilitation mechanisms in advanced economies. They typically express their concerns about slow progress and comparatively lower expectations for operational elements. This includes expectations for rapid policy progress on new and emerging technologies issues – a topic that was “unthinkable” in debates at UN Headquarters only a few years ago.

In other words, benchmark and time frame matters greatly. It also raises the question about the range of current expectations for the TFM. If anything, TFM expectations have increased ever more and are not at all commensurate with the level of resources currently available for the TFM.

Undoubtedly, science, technology and innovation issues are firmly back on the agenda at UN headquarters, which has spurred a lot of STI activities across the UN system. Yet, political sensitivities around IPR and new technologies remain.

While the TFM has made laudable inroads towards much greater UN system cooperation, it remains a very much fragmented system. This is despite having achieved the highest level of cooperation on STI at the working level in 40 years. It should be noted that the TFM’s Interagency Task Team on STI for the SDGs (IATT) now comprises 42 UN entities and more than 100 expert staff who are active in various IATT subgroups. In the words of Mr. Bill Colglazier *“In my view, the key innovation of the TFM enabling it to be actionable is the creation of the IATT.”*

Unprecedented new, institutionalized entry points have been institutionalized at the UN for science and technology since 2012. Besides the TFM, these include the HLPF, GSDR, IATF, the VNR processes, and others. At the working level, there are many interconnections and cooperation between these and with the older, established entry points, such as the Committee on Development Policy. However, they are not institutionalized and rise and fall with the individuals involved. In view of the new political possibilities created by the TFM, other UN coordinating mechanisms have recently also taken up STI work (e.g. the Chief Executives Board) and others like the Financing for Development Office and the UN Commission on Science and technology for Development have taken up previously “forbidden” technology topics. This is good news, but institutionalized cooperation could go a long way in making the system more efficient.

As in previous years, there is a lot of talk about “one-UN” approaches, but little incentives and active support for it. In this context, it has been noted that, while there is now a UN Chief Economist based in DESA, there is no UN Chief Scientist who could drive support for coherent STI work across the system and among UN senior leadership.

There is great willingness from stakeholders, including academia, NGOs and government officials to get engaged, but avenues for engagement are somewhat limited compared to the high levels of interest. Despite these limitations, to-date thousands of participants have made voluntary contributors.

It is important to note that the wide range of participation has not only been a matter of choice, but that it has become increasingly essential, in view of the complexity of new technology issues for achieving the SDGs.

In particular with respect to the far-reaching implications of new and emerging technologies, it has been noted that these technologies have progressed much faster than the TFM has been capable to respond or merely document the changes. The TFM’s work on STI for SDGs roadmaps have been promising, but the rapidly changing environment has been noted. In fact, four of the fifteen years of the SDG timeframe have already passed. Similarly, many ideas have been put forward for radically innovative formats for the STI Forum and interagency cooperation, but existing constraints have limited what could be achieved. Most importantly, the TFM remains an almost entirely unfunded General Assembly mandate within UN Secretariat. This is greatly at odds with the rising expectations for the TFM to facilitate STI for the SDGs worldwide. One important practical step would be to formally integrate the TFM work into the work programmes of all IATT members and thus to ensure adequate funding, in line with the joint Statement of several heads of UN system organizations in support of the TFM at the time of the Addis Ababa Agenda and 2030 Agenda negotiations in 2015.

In view of the nature of the TFM as a coordination and stakeholder engagement mechanism, it will be most important to find an effective way forward so that the TFM is better able to engage in a systematic way with key stakeholders and other existing mechanisms to provide actionable advice for member states and all stakeholders.

b) Looking ahead

In devising a plan for the future work of the TFM, it is insufficient to look at past trends and TFM performance. This is because the overall environment and possibly the dynamics and patterns of change

could have changed quite dramatically in recent years. What worked in the past might not work - or might not work as well - in the future. Hence, it is of paramount importance to look at the most recent, most salient trends, in order to get a better understanding of what might work in the next few years.

Indeed, ample evidence can be put forward to show that the conditions for achieving the SDGs have significantly changed since they were adopted in 2015. Many of the changes have been – directly or indirectly - by the rapidly advancing science and technology and their implications including in institutional terms.

Rapid changes can be seen in technology development, demonstration and diffusion with increasingly significant impacts on countries at all levels of development. In fact, almost all countries that are not at the technology frontiers with respect to these new technology clusters face increasing disadvantages, as the export-oriented development model based on technological upgrading that had been extremely successful in recent decades is becoming increasingly difficult to follow or some argue it is becoming infeasible. “Premature deindustrialization” in developing countries is but one of the more often noted phenomena in this regard.

At the same time, the STI communities are undergoing major institutional and organizational changes. In fact, their societal and economic roles are shifting. The emergence of sustainability science as a fully integrated, practical kind of science that links with many different disciplines across natural and social sciences is a case in point.

More worryingly, highly regarded scientists expressed their doubts as to whether our knowledge of how to effectively address major global sustainable development challenges has really significantly improved. This points to more fundamental issues in linking science with practical policy and problem solving.

The global perspectives on “STI for SDGs”, “SDGs for STI”, and “STI for climate change mitigation and adaption” have increasingly converged. There are, for example, major overlaps between STI for climate and sustainable development debates.

In view of these changes, it may not be surprising that the role of the relatively young TFM is also undergoing significant change. Just to name one example, the recent General Assembly resolutions 72/242 and 73/17 on the impacts of rapid technological change on the SDGs have focused some of the TFM work on precisely some of the recent trends just mentioned. Responding to such challenges in a timely manner is essential for a continued relevance of the TFM in the future.

Goodwill by all experts involved will likely not be enough for the TFM to master the future challenges and opportunities towards fulfilling its role. Structural considerations will also need to be seriously considered. They relate to the implementation approach; governance; the means and ways of engaging of volunteers; funding; geopolitics; and how to operationalize interlinkages with partners within and beyond the UN.

Ultimately, we need to know how good TFM performance is and whether it improves or not. What is its value-added? What are the cost-benefit ratios of TFM activities in its various work streams?

4. Recommendations

Against this background, we propose seventeen recommendations for consideration in five areas: (a) strategic and programmatic approach; (b) institutional architecture; (c) funding and resources; (d) participation; and (e) substantive areas for works. They are summarized in the Table and elaborated in the following.

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Source: based on suggestions by members of the IATT and 10-Member-Group. This is work in progress. Feedback is welcome. Status: May 2019

a) Strategic and programmatic approach

It has been noted many times that the General Assembly mandate which constituted the TFM - as contained in the Addis Ababa Agenda and the 2030 Agenda for Sustainable Development - was unusually detailed and prescriptive. In view of the political sensitivities, a number of Member States decided to include various safeguards that were designed to constrain the interpretation space by the Secretariat for implementing the mandate. As a result, the mandate has served as de-facto strategic document and as verbatim source for the terms of references of all TFM components. While this may have ensured a faithful implementation of Member States' agreed TFM objectives of 2015, it is clear that the mandate itself does not contain a forward-looking vision for the TFM. It does not spell-out what the TFM should achieve in broad strategic terms, nor how it could be accomplished. Furthermore, while TFM partners have made vague references to guiding principles in various UN documents, it is far from clear how they should be translated in practice, nor which of them are most important in which contexts.

Recommendation 1: Develop TFM vision and document guiding principles

There is a clear need for an *overall vision and broad guiding principles for the TFM*. They are needed for an efficient work programme development, to clearly define the role of the TFM in a changing global environment, and to guide the promotion in spinning-off of multi-stakeholder partnerships. They should

be built on initial, related work by the 10-MG on a “TFM narrative” and should be clearly grounded in the UN Charter; the Rio process, especially the Rio+20 outcome and the principles contained in the 2030 Agenda.

Technological change (and mainly digitalization, automation and AI systems) amplifies systemic and institutional deficiencies. The TFM vision might want to address this by focusing initial efforts on the following types of activities. They are but some of the issues to be considered: support for the global promotion of the rule of law and transparent regulatory frameworks to help counter inefficient bureaucracy, ultimately growing productivity; formalization of the economy to improve working conditions, including wages and access to healthcare, and to increase the tax payer base; national security to reduce violence, and for the multiple and civilian applications and synergies that military technologies have; promotion for the widespread access to electricity, Internet and digital infrastructure for all to build the necessary capacities of entire populations; building public service and public infrastructure to address the inefficiencies in public services and to improve productivity.

Recommendation 2: Quantifiable TFM targets and key performance indicators

Metrics of success are essential for any complex management or implementation task, such as the TFM. It is thus suggested to set *key performance indicators* (KPIs) to enable the IATT and 10-Member Group to make smart decisions about the direction of all current and future initiatives and projects.

