



**Economic and Social Commission for Western Asia (ESCWA)**

## **Report**

### **Expert Group Meeting on Innovation and Technology for Achieving the 2030 Development Agenda Beirut, 5-7 December 2017**

#### **Summary**

The Expert Group Meeting on Innovation and Technology for Achieving the 2030 Development Agenda was held in the UN-House, Beirut, from 5 to 7 December 2017. It was convened by the Innovation Section of the Technology for Development Division of the Economic and Social Commission for Western Asia (ESCWA).

The objective of this meeting was to discuss the role of innovation and technology for achieving the 2030 Development Agenda in the Arab countries taking into account the integrated approach of the Sustainable Development Goals (SDGs). Special attention was paid to the new perspectives of innovation and technology and to their role in economic growth, enhancing productivity, creating decent jobs, and addressing societal challenges. The meeting considered all SDGs, with special focus on Goals 8 and 9 as well as 1, 3, 4, 5, 10 and 17.

The meeting gathered specialists involved in, and fundamental for, innovation, including experts from Government institutions, academia and universities, research centres, the private sector, regional and international organizations, and entrepreneurs. Topics discussed ranged from the innovation and technology perspective for the Arab Horizon 2030, the role of innovation and technology in enhancing small and medium-sized enterprises (SMEs) and fostering entrepreneurship, to community-based and industrial innovation, in addition to regional and international experiences in government transformation. Furthermore, the report on “Enabling Digital Opportunities in the Middle East” was launched during the meeting by Internet Society (ISOC), ESCWA and the investment company Wamda.

The meeting was attended by 55 experts from 14 Arab countries in addition to international experts from Belgium and France and from international organizations such as the United Nations Department of Economic and Social Affairs (UN-DESA), the United Nations Conference on Trade and Development (UNCTAD), the United Nations University (UNU)-Merit, the United Nations Development Programme (UNDP), the International Telecommunication Union (ITU) and the World Bank. Several ESCWA staff members from the Technology for Development Division and other divisions also attended this meeting. It culminated in recommendations on crucial areas and forthcoming endeavours.

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## Introduction

1. The globe is facing huge problems in terms of sustainability. One imperative way to face this issue is through achieving the Sustainable Development Goals (SDGs). The 2030 Agenda for Sustainable Development stresses that challenges and commitments are interrelated and calls for integrated solutions and a new approach for implementation. As such, business as usual is no longer an option, and a new innovative and integrated development approach is compulsory.

2. Innovation is cited clearly in Goal 9, specifically in targets 9.4, 9.5 and 9.b. In Goal 8, two targets distinctly mention innovation, namely, 8.2 and 8.3. Innovation is also linked to other goals, especially those including targets on science, technology and innovation (STI), which are: Goal 1 on combatting poverty, Goal 5 on gender equality and Goal 7 on energy technology research and sustainable services. In addition, Goal 17 has three targets linked to innovation, namely, 17.6, 17.7 and 17.8. Experiences have shown that innovation, particularly in technology, drives economic growth, improves productivity and efficiency, creates jobs, enhances social well-being, and promotes environment protection. Many countries in the Arab region are realizing the role of innovation and technology in addressing social and economic challenges. To understand this role and harness it for the implementation of the SDGs, policy options are identified, and policy recommendations addressing the challenges of the region were suggested during this meeting.

### I. RECOMMENDATIONS

3. The experts of the meeting agreed on a list of main recommendations emanating from the meeting as a whole, in addition to specific recommendations from selected sessions. The following are the main recommendations of the meeting:

