



**ECONOMIC AND SOCIAL
COUNCIL**

Distr.
LIMITED
E/ESCWA/ICTD/2011/WG.3/Report
7 July 2011
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

REPORT

EXPERT GROUP MEETING ON PROMOTION OF SOUTH-SOUTH COOPERATION IN TECHNOLOGY TRANSFER AMMAN, 20-21 APRIL 2011

Summary

The Expert Group Meeting on Promotion of South-South Cooperation in Technology Transfer was held in Amman from 20 to 21 April 2011.

Organized in collaboration with the Royal Scientific Society of Jordan, the meeting discussed priority areas of cooperation in technology transfer and provided participants with the opportunity to share best practice for cooperation with successful technology transfer case studies in the areas of water, energy, agricultural land, information and communication. The topics covered (a) ESCWA Technology Centre; (b) Thematic areas of priority for technology transfer in the sectors of water, energy, agricultural land, and information and communication; and (c) Case studies of technology transfer that convey successful practices and cooperation mechanisms.

Participants agreed on a number of recommendations related to the thematic areas of the meeting; Developing a mechanism to reach the beneficiaries of the ETC and a plan for sustained funding; Promoting the impact of technology for water use efficiency, especially in agriculture; Promoting legislations and awareness programmes for the efficient use and conservation of energy. Adopting and deploying ICTs and identifying ICT priorities in different areas; Promoting the development of a regional information system for natural resources; Compiling appropriate technology selection and transfer models, and conducting related foresight studies for the region; Partnering with local communities and collaborating with southern centres specialized in science, technology and innovation systems and related policymaking for socio-economic development.

The meeting was attended by 32 participants including experts in technology transfer business modelling and mechanisms and in the thematic focus areas of the meeting, from academic institutions and research centres, as well as governmental and non-governmental institutions.

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Introduction

1. South-South cooperation is part of the mandate of the Economic and Social Commission for Western Asia (ESCWA), to promote regional and interregional cooperation and collaboration. The work of ESCWA is aligned with the Nairobi outcome document of the High-level United Nations Conference on South-South Cooperation, adopted by General Assembly resolution 64/222, which “Call[ed] upon the United Nations funds and programmes and invite[d] the specialized agencies to continue to enhance the capacities of developing countries to develop and formulate development cooperation programmes, strengthen the capacities of regional and subregional organizations and conduct research to identify areas where support for South-South cooperation will have the greatest impact”.¹
2. In recent years, South-South cooperation has taken many forms including the Group of 77 developing countries, the Organization of Petroleum Exporting Countries (OPEC), the Non-Aligned Movement, the Association of Southeast Asian Nations (ASEAN), the Organization of the Islamic Conference (OIC), the League of Arab States and the United Nations regional commissions. Such collaboration platforms have invariably been driven by a clear vision of mutual benefit and guided by the principles of respect for national sovereignty and independence. Developing countries tend to face similar development challenges and thus need to create and implement common development strategies and priorities. While traditional economic relationships and networks still have a part to play, South-South cooperation can both supplement them and complement North-South cooperation.
3. It is important to recognize that South-South cooperation is based on a multi-stakeholder approach, including civil society, the private sector, Governments and other actors. Among the areas that pose a challenge and opportunity is the technology transfer and deployment for reaching the development goals of the countries. Hence, regional forums for transferring technology: Consortium on Science, Technology and Innovation (STI) for the South; Technology Exchange Forum by the Standing Committee on Scientific and Technological Cooperation of the 57-member Organization of the Islamic Conference; Egyptian Fund for Technical Cooperation with Africa; India’s Pan-African e-Network Project; United Arab Emirates in the field of renewable and alternative energy and clean technology; United Nations ESCAP Technology Transfer Centre in India; and others.
4. The fifth meeting of the ESCWA Consultative Committee on Scientific and Technological Development and Technological Innovation (Beirut, 29-30 March 2010)² recommended that the ESCWA Technology Centre activities connect with “global and regional initiatives to support country-based technology transfer by supporting needs assessment, facilitating information exchange and providing capacity-building services”. The Committee also recommended that the activities of Information and Communications Technology (ICT) of ESCWA consider technology transfer to support climate change mitigation and adaptation measures. Furthermore, the 2009 Arab Plan of Action for Science and Technology³ that identified the region’s priorities in science and technology, promoted intraregional cooperation on technology transfer projects towards the implementation of the Arab Plan of Action. In addition, technology transfer has been considered to be among the priority areas for sustainable development in the region,⁴ as iterated in a number of Arab declarations, including the Arab Declaration to the World Summit on Sustainable Development (2002).

