



**ECONOMIC AND SOCIAL
COUNCIL**

Distr.
LIMITED
E/ESCWA/TDD/2018/WG.2/Report
2 November 2018
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

Report

Capacity-building Workshop on Technology for Development: Innovation Policies for SDGs in the Arab Region Amman, 15-19 April 2018

Summary

The United Nations-wide Capacity-building Workshop on Technology for Development: Innovation Policies for SDGs in the Arab Region was organized within the framework of the first initiative of the Work Stream 6 of the United Nations Inter-Agency Task Team on Science, Technology and Innovation (STI). The workshop was organized by ESCWA in cooperation with the Higher Council for Science and Technology (HCST) in Jordan and in partnership with seven UN agencies, namely the UN Department of Economic and Social Affairs (UNDESA), the UN Industrial Development Organization (UNIDO), the UN Educational, Scientific and Cultural Organization (UNESCO), the UN Conference on Trade and Development (UNCTAD), the International Telecommunication Union (ITU), the World Intellectual Property Organization (WIPO) and the United Nations University – Merit (UNU-Merit).

The workshop sessions were clustered along three themes. The first theme introduced the participants to the theory and concept of innovation, the role of STI policy in growth and sustainable development within the context of the 2030 Development Agenda. The design and implementation of innovation policies was the focus of the second theme that tackled issues related to the policy content and process in an SDG context including the objectives, instruments, capabilities and stages. The third theme on monitoring and evaluation of innovation policies provided the participants with a comprehensive framework to be applied during the formulation, implementation and update of their innovation policies and strategies through examining the methodologies, collection approaches and standards for STI indicators frameworks.

The workshop, which the first time involved all UN agencies globally, was delivered by top-level experts in an integrated and interrelated manner to build the capacity of 31 mid- to high-level government representatives and experts involved in STI from regional organizations, academia and research institutions in the Arab region.

CONTENTS

	<i>Paragraphs</i>	<i>Page</i>
Introduction	1-3	3
<i>Chapter</i>		
I. OUTCOMES	4-6	3
II. TOPICS OF DISCUSSION	7-37	3
A. Opening	8-11	3
B. Theme I: Science, Technology and Innovation for Sustainable Development Goals: a conceptual framework.....	12-18	4
C. Theme II: design and implementation of innovation policies	19-27	5
D. Theme III: monitoring and evaluation.....	28-37	7
III. ORGANIZATION OF WORK	38-43	9
A. Venue and date	38	9
B. Participants	39	10
C. Agenda.....	40	10
D. Documents.....	41	10
E. Evaluation.....	42-43	10
<i>Annex.</i> List of participants.....		11

Introduction

1. The Economic and Social Commission for Western Asia (ESCWA) organized the United Nations-wide Capacity-Building Workshop on Technology for Development: Innovation Policies for SDGs in the Arab Region, in partnership with the United Nations Department of Economic and Social Affairs (UNDESA), the United Nations Industrial Development Organization (UNIDO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD), the International Telecommunication Union (ITU), the World Intellectual Property Organization (WIPO) and the United Nations University – Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT). The meeting was held in Amman in cooperation with the Higher Council for Scientific Research (HCST) in Jordan.
2. The main objective of the meeting was to introduce the participants to innovation policies and provide training on the systemic nature of innovation and innovation policy to increase the awareness of active contributors to innovation, such as private enterprise, public firms, small- and medium-sized enterprise, farmers, inventors, entrepreneurs, on the various aspects of innovation policies.
3. This foundational course, the first of its kind in the Arab region and ground-breaking in terms of structure, content and duration, spanned five days with sessions clustered around three themes. Section I of this report highlights the main outcomes of the workshop. Section II provides a summary of the presentations and the main topics of discussions held during the sessions. Section III reviews the organization of work, including information regarding the workshop agenda, participants and evaluation. Full documentation of the workshop is available at: <https://www.unescwa.org/events/workshop-innovation-policies-sdgs-arab-region>.

I. OUTCOMES

4. The workshop enabled mid- to high-level decision makers from Arab countries to increase their understanding of innovation and innovation-related policies as well as learn about the best practices in Science, Technology and Innovation (STI) policies globally, regionally and nationally and in relation to the Sustainable Development Goals (SDGs). It was an opportunity to exchange experiences at the national and global levels on the state of innovation in the Arab region through the ESCWA framework for innovation policy and its various components which was shared with the participants.
5. It was also an occasion for professional networking for participants from different public entities in the Arab region and 13 experts representing seven United Nations agencies.
6. Participants stressed the need to replicate the workshop at national and regional levels. Experts participating in the workshop expressed their interest in further cooperation and collaboration with United Nations agencies to ensure complementarity, especially in the field of technology and innovation.