- **Innovation policy:** Encourage Arab Governments to develop/update national innovation policies and to strengthen national innovation systems and to diversify their economies. They are furthermore encouraged to develop innovation policies for specific sectors such as agriculture, industry and climate change. Such policies should address the urgent challenges of the Arab region including refugees and displaced people, job creation, reconstruction, peacebuilding, water scarcity, food security, and economic diversification;
- **New approaches to innovation:** Arab Governments and societies should encourage a linear approach as well as bottom-up approaches of innovation such as social innovation, inclusive innovation and mission-oriented innovation. International organizations, local governments and non-governmental organizations (NGOs) should collaborate to build capacity of new approaches to innovation in Arab countries;
- **Implementation of strategies:** International organizations and research centres should develop guidelines, standards and plans of action for Governments and other stakeholders on the implementation of STI policies and strategies for achieving the 2030 Development Agenda;
- **Education, research and development:**
  - (a) Education systems should produce graduates with 21st-century skills in line with market needs. These skills would ensure employment of youth, reduce poverty and contribute to inclusive socioeconomic development;
  - (b) Arab youth, including women, should be encouraged to pursue careers in science, technology, engineering, and mathematics (STEM) (as there are plenty of job opportunities in the technology industry and not enough qualified people in the Arab region);
  - (c) Request Governments, academia and the private sector to increase budgets allocated to research and development and encourage research centres, think tanks and universities to enhance research and development activities for achieving the 2030 Development Agenda with emphasis on the challenges of the Arab region that include refugees, reconstruction, peacebuilding, water scarcity and food security;

- **Collaboration for achieving the SDGs:**

(a) The integrated and cross-sectoral approach of SDGs should be seriously considered throughout the planning and implementing stages of SDGs;

(b) Arab Governments should be encouraged to implement policies that mitigate the sectorial silos, adopt new models of planning inspired by international best practices, institutionalize the realization of SDGs and establish a high-level executive entity responsible for the SDGs;

(c) Decision makers in the United Nations system should enhance collaboration between United Nations agencies, especially as concerns innovation and technology;

(d) South-south collaboration among Arab countries and with developing countries should be encouraged by Governments and decision makers;

- **Role of technology in achieving the SDGs:** Private sector, academia and entrepreneurs should leapfrog to advance the use of technology and innovation for achieving the SDGs. They should consider emerging and disruptive technologies such as artificial intelligence, drones, robotics, Internet of things, and big data, to address social, economic and environmental challenges in the Arab region;

- **Digital technologies:**

(a) The United Nations and international organizations should support Arab Governments in developing and implementing the concept of digital government, as digital government and digital technologies play a crucial role in addressing the challenges of SDGs. Attention should be paid to digital currencies, their potentials and impact on digital service delivery in the Arab countries;

(b) Governments in the Arab region should enhance broadband infrastructure and digital platforms as they are key foundations of digital government; governments should also adopt new trends such as open government. They are furthermore requested to periodically collect data on digital government and its usage;

- **Fourth industrial revolution:** International organizations, including the Economic and Social Commission for Western Asia (ESCWA), should support the Arab Governments in understanding the different dimensions of the fourth industrial revolution and its impact on economic diversification and the creation of new job opportunities, especially for young people;
- **Innovation and small and medium-sized enterprises:** International organizations and Arab Governments should jointly attend to the serious need to collect information and undertake statistical surveys to assess micro, small and medium-sized enterprises (MSMEs), their contribution to employment and economy in the Arab countries, and to evaluate the impact of innovation and technology on MSMEs;
- **Entrepreneurship ecosystem:** Arab Governments, with the support of international organizations, should develop plans of action to enhance entrepreneurship ecosystems and encourage the establishment of technology parks in Arab countries. Also, thoughtful efforts are needed in the Arab region for promoting the management of intellectual property rights;
- **Innovation for community development:** Arab Governments, especially at the local level, with the support of international organizations and NGOs, should create appropriate ecosystems for social innovation and social enterprise and encourage social innovations through ethical/social public procurement, promote technical and vocational training, and build long-term training and capacity-building programmes with local communities. There is an urgent need for a legal framework for the establishment and registration of social enterprises in the Arab world;