¹ Nairobi Outcome Document, <http://southsouthconference.org/wp-content/uploads/2010/01/GA-resolution-endorsed-Nairobi-Outcome-21-Dec-09.pdf>.

² <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1248E>.

³ UNESCO and ALECSO, 2009, *Arab Plan of Action for Science and Technology* (in Arabic), available at <http://www.unesco.org/science/psd/focus/focus09/astpa.pdf>.

⁴ ESCWA, 2003, *Governance for Sustainable Development in the Arab Region: Institutions and Instruments for Moving beyond an Environmental Management Culture*, E/ESCWA/SDPD/2003/8, Table 4, p. 8.

5. The Information and Communication Technology Division (ICTD) organized the expert group meeting on Promotion of South-South Cooperation in Technology Transfer, and chose to address technology transfer in the areas of water, energy, agricultural land, and information and communication. The meeting discussed priority areas of cooperation in technology transfer with the highest impact, shared best practice for cooperation with successful technology transfer case studies.

6. The meeting was attended by 32 participants including experts in technology transfer business modelling and mechanisms and in the thematic focus areas of the meeting, from academic institutions and research centres, as well as governmental and non-governmental organizations.

I. RECOMMENDATIONS

7. Based on the meeting discussions, the following recommendations were proposed:

(a) Developing mechanisms to reach the beneficiaries of the ESCWA Technology Centre, as well as a plan for sustained funding correlated with success indicators;

(b) Promoting the impact of technology on water use efficiency, especially in agriculture, and harnessing traditional water harvesting and management knowledge;

(c) Promoting legislations and awareness programmes for the efficient use and conservation of energy, especially in the transport sector;

(d) Building capacity in renewable energy and energy saving technologies, and addressing problems of renewable energy systems through research and development towards more affordable solutions, as well as developing a regional atlas of wind and sun energy maps, towards promoting integration and cooperation in the region;

(e) Developing a roadmap of ICT application priorities in the areas of water, energy, environment, agriculture, industry and education;

(f) Adopting ICTs as efficient, fast and affordable tools for transferring technologies in various areas of interest;

(g) Promoting the development of a regional information system with mapping capability for the region's natural resources, namely water, energy, and agricultural land;

(h) Deploying ICT and media technologies in educating, surveying, and monitoring of water;

(i) Developing databases of best practice in technological applications in water and energy saving methods; and successful cases of technology transfer among southern countries;

(j) Developing a directory of green economy factor with the appropriate definitions and studies of potential impacts on the regional development;

(k) Deploying technology in spreading of agricultural knowledge towards higher productivity and in the agricultural value chain towards strengthening marketing;

(l) Developing appropriate technology selection and transfer models that includes knowledge along with equipment for the region;

(m) Establishing partnerships with local communities targeted by scientific research projects as the knowledge is exchanged in a two-way process;

(n) Collaborating with southern centres that are specialized in capacity-building for science, technology and innovation (STI) systems and related policymaking for socio-economic development;

(o) Disseminating successful lessons and failures from South Korea and similar developing countries as they are becoming developed nations;

(p) Conducting studies related to appropriate technology foresight for the region, and technology transfer process between North and South countries, towards producing and rooting appropriate technologies with interest in multiplier effects, and cooperating with South countries as South to South cooperation complements rather than negate North to South counterparts;

(q) Developing technology transfer success criteria and indicators taking into consideration direct, indirect, short and long-term impact.

II. PRESENTATIONS AND DISCUSSIONS

8. Meeting presentations covered the following principal themes: (a) ESCWA Technology Centre; (b) Thematic areas of priority for technology transfer in the sectors of water, energy, agricultural land, and information and communication; and (c) Case studies of technology transfer that convey successful practices and cooperation mechanisms. The sessions included discussions covering the addressed themes, case studies and the meeting recommendations. The presentations and deliberations are summarized below.

A. ESCWA TECHNOLOGY CENTRE

9. In this session, Mr. Fouad Mrad, Executive Director a.i. of the ESCWA Technology Centre (ETC), delivered a presentation on the ETC, covering: Establishment of the Centre; major regional needs and competitiveness ranking; constraints facing Arab countries in STI and R&D; existing promising potentials in the region; and ETC mission, objectives, activities, organizational structure of work, domains of attention, contributions and funding schemes.