II. TOPICS OF DISCUSSION

7. The workshop sessions were clustered around three themes related to STI for SDGs: (a) conceptual framework; (b) design and implementation of innovation policies; and (c) monitoring and evaluation of innovation policies. The workshop also included presentations, practical group exercises, video presentations and selected case studies and success stories to enrich the discussions. The presentations and deliberations are presented in the following sections, organized according to the themes.

A. OPENING

8. Ms. Nibal Idlebi, Chief of the Innovation Section at ESCWA, welcomed the participants and experts to the workshop. She highlighted the work of the ESCWA Technology for Development Division and its focus on innovation. Arab countries have relatively low scores in the Global Innovation Index, especially when

considering their gross domestic product (GDP), she noted, further clarifying that Western Asia and North Africa ranked fourth after North America, Europe and South East Asia, East Asia and Oceania. Ms. Idlebi stressed that “more efforts are needed in the Arab world to formulate innovation policies that enhance their national innovation system and thus boost innovation as a leverage for achieving SDGs”.

9. Mr. Fawwaz Elkarmi, Assistant Secretary General for Scientific and Technological Affairs at the Higher Council for Science and Technology (HCST) in Jordan, delivered the opening speech. He explained that HCST attempts to be the national incubator for the scientific and technological community in Jordan. In this respect, HCST cooperates with national, regional and international organizations to disseminate knowledge, transfer technology and inform employees in the field of research, development and innovation. Mr. Elkarmi also announced the establishment of the “National Centre for Innovation” to be affiliated with HCST which will be the national repository for innovation activities, capacities and potential in Jordan as well as act as the link between innovators and the means to success.

10. Mr. Haidar Fraihat, Director of the Technology for Development Division at ESCWA, noted that “developed countries and some developing economies, such as China and Korea, have realized the impact of science, technology and innovation on economic growth and the development of social services. They have developed national policies and supported their national innovation systems to create an enabling environment conducive to science, technology and innovation. ESCWA hopes that Arab countries will adopt similar approaches to develop and diversify the economies of Arab countries, meet different challenges and increase economic and social well-being based on science, technology and innovation”.

11. Speaking on behalf of Work Stream 6 of the United Nations Inter-Agency Task Team on Science, Technology and Innovation for the SDGs, Mr. Dimo Calovski, Senior Expert on Innovation Policy at UNCTAD expressed gratitude to HCST and ESCWA for their cooperation to organize the workshop and thanked the participants for their interest noting “...the idea that STI policy was increasingly an interdisciplinary challenge, underscored by the SDGs and Agenda 2030, was evident in the diverse backgrounds, professions and national organizations that the workshop has assembled, matching an equally diverse participation of UN organizations and agencies under the umbrella of the UN Technology Facilitation Mechanism and its Inter-Agency Task Team on capacity-building as well as the responsiveness of UN and international agencies to address this challenge and participate in the Workshop”.

B. THEME I: SCIENCE, TECHNOLOGY AND INNOVATION FOR SUSTAINABLE DEVELOPMENT GOALS: A CONCEPTUAL FRAMEWORK

12. The goal of Theme I was to introduce the participants to the theory and concept of innovation, the role of STI policy in growth and sustainable development as well as its relationship to economic development and governance in the context of the 2030 Development Agenda. As such, it focused on the innovation framework, national innovation systems and the role of research and development in innovation and economic growth and highlighted the role of public investment in STI while concurrently tapping into global knowledge flows.

13. In this context, Mr. Dimo Calovski of UNCTAD opened the session with a discussion on what is innovation and why it is needed from a development perspective. The role and components of STI policy were examined and the particularities of innovation in a development and SDG context were tackled. Among issues raised by participants was the relationship between various individual and synthetic innovation indicators and growth indicators. The discussion also touched on the prime conditions for innovation, in particular, market size, market access and export opportunities.

14. Mr. Calovski then presented the key concepts of creative destruction, disruptive innovation and the role of societal change in spurring innovation. Deliberations highlighted policy dilemmas whether to prioritize support to large firms or SMEs, given the limited resources in many developing countries. The discussion tied in well with the data and concepts presented later on the role of research and development (R&D). In a practical

exercise, participants were asked to develop and discuss examples of creative destruction, disruptive innovation or innovation resulting from societal change in their country or region.

