ECONOMIC AND SOCIAL COUNCIL

Economic and Social Commission for Western Asia (ESCWA)

Committee on Technology for Development
Third session
Online, 15-16 February 2021

Item 6 of the provisional agenda

Activities of the ESCWA Technology Centre

Summary

The present document reviews the activities undertaken by the Technology Centre of the Economic and Social Commission for Western Asia (ESCWA) since the second session of the Committee on Technology for Development, held in Beirut on 20 and 21 March 2019. It also contains the meeting outcomes of the Centre's Technical Committee. The annex to the present document sets out members of the Board of Governors for the period 2018-2021.

The Committee on Technology for Development is invited to take note of the present document and make comments as needed.

21-00066

Contents

Introduction

1.   The Economic and Social Commission for Western Asia (ESCWA) established the ESCWA Technology Centre pursuant to United Nations Economic and Social Council resolution 2010/5 of 20 July 2010 to build member States' capacity in developing and managing technology, and innovation systems; developing, transferring, adapting, and applying appropriate technology; improving the legal and commercial framework for technology transfer, and increasing scientific and technological knowledge in key economic sectors. Jordan hosts the ESCWA Technology Centre at the Royal Scientific Society (RSS). The Centre receives support from RSS and the Higher Council for Science and Technology of Jordan.

2.   The Centre is also committed to helping ESCWA member States implement global policy frameworks, notably the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), by developing their science, technology and innovation (STI) capabilities. In early 2020, the challenges brought on by the COVID-19 pandemic affected all aspects of the three dimensions of sustainable development (social, economic and environmental). The Centre has shifted gears to adapt its projects in response to those challenges, leading to a change in the way the Centre operates, and shifting focus to devising practical solutions to overcome those challenges.

3.   The present document reviews the ESCWA Technology Centre's activities since the second session of the Committee on Technology for Development, held in Beirut on 20 and 21 March 2019. The Centre's programme of work for 2019 and 2020 set out the following expected accomplishments:

        (a)   Designing the national STI road-mapping, technology development, and transfer landscape to contribute to achieving sustainable development;

        (b)   Improving knowledge, capacity and regional cooperation on technology as a key means of implementation of the 2030 Agenda;

        (c)   Empowering Arab young people and women through skill development and interactive tools in technology and entrepreneurship;

        (d)   Establishing a practical framework to improve the capacity of micro, small and medium enterprises (MSMEs) in the Arab region, so as to enable them to plan, manage and scale up their businesses, and achieve financial sustainability; and to build member States' capacity to design and deliver programmes and services that meet entrepreneurs' needs.

4.   Various activities were undertaken in the period 2019-2020 to achieve those objectives, including expert group meetings, workshops, studies, technical reports, and projects. Moreover, the present document sets out the advisory services provided by the Centre over the same period, following requests by member States and its national, regional, and international partners.

5.   The present document also sets out the Centre's Technical Committee's periodic meetings and key recommendations on developing the Centre's work programmes, which will be presented to the Board of Governors at its ninth meeting in February 2021. The annex to the present document sets out the Board of Governors' members for the period 2018-2021.

I. Activities of the centre since the second session of the Committee on Technology for Development

6.   Over the period 2019-2020, the ESCWA Technology Centre undertook several activities in the fields of technology development and transfer; green development and sustainable resource use; strengthening regional cooperation in research, development, and innovation; in addition to tackling technical issues and challenges facing MSMEs, youth employment, and women's empowerment; and addressing the impact of the COVID-19 pandemic on sustainable development and economic growth. The following sections summarize key meetings, training workshops and projects that have either been implemented by the Centre or are ongoing, and the prominent publications issued.

**A. National STI roadmapping, and technology development
and transfer for sustainable development**

1. *Meetings*

7.   The Centre held an expert group meeting on technological innovation and entrepreneurship and the role of science and technology parks for sustainable development in Arab countries in Amman from 26 to 28 November 2019. It aimed to bridge gaps in the innovation and entrepreneurship ecosystems in the Arab region at the policy and practical levels; and define the role of national technology transfer offices and science and technology parks in the entrepreneurship ecosystem. It focused on technopreneurs and their role in achieving sustainable development, and the role of technology development and transfer offices in knowledge commercialization and employment.

8.   The Centre co-organized the third meeting of the Arab Working Group on Linking Academia with Industry held online on 23 June 2020, in collaboration with the Arab Industrial Development and Mining Organization (AIDMO). The meeting aimed to promote technologically advanced Arab industry by enhancing Arab cooperation in scientific research, technological development, and innovation, the meeting focused on developing interaction tools and mechanisms to bridge gaps between scientific research and industry, addressing the main challenges facing partnerships between universities and industry, and stressing the importance of these partnerships to overcome the effects of the COVID-19 pandemic. A key recommendation of the meeting was the support and collaboration requested from participating Arab and regional organizations in establishing the Online Toolbox Portal for MSMEs presented at the meeting, by providing experts and researchers to collaborate with the Centre in this endeavor to establish the Portal, which will also comprise tools to empower women and young entrepreneurs in the Arab region.