- **International and regional initiatives:** Governments are encouraged to collaborate with international organizations to implement relevant international and regional initiatives aiming at achieving the SDGs, such as the Department of Economic and Social Affairs (DESA) initiative on e-Government survey, the ESCWA project on Open Government, GEMS Maturity Index, the Public Sector Award of DESA and the proposed regional initiative for the establishment of an Arab intellectual property office;
- **Best practices:** International organizations should continue their endeavours related to the collection of best practices on innovation and technology for SDGs and are encouraged to identify and promote innovation champions in Arab countries. International organizations should encourage Arab stakeholders to use the global virtual platform of best practices on STI for SDGs;
- **Statistics on technology and innovation:** Arab Governments should periodically collect data related to the recognized indexes and surveys on STI and the information society;
- **Recommendations for ESCWA:**

(a) Undertake studies in the following areas: plans of action/guidelines for the implementation of policies and strategies; the role of innovation and technology in specific sectors such as agriculture and industry; the role of innovation and technology for addressing refugees issues in the Arab countries; the role of technologies in reconstruction and post-conflicts; and enhancing the management of intellectual property rights in Arab countries;

(b) Organize information and media campaigns to promote and disseminate ESCWA studies, meetings, reports and their findings;

(c) Organize specialized meetings to discuss specific ESCWA studies and their applications in member countries;

(d) Extend scope and participation of ESCWA meetings on innovation and technology to turn them into annual Arab forums.

## II. TOPICS OF DISCUSSION

4. The meeting consisted of eight sessions in addition to the opening and closing sessions. The presentations deliberated on several topics regarding innovation and technology and their role in achieving the 2030 Development Agenda. The report on “Enabling Digital Opportunities in the Middle East” was launched at the end of the first session.

### A. OPENING SESSION

5. Ms. Nibal Idlebi, Chief of the ESCWA Innovation Section, briefly welcomed the experts and outlined the purpose and anticipated outcomes of the meeting. She provided an overview on the objectives and activities of the Technology for Development Division, with particular focus on the Innovation Section.

6. Ms. Khawla Mattar delivered the opening speech on behalf of the Executive-Secretary of ESCWA, Mr. Mohamed Ali Alhakim. She talked about the importance of innovation for social, environmental and economic development, thus for achieving the 2030 Development Agenda. She highlighted how Asian countries improved their economies by adopting and implementing suitable innovation policy; strengthening collaboration among various stakeholders; and enhancing national innovation systems. Ms. Mattar elaborated on the main objectives of the meeting and its link to ESCWA’s activities on SDGs. She also stressed on the relevance of exchanging best practices at the regional level and the value of interaction and collaboration with the international community for promoting the role of technology and innovation in national and regional development agendas. Ms. Mattar concluded her speech by stating the objectives and expected outcomes of the meeting and wished all the participants a fruitful meeting.

7. Mr. Hassan Diab, Former Minister of Education and Higher Education and Vice-President for Regional External Programmes at the American University of Beirut, gave a keynote presentation about the promotion of innovation and technology in higher education in the Middle East and North Africa (MENA) region. He elaborated on the role of higher education in achieving the SDGs and talked about the weaknesses of the education system in the MENA region and the importance of new teaching methodologies that rely on students researching. He continued by giving an overview of the status of Lebanon, in particular, and the Arab region, in general, in terms of research and development institutions. He explained the role of higher education in SDG 3 on good health, SDG 5 on gender equality, SDG 8 on decent work and economy growth, SDG 9 on innovation and industry, SDG 10 on reduced inequalities, and SDG 17 on achieving partnerships to reach the goals.

8. During the discussion of the opening session, experts stressed on the need to increase the budget for higher education and scientific research and to strengthen the link between higher education and industry in Arab countries.

#### B. HORIZON 2030: INNOVATION AND TECHNOLOGY PERSPECTIVES

9. This session was chaired by Mr. Nawar Alawa, Regional Advisor at the Technology for Development Division, ESCWA.

10. Ms. Nibal Idlebi, Chief of the Innovation Section, Technology for Development Division, delivered a presentation on selected ESCWA activities related to innovation and technology for achieving the 2030 Development Agenda. She presented the main findings of the ESCWA study on “Innovation Landscape in the Arab Region” and displayed the ranks of Arab countries in the Global Innovation Index 2016/GDP. Ms. Idlebi talked about the ESCWA project for the establishment of national technology transfer offices in a number of ESCWA member countries and highlighted that the expected outputs of this project were roadmaps for enhancing the national innovation system (NIS) and the establishment of technology transfer offices in each country. In addition, she presented the main features of the ESCWA study on “Innovation Policy for Inclusive Sustainable Development in the Arab Region” that provides a framework for the formulation of national innovation policies. Ms. Idlebi summarized future objectives and planned activities of the Innovation Section and explained their relationship with SDGs.