15. Finally, Mr. Calovski discussed the concept of a “National System of Innovation” and its role in targeting development challenges and how it can help tackle the SDGs and support the ambitions of the 2030 Agenda. The role of information gatekeepers was highlighted and potential SDG-relevant technological areas were developed in discussion. In the case study exercise, participants gained insight on the need to include a more complete set of STI stakeholders beyond a few Government agencies. More developed linkages that enable learning and information flows were identified as a need as well as policy coherence between overall development direction, STI policy and institutional programmes and activities.

16. Ms. Idlebi of ESCWA presented the innovation landscape in Arab countries, based on an innovation vision embedded in countries’ development targets and a national innovation system from the perspective of different models for innovation policies. She explained the qualitative and quantitative methods to describe innovation landscape. She clarified that ESCWA evaluates the National Innovation Systems in seven Arab countries (Lebanon, Tunisia, Egypt, Morocco, the Sudan, Mauritania and Oman) within the framework of its project “Establishment of National Technology Transfer Offices” in some ESCWA member countries. Ms. Idlebi clearly illustrated the relationship between the innovation landscape and GII in the Arab countries by presenting recent data in comparable formats. Noting that the large differences in GDP in the Arab region, ESCWA looked at the innovation landscape taking into consideration the impact of GDP on the behaviour of the Arab countries. After presenting case studies from Jordan and the United Arab Emirates, she concluded with key issues for enhancing innovation landscape in the Arab countries.

17. Ms. Shyama Ramani, Professorial Fellow, UNU-MERIT, delivered a presentation on Science, Technology and Innovation in the 2030 Agenda. In her presentation, she clarified that industrial, regulatory, and financial skills are needed along with incentive systems and these should be coupled with the required E’s: engagement, ethics and entrepreneurship. Ms. Ramani listed the challenges which included lack of resources, investment funds, skills and industrial capabilities, in addition to the absence of clear STI strategies. She then presented the systemic impact of different technology paradigms in agriculture, such as the green revolution in contrast to genetically modified crops. Ms. Ramani discussed the relationship between the State, industry and academia and presented case studies of innovation and pro-poor innovation in different countries. She also stressed the importance of engaging different stakeholders to develop a suitable innovation policy.

18. In the “R&D, Innovation & Economic Growth: Can we Make the Relationship Sustainable?” presentation, Mr. Ludovico Alcorta, Professorial Fellow at UNU-MERIT, addressed the relationship between global trends in R&D and innovation and economic growth. He examined the question of whether Government should invest in R&D and innovation in support of economic growth. Long-term trends in public and private research, development expenditure and personnel expenditure were examined with the view to identify top performers and best directed investment and what the emerging differences imply for economic growth. Mr. Alcorta then described the main determinants of economic growth, focusing on the main approaches of how technological change and innovation can lead to a sustained expansion of economic activity. with special attention was paid to the role of markets, human capital, capabilities, knowledge and firms in promoting growth-enhancing technical change.

C. THEME II: DESIGN AND IMPLEMENTATION OF INNOVATION POLICIES

19. The design and implementation of innovation policies was the focus of the Theme II which aimed to tackle issues related to the policy content and process of the objectives, instruments, capabilities and stages of an SDG. Participants were introduced to the role of structural transformation in innovation and development as well as the approaches and mechanisms for strategic diversification into new sectors. Topics related to entrepreneurship and startups highlighted the relationship between entrepreneurship and innovation. The role of intellectual property rights in STI, in terms of stimulating invention at various stages of development and diffusing knowledge, were also identified. The relationship and convergence between innovation policy and

industrial policy and the different forms of innovation from industrial perspectives were addressed. The importance of channels and linkage between universities and industry to foster technology transfer were also underscored.

20. During this session, Mr. Alcorta presented on “The Policy Content and Process in an SDG Context: Objectives, Instruments, Capabilities and Stages”. His presentation focused on the STI policy process, from setting objectives by Governments all the way to the activities necessary to innovate at firm level. It reviewed policy processes at all Government levels and the R&D processes at all corporate levels. He explained that the setting of policy objectives at the Government level begins the process and is where the connection between national STI and SDG objectives is made. The connection operates at strategic, political and operational levels. Identifying the regulatory, economic and/or soft mechanisms and instruments required to achieve the set objectives is the next step in the process. A key task during this stage is determining the right mix of policies. The successful implementation of STI policies involves the additional step of building the institutional and governance framework. Governance arrangements normally involve ministries, STI councils, consultation bodies and specialized agencies. A key challenge at this stage is intersectoral and intergroup coordination. Learning and improving the policy process requires the assessment of both the process and its impact.

