



REPORT

International Consultation on Science, Technology and Innovation in the Implementation of the 2030 Agenda for Sustainable Development and its Health-Related Goals

6 - 8 November 2017

Rio de Janeiro, Brazil

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INTRODUCTION

The Oswaldo Cruz Foundation (FIOCRUZ), the United Nations Department of Economic and Social Affairs (UN DESA), with support from the UN Peace and Development Trust Fund's 2030 Agenda Sub-fund, and the United Nations Development Program's World Centre for Sustainable Development (UNDP/RIO+ Centre) co-organized a three-day meeting about Science, Technology, and Innovation (STI) for the implementation of the health-related Sustainable Development Goals (SDGs) and targets.

The meeting occurred on November 6-8, 2017, in Rio de Janeiro, Brazil. Its main objectives were to convene public-health sector stakeholders to discuss STI for the health-related SDGs, and to produce recommendations for the Multi-Stakeholder Forum on STI for the SDGs (STI Forum) and the High-Level Political Forum on Sustainable Development (HLPF) in 2018. Another objective was to contribute towards the implementation of the Technology Facilitation Mechanism (TFM) and the development of its online platform. Eighty experts from the government, the private sector, research institutions, NGOs, and international organizations participated at the event.

This report includes a summary of the panels of the International Consultation and the main topics discussed, as well as the conclusions and recommendations resulting from the meeting.

Note:

The opinions expressed in this report do not necessarily reflect the views of the United Nations or FIOCRUZ.

BACKGROUND

The 2030 Agenda for Sustainable Development established the “Technology Facilitation Mechanism” (TFM) to support the implementation of the SDGs. The TFM’s main goal is to harness STI for the 2030 Agenda. The TFM has three components: Interagency Task Team (IATT), with a 10-Member Group from civil society, the private sector and scientific community; a Multi-Stakeholder Forum on STI for the SDGs (STI Forum); and an online platform with information on existing STI initiatives, mechanisms, and programs. One of the 10-Member Group’s tasks is to provide inputs to the UN High-Level Political Forum on Sustainable Development (HLPF), and other UN fora, when necessary.

The holistic nature of the 2030 Agenda and SDGs requires an integrated and systemic approach in dealing with the specificities of each of the 17 goals. The relevance of the social and environmental determinants in health outcomes and the strong role of the health sector in productive and economic development make the health-related goals a unique case that requires intensive interdisciplinary analysis and multisectoral expertise in their implementation.

Health is a key factor in sustainable development, being a prerequisite and an indicator of progress in the theme. The health sector is a platform on which new STI paradigms emerge. Global health is the force behind more than 30% of research and accounts for about 10% of the OECD countries' GDP. In turn, STI play a key role in providing solutions to public health problems. Thus, synergies between health, STI and SDGs are crucial for the implementation of the 2030 Agenda.

EXECUTIVE SUMMARY

On November 6, 2017, the opening table began the International Consultation on Science, Technology and Innovation in the Implementation of the 2030 Agenda for Sustainable Development and its Health-Related Goals, and highlighted that the 2030 Agenda made great progress if compared to the Millennium Development Goals (MDGs), with the goal of poverty eradication and the motto of not leaving anyone behind. The panel emphasized that putting the 2030 Agenda into practice is a major challenge and that there is a lack of technical solutions for doing so. It believes that harnessing the potential of STI can help in this task, but warned that the rapid expansion of STI is not neutral and can decrease or increase inequalities. It said that another breakthrough in comparison to the MDGs is the fact that the 2030 Agenda considers the social determinants of health and understands health as complex and multidimensional. The panel indicated that health can also leverage the discussion of STI to other areas.

On the first day, the conferences and panels discussed the concept of sustainable development, the integration of STI, the 2030 Agenda and the SDGs as an opportunity for health advancement, and experiences with online technology facilitation platforms. The panelists emphasized that sustainable development must consider the economic, social and environmental dimensions. For this, it is necessary to have a change in the modality of growth and a decrease in inequality of income distribution within and between countries.

Panelists pointed out that STI from and for the health sector should consider equity, social inclusion, universal access to quality health, disease burden, the appropriate use of natural resources, and an integration of policies for effective health interventions that includes adequate policies and financial sustainability. They emphasized that indicators and metrics for the SDGs should be improved, and that the health area could contribute in this respect to other areas. The FIOCRUZ Strategy for the 2030 Agenda was also launched, signaling the institution's commitment to the global agreement of the 2030 Agenda and its SDGs.

On November 7, 2017, the conference and panels discussed important aspects of innovation and its impact on health, priorities for health-related STI in the 2030 Agenda, online STI platforms, socioeconomic and health contexts in Latin America, traditional knowledge, upcoming steps for an integrated response concerning health-related goals, and messages for the 2018 STI Forum. Panelists highlighted the interconnection between the SDGs and the need for an approach that is integrated, has systemic potential, and includes traditional knowledge.

In addition, panelists stressed that there is a large divide between health and STI governance at the national and global levels leading to a mismatch between STI outcomes and health needs, especially for the most vulnerable. They affirmed that the effort to achieve SDG # 3 (ensure healthy lives and promote well-being for all at all ages) should result from a good understanding of health priorities and their determinants, with special attention given to social and environmental factors, confronting them with STI solutions, and strengthening global and local governance.

During the plenary session, FIOCRUZ, UN DESA, and the RIO+ Centre/UNDP presented the main messages and recommendations of the meeting.

On November 8, 2017, the discussions were focused on social technologies. They highlighted the great relevance that social technologies have for the 2030 Agenda and the role of local communities as producers of health-related knowledge and innovations, rather than being mere consumers. Panelists pointed out that social technologies should be simple from the technological point of view, capable of gaining scale, and should emerge from the knowledge and experience of the communities. This would be from the perspective of achieving dignity, inclusion, and social emancipation. The importance of communication and mobilization for health, social technologies and the implementation of the 2030 Agenda was emphasized. The meeting's third day also included the launch of FIOCRUZ's Agora 2030 platform and the RIO+ Centre's We App Heroes, as well as a discussion of lessons from other platforms and their possible interaction with the UN Global Online Platform on STI in the implementation of the 2030 Agenda.

RECOMMENDATIONS

The following conclusions and recommendations emerged from the discussions:

- a) **Prioritization** - Progress towards achieving the SDGs could be expedited by identifying priorities that are aligned with the quest for health equity, WHO's call for the 2030 Agenda implementation, and embedded in national strategies. STI professionals are encouraged to tackle solutions for the achievement of the health-related SDGs. The TFM, through the STI Forum and IATT, should promote the formulation of thematic, global, regional, and national STI Plans, considering these priorities. The meeting called for the creation of a Latin American STI Plan of Action for the achievement of the health-related SDGs.
- b) **Interlinkages** - STI for health-related SDGs should harness the interlinkages between health, environment and socioeconomic issues. So, it calls for the adoption of the Social Determinants and One Health approaches; analyses and initiatives with systemic impact connecting SDG 3 with others; and studies identifying desired scenarios and ways to attain them. The TFM should strengthen the capacity of governments and other stakeholders by promoting exchange on harnessing STI's crosscutting nature, including through the STI Forum, the platform, and IATT's initiatives for cooperation within the UN on STI and health-related capacity-building.
- c) **STI creation and diffusion** - The creation and diffusion of STI for health-related SDGs should be facilitated by all stakeholders to ensure progress toward SDGs in all countries and segments. The TFM should continue facilitating knowledge access, and stakeholders are encouraged to support its online platform to advance STI dissemination.
- d) **Health system innovation** - Health systems are key to recover and promote health. The HLPF and WHO agree that Universal Health Coverage (UHC) is a main driver to attain SDG 3, and that UHC should include equitable access to quality health care. The TFM should encourage health system innovation and value aggregation to meet this goal.
- e) **Emerging technologies and new technological paradigms** - They can have a transformative impact in health-related SDGs. Stakeholders should explore how emerging and accelerated technologies could address health-related challenges such as the new technologies' impact and negative effects on health and health care systems, and conduct assessments. The TFM, through the IATT and 10-Member Group, should promote the preparation of such assessments, and results should be disseminated and discussed via the STI Forum and online platform.
- f) **Inclusive technologies** - STI solutions for health-related SDGs should be inclusive and strive to benefit all, focusing on the poorest and most vulnerable. It is crucial to bring science and society closer, and support the participation of local communities as co-creators of health-related innovations, including social technologies. Governments should adopt inclusiveness in formulating STI and health strategies. The TFM should support this, including by promoting the vulnerable groups' participation at the STI Forum and as users/co-creators of the online platform.
- g) **Indigenous knowledge** - STI stakeholders are encouraged to harness traditional and indigenous knowledge and frugal innovations to provide appropriate and cost effective STI solutions for

achieving health-related SDGs. The TFM should highlight indigenous knowledge and frugal innovations at the STI Forum and online platform.

- h) **Scale-up challenges** - Many STI solutions for health-related SDGs fail to scale up. Reasons include a lack of financing mechanisms, market barriers, failure in mobilizing key political actors and conducting public and private partnerships, and cultural norms limiting access to innovations for certain social groups. The TFM should promote the scale up of STI solutions for health-related SDGs, and enhance the capacity to prepare context assessments.
- i) **Public perception of STI and SDGs** - The “citizen science” concept, with rich experiences in many countries, should be extended to the TFM. Stakeholders should contribute to a related initiative using all communication forms, especially social media. There are important initiatives to be enhanced, such as the International Science Center & Science Museum Day, and the Tokyo Protocol launched by the Science Centre World Summit 2017.
- j) **Health sector as a platform for innovation and development** - The health sector is a key innovation platform in many developed economies. Developing countries are encouraged to formulate policies and strategies to harness the economic and productive potential of health-related innovations.
- k) **Previous efforts on health** - The experts noted previous efforts addressing the 2030 Agenda and its health-related SDGs, such as the Shanghai Declaration on promoting health in the 2030 Agenda, STI Forum 2017, and HLPF 2017.
- l) **Latin America and Caribbean** - Their recent economic and social trends, which increase structural challenges for sustainable development and social equity, threaten the fulfillment of health-related SDGs. UNDP-LAC, WHO/PAHO and ECLAC should join efforts to connect economic development and health policies.
- m) **Call to action** - We urge health sector political leaders to engage with STI sectors to increase the political and financial commitment from governments, private sector and civil society, in order to invest in a research and development agenda that would enable health actions to advance and monitor the implementation of the SDGs.
- n) **Next steps** - The meeting’s participants agree to continue the collaboration on STI and Health for the 2030 Agenda, and call upon UN DESA and FIOCRUZ to follow-up and bring the main messages to higher levels, including the STI Forum and HLPF, and implement further activities to promote STI for health-related SDGs as part of the TFM.

I - SUMMARY OF THE PANELS AND DEBATES

1. First day - November 6, 2017

1.1 Opening ceremony

Mr. **Thomas Gass**, United Nations Assistant Secretary-General for Policy Coordination and Inter-Agency Affairs in the Department of Economic and Social Affairs, United Nations (UN DESA) [video message]; Ms. **Rúbia A.C. Quintão**, General Coordinator of Special Projects, National Secretariat of Social Coordination, Government Secretariat of the Presidency of Brazil; Ms. **Laís Abramo**, Chief of Division, Social Development Division, Economic Commission for Latin America and the Caribbean (ECLAC); Mr. **Giorgio Solimano**, Technical Secretary, Latin American Alliance for Global Health (ALASAG); Ms. **Carina Vance Mafla**, Executive Director, South American Institute of Government in Health (ISAGS), Union of South American Nations (UNASUR); Mr. **Ildeu de Castro Moreira**, President of Brazilian Society for Science Progress (SBPC); Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+); Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA); Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation (FIOCRUZ); and Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group.

Mr. Thomas Gass emphasized that the 2030 Agenda urges the governments of all countries, poor and rich, to promote prosperity and peace, while at the same time protecting the planet. The implementation of the 2030 Agenda requires transformation and change. Mr. Gass believes that harnessing the potential of STI can help bring about such change, and bring greater clarity to synergies between targets and unanticipated challenges. He stressed that this meeting will deepen the dialogue around health innovations and strengthen the capacity of public health stakeholders to take advantage of STI for SDGs. He pointed out that greater capacity in health and safety will contribute significantly to the TFM, and that Brazil has played a key role in bringing the North and South closer together and in supporting the STI agenda for sustainable development.

Ms. Rúbia Quintão pointed out that the SDGs agenda is a State policy in Brazil and that the Ministry of Science, Technology, Innovation and Communications, the Ministry of Health, and other ministries are key contributors to this issue as part of the thematic chambers that were created. She announced that the National Commission for the SDGs would launch its work plan, and that the Ministry of Planning would launch a mapping of the attributes of the Brazilian government's Multi-Year Plan *vis-a-vis* the targets of the SDGs. She emphasized that FIOCRUZ has a fundamental and strategic role regarding SDG #3, but also SDG #9 (build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), and others.

Ms. Laís Abramo emphasized that the 2030 Agenda is a commitment to civilization with the radical goal of eradicating poverty in all its forms and in all places. This is a big step forward in relation to the MDGs. Another advance was putting equality in the center. She stated that the 2030 Agenda's main motto is that no one should be left behind and that putting the 2030 Agenda's ideas into practice is a big challenge and a great opportunity. Since 2010, ECLAC has defined equality as the main and strategic goal of development, implying a balance between the social, economic, and environmental

dimensions. The universalization of health is linked to the social, environmental and economic aspects of the 2030 Agenda. Thus, this debate is very useful for thinking about the integrality of the Agenda. During ECLAC's 36th session, held in Mexico City in May 2016, the Forum of the Countries of Latin America and the Caribbean on Sustainable Development was established as a regional mechanism to follow-up on the 2030 Agenda and its SDGs. ECLAC and FIOCRUZ are signing a cooperation agreement on the relationship between health, development, and equality.