11. Mr. Dimo Calovski, Economic Affairs Officer at the United Nations Conference on Trade and Development (UNCTAD), presented the role of national innovation systems in framing STI policies for SDGs. He started by defining innovation and its national system and identifying the role of STI policy. As examples from developing countries, Mr. Calovski presented the innovation knowledge systems in India and the national innovation system in China. He continued by recognizing NIS as a solution to several problems since it provides a framework for developing and implementing policies and explained the relation between NIS and SDGs. He concluded his presentation by stating current global concerns such as gender equality and summarizing the way forward, especially concerning policy fundamentals.

12. Mr. Najib Abdel Wahed, ESCWA consultant and expert in STI, presented the ESCWA study “Horizon 2030: Innovation and Technology Perspectives for the Arab Region”. He elaborated on the characteristics of the SDGs and their interrelations and clarified the role of innovation and technology in achieving the SDGs. He stated the transformations needed to attain the SDGs. In addition, Mr. Abdel Wahed presented the new innovation approaches, including mission-oriented, social, inclusive, frugal, pro-poor, grassroots, and open and collaborative innovation. Mr. Abdel Wahed indicated the need to use an integrated cross-sectoral approach to achieve the SDGs, which, in turn, would help in solving economic, social and environmental challenges, and the urge to use and develop digital technologies in the Arab region as these technologies push innovation, and emphasized the “bottom-up” approach. He presented emerging and distributive technologies and highlighted the importance of smart technologies, artificial intelligence, block chain and robots.

13. Setting the scene for integrated technological solutions for the SDGs was the subject of the presentation delivered by Mr. Robby Berloznik, Director of the Programme for the Global Science, Technology and Innovation Conference (G-STIC), Flemish Institute for Technological Research, Belgium. Mr. Berloznik discussed the new technologies and solutions needed to achieve the SDGs and Paris agreement that emanated from the United Nations Climate Change Conference (COP21). He identified G-STIC and explained how to set the scene for integrated technological solutions for the SDGs. He showed ways to deal with waste (integrated water) and how to benefit from organic waste and sewage water, with examples from India and Africa. He presented a comparison between “conventional development models” and the “G-STIC approach”; and talked about climate-smart technology, gender mainstreaming, ICT as enabling technology, and youth engagement as thematic clusters of G-STIC 2017. The presentation ended with a brief introduction of the upcoming G-STIC programme for 2018.

14. During the following discussion, experts emphasized the need for collaboration at national, regional and international levels in order to address challenges for achieving the SDGs respectively. Many experts stressed the importance of integrating regional perspectives into national innovation policies in order to face especially environmental challenges in the Arab region. The experts also stressed the need to call upon Governments to launch initiatives towards the implementation of SDGs to complement the initiatives of regional and international organizations.

### C. POLICY PERSPECTIVES OF THE SDGs

15. This session was chaired by Mr. Muhammad Saidam, Chief Scientist at the Royal Scientific Society in Jordan.

16. Mr. Mohamad Mrayati, Senior Adviser on Science and Technology for Sustainable Development at the United Nations Development Programme (UNDP) and adviser to the Minister of Economy and Planning in Saudi Arabia, analysed the need for new planning in order to achieve SDGs in the Arab region. Mr. Mrayati began his speech by pointing out the major changes affecting the role of science, technology and innovation from a 2030 Agenda perspective. Throughout his presentation, he stressed the important role of technology and innovation, which are the base of the fourth industrial revolution and the core for finding solutions to matters related to energy, knowledge economy and job opportunities. He continued by stating that the unmet goals of Arab policies and plans, the undeveloped planning and implementation institutions and the uncommitted private-sector institutions are all reasons for not achieving sustainable development. Furthermore, he discussed various motives that pressure Arab countries to take serious actions, especially as concerns planning at national level. He provided India and South Korea as examples for the importance of adopting new planning strategies that will ultimately achieve SDGs in the Arab region.