9.   The ninth Arab Forum for Small and Medium Industries: Enhancing Creativity and Innovation Toward Industrial Competitiveness was co-organized with AIDMO, the Moroccan Office of Industrial and Commercial Property, and the Chamber of Traditional Industry of Fez-Meknes, and held online on 25 November 2020. Representatives from 16 Arab countries attended the Forum. Regional and international agencies discussed the role of innovation and entrepreneurship in enhancing the competitiveness of small and medium industries, and presented some cases from the Arab region.

10.   On 17 November 2020, the Centre presented its work at a side event on the theme "STI for SDGs roadmaps (science, technology and innovation roadmaps for the SDGs) – achievements and new opportunities", held at the seventy-fifth session of the United Nations General Assembly. The event focused on the preliminary results and next steps for the finalization of pilot roadmaps as part of the Global Pilot Programme for STI for the SDGs, and presented proposals and ideas for the expansion of the Global Pilot Programme to include the Arab region within the new initiative "Partnership in Action". The Centre then joined the DESA Sub-Working Group on STI Roadmaps for SDGs, and actively participated in monthly meetings to transfer the Group's international experiences to the Arab region.

11.   The Centre co-organized with AIDMO and other partners the "Third Forum of Industrial Information and Statistics in the Arab Countries" under the theme "Development of Arab statistical capabilities in the light of the digital revolution", which was held online on 7 December 2020. The Forum shed light on developing professional and technological capacity in producing, collecting and analysing statistical data, and raised awareness of big data opportunities to achieve sustainable development in Arab countries.

2. *Workshops and training*

12.   The Centre organized a regional workshop on the "Intellectual property rights for innovation in industrial and agricultural research sectors in support of economic development", held in Amman on 14 and 15 December 2019, in collaboration with the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA) and iPARK at the Royal Scientific Society of Jordan. The workshop aimed to build

capacity in intellectual property management and intellectual property rights in global policy for agricultural research and innovation, and provide transparent means and channels for facilitating technology and knowledge transfer to industry and business. It highlighted the importance of intellectual property in promoting economic development, particularly in the industrial and agriculture sectors, and explored the opportunities and challenges facing agricultural innovators to strengthen regional innovation. The workshop was held as part of the recommendations of the eighth meeting of the Board of Governors of the ESCWA Technology Centre, held in Amman on 15 November 2018, where members of the Board (Libya, Oman and Tunisia) requested a workshop on managing intellectual property and its impact on socioeconomic development.

3. *Reports and studies*

13.   In 2020, a technology brief entitled "how to use internet audio streaming and messaging apps to produce community radio" was produced in partnership with the United Nations Office of Information and Communications Technology (OICT), and in close coordination with the World Health Organization (WHO). The brief explains how to use commodity software, hardware, Internet audio streaming, and messaging apps to empower community members to operate an Internet streaming radio station at low-cost during the pandemic.

14.   At the end of 2020, to assist member States in achieving the SDGs through STI, the Centre, in collaboration with the United Nations Department of Economic and Social Affairs (DESA), translated into Arabic the following three documents prepared by the Technology Facilitation Mechanism on STI roadmaps for the SDGs: an operational note on implementing STI for SDGs roadmaps; a guidebook for the preparation of STI for SDGs roadmaps; and a progress report on the global pilot programme on STI for SDGs roadmaps. These documents will be posted on the DESA website in 2021.

4. *Projects*

15.   In partnership with OICT and in close collaboration with WHO, the Centre designed and built a prototype mobile application entitled Pay-It-Forward. This application is an innovation for peer-to-peer money donations to increase gonorrhoea and chlamydia testing among populations at risk who cannot afford to be tested. The prototype, designed at three human-centred design workshops held online on 26 and 28 August and on 2 September 2020, served as a model for field-level implementation at testing facilities in China, and will be presented to member States' health authorities through United Nations country offices for local implementation.

16.   In 2020, the Centre submitted a project proposal and received initial approval on a project funded by the United Nations Development Account. The project is entitled "Expanding the science-policy nexus in support of the 2030 Agenda in the Arab region", and has a budget of $549,000 for three years (2021-2023). It will be implemented in Egypt, Jordan and Lebanon, and will be extended to Tunisia and the Sudan. The cooperating partners are the World Intellectual Property Organization (WIPO), the International Telecommunication Union (ITU), OICT, UNICEF, and the United Nations Development Programme (UNDP). Based on the initial approval, the Centre prepared all related project management documents and its implementation plan.