Mr. Giorgio Solimano explained that ALASAG is an alliance of global public health programs that integrates institutions from Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Peru. Its main purpose is to address the theme of global health. It created the concept of “planetary health,” which goes beyond the concept of global health and incorporates elements connected to the environment, biodiversity, and other issues that affect health. Mr. Solimano mentioned that in July 2017, ALASAG met in Chile to discuss the political elements that condition the implementation of the SDGs. He added that the 2030 Agenda is a central theme of ALASAG's work and its institutions, which include several research projects and capacity-building initiatives related to global health and the importance of the SDGs.

Ms. Carina Mafla stated that the 2030 Agenda brought hope to the field of public health and went beyond the MDGs because it understands health as something complex and multidimensional. Furthermore, it takes into account the Social Determinants of Health, which have a close relationship with health and well-being. Ms. Mafla emphasized that the world is monopolized by innovations based on commercial interests and not those that are based on the public interest. She mentioned that one of the biggest concerns in the South American region is the search for truly universal health systems that are equitable and sustainable. Ms. Mafla added that another problematic issue in the region is the “judicialization of health,” where several medications, supposedly the results of innovation, are increasingly being incorporated into the health system through the judicial process. Therefore, one of our most important challenges is to ensure that the public interest overrides other interests.

Mr. Ildeu Moreira mentioned that the Brazilian Society for the Progress (SBPC) of Science brings together 140 scientific entities and will celebrate its 70th anniversary in 2018. He emphasized that one of the institution's concerns is getting the SDGs to be discussed more widely within society, since their implementation will only be possible with broad social and political engagement at the national and international levels. The SBPC's 2018 annual meeting will discuss the situation of the 2030 Agenda's implementation in Brazil, with FIOCRUZ's participation. SBPC considers essential that other research institutes take part in the 2030 Agenda discussion. The theme of the 2018 National STI Week will be SDG # 10 (reduction of inequalities).

Mr. Rômulo Paes pointed out that health can leverage the discussion of STI to other areas and that there is a lack of technical solutions for implementing the 2030 Agenda. He stated that the health sector is the second largest producer and consumer of STI, behind only the military sector. It is also relevant in budgeting and has a lot of built-in competence, and it therefore has a great capacity for mobilization. Mr. Paes warned, however, that for health to help change the logic of production-consumption and the way in which policies are integrated, the competence of the area should be more open to the renewal that the 2030 Agenda suggests. The greatest challenge in public policy is the implementation, which is where the political narrative becomes about improving lives - in general, there is a separation between intention and practice. He considers this meeting an

opportunity to help turn the narratives into implementation and open the STI health expertise in an integrated way, inspiring other areas.

Mr. Shantanu Mukherjee explained that UN DESA is responsible for the global follow-up and review of the 2030 Agenda and its implementation mechanisms, such as the TFM. He presented three aspects that show why this meeting is so timely: 1) countries are ready to implement solutions towards the SDGs, but many countries don't know what solutions might be the most suitable for them. So it is important to identify what these solutions are and their impediments for becoming scalable; 2) in 2019 the UN General Assembly will conduct a review of the implementation progress, so whatever guidance we can provide to that review in terms of a way forward will be crucial for ensuring the agenda's success. Twenty targets must be fulfilled by 2020, and it is necessary to channel the efforts towards that. This meeting comes at the right time to discuss priorities; and 3) the rapid expansion of STI is not neutral and can help narrow or increase inequalities. Mr. Mukherjee stressed that many of these technologies are still in their nascent form, and the present moment is the time to set normative aspects to direct them.

Ms. Nísia Trindade explained that for FIOCRUZ this discussion is a continuation of other debates in this area and its active participation in initiatives such as Rio 92 and Rio + 10. She pointed out that the implementation of the 2030 Agenda at this time is not easy. There are fiscal cutbacks and difficulties in the fulfillment of rights in Brazil and around the world. One of the most significant aspects of the 2030 Agenda is the view that development is a human right. Ms. Trindade considers this meeting to be very positive for FIOCRUZ, in view of its four-year internal congress in 2018, which will address the future of Brazil's Unified Public Health System (SUS). She pointed out that it is impossible to think of the 2030 Agenda in Brazil without also looking at the role of SUS. She corroborated the importance of coordinated action by ministries in this area and hopes that the meeting will result in an agenda of mechanisms and recommendations that will help implement the 2030 Agenda so that, in fact, no one is left behind.

1.2 Launch of the FIOCRUZ Strategy for 2030 Agenda

Mr. **Paulo Gadelha** Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group.

Mr. Paulo Gadelha explained that the FIOCRUZ Strategy for the 2030 Agenda was created by a committee made up of members from different sectors of the institution. It was the product of intense work that reflects the connection between the parameters of the 2030 Agenda and the history and prospecting of FIOCRUZ. He added that the institution's creation process was centered on the close relationship between knowledge and innovation, and the area of economic and social development projects. He emphasized that FIOCRUZ was established with a strong presence in the development of the Brazilian State. The main reason for the formation of FIOCRUZ was the existence of territories still unknown and deep inequities in Brazil. An important feature of the institution is that it has had an international connection from the beginning, and this has remained strong up to today. Its other features include working with innovation in a systemic way, and combining a wide range of activities in the field of health, allowing synergistic relationships of great relevance. He stressed that health is a human right, a precondition, an indicator, and a result of sustainable development. Therefore, it plays a key role in the implementation of the 2030 Agenda as a whole.

Mr. Gadelha pointed out that the central challenge of the FIOCRUZ Strategy for the 2030 Agenda is finding where FRIOCRUZ can best interact with the 2030 Agenda to enhance and coordinate its contributions to the Agenda's implementation. Another challenge is how to optimize the opportunities that the Agenda offers to strengthen FIOCRUZ as a strategic State institution and enhance cooperative networks and institutional cohesion. Finally, Mr. Gadelha presented FIOCRUZ's main initiatives for the implementation of the 2030 Agenda.

1.3 First Conference - Sustainable development: *Transformative concept for a challenging world*

Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation (FIOCRUZ).

Ms. Nísia Trindade reflected on the concept of sustainable development, based on its relationship with the development debate. She pointed out that the whole discussion leads to a diachronic dimension, covering the economic, social and environmental aspects as a great commitment to the younger generations. It also has a synchronic dimension, and it is essential to think about the inequalities in the fulfillment of human needs at the same time. In this theme, she cited authors such as Ignacy Sachs, who argues that it is not a matter of stopping growth while inequalities are not overcome, but there must be a change in the modality of growth and distribution of results, which reinforces the relevance of coordinating the social, economic and environmental dimensions. Sachs also brings forward the notion of eco-development, which must respond to the challenge of harmonizing economic and social goals through the ecologically prudent management of natural resources.

Ms. Trindade added that the discussion on development increased in significance after World War II and that it was during this period that the concept of a "vicious cycle of poverty" emerged. The idea was that the poor are poor because they are sick and vice versa, providing evidence for the relationship between poverty and disease. This discussion is usually associated with Gunnar Myrdal, who discusses the cumulative effect of inequality, that is, "poverty creates more poverty."

Following this, Ms. Trindade highlighted Josué de Castro's statement that "half of humanity does not eat and the other half does not sleep because it is afraid of the one that doesn't eat", found in the book "Geography of Hunger", which addressed other aspects such as the "dilemma between bread and steel". It has had a huge impact framing famine not as being caused by natural disasters or an ignorance of nutrition, but as a social issue. Ms. Trindade called attention to Graciliano Ramos' book "Vidas Secas", which also views this issue not as a consequence of drought, but as a combination of social relations.

She pointed out that while there is a post-war idea that there is a linear development that all nations should achieve, there is an opposing thought in this regard. Josué de Castro argues that underdevelopment is not lack of development, but a product or byproduct of it. Celso Furtado argues that what defines development is the underlying social project; that the development model of countries considered as advanced is not generalizable to all nations, but should take place in a more egalitarian way, reducing the waste generated from consumption; and that the mismatches caused by social exclusion are not only the result of the direction of technological progress but also of the incorporation of poorly paid labor from the countries of late industrialization. Ms. Trindade pointed out that this type of reflection is extremely valuable for us to consider with regard to the 2030

Agenda and that the critique of the concept of development is not focused on technological progress, but on the need to adapt that progress to integrate the three dimensions of sustainable development.

Ms. Trindade stressed that the 2030 Agenda recognizes the eradication of poverty as the greatest global challenge and an indispensable prerequisite for sustainable development, clarifying that it appears in earlier UN documents, but now gains strength through its clearer association with inequality. With regard to SDG # 3, she recalled that the 2017 HLPF stated that universal coverage is the key to achieving this objective. However, she warned that such a formulation does not clearly contain the guarantees of equity, completeness, public sense and health as a right - without restrictions on access -, elements that are intrinsic to the concept of universal coverage.

She pointed out that the social determinants and the Health Economic and Industrial Complex are central references for discussion, and stressed the importance of taking into account both state-of-the-art technologies and social technologies. She presented FIOCRUZ's vision of including the environmental dimension along with the social and economic dimensions of health, which is present in publications by Maria Cecília Minayo and Marcelo Firpo. Ms. Trindade warned that we should not use the nature vs. culture/society dichotomy, but we should think of natural disasters within a more integrated social vision to allow us to look at what appears natural in a different way. She stressed that neither poverty nor hunger nor inequality are natural, and that academic denaturalization and putting it into practice are essential.

1.4 First Panel - *Mainstreaming STI in the Era of Sustainable Development*

Chair and Rapporteur: Mr. **William Colglazier**, Fellow, American Association for the Advancement of Science (AAAS).

Presentations: Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA), *The role of STI in the context of the HLPF and ECOSOC on the implementation of the 2030 Agenda and its SDGs*; Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group, *The importance of STI in the health sector to facilitate the implementation of the 2030 Agenda and the health-related SDGs*; Ms. **Cristiane Quental**, Advisor, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ); and Mr. **Alex Alarcon**, Researcher, Universidad del Chile, *The implementation of 2030 Agenda and its SDGs in Latin America: Think Tanks and academic institutions' contribution*.

The panel discussed STI action priorities to strengthen the implementation of the 2030 Agenda at the global level, the role of STI in the health sector to facilitate the achievement of health-related SDGs, and the contribution of Think Tanks and academic institutions toward the Latin American implementation.

The panelists consider the SDGs as a gift to the world, as they represent a consensus of the world's political leadership; provide an aspirational and practical definition of sustainable development; apply to all countries; are interdependent; and have longevity because they extend until 2030. Another aspect that the panelists see as positive is the UN recognizing that STI are essential for

maximizing progress on the SDGs. STI develop very rapidly, and by 2030 there will be new advancements that can support the SDGs' implementation.

The panelists believe that health and education are probably the SDGs that have the most positive spillover on others, and health would be the most affected if the other goals were not implemented. The 232 indicators of the 2030 Agenda are being classified into three tiers. Indicators with known methodology and regular data collection are classified as tier 1. Tier 2 contains indicators with known methodology, but the data is not very well collected. Indicators in tier 3 have methodology that is not very well defined and, as a consequence, are hard to monitor. About one third of the indicators fall in each of these categories. Because of the public health community's considerable experience, most of the indicators for SDG #3 are classified as tier 1 indicators. Therefore, some areas could learn from SDG #3 in terms of targets and indicators. On the other hand, an aspect that could be improved in SDG #3 is the role of STI, which is not mentioned among the targets, except for a reference to research on vaccination. The role of STI must be a key element in the action plans for every target.

The panel emphasized the important role that STI had in the formulation of the SDGs. The panel believes that a step forward in the use of science to influence public policy occurred when the UN allowed science to influence the SDGs' negotiation process. Including the SDGs in a global agenda has an indirect effect of triggering an increase in related scientific research among civil society, academia, and the private sector, particularly with respect to social and health-related themes. The biggest challenge is not the existence of knowledge, but the need to connect STI demands with available solutions. The TFM can help in this regard.

The panelists understand that there are some priorities to be addressed by the scientific community: 1) it is necessary to improve the current trend of the SDGs' implementation. It is possible to predict that some targets, such as maternal mortality, will not be fulfilled by the deadline unless we double the implementation rate; 2) the scientific community should develop methods to track the hard-to-monitor indicators; 3) translating the SDGs into policy formulation is always a challenge, since it is a political process. Thus, the scientific community should identify which synergies and trade-offs among the SDGs would be hard to achieve if they were left to the market forces, and develop solutions to make the political decision easier. For example, carbon-based fuels used to be much less expensive than renewable fuels, which made the discussion on this theme very difficult. This discussion is becoming easier from an economic perspective with the new technological solutions in this field; 4) there's a need to strengthen the efforts to reach those people who are the most left behind. This includes expanding the research to identify and tackle the underlying reasons for exclusion; and 5) exponential technologies normally follow the market, and the scientific community should work to direct them towards the fulfillment of the SDGs and not to create more barriers.

It is necessary to approach the SDGs in a holistic way, explore the connections that the SDGs related to health have with the others, and produce interactions with greater systemic potential. There was an emphasis on the existence of a "big gap" between health governance and STI. According to the panelists, the One Health and the social determinants of health approaches contribute to a more holistic reflection.