At present, there are no well-defined *KPIs of STI for SDGs*. Academia and industry should be invited to help defining appropriate KPIs. STI-related SDG targets need to be quantified and translated into practical terms for various stakeholders. Furthermore, *KPIs for the TFM* are needed not only to monitor progress, but also to make its activities more visible and to get more support from UN Headquarters and UN Member States. Targets and KPIs should operate on several levels to create data and information useful to various decision-makers and other stakeholders. In particular, setting an *eye-catching and cross-cutting thematic target for each STI Forum* (e.g., ocean plastics) might be very useful and focus stakeholders work and contributions in preparation for and follow-up to the Forum.

b) Institutional architecture

During the starting-up of the TFM, a number of institutional deficiencies have become apparent that could not easily be overcome, in view of the unusually detailed mandate that set-up the TFM. As explained, the institutional TFM parameters arose from primarily political considerations of Member States, not organizational or managerial considerations.

Recommendation 3: Improve the fragmented institutional system

The original General Assembly mandate for the TFM is unusually detailed, reflecting a number of safeguards that were decided to be included by Member States. The result is a complex institutional system that ensured checks and balances and a wide range of perspectives. On the downside, it contributed to slower progress on some of the components, such as the online platform, than what some may have desired. Another example is the fact that the STI Forum and CSTD sessions in 2019 were organized in the same week in two different locations. There is a need for fine-tuning actions to ensure a systematic, workable institutional architecture that more clearly defines the division of labour and takes into account the respective roles and reporting structures of the TFM, CSTD, GSDR, HLPF, VNRs, IATF, LDC tech Bank, and STI committees of the UN Regional Commissions, together with the roles of external science and technology stakeholder communities. Such division of labour works well at the expert and

working levels, but rise and fall with the individuals involved, as the institutional links are not sufficiently specified within the Secretariat, the entire UN system, and even less so with external STI communities. An institutionalization of these links could go a long way in improving the overall UN STI system.

Against this background, it makes sense to explore institutionalization of the currently informal IATT expert inputs to recurring technology chapter in the IATF report under the Financing for Development process; to the LDC Technology Bank; the GSDR; and the various IATT work streams and related initiatives.

Similarly, institutional alignment of STI Forum and CSTD processes appear essential, in line with the spirit of the 2030 Agenda. Institutional arrangements to designate associated conferences, forums and expert groups (e.g., GSTIC, GSS and many others) co-location and reporting their results to the STI Forum. Their more specialized work should also be integrated with the IATT workstreams.

In the context of ongoing UN reform, it would make sense to institutionalize IATT and 10-Member Group expert inputs as the dedicated resource in support to the emerging economist/expert team in the new UN resident coordinators system. Subgroups designed along the IATT workstreams could provide additional specific expert support to countries.

Similar to the earlier appointment of a UN Chief Economist, the appointment of a dedicated UN Chief Scientist (at ASG level like the UN Chief Economist) could support guiding TFM and CSTD work across UN Secretariat and ensure improved support at the senior management level.

Regional STI Forums have been launched by the UN Regional Commissions. Their work should be aligned and formally designated as regional preparatory rounds for the STI Forum.

It would make much sense to align the term of mandate of the 10-Member-Group with that of the HLPF, i.e., appoint them for a full four years. The 10-Member-Group appointment process should be routinely based on nominations by academia, NGOs and private sector stakeholders, not Member States, in order to ensure ownership and the mandated multi-stakeholder nature of the Group. In addition, a role of previous members of the 10-Member-Group should be institutionalized, in order to support their continued engagement of a wide range of STI communities for the TFM.

Recommendation 4: Refine the role and working methods of the 10-Member Group

There are different views on the ultimate role and specific working methods of the 10-Member Group that is appointed by the UN Secretary General. As per the GA mandate, they are representatives of science, civil society and private sector communities, and are expected to mobilize engagement of these communities for the TFM. They ensure the functioning of the TFM as a new entry point for science at the UN. The primary role should be clearly defined and institutionalized. While the primary role is to engage and mobilize their communities and to guide the TFM, another role might be to bridge regional governments and communities and IATT.

In this context, it should be noted that the first batch of the 10-Member Group was based on an open, transparent nomination process with stakeholders and selected by an expert-based UN selection panel. The selection of the second batch of the 10-Member Group followed a call to Member States to nominate candidates for the Group. It is important to clearly define and institutionalize the elements of

the selection process to be followed in the future, while, of course, maintaining the UN Secretary General's prerogative in making the final selection.

Each incoming 10-Member-Group might be encouraged to focus their work on two to three key deliverables for their term and provide overall strategic guidance for the TFM and IATT.

There is an urgent need for systematic use of the UN online platform for sharing practices and updates among the 10-Member-Group, IATT and other partners. In addition, regular, monthly tele-meetings among the 10-Member Group supported by the Secretariat may be useful.

Recommendation 5: Refine the role and working methods of the Secretariat and IATT

There is also a need to better define and refine the precise role and working methods of the Secretariat and the IATT in TFM context. While it is essential to provide time-bound roles and TFM functions to interested UN entities, the institutionalization of a permanent role for DESA, UNCTAD and the Regional Commissions would be very important, in order to ensure longer-term institutional continuity and budget allocations. This should also be supported by senior UN management involvement in the overall guidance and involvement, preferably by a future UN Chief Scientist and/or the existing UN Chief Economist.

The refined definition of the respective IATT roles should also include well-defined, systematic and resourced work streams with well-defined work products and recommendations, where progress is monitored and supported with KPI targets (see above). This could be done on a four-yearly basis, in order to allow programming and budgeting into the respective independent UN entities' budget processes. Some of the work should also be undertaken at the regional level and a continued, real-time reporting system instituted.

It is important to record and credit all the contributions to the TFM, including from each UN entities, Member State, major group, and other science, technology and innovation communities. This should apply for all components of the TFM, including the STI forum, IATT workstreams, online platform and other mandated activities.

Recommendation 6: Institute systematic, dedicated and resourced work streams

There is a need for creating more dedicated workstreams (or subgroups) on key issues led by one or more IATT member institutions with one or more member states working with active participation of DESA/UNCTAD, members of the 10 MG, and stakeholder institutions.

One model for how this could look like is the workstream on "STI for SDGs roadmaps" which has active leadership and startup funding from the World Bank and the Government of Japan and with active, substantive participation by other IATT and 10-Member-Group. This workstream has conducted multiple Expert Group Meetings during the past year aimed at producing a major work product (guidebook on roadmaps) on a defined schedule for presenting at the STI Forum, HLPF, and the General Assembly in 2019.

IATT subgroup work needs systematic planning, which, of course, requires increased dedication of staff resources that are commensurate with the tasks. Based on the IATT's vision and targets, each

workstream can be redefined and set its own vision, targets and expected outputs for a four-yearly cycle, based on demand from Member States and scientifically identified gaps.

Essential ingredients include commitment and startup funding from IATT members and other stakeholders leading the workstream, as well as regular expert group meetings (online or offline) aimed at producing work products addressing the needs of Member States and stakeholders.

The IATT should also clarify its role in attaining the SDGs by 2030 and map the existing academic and related communities which can commit more to support the TFM. (e.g., the TFM intends to transform society by science, technology and innovation). The IATT can encourage a system of systems approach to have more impact on STI for SDGs. Since every workstream is linked to the others, a system needs to be instituted to regularly inform the 10-Member-Group of the activities and progress.

Recommendation 7: Make the format of the STI Forum more innovative

Ever since the creation of the TFM, suggestions have been put forward on how to make the STI Forum more innovative and different from established, traditional UN meetings. Subsequent STI Forums have explored some of these suggestions. As a result, a decent format with a focus on the SDGs under review in the particular year and recurring crosscutting issues has emerged. However, progress on a truly innovative format has been limited due to a number of political, institutional and resource limitations. The experimentation needs to be continued and based on lessons-learnt from previous years. Ambitious political leadership will be needed to make progress in this regard.

Just to name a few of them: The STI Forum that is mandated to be two days. To increase visibility and participation, it should be co-hosted with associated meetings, making a whole STI week. Visibility could also be increased by using digital tools, including a major upgrade investment into the TFM Website and links to other stakeholders' websites.