17.   In January 2021, the Centre prepared a concept note entitled "ESTIMRAR: entrepreneurship, science, technology, and innovation multi-modality roadmap in the Arab region" and applied for funding from the Peace and Development Trust Fund. The project will produce knowledge tools and build members States' capacity to design and implement their STI for SDGs roadmaps.

**B. Improving knowledge, capacity and regional cooperation
on technology and its role as a means of implementation
of the 2030 Agenda**

1. *Meetings*

18.   The Centre organized an expert group meeting on green Technology Investments and Access to sustainable financing in the Arab region, held in Beirut from 4 to 6 March 2019, in collaboration with the Climate Technology Centre Network (CTCN) and the National Council for Scientific Research of Lebanon (CNRS-L), to discuss green climate technology deployment and access to finance as a necessary means of implementation to accelerate SDG achievement and nationally determined contributions (NDC) implementation. The meeting was structured around the following major themes: green technology transfer and adaptation challenges and opportunities in the Arab region: green technologies priorities; investments; challenges for countries in special situations; deployment and implementations; and coordination for mobilizing national, regional and international financial and non-financial resources to achieve climate targets.

19.   The Centre organized an expert group meeting on green technology transfer, adaptation and investment required for implementing SDG 12: sustainable consumption and production, held in Amman from 29 to 31 July 2019, in collaboration with CTCN, the United Nations Technology Bank for Least Developed Countries, and AIDMO. The meeting promoted regional cooperation in deploying green technologies to achieve SDG 12, focusing on technologies for the agricultural and food sector (and its relationship to other sectors, including the water and energy sectors) and the conflict waste management sector in the Arab region. The meeting also discussed green investments needed in the region to support the green transformation in these two sectors.

20.   To mobilize resources for promoting, transferring, and scaling up innovative green technologies, the Centre organized an interactive exhibition as a side event of its expert group meeting on green technology transfer, adaptation and investment required for implementing SDG 12: sustainable consumption and production, held from 29 to 31 July 2019. It exhibited examples of green technologies that could be applied in member States to enhance the implementation of SDG 12. This showcase exhibition aligned with the Centre's role in strengthening the capacity of innovation and technology actors in the Arab region, and sharing experiences among member States on the best means for development. In this interactive exhibition, 11 companies and research institutes presented 14 innovative technologies in the fields of agriculture and conflict solid waste management.

21.   The Centre participated in the sixth Arab Roundtable Meeting on Sustainable Consumption and Production, held in Cairo on 9 and 10 October 2019, on the theme "From action plans to implementation". The Meeting stressed the need for green technology development and transfer for sustainable consumption and production in the region, and reviewed progress by Arab countries towards achieving the SDGs, especially SDG 12 on ensuring sustainable consumption and production patterns. The Centre made a presentation on the status of green technologies in the Arab region.

22.   Under the patronage of Princess Sumaya bint Hassan, the Centre co-organized the seventh session of the Arab Forum on Scientific Research and Sustainable Development, held in Amman from 17 to 19 December 2019, in collaboration with the Arab League Educational, Cultural and Scientific Organization (ALECSO), and the Jordanian Ministry of Higher Education and Scientific Research. The Forum aimed to build effective partnerships in the education and scientific research sector and other sectors concerned with economic development in the Arab region. The Forum's main themes included the potential role of the private sector in supporting, encouraging and financing scientific research activities in the Arab countries; scientific research and its link to national security; technology transfer; and innovation and entrepreneurship for young people and women. Topics also included challenges of the digital space, knowledge and economic research, water scarcity in the Arab region, food processing, environment conservation, pollution problems, migration and Arab brain drain. The Centre, in collaboration with the ESCWA Innovation Section, held a session on "Technology transfer, innovation and entrepreneurship: for young people and women". Participants discussed

the opportunities provided by innovation, technology transfer and entrepreneurship for young people and women, and presented the roles of different stakeholders in stimulating technology transfer and innovation, notably universities and international organizations.

23. The Centre supported the Food and Agriculture Organization of the United Nations (FAO), ITU, the Ministry of Environment and the Water and Agriculture of Saudi Arabia in organizing a Zoominar on "The role of the private sector in the use of innovation and technology to support smallholders facing the disruptive impact of the COVID-19 pandemic", held on 18 June 2020. The Zoominar highlighted the private sector's role in the use of innovation and green technology, and the potential role of public-private partnerships and regional cooperation in reaching out to smallholders and building their resilience to crises, disasters, and the pandemic. The representative of the Centre made a presentation on the theme: "The wheel of technology and innovation for agricultural technology acceleration in the Arab region", which illustrated the Centre's new model for knowledge and technology transfer in the field of green technologies.