17. Mr. Mouneef Zou’bi, Director General of the Islamic World Academy of Sciences, made a presentation on the approach of the Middle East towards SDGs. He indicated that the chaos in politics and policies are the main reasons why the Arab spring failed. He stated that the 2030 Agenda is based on the principle of universality and that STIs play an important role for SDGs by identifying sustainability challenges, interpreting SDGs, working out the priorities, monitoring implementation of policies, and developing models on how different targets interact. Mr. Zou’bi relied on the SDG index and dashboards to measure the level of achievement of all 17 SDGs in Arab countries. He also differentiated between soft and hard innovation. He ended his presentation by stating that, for Arab countries to enlarge their vision of global sustainable development, they should develop their STI ecosystem, encourage soft and hard innovation, adopt the innovation dashboard co-developed by the ESCWA Technology Centre and other regional institutions.

18. Mr. Bassam Jouny, Economist at the Lebanese Ministry of Industry, informed participants that the Ministry has developed its vision “Lebanon Industry 2025”. This vision includes several strategic objectives and seven operational objectives as well as an executive strategic plan (2016-2020) and an operational plan for 2016-2017.

#### D. REGIONAL AND INTERNATIONAL EXPERIENCES IN GOVERNMENT TRANSFORMATION

19. This session was chaired by Mr. Ebrahim al Haddad, Director of the Arab Regional Office of the International Telecommunication Union (ITU).

20. The first presentation was given by Ms. Samia Melhem, Lead Policy Officer at the Transport and ICT Global Practice Group, World Bank, on digital identification for inclusive access to services. She listed some challenges in preventing access to Internet and identified broadband infrastructure and digital government platforms as key foundations for digital government. She explained which challenges will be solved by a digital government and gave real-life examples. She also stated the challenges facing this transformation regarding governance, regulatory issues, technology, costs and accessibility. Ms. Melhem revealed the principles of digital government and the elements of successful digital development. In addition, she highlighted the importance and benefits of digital identity. Finally, she explained how the World Bank can help in forming digital government platforms.

21. Mr. Vincenzo Aquaro, Chief of the E-Government Branch, Division for Public Administration and Development Management at UN-DESA, presented the 2018 United Nations e-Government Survey in terms of the meaning, users and methodology. He stated that any country's rank is determined by the E-Government Development Index, which is the average of three subindexes, namely, Online Service Index (OSI), Telecommunication Infrastructure Index (TII), and Human Capital Index (HCI), which he elaborated on. Mr. Aquaro discussed the principles of effective governance, namely, effectiveness, inclusion and accountability. He mentioned open data, e-participation, integration, m-government and digital divide as the themes covered by the survey. Mr. Aquaro defined e-government as an enabler for sustainable development and called upon Governments in the Arab region to collaborate with UN-DESA for filling the questionnaire related to the e-government survey.

22. Ms. Lize Denner from the Innovation Section at ESCWA presented the ESCWA framework for open government in the Arab region. She started her presentation by explaining how technology, innovation and openness are powerful tools in strengthening a Government. She stated that the ESCWA initiative on open government aims at building the capacity of member countries to utilize technology and innovation to achieve the SDGs. Ms. Denner defined the term "open government" and elaborated on the four stages of the framework, namely, transparency, participation, collaboration and engagement. She pointed out that open government is a continuous programme, and policies plus action plans should be produced in its favour and should include all stakeholders.