Systematic preparations are essential and need to be resourced. A much longer timeline of at least six months is needed for STI Forum preparations. Preparations should be focused on substantive content production, analysis and synthesis of policy options, by IATT, 10-Member-Group and multiple stakeholders. The achievements of systematic collaborative work by the IATT subgroups/workstreams (see above) could be featured highly in the Forum. In fact, a major portion of future STI Forums could be dedicated to reporting on the output from these major workstreams with their recommendations for member states and stakeholders. A session focused on facilitating TFM partnerships should be considered in this regard. Joint events with other mandated UN expert groups, such as the CDP, the Group of 15 independent scientists for the GSDR, and a range of sectoral expert groups related to the specific SDGs under review might support further cooperation.

Similarly, a wider range of private sector events and exhibitions from diverse regions and sectors should be encouraged. The younger generations, including high school and university students, need to be invited to the STI Forum – it is an investment in the future. Younger generations have a strong interest in a sustainable future society.

c) Funding and resources

Recommendation 8: Mobilize funding that is commensurate with the objectives

The TFM remains an almost entirely unfunded General Assembly mandate. At the most basic level, Member States should consider allocating adequate regular budget for the various components of the TFM, in particular the 10-Member Group and IATT, as well as for the STI Forum, commensurate with the objectives and comparable to other General Assembly mandated UN groups and activities (e.g., the 10-Member-Group similar to CDP or GSDR independent scientists group; the IATT similar to IATF, STI Forum similar to FFD Forum).

Similarly, an adequate funding model is needed for the TFM online platform. Partnerships with science and technology communities and the new UN technology and innovation labs (project offices) should be considered.

“Partnerships and finance” have not been consistently touched upon in the TFM. International perspectives may be more critical than domestic ones. An IATT subgroup dedicated to international partnerships and finance may be necessary to handle this work stream.

A TFM fund is needed to support the TFM activities for multi-stakeholder capacity building. An interagency model, such as that of UNAIDS, might be useful. Such resources could also help providing systematic STI expertise among UN experts staff in support of the LDC Tech Bank.

Partnerships with interested R&D and demonstration programmes (e.g., the EU framework programme and others) that can offer participation from other countries should be pursued, in order to support demonstration projects of STI solutions for the SDGs.

The innovation pitches at the STI forum in 2017 and 2018 provided opportunities to young entrepreneurs, and it is essential for the IATT to identify how such opportunities could create new partnerships and mobilize finance by conducting a follow-up survey on their activities after the STI Forum, in line with the original idea of a *facilitation* mechanism. In this context, it private sector technology prizes for young innovators might also be considered in the TFM context.

d) Participation

Recommendation 9: Improve level and balance of multi-stakeholder participation

There is a need to systematically improve the level and balance of multi-stakeholder participation in all components of the TFM. One way to do this might be through formal association agreements with the most relevant conferences, forums and meetings, possibly including formal reporting. This is especially important with respect to the Regional STI Forums and their inputs to the global STI Forum.

A major drive is needed to mobilize Member States, academia and private sector participation, using all available channels (including 10-Member Group “alumni”). Early mobilization is needed especially for the highest-level presidents of universities and industries, so that they attend not only Davos, but also the STI Forum. In this regard, institutional relations need to be expanded to invite influential academics. Another way would be Member States to host the STI Forum thereby increasing ownership and local participation.

As the TFM plays a role to facilitate partnerships, its role should be well-recognized among the member states and the UN entities. To do so, advocacy is necessary to enhance the visibility of TFM. Finally, the IATT subgroups should systematically work with stakeholder groups, including incubators networks and the organizations engaged in the Rio+20 and SDG voluntary commitments to action.

Recommendation 10: Full engagement of young people

There is a need to fully engage young people, especially research students, young scientists, engineers and innovators as decision-makers in all components of the TFM process. One way to support such engagement could be institutionalized through a partnership with the UN Major Group on Children and Youth which has been major active contributor to the TFM process so far. Other proposals are a “UN science kids” initiative, a well-resourced programme to engage a much wider community of young innovators, and raising funding targeted specifically to engage more young people.

Recommendation 11: Timely TFM engagement with innovators and technology pioneers

In view of the rapid technological change, timely engagement of the TFM with innovators and technology pioneers is essential. There are various models through which this could be achieved. Analysis, advisory services and training are essential in this regard. One proposal has been to institutionalize a permanent expert group/committee on the impact of new and emerging technologies (such as AI, nanotechnology, biotechnology, etc.) on the SDGs. Such group could serve TFM, CSTD, ECOSOC, GA, and the UN res rep system and be supported by the IATT. A more ambitious idea is that of a “discovery lab” or observatory that could provide real-time interaction between decision makers and technology pioneers. This has been suggested in an expert group meeting organized by IATT and several academic institutions have expressed their interest in partnering on such an idea. Such programme would most likely build on existing labs and be linked to an expert group under the auspices of the 10-Member Group. Above all, it will be important to fully engage young people, and especially young scientists, engineers and innovators, who are at the forefront of these changes.

e) Substantive areas of work

Recommendation 12: Monitor and analyze the impacts of new and emerging technologies and rapid technology change on the SDGs

One key area of present work of the IATT and 10-Member Group is to monitor and analyze the impacts of new and emerging technologies and rapid technology change on the SDGs. Such work needs to be adequately resourced and requires the engagement of all UN entities concerned. Under the auspices or in close cooperation with the 10-Member Group and the IATT subgroup on new and emerging technologies, a permanent and independent multidisciplinary, multi-sector group of experts could be established, with the aim to gathering information on best practices, available technologies, and probable disruptive technologies on the horizon (with the deep involvement of data-scientists and the STI community); analyzing data and the information described above in order to confirm the probable present and future impact of accelerating technological change, both positive and negative, on accomplishing national SDGs; disseminating the information and findings; and systematically updating information regarding global developments and events and creating metrics and quantified innovation goals.

More specifically, such group could, for example, identify probable global technological disruptive events up to 2030; map the key accelerating general-purpose technologies (GPT)¹ and specific emerging technologies², particularly AI and digitalisation (use cases relevant for achieving SDGs). It could identify properties, capabilities and reach of emerging technologies (by establishing technology metrics). It could describe the most effective STI-economic strategies in various countries and regions, taking into account political, social, cultural and religious conditions, and defining conditions that lead to scaling up the use of frontier technologies. It could recognize best practices, as well as obstacles and bottlenecks encountered in the private and public sectors, mainly related to technological infrastructure, digitalisation and talent creation. It could identify contextual factors that boost or inhibit the development and application of frontier technologies, mainly AI systems.

To analyze data and information, the group could map all foreseen or on-going R&D of disruptive emerging technologies, particularly AI, that can have a widespread positive or negative effect in achieving the SDGs. It could enlist main studies, per country and region, on the probable socioeconomic impact of GPTs and specific emerging technologies. And it could examine the conditions under which positive or negative effects can be expected under the light of the SDGs.

These are just illustrations of the many pertinent tasks that could be carried out by such group with IATT/10-Member-Group.

Recommendation 13: Carry out a significant number of pilot applications of STI for the SDGs roadmaps

One of the cornerstones of the IATT work has been the work stream on STI for SDGs roadmaps. The work stream has organized a larger number of expert consultations and developed a practical guidebook on the topic. The work stream can serve as model approach, as it is based on leadership and resourcing by the World Bank and the Government of Japan but is supported by many of the UN entities active in the IATT. In the next step, a number of pilot applications of the STI for SDGs roadmaps is planned. In this next step it will be important to integrate this work with the work stream on new and emerging technologies, as well as the one on capacity building. For example, the training developed by the IATT capacity building group can be carried in a tailored form to bring all decision-makers on the same minimum knowledge level, in order to undertake a policy review (such as the STIP review supported by UNCTAD) and then finally engage in STI roadmap work that will help refining goals and implementing coherent actions.

Recommendation 14: Synthesize findings from technology scenarios and futures

As outlined in the introduction, rapid technology change has increasingly changed development options and the range of most effective technology solutions. Therefore, it is essential to take a forward-looking perspective. Horizon scanning can help identify big impact emerging technologies and major impact issues. Scenario analysis can be used to test the potential of various technologies, institutions and

¹ Mainly: artificial intelligence and machine-learning; high computational capacity; smart digitization; ubiquitous internet (4G and 5G) and hyperconnectivity; virtual and augmented reality; 3D and 4D printing; Internet of Things; renewable and clean energy; intelligent robotics; biotechnology, genomics and synthetic life; personalised medicine; advanced nanotechnology and nanotubes; industrial ecology and green chemistry; autonomous vehicles; blockchain; universal translation; advanced neuro-technology and brain-computer interface.

