



Economic and Social Commission for Western Asia (ESCWA)

REPORT

WORKSHOP ON SCIENCE, TECHNOLOGY AND INNOVATION OBSERVATORIES IN ESCWA MEMBER COUNTRIES

PHASE I: TOWARDS THE ESTABLISHMENT OF NATIONAL AND REGIONAL STI OBSERVATORIES BEIRUT, 11-12 NOVEMBER 2009

Summary

Science, technology and innovation (STI) observatories are increasingly considered an essential institutional endeavour aimed at providing policymakers in the region with the basic information and strategic analysis for drafting and adopting effective development-oriented policies and plans of action.

The ICT Division of ESCWA organized the Workshop on Science, Technology and Innovation Observatories in ESCWA Member Countries – Phase I: Towards the Establishment of National and Regional STI Observatories (Beirut, 11-12 November 2009). The two-day Workshop involved the participation of high-level decision makers and experts in STI methodologies and policies, and aimed at assessing the impact of STI on socio-economic development, and at highlighting the role of STI observatories and the methods for their establishment. Guidelines for setting up national and regional observatories were discussed as well as the fostering of regional cooperation among STI policymakers in the region.

The Workshop was attended by 20 participants from Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, the Sudan and the Syrian Arab Republic. Deliberations resulted in a number of recommendations related to the following: (a) building appropriate STI capacities that enable the attainment of poverty reduction and local economic development; (b) fostering entrepreneurship that contributes to STI capacities; (c) ensuring strong political support and consent of stakeholders as the starting step for establishing STI observatories; (d) establishing a well-defined plan of work and implementation based on available and necessary resources; (e) allocating the necessary financial resources that meet the needs of observatories; (f) promoting cooperation and partnerships that enable pooling of resources and sharing of information and experiences among stakeholders; and (g) connecting STI observatories with appropriate regional and international structures.

CONTENTS

| | <i>Paragraphs</i> | <i>Page</i> |
|---|-------------------|-------------|
| Introduction | 1-5 | 3 |
| <i>Chapter</i> | | |
| I. RECOMMENDATIONS | 6 | 3 |
| II. PRESENTATIONS AND DISCUSSIONS | 7-50 | 4 |
| A. Impact of STI on socio-economic development in the Arab States | 8-12 | 4 |
| B. Guidelines for setting up STI observatories | 13-15 | 5 |
| C. Status of STI data collection in ESCWA member countries | 16-35 | 5 |
| D. Towards a regional STI observatory | 36-38 | 8 |
| E. Round table on guidelines for setting up national STI observatories | 39 | 9 |
| F. Round table on practical steps to establish a regional STI observatory | 40-42 | 10 |
| G. Discussions | 43-50 | 10 |
| III. ORGANIZATION OF WORK | 51-57 | 11 |
| A. Venue and date | 51 | 11 |
| B. Opening | 52 | 11 |
| C. Participants | 56 | 12 |
| D. Documents..... | 57 | 12 |

LIST OF ANNEXES

| | |
|------------------------------|----|
| I. List of participants..... | 13 |
| II. List of documents | 15 |

Introduction

1. Science, technology and innovation (STI) are recognized as essential strategic components in the process of promoting sustainable development in nations. They play a major role in poverty reduction within an increasingly globalized world wherein free trade and knowledge-based economies intensify the role of STI in economic growth and competitiveness. In turn, the significant role of STI has spurred the need for data collection and analysis and the adoption of appropriate indicators that imply reliable facts and figures. STI observatories can provide policymakers in the region with the basic information and strategic analysis for planning development, including the issuance of evidence-based policies and strategies leading to effective socio-economic development.
2. Statistics and performance indicators are necessary tools in the evaluation of the various stages of STI performance. They are crucial for monitoring scientific and technological developments, determining global technological trends, conducting foresight exercises and identifying specific areas of investment. These indicators are also essential for the formulation and implementation of STI policies and strategies, and can be vital for the work of policymakers and strategic analysts.
3. Currently, data collection and analysis in the ESCWA region is carried out in a multitude of ways and by various institutions, such as ministries of health, and science and technology; higher councils for scientific research; and statistics bureaus. STI observatories could be established across the region to be responsible for the compilation of data and the development and analysis of indicators.
4. Within the efforts of promoting the establishment of STI observatories, several member countries have formulated plans to establish national STI observatories. In Lebanon, a planned observatory would be hosted by the National Council for Scientific Research. In Jordan, it will be hosted by the Higher Council for Science and Technology, and in the Syrian Arab Republic by the Higher Commission of Scientific Research. In that light, capacity-building plays a major role and this phase of the Workshop aims to promote the establishment of national and regional STI observatories in the ESCWA region.
5. The ICT Division of ESCWA organized the first phase of the Workshop in Beirut, during 11-12 November 2009. In this phase the focus was on the rationale for establishing national and regional STI observatories, the basic principles and functions of STI observatories, and the links between observatories and national STI systems. It also aimed at assessing the impact of STI on socio-economic development, raising awareness on STI observatories and promoting their establishment in the ESCWA region, formulating plans for their establishment and fostering cooperation among STI policymakers in the region.