Mechanisms for reducing the separation between health governance and STI were discussed: improve mechanisms for evaluating technologies that analyze the impact of innovations on health, and whether they have synergies, or not, with their demands; create thematic action plans (particularly in STI); intersectoral governance; work on other examples with a systemic impact, such

as the approach to chronic non-infectious diseases, with great capacity to mobilize different sectors; work on health system innovations, with several studies showing that they have a more powerful impact compared to fragmented or sectoral innovations; work more vigorously on innovative arrangements for health financing and innovation co-production; seek a closer and more coordinated connection between companies and health care planning, ensuring that the innovation produced is absorbed; work better on cooperative platforms from the point of view of knowledge and the co-production of innovation; strengthen the capacity of data processing and make the indicators be oriented to what we want to solve, allowing them to reveal inequities and help indicate how the health area can be used to monitor all SDGs; and social control and public appropriation of knowledge about the 2030 Agenda, extending the concept of "citizen science". UNESCO has established a day dedicated to science, celebrated each year, which helps with the dissemination of the 2030 Agenda and the SDGs.

The discussion then turned to the institutional arrangements for the implementation and monitoring of the SDGs in Brazil and Chile, as part of a CRIS/FIOCRUZ study. The study's main objective is to describe and compare the various national institutional arrangements being created in seven of Latin America's countries for the implementation of SDGs, and identify the priority given to health. The Chile study indicates that most publications on SDGs in that country come from government and international organizations; less than 25% is directly related to health; private sector participation is limited and inconstant; and the participation of civil society and academia is still a challenge.

Participants suggested that funding for the SDGs should be independent from the traditional activities of ministries, which would exclude the justification that they already meet the 2030 Agenda as part of their day-to-day activities. Participants stressed the need to reflect on the great contradiction between the 2030 Agenda and the Addis Ababa Agenda, since the latter proposes that development finance be done through conducting business and encourages the strengthening of trade, which may end up worsening inequality. In the conclusion, participants stressed the importance of highlighting local initiatives, not necessarily those linked to the 2030 Agenda, but related themes. They believe that in the face of the current wave of conservatism around the world, much of the progress will come from the local level, where there are very interesting sustainable development actions taking place. In the same way, they pointed out that for the implementation of SDGs we need to unite the different efforts in the region, and that there are excellent initiatives in Colombia and Peru, for example.

1.5 Second Conference - *The 2030 Agenda and its Sustainable Development Goals as a new opportunity for the advancement of Health*

Ms. **Laís Abramo**, Chief of Division, Social Development Division, Economic Commission for Latin America and the Caribbean (ECLAC).

Ms. Laís Abramo emphasized that the current development model is not sustainable and that it is essential to strike a balance between the three dimensions (economic, social and environmental). She pointed out that the 2030 Agenda represents a great commitment and a great challenge for the Latin American and Caribbean countries, which face numerous difficulties, such as a growing gap between the capacity of innovation in the region and in the rest of the world, and a dependency on natural resources (commodities). She warned that achieving the goals and targets of the 2030

Agenda requires not only the eradication of poverty, but also the concentration of wealth. She emphasized that the impacts of climate change on the region are getting worse, and stressed the importance of strengthening South-South cooperation.

Despite progress made in reducing poverty and inequality between 2002 and 2014 in Latin America, major structural problems remain in the region, which are critical obstacles for sustainable development. Poverty is more severe for some groups of the population, such as children, women, indigenous peoples, and the Afro-descendant population. In rural areas, more than half of the children live in poverty. Ms. Abramo argued that decent work and social protection systems are key to eliminating poverty and reducing inequality. She added that putting an end to prejudice against the poor is just as important as eliminating poverty.

She presented graphs showing how countries improved during this period. The changes were closely related to the advances in the labor market (such as the reduction of unemployment, rising wages, especially the minimum wage, and the formalization of labor), poverty reduction policies (such as the Bolsa Familia program in Brazil), and an increase in social protection systems. Despite this, only 30% of the households in the region have double inclusion (social and labor). From 2007 to 2015 there was an increase in public investment in the social area (social spending); however, the budget for the social area has decreased since 2015, in a context where the countries' commitments to the social goals set out in the 2030 Agenda increase. She warned against the cost of setbacks, showing how, following the crises that hit Latin America in the 1980s and 1990s, GDP per capita took 15 years to recover, but poverty levels took 25 years. It is crucial, therefore, to preserve the advances that took place in several areas of social development during the 2002-2014 period.

With regard to SDG # 3, Ms. Abramo stressed that health does not only concern this particular goal, but is strongly related to several others. She presented a table that showed how the targets of each SDG relate to social aspects, explaining that the social dimension crosses the 17 SDGs. She placed the ethnic-racial issue as one of the structuring axes of the poverty situation and the matrix of social inequality in Latin America and, as an example, pointed out that infant mortality is higher among indigenous and Afro-descendant children. However, the UN International Decade of Afrodescendants is not mentioned in the 2030 Agenda, so how can we promote an effective dialogue between these two instruments?

She stressed that the 2030 Agenda states that no one can be left behind, and that one of the conditions for this is the disaggregation of data (by socioeconomic level, sex, race, ethnicity, age, place of residence, etc.) as defined in goal 17.18 of the Agenda. Today, with the existing statistical information from most Latin American countries, it is possible to disaggregate a significant number of data by territory, sex, age, but not by race, ethnicity and disability. Other challenges include intersectoral arrangements, sectoral policies targeting specific groups, and appropriate funding. Ministries need to talk to each other (health, education, agrarian development, etc.). Without funding there are no public policies, and without public policies the challenges that the international community intends to overcome will not be met.

Despite an increase in public and social investments in the region, they are not enough to eradicate poverty. According to ECLAC, US \$ 340 million were misappropriated in Latin America in 2015. This is equivalent to 6.7% of the GDP. The tax systems in the region are heavily regressive, which means that the richer pay less taxes. Ms. Abramo emphasized that if tax systems were organized in a fairer way, there would be more tax collection, and this would allow for more social investments.

Participants stated that the issue of inequality can lead to even less visibility for the indigenous, Afro-descendant and peripheral populations, and that it will be very difficult to change this reality without transforming the concepts of development, progress, wealth and poverty. They reinforced the importance of reflecting on how to reduce inequalities without wiping out differences. They questioned the situation and the financing of social protection systems in the present and the future in Latin America.

Participants warned of the increasing inequality of wealth distribution in the world, which, along with the reduction of social spending, will lead to increased transfers to the top of the pyramid and will lead to favoring this portion of the pyramid for technological choices. They understand that it is crucial to discuss what interests the 2030 Agenda faces, who loses and who wins. They questioned whether technology is gender neutral and how it impacts on the provision of social policies that directly affect women's lives.

The participants also reflected upon the sustainability of social security and health systems with an aging population and changes in the nature of work (work for the new generation is more linked to information technologies, without the same contributions to social security). This is a challenge especially for Europe, but also relevant for reflection in Latin America. Access to water and sanitation is a social and public health problem. Inequality between men and women and women's emancipation derived from advances in this field also need to be taken into account. The changes in some activities attributed to women, such as running water and washing machines replacing the practice of fetching water and washing clothes in a river, had a great impact in their lives.

Ms. Abramo emphasized the important advances in social policies throughout Latin America over the last decade and a half, especially with regard to social protections based on access to rights. She noted that social protection systems should be universal, as should quality health and education. The progress made from 2002-2014 was not only the result of relatively favorable growth, but has been associated with distributive policies in the social and labor market, and a rise in public spending. Despite women being more involved in society and the labor market, important gender inequalities persist, which constitutes one of the structuring axes of the social inequality matrix in Latin America. One of the trends of the current situation is that the aging population will continue to increase in size. Their caretaking needs will increase, and this will overwhelm women. Nineteen countries have time-use studies to identify the hours spent by men and women in unpaid domestic work and indicate that women in all countries devote a much higher number of hours to this type of work, particularly among the poorer sections of the population. Ms. Abramo agreed that technology undoubtedly has a gender bias, and that despite the advances, there is still a resistance to women entering the STI area.

She emphasized that the end of poverty and the reduction of inequality should be an objective for everyone. Furthermore, it requires moving from a culture of privilege, which is a trait historically found in Latin American societies, to a culture of equality. Democracy, no doubt, imposes limits on the culture of privilege, but in several countries, there may be setbacks in this regard. She reaffirmed that poverty cannot be overcome without a much more determined confrontation of social inequality in Latin America.

1.6 Second Panel - *Experiences on Online Platforms for Technology Facilitation*

Chair and Rapporteur: Mr. **Luiz Augusto C. Galvão**, Researcher, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ).

Presentations: Mr. **Clóvis Freire**, Economic Affairs Officer, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA); Mr. **Jorge Martinez-Navarrete**, Information Technology Officer, Office of Information Communication Technology, United Nations (UN OITC); Ms. **Marcia Chame**, Coordinator, Wild Health Information Center, Institutional Platform on Biodiversity and Wild Health (CISS), Oswaldo Cruz Foundation (FIOCRUZ); Mr. **Wagner de Jesus Martins**, Ágora Project Coordinator and Management Coordinator, Oswaldo Cruz Foundation (FIOCRUZ - Brasília); and Mr. **Cláudio Muniz Machado**, General Coordinator of Strategic Information Management, Department for Monitoring and Evaluation of the Unified Public Health System - SUS (DEMAS), Brazil's Health Ministry.

The key elements of the TFM were presented, as well as the objectives, users, and components of the TFM's online platform. The platform will be accessible for those that don't have a lot of computer knowledge. It will provide access to information related to STI, such as regulations, and ways for STI users to locate suitable solutions. The platform's users will produce and demand information. The panelists presented important aspects for platforms to be successful. Many platforms fail soon after being created. In order for a platform to be used, it is necessary to make it interesting and create incentives for users to access it.

Other recommendations include using tools that are already available, content that is created by the users, and open-source software. The panel advised that it is not worth it to spend much time improving the taxonomy, as most people prefer to use the search engine. Designing very elaborate platforms can take years, and could be a waste of time and resources. By that time, it is possible that the platform is no longer needed, because the world is very dynamic. It is better to design platforms that can be ready in months with basic functions, and can be further developed in a modular fashion.

FIOCRUZ's Biodiversity and Wildlife Health Institutional Platform was developed due to the emergence of zoonoses in Brazil and in the world, in line with the 2030 Agenda. Understanding animal death is a way of protecting human health, since animals often get sick first. The platform aims to prevent epidemics and to understand the relationship between biodiversity and health. It includes a georeferenced system that allows anyone to register sick animals, alive or dead, with photographs and information to be later validated with a visit by health and environmental surveillance technicians. The location is registered via a cell phone's GPS and does not need the internet. There is also an online platform that allows you to generate reports. The use of simple animal names, rather than scientific names, and a simplistic layout were prioritized.

The project involved testing in traditional and indigenous communities in the Amazon and the Atlantic Forest, and giving cell phones to collaborators. User comments made improvements to the app. For example, people in the rural areas had calloused hands and could not use the touch screen, so it had to be adapted. In all, 166 adjustments were made to the system to help make it accessible. There is an annual competition to elect the top ten contributors. The third largest contributor in Brazil in 2016 was a 70-year-old lady who had never used a cell phone. The platform was certified as a social technology by the *Banco do Brasil Foundation*. One of the greatest lessons learned was the importance of partner collaboration.

The FIOCRUZ Agora platform was discussed next. It focuses on the governance of public policies in a collective way, and the dissemination of knowledge about the SDGs and health. It is an online space where technicians, researchers and others can form networks, exchange knowledge and find partners for their projects. It has a network of autonomous developers. Because of its links with society, academia and government, FIOCRUZ was an environment conducive to the creation of the platform. The idea is that the *Ágora 2030 Challenge* can also be used to evaluate and finance new technologies.

The *digiSUS* platform was also presented. This platform aims to facilitate the population's access to health information, reduce the fragmentation of SUS' initiatives, and improve its governance. Health has a tremendous amount of data. With the platform, which also includes electronic medical records, it is possible to better focus and organize this information and make it available to the public so that it can monitor the data. The information is sensitive, so *digiSUS* is prioritizing data security and access control. Often the information exists at different government agencies, but there is no incentive to make it available. Currently, 15,488 public basic health units (36% of the total) use the electronic medical record.

In financial terms, participants considered it difficult to maintain the platforms. This sparked a reflection on whether public-private partnerships would be appropriate for the 2030 Agenda and recommended for public platforms from an ethical point of view. Other participants questioned whether platforms communicate with each other and if there was any way to share platform knowledge, something like a mother of all the platforms. They also stressed the need to think how to best communicate the 2030 Agenda in order to effectively touch "hearts and minds".

Panelists understand that working collaboratively increases visibility and lowers costs for everyone. They stressed that trust and interaction are essential elements, and that people do not contribute if they do not perceive a clear benefit. Panelists believe that the mother of all platforms would be the internet, where there is a certain amount of trust and the number of networks continues to increase, bringing together a growing number of people. They indicated that it would be possible to communicate between platforms and that this would be useful. They mentioned that in Brazil there are laws that "stick" and "do not stick". Platforms can help something that society wants to "stick" or "not stick". Finally, the panelists invited everyone to think about how a global platform could be created, which is the goal of the TFM.

2. Second day - November 7, 2017

2.1 Third Conference - *Relevant Features of Innovation and its impact on Health*

Mr. **Summerpal Kahlon**, Director, Care Innovation, Oracle Health Sciences.

Mr. Summerpal Kahlon began his talk by stating that health care is an extremely personal experience and service, and one that involves interactions based on trust. Trust is also very important with technology and innovation. If people don't have trust, they will not participate or contribute. In Kenya, Mr. Kahlon noticed that some people don't trust the government, and they trust foreigners even less, including the Doctors Without Borders staff. He added that in the US companies are trusted more than the government, due to the belief that the market will punish companies that fail.

In Belgium some people don't trust their central government, but they do trust the Flemish and the Walloon governments.