² e.g. superhuman robotic vision; precision farming; mapping of each cell; hypersensitive blood tests for medical diagnosis (eg cancer and treatments); genomic vaccines composed of DNA and RNA; portable biomarkers; bio-concrete self-repairing quantum computing assisted by new algorithms; portable and implantable sensors and technologies: they will modify the interaction of people and things; laptops with dozens of biomarkers; Additive 3D and 4D printers with high speed and efficiency.

policies to achieve the SDGs. Such information is also essential for the STI for SDG roadmaps exercises described above. The IATT may want to work with the 10-Member-Group and other TFM partners to regularly synthesize the latest scientific findings from technology scenarios and futures. One suggestion has been to include these results as a recurring section in the UN Technology and Development Report or other forward-looking UN technology-related publications. Important scientific discoveries and revolutionary innovations could provide important contextual information for STI workflows. The findings could provide tailored background information for the STI for roadmaps initiative.

Recommendation 15: Substantive areas for future TFM work streams for consideration

There are a number of existing substantive TFM subgroups that have proven useful and should continue, such as those on STI for SDGs roadmaps; on new and emerging technologies (impacts of rapid technological change); on STI capacity building; and on gender and STI. These could be further integrated in various ways. A number of new work streams have been suggested:

(a) *Scaling Up Social Enterprises*: This work stream could be led by UNCTAD with participation of the Global Solutions Summit, leading development assistance agencies and private funders, and innovative social enterprises that have demonstrated real achievements in specific locales.

(b) *Smart infrastructure addressing urban needs*: This work stream could solicit active participation of major private sector actors, including multinational businesses developing new infrastructure for cities using digital technologies and technological innovations along with organizations representing mayors of cities around the world.

(c) *STI advisory ecosystems at the global, national, and sub-national levels*: This work stream could include participation by the new INGSA network and institutions representing STI advisory institutions in member states.

(d) *Partnerships of major governmental and non-governmental funders of research and development addressing the SDGs*: This work stream could involve participation of the Global Research Council, private foundations, and research institutions.

(e) *Hydrogen economy*: This work stream would focus on key energy transformations towards a low-carbon hydrogen economy.

The following recommendations 16 and 17 are recommendations for the national level activities that could also potentially be supported by the TFM in one way or another.

Recommendation 16: Provide knowledge and capacity building support for the establishment of independent and permanent national mission-innovation councils

The TFM could consider – upon request – to provide knowledge and capacity building support for the establishment of independent and permanent national mission-innovation councils, supported by open forums structured bottom-up, and integrated by civil society, academia, and the public and private sectors, in order to facilitate: creating new governance, regulatory frameworks and technological capabilities for maximum adaptability and future proof of concepts; identifying “missions” or objectives

based on needs as well as national and local STI strengths and weaknesses; developing appropriate and versatile new legislation to create better adapted governance, regulatory frameworks and public policies; quantifying “missions”/objectives through inclusive democratic process and lead to agreements on specific mission innovations; defining national, regional and local governance, regulatory frameworks, public policies and actions with the aim of achieving SDGs (key issues are agreeing on public policies, and systemic strategies, and coordination of all actors in the national innovation system to achieve mission innovation); exemplifying mission innovation in socially and politically visible sectors, and identifying ways and means to socialize risks and benefits of these missions to maximize socioeconomic benefits.

Recommendation 17: Provide capacity building support for the creation of a multi-sector, multiregional STI information and evaluation system that is integrated under a national STI body (existing or newly created)

The TFM could consider – upon request – to provide knowledge and capacity building support for the creation of a multi-sector, multiregional STI information and evaluation system, integrated under a national STI body (existing or newly created), with the purpose of: establishing and constantly adapting indicators to measure the national and regional STI capabilities and limitations; identifying business, academic and foreign sector requirements to boost STI and R&D; understanding the relevance of the national STI system in achieving the SDGs; and systematically updating STI indicators, and requirements of all actors in the national innovation ecosystem.

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Feedback and suggestions welcome, please contact roehrl@un.org

Annex: 1 Key recommendations contained in the co-chairs' summaries of the STI Forums

The following is a synthesis of the key messages and recommendations contained in the co-chair's summaries of the STI Forums 2016, 2017, 2018 and 2019. The synthesis is as verbatim as possible. Sources are provided in square brackets.

(a) Key messages and general recommendations

The forum highlighted many practical examples and proposed recommendations for action by the UN system, Governments, businesses, scientists, academia, civil society and others. The necessity of a multi-stakeholder approach was repeatedly underscored. The following issues may be considered by decision makers, in addition to the wider range of recommendations on how to address the challenges in the various SDGs and a number of cross-cutting issues. [2019 (§95), 2018 (§98); 2017 (§70)]

The TFM constitutes a new one-UN way of working for the UN system which is entirely new, especially in terms of engaging many STI communities and individual experts that are not typically engaged with the UN. [2019 (§96)]

STI for the SDGs

Many insights have been gathered towards SDG-specific technology solutions, including those that help to manage trade-offs and realize synergies. Attention should now move to identify and assess high impact, integrated technology solutions across SDGs, their socio-technical feasibility and potential impact. These should be discussed at the 2020 forum. [2019 (§97), 2018 (§99)]

Similarly, hundreds of innovators participated in the call for technology innovations for the SDGs every year since 2016. It is time to follow-up, support and create partnerships for supporting the scaling up these and similar other innovations. [2019 (§98)]

The TFM has become the premier multi-stakeholder mechanism in the UN system for advancing STI applications for the SDGs. Existing conferences and events within and outside the United Nations may be associated with and consider presenting their STI findings to the forum. The online platform, as mandated by the 2030 Agenda, is close to operationalisation, but requires further support from donors, the private sector, international organizations and others to reach this stage. [2019 (§99); 2018 (§101)]

The online platform, as mandated by the 2030 Agenda, is now at a stage where it could start delivering transformative results. Support from donors, the private sector, international organizations and others will be needed for this to happen.... Similar results can be expected in relation to capacity-building, science, technology and innovation for Sustainable Development Goal road maps and the scale-up of indigenous/traditional knowledge. [2018 (§100)]

New and emerging technologies, frontier technologies, and rapid technological change

While the TFM has made progress in documenting and analysing the wider societal impacts of new technologies, much better knowledge and also quantitative insights are needed — in both developed and developing countries — in order to prepare for the different scenarios of how these impacts might unfold in the coming years. Supporting the capacities of developing countries to assess and prepare for these impacts and exchange of experiences on public

policies and good practices will be needed and should be systematically supported by the UN. [2019 (§100), 2018 (§102)]

Governments and all relevant stakeholders need to act proactively in the coming years, in order to realize the positive technology impacts and achieve the objective of the 2030 Agenda to leave no one behind. [2018 (§103)]

Responsible and ethical deployment of technologies has to be balanced against concerns that “excessive” restraints on innovations might otherwise deprive humanity of many benefits. This requires pragmatic, evidence-based ethical assessments that must derive from the values contained in the UN Charter, the Universal Declaration of Human Rights, the Rio+20 outcome, and the 2030 Agenda. The report of the High-level Panel on Digital Cooperation is expected to provide guidance in this direction. [2019 (§101); 2018 (§104)]

Holistic, integrated approaches and strategies are needed. They should be conducive to a wide range of forms of knowledge and perspectives, including those of young people, as well as local, traditional and indigenous forms of knowledge, and also supported by new and emerging technologies. [2019 (§102); 2018 (§106)]

Extraordinary levels of international cooperation on research, infrastructure, access, and capacities are needed, in order to overcome the technology gaps between and within countries, between men and women, and across social groups — ultimately to avoid long-run, low-technology traps. This requires multi-stakeholder approaches and UN system support. [2019 (§103); 2018 (§105)]

In a rapidly changing world, a forward-looking perspective is needed to understand the potential opportunities and challenges associated with the impact of rapid technological change on the achievement of the Sustainable Development Goals, including through the engagement of other existing forums and opportunities, such as the high-level political forum and the General Assembly. [2019 (§104); 2018 (§107)]

In this regard, key emerging issues need to be systematically identified by the TFM. One such example was the call of this year’s forum to fully supporting academic and business efforts towards reducing, or even eliminating antibiotics resistance. [2019 (§105)]

STI for the SDGs road maps and action plans

The cross-cutting nature of science, technology and innovation and the Sustainable Development Goals requires holistic approaches and strategies. Multidisciplinary and integrated approaches are necessary to take into account different sources of knowledge, including local and indigenous knowledge. [2018 (§108); 2017 (§71)] Recent large-scale disease outbreaks are a case in point, as early warnings have been made more difficult by institutional silos between animal health monitoring and human epidemiology. [2017 (§71)]