21. Ms. Idlebi followed with a presentation on “Human Capital Building: Educational, Vocational and Skilled Labour Promoting Policies”, based on the ESCWA framework for innovation policy for the Arab region. She focused on the importance of the availability of science, technology, engineering and math (STEM) specialists for innovation, in addition to problem-solving, critical and creative thinking and behavioural skills. Ms. Idlebi explained that the key elements to boost participation in STEM fields includes cultivating teachers’ skills, reforming school curricula and attracting top STEM graduates into teaching, particularly in low-performing schools. Other issues, such as the gender gap, the relevance of specialized graduates’ certificates to the labour market, brain drain in developing countries and the use of technology and e-learning platforms for enhancing education, training, skills and lifelong learning, need to be considered as well. Ms. Idlebi then presented education system success stories from various developed and developing countries.

22. Mr. Clovis Freire, Economic Affairs Officer at the Division for Sustainable Development of UNDESA presented the “Diversification into New Sectors: Approaches and Mechanisms”. In it, he highlighted the importance of strategic economic diversification for sustainable development. Structured as series of short presentations and interactive discussions, some key messages of his intervention were that economic development happens through the diversification of economies towards more complex products, which is the result of strategic innovation and development policies should be designed to facilitate that process, including STI, industry, trade, infrastructure and education policies. Additionally, he noted that recent literature on economic complexity can inform decision makers in developing countries on how to identify potential new sectors for economic diversification based on the productive structure of the country and changes in global demand.

23. The floor was handed over to Ms. Idlebi who delivered a presentation on “Entrepreneurship in the Arab region”, including a matrix of several national level entrepreneurship support programmes in Algeria, Bahrain, Egypt, Jordan, Lebanon, Morocco and Tunisia as well as at the regional level. She highlighted the role, scope and impact of these programmes. Ms. Idlebi’s focused on ways to encourage entrepreneurs to contribute to the achievement of SDGs. Explaining the five types of entrepreneurial activities: new product, new process, market innovation, resources innovation and organization innovation, she presented a tabulated comparison between the concepts of entrepreneurship and small business. She also identified common themes that characterize Arab labour market structure and entrepreneurial ecosystem, referring to case studies from Lebanon and Oman. She concluded her intervention with proposed recommendations in relation to access to markets, finance, human capital and skills, legal frameworks and public policies.

24. The “Role of Intellectual Property in Science, Technology and Development” was presented by Ms. Tamara Nanayakkara, Counsellor at the SMEs and Entrepreneurship Support Division at the Department for Transition and Developed Countries, WIPO. Starting with a brief on the mission and vision of WIPO,

Ms. Nanayakkara's presentation laid out the definition of intellectual property, its implications on innovation system and the challenges faced by developing countries. She shared the possible WIPO interventions in support of policy makers, research initiatives, innovative SMEs and intellectual property (IP) education through WIPO's university and IP programmes. Ms. Nanayakkara also presented the IP Tool Kit and additional resources and tools available from the WIPO Technology and Innovation Support Centers (TISC) programme as well as WIPOs related publications, training programmes and support to Governments.

25. The next presentation on "Fostering Technology Transfer: Role, Absorption Capacity, Channels and Promotion Instruments" by Mr. Calovski focused on the nature and role of technology transfer. It also addressed the issue of knowledge gaps in technology, their relation to poverty and channels for technology transfer including trade, licensing, foreign direct investment and migration. The presentation highlighted technology transfer in relation to national innovation systems and addressed issues related to absorption capacities and intellectual property rights. During the deliberations that followed, questions were voiced about the suitability of using licensing as a technology transfer channel at varying stages of development. Participants stressed the point that technology transfer was an issue of local concern and transfer among firms or between knowledge organizations and firms, in contrast to the international debate on the need for greater technology transfer between developed and developing countries to reduce development gaps.

26. Ms. Idlebi then presented the United Nations Development Account (UNDA) project on "Establishment of a National Technology Transfer Offices in Selected ESCWA Countries (Egypt, Lebanon, Morocco, Tunisia, Mauritania and Oman)" in detail. The presentation provided a background of the project, the problem analysis and its objectives. She explained that the project seeks to develop a road map for national innovation systems and establish a national office for technology transfer in the Arab countries participating in collaboration with partners there. Ms. Idlebi listed the main activities of the project at the different stages.