It is important to know who will use the innovation and why, and who will pay for the costs. Many ideas fail to succeed because they lack a business plan and a clear value. Each stakeholder must benefit from the innovation. The customer might not necessarily be the one that pays for it. The path to a vision is never linear. Many innovators envision what they think "should be" and disregard reality. The first three years are always challenging, and start-ups usually fail or succeed by the third year. Failure is okay. Actually, most ventures fail. It is necessary to start with a project plan where even if the venture fails, one can still learn from it. If the project plan is too ambitious, and the venture runs out of funding, there will be no results to show. It is important to learn from failures and always plan for success. Many ventures aren't ready when they succeed.

Mr. Kahlon emphasized that scalability is essential. It is important to keep in mind how much work would be necessary for the innovation to gain scale, as well as the complexity involved. If an innovation never leaves the lab, it will never create the impact that it could potentially have if it were put into practice. Flexibility is vital in this process. It might be necessary to change the original views or accept changes. Mr. Kahlon emphasized that it is important to listen to partners, clients and the environment, and be prepared from the beginning to make changes along the way. There is no problem in not achieving the full vision, as long as one achieves something meaningful.

Another recommendation is to create solutions to problems, and not pursue fanciful ideas that no one needs at the moment. Amazon is considered a disruptive force. Disruptive innovation is something to keep an eye on. However, innovation doesn't have to be disruptive, as it can be incremental. According to Mr. Kahlon, this is particularly true in the health sector, which requires patience, privacy, accuracy, and risk averting. It might take a scientist thirty years to achieve his discovery. Yet, companies have a hard time with patience, which is true for Oracle as well.

Another important aspect is to observe regulation. Governments create laws for a reason. Innovators sometimes ignore regulation and simply get frustrated. Furthermore, innovators should understand what people are doing, and why. Steve Jobs saw what people were doing with cell phones and computers and offered a single solution. If he had asked people, they would never have known. Steve Jobs is probably the largest technology innovator known. Apple is a rarity, but these principles are worth trying. Toyota has a set of five "whys" which should be answered before starting an innovation. It is necessary to answer all five to obtain a good answer. People usually stop at the first or second why.

In addition, it is important to pay attention to *Big Data*. The health sector generates more information than any other sector. This information must be analyzed in real time to extract patterns which might result in treatments. Lives are at stake, so the innovation process can be slow in healthcare. The blame cannot be placed upon algorithms when there is a medical failure. The Internet of Things will be able to increase the amount of information within patients' profiles. It will be possible to add value to data generated by the patient, which can be used to design policies. With regard to applications (apps), the ones that are most used provide either instant gratification or information in exchange for the data input. Most health apps do not send data anywhere and give little information back.

Mr. Kahlon explained descriptive analytics (reporting what is known, “who and what”), predictive analytics (using patterns to predict trends, “when and where”), and prescriptive analytics, which is the frontier in health care. Prescriptive analytics can predict what will happen in the future and recommend what to do to prevent it and when, through mathematical models of pattern recognition.

Mr. Kahlon indicated that there is a concern that automation might cause jobs to be lost. It concentrates the work into the hands of a relatively small number of people who create the software and the machines. There is a growing divide between those who know technology and those who do not. It is important that more and more people understand how technology works and its role in the world. Another concern is that some large companies that operate internationally are under less control from regulatory bodies. A lot of what they offer would not be possible if they were under greater control. Several of Google’s services, for example, use data obtained from the users. Google has access to that data. Some European Union countries are trying to better understand who has the data and where it is going. Mr. Kahlon believes that this is an interesting initiative, and that it would take a multinational effort to deal with this issue.

He suggested that involving people from different sectors, and not just from the health area, to work in innovation increases the chances of creating something significant. Participants asked about how to develop a system that could be applicable in countries that have different health realities, and how developing countries could attract more innovation investment, including from the Silicon Valley. Mr. Kahlon pointed out that it would be a matter of finding someone with resources who is willing to try. Investors are attracted to profits. Countries such as Brazil attract capital, but smaller countries attract less investments. Countries can think about how to make the entrance of innovation projects easier, without hurting the nation’s values. This does not mean abolishing regulations. Instead, it could be simple, such as an access point, a person, or a group with whom interested companies can work. Finding a good local partner is a complex task, and can sometimes take more than a year.

Participants stated that a considerable part of innovations in developing countries is associated to digital imagery, and asked about innovations in this area. Other participants asked whether Oracle collaborates with institutions focused on health innovations, such as the Chan Zuckerberg and the Bill & Melinda Gates foundations.

Mr. Kahlon mentioned that Oracle is working with an NGO in Cameroon to apply machine learning to analyze the digital images of Pap smear tests. The local internet connection is fast enough to transfer data, but not fast enough to stream in real time. Currently, the biggest challenge is regulatory paper work. Mr. Kahlon explained that Oracle does not cooperate directly with the foundations mentioned, but would be open to that. He added that Oracle’s executive director has a foundation and makes donations in this area.

2.2 Third Panel - *Priorities and opportunities for health-related STI in the implementation of the 2030 Agenda and its health-related sustainable development goals*

Chair and Rapporteur: Ms. **Tereza Campello**, Associate Researcher, Oswaldo Cruz Foundation (FIOCRUZ).

Presentations: Mr. **Carlos Gadelha**, Prospection Actions Coordinator, Lead researcher on Development, Innovation and Health Economic-Industrial Complex, Oswaldo Cruz Foundation (FIOCRUZ), *Relationships between Health, Innovation and Development policies: the Health Economic and Industrial Complex perspective*; Mr. **José Vieira**, Professor, Engineering School, University of Minho, Portugal, *Challenges and opportunities for the implementation of the 2030 Agenda - water and sanitation: social and public health implications*; and Ms. **Gabriela Prada**, Strategist, Health Policy Systems, Global Government Affairs, Medtronic, *Technology for Health: prospects and accessibility*.

The panel discussed guidelines for prioritizing health-related STI and SDGs, taking into account the social and environmental determinants of health, contemporary challenges, future trends, equity and the economic and industrial health complex.

The panelists defined development as a process of social change and induction to the differentiation of the productive system through the incorporation of STI. They presented and discussed data on the global asymmetries in the distribution of scientific knowledge, intellectual property, economic complexity, added value of industrial production, trade balance, and relations between productive structure and social inequalities. Based on this analysis, they showed that health is a priority area for coordination between the STI system, industrial dynamics, and the reduction of regional, national, and global inequalities - a goal advocated by the 2030 Agenda.

Based on this proposal, the panelists presented the concept and Brazil's experience with the Health Economic and Industrial Complex (HEIC) and why it is structurally important for a successful universal access to health. They suggested, for the countries that are committed to the 2030 Agenda, that concrete guidelines and priorities be established for the policies and investments: (i) research, innovation, and industrial policy programs driven by the needs of the unified public health system; (ii) inducement to the incorporation, transfer, and development of new technologies; (iii) systematic south-south and north-south cooperation in a new global context and to allow for the entrance of new actors and countries into the production of STI; and (iv) coordination of health promotion, prevention, and care. According to the panelists, it is not possible to think about sustainable development without having a systemic vision. They added a sixth "P", to signify Power (to change), to the principles of the 2030 Agenda.

The panel then discussed the social perspectives regarding water and sanitation. These relate to poverty, wealth and income inequality. Globally, the access to safe drinking water and sanitation is extremely unequal, and it has a significant impact upon women. Panelists clarified that the use of chlorine to purify water led to a reduction in the number of people infected with waterborne diseases in the world. Children as young as five were the most common victims.

Strong policies and political will can lead to the eradication of these diseases, and it would be relatively inexpensive. Developing countries are finding it difficult to meet the desired levels. However, there is a big difference between these countries, especially in Oceania. Accelerated growth poses a threat, with higher concentrations in Asia and Africa. There are 31 megacities in the world. By 2030, the expectation is there will be ten more, and those will all be in the Southern Hemisphere. Water quality is another challenge. Panelists warned of old resurgent diseases, isolated diseases, and chemical threats. The UN recognized water as a human right in 2010, but 683 million people worldwide live without sanitation. Investments in water and sanitation have a high rate of return: every dollar invested can bring savings ranging between \$5.00 to \$28.00 (WHO). Providing

universal access to water would cost less than 0.1% of global GDP (\$ 53 billion per year over five years).

Regarding health care, aging populations and an increase in chronic diseases present challenges that call for sound policies to ensure health services are accessible, affordable, and sustainable, while also curtailing health inequities and inequalities. Universal health coverage reduces health inequities, but the Canadian experience, for example, shows that a shift to value-based health care can help reduce health inequalities. Value-based health care aims to improve patient outcomes at a manageable cost. This notion of “value” supports the affordability of health care, boosts innovation, and leads to better health and well-being; all of which contribute directly to the SDGs.

More money for health care does not necessarily solve health inequalities. How these resources are used is what makes the difference. The more financial resources a country has, the more it likely spends on health. However, the solution may not be spending more, but spending it better: paying for services and technologies that directly improve health outcomes. By improving health outcomes, health systems can decrease the demand for health services. For example, by rewarding services that lead to greater control of diabetes, health systems are likely to avoid expensive complications such as kidney failure, cardiovascular disease, and amputations in the medium to long term. The notion of “value” (health outcomes divided by the cost of achieving these results) has been supporting and boosting innovation and sustainability in health care. The transition to value-based health care is already unfolding around the globe; some Latin American countries such as Brazil, Chile, and Colombia are already embracing value-based health care models.

Participants underscored the importance of thinking about how to deal with climate change, and the likely relevance that the green economy will have. They turned the discussion to how to sensitize governments to an expanded conception of value, which also includes values for the patient and not just those that interest the state (such as economic efficiency) in the neoliberal context. This tension is exemplified by the high-cost drugs needed to fight rare diseases. There is a shift in the view from “patient” to “user.” Another issue raised was the judicialization of “orphan drugs”, those that the government leaves unused. Many people are dying without access to medication. Participants warned that if the value parameter is not changed, the SDGs will not be reached. They corroborated that progress in regional and south-south cooperation is essential for the advancement of SDGs.

Since the populations that do not have access to sanitation are generally not in urban centers, the participants inquired about possible non-traditional sanitation solutions (in addition to government assistance) that can be adapted to specific realities. They underscored the role of civil society and social control bodies in the implementation of the 2030 Agenda. They then suggested that the group attending the meeting, together with other countries, could promote the second conference on universal health systems. The first, organized by the National Health Council, was attended by representatives from Africa.

When comparing examples from around the world, participants mentioned that Norway is currently one of the least unequal countries. Norway began to invest in social policies when it was much poorer, which is something worth reflecting upon. Norway discovered oil some years ago, and good political leadership led to the creation of a sovereign fund that is shielded from interference by the government and Queen. Angola, for example, has also created a fund that is controlled by the government, but the population has not received much benefit from it. This demonstrates that the same solution may have different results in different realities.

Panelists recounted that in the nineteenth century, the cities of Hamburg, Paris and London had a serious problem with cholera transmitted by water. This led to the development of an innovation that combined the aqueduct, which was a Roman solution, and water vapor. It is about adapting existing solutions to local realities. Many children still die daily due to water and sanitation problems, which could easily be avoided with technologies already in use. Innovation may be key to certain needs such as desalination of water, for example. As far as funding is concerned, panelists do not know about successful examples of privatization of sanitation, but they believe that the problem is not the lack of resources in governments, but public choices in some countries.

Participants emphasized that STI should include the socio-environmental needs of health, politics/power, and the sustainability/preservation of ecosystems and biodiversity. They understand that we should not differentiate transgenics in agriculture from transgenics in medicine (penicillin). They stressed that we need to consider local and traditional knowledge to avoid the authoritarianism of technoscience. Some participants believe that the concept of "innovation" is being used in a polysemic way, and that differences should be borne in mind, depending on the field in which it is applied.

Participants reiterated that equity and sustainability require quality universal health systems. Some of them believe that having innovations such as algorithms (which can help diagnose diseases) in the public domain could be considered, and that perhaps researchers in the global south could work on this. Participants pointed out that sometimes there are solutions, but there is no political will to change the current reality. Participants also reflected on how to change the development model in order to boost agroecological agriculture that promotes health. Investments in organic production should be expanded. They emphasized the importance of thinking about devices that pose very different questions for access, automation maximization, and integration with care systems, which are related to the systemic approach to health care. Innovative models do not consider technology in isolation, but look at how devices are integrated within health care services to optimize access, efficiency, and health outcomes. Public and private sectors are increasingly working together to redesign care pathways to optimize the resources available.

The panelists emphasized the key role of equity in health systems and the fact that while policies help, they can also destroy. For example, the health of those living in Venezuela has deteriorated dramatically due in large part to inappropriate health policies. Most countries in Latin America are committed to providing universal coverage, but there is still the challenge of determining how to fund it, defining what is included and what is not, and implementing policies as intended. We must work together to make this financially viable. Panelists emphasized that innovation is not just a scientific invention, but it is the process of extracting value from the invention to make it useful, economically accessible and available. Today's health care affordability challenges require innovation and partnerships. New public-private collaborations can deliver these results, which fits well with the SDGs. The panelists stressed that it is difficult to bring about change, and we often do not have the power to do so within our countries, but the global 2030 Agenda can empower countries to do so.

2.3 Fourth Panel - *Next steps for an integrated response on the 2030 Agenda's health-related goals*

Chair and Rapporteur: Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+).

Presentations: Mr. **Paulo Buss**, Head, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ), *Global Health Governance: Challenges and mechanisms*; Mr. **Neboja Nakicenovic**, Deputy Chief Executive Officer, International Institute for Applied Research (IIASA), Austria, *Pathways towards sustainable development: the world in 2050*; Ms. **Myrna Cunninham**, President, Center for Autonomy and Development of Indigenous Peoples (CADPI), Nicaragua, *Traditional Knowledge and Social Technologies, a hidden issue of Sustainable Development*; Mr. **Mauricio Barreto**, Coordinator, Data Integration and Health Knowledge Centre (CIDACS), Oswaldo Cruz Foundation (FIOCRUZ), *Monitoring social, economic and demographic factors of 2030 Agenda and the health-related SDGs*; and Mr. **Oscar Mujica**, Regional Advisor of Social Epidemiology, Special Program on Sustainable Development and Health Equity, Pan American Health Organization (PAHO), World Health Organization (WHO), *The quest for health equity*.