#### E. INNOVATION AND TECHNOLOGY FOR ENHANCING SMALL AND MEDIUM-SIZED ENTERPRISES AND ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN THE ARAB REGION

23. This session was chaired by Mr. Nicolas Nahas, Former Minister of Economy and Trade in Lebanon. Mr. Nahas provided a brief about the challenges on the path towards an innovative environment and presented the almost linear link between research and development and gross domestic product (GDP) per capita. He also stated that the importance of innovation has been reinforced by globalization and rapid advances in new technologies.

24. Mr. Rami Zaatari, Head of the Unit for Dissemination, Statistics Division, talked about the objectives of the upcoming ESCWA study on innovation and technology in MSMEs. He pointed out the important role of MSMEs for development, in particular towards the achievement of SDGs 8 and 9. He continued by stating the barriers facing MSMEs, such as regulations, inefficient tax systems and shortage of finance.

25. Mr. Samir Aita, ESCWA Consultant and President of *Le cercle des économistes Arabes*, delivered a presentation on innovation and technology in Arab SMEs for achieving the 2030 Agenda for Sustainable Development. He commenced by explaining how innovation and SMEs are both related to SDGs. He



elaborated on the results of the SDG Index and Global Innovation Index and discussed the size and impact of SMEs in the Arab economy through defining MSMEs, explaining their role and number in the Arab region and especially their effect on the GDP. Mr. Aita then presented the SME Index for the Arab countries. He pointed out that all studied countries, with a few exceptions, have developed innovation strategies, but added that the innovation policy was still weak. He also talked about the ways to foster innovation in MSMEs and the methodology to assess innovation needs for establishing policies for MSMEs. Mr. Aita concluded by emphasizing the urge to assess the impact of innovation and to develop innovation strategies.

26. Mr. Johnny Matta from the UNDP Project in the Ministry of Economy and Trade presented a case study on the status of SMEs in Lebanon. He mentioned that SMEs represent 95 per cent of all companies in Lebanon and employ 50 per cent of the working population, and that 73 per cent of SMEs in Lebanon are micro-enterprises. He presented the top challenges facing SMEs and women entrepreneurship and highlighted gaps in the financing spectrum. He talked about the SME Roadmap 2020 and the outcomes of the Lebanese Forum 2017, during which the Ministry of Economy and Trade released a letter of commitment on the principles of the United Nations Global Compact Network, in addition to many other important outcomes. He elaborated on the strategy and action plan for SMEs and listed the outcomes, in terms of work progress, recommendations and legislative reform.

27. As a case study of an SME relying on innovation and technology, Ms. Roula Moussa, Managing Partner at Netways and Founder of Diaspora ID, delivered a presentation on the role of technology in sparking diaspora engagement in Lebanon. She started by talking about the fourth industrial revolution and the platform revolution and stated that engaging and leveraging diaspora capacity was a vital need. She explained the needs and obstacles of diaspora engagement. She continued by presenting Diaspora ID, which was founded to connect diasporas with their hometowns and their municipalities to provide mutual benefits for all parties involved and to encourage direct management in a transparent manner. Diaspora ID mainly focuses on local investment and development, knowledge transfer, business and trade development, and peer-to-peer and peer-to-community engagement. She pointed out the importance of finding ways to employ new technology trends in an innovative manner for the public good.

28. During the discussion, experts recommended that Governments, with the support of international organizations, should encourage the private sector and the third sector to plan, develop and fund initiatives and projects that support Governments in achieving SDGs.

#### F. FOSTERING ENTREPRENEURSHIP FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN THE ARAB REGION

29. This session was chaired by Ms. Najiba el Amrani, Head of the Electrical Engineering Department at the University of Sidi Mohamed ben Abdellah in Morocco.

30. Mr. Hassan Ghaziri, ESCWA Consultant and Founding Director of the Beirut Research and Innovation Centre, gave a presentation on the Arab entrepreneurial ecosystem based on the ESCWA study on the same topic. He defined the terms entrepreneur, entrepreneurship and entrepreneurial ecosystem. He elaborated on the Arab entrepreneurial ecosystem in terms of human capital, labour market structure, expenditure on education, ease of doing business and access to finance. He continued by presenting the challenges of the entrepreneurial ecosystem in Lebanon, Morocco and Oman. He concluded by proposing recommendations for enhancing entrepreneurship ecosystems in Arab countries and stressed on the need to develop an Arab intellectual property rights organization to facilitate the management of intellectual property for entrepreneurs in Arab countries.