10. The process leading to the establishment of the Centre started from the first United Nations commitment in 2005 and the approval of its establishment in 2006, to the signing of the Host Country Agreement with the Government of Jordan in December 2010. The highlighted major regional needs include, job creation for skilled youth, governance of finances to meet development needs, acquisition of STI capabilities and benchmarking STI progress, identification of priorities and diffusion of best practice, facilitation of agricultural and industrial growth and competitiveness, and improving management of natural resources and environment.

11. The constraints facing Arab countries are associated with the technology policies, published data on STI and R&D, together with the lack of application rather than availability of laws and policies. On the other hand, the region has promising potentials in R&D that could be utilized for connecting between researchers and scientists capacities with the community development needs. Currently, STI investments in the region rarely meet expectations, and local research efforts published in international journals often have limited impact on the region.

12. The ETC aims to strengthen national STI systems, developing capabilities in solving problems and formulating policies, and fostering synergy and complementarities at the regional level in the application of technology. The work of the Centre tries to integrate efforts between stakeholders in the region, and connect the need and supply through ICT and virtual market. The domains of attention of ETC include the construction industry and industrial technologies, energy, ICT, agriculture and water. The funding of the Centre is secured from contributions of ESCWA and institutions of the Host Country Jordan, as well as from annual contributions by member countries, contributions from direct beneficiaries, partnerships with regional and international programmes and other sources approved by the ETC Board of Governors.

B. WATER

13. The first presentation in this session was entitled “Water Saving Technologies” and delivered by Mr. George Nasr, First Economic Affairs Officer, Sustainable Development and Productivity Division (SDPD), ESCWA. Within the context of addressing the main issues of concern in the twenty-first century, namely water pollution, access to freshwater, and the depletion of natural resources, the speaker considered water saving as a prime development concern and water saving technologies a vital need. The presentation outlined how the natural water cycle is affected by the socio-economic water cycle; then, discussed the various water saving technologies, showing how these technologies address the need to conserve, reuse, monitor, and manage this precious resource. The presenter outlined the future outlook and trends in water saving technologies, and described the water-energy nexus and its implications going forward.

14. A case study entitled “Real-time water quality monitoring system” (in Arabic) was the second presentation in the session, and delivered by Ms. Fida’a Jibril, Environment Monitoring and Research Central Unit (EMARCU) of the Royal Scientific Society (RSS) of Jordan. The purpose of the project was to collect and make available water quality data from a real-time monitoring system (RTMS) and from national water-testing laboratories, with an ultimate objective of public health and environmental protection and sustainability. The main objective of the RTMS project lies in providing a data platform for national water quality of the major surface water resources in Jordan, which can be accessible through the Internet, to help improve decision-making in the water and environment sectors.

15. The third presentation was a case study entitled “Using Geographic Information System (GIS) in Water Harvesting” and delivered by Ms. Manal Dawoud Salih, Director of Water Harvesting Unit in the Sudanese Ministry of Irrigation and Water Resources. The speaker overviewed a water harvesting project implemented in Wadi Sira in North Darfur, a semi-arid zone affected by water shortage and in need for balancing the short water supply with the demand. Work involved the integration of GIS with remote sensing for mapping the water basin and establishing a database for drainage system, and for identifying the basin and sub-basin for water harvesting. Following the traditional rainwater harvesting, efforts were directed to water harvesting techniques for catching water in times of flood. These techniques are not only based on annual rainfall, but also on terrain, soil permeability and land use. In this context, contour mapping is very essential in quantifying run-off water. With an impermeable surface, run-off flows immediately on the surface, whereas on a permeable surface, run-off occurs after the surface is saturated.

C. ENERGY

16. The first presentation in this session was entitled “Renewable Energy and Energy Efficiency Technologies” and delivered by Mr. Ziad Jaber, Economic Affairs Officer, SDPD, ESCWA. After an overview of the energy sector in the ESCWA region, the speaker emphasized the need for adopting renewable energy and energy efficiency technologies for enhancing sustainability, improving energy access and security of supply, as well as reducing the energy bill and subsidies, and contributing to climate change mitigation. Adoption of these technologies would reduce fuel dependency, and subsequently reduce fuel imports for energy importing countries and increase exports for oil and gas producing countries.