The panel discussed how global dynamics affect health outcomes in the local and national levels, perspectives for sustainable development for the next decades, monitoring the SDGs, equity in health, and the role of traditional knowledge in the 2030 Agenda.

The panelists pointed out that the global political determinants of health are: austerity measures in economic crises, intellectual property, foreign investment treaties, food security, transnational entrepreneurial experiences, illegal migration and conflicts. They highlighted that there is a gap in the distribution of STI in the world, and that neglected diseases are a challenge, but the real problem is related to research and the lack of access. STI for global health must involve more than just medicines and devices. They must include advances in sanitation and agriculture. It is necessary to focus on the needs of the poorest populations, including through frugal technologies. Panelists also called attention to how pharmaceutical groups tend to focus on profits and to the lack of accountability.

There is an enormous amount of STI-related initiatives, but there is a lack of integration between the agencies that deal with this theme at the WHO and the UN. It is important to strengthen the system within the UN to coordinate STI issues. An STI priorities agenda must be established, focusing on sustainable development and health. Financing for sustainable development, including STI for health, is paramount. Other recommendations include strengthening North-South-South cooperation and the coordination between the WHO and the big research institutes, to optimize the results; and establishing an agenda and a conference for STI for health in Brazil. There are plenty of documents related to health and STI in the UN. The panelists suggested reading them. It will be necessary to educate diplomats, lawyers and other professionals on how to deal with the challenges of the 2030 Agenda, such as intellectual property in the case of STI for health.

The panelists underscored that initiatives aiming to achieve sustainable development must be inclusive and involve all sectors of society. Including artists, for example, is very helpful for mobilization and communication. Integrated and inter-sectorial policies are needed for the

fulfillment of the SDGs. Health is particularly important for the achievement of the other goals due to the heavy disease burden in the world. There are serious problems that could be eliminated in an inexpensive manner, such as childhood stunting, malaria, open defecation, and respiratory diseases caused by the use of polluting cooking fuels. It is essential to adopt a systemic perspective, with a focus on the synergies. If solutions for energy security, domestic and air pollution, and climate change were jointly implemented, the total cost would be 40% lower than if isolated solutions were implemented for each problem.

The world will not stop in 2030, and it's necessary to think ahead. "The World in 2050" network aims to integrate disciplines toward systems science for transformation to sustainability. Another goal is to develop alternative science-based pathways for the achievement of the SDGs. Changes will not occur on their own. They must be planned. For example, it took more than seventy years for the use of toilets to become widespread in OECD countries, and fifty years in developing countries. At the beginning of the 20th Century, in New York City, horses were replaced by automobiles within thirteen years. Cell phones spread across the world in eleven years. This shows that it is possible that big transformations occur in a short time. Between now and 2030 significant changes can still happen. The panelists stressed that there should be more initiatives to disseminate the SDGs, such as the posters about the SDGs that were installed in the Duty-Free shop at St. Petersburg's airport.

With respect to traditional knowledge, panelists underlined that there are 370 million indigenous people in the world, divided into more than five thousand different peoples. This includes 826 indigenous peoples in Latin America and the Caribbean. The great variety of peoples and cultures makes it even harder to talk about equality. Although there is still discrimination against traditional knowledge, there has been progress in this regard. UNESCO recognized cultural diversity, and PAHO approved a resolution that recognized the indigenous peoples' traditional knowledge. However, there are serious gaps concerning access to health and other basic services among indigenous communities. They have the highest maternal mortality rates. Not only do they die from simple illnesses such as diarrhea, they are also dying due to more serious diseases such as diabetes. This has to do with the extractive development model, the expulsion of the indigenous peoples from their ancestral territories, and the loss of their traditional ways of life.

In Latin America, there are some notable examples where indigenous knowledge is being used in the organization of health systems: 1) the utilization of medicinal plants and their inclusion in the list of basic medications; 2) intercultural health systems, which offer the choice between western and traditional medicine. Here the traditional system is subordinated to the western system; 3) coordinated health systems, where there's a horizontal coordination between the two systems; and 4) fourteen countries in the region included intercultural health in their constitutions or specific laws, and established departments to promote the use of traditional medicine. Furthermore, there are several examples where indigenous knowledge has contributed to innovation. One example is the weaving of titanium and nickel by Bolivia's Aymara women, according to their ancestral techniques, to be used in cardiac surgery on children. Another example is the replacement of hospital beds with hammocks in Mexico for women to use after giving birth. Some hospitals are being designed according to indigenous architecture, with ceremonial places and beds positioned according to the indigenous cosmovision. A positive strategy that is being used in some places is to hire intercultural health advisors to welcome indigenous patients and serve as mediators between the two health systems.

Examples of the use of technology in indigenous communities include the utilization of cell phones/iPads by traditional midwives to report emergencies, register newborn babies, and produce statistics. Also, doctors are able to reach patients in remote locations by equipping boats, so they become floating doctors' offices. Panelists reiterated that traditional knowledge is central for the achievement of the SDGs in the region, and made the following recommendations: 1) understand that there are different ways of looking at reality, and create spaces for the exchange of knowledge and solutions; 2) identify innovations for cultural access, such as flexible hours, language knowledge, short-stay accommodation for patients and their families, and the use of colors, as white represents death in many indigenous cultures; 3) institutional governance - health systems should take into account indigenous self-governance, in which health is not separate from self-determination and spirituality. Health systems' governance should also consider indicators that are relevant under a cultural perspective, such as process and structural indicators, and not only results indicators; and 4) alert mechanisms - develop technologies that will issue warnings for the early detection of diseases and monitor patients in remote locations.

The SDGs are deeply inter-connected. The recent economic crisis has intensified the impacts of tax austerity in the areas of health and the environment. The current migration crisis reinforces that. The public decisions that have been made can explain why some diseases are eradicated, while others are not, or why mobile phones are more common than toilets. Social inequality can explain this. Cash-transfer programs can reduce the amount of tuberculosis cases, for instance. The SDGs have their own goals and indicators, but there are significant differences among the results achieved by each country. Some countries don't even have resources to monitor or quantify the cases. In this regard, Latin America is placed in an intermediate position. Panelists added that there are several mental, environmental, and occupational diseases that were not considered in the development of the SDGs. Poverty can cause a lot more risks than other factors, and many other elements related to it have been causing increasing impacts. For example, smoking nowadays is more often associated with the low-income population. Social inequality can be reduced if there are clear issues to be addressed, otherwise all we have is normative fallacies. When there are changes in the government, the ways of looking at and implementing social inclusion initiatives also change, which represents a major challenge.

In addressing the “quest for health equity” as a common response to the 2030 Agenda, the panelists contended that — to ensure a healthier and more sustainable future — the most pressing issue the world faces is achieving social equity. The panelists underscored the growing sense of urgency in the common perception that there is a need to implement structural, transformative changes to restore the principle of social justice. Extreme world income inequality epitomizes the current state of affairs: as shown by Milanovic's curves, based on microdata from surveys of household income, Canada's poorest 1% is richer than rural India's wealthiest 1%. As many Latin American countries, Brazil's income distribution is extremely inequitable. Yet over the past two decades Brazil has made unequivocal progress in improving wealth distribution, which translated into a remarkable decline in health inequality, along with an overall improvement in its population's health status and human development.

Nobel Laureate Joseph Stiglitz proposed “eliminating extreme inequality” as a sustainable development goal for 2030 (his “Goal Nine”), and called for a national inequality assessment of a Palma ratio-of-1 target. Given that none of the SDG indicators measures health inequality, panelists

contended that we must outdo rhetoric and generate accountability capacity to honor our commitment to leaving no one behind. In the “bringing significant positive change” essence of innovation, the panelists proposed a three-pronged approach for health equity: 1) to not remain equity-blind, i.e., start monitoring social inequalities in health and health access across the life course; 2) commit to explicitly defined, achievable, equity-oriented targets and indicators; and, 3) engage in action on the social determinants of health.

The participants stressed that the current indicators are not enough to evaluate inequality. They suggested that, given the limitations of the current health indicators, it would be useful to analyze other indicators, such as the Gross National Happiness (GNH) index, which measures the quality of the government, the sustainable socioeconomic development, the preservation and promotion of culture, and the environmental protection. The GNH was created in Buthan in 1970, and it was recommended by the UN General Assembly in 2011. Denmark is at the top of this ranking. Brazil used be in the 25th position. When it comes to women’s health, participants mentioned that maternal death happens twice as often among black women in Brazil, which could be interpreted as institutional violence. They added that the maternal mortality ratio for every 100,000 live births in Brazil is 60, but there are areas with a 44 ratio, and others with a 110 ratio, for example. Thus, participants asked about how to unmask the problems that are apparently solved. According to the WHO, 90% of maternal deaths are avoidable. Participants noted that it would also be important to take women’s mental health into consideration. There is no diagnosis for this in the basic healthcare system. Another important cause of mortality is unsafe abortion.

The participants discussed the narrative behind the targets of the SDGs, which explains the lack of clear references to indigenous populations and people of African descent in the text. As mobility is getting more intense in the world, it would be important to evaluate the impacts of migration and refugees on health, and where these issues would fit in the SDGs. Another issue discussed was data breakdown. We should go beyond the common narrative, with alternatives to measure progress. The participants also raised the topic of how to find practical measures to evaluate inequalities related to health in valid and applicable ways that would work in every country. They highlighted the importance of the Community Health Agents (ACS) and the Family Health Strategy in Brazil as policies that effectively helped improve health indicators. It is paramount to maintain initiatives such as these. 90% of the ACS are women belonging to the most impoverished layers of society. Participants reinforced the need to develop strategies to invest in these professionals.

The participants reiterated the key role of equity in solving the problems that were discussed in this panel, and the importance of collectively developing the ability to monitor whether there are people being left behind. One of the lessons learned from the MDGs is that equity as a value is not enough. More concrete and feasible proposals are necessary to achieve an equitable and inclusive society. Countries have advanced more than we can imagine in the analytical use of their administrative data, which is positive, regardless of their imperfections. From a practical point of view, there is no other way of documenting intersectoriality - to show the magnitude or the inequality trends by gender, ethnicity, education or income, for example - if not through administrative data. It is necessary to strengthen the governments’ ability to handle different sources of data (education, housing, health, and so forth) in a smart way.

Another challenge is that in many cases there are indicators, but no metrics. It is necessary to create reasonable and consensual metrics for equity, which is quite complicated, given that the concept’s

narrative itself is still unclear. Thus, there is a lot to reflect on in this regard. The Gini index used to be a reference to calculate inequality, but Brazil questioned that. The country uses data from the National Household Sample Survey (PNAD) to calculate its Gini index, but if we use income tax data instead, the result will be different. The panelists pointed out that we must rethink the metrics as part of a process of creating knowledge. Otherwise, we will not have real solutions and policies to help us achieve our targets by 2030. There is a lot of knowledge, but there is also a lot of loose data. Therefore, it is necessary to coordinate them and build a common agenda for monitoring and evaluating the SDGs. Researchers, policy makers, and civil society should work together in this direction.

The panelists reinforced that the organization of intercultural health systems is a political process. The negotiation of the SDGs was political, and the inclusion of indigenous matters in only two of the 17 goals was far below the expectation. Therefore, the indigenous communities also consider themselves as included through the use of the word “ethnicity,” which is present in a few parts of the text. They have prepared an indicators proposal that listed health as one of the main priorities, and included intercultural health policies, but none of these indicators was accepted. Thus, based on the SDGs, the United Nations Declaration on the Rights of Indigenous Peoples, and the final document of the World Conference of Indigenous Peoples, the indigenous populations defined new indicators. These indicators are currently being tested through a pilot project in 11 countries, as an attempt to verify - through interactions with the community, local governments and other stakeholders - how to convince national governments to take some of these indicators into account. A report on the SDGs and the indigenous perspective is being elaborated. The panelists also highlighted the importance of dissociating ethnic data first, and then cultural data.

2.4 Plenary Session on conclusions and messages for the STI Forum 2018

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group; Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA); and Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+).

Rapporteurs: Mr. **Luiz A. C. Galvão**, CRIS FIOCRUZ; Mr. **Clóvis Freire**, UN DESA; Mr. **Marcio Pontual**, UNDP Rio+; and Ms. **Cintia Borba Hoskinson**, FIOCRUZ.

The panel thanked everyone’s active participation, and stressed that the presence of representatives from diverse areas enriched the discussion and gave a sample of what may be achieved in the future. It specially thanked the presence of institutions such as ISAGS and ECLAC, representatives from the private sector, and the National Health Council, which is SUS’ highest decision-making body. The panel also pointed out that the first two days of the meeting evidenced that there is a vast knowledge, but it is necessary to adjust inaccuracies and get the different structures closer in order to make a collective and coordinated effort.

The panel mentioned that equity was brought up several times and will remain as a reflection theme. It stated that issues such the inter-dependence among the SDGs, the lack of solutions to put the 2030 Agenda into practice, the improvement of indicators and metrics, ways of enabling financing, and the

inclusion of traditional knowledge and social technologies were widely discussed, with an emphasis on the need to foster dialogue and deepen the debate over these issues.

Finally, the main messages and recommendations of the meeting were presented. They can be grouped into four topics: 1) appropriation of the power of STI to achieve the SDGs, specially the health-related SDGs / review of the current development model; 2) mobilization, engagement, and convergence of agendas; 3) dissemination incentives; and 4) means of implementation - governance and financing [see the “Recommendations” session, page 07].