STI roadmaps for the SDGs and related action plans need to be developed at the national and subnational levels, ideally with measures for tracking progress and in line with national and global development strategies. They are strategic tools for ensuring policy coherence, linking public and private actions, and optimizing investments. They are also powerful communication tools. [2019 (§106); 2018 (§109)] These road maps incorporate processes that require feedback loops, evaluate what is working and not working, and produce continual revisions that create a real learning environment. [2017 (§72)]

STI roadmaps are most effective if built up with stakeholder engagement and when they contribute to “smart Government”. [2017 (§72)] Participation of science communities, funders, academia and the private sector need to be further expanded and deepened, and partnerships are essential. Public-private partnerships and other forms of collaboration should be fostered with scientists and engineers in companies at the technology frontier. Regardless of the model of involvement, a business case should be made for private sector investments in innovation for the Goals. Member States were also called upon to support the TFM, both politically and financially. [2019 (§108); 2018 (§110)]

“Deep dives” are needed for each Goal for which road maps could help prioritize actions and promote cross-sectoral collaborations [2019 (§108); 2018 (§110); 2017 (§73)]

The IATT guidebook provides an outline of the scope and nature of the road mapping process. [2019 (§107)] It was suggested that a group of Member States could lead the way by undertaking serious efforts over the coming year to develop their own versions of STI roadmaps for the SDGs and reporting on their experiences at future STI Forums and the HLPF. [2019 (§107); 2018 (§111)]

Low-cost technology and meeting basic needs

There is a need to pay more attention to meeting needs through existing low-cost technologies. This requires scientists and innovators to engage with the realities of local communities. For example, the needs of small-scale farmers should be put at the centre of agricultural innovation systems. [2017 (§74)]

Many examples of low-cost technologies exist, while others can be developed. These should be shared, adapted as needed and deployed, in order to ensure the widest possible diffusion and dissemination of benefits, especially for the poor and those at risk of being left behind. The forum provided many illustrations of this point, with examples of the impacts of local technology initiatives, such as Gearbox in Kenya and the production of small-scale refrigerators in India. [2017 (§75)]

Inclusiveness and stakeholder engagement

All relevant stakeholders should be engaged in science, technology and innovation policy design, adaptation and application. Collaboration should be fostered among scientists, engineers, companies and the end users of technological products. The practical usefulness of inclusiveness was highlighted, with many examples presented at the forum, including for poverty eradication, vaccine development and science, technology and innovation strategies for food security. [2017 (§76)]

Gender differences in terms of access to and the use and impacts of technologies arise through many different mechanisms, including those related to social and cultural factors. A multi-pronged approach is needed to address them. One important aspect is building the capacity and engagement of girls and women in science, technology, engineering and mathematics. At the same time, there should also be social and organizational support for women to pursue careers in these areas, including as innovators and entrepreneurs. [2017 (§77)]

Investment, Governments and the private sector

More engagement is needed from science communities, funders, academia and the private sector. Public-private partnerships are essential for science,

technology and innovation, as are other efforts that expand partnerships with the private sector for creating business opportunities in pursuing science, technology and innovation solutions for achieving the Sustainable Development Goals. Regardless of the model of involvement, a business case should be made for private sector investment in innovation for the Goals. Member States were also called upon to support the Technology Facilitation Mechanism, both politically and financially. [2018 (§112); 2017 (§78)]

Strategies for fostering start-ups can be useful for crowdsourcing solutions to both economic and daily life challenges. In fact, existing technologies can solve many current needs, if matchmaking and scaling up can be facilitated, as was demonstrated in the forum's exhibitions and event on deploying, financing and scaling technologies. After its four-year cycle in 2019, the lessons learned should inform the progress towards multi-year sustainable solutions. [2018 (§113); 2017 (§79)]

There is a need to scale up smart investment by Governments, the private sector and other partners, including for building productive and human capacity for science, technology and innovation to unlock the creative potential of youth and women. Investments in infrastructure and connectivity to bridge various forms of exclusion, including rural-urban and geographic divides, are particularly important, in view of the centrality of information and communications technology infrastructure expansion to science, technology and innovation and development efforts. Efforts could also be made to scale up science, technology and innovation through new and innovative solutions, financial instruments and channels such as impact investing, crowd-funding, diaspora funders and local communities. [2017 (§80)]

Productive capacities, innovation and emerging technologies

Science, technology and innovation capacity-building in every country is essential. This includes building human and institutional capacity and strengthening science advisory ecosystems and science, technology and innovation policy. Governments have an important role to play in creating incentives for building productive capacities, as evidenced by the success of development driven by science, technology and innovation in many Asian countries. As innovation happens across the world using a variety of technologies, the dissemination of such technologies must be encouraged, including through partnerships and the sharing of experiences. [2017 (§81)]

In a rapidly changing world, foresight in science, technology and innovation is needed to understand the potential opportunities and challenges associated with advancing science and technology. There are positive and negative impacts from the disruptive effects on societies of new technologies, such as nanotechnology, automation, robotics, artificial intelligence, gene editing, big data and 3D printing. The future cannot be predicted, but understanding the possible consequences of decisions taken now is essential. In this context, there is a need to broaden discussions on the impact of technologies and science in general. [2017 (§82)]

(b) Recommendations for the STI Forum

Going forward, the forum will continue to strengthen its convening power for dialogues between stakeholders and governments and for sharing ideas and catalysing new initiatives and partnerships. It will continue to help to identify practical means and solutions to foster science, technology and innovation in all countries. [2019 (§109); 2018 (§114); 2017 (§83); 2016 (§35)]

In that respect, the forum should consider including discussions of various sources of knowledge in future iterations of the forum and continue to facilitate exchanges on science, technology and innovation solutions. The forum should also continue to serve as a venue to provide specific, practical guidance on how to make science, technology and innovation for the implementation of the Sustainable Development Goals a reality. [2017 (§83); 2016 (§35)]

In terms of governance, working methods and activities, the forum could take inspiration from other mechanisms such as the Internet Governance Forum, which was mentioned as an example of a successful multi-stakeholder mechanism working at various levels. [2016 (§36)]

Supporting an inclusive Technology Facilitation Mechanism

Continued real demand for the multi-stakeholder STI Forum and its science-policy interface function in support of the SDGs is apparent. Given the high expectations for the TFM, Member States and stakeholders should consider strengthening their political and financial support for the Mechanism. [2019 (§110); 2018 (§115); 2017 (§84)]

The multi-stakeholder TFM should continue to improve inclusion of stakeholders and associated related events and improve coordination with UN system and other international organizations. Support is needed for even greater participation in the forum by government representatives and innovators from developing countries. Significant support is needed to fully operationalise and expand the TFM online platform into a veritable partnership portal on STI for the SDGs. And support is needed for the expert work at the working level in the various IATT subgroups streams, to better integrate the work streams themselves, and to disseminate and communicate its work. [2019 (§111); 2018 (§116); 2017 (§85)]

Promoting networking and matchmaking

There is a need to ensure multi-stakeholder participation in the forum and that the contributions of experts, technology users, change agents, young people, the private sector, academic institutions and all other relevant stakeholder groups are taken into account. The forum also needs to reflect the perspectives of the poor. The forum could become a platform at the global level for the science, technology and innovation community and its full diversity of stakeholders to jointly create the conditions of possibility for transformative, solutions-oriented science, technology and innovation by fostering international coordination and multi-stakeholder collaboration and, where necessary, providing support to manage the disruptions to science, technology and innovation policy and practice that will be generated. That includes conveying locally determined needs to achieve the Goals and presenting useful and proven technologies developed by communities and local innovators. [2016 (§37)]

The forum experimented with ways to promote networking and matchmaking, pursuant to its mandate. In one example, innovators selected from a large number of respondents to an open call for action had a chance to present their innovations, and other participants expressed an interest in helping some of the respondents to gain access to funding. Open calls for innovation should be a recurrent feature of future forums, to help source, fund and deploy technology solutions to specific Goal challenges. In that context, the forum could facilitate access to funding for outstanding innovations with the greatest Goal impact. It would be important to expand participation in the forum to

include the financial sector, especially providers of early-stage finance, who could be matched with participating innovators. [2016 (§37)]

Between annual sessions of the forum, the 10-Member-Group may promote activities that catalyse and enable stakeholder engagement in the Mechanism and that foster the inclusion of existing initiatives and organizations that also promote science, technology and innovation for sustainable development. That can be done around cross-cutting themes, such as data collection and availability, or for specific sectors, such as health and education. [2016 (§39)]

The forum as a catalyst for multi-stakeholder partnerships

Governments should collaborate and innovate with all types of stakeholders and experts to leverage the potential of science, technology and innovation to achieve the Goals. In this context, the United Nations should continue to support such cooperation through its convening power. In particular, the forum should serve as catalyst for multi-stakeholder partnerships that include the private sector. [2017 (§88); 2016 (§40)]