24. The Centre supported FAO, ITU, and the Ministry of Environment, Water and Agriculture of Saudi Arabia in organizing a Zoominar on the "Role of public policies in supporting innovation for sustainable agri-food system transformation in the MENA region", held of 12 November 2020. Participants discussed the main policy challenges hindering digital transformation in agriculture, suggested a roadmap to enhance innovation, and explored cooperation and support areas. The Centre presented the concept of an ESCWA "Compendium of green technologies for sustainable agriculture".

25. The Centre and the WANA Institute organized a webinar on "Re-imagining food security in the Arab region post-COVID", held on 23 November 2020. Participants discussed the following three main subjects: key findings of the Arab Sustainable Development Report 2020 and SDG progress in the Arab region, with a focus on SDG2; promising initiatives to rethink the planning and implementation of policies that address SDG 2 in all its dimensions in the Arab region, especially regarding vulnerable groups; and the role of technology in enhancing sustainability and ensuring a green recovery from the pandemic. Prince Hassan bin Talal (Chairman of WANA) was the keynote speaker.

26. In collaboration with the Department of Sustainable Development and International Cooperation at the League of Arab States, the Centre organized a meeting on the theme "Strengthening partnerships to activate the Arab Network for Science and Technology for Sustainable Development", held online on 3 December 2020. The meeting launched the electronic portal of the Arab Network. The Centre is an active member of the Board of Trustees at the technical secretariat of the Arab Network.

2. *Workshops and training*

27. The Centre, in collaboration with the ESCWA Climate Change and Natural Resource Sustainability Cluster and the Jordanian Ministry of Agriculture, organized a capacity-building workshop on the theme "Revisiting the agriculture strategy of Jordan to achieve the SDGs", held on 3 and 4 March 2020. The workshop aimed to guide the mainstreaming of the SDGs into Jordanian agriculture and food security policies, based on a theoretical and empirical overview from stakeholders. The Centre made a presentation entitled "Agricultural technology promotion in the Jordanian context", which provided recommendations for developing and transferring appropriate agricultural technologies in Jordan.

28. The Centre prepared a capacity-building needs assessment on agricultural technologies for the Jordanian and Palestinian ministries of agriculture. The outcomes set priorities for the training modules that ESCWA will provide to these two countries in 2021.

29. The Centre, in collaboration with the ESCWA Statistics, Information Society and Technology Cluster and the Qatari Ministry of Transport and Communication, organized a workshop on new technologies and digital transformation, held on 29 December 2020. The workshop highlighted digital transformation concepts, challenges and socioeconomic impacts, and best regional and global practices on developing relevant plans

and policies. It also highlighted the role of new technologies, particularly artificial intelligence, in accelerating digital transformation, and showcased best regional and international practices in developing related plans. The workshop also presented new applications and initiatives developed by ESCWA and its new Centre of Entrepreneurship to digitize SMEs in the Arab region.

3. *Reports and studies*

30.   In 2019, the Centre prepared three technical reports related to green technology transfer, adaptation and investment for SDG 12 (the first was on green technology transfer and adaptation for agriculture in the Arab region; the second was on green technology transfer and adaptation for post-conflict solid waste management in the Arab region; and the third was on investment in green technology for agriculture and post-conflict solid waste management in the Arab region). These reports were presented and discussed at the seventh meeting of the Technical Committee, held on 29 July 2020.

31.   The Centre produced the "Compendium of Renewable Energy Technologies in the Arab Region." It will be published in the first quarter of 2021 in cooperation with ESCWA's Energy Section. It includes factsheets on solar thermal energy, wind energy, geothermal energy, PV, hydropower, etc. Every technology factsheet consists of a description of the technology, design consideration, advantages and disadvantages, and applications in the Arab region.

32.   In 2020, in collaboration with the ESCWA Food and Environment Policies Section, the Centre produced several technology factsheets in the field of agricultural technologies: rainwater harvesting, solar drying, soil remediation, and green fertilizers. Every technology factsheet contains a description of the technology, design considerations, advantages and disadvantages, and applications in the Arab region.

4. *Projects*

33.   In 2020, in collaboration with OICT, the Centre initiated the design of an online platform entitled Driving Innovation in the Arab Region (DIAR). The platform provides a multidisciplinary understanding of appropriate technologies and their application in the Arab region. It comprises the following four sections: technology compendiums, consisting of technology factsheets on three technology domains: green-tech, health-tech and emerging-tech; an innovation toolbox, providing hands-on tools to help Arab innovators develop local technologies; knowledge and innovation communities, demonstrating the STI landscape map of each Arab country; and an Arab technology forum, which connects Arab innovators and researchers to create synergies and develop collaborative innovation. This platform will be published in the first quarter of 2021.