3. Third day - November 8, 2017 *The Relevance of Social Technologies for the 2030 Agenda*

3.1 Welcome and Introduction to the 3rd day

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group; Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA); Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+); and Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation (FIOCRUZ).

Mr. Paulo Gadelha explained that the first two days of the meeting focused on the international contributions, resulting in recommendations to the HLPF 2018 and other outcomes, such as coordinated management and network building processes. He added that the third day will focus on sharing experiences related to social technologies and innovation, including the launch of online platforms. He stressed that Brazil and Latin America are perhaps the areas with the deepest concentration of social technology and innovation, especially in the field of health - and that the fact that the UN chose to host this meeting in Brazil is a way of recognizing this. He believes that the density of the regional social technology experiences presented may be a starting point to deepen the search for facilitating mechanisms for STI directed at the SDGs.

Mr. Rômulo Paes stressed that the term “sustainable development” can evoke the idea of a topic to be addressed by big actors, governments and big companies, but this way of thinking is only part of the story. To promote such a deep and necessary transformation, it is essential to have everyone engaged, and mobilize types of knowledge that have not been used much so far. He explained that the intention of adding social technologies and other successful experiences to the meeting’s program was to show the need to change the current production and consumption models. It is necessary to transform the way governments make policies and acquisitions, which implies that voters, consumers, activists, etc. must demand that governments and companies produce sustainable services and products.

Mr. Shantanu Mukherjee mentioned that the first global goal ever set and fully achieved at the UN was the eradication of small pox. Over time, other goals were set related to education, health, and so forth. Eventually, the 8 MDGs were established. Following the UN’s tradition of implementing initiatives that build upon prior experiences that worked, the 17 SDGs were set in 2015. This meeting is about the achievement of the SDGs, with which for the first time we are talking about eradicating

certain deprivations. These eradication challenges are hard to meet. The closer we get to helping excluded people, the more evident it becomes that problems are interconnected. The interplay between health, education, and other social issues becomes even more relevant if we aim to entirely remove some deprivations. The transformation does not come from the UN, but from the countries. The UN only helps bring it about. Innovations and adaptations to particular conditions are happening spontaneously across the world. The UN wants to enable collaborations to help these initiatives have a broader impact in a country or across countries. There's a lot of expertise at this meeting, and the UN wants to extend this conversation and engage in collaboration with the experts here.

Ms. Nísia Trindade stressed that we are going through difficult times, which makes it even harder to achieve the SDGs, and that it is urgent to recognize the value of social technologies. They have a long history in Brazil, but recently there have been some remarkable achievements within the new scope of social technologies that we are working with. Ms. Trindade acknowledged the efforts of Ms. Tereza Campello, Brazil's former Ministry of Social Development, who enabled different ways of addressing social technologies within public policies that were consistent in various areas. Ms. Trindade mentioned the *Bolsa Família* program as a special example, for its positive impact on the lives of millions of Brazilians - especially when it comes to women empowerment, which is a turning point when we talk about social technologies. She also noted the positive impacts of social technologies in the field of health, as they contribute significantly to reducing cases of tuberculosis and child mortality. In terms of this meeting's outcomes, Ms. Trindade considers the presence of the National Health Council as crucial, and suggested that some of the recommendations should be discussed with the Council, particularly through the Brazilian Association of Collective Health (ABRASCO), to facilitate follow-up actions with regard to Brazil.

3.2 Launching of the online platforms *Ágora 2030* (FIOCRUZ) and *We App Heroes* (UNDP Rio+)

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group; Ms. **Cláudia Martins**, Health Management Analyst, FIOCRUZ Strategy for 2030 Agenda; and Ms. **Valentina Hernandez**, CEO, Sunscious.

Mr. Paulo Gadelha highlighted the relevance of discussing the functionalities and possible interactions between platforms. He remembered that the FIOCRUZ Strategy for the 2030 agenda was launched on the first day of this meeting, which was an important achievement for the institution. He added that the *Ágora* platform is a key step within this work, which is aligned with the TFM. He shared that the *Ágora* platform was successfully tested during the Health Solutions Fair - Zika, held in Salvador in August 2017. He noted that the zika theme enabled interactions between different areas (social, sanitary, environmental, economic, inequality, etc.), that Brazil's response to zika was exemplar, and that the leading researcher was internationally recognized. Mr. Gadelha emphasized the importance of working with local contexts when trying to achieve the SDGs, and finding ways to cooperate and disseminate information. The UN DESA is organizing a high-level debate in China to address these kinds of issues.

Ms. Cláudia Martins explained that the goal of this platform is to promote cooperation and the exchange of knowledge, always with an inclusive perspective. The platform includes a blog, an events directory, and a research engine. One important functionality is to support the activation and

formation of networks, using an open-code software, for collaborative work in the field of health and other SDGs. It allows the creation of open or closed networks, to be defined by the users. It includes room for virtual meetings, the creation of sub-networks, and a collective decision-making tool. The app “Ágora 2030 Challenge” was also developed, and its initial theme is social technology related to health topics, such as zika. It is structured as a game that allows virtual participation and crowdfunding. Individuals receive virtual coins that enable people to support initiatives. One of the main functions of this app is the social curatorship. When a function is performed, the app gets changed based on the users’ interest. The app enables contacting other users and exchanging and spreading experiences and projects. It was developed within three months and it’s already available to download on iOS and Android.

Ms. Valentina Hernandez began her presentation by referring to data that shows an ongoing rise in the number of people who are living isolated. The growing levels of loneliness in the world have been having negative impacts on health. One of the impacts is an increase in anxiety and depression, which tend to lead to a bigger use of social media. Ms. Hernandez mentioned a study from the University of Missouri about the relationship between depression and the use of Facebook. She emphasized the importance of real human relationships, and indicated that there’s a latent need in people for transformation. *We App Heroes* was developed with that in mind. Ms. Hernandez explained that it is a cell phone app that uses already existing phenomena and technologies such as the power of the crowd, the collaborative economy, and geo-localization to have an impact in the community through micro-volunteering and spontaneous altruism.

We App Heroes aims to connect heroes to needs, in exchange for a purpose and trust. Ms. Hernandez added that trust is a world-recognized indicator that has more impact on well-being than income. When *We App Heroes* was tested at the University of Padova, in Italy, the results showed an increase in trust and a reduction in indifference. The app allows users to ask for and offer help, say thanks, make reviews, and create communities. It has a wall and categories related to one or more SDGs. It is possible to determine the number of people needed to perform a certain task and choose the hero, and he/she will be contacted. Users can visualize the hero’s reputation, the people that he/she has helped, and reviews about the hero. Ms. Hernandez stated that the app will help promote interaction, build trust, and reduce indifference. She ended with a video about the initiative.

3.3 Panel discussion - *Lessons learned on online platforms: facilitating the use and assisting matchmaking of users and providers of solutions*

Chair: Mr. **Guilherme Franco Netto**, Executive Secretary, Researcher, FIOCRUZ Strategy for 2030 Agenda.

Commentators: Ms. **Tereza Campello**, Associate Researcher, Oswaldo Cruz Foundation (FIOCRUZ); and Ms. **Myrna Cunninham**, President, *Centro para la Autonomía y el Desarrollo de los Pueblos Indígenas* (CADPI) [Center for Autonomy and Development of Indigenous Peoples], Nicaragua.

Mr. **Jorge Martinez-Navarrete**, Information Technology Officer, Office of Information Communication Technology, United Nations (UN OITC); Ms. **Mariana Balboni**, Senior Project Officer, International Policy Centre for Inclusive Growth (IPC-IG/UNDP); Mr. **Naidison Baptista**,

Coordinator, Brazilian's Semiarid Articulation (ASA); Mr. **Fabrcio Erick de Araujo**, Advisor, Strategic Partnership Management and Modeling of Programs and Projects, Banco do Brasil Foundation; and Mr. **Daniel A. Maciel Villela**, Researcher, Scientific Computing Program (PROCC), Oswaldo Cruz Foundation (FIOCRUZ).

This session debated lessons learned from online platforms and their possible interaction with the UN Global Online Platform on STI, as well as successful experiences with social technologies.

The panelists believe that *Ágora* and *We App Heroes* have important aspects and a great potential to be successful. They stated that some of the aspects discussed in this session are aligned with both initiatives. The 2030 Agenda declaration includes the countries' compromise to promote technology facilitation through the TFM. The TFM's global platform will integrate national platforms, such as *Ágora*, which is a solid product that could serve as an example to other countries developing this type of platform. The TFM's global platform aims to connect existing networks and the parties involved in the technology development and utilization, such as entrepreneurs, researchers, public managers, and providers of legal, financial and certification services. Therefore, the platform, as well as all platforms that aim to connect people, must have visible and accessible options to make this process simple and fast, such as icons for contacting, hiring, and registering.

In order to attract more users, the platform must allow for easy and pleasant navigation. The platform should offer services or tools that are better than the existing ones. It should offer the potential for obtaining benefits such as a job, a service, a connection or an opportunity for the users to improve their reputation or advertise services. Sometimes the benefit is social interaction, such as with Facebook. It is also important to have a lot of content available on the platform at the time of its launch. But there is no need to spend time classifying the contents very well at the beginning or developing a sophisticated structure. It is better to develop a minimal prototype, launch it quickly, and allow the users to help advance it.

IPC-IG's platform socialprotection.org was also presented. It was created in 2015 and it is focused on social protection, specially cash-transfer programs, with the goal of promoting information exchange, training, and networking between the users. The content is primarily added by the members of the platform. All the pieces are reviewed by IPC-IG. The target audience includes public policy makers who work with social protection, more specifically in Sub-Saharan Africa. The platform has detailed taxonomy and filters organized by topic, area and region. It is divided between: "Discover," with different content databases; "Connect," which enables the development of online communities, encourages professional information exchange, and allows users to follow researchers in the network; "Learn," which has a virtual campus that offers free seminars with speakers from all over the world, and a blog with articles and information; and "Share," which enables members to insert content.

The platform has more than 2800 members, 3000 publications, and has already hosted 48 webinars. It is connected with social media, which is useful to spread content. The main lessons learned were that the platform is a live instrument that requires permanent monitoring so it can work properly, and that it is crucial to keep in touch with the community coordinators, so the communities stay alive. It is essential to adapt the communication strategies, and some of the areas were reviewed and discontinued. The blog is new. Another news is the live conferences tool, which has been widely used. The panel also highlighted how important it is to make the platform easy to access. As this is not always the case, IPC-IG developed tools to help users navigate.

In the context of social technologies, the panel shared experiences from ASA, which gathers over 3,000 organizations from the Brazilian Semi-arid region, seeking to understand their perspective on living in the semi-arid region, its culture and wealth, as opposed to creating actions to fight droughts, which are often linked to actions that aim to maintain existing power structures and marginalize the local population. Likewise, the panelists stressed that there are two sociopolitical projects in the world: one of them retains resources and opportunities, and marginalizes people; and the other one focuses on the resistance of those who believe in social, economic and political inclusion. Panelists highlighted that social technologies are not neutral - they are immersed in a political context (with which they may or may not agree), and that they must create opportunities for people to escape subalternity.

ASA launched in 1999 the “One Million Rural Cisterns” program, which aimed to build 16,000 liters cisterns to collect water from the rain, so the families could have water security and would no longer need to sell their votes in exchange for water barrels, and women would not waste their time fetching water. The cistern was developed in the rural communities and it enabled the communities to stay alive. There are 1,250,000 cisterns in the Brazilian Semi-Arid region, but the program is now almost inactive because of the lack of government funding. It is surviving with the remaining funds acquired during Dilma Rousseff’s administration. Significant impacts of the program include child mortality reduction and improvements in the lives of 1,250,000 women who no longer have to fetch water. Many of them did not have much time for their families and are now able to study. Today the cisterns provide over 50,000 liters of water for agricultural production. ASA is also installing cisterns in schools, as many schools are closed because there is no water available.

The speakers emphasized the important role ASA played in spreading this technology. They also recognized that the support from the government when the cisterns were created made it possible to transform the cistern system into policy and law. ASA works with other social technologies, such as the creole seeds identification / storage project, with 1000 seed banks, which started with governmental support and now has difficulties to operate. The panelists highlighted the essential characteristics of social technologies: they allow people to get out of social exclusion - the communities have the knowledge and the ownership of the seeds, which assures that they have autonomy to plant and exchange. They also enable their needs to be met and give them access to their rights. Social technologies also provide access to goods and services, such as water and the ability to produce. They are technologies of resistance, as they allow people to stay alive in challenging situations. They are endogenous - ASA helped improve the cistern system, but it was created in the communities of the Brazilian Semi-Arid region. Social technologies generate democracy and participation spaces; they are easy to access and manage; and they must have the ability to become public policies, because isolated social technologies will not bring social transformation.

The cistern system was certified by the Banco do Brasil Foundation in 2001, the same year when the Social Technology Bank was created - a program that certifies social technologies through the *Banco do Brasil Foundation Social Technology Award*. Over a thousand technologies have already been certified, 93 of which are mainly focused on health. In the Social Technology Bank it is possible to identify several technologies that focus on different themes, but have health as a secondary topic - thus evidencing the health theme’s transversality.

As an example, panelists mentioned the biodigester septic tank, a certified social technology developed by the Brazilian Company for Agricultural Research (EMBRAPA), which deals with rural sanitation and has characteristics that are relevant to social technologies: simple, efficient, and easily replicable. The panelists believe that the spreading, dissemination, and replication of social technologies contribute toward turning these technologies into public policies, thus generating social transformation in the country.