It needs to link closely with and bring together existing initiatives, such as the International Network for Government Science Advice, the Global Research Council, the Future Earth initiative, the African Innovation Foundation, private-public academic partnerships and the Global Young Academy, as well as development and research funding agencies at the national, regional and global levels. [2016 (§40)]

It should be closely linked with and foster collaboration across existing initiatives, as well as mobilize new partnerships at the national, regional and global levels. In view of the increased participation and interest, and to promote stakeholders' ownership of the forum, future forums should consider a larger number of thematic breakout sessions and events that could perhaps report to plenary sessions. [2017 (§88); 2016 (§40)]

Systematically filling gaps in capacity-building by the UN system

The mapping of United Nations system activities on science, technology and innovation for the Goals conducted by the inter-agency task team and presented at the forum highlighted a number of significant activities, as well as gaps in terms of resources, strategic focus, data and reporting. The United Nations system and its Technology Facilitation Mechanism partners should work together to systematically close these gaps and increase their joint impact. In particular, the Mechanism may need to focus on matchmaking between existing problems and existing solutions and facilitate science, technology and innovation assistance to countries, where it is most needed. In this context, other steps may be considered for strengthening the United Nations support to science advisory ecosystems and for facilitating greater synergy and collaboration across the agencies in the inter-agency task team. The mapping of activities should be refined and as needed, in order to support well-informed discussions at forums in the coming years. [2017 (§89)]

Road map for the TFM and intersessional work that is cumulative: connecting with the sessions of the HLPF and other forums

The forum should become more action-oriented and cumulative in its impact, including in the messages it provides to the high-level political forum. Over the coming years, future forums should learn from and advance the achievements of previous ones. [2018 (§117); 2017 (§87); 2016 (§42)]

In that context, various proposals were made, including for intersessional meetings and regional and/or national science, technology and innovation forums, events and activities, in addition to global online discussions and more systematic ways of involving civil society. Several proposals were made on how to make the forum itself more interactive, including break-out sessions. **[2016 (§42)]**

The forum should become the outcome of an annual programme of results-oriented activities and, as part of a series, provide a regular opportunity to collaboratively define priorities for action. The 10-member group and the inter-agency task team should further refine those objectives, develop specific actions and share progress on such actions to support the objectives. **[2018 (§117); 2017 (§87); 2016 (§43)]**

Activities could address specific objectives such as monitoring and sharing information on trends in the deployment of science, technology and innovation for the Goals; showcasing specific solutions and achievements (such as social and technological innovations, the development of national policy road maps, multilateral resource mobilization for science, technology and innovation); collecting, coordinating and making available state-of-the-art expertise on specific issues and practice areas (e.g., science, technology and innovation training and education, capacity-building and mobilization, science advising, the development and diffusion of inclusive, transformative technologies, technology assessment and open data/digital platforms); implementing horizon scanning and technology foresight activities; identifying emerging priorities, critical knowledge and innovation gaps and “neglected” Goals and targets, and identifying and assessing ways of mobilizing science, technology and innovation responses to address them; continuing to build a community of collaborators as part of United Nations initiatives on the use of science, technology and innovation for the Goals, and providing effective matchmaking opportunities. **[2016 (§43)]**

A road map for the Technology Facilitation Mechanism should be developed by the inter-agency task team and the 10-member group. The road map should also include details on associating key international events and meetings with the forum, in order to maximize the impact of the forum and to draw on key messages from different stakeholder communities. **[2018 (§117); 2017 (§86)]**

Examples of meetings that were referred to in the forum include the Commission on Science and Technology for Development, the World Government Summit, the Global Science, Technology and Innovation Conference, the Global Solutions Summit, meetings of the International Network of Government Science Advice, various regional United Nations meetings, and expert group meetings focused on key emerging technology issues. **[2017 (§86)]**

Work of the TFM on emerging technologies and rapid technological change

The Technology Facilitation Mechanism should support or conduct forward looking exercises on emerging developments in the field of science, technology and innovation so as to make deliberations on emerging technologies a regular feature at each forum. Given the potential of these developments to have a significant impact on human well-being and sustainability around the world, a longer-term and systematic programme of work in a multi-stakeholder format would help illuminate issues and provide guidance at various levels. **[2017 (§90)]**

The IATT subgroup on new and emerging technologies, frontier technologies and rapid technology change should make a special effort to disseminate salient information on and support the knowledge and understanding of STI trends, impacts, good practices, initiatives and public policies for the SDGs. A forward-looking perspective, coherent and plausible scenarios and more robust quantitative approaches could help in this effort. **[2019 (§112); 2018 (§118)]**

The TFM should build partnerships and interfaces with universities, innovation incubators and private sector entities that are at the forefront of technological change. In particular, it may want to further pursue the idea of a discovery lab or a network of STI centres to serve as an interface between the policy makers and technology pioneers, facilitating a two-way exchange of real-time information, engagement and policy insights. **[2019 (§113); 2018 (§119)]**

Work of the TFM on STI for SDG road maps

The work of the IATT subgroup on STI roadmaps for the SDGs should continue supporting the development of multi-stakeholder roadmaps in interested countries, based on the conceptual approaches outline in the recent IATT guidebook on STI roadmaps. International support, Member State engagement and partnerships with civil society and the private sector will be needed to develop capacities and fill critical gaps in data, finance and effective implementation. UN experts in the IATT, in the 10-Member Group and among TFM stakeholders constitute an important source of technical expertise in this respect. **[2019 (§114); 2018 (§120)]**

Similarly, the IATT subgroups on capacity building and on gender and STI need full support and engagement. **[2019 (§115)]**

In view of the demand for further work streams, the IATT and 10-Member Group is encouraged to take stock of the start-up phase of the TFM from 2015 to 2019, and optimize its focus and working structures, based on the lessons-learned. **[2019 (§116)]**

Over the coming years, future forums should learn from and advance the achievements of previous ones. The forum might become the outcome of an annual programme of results-oriented activities in the IATT subgroups in close cooperation with the 10-Member Group. **[2019 (§117)]**

Annex 2: Summary of SDG focus and cross-cutting issues in the work of the TFM since its inception

The TFM was conceived and mandated as *the* mechanism in the Addis Ababa and 2030 Agendas for strengthening science, technology and innovation for the SDGs. The Agendas also highlight a number of cross-cutting issues of special importance for STI. The following table provides a broad-brush overview of how the various TFM activities addressed the SDGs and these cross-cutting issues. It is important to note that every STI Forum essentially followed the SDG focus areas and theme of the HLPF in the same year, in order to provide most salient inputs.

Type	Session name in STI Forum	Year	Specific SDG or cross-cutting	Key paragraphs in co-chairs' summary	Dedicated IATT work-stream
Specific SDGs 1 to 16	Key priorities for engaging STI for building resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (SDG 9)	2017	SDG9	§30, §31	n.a.
	Key priorities for engaging STI for conserving and sustainably using the oceans, seas and marine resources for sustainable development (SDG 14)	2017	SDG14	§25 to §28	n.a.
	Key priorities for engaging STI for ensuring healthy lives and promote well-being for all at all ages (SDG 3)	2017	SDG3	§16 to §21	n.a.
	Key priorities for engaging STI for ending hunger, achieve food security and improved nutrition and promote sustainable agriculture (SDG 2)	2017	SDG2	§11 to §15	n.a.
	Key priorities for engaging STI for ending poverty in all its forms everywhere (SDG 1)	2017	SDG1	§6 to §10	n.a.
	STI for sustainable management of water and sanitation for all (SDG 6)	2018	SDG6	§43 to §45	n.a.
	STI for inclusive, safe, resilient and sustainable cities and human settlements (SDG 11)	2018	SDG11	§52 to §55	n.a.
	STI for access to affordable, reliable, sustainable and modern energy for all (SDG 7)	2018	SDG7	§48 to §51	n.a.
	STI for sustainable terrestrial ecosystems (SDG 15)	2018	SDG15	§62 to §66	n.a.
	STI for sustainable consumption and production patterns (SDG 12)	2018	SDG12	§56 to §61	n.a.
	STI for taking action to combat climate change and its impacts (SDG 13)	2019	SDG13	§67 to §70	n.a.
	Science, Technology and Innovation for education and decent work for the future (SDG 4 and SDG 8)	2019	SDG4	§41 to §45, §49 to §58	n.a.
			SDG8	§42, §45 to §48	
STI for inclusive and equitable societies (SDG 10 and SDG 16)	2019	SDG 10	§61, §65, §66	WS8	
		SDG16	§59, §60, §61, §63 to §66		
SDG5 as cross-cutting	Gender and Science, Technology and Innovation for the SDGs	2019	SDG5 Gender	§46 to §51, §84a, §93, §105	n.a.
	Launch of the exhibition on gender and STI				
	[Crosscutting across all sessions]	2018		§17, §22, §30, §40, §79, §82, §87, §105	
	Key priorities for engaging STI for achieving gender equality and empower all women and girls (SDG5)	2017		§22 to §24, §77, §80	
Creating Shared Value: How Do We Make It Work?	2016	§9, §11, §18, §42			
SD17 as cross-cutting	Linking science, technology and innovation of indigenous peoples, culture and traditional knowledge, and the achievement of the SDGs	2019	Indigenous peoples	§71, §92	n.a.
	Realizing the full potential of local and indigenous knowledge, and home-grown innovations for the achievement of the SDGs	2018		§108	
	A Brighter Future – Youth, Innovation Ecosystems, and Development	2019	Youth (& young)	§29, §51 to §58	n.a.
	Special event: Launch of exhibition of innovative technology solutions for the SDGs [and cross-cutting	2019			