27. In a presentation on "STI Policy Instruments: Procurement and Finance", Mr. Alcorta addressed two of the key instruments used for promoting STI: public procurement and financial incentives. Governments can have an immense leverage over innovative activity through their purchasing capacity. This can be used for purchasing products or services that are not yet in the market or by stimulating innovation without purchasing new products. In OECD countries, public purchases account for up to 13 per cent of GDP. Mr. Alcorta then addressed the different STI development deficiencies that public procurement can tackle and provided a specific set of instruments and experiences of their use in different contexts. Financial incentives are widely used to stimulate innovation, according to Mr. Alcorta. Insofar as innovation involves significant investment, often in uncertain or highly risky ventures, financial support become a significant driver of innovative activity. Financing can take place directly through public grants or subsidies or indirectly, such using the tax system through R&D tax incentives. Tax incentive schemes can focus on providing tax credits or allowances to corporations or to reduce individual tax payments. They can target small and medium enterprises (SMEs) or specific areas or industries.

D. THEME III: MONITORING AND EVALUATION

28. Theme III on the monitoring and evaluation focused on STI strategies and policy instruments used in advancing national industrialization plans and strategies. It focused in particular on the sectoral dynamics of STI policies and successful STI policy practices tailored to priority sectors in order to provide concrete examples of sectoral system of innovation and firm-level innovation analyses. These sessions provided a comprehensive framework to be applied during the formulation, implementation and update of innovation policies and strategies through examining the methodologies, collection approaches and standards for STI indicators frameworks. Participants were introduced to the design and implementation of innovation surveys as specific tools for measuring progress as well as the evaluation approaches and techniques in the context of SDGs.

29. Two presentations were delivered by UNIDO experts. The presentation on "Sectoral Dynamics of STI Policies" by Mr. Ritin Koria, Associate Expert in Innovation at UNIDO, returned to the core concepts of

invention and innovation, the systems of innovation, the related core actors and the need for evidence-based policy. The discussion was oriented toward a practical session in which working groups: (a) defined the stages in the innovation process; (b) identified where certain system and market failures would have an impact; (c) highlighted which system actor could provide support in overcoming these failures; and finally, (d) identified what types of policy interventions could be developed.

30. The presentation on “Spatial Dimensions of STI Policies” by Mr. Fernando Santiago-Rodriguez, Research and Industrial Policy Officer at UNIDO, addressed the links between innovation policy and industrial policy, moving from academic debates to discussion of concrete country cases and sectors. Taking the experience of developing countries aircraft manufacturing in Brazil and palm oil in Malaysia were examined. The links between innovation policy and industrial policy and UNIDO’s inclusive and sustainable industrial development (ISID) approach and planned contribution to SDG 9 were also discussed. The scope of innovation and consequently innovation policy, is increasingly moving beyond new technologies, products or services to capability-building and increased ability to mobilize knowledge and address pressing development needs.

31. “Women in STI: Addressing the Gender Gap” presented by Mr. Alessandro Bello, Project Officer of the STEM and Gender Advancement (SAGA) project at the Division of Science Policy and Capacity-Building at UNESCO, focused on the need and ways to integrate the gender dimension into STI policies and how to identify drivers and barriers in science and engineering careers and building capacity for data collection on gender in STEM. The presentation discussed the factors that explain the current gender gap in STEM and highlighted the lack of policy guidelines to ensure the participation of young girls and women in STEM. During the deliberations, participants identified common problems in gender equality in STI and discussed the situation in their countries.

32. Ms. Idlebi presented the ESCWA publication “Innovation Policy for Inclusive Sustainable Development in the Arab Region”. She provided a brief overview into the background in the Arab countries and clarified that innovation is essential to address socioeconomic challenges in Arab countries. The presentation mapped innovation policies in Egypt, Jordan, Morocco, Saudi Arabia and United Arab Emirates as well as presented a case study on the innovation ecosystem in Morocco. Ms. Idlebi also presented the specific challenges identified by the publication that Arab countries face. She then shared the details of the proposed “Framework for the Elaboration of Innovation Policy in the Arab Countries” which aims to encourage countries to formulate innovation policies; bridge the gap between Arab countries and many developed and developing countries; and provide Arab countries with a comprehensive framework to develop a national innovation system that supports economic growth and contributes to the achievement of the SDGs.

33. “STI Indicators Frameworks: Methodologies, Collection Approaches, Standards, R&D and Other STI Indicators and Temporal Series” was presented by Ms. Kornelia Tzinova, Assistant Programme Specialist at the Division of Science Policy and Capacity-Building of UNESCO, who discussed the importance of measuring R&D and the need of collecting reliable and precise data. The presentation focused on R&D input indicators related to the investment of human and financial resources. After presenting the international standards and key definitions used in R&D, notably the Frascati Manual, the presentation provided key guidelines for collecting data and identified several methods for measuring and aggregating the data used in the case of R&D indicators. It was clarified that the lack of accurate information, adequate indicators and capacities to analyse and monitor policies and instruments is a major development challenge for countries. Translating policies into action requires evidence-informed decisions, programmes, policy instruments and appropriate monitoring and evaluation systems.