The *InfoDengue* System was presented next. *InfoDengue* monitors dengue and chikungunya in the states of Ceará, Espírito Santo, Minas Gerais, Paraná and Rio de Janeiro, and was developed by PROCC/FIOCRUZ, in partnership with the School of Applied Math of the Getúlio Vargas Foundation. The system uses mathematical and statistical modeling methods and computational approaches to analyze and transform data into information and indicators, with the goal of alerting the population, keeping it informed about the decision-making process of public managers, and preventing epidemics. There is also the *InfoGripe* system, which does similar monitoring. Other examples of systems across the world were presented, and they may be useful to discuss how to move forward in the monitoring and studying of indicators for the SDGs. However, studies and indicators should consider local specificities and neglected diseases. In the context of Rio de Janeiro, for example, there is a risk of disease emergencies, so we must develop indicators that monitor this issue while meeting the needs of the SDGs.

The panelists reflected on how the cistern addresses basically all the SDGs, as it is directed at lower income people, helps them step out of a vulnerability condition by generating income, and impacts matters such as water access, food security, health, education, gender equality etc. In addition, it is one of the few solutions that deal with climate change adaptations considering lower income populations. It is possibly the world's most comprehensive experience in this regard. It is a simple and cheap solution that exists since the Roman Empire and remains useful. The panelists argued that the problems we face today can't be justified by a lack of technological innovation. It is not because of a lack of technologies that we use oil, for example. Successful solutions require social mobilization, scaling-up and political support. The panelists believe that it is necessary to go beyond science and technology to turn them into effective and feasible solutions, but they understand that many other challenges must be faced to achieve the SDGs by 2030.

Reflecting upon the initiatives that were presented, panelists pointed out that social technologies and innovations are positive if they allow the communities to recover their dignity and values. Otherwise, they will perpetuate the same situation that has occurred over the past few decades, where STI helped increase inequality. Any social technology that aims to reduce inequality must empower the people involved. Panelists indicated that there are good results when the concept of health is expanded to include themes such as water, the environment, and information that is accessible to the population. In addition, panelists perceived important traditional values such as cooperation, complementarity, and reciprocity in the initiatives presented in this session. With respect to the platforms, panelists highlighted experiential characteristics that stimulate collaboration, such as trust, the ludic aspect, and the encouragement of dialogue across different sectors. Panelists stressed that traditional knowledge must be valued and preserved with actions that confer voice and visibility to the excluded groups. This involves portraying them on the platforms with images that have dignity, so they can be remembered. Many traditional communities do not

have electricity, which makes it impossible to apply some of the initiatives presented here. For that reason, it's imperative to come up with alternatives to reach out to those communities.

3.4 Panel discussion - *Social Technologies and their contribution to health outcomes: A Brazilian case*

Chair: Mr. **Marco Menezes**, Vice-president of Environment, Health Attention and Promotion, Oswaldo Cruz Foundation (FIOCRUZ).

Motivator: Mr. **Edmundo Gallo**, General Coordinator, Observatory of Sustainable and Healthy Territories of Bocaina (OTSS), Oswaldo Cruz Foundation (FIOCRUZ).

Mr. **Aly Ndiaye**, Researcher, Integrated and Sustainable Agroecological Production (PAIS), Brazilian Service to Support Micro and Small Business (SEBRAE); Mr. **Claudio Cordovil Oliveira**, Researcher in Public Health, Oswaldo Cruz Foundation (FIOCRUZ); Mr. **Vagner do Nascimento**, Researcher, Traditional Communities Forum, Observatory of Sustainable and Healthy Territories of Bocaina (OTSS), Fundação Oswaldo Cruz (FIOCRUZ); Mr. **Marcelo Firpo de Souza Porto**, Researcher, Center for Health Studies of the Worker and Human Ecology, Oswaldo Cruz Foundation (FIOCRUZ); Mr. **Francisco Menezes**, Coordinator, Brazilian Institute of Social and Economic Analysis (IBASE); and Ms. **Carmen Lúcia Luiz**, Counselor, National Health Council (CNS), Brazilian Women's Union (UBM).

This session discussed the relevance of social technologies in the implementation of the 2030 Agenda, and their relationship with health. It also debated important experiences related to this theme.

One of the initiatives presented was the Integrated and Sustainable Agroecological Production (PAIS), which promotes a transition from the conventional into organic agriculture, with a more ecological, sustainable and pesticide-free production. The project was initially planned to serve small producers in Rio de Janeiro. The first step was to define the scope of the project and the technique to be applied. The project uses a mandala design, with a hen house in the middle, surrounded by flowerbeds - this enables nutrient recycling. The fertilizer coming from the hen house manure fuels the flowerbeds, and the surplus of the flowerbeds' production feeds the chicken. The next step was to budget each of the previous steps to develop a simple and replicable project. When it comes to technical assistance, the cheapest and most practical solution was to use local technicians. The idea was to choose a local property, develop a pilot project and train the technicians, so they could work for the project and solve problems locally.

Since the technology is simple, what makes a difference are the partnerships, which enable its applicability in a large scale. After some time, the projects start to be self-sufficient and provide food sovereignty and security, also bringing vegetables that had been forgotten closer to people's homes. There are more than ten thousand units using the PAIS technology in almost every state of Brazil. In Rio de Janeiro, within 3 years, 350 properties were certified with an organic seal from the Participative Guarantee System, which is supported by the Biological Farmers Association of Rio de Janeiro state. This project has been working with communities in Africa for over two years, and is being adapted to address their local particularities.

Regarding the implementation of the 2030 Agenda, the panel emphasized the importance of communication, often forgotten when we focus too much on information - which is common in the field of health. The 2030 Agenda proposes changes in rooted behaviors of society - which is impossible without a good communication strategy. In a simplified way, we can say that society is divided between conservatives and progressives, and this separation is very sharp in the contemporary national public sphere. There is always a risk of losing one of these groups when trying to communicate a certain topic. The 2030 Agenda requires the whole society to be involved, including its most conservative and progressive strands. Depending on the way we communicate the social determinants of health, for example, parts of the society might or might not accept certain policies. There is a communication technique for this theme, which must be studied and applied, but, instead, it is usually disregarded by health professionals in Brazil. Communicating is not an intuitive activity. And communicating to change rooted conducts requires that such initiatives be supported by the state-of-art research in Communication for Development and Social Change.

It is crucial to eliminate the existing distance between scientists and policymakers. The current model of journalism focuses on problems and believes that only by denouncing them it will motivate society to solve them. Therefore, "tragedies shout and solutions whisper," and no one feels motivated to act with so much pessimism. It is necessary to adopt a constructive journalism, whose narrative focuses on offering solutions for concrete problems, with local investigation to gather evidences and lessons learned from successful experiences. Other communication solutions for social initiatives are the advocacy journalism, where the journalist defends the interests of the studied communities; and training journalists inside the communities to allow local militants to develop and convey their own narratives. In its "civic" modality, advocacy journalism refers to organized groups that use media resources to influence the reporting agenda and, ultimately, public policies. It is a form of political mobilization that "seeks to increase the power of people and groups and make institutions more responsive to human needs." Within the framework of the 2030 Agenda and the SDG # 3, FIOCRUZ could facilitate the community dialogue more proactively, with the dissemination of practices learned from these approaches.

The Forum of Traditional Communities operates in the Bocaina territory, which is located in the municipalities of Paraty, Angra dos Reis and Ubatuba, including indigenous, *caiçara* and *quilombola* communities. The Observatory of Sustainable and Healthy Territories of Bocaina (OTSS) is a partnership between the Forum and FIOCRUZ. This place is subject to a lot of disputes due to its resources, natural beauty and privileged location in the coast between Rio de Janeiro and São Paulo, and it has received several investments in energy, transportation and tourism over the last decades. There are many luxury compounds and resorts installed in the region, and they dispute the territory with these communities. 80% of the territory is composed of Atlantic Forest and is located in environmental preservation areas. Many communities are located in remote areas, only accessible by boat. Some do not have electricity, and most of them do not have basic sanitation. Some social technologies are used to deal with the challenges. One of them is related to ecological sanitation through evapotranspiration, which was first developed in the community of Praia do Sono, in Paraty.

At the same time as this technology was being developed, the municipal government of Paraty was discussing its Municipal Sanitation Plan, and planning to implement a traditional sanitation system covering only the urban part of the municipality (70%), but not the rural part (30%), where traditional communities are located. Thus, the Bocaina territory got involved in the discussions of the municipal

plan and signed an agreement for the government to include the implementation of a sanitation system for the rural area using evapotranspiration. This social technology is also being reapplied in other communities outside of Paraty. A different social technology adapted a methodology used in the Amazon to produce a social cartography of the Bocaina territory. The tourism industry takes the territories of the traditional communities without asking permission and privatizes beaches, which is very negative. Other initiatives in the Bocaina territory concern community-based tourism and agroecology. These initiatives help the local populations fight to remain with dignity in their territory. The participation of traditional communities in the discussion spaces and decision-making processes is fundamental.

This was followed by a reflection on sustainable development, social technologies and social emancipation. Panelists stressed that the concept of sustainable development is problematic because it has as a background the crisis of the very idea of the development and progress of capitalism and a social metabolism that ignores populations, the laws of nature and other possible connections with it. It is a crisis that concerns society, ecology and civilization, with a tripod based on capitalism, colonialism and patriarchy. The communities living according to their traditions, especially in the global South, are seen as sub-humans and not incorporated into the concept of citizenship. The panelists mentioned that the issues related to sanitation can be a metaphor for this. Where the engineering pipe ends, the sub-humanity of the sub-citizenship of the blacks, the poor and the *favela* residents start - these populations live without basic sanitation in the cities. Solutions for this kind of problem are not only related to social technologies, but also to the recognition of other forms of being and living, beyond the Eurocentric and market-oriented ones, which characterize modernity.

Some panelists consider the concept of social technology problematic - even though they recognize its power -, and prefer to work with the production of emancipatory knowledge, non-extractive collaborative methodologies, and the ecology of knowledge, where STI can create favorable conditions for the acceptance, production and diffusion of knowledge from a more participatory and transformative logic. They understand that social technologies impoverish the dimension of social transformation if they are not connected with the oppressed populations and their social and political fight for their territory and a different kind of development. The panelists believe that two points are of paramount importance for social technologies. The first one concerns who they relate to and the needs and contexts of emancipatory struggles in which technologies emerge. Social technologies should, in this context, serve the political struggles and work in networks, centered on social emancipation. The second point is about how to create dialogue between scientific and non-scientific knowledge. For the latter, cultures, knowledge, practices and spirituality are not separated. The panelists pointed out that social struggle leads to searching for denunciation and alternatives. They believe that social technology can be an important component to this when it increases the power of citizenship of excluded populations, and presents alternatives such as other economic models, and other ways of taking care of health and dealing with nature.

The panelists warned that we should not have any illusions about the SDGs, because, in order to reach consensus, countries had to give up on many particular goals, which limited the SDGs. Nevertheless, this process should not be neglected, since, among other things, it has motivated people to monitor these issues in each country. Panelists reiterated that one should not look at the SDGs in a fragmented way, because they are inseparable. Brazil has made progress in addressing hunger when it invested in fighting extreme poverty, which enabled the country to exit the hunger

map in 2014. From 2015 on, poverty and inequality rates have stopped decreasing and started to rise again. In 2016 and 2017, the increase of unemployment was very intense, which will have impacts on poverty. The visibility of the SDGs at the international level can serve to alert to problems of social retrogression in the countries. Panelists stated that there is a discontinuity or reduction of many social programs in Brazil, which could have catastrophic consequences, especially for the most vulnerable population.

In order for people to assimilate technologies, they must be part of their development process. Visibility is of utmost importance, for whoever is not seen is not remembered, and therefore has no rights. The panelists drew attention to the fact that women do not always take part in the discussion processes, hence the importance of the gender equality SDG, in order to create spaces for women to have voice, visibility and participation, especially in meetings like this. Participants shared that in the current times, when social and emancipatory guarantees are being withdrawn, the National Health Council has held national health conferences, which are constitutionally guaranteed, as a form of resistance. Three conferences have already been held, addressing topics such as communication in health and women's health. The Council recently created an SDGs working group, which will formulate a work plan to leverage the SDGs within the institution, in partnership with FIOCRUZ's initiatives.

The participants also called attention to the decreasing amount of policies in the field of STI in Brazil. They emphasized that there is an organicity crisis in the academic sector, and it is important to rebuild ties between academia and society, taking into account the need to democratize access through quotas; discuss university extension to seek links with society; engage in debates with society and seek adequate knowledge for the emancipatory process; consider the ecology of knowledge; and reintegrate university education with basic education.

The participants reaffirmed that we should continue to coordinate actions at the regional and global levels and learn from each other. It is important that what is being done within the institutions involved in this meeting can be shared and coordinated with what is being done by groups from other countries in the region. Possible areas of contribution would be: the News Agencies for Indigenous and Afro-descendant Women, which has a capacity-building initiative on SDGs that could be replicated; the Major Group of Indigenous Peoples for the SDGs; initiatives such as the indigenous socio-environmental monitoring mapping effort, which is being carried out; and a group of organizations, led by the International Indigenous Women's Forum, which is analyzing the impact of agrochemicals and pollutants on women's reproductive health (it has already reached good recommendations on pollutants and currently conducts a study on mercury). The participants indicated that the next seminar for this initiative will be on April 14 and 15, 2018, at Columbia University in New York, and it would be great if some of the participants who deal with this theme took part in the event.

Participants underscored that even though the SDGs can be considered restrictive from a critical point of view, we can still use them as a reference to seek expanded forms of action (given their axiological and aspirational importance). Likewise, we must also flexibilize our understanding of social technologies to enable the creation of common languages with other actors, as well as the establishment of alliances and broader action. If we adopt a strict concept, we will lose much of our ability to communicate and cooperate. Participants stated that loose concepts have an enormous power of cohesion and that without this kind of attitude, it is hard to achieve common ground for

communication within the UN. As one of the outcomes of this meeting, we must draw a common basis for strategic action.