31. Ms. Rasha Tantawy, Head of Entrepreneurship and Business Support at the Technology Innovation and Entrepreneurship Centre, Information Technology Industry Development Agency (TIEC/ITIDA), in Egypt, discussed the role of government in strengthening the entrepreneurship ecosystem in Egypt. She explained the pillars forming the ecosystem, the increasing role of government and the important role of innovation in the

entrepreneurship support cycle. She talked about the process of start and growth of any innovative idea and highlighted that, through the initiatives of TIEC/ITIDA, 450 new ideas were created, 1,896 entrepreneurs and 194 start-ups were supported and 2,460 jobs were created. She also elaborated on women entrepreneurship in Egypt and the Egyptian online hub.

32. Mr. Antoine Skayem from Lebanon presented his experience as entrepreneur in creating a startup that works on improving welfare and saving the environment. He presented his solution “Riego” and how it enables users, such as farmers, to reduce water consumption through monitoring weather and soil specifications. Mr. Skayem concluded by emphasizing the importance of providing humanity with cleaner and cheaper energy since energy is an essential commodity worldwide.

#### G. FOSTERING INNOVATION IN INDUSTRY

33. This session was chaired by Mr. Fouad Murad, Senior Expert in Science, Technology and Innovation at the Technology for Development Division of ESCWA.

34. Mr. Augusto Luis Alcorta, Research Fellow at the United Nations University (UNU) Merit, delivered a presentation on the fourth industrial revolution and the 2030 Development Agenda. He discussed megatrends, which are trends driving challenges in manufacturing, technological breakthroughs to identify technologies that will transform manufacturing and how the implementation of the 2030 Agenda may be affected by the fourth industrial revolution regarding prosperity, people, the planet, and developing countries. In addition, he talked about the response of the United Nations on the impact of the revolution on the 2030 Agenda. He ended by emphasizing the significant role of the United Nations in helping to roll out transitional mechanisms.

35. Ms. Syham Bentouati, Managing Director of NAFAS International, gave a presentation on the economic and social impact of supporting industrial innovation. She explained that industrial innovation included new products or processes developed by the industrial sector. She continued by pointing out the urge for the industrial sector to renew and improve itself to face competition and the importance of strengthening innovation by creating specialized human capital and by providing financial and post-implementation support.

36. Mr. Peter Nicholls, Chief of the Caribbean Knowledge Management Centre at the Economic Commission for Latin America and the Caribbean (ECLAC), discussed the need for regional collaboration and partnership to progress in emerging industries and support the SDGs. He elaborated on the work of the United Nations with regard to SDGs and the outcomes of selected meetings that were organized by ECLAC. One of the important outcomes was that digital currencies represent a potential option for improving services and reducing cost. However, among the weaknesses of the digital currency in the Caribbean are consumer protection and the payment systems. Mr. Nicholls suggested the use of blockchains to enhance monitoring, and pointed out the function of the the central bank in this process to issue the digital currency, which facilitates the detection of financial crimes. He also discussed identity management, welfare payments pilot schemes and Caribbean Fintech (Bitt).

#### H. INNOVATION AND TECHNOLOGY FOR COMMUNITY DEVELOPMENT IN THE ARAB REGION

37. This session was chaired by Mr. Khalil Ajami, President of the Syrian Virtual University.

38. Mr. Alain Daou, ESCWA Consultant and Assistant Professor of Entrepreneurship at the American University of Beirut, presented the ESCWA study on community-based innovation (CBI) for improved social well-being. He defined CBI and explained its connection with the SDGs, especially Goal 1 for no poverty, Goal 5 for gender equality, Goal 11 on sustainable cities and communities and Goal 16 on peace, justice and strong institutions. He explained the most important CBI types, including grassroots, social and crowd-sourcing innovation. He discussed the enablers, drivers and barriers of CBI and presented some case studies to support his theories. Mr. Daou concluded by presenting a set of recommendations which focused on

capacity-building and encouraging educational innovation, and emphasized the role of the Government and empowering local authorities to foster local needs and innovations. He stressed the need to create an appropriate ecosystem for social innovation in local communities and to encourage creativity and emphasized the importance of local networks in scaling up CBI.