34. Mr. Guillermo Lemarchand, Consultant and Principal Investigator of the Global Observatory of STI Policy Instruments (GO-SPIN) at the Division of Science, Policy and Capacity-Building at UNESCO, made a presentation on “Monitoring STI Policies and their contexts through GO-SPIN: Ecosystems, Legal Frameworks and Operational Policy Instruments”. He introduced techniques for monitoring and analysing STI policies and their contextual factors, in addition to the traditional input/output STI indicators. The temporal series of indicators demonstrated that governance and political stability, as well as other economic, industrial,

educational, cultural, labour and environmental policies have strong effects on “STI-explicit” policy implementation. The participants were also introduced to the UNESCO GO-SPIN common methodologies seen in the implementation of STI policies and their instruments.

35. Mr. Anthony Arundel, Professorial Fellow at the UNU-MERIT presented “Innovation Surveys: Design and Implementation Standards”. The purpose of innovation surveys, he explained, is to measure benchmarking performance by sector at the regional and international levels, trend analysis over time, as well as the econometric analysis of the most beneficial means for attaining the economic outcomes and outputs of innovation. The presentation highlighted the disadvantages of non-survey innovation data and listed the types of data that can be collected through an innovation survey: innovation drivers (such as demand, regulation and competition), objectives (such as cost reduction and product differentiation), strategies (such as exploratory or exploitative and use of IPs); types of activities (such as R&D, equipment, marketing, training, design and idea generation), sources of knowledge (such as universities, competitors, suppliers, customers, Government), methods used to innovate (trial and error, scientific method, etc.), as well as obstacles and outcomes. Mr. Arundel provided examples of questions for a survey of internal innovation conducted by Australian universities as well as detailed different examples of data collection through innovation surveys based on innovation definitions with a focus on the Oslo Manual. Mr. Arundel also presented a means of cognitive testing of surveys that addresses problems related to perceptions and respondents’ interpretations of survey questions. He concluded his presentation by listing the main steps for implementation of innovation surveys and other issues to consider when designing innovation surveys.

36. Mr. Arundel’s second presentation on “Innovation, SDGs and Evaluation” began by presenting a matrix detailing the relationship between SDGs, business and Government innovation and policies. He discussed the role of business sector innovation in SDGs and the relevant data that can be collected through innovation surveys. Emerging innovation concepts relevant to SDGs were presented: inclusive innovation, grassroots innovation and social innovation and the associated emerging components such as shared economy, creative common/open source and design thinking/co-creation. Mr. Arundel further explained ways of linking different types of data and performance evaluation. The effects of innovation on national, regional or sector outcomes at the macrolevel of analysis were also discussed. Mr. Arundel clarified that evaluation of innovation policies or other policies that support SDG implementation involve monitoring and impact evaluation. He further listed the relevant innovation policies for evaluation and provided examples. Mr. Arundel explained the alternative methods of evaluation without randomization and concluded his presentation with a set of recommendations on the relevance and use of innovation surveys for SDGs and evaluation methods.

37. In the next presentation on “Measurement Issues in the Arab Region”, Ms. Idlebi provided examples of innovation scoreboards including the Global Innovation Index, Asian Development Bank/EIU Creative Productivity Index and the Europe Innovation Index. She also presented the Middle East and North Africa (MENA) Innovation Scoreboard and the background for its formulation, clarifying that it relies on recognized international sources for defining indicators and uses alternative indicators for the region in the absence of data. She presented the 39 indicators used for the MENA Innovation Scoreboard that are grouped under two pillars: (a) input that includes human resources and business enablers; and (b) output and impact that includes the value-added potential of the private sector, quality of scholastic output, business impact and intellectual asset formation. Ms. Idlebi concluded her presentation with a set of recommendations for measuring innovation in the Arab region, focused primarily on improving statistical data collection for innovation indicators and adoption of the Scoreboard.

III. ORGANIZATION OF WORK

A. VENUE AND DATE

38. The Capacity-Building Workshop on Technology for Development: Innovation Policies for SDGs in the Arab Region was held at the Kempinski Hotel from 15-19 April 2018 in Amman, Jordan.

B. PARTICIPANTS

39. The capacity-building workshop was attended by 31 participants, 18 of whom were women, from 12 ESCWA member States (Egypt, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, the Sudan, the Syrian Arab Republic, Tunisia, the United Arab Emirates and Yemen). The list of participants is included in the annex of this report.