Thinking about the outcomes, the participants noted that this meeting brought together a wide range of experiences, with rich inputs, and will enable the creation of a local agenda on STI in the 2030 Agenda and its health-related SDGs, so that we can work in an integrated way to include this theme in the institutions' agendas, and thus contribute to making the 2030 Agenda more concrete.

At the end of the meeting, the panelists wanted the audience to leave with the message that the communities need to stop acting as mere consumers and become producers of public policies, because it is much easier to assimilate what comes from within, and if this is well consolidated, it will facilitate the incorporation of partners and institutions from outside of the community, such as universities. We should not segregate, but aggregate, as everyone has room in this fight for a most sustainable future.

Before closing the event, the panelists thanked everyone for their participation and shared that they are looking forward to a workshop at FIOCRUZ in mid-2018, with the participation of traditional peoples from Latin America, to discuss sustainable development, traditional knowledge, and the leading role of these peoples in the construction of the 2030 Agenda and the creation of sustainability mechanisms that are normally not included in the 2030 Agenda discussions.

II – PROGRAM

INTERNATIONAL CONSULTATION ON SCIENCE, TECHNOLOGY AND INNOVATION IN THE IMPLEMENTATION OF THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT AND ITS HEALTH-RELATED GOALS

6 - 8 November 2017 – Rio de Janeiro, Brazil

NOVEMBER 6, 2017 Monday

09:00 Opening ceremony

Mr. **Thomas Gass**, United Nations Assistant Secretary-General for Policy Coordination and Inter-Agency Affairs in the Department of Economic and Social Affairs, United Nations (UN DESA) [video message]

Ms. **Rúbia A.C. Quintão**, General Coordinator of Special Projects, National Secretariat of Social Coordination, Government Secretariat of the Presidency of Brazil

Ms. **Laís Abramo**, Chief of Division, Social Development Division, Economic Commission for Latin America and the Caribbean (ECLAC)

Mr. **Giorgio Solimano**, Technical Secretary, Latin American Alliance for Global Health (ALASAG)

Ms. **Carina Vance Mafla**, Executive Director, South American Institute of Government in Health (ISAGS), Union of South American Nations (UNASUR)

Mr. **Ildéu de Castro Moreira**, President of Brazilian Society for Science Progress (SBPC)

Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+)

Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA)

Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

09:45 Launch of the FIOCRUZ Strategy for 2030 Agenda

Mr. **Paulo Gadelha** Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

10:20 First Conference - *Sustainable development: Transformative concept for a challenging world*

Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation FIOCRUZ

11:00 Coffee break

11:15 First Panel - *Mainstreaming STI in the Era of Sustainable Development*

Chair and Rapporteur: Mr. **William Colglazier**, Fellow, American Association for the Advancement of Science (AAAS)

Key questions:

- ♦ What are the strong points and progress derived from the UN TFM mechanism, and what is lacking to make it more effective?
- ♦ Considering the interactions of SDGs, which policies and implementation mechanisms should be prioritized in overcoming the divide on health and innovation?
- ♦ How to potentialize health as a monitoring reference of 2030 Agenda and its SDGs?

Presentations

The role of STI in the context of the HLPF and ECOSOC in the implementation of the 2030 Agenda and its SDGs

Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA)

The importance of STI in the health sector to facilitate the implementation of the 2030 Agenda and the health-related SDGs

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

The implementation of 2030 Agenda and its SDGs in Latin America: Think Tanks and academic institutions' contribution

Ms. **Cristiane Quental**, Advisor, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Alex Alarcon**, Researcher, Universidad del Chile

13:00 Lunch

14:00 **Second Conference - *The 2030 Agenda and its Sustainable Development Goals as a new opportunity for the advancement of Health***

Ms. **Laís Abramo**, Chief of Division, Social Development Division, Economic Commission for Latin America and the Caribbean (ECLAC)

15:00 **Second Panel - *Experiences with Online Platforms for Technology Facilitation***

Chair and Rapporteur: Mr. **Luiz Augusto C. Galvão**, Researcher, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ)

This session will present a stocktaking of best practices and lessons learned from existing relevant online platforms on STI and Health. The session will discuss options for the establishment of an online knowledge hub and information-sharing platform on STI and Health as part of the Online Platform under the TFM.

Key questions:

- ♦ What are the specific features of health innovation that should take into consideration in building a STI/Health Platform?
- ♦ Which should be the best strategy in developing a road map for assuring the connection of the STI/Health Platform with the building process of the Online Platform for TFM and credibility among potential users?
- ♦ How to engage the governance of health and STI at global and national levels in the building and animation of this platform?

Presentations:

Mr. **Clóvis Freire**, Economic Affairs Officer, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA)

Mr. **Jorge Martinez-Navarrete**, Information Technology Officer, Office of Information Communication Technology, United Nations (UN OITC)

Ms. **Marcia Chame**, Coordinator, Wild Health Information Center, Institutional Platform on Biodiversity and Wild Health (CISS), Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Wagner de Jesus Martins**, Ágora Project Coordinator and Management Coordinator, Oswaldo Cruz Foundation (FIOCRUZ- Brasília)

Mr. **Cláudio Muniz Machado**, General Coordinator of Strategic Information Management, Department for Monitoring and Evaluation of the Unified Public Health System - SUS (DEMAS), Brazil's Health Ministry

Plenary Discussion

16:30 Wrap-up

19:30 Dinner

NOVEMBER 7, 2017 Tuesday
08:45 Welcome and Introduction to the 2nd day

Mr. **Guilherme Franco Netto**, Executive Secretary, Researcher, FIOCRUZ Strategy for 2030 Agenda

09:00 Third Conference***Relevant Features of Innovation and its impact on Health***

Mr. **Summerpal Kahlon**, Director, Care Innovation, Oracle Health Sciences

Plenary Discussion

10:15 Coffee break

10:30 Third Panel***Priorities and opportunities for health-related STI in the implementation of the 2030 Agenda and its health-related sustainable development goals***

Chair and Rapporteur: Ms. **Tereza Campello**, Associate Researcher, Oswaldo Cruz Foundation (FIOCRUZ)

Key questions:

- ♦ Which are the main guidelines for prioritizing STI and health-related goals, considering the prevalence of social and environmental determinants of health, contemporary challenges, future trends and the values of human rights, equity and “leaving no one behind”?
- ♦ An integrated assessment of SDGs reveals a complex and diversified dynamics of interactions with SDG 3 that help to establish policies and tools for its effective success. How to cope with this reality in seizing opportunities and overcoming barriers for “ensuring healthy lives and promoting well-being for all at all ages”?
- ♦ Considering the role of health in economic development, which public policies, broad inter-sectoral business models and innovative PPP and governance mechanism should be adopted to bring a positive synergy among the health-industrial complex and 2030 Agenda?

Presentations:***Relationships between Health, Innovation and Development policies: the perspective of the Health Economic and Industrial Complex***

Mr. **Carlos Gadelha**, Prospection Actions Coordinator, Lead researcher on Development, Innovation and Health Economic-Industrial Complex, Oswaldo Cruz Foundation (FIOCRUZ)

Challenges and opportunities for the implementation of the 2030 Agenda - water and sanitation: social and public health implications

Mr. **José Vieira**, Professor, Engineering School, University of Minho, Portugal

Technology for Health: prospects and accessibility

Ms. **Gabriela Prada**, Strategist, Health Policy Systems, Global Government Affairs, Medtronic

Plenary discussion

12:30 Lunch

14:00 Fourth Panel***Next steps for an integrated response on the 2030 Agenda's health-related goals***

Chair and Rapporteur: Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+)

Key questions:

- ♦ Global dynamics affects heavily health outcomes that in many was shall be coped at the national and local level. How to reinforce the coherence and effectiveness between these different instances in governance, specially the WHO system taking STI as a priority?

- ♦ Universal Health Coverage (UHC) is a “key driver to achieve all SDG 3 targets”. How to qualify this statement in terms of STI role in health policies and governance?
- ♦ Prospective studies are strong tools for revealing scenarios and preconditions to achieve them. How to develop this in the health area and connect with monitoring social, environmental, economic and demographic factors that impact the road to the success of SDG 3?

Presentations:

Global Health Governance: Challenges and mechanisms

Mr. **Paulo Buss**, Head, Center for International Relations in Health (CRIS), Oswaldo Cruz Foundation (FIOCRUZ)

Pathways towards sustainable development: the world in 2050

Mr. **Neboja Nakicenovic**, Deputy Chief Executive Officer, International Institute for Applied Research (IIASA), Austria

Traditional Knowledge and Social Technologies, a hidden issue of Sustainable Development

Ms. **Myrna Cunninham**, President, Center for Autonomy and Development of Indigenous Peoples (CADPI), Nicaragua

Monitoring social, economic and demographic factors of the 2030 Agenda and the health-related SDGs

Mr. **Mauricio Barreto**, Coordinator, Data Integration and Health Knowledge Centre (CIDACS), Oswaldo Cruz Foundation (FIOCRUZ)

The quest for health equity

Mr. **Oscar Mujica**, Regional Advisor of Social Epidemiology, Special Program on Sustainable Development and Health Equity, Pan American Health Organization (PAHO), World Health Organization (WHO)

Plenary Discussion

16:30 Plenary Session on conclusions and messages for the STI Forum 2018

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA)

Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+)

Rapporteurs:

Mr. **Luiz A. C. Galvão**, CRIS/FIOCRUZ

Mr. **Clóvis Freire**, UN DESA

Mr. **Marcio Pontual**, UNDP Rio+

Ms. **Cintia Borba Hoskinson**, FIOCRUZ

17h00 Wrap-up

NOVEMBER 8, 2017 Wednesday

Museum of Life (Auditorium) – FIOCRUZ, Rio de Janeiro
The Relevance of Social Technologies for the 2030 Agenda

09:00 Welcome and Introduction to the 3rd day

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

Mr. **Rômulo Paes**, Director, RIO+ World Centre for Sustainable Development, United Nations Development Programme (UNDP Rio+)

Mr. **Shantanu Mukherjee**, Chief, Policy Analysis Branch, Division for Sustainable Development, Department of Economic and Social Affairs, United Nations (UN DESA)

Ms. **Nísia Trindade Lima**, President, Oswaldo Cruz Foundation (FIOCRUZ)

09:30 Launching of the online platform

Ágora 2030 (FIOCRUZ)

Mr. **Paulo Gadelha**, Coordinator, FIOCRUZ Strategy for 2030 Agenda, UN 10-Member Group

Ms. **Cláudia Martins**, Health Management Analyst, FIOCRUZ Strategy for 2030 Agenda

We App Heroes (UNDP Rio+)

Ms. **Valentina Hernandez**, CEO, Sunscious

10:00 Panel discussion

Lessons learned on online platforms: facilitating the use and assisting matchmaking of users and providers of solutions

Chair: Mr. **Guilherme Franco Netto**, Executive Secretary, Researcher, FIOCRUZ Strategy for 2030 Agenda

Commentators: Ms. **Tereza Campello**, Associate Researcher, Oswaldo Cruz Foundation (FIOCRUZ) and Ms. **Myrna Cunninham**, President, *Centro para la Autonomía y el Desarrollo de los Pueblos indígenas* (CADPI) [Center for Autonomy and Development of Indigenous Peoples], Nicaragua

Mr. **Jorge Martinez-Navarrete**, Information Technology Officer, Office of Information Communication Technology, United Nations (UN OITC)

Ms. **Mariana Balboni**, Senior Project Officer, International Policy Centre for Inclusive Growth (IPC-IG/UNDP)

Mr. **Naidison Baptista**, Coordenator, Brazilian's Semiarid Articulation (ASA)

Mr. **Fabício Erick de Araújo**, Advisor, Strategic Partnership Management and Modeling of Programs and Projects, Banco do Brasil Foundation

Mr. **Daniel A. Maciel Villela**, Researcher, Scientific Computing Program (PROCC), Oswaldo Cruz Foundation (FIOCRUZ)

13:00 Lunch

14:00 Panel discussion

Social Technologies and their contribution to health outcomes: A Brazilian case

Chair: Mr. **Marco Menezes**, Vice-president of Environment, Health Attention and Promotion, Oswaldo Cruz Foundation (FIOCRUZ)

Motivator: Mr. **Edmundo Gallo**, General Coordinator, Observatory of Sustainable and Healthy Territories of Bocaina (OTSS), Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Aly Ndiaye**, Researcher, Integrated and Sustainable Agroecological Production (PAIS), Brazilian Service to Support Micro and Small Business (SEBRAE)

Mr. **Claudio Cordovil Oliveira**, Researcher in Public Health, Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Vagner do Nascimento**, Researcher, Traditional Communities Forum, Observatory of Sustainable and Healthy Territories of Bocaina (OTSS), Fundação Oswaldo Cruz (FIOCRUZ)

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Mr. **Marcelo Firpo de Souza Porto**, Researcher, Center for Health Studies of the Worker and Human Ecology, Oswaldo Cruz Foundation (FIOCRUZ)

Mr. **Francisco Menezes**, Coordinator, Brazilian Institute of Social and Economic Analysis (IBASE)

Ms. **Carmen Lucia Luiz**, Counselor, National Health Council (CNS), Brazilian Women's Union (UBM)

16:00 **Discussion Plenary**

17:00 **Closing Remarks**

Photos



Pictures 1 - Health and STI for the 2030 Agenda, November 6, 2017 - Rio de Janeiro, Brazil



Pictures 2 - Health and STI for the 2030 Agenda, November 7, 2017 - Rio de Janeiro, Brazil



Pictures 3 - Health and STI for the 2030 Agenda, November 8, 2017 - Rio de Janeiro, Brazil