I. RECOMMENDATIONS

6. Based on the deliberations and discussions of the Workshop, the following recommendations were proposed towards establishing national and regional STI observatories in the region:
 - (a) Ensuring strong political and stakeholder support as the starting step for establishing STI observatories;
 - (b) Communicating national commitment regarding the establishment of national STI observatories;
 - (c) Promoting cooperation and partnerships that enable the pooling of resources and sharing experiences among stakeholders;
 - (d) Allocating the necessary financial resources;
 - (e) Establishing a well-defined plan of work and implementation methodology based on available and necessary resources;

(f) Emphasizing the building of capabilities in data collection as the main issue to be addressed in the process for national and regional STI observatories;

(g) Networking between STI observatories in the region with corresponding regional and international structures;

(h) Harmonizing STI indicators for the region such that they reflect the needs at the national and regional levels, and enable the regular monitoring of progress at the national level;

(i) Conducting comparative studies to enable the assessment of status of the STI use for development in the region and categorize countries in that regard.

II. PRESENTATIONS AND DISCUSSIONS

7. The Workshop presentations started with a keynote presentation and covered four principal themes, namely: (a) impact of STI on socio-economic development in Arab countries; (b) guidelines for establishing STI observatories; (c) status of STI data collection in ESCWA member countries; and (d) towards a regional STI observatory. Discussions were held both after each presentation and in two round tables on the establishment of national and regional STI observatories.

A. IMPACT OF STI ON SOCIO-ECONOMIC DEVELOPMENT IN ARAB COUNTRIES

8. The keynote presentation of the Workshop addressed the impact of STI on socio-economic development in Arab countries, and was delivered by Mr. Tarek Shawki, Director of the Regional Bureau for Sciences for the Arab States of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The presentation emphasized the importance of building STI capacity for poverty reduction and local economic development, stressing that STI capacity must be built in appropriately if it is to achieve laudable objectives. STI could stand for “solve, transform and impact” and avoid theoretical abstract research. The speaker emphasized the importance of education, clustering, entrepreneurship and capacity-building.

9. Mr. Shawki started by referring to the World Science Day for Peace and Development that falls every year on 10 November, which therefore represented a day before the beginning of the Workshop, and quoted the vision that drives India and determines the prosperity of the knowledge society. A historical review of the impact of science and technology on development was carried out. The revolution of sharing information through printing had a vast social impact through the spread of knowledge. Within the technological revolution and the techno-economic paradigm, mass production, economies of scale and the standardization of products were also having a huge impact on poverty alleviation and were increasing standards of living.

10. Innovations and innovators in the past two decades have witnessed another revolution with the connection of computers and the universal access to the Internet. The information intensity coupled with the evolving technologies made knowledge as a capital and an intangible value added to corporate values. With the segmentation of markets, branding, economies of scale and the interaction of global and local markets with instant communication, there was therefore a need to invest in human capital and nurture entrepreneurship.

11. The exposure of young people to technological innovation does not stem solely from school education, and the impact of technology cannot be predicated through time in the education system. International collaboration constitutes a key factor in adding up the efforts towards the development of the education system. STI observatories could enable sharing of information between institutions through the right means, channelling these efforts across agencies.

12. Building STI capacity is essential and needs to be built in an optimal way to achieve the Millennium Development Goals (MDGs) through STI. Basic literacy rates are not sufficient in the information age, given that building capacity of the work force is increasingly essential in order to enhance the compatibility and skills of people, thereby meeting their needs. Solutions must be adapted to the needs of countries. An STI simulator is being built by economists and software specialists aimed at policymakers in order to try to answer questions and build policy models.

B. GUIDELINES FOR SETTING UP STI OBSERVATORIES

13. Ms. Laurence Esterle, an expert in research and development (R and D) policies and strategic evaluation, presented a paper, entitled “Guidelines for setting up national STI observatories”. Ms Esterle described the main characteristics and functions of an STI observatory and presented the common design conditions for its implementation. Owing to the many actors and interactions in STI policies, decision-making processes have become increasingly complex. Increasingly, decisions require adequate quantitative and qualitative information regarding available resources, results attained, trends and future scenarios.

14. International experience has shown the advantages of permanently institutionalizing these activities, which has led to the development of the notion of monitoring and evaluation system (MES). In most cases, one of the essential dimensions of MES is the implementation of an observatory for STI. The main role of an STI observatory is to develop capacities for developing indicators, distributing these indicators and carrying out studies, as well as supporting the monitoring and evaluation of the national innovation system (NIS).

15. The creation of an STI observatory requires consent of all stakeholders and high-level political decision. The setting up of an STI observatory involves complex conditions and mission, and is a time- and resource-consuming gradual progress that could require outside support. The design of observatories requires links between the various sectors and stakeholders, and the production of standard STI indicators is recommended, based on internationally recognized methods. Countries could use national databases and existing data, and produce country specific indicators. Furthermore, a regional STI observatory and partners could collaborate and establish a consortium aimed at developing appropriate indicators for the region. The funding of a regional