throughout]	2018	innovators)	\$22, \$31, \$49, \$61, \$79, \$82 to \$95, \$106	
	2017		\$8, \$12, \$15, \$25, \$26, \$27, \$37, \$41, \$55 to \$58, \$61, \$80,	
Youth for Science, Technology and Innovation	2016		\$14, \$18, \$21, \$37, \$40	
Roundtable of STI innovators, funders and other supporters	2018	SDG17 Financing, Enabling environment	\$79 to \$82	n.a.
Special event on financing technologies and impact investing	2017		\$14, \$18, \$32, \$79	
Enabling Environment for Science, Technology and Innovation	2016		\$19	
STI capacity building for achieving the SDGs [and cross-cutting throughout]	2017	SDG17 Capacity building	\$8, \$21, \$32, \$37, \$39-\$41, \$45, \$50,	WS6
Strengthening capacity and policy for the development of science, technology, and innovation roadmaps.	2019	SDG17 STI roadmaps for the SDGs	\$27 to \$40, \$71, \$75, \$96 to \$98, \$104	WS9
Special event 2: Roundtable on STI roadmaps for the SDGs - the technical perspective	2019		\$25 to \$35, \$73, \$108 to \$111, \$116, \$120	
National STI roadmaps for the SDGs and capacity building	2018		\$36 to \$38, \$72, \$73	
National STI plans and policies for achieving the SDGs	2017		\$24, \$25, \$43	
Towards a Roadmap of Effective Science, Technology and Innovation Policy Frameworks	2016	SDG17, SDG9 New and emerging technologies	\$11 to \$26, \$33, \$38, \$41, \$45, \$90 to \$95, \$102	WS10
Emerging technology clusters and the impact of rapid technological change on the SDGs	2019		\$12 to \$24, \$73, \$102 to \$107, \$118, \$119	
Impact of rapid technological change on the achievement of the Sustainable Development Goals	2018		\$14, \$81, \$82, \$90	
Emerging frontiers: evolving STI developments with implications for SDGs	2017		\$5, \$18, \$31, \$32	
Transformative Technologies for the Sustainable Development Goals	2016	SDG17 TFM support	\$76 to \$82, \$86, \$89, \$90, \$98 to 107	WS1, WS3, WS4, WS5, WS7
Supporting the implementation of the Technology Facilitation Mechanism – the way forward for joint action	2019		\$67 to \$78	
	2018		\$48 to \$52	
	2017		\$6, \$34, \$43	
The Way Forward: Adding Value Through the Science, Technology and Innovation Forum	2016	\$9	WS2	
Interactive Dialogue with the 10 Member Group to support the Technology Facilitation Mechanism	2018	Overall introductory session, Linkages,	\$32	n.a.
Welcome address and opening: appreciating the cross-cutting nature of science, technology and innovation	2019		\$108, \$26	
	2018		\$33 to \$35	
Lessons learned in improving the impact of STI on the SDGs – highlighting the cross-cutting nature of STI	2017			

	Harnessing STI for the SDGs –the key to unlocking STI potentials	2017	STI for SDGs	\$6 to \$10	
	The Power of Science, Technology and Innovation; and Realizing the Potential of Science, Technology and Innovation for the Sustainable Development Goals	2016			

Note: The IATT’s current work is structured around ten work streams:

- WS1: Establishment and management of the Interagency Task Team
- WS2: Group of 10 representatives of civil society, private sector and science (“10-Member Group”)
- WS3: Collaborative, multi-stakeholder forum on STI for the SDGs
- WS4: Online Platform
- WS5: Mapping of STI initiatives, background research and reports in support of the TFM activities
- WS6: UN capacity building programme on technology facilitation for SDGs
- WS7: Partnerships and fund raising
- WS8: Gender and STI
- WS9: STI policy frameworks, action plan and roadmaps
- WS10: Analytical work on emerging technologies and the SDGs

Annex 3: Update on the work of the IATT work streams

The following is an informal update on the key elements of recent work of the Inter-agency Task Team on STI for the SDGs (IATT).

An informal Inter-agency Working Group on a Global Technology Facilitation Platform (IAWG) was convened jointly by DESA and UNEP in 2014 to support the proposal of the Secretary-General contained in paragraph 125 of his Synthesis Report and the follow-up of resolution A/RES/68/310 of 15 September 2014 on 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”.

After the Summit in September 2015, the IAWG morphed into the Inter-Agency Task Team on Science, Technology and Innovation for the sustainable development goals (IATT). DESA/DSDG has continued to serve as the Secretariat for the IATT since inception, with UNEP as co-convenor over 2015-2017 and UNCTAD as co-convenor since 2017 to present.

Over the years, IATT membership continued to increase and is now at 42 UN entities and more than 100 active staff members – an unprecedented level of cooperation on science and technology that now brings together all relevant UN entities. The number of its members is still increasing. The IATT meets regularly via teleconference and occasionally in person.

Box: Members of the Inter-agency Task Team

1. United Nations Department of Economic and Social Affairs (UNDESA) (Coordinator)
2. United Nations Conference on Trade and Development (UNCTAD) (Coordinator)
3. Food and Agriculture Organization of the United Nations (FAO)
4. International Atomic Energy Agency (IAEA)
5. International Centre for Genetic Engineering and Biotechnology
6. International Maritime Organization (IMO)
7. International Telecommunication Union (ITU)
8. International Trade Centre (ITC)
9. United Nations Capital Development Fund (UNCDF)
10. United Nations Environment Programme (UNEP)
11. United Nations Development Programme (UNDP)
12. United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)
13. United Nations Economic and Social Commission for Western Africa (UNESCWA)
14. United Nations Economic Commission for Africa (UNECA)
15. United Nations Economic Commission for Europe (UNECE)
16. United Nations Economic and Social Commission for Latin America and the Caribbean (UNECLAC)
17. United Nations Educational, Scientific and Cultural Organization (UNESCO)
18. United Nations Framework Convention on Climate Change (UNFCCC)
19. United Nations Global Pulse
20. United Nations Human Settlements Programme (UNHabitat)
21. United Nations Industrial Development Organization (UNIDO)
22. United Nations Institute for Training and Research (UNITAR)

23. United Nations International Children's Emergency Fund (UNICEF)
24. United Nations Office for Disaster Risk Reduction (UNISDR)
25. United Nations Office for Outer Space Affairs (UNOOSA)
26. United Nations Office for Partnerships (UNOP)
27. United Nations Office for Project Services (UNOPS)
28. United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
29. United Nations Office for South-South Cooperation (UNOSSC)
30. United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UNOHRLLS)
31. United Nations Technology Bank for Least Developed Countries
32. United Nations Office of Information and Communications Technology (UNOICT)
33. United Nations Regional Commissions New York Office (RCNYO)
34. United Nations Research Institute for Social Development (UNRISD)
35. United Nations System Chief Executives Board for Coordination (CEB Secretariat)
36. United Nations University - MERIT
37. United Nations Women (UNWomen)
38. United Nations World Food Programme (WFP)
39. World Bank Group
40. World Intellectual Property Organization (WIPO)
41. World Meteorological Organization (WMO)
42. World Trade Organization (WTO)

Detailed information about the list of the IATT and its Terms of Reference is available on a dedicated TFM website at <https://sustainabledevelopment.un.org/tfm> .