34.   In 2020, the Centre, in collaboration with the Fraunhofer Centre for International Management and Knowledge Economics (Germany), the Reiner Lemoine Institute (Germany), the Egypt-Japan University of Science and Technology (Egypt), and the Jordan University of Science and Technology, prepared the documents for a project entitled "Water-energy governance in rural regions: using decentralized water and energy networks for affordable access in Egypt and Jordan" to be implemented in three years starting from 2021.

C. Arab young people and women's empowerment for technology and entrepreneurship

1. *Meetings*

35.   On 7 October 2020, the Centre, in collaboration with the ESCWA Innovation Section, facilitated a session on the theme "Digital Arabic content, innovation and entrepreneurship among young people" at the fourth Arab Digital Content Forum, held from 5 to 7 October 2020. The session shed light on youth opportunities in innovation and entrepreneurship in the field of digital Arabic content. It also demonstrated the availability of appropriate business models to establish startups or develop existing SMEs by presenting success stories of youth-led startups from the Arab region working in digital Arabic content. The session also

highlighted the enabling environment needed to support youth-led innovation and entrepreneurship, and clarified the challenges facing the Arab region in this domain.

36.   On 18 August 2020, the Centre contributed to Arab Science Week by offering an online session for Arab young people on the theme "Driving innovation in the Arab region". The session stressed the importance of producing hands-on knowledge tools in technology and innovation, building the capacity of Arab young people and women on these knowledge tools, and facilitating the implementation of knowledge-based innovation and technologies.

37.   From 27 to 29 October 2020, The Centre joined the jury of AMWAJ Water and Energy Mediation, which was a three-day event where media professionals and water and energy young entrepreneurs from the Arab region joined forces to develop media campaigns to stimulate higher demand for sustainable and innovative water and energy solutions.

2. *Workshops and training*

38.   On 20 April 2020, the Centre, in collaboration with International Centre for Water Management (Cewas) Middle East, UNDP, UN-Habitat, Berytech, Nestle, Toilets for All, the Swiss Agency for Development and Cooperation (SDC), the World Food Programme, UNICEF and Alfanar, facilitated the "WaSH vs. COVID-19 Innovator Day", which kicked off a youth capacity-building programme designed to turn the pandemic into an opportunity, and motivate them to apply for the WaSH vs. COVID-19 Innovator Fund. Through networking, coaching and funding, the programme enabled 20 youth-led startups to expand their portfolio, and supported them in digitalizing and crisis-proofing their businesses and in initiating new approaches directly tackling issues associated with disease control, such as improved hygiene and sanitary solutions.

39.   On 18 August 2020, in collaboration with the Middle East Desalination Research Centre (MEDRC), the ESCWA Technology Centre facilitated a workshop on participatory innovation for young Omani researchers, to innovate sustainable water technologies and build startups in the water treatment sector. The workshop provided a hands-on and step-by-step guide to design solutions based on community needs and demands.

40.   In July and November 2020, the Centre, in cooperation with the Princess Sumaya University for Technology and the ESCWA Shared Economic Prosperity Cluster, facilitated two seasonal training programmes (summer and winter) for more than 300 graduates from Arab countries. The training programmes were conducted online for three months each. They included several youth development skills, such as personal and soft skills, technical and professional skills (digital content design and web development), and project management tools such as project constraint triangles, project initiation, project planning, project performance/monitoring, evaluation, control, execution, and closure.

3. *Reports and studies*

41.   In 2020, the Centre supported the ESCWA 2030 Agenda and SDG Coordination Cluster in disseminating the Arab Youth in a Post-COVID World Survey Report, and including it in the planning process for the youth round-table sessions at the Arab Forum on Sustainable Development. The report, its findings, and analysis will be published in the first quarter of 2021.

42.   In November 2020, the Centre contributed to an ESCWA policy brief on job creation in the Arab region (E/ESCWA/CL2.GPID/2020/Policy Brief.3).

4. *Projects*

43.   In 2020, in collaboration with UNESCO, the Centre proposed a project entitled the "Youth citizen science toolbox" (YCST), which aimed to facilitate youth critical thinking and allow dynamic collaboration and partnerships between citizens and scientists for research production, which could lead to breakthrough

research, new approaches, crowd-based knowledge production, and expedited discoveries and innovations. YCST will be published in the first quarter of 2021.

44.   In 2020, the Centre prepared a project entitled "Arab women's empowerment for technology and entrepreneurship" (AWETE), in collaboration with the ESCWA Gender Justice, Population and Inclusive Development Cluster, Holdal Group, Tharawat, the International Chamber of Commerce (ICC), and the Global Compact Network Lebanon. The AWETE framework aims to improve the capacity of women-led innovation and businesses in the Arab region to enable them to plan, manage and scale up their projects, in addition to achieving financial sustainability to reduce women's unemployment rates in the Arab region. AWETE will also integrate regional efforts to create a shared vision and mobilize resources for supporting Arab women.