39. Mr. Nady Kamel Dous, Executive Director of the New Horizon Association for Social Development (NHASD), presented the programme “Employ Some to Feed Many”. This programme, which is supported by the Egyptian Government, provides land for the farmers to achieve food security and agriculture stability. At the same time, NHASD has tackled the problem of unemployment by creating jobs in rural areas and empowered women by providing them with jobs according to their expertise and by giving them the opportunity to do vocational training. He indicated that NHASD also started supporting local NGOs and local professions such as handcrafts.

40. Ms. Asmahan Zein, General Manager of the Lebanese League for Women in Business (LLWB), presented LLWB and its initiatives. She stated that only 15 per cent of Lebanese women are employers or self-employed and unfortunately there is no support programme. She elaborated on the Lebanese Women Angel Fund programme and presented the LLWB initiative “Girls got IT”, which aims at encouraging young women in school grades 10 and 11 to experience the potential of IT and STEM subjects. She indicated that, so far, five events were organized in different areas in Lebanon, in which more than 2,000 girls from public and private schools and from marginalized communities participated.

41. During the discussions on the above three presentations, experts agreed that innovation in rural areas is very different than innovation in urban areas, thus the need to treat them differently. Additionally, local authorities need to be encouraged to provide open-space fostering innovation to address local needs and innovation, and Governments should simplify registration procedures for social enterprises and entrepreneurs.

### **III. ORGANIZATION OF WORK**

#### **A. DATE AND VENUE OF THE MEETING**

42. The Expert Group Meeting on Innovation and Technology for Achieving the 2030 Development Agenda was organized by the Innovation Section of the Technology for Development Division of ESCWA at the UN-House in Beirut on 5-7 December 2017.

#### **B. ATTENDANCE**

43. The meeting was attended by approximately 55 experts, 24 per cent of which were women, representing Governments, the private sector, academia and NGOs from 14 Arab countries, Belgium and France. In addition representatives from international organizations, namely, ECLAC, ITU, UNCTAD, UN-DESA, UNDP, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO), UNU-Merit, and the World Bank contributed to this meeting. The annex to the current report sets out the list of participants.

#### **C. DOCUMENTS**

44. The documents submitted to the meeting are available at <https://www.unescwa.org/events/sdg-innovation-technology-arab-region>.

#### **D. EVALUATION**

45. An evaluation questionnaire was prepared to appraise the technical, administrative and overall value of this meeting, which was filled by many participants. Following are selected highlights:

- The overall quality of the meeting was rated good to excellent by 100 per cent;
- 80 per cent thought that the meeting met its objectives in an excellent/good aspect;
- The quality of background papers was rated good to excellent by 100 per cent;
- 94 per cent rated the quality of presentations as excellent/good, whereas only 6 per cent thought they were average;
- 87 per cent said that the time allocated for sessions was excellent/good;
- The role of ESCWA in enriching discussions was rated good to excellent by 100 per cent;
- 100 per cent thought the meeting was an opportunity to enhance communications and exchange expertise, and there is a need to follow-up meeting's results.

Annex\*

**LIST OF PARTICIPANTS**

A. ORGANIZATIONS AND EXPERTS BY COUNTRY

Bahrain

Mr. Dahmani Fathallah  
Dean, College of Graduate Studies and Chairman,  
Biotechnology PhD Programme  
Arabian Gulf University

Belgium

Mr. Robert Berloznik  
Director program G-STIC  
Flemish Institute for Technological Research

Egypt

Mr. Ebrahim al Haddad  
Regional Director  
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\* Issued as submitted.

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