C. AGENDA

40. Presentations and discussions revolved around three main themes. The agenda of the workshop is summarized below:

- (a) Opening statements;
- (b) Sessions on science, technology and innovation for SDGs: a conceptual framework;
- (c) Sessions on design and implementation of innovation policies;
- (d) Sessions on monitoring and evaluation of innovation policies.

D. DOCUMENTS

41. The list of documents and presentations related to the workshop are available on ESCWA page on the following link: <https://www.unescwa.org/events/workshop-innovation-policies-sdgs-arab-region>.

E. EVALUATION

42. An evaluation questionnaire was distributed to all participants to assess and rate the relevance, effectiveness, and impact of the workshop. The feedback was positive, most participants (95 per cent) found that the overall quality of workshop was good to excellent. The usefulness of the workshop was rated good to excellent in terms of knowledge and skills obtained for future work, the relevance of subject to participants' work of expertise and exchange of experiences.

43. Eighty-six per cent of participants believed they could use the knowledge obtained and pass it to others. In addition, 95 per cent of them recommended that other specialists from their countries/professions attend similar workshops if organized in future. All the submitted questionnaires requested follow-up activities on innovation policies for SDGs in the Arab region. The majority of participants indicated that they had not attended any workshop on a similar topic organized by other organization.

Annex*

LIST OF PARTICIPANTS

A. COUNTRY ORGANIZATIONS AND EXPERTS

Egypt

Ms. Fagr Abdel-Gawad
Head of Water Pollution Research Department
National Research Center (NRC)
E-mail: fagrabdlgawad@nrc.sci.eg
fagrabdlgawad@gmail.com

Ms. Haiam Mahmoud
Director of Technical Office
Academy of Scientific Research and Technology
(ASRT)
E-mail: haiamhelmy@gmail.com
tsmiao.asrt@gmail.com

Ms. Hala Ahmed
Manager of National Incubator Programme
ASRT
E-mail: hala.ahmedy.asrt@gmail.com

Ms. Rasha Tantawy
Head of Entrepreneurship and Business Support
Technology Innovation and Entrepreneurship
Center
E-mail: rtantawy@tiec.gov.eg
rashatantawy99@gmail.com

Jordan

Mr. Fawwaz ElKarmi
Assistant Secretary General for Scientific
and Technological Affairs
Higher Council for Science and Technology
(HCST)
E-mail: fkarmi@hcst.gov.jo

Ms. Rasha Smadi
Researcher, International Cooperation Department
HCST
E-mail: rasha.s@hcst.gov.jo

Mr. Wisam Samara
Researcher, Public Relations Department
HCST
E-mail: wisam_samara@hcst.gov.jo

Mr. Nizar Al-Halasa
Advisor of Science Engagement
Royal Scientific Society (RSS)
E-mail: nizar.halasa@rss.jo

Ms. Tharwh Qutaish
Manager of Environmental Monitoring
and Research Central Unit
RSS
E-mail: tharwh.qutaish@rss.jo

Mr. Almoayied Assayed
Head of Water Studies Division
RSS
E-mail: almoayied.assayed@rss.jo
almoayied.assayed@gmail.com

Ms. Razan Al-Khaza'leh
Head of Advisory and Technical Support Section
Amman Chamber of Industry
E-mail: razan@aci.org.jo

Mr. Wassim Alhalasa
Director of Technical Affairs
Scientific Research Support Fund
Ministry of Higher Education and Scientific
Research
E-mail: wassim.halasa@srf.gov.jo
whalasa@yahoo.com

Mr. Mutasim Zaid Al-Kilani
Head of Sustainable Development Division
Ministry of Planning and Internal Cooperation
E-mail: mutasim.k@mop.gov.jo

Mr. Fekadu Terefe
Programme Specialist, Inclusive and Sustainable
Growth and Development
UNDP-Amman
E-mail: fekadu.terefe@undp.org

Kuwait

Ms. Faten Al Jabsheh
Research Scientist
Techno-Economics Division
Kuwait Institute for Scientific Research (KISR)
E-mail: fjabsheh@kisir.edu.kw
applecider69@hotmail.com

* Issued as submitted.