17. The shares of the different energy sources in the total primary energy supply were highlighted, as well as the shares of the different sectors in the total energy final consumption. The speaker profiled the renewable energy and energy efficient technologies and their potentials in the Arab region, and presented a comparative current and future cost of these technologies, as well as the strategies and projects related to renewable energy in the Arab region. Moreover, focusing on components of energy efficiency projects can be used in the transport, industry, households and buildings sectors.

18. Finally, the presentation addressed the challenges facing the deployment of renewable energy and energy efficiency measures, as well as the technology know-how build-up in the ESCWA region and the role of the Governments, private sector, and international and regional organizations in technology transfer and

sharing. A summary of related ESCWA activities and publications was also given, and the presentation concluded with an emphasis on the need for an affordable access to energy and to reduce carbon dioxide emissions, and for the adoption of solutions that suit local and regional needs.

19. Ms. Tala Awadallah, Architectural Studies Division, Building Research Centre, Royal Scientific Society, gave the second presentation in this session, namely a case study entitled “Green building guidelines for Jordan”⁵ (in Arabic). Approved in 2010 by the Jordan National Building Council, the Green Building Guideline and Rating System prepared for Jordan was referenced to as Building Codes. The guideline contains 38 codes and seeks to clarify the criteria for meeting sustainability requirements in buildings and their evaluation in Jordan. For each criterion, there are compulsory, committing and voluntary requirements for the design and construction of green buildings, covering architectural, civil, mechanical and electrical designs. The compulsory requirements receive 30 per cent of the grading and the choice based requirements enable going to higher grades. Furthermore, the parameters and criteria in the guidelines are adapted for Jordan’s climate, resources, legislation, policies and their instruments, building techniques and strategies. The guideline is coupled with a voluntary rating system that is connected to an incentive scheme given by the Government.

20. With a profound impact of buildings on the environment, economy, health and productivity, the guideline evaluates green building designs in six key areas, including water and energy efficiency that are of importance in Jordan and receive the highest weight in the scoring system. The six areas and their allocated points are as follows: green building management, 6 per cent; site sustainability, 8 per cent; water efficiency, 35 per cent; energy efficiency, 33 per cent; healthy indoor environment, 8 per cent; and materials and resources, 10 per cent. The energy efficiency chapter in the guidelines contains a number of criteria: building envelope, renewable energy, HVAC system, measurements, water heating, lifts and escalators, electric lighting, and electric power.

D. INFORMATION AND COMMUNICATION

21. Mr. Yousef Nusseir, Director, ICTD, ESCWA delivered the first presentation entitled “ICT as an Enabler for Technology Transfer”, in which he highlighted the importance of ICT in technology transfer activities. The presentation covered the modalities of technology transfer, identification of candidates, income deviation analysis and opportunities as well as the factors for a successful technology transfer.

22. The modalities of technology transfer go through the stages of research, development, manufacture and sales, and the process must be customized to the conditions of both donor and recipient countries. When partners have similar challenges and different development levels, there is an opportunity for technology transfer. Also, there are possible partnerships when there are considerable but not overwhelming income disparities. Although the transfer between similar countries is more likely to succeed, it is less likely to deliver dramatic benefits.

23. For successful technology transfer, there are many factors involved, yet importance particularly lies in the absorptive capacity. The ICT capabilities are essential both directly as transferred technology and indirectly as an enabler for South-South cooperation. Furthermore, ICT narrows the development gaps between partners. The direct transfer of ICT is often an activity, with an increasing number of regional and bilateral South-South information technology cooperation agreements.

24. As an enabler, ICT promotes communication to enable absorptive capacity and successful technology transfer. Giving examples of technology transfer, in terms of software and hardware, the question raised was whether countries in the region are producers or users. The technology transfer is not only about products, but also covers the transfer of business processes and gained knowledge, and the process of technology

⁵ Tala Awadallah, Shamel Habet, Amani Mahasneh from the Royal Scientific Society, and Haitham Adas from the National Energy Research Centre, Jordan.

transfer should look into the processes and the utilization of acquired knowledge for the successful deployment of technology.