45.   In November 2020, the Centre supported the ESCWA Annotation Project, which established a job monitor that extracts skills from job descriptions in the Arab region. The Centre trained and mobilized 70 young people for three months to work on this project remotely.

D. Entrepreneurship and improving MSME capacity in the Arab region

1. *Meetings*

46.   In 2020, the Centre supported ESCWA meetings and efforts to cooperate and partner with ICC to establish and launch the "ICC-ESCWA Centre of Entrepreneurship" (CoE) on 9 October 2020. CoE is devoted to improving citizens' livelihoods in the Arab region through the following objectives: inspiring future entrepreneurs; digitizing SMEs; and scaling up startups. CoE serves as a platform to scale up the most successful local and regional entrepreneurial initiatives globally. Driven by its various partners and stakeholders, it will connect local entrepreneurs to global markets, enhance SME regulatory conditions to allow them to thrive, develop young people's skills who face uncertain employment prospects, and mentor local startups and entrepreneurs.

47.   In 2020, in cooperation with Cewas Middle East, the Centre co-facilitated the monthly meetings of Green Entrepreneurship Network Jordan. It is an informal network of like-minded green entrepreneurship support actors in Jordan. The network operates as a community of practice, focusing on open exchange, joint learning, and networking. In regular meetings, members exchange experiences and lessons learned. Members also collectively devise solutions for emerging challenges in the sector, and form task forces on issues needing improvement. Network members include over 16 partner organizations and more than 20 individual members.

48.   In 2020, the Centre represented ESCWA at the preparatory meetings of the "Global initiative towards post-Covid-19 resurgence of the MSME sector", which led to a Development Account project in partnership with UNCTAD, the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic Commission for Latin America and the Caribbean (ECLAC), the Economic Commission for Europe (ECE), the Economic Commission for Africa (ECA), UN-Habitat and UNEP.

2. *Workshops and training*

49.   On 15 October 2020, the Centre supported UNCTAD in facilitating a webinar on "Digital and innovative solutions for entrepreneurship and MSMEs resurgence". The webinar identified and analysed the main effects of the pandemic on entrepreneurs and MSMEs, their reactions, and the support they received to face the crisis. The webinar provided an opportunity for an intermediate impact assessment of the disruption, identified a set of priority policies and measures for immediate re-opening for small businesses, and outlined a longer-term social and economic recovery strategy.

50.   On 20 November 2020, the Centre, in collaboration with ICC, conducted the first interactive community workshop of the ICC-ESCWA Centre of Entrepreneurship on the theme "How to inspire future entrepreneurs

in the Arab region", covering the following three main topics: challenges facing SMEs; suggested solutions to those challenges; and community commitment to implement those solutions. The workshop addressed 23 structural challenges facing emerging and developing entrepreneurial markets in the region, and suggested 26 solutions to tackle those challenges.

51.   On 29 and 30 November 2020, the Centre, in collaboration with Sindyan for Entrepreneurship and Development (Jordan), facilitated a series of talks at the International Entrepreneurship Symposium 2020 to promote technology entrepreneurship and regional opportunities for SMEs to access finance and markets.

52.   On 2 December, the Centre, in collaboration with ICC, held the second interactive community workshop of the ICC-ESCWA Centre of Entrepreneurship on the theme "How to digitize SMEs in the Arab region", covering the following three main topics: challenges facing SMEs in digitizing their businesses; suggested solutions to those challenges; and community commitment to implement those solutions. The workshop addressed 33 challenges facing SMEs in digitizing their businesses, and suggested 27 solutions to tackle those challenges.

53.   On 3 December 2020, the Centre, in collaboration with ICC, conducted the third interactive community workshop of the ICC-ESCWA Centre of Entrepreneurship on the theme "How to scale up startups in the Arab region", covering the following three main topics: scale-up challenges facing SMEs; suggested solutions to those challenges; and community commitment to implement those solutions. The workshop addressed 17 challenges facing SMEs in scaling up their businesses, and suggested 28 solutions to tackle those challenges.

3. *Reports and studies*

54.   In October 2020, the Centre supported UNCTAD in reviewing its report entitled "Competition policies to enhance MSME access to markets and competitiveness in the post-COVID era". The report provides a snapshot of current competition and market access challenges faced by MSMEs worldwide, as they deal with the impact of the pandemic on their operations. It focuses on competition-related difficulties caused by the pandemic, the ability to access existing and new markets, regulator responses to the situation that mainly affect MSMEs, and observable trends in the sector. It concludes with several recommendations for future action.