Lebanon

Mr. Ahmad Jammal
Director General of Higher Education
Ministry of Education and Higher Education
E-mail: ajammal@ieec.org
ajammal@higher-edu.gov.lb

Mr. Mahdi Maatouk
Research Assistant, IT-Computer Sciences
National Center of Remote Sensing (CNRS)
E-mail: mahdi.maatouk@cnrs.edu.lb

Oman

Ms. Zakiya Al Azri
Project Analyst
The Research Council
E-mail: zakiya.alazri@trc.gov.om

Palestine

Ms. Rania Nasir
Policies and Strategies Director
Ministry of Telecom and Information Technology
E-mail: raniajj@hotmail.com
rania.jaber@mtit.pna.ps

Mr. Laith Kassis
CEO
Techno Park Palestine
E-mail: laithkassis@technopark.ps

Ms. Samah Abu Assab
Assistant Professor
Birzeit University
E-mail: sassab@birzeit.edu

Qatar

Mr. Khalid Al Quradaghi
Director of Knowledge and Innovation Systems
Qatar Foundation for Education, Science
and Community Development
E-mail: kalquradaghi@qf.org.qa

Saudi Arabia

Ms. Hanan Edrees
Advisor
Ministry of Economy and Planning
E-mail: hedrees@mep.gov.sa
hanan.edrees@gmail.com

Sudan

Mr. Mohamed Aboubakr Talib Abdelrahman
Director Directorate of Technology
and Development
E-mail: talibmoh9@gmail.com

Mr. Rashid Abdelhaleem Saeed
Deputy General Manager
Ministry of Higher Education
E-mail: eng_rashid@mohe.gov.sd
eng_rashid@hotmail.com

Syrian Arab Republic

Ms. Fatima Bader
Vice President for Lifelong Learning
Syrian Virtual University
E-mail: fatima.bader@outlook.com

Mr. Mohammad Saeed Abou Trab
Head Master of Software Engineering Department
Faculty of IT
Damascus University
E-mail: m.s.trab@hotmail.com

Tunisia

Ms. Souad Boussaid
Chief Engineer
National Agency for Scientific Research
Promotion (ANPR)
E-mail: souad.boussaid@gmail.com
souad.boussaid@anpr.tn

Ms. Mariem Jaouadi Hamdi
Chief Engineer in Charge of R&I Project
Management
ANPR
E-mail: mariem.jaouadi@anpr.tn
mariem.jaouadi@gmail.com

United Arab Emirates

Ms. Radheya AlHashmi
Director of Sustainable Development Department
Sustainable Development Department Strategies
and Innovation Sector
E-mail: radheya.alhashmi@pmo.gov.ae

Ms. Meera AlShaikh
Projects Manager
Smart Dubai Office
E-mail: meera.alshaikh@smartdubai.ae

B. INTERNATIONAL AND REGIONAL ORGANIZATIONS

Mr. Dimo Calovski
Senior Expert on Innovation Policy
UNCTAD
E-mail: dimo.calovski@un.org

Ms. Shyama Ramani
Professorial Fellow
UNU-MERIT
E-mail: ramani@merit.unu.edu

Mr. Ludovico Alcorta
Professorial Fellow
UNU-MERIT
E-mail: alcorta@merit.unu.edu

Mr. Anthony Arundel
Professorial Fellow
UNU-MERIT
E-mail: a.arundel@maastrichtuniversity.nl

Mr. Clovis Freire
Economic Affairs Officer, Policy Analysis
UNDESA
E-mail: freire@un.org

Ms. Tamara Nanayakkara
Counsellor, SMEs and Entrepreneurship
Support Division
WIPO
E-mail: tamara.nanayakkara@wipo.int

Mr. Fernando Santiago-Rodriguez
Research and Industrial Policy Officer
UNIDO
E-mail: f.santiagorodriguez@unido.org

Mr. Ritin Koria
Associate Expert, Innovation
UNIDO
E-mail: r.koria@unido.org

Mr. Alessandro Bello
Project Officer of the STEM and Gender
Advancement (SAGA) project
UNESCO
E-mail: a.bello@unesco.org

Ms. Kornelia Tzinova
Assistant Programme Specialist
Division of Science Policy and Capacity Building
UNESCO
E-mail: k.tzinova@unesco.org

Mr. Guillermo Lemarchand
Consultant and Principal Investigator
Division of Science Policy and Capacity Building
UNESCO
E-mail: ga.lemarchand@unesco.org

C. UNITED NATIONS ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA

Mr. Haidar Fraihat
Director
Technology for Development Division (TDD)
E-mail: Fraihat@un.org

Ms. Nibal Idlebi
Chief
Innovation Section
TDD
E-mail: Idlebi@un.org

Ms. Reem Nejdawi
Executive Director
ESCWA Technology Centre
E-mail: nejdawi@un.org

Ms. Maya Hammoud
Research Assistant
Innovation Section
TDD
E-mail: hammoudm@un.org

Mr. Nael Al Mulki
National Officer
ESCWA Technology Centre
E-mail: almulki@un.org