25. Within the North-South cooperation, licensing and intellectual property rights (IPR) protection is a challenge for many countries in the region, some of which have developed laws to protect IPR, however, it is often that these laws are not all implemented. The brain drain and gain was considered an important technology transfer mechanism, and the region needs to set the right environment to attract foreign educated workers to their home country and benefit the region.

26. The second presentation was a case study entitled “Integrated system for managing hazardous material” (in Arabic), and delivered by Mr. Daher Daher, Acting Executive Director of ICT, Royal Scientific Society in Jordan. The project was transferred and applied in the United Arab Emirates. Hazardous material has damaging impact on the resources and the public safety, and the establishment of an integrated system was essential to control and manage hazardous materials in the region. The project received financial support from the Swiss Agency for Development and International Cooperation, and the system was implemented by the Royal Scientific Society in phases and in cooperation with stakeholders involved in monitoring hazardous material.

27. The objectives of the system were to enable participating institutions to monitor the process of managing hazardous material; profile chemicals that are considered hazardous; and make the system information available online for the public and decision makers to know about existing material and whether they are restricted or forbidden. The integrated management system of hazardous material was connected with the border customs system in Jordan that studies the material and classifies its use in the management cycle.

E. AGRICULTURAL LAND

28. Mr. George Nasr of ESCWA SDPD also delivered the first presentation in this session, entitled “Technologies for Sustainable Land Management”. Since the emergence of civilization in the Middle East region, people have been farming the land. Through irrigation and pumping from underground water, higher production was enabled and depletion of ground water resources became a risk. Also land was worked through tilling. Through time, the accumulated strain on the region’s land led to degradation and often exacerbated desertification trends. This was accelerated over the course of the twentieth century, as ill adapted technical “innovations” brought about damaging practices, and reinforcing a vicious cycle of land degradation and desertification. The presentation showed how this cycle of land degradation can be turned into a virtuous cycle with the adequate application of local and traditional knowledge in the right context, in addition to modern technologies.

29. Mr. Mohamad Al Oun, Researcher, National Centre for Research and Development, gave a presentation entitled “Ecosystem Restoration to Secure Water and Food in the Arid Areas in Jordan: Tal Remah case study”. The speaker highlighted the challenges and constraints related to dry areas, water scarcity, food security, and ecosystem sustainability. The need was to conduct research that will contribute to providing policymakers with recommendations to develop national policies for efficient water use and food production. The Tal Remah case study involved a community-based approach for achieving food security using the *Hima* system; the approach sought to restore al-Badia ecosystems with the participation of local communities in the identification of problems and solutions, site selection and utilization of appropriate land management and water harvesting techniques, as well as in the choice of plant species for the restored area and the intended use by livestock owners.

30. The case study area has dry and degraded land, and the project activities of water conservation and suitable planting changed its situation from no cover to green land. The presentation main conclusions were: Cooperation with local communities for water conservation and food security in arid land is possible and vital for the success of similar projects; securing water and food is possible through proper land and water

management techniques, even with low rainfall; drought contingency plans should be prepared to handle the effects of drought.

F. PERSPECTIVE OF INTERNATIONAL AND REGIONAL ORGANIZATIONS

31. A presentation entitled “Role and Programme of International STI Centre (ISTIC) in Enhancing South-South Cooperation” was delivered by Mr. Samsudin Tugiman, Director of the International STI Centre for South-South Cooperation. The speaker gave an overview of the establishment of ISTIC in Kuala Lumpur in 2008, as a category II centre in Malaysia and under the Auspices of UNESCO. The establishment of the Centre was a follow up to the Doha Plan of Action, adopted in 2005 by the Head of States and Governments meeting in Qatar for the Second Summit of the Group of 77.

32. Since its establishment, the Centre had formulated and implemented programmes focusing on the following: STI policy for development; STI capacity-building, institutional and human resources, in South countries; Collaborative initiatives with existing STI networks, especially in the South; the focus areas of 2002 World Summit on Sustainable Development (WSSD), namely water, energy, health, agriculture and biodiversity (WEHAB); and new technologies for development. The presentation briefed on the main objectives of the Centre, and highlighted the programmes for 2010-2012 and their associated mechanisms of collaboration and implementation in enhancing South-South cooperation.