55.   In December 2020, in cooperation with ICC, the Centre produced the first draft of a regional entrepreneurship strategy, based on the outcomes of the three interactive community workshops facilitated by the ICC-ESCWA Centre of Entrepreneurship.

56.   In December 2020, the Centre developed entrepreneurship ecosystem maps for Algeria, Egypt, Jordan and the Sudan to demonstrate the main pillars and actors shaping each country's business environment.

4. *Projects*

57.   In 2020, the Centre submitted a proposal and received approval on a project funded by the United Nations Development Account, entitled "Improving the performance of small and medium-sized enterprises in the Arab region", with a budget of $470,000 for three years (2021-2023). The project will be implemented initially in three Arab countries (Algeria, Jordan and Lebanon) and extended to other Arab countries later on. The Centre will cooperate with UNCTAD, OICT, ICC and several clusters at ESCWA to implement the project. Based on the initial approval, the Centre prepared all related project management documents and designed an implementation plan.

58.   In 2020, the Centre and other entities led the ESCWA contribution to the Development Account project entitled "Global Initiative towards post-Covid-19 resurgence of the MSME sector", which aims to strengthen the capacity and resilience of MSMEs in developing countries and economies in transition in view of the global pandemic, and assist in identifying and tapping new entrepreneurship opportunities to facilitate post-pandemic

recovery, including focusing on the most vulnerable groups such as women and young people. The project will be implemented in three phases and extended to the end of 2021. The project's participating agencies are UNCTAD, DESA, the five United Nations regional commissions, UN-Habitat and UNEP, in close cooperation with United Nations country teams the United Nations Resident Coordinator System, using the newly established United Nations Economists Network as a productive results-oriented tool. The Centre and the ESCWA Strategy, Planning, Accountability, Results and Knowledge Section (SPARK) secured almost $360,000 from this project to support MSMEs and government agencies in the Arab region.

59.   In 2020, in collaboration with OICT, the Centre established the first phase of the MSMEs Toolbox. The project aims to develop online tools to facilitate and accelerate access to information and services needed to launch projects and build businesses. The portal includes nine sections representing the main supporting themes for different beneficiaries, as follows: an online accelerator, a cooperation zone, a talent pool, a marketplace, a learning hub, access to finance, enabling environment, events and initiatives, and women's empowerment. Each section consists of several integrated partitions, supported by different knowledge and tool kits.

60.   In 2020, in collaboration with the ESCWA Governance and Conflict Prevention Cluster, the Centre prepared a concept note entitled "An enabling environment for private sector development" as part of an economic development project in Yemen.

II. Advisory services

61.   In 2020, in collaboration with the ESCWA Food and Environment Policies Section, the Centre provided several advisory services to the Jordanian Ministry of Agriculture and Ministry of Environment by reviewing national strategies, assessing technological capacity, and recommending actions to adapt to the pandemic.

62.   In 2020, in collaboration with the ESCWA Statistics, Information Society and Technology Cluster, The Centre provided several advisory services and technical support to the Qatari Ministry of Transport and Communication to building capacity on digital transformation.

63.   In 2020, the Centre supported the design of the capacity development workshop for the Lebanese Ministry of Labour on the role of ICT in creating employment opportunities, as conceived by the ESCWA Gender Justice, Population and Inclusive Development Cluster, and the Statistics, Information Society and Technology.

64.   In 2020, in collaboration with the ESCWA Governance and Conflict Prevention Cluster, the Centre provided a conceptual approach for building an enabling environment for private sector development in Yemen.

65.   In the period 2020-2021, in collaboration with ESCWA Gender Justice, Population and Inclusive Development Cluster, the Centre will provide advisory services and technical support to the Sudanese Government in the fields of entrepreneurship and microfinancing.

III. Partnerships

66.   The Centre has forged various partnerships through its work activities with government and private institutions, civil society, and several regional and international organizations, to increase the impact of its normative activities, such as reports, studies and joint proposals, and improve the efficiency of services provided to member States. Partnerships can be long or short term, and some have a broader scope than others. The table below sets out those institutions and organizations.