The IATT's current work is structured around ten work streams:

- Work Stream 1: Establishment and management of the Interagency Task Team
- Work Stream 2: Group of 10 representatives of civil society, private sector and science ("10-Member Group")
- Work Stream 3: Collaborative, multi-stakeholder forum on STI for the SDGs
- Work Stream 4: Online Platform
- Work Stream 5: Mapping of STI initiatives, background research and reports in support of the TFM activities
- Work Stream 6: UN capacity building programme on technology facilitation for SDGs
- Work Stream 7: Partnerships and fund raising
- Work Stream 8: Gender and STI
- Work Stream 9: STI policy frameworks, action plan and roadmaps
- Work Stream 10: Analytical work on emerging technologies and the SDGs

The creation of the TFM was of historic significance, as it brought back substantive STI discussions to the UN HQ, after decades of political gridlock over IPRs and technology transfer. In the past three years, the TFM has explored a new multi-stakeholder model of work for the UN system, which to-date has engaged 42 UN entities and thousands of scientists and stakeholders to facilitate STI for the SDGs.

The IATT work is organized in a number of subgroups which focus on key areas of work, including delivering joint training workshops based on resources pooled from across the UN system; support for the platform development; development of STI roadmaps for the SDGs; identification of new and emerging technologies and the impacts of their rapid change; linking gender and STI; and performing the typical Secretariat functions.

STI roadmaps

STI roadmaps and action plans to help realize the SDGs have been among the central topics addressed in the first four STI Forums. UN IATT established a sub-working group for taking forward the work STI Roadmaps. It has developed a joint guidebook³ and had several expert consultations (New York, Tokyo, Brussels, Nairobi) to prepare the guidebook and the support to a selected set of countries to develop national STI roadmaps for the SDGs. Also, the G20 outcome package (Osaka Leader’s Declaration, 2019) contains guiding principles for the STI for SDGs roadmaps. There is now a need to expand the work and involve more countries in developing STI roadmaps for the SDGs within their overall action plan to implement the SDGs. The project has now entered a pilot phase in five selected countries: Ethiopia, Ghana, Kenya, India and Serbia. A work plan and a timeline have been established and agreed among UN agencies and with partner countries at the end October 2019.

New and emerging technologies

The new and emerging technologies group has collected, synthesized inputs from within the UN system and external expert communities on the impacts of rapid technology change on the SDGs and coordinated the UN work on this topic.⁴ The group also substantively supported the multi-stakeholder discussions in the STI Forum on the impacts on societies caused by the disruptive effects of new technologies, such as nanotechnology, automation, robotics, artificial intelligence, gene editing, big data, and 3D printing. The topic has been on the Forum’s agenda since 2016. Ever since, the inputs and findings have continued to be collated, synthesized and analyzed in the form of informal documents that continue to grow.

Gender and STI

In 2018-2019 the group worked on collecting the list of initiatives within the UN System on gender and science, technology and innovation (STI) from 11 contributing UN entities members of the IATT. The initiatives aim at empowering women and girls in the field of STI through various areas of action that include capacity building, information sharing, policy setting and awareness raising. In 2019 the group organized two events on Gender and STI issues – one on the margin of the 63 CSW and another one as a part of the STI Forum 2019.⁵

On-line platform

Regarding the online platform, IATT and 10 -Member Advisory Group have worked together to operationalize it. In 2018, the IATT focused on advancing the capabilities and design of a prototype of the online platform⁶ and also expanded the network of partners and potential users. It also worked on outreach and advocacy, creating a “brand” for the online platform—now known as “2030 Connect”—and developed

³ For more details and latest version of the draft guidebook, see: <https://sustainabledevelopment.un.org/tfm#roadmaps>

⁴ For the group’s work, see: <https://sustainabledevelopment.un.org/index.php?page=view&type=12&nr=3335>

⁵ For the group’s work, see: <https://sustainabledevelopment.un.org/womeninscience> (underdevelopment)

⁶ For the prototype and other related work, see: <https://sustainabledevelopment.un.org/tfm#online>

a plan to secure the necessary funding. 2030 Connect will include an upgraded search function and improved connectivity across all partner databases. It will provide access to a wider range of sectors and resources, ranging from publications to training opportunities to technology offers and technology requests.

Training workshops

To-date, the IATT conducted two joint training workshops – one in Jordan focused on the Arab region and one in Panama focused on Central America, with several others planned for other world regions in the coming months provided minimum funding can be secured. These workshops have demonstrated UN expert knowledge and potential of working as one-UN in direct response to member States demands. In addition to the joint efforts by the IATT, DESA has supported several STI capacity building meetings, including in Shanghai and Bangkok. A nine-day capacity building workshop on STI for the SDGs in Guilin in December 2019, as a follow up of the 2019 STI Forum, attracted more than 100 participants globally.⁷

Convening the STI forum, partnerships

and support to relevant other intergovernmental meetings and initiatives/programmes (Secretarial functions)⁸

Convening the STI Forums: Hundreds of scientists, young innovators, technology specialists, entrepreneur, policy makers and civil society representatives gathered in the UN HQs to discuss and showcase science, technology and innovation solutions for achieving SDGs under review at the HLPF as well as several cross-cutting themes. STI Forum have covered a wide range of issues and collected an impressive number of recommendations from STI stakeholders. The Forum facilitated interaction, matchmaking and the establishment of networks between relevant stakeholders. Over the years, the Forum has also helped bring together the organizers and participants from other multi-stakeholder fora addressing similar topics to engage in the global conversation.

Linking with the HLPF: The TFM's STI Forum also holds a special role as it reports formally to the High-level Political Forum on Sustainable Development (HLPF) in support of its review of SDG progress and its explicit function to “strengthen the science-policy interface”.

Supporting the discussion on the STI problematics within the Commission on Science and Technology for Development: the co-chairs of the STI Forum present outcomes from their work to the CSTD, while the Chair of the CSTD presents the negotiated outcome of the CSTD to the STI Forum. UNCTAD and DESA as co-chairs of the IATT support each other in the organization of the STI Forum and of the CSTD.

Working with other relevant UN initiatives: UNCTAD and the Commission on Science and Technology for Development, the UN Regional Commissions, the IATF, UNEP, the World Bank, UNESCO, WIPO, ITU, FAO, the SG's High-level Panel on Digital Cooperation, and many other participating UN system entities have issued documents on trends and policy options and proposed findings on science, technology and innovation in their areas of expertise. All this expertise has been used and integrated in the production of the STI for SDG roadmaps guidebook and in the IATT member's initiatives on technology facilitation

Partnerships with non-UN global programmes and initiatives that deal with STI for SDGs. In addition, several organizations beyond the UN system have started cooperating and contributing to the TFM work, such as

⁷ For the details of the meetings including the workshop summary, see: <https://sustainabledevelopment.un.org/tfm#events>

⁸ For all the STI Forum websites, see: <https://sustainabledevelopment.un.org/tfm#forum>

the Global Sustainable Technology and Innovation Conference series (G-STIC)⁹, and the Global Solution Summit and the Global Innovation Exchange.

Following the call by the Conference of Ministers of ECA 15 May 2018 (resolution 960 (LI)) on ECA, African Union Commission and partners to organize on regular basis the STI Forum, the African Regional STI Forum was the first African Regional STI Forum was organized and held in Morocco on 16 April 2019 in collaboration with the Department of Science and Technology of South Africa. The second African Regional Science, Technology and Innovation Forum is scheduled to take place from 24 to 25 February 2020 in Victoria Falls, Zimbabwe.

Science, technology, innovation (STI) and related capacity building are essential means to achieve the Sustainable Development Goals (SDGs). The UN Inter-agency Task Team on STI for the SDGs (IATT) promotes coordination, coherence, and cooperation within the UN System on STI related matters, enhancing synergy and efficiency. The platform also engages stakeholders from civil society, the private sector, and the scientific community. In its meetings, the IATT has regularly reflected on its work direction and on the relationship to participating UN system entities and to the TFM's 10-Member Advisory Group. At the same time, UNCTAD as the Secretariat for the Commission on Science and Technology for Development, the UN Regional Commissions, the IATF, UNEP, the World Bank, UNESCO, WIPO, ITU, FAO, and many other participating UN system entities have issued documents on trends and policy options and proposed findings on science, technology and innovation in their areas of expertise. In addition, several organizations beyond the UN system have started cooperating and contributing to the TFM work.

The IATT Secretariat together with the 10 Member Group is in the process of drafting a review of TFM implementation. It is an opportunity to take stock, self-reflect, and compile all relevant ideas and outputs into an accessible format and derive from its well-informed guidance for the future work of the TFM, including specific elements of a work plan for 2020-2024.

⁹ G-STIC is an initiative of 7 non-profit, independent technological research institutes world-wide in support of the implementation of the SDGs.