33. Mr. Ayman El-Dessouki Ibrahim, Chairman of the Egyptian National Authority for Remote Sensing and Space Sciences (NARSS), delivered a presentation entitled “Effectiveness of Technology Transfer in High Tech Projects – the Egyptian Space Program”. With technology transfer constituting an essential component in high-tech projects in developing countries, special considerations need to be taken into account when designing such projects. The presentation addressed some of the issues that assure an effective program for technology transfer in high-tech projects, with the case study of the Egyptian Space Program. A prioritized set of objectives need to be set for the program from its initiation phase and prior to its implementation. Clear contractual obligations need to be spelled out within the contract for technology transfer in order to avoid ambiguities during implementation. Proper selection for the qualification and size of the team who will be trained to acquire the technological knowledge is necessary for successful transfer of knowledge. Considerations for the effect of cultural differences between the social environment at the home and host countries on the trainees have to be taken care of otherwise cultural shocks and language barriers will lead to failure to achieve the required objectives.

34. The session included a briefing on the programmes of the Qatar National Research Fund (QNRF), provided by Mr. Hisham M. Sabir, Program Manager, Engineering and Industry, QNRF, Qatar Foundation. One mandate of Qatar Foundation is to nurture local research and academia to international experiences. Within this framework, the QNRF funds are offered globally and enable cooperation between South-South countries on national research priorities. Funding programmes are available for international collaboration on projects based on competitiveness and merit and include a process of peer review. The speaker elaborated on the budget allocated and the proposals funded in the Arab region, which include projects in many universities in Egypt, Jordan, Lebanon, Tunisia, and other countries.

G. DISCUSSION

35. Summarized below are the discussions of the meeting, experts made suggestions for consideration and shed light on areas that might need special attention in the follow-up process.

36. The role of ESCWA Technology Centre (ETC) in the region was discussed, it was emphasized that the Centre is a cooperative rather than an implementation body. The work programme of the Centre is geared towards selecting what is most important and of highest impact for sustainable development in the region. Efforts include networking between the different economic sectors, linking research to meet local needs, and matching potential solutions to the existing problems.

37. Activities of the Centre include supporting STI efforts in the region, fostering ICT for development, with the establishment of a virtual technology innovation. Exchange market for matching supply and demand through the use of ICT tools. The financing mechanism is basic in the strategy of the ETC, which will be proposed for consideration by the ETC Board of Governors. The Centre was and will sustain through seed money and in-kind contributions.

38. Emphasis was placed on the importance of harmonizing indicators with international standards. It was underlined, for example, that inventions are not registered or protected in the region in view of the lack of intellectual property rights system.

39. Experts considered that water management in the region includes the pressing element of disputes over shared water resources, and that there is interest in water condensation that has significant potentials. The need to better utilize solar and wind energy was stressed.

40. For water saving, the agriculture sector needs special focus as it is the major consumer of water. For better water resource management, maps, figures and statistics are needed to reflect the real situation. The establishment of a database of projects, accessible to the public, was considered important for sharing and coordination of experiences and for avoiding the duplication of activities. It was also suggested to include education in the cooperation work for educating the public on critical water usage habits.

41. The implementation of green building codes related to energy and water was emphasized, as well as the need in the region for a renewable energy resource map. Participants stressed the need for cooperation on technology transfer that is adaptable to local conditions with mutual benefits to all partners.

42. The need for legal reforms to promote the ICT industry and high speed connectivity in the region is highlighted, and efforts on content development and setting priorities for ICT industries could increase the share of the region in the ICT economy. The need to target and support research and development in the region was also raised, with a view to combine public and private efforts to enhance the reference of research in meeting local needs.

43. Experiences on sustainable agriculture projects were shared, and emphasis was made on the adoption of community-based and participatory approach in projects.

44. The concept of Green Economy was discussed, and the need was raised to translate its benefits in the region and identify the role of the high-technology in its framework. With emphasis on cooperation, participants stand that care should be taken to prevent the green concept abuse in protectionism that might add to unfair trade limitations. Furthermore, the quality in agriculture produce was considered of significant importance for avoiding market restrictions within the green economy.

III. ORGANIZATION OF WORK

A. VENUE AND DATE

45. The meeting was held from 20 to 21 April 2011 at the premises of the Royal Scientific Society in El Hassan Science City, Amman, Jordan.