**Institutions and organizations that partnered with the Centre to implement its activities
over the period 2019-2020**

Institution/organization	Country
Royal Scientific Society	Jordan
Higher Council for Science and Technology	Jordan
Ministry of Planning and International Cooperation	Jordan
Ministry of Agriculture	Jordan
Ministry of Higher Education and Scientific Research	Jordan
Ministry of Environment	Jordan
Princess Sumaya University for Technology	Jordan
Jordan University of Science and Technology	Jordan
Zewail University for Science and Technology	Egypt
Egypt-Japan University of Science and Technology	Egypt
Academy of Scientific Research and Technology	Egypt
Global Compact Network Lebanon	Lebanon
American University of Beirut	Lebanon
AMIDEAST Lebanon	Lebanon
Berytech	Lebanon
National Council for Scientific Research	Lebanon
Ministry of Energy and Water	Lebanon
Middle East Desalination Research Centre (MEDRC)	Oman
National Research Council	Oman
National Centre for Scientific and Technical Research	Morocco
University of Science, Technology and Medicine	Mauritania
National Agency for the Advancement of Scientific Research	Tunisia
Authority of National Science Research and Technology	Libya
Central Bank of Sudan	Sudan
Ministry of Social Development and Labour	Sudan
Africa City of Technology	Sudan
Union of Arab Scientific Research Councils	Sudan
Ministry of Higher Education and Scientific Research	Yemen
Oxford University	United Kingdom
Global Institute for Water, Environment, and Health (GIWEH)	Switzerland
International Centre for Water Management (Cewas)	Switzerland
Swiss Federal Institute for Science and Technology	Switzerland
University of Zurich	Switzerland
Swiss Arab Entrepreneurs Platform	Switzerland
Technische Unversität Berlin	Germany
Fraunhofer Centre for International Management and Knowledge Economics	Germany
Reiner Lemoine Institute	Germany
Arab Industrial Development and Mining Organization (AIDMO)	League of Arab States

Institution/organization	Country
Arab League Educational, Cultural and Scientific Organization (ALECSO)	League of Arab States
Sustainable Development Department and International Cooperation	League of Arab States
West Asia-North Africa (WANA) Institute	Regional
Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA)	Regional
International Chamber of Commerce	International
International Centre for Agricultural Research in the Dry Areas	International
DESA, UNCTAD, UNEP, UN-Habitat, UN-Women, UNFPA, ESCAP, ECLAC, ECE, United Nations Volunteers, UNICEF, OHCHR, OICT, CTCN	United Nations

IV. Meetings of the Board of Governors of the ESCWA Technology Centre

67.   Member States appointed representatives to the Board of Governors of the ESCWA Technology Centre for the period 2018-2021, as set out in the annex to the present document. The ninth Board of Governors meeting will convene online in February 2021.

V. Meetings of the Technical Committee of the ESCWA Technology Centre

68.   The Centre's Technical Committee held its seventh meeting in Amman on 29 July 2019. It was attended by 123 experts from 18 Arab countries, representing academia, research institutions, ministries, industry, non-governmental organizations, entrepreneurs, and other United Nations organizations, in addition to regional and international organizations. Participants discussed the Centre's programme of work for 2019 and 2020. They stressed the need to focus on resource mobilization to pilot and support research on the transfer and adaptation of green technologies, and to develop a regulatory environment to provide incentives for the use of green technologies; and stressed the importance of involving local communities at an early stage, and ensuring access to related employment opportunities to transform into circular economies. The Technical Committee made several recommendations, notably to establish an interactive platform to support green technology development and adaptation, entrepreneurship and innovation, and derived key messages to assist the Centre in developing its 2020 work programme that would be further reviewed and discussed by the Board of Governors at its next regular meeting.

69.   The Centre's next Technical Committee meeting will be held online in February 2021.

Annex[*]

Members of the Board of Governors of the ESCWA Technology Centre
for the period 2018-2021

State	Name	Job title	Organization
Jordan	HRH Princess Sumaya bint El Hassan	President	Royal Scientific Society
Iraq	Mr. Husain Dawoud	Director-General, Sectors' Planning Directorate	Ministry of Planning
Kuwait	Ms. Samira Alsayed Omar	General Manager	Kuwait Institute for Scientific Research
Lebanon	Dr. Mouin Hamze	Secretary-General	National Council for Scientific Research
Libya	Mr. Abulgasem Al Mashai	Senior Researcher	Authority of National Science Research and Technology
Mauritania	Mr. Ahmed Salem Etvagha	Director, Social Register General Direction of Development policies and strategies	Minister of Economy and Finance
Morocco	Mr. Mohammed Hajroun	Director of Electricity	Ministry of Energy, Mines and Sustainable Development
Oman	Mr. Obaid Al Saeedi	Director of Programs Department	The Research Council
State of Palestine	Mr. Mohammad Bader	Policy and Strategic Planning Department	Ministry of Telecom and Information Technology
Sudan	Mr. Ahmed Hassan Fahal	President, Scientific Research and Innovation Authority	Ministry of Higher Education and Scientific Research
Syrian Arab Republic	Ms. Fadia Sulaiman	Director General, National Agency for Network Services	Ministry of Communications and Technology
Tunisia	Mr. Mounir Farikha	Professor of Higher Education	Education, Higher School of Communication of Tunis
Yemen	Dr. Yahya Al Rewi	President	National Information Center

-----

_____

[*] Issued as submitted.