B. OPENING

46. Mr. Yousef Nusseir, Director, ICTD, ESCWA, gave an opening statement in which he welcomed participants to the first official activity of the ESCWA Technology Centre that was held in collaboration with the Royal Scientific Society, the natural host for the Centre considering its long standing work in research, testing and scientific and industrial applications. Mr. Nusseir considered the establishment of the Centre a

live substantiation of regional cooperation, and highlighted the persisting need to modernize and develop the economies in the region with reliance on effective technology transfer among the countries.

47. Referring to the prevailing period of major economic changes affecting the entire world, and to the rapid changes and political reform facing some Arab countries, Mr. Nusseir emphasized the importance of economics in political and social stability and security, and stressed the need to attend to the youth capabilities in the region and the creation of suitable employment opportunities.

48. With the technology transfer process defined as the transfer of technical knowledge and property from the owner/producer to the receptor/consumer, Mr. Nusseir added that the two sides could constitute models of cooperation at local, regional and South-South levels with the participation of many parties. The existing potentials and knowledge of countries in the South can significantly impact economic and social development, and many successful models for technology transfer exist and were based on decades of experience.

49. For benefiting from these experiences it would be best to formulate a clear strategy for each case, following an assessment of the needs and identification of partners, and with emphasis on planning and implementation that takes into account technology transfer period, adoption, sustainability and use. The successful cooperation between South countries is based on several elements, such as skilled and qualified employment, telecommunications, finance where the technology transfer process is a fundamental pillar for building trust and long-term productive collaboration in all areas.

50. Mr. Tareq Al-Hadid, Executive Director for External Affairs of the Royal Scientific Society also gave a statement, providing statistical information on the region related to STI and spending on Research and Development. He overviewed the situation of Jordan in terms of water and energy, noting that the annual water availability lies at less than 150 m³ per person, which is much less than the annual need of 500 m³ per person of the poverty line. With the gap between availability and need, technologies for efficient water use and treatment for reuse is needed. In the energy sector, Jordan imports 96 per cent of the energy needs, and it is essential to have better and more efficient use of energy.

51. In 2007, he added, El Hassan Science City (EHSC) was launched, encompassing in its framework the Higher Council for Science and Technology, the Royal Scientific Society, El Hassan Business Park, and Princess Sumaya University for Technology. The aim was for these bodies to work together towards strengthening STI, for improving the quality of people's lives through scientific education, research, development and enterprise in the fields of ICTs, clean technologies and human safety and security. Mr. Al-Hadid also highlighted the interrelation between the objectives of EHSC and the themes of the meeting.

C. PARTICIPANTS

52. The meeting was attended by 32 participants including experts in technology transfer business modelling and mechanisms and in the thematic focus areas of the meeting, from academic institutions and research centres, as well as governmental and non-governmental organizations. Participants included representatives of institutions that are responsible for implementing sectoral policies and strategies, and managers from financial institutions that work closely with businesses. Participants were from Egypt, Iraq, Jordan, Lebanon, Malaysia, Palestine, Qatar, Saudi Arabia, and the Sudan.

D. DOCUMENTS

53. The documents submitted to the meeting are contained in annex II of this report and available on the ESCWA web page for the meeting.⁶

⁶ <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1441E>.

Annex I*

LIST OF PARTICIPANTS

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Annex II

LIST OF DOCUMENTS

Title	
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(a)	Background documents:
	<ul style="list-style-type: none">- Information Note (English)- Agenda (English and Arabic)
(b)	Presentations:
	<ul style="list-style-type: none">- ESCWA Technology Centre, Fouad Mrad- Water Saving Technologies, George Nasr- Case study: Real-time Water Quality Monitoring System (in Arabic), Fida'a Jibril- Case study: Using GIS in Water Harvesting, Manal Dawoud Salih- Renewable Energy and Energy Efficiency Technologies, Ziad Jaber- Case study: Green Building Guidelines for Jordan (in Arabic), Tala Awadallah- ICT as an Enabler for Technology Transfer, Yousef Nusseir- Case study: Integrated System for Managing Hazardous Material (in Arabic), Daher Daher- Technologies for Sustainable Land Management, George Nasr and Fidele Byringiro- Case study: Ecosystem Restoration to Secure Water and Food in the Arid Areas in Jordan: Tal Remah, Mohamad Al-Oun, Raed Al-Tabini- Role and Programme of International STI Centre (ISTIC) in Enhancing South-South Cooperation, Samsudin Tugiman- Effectiveness of Technology Transfer in High Tech Projects – the Egyptian Space Program, Ayman El-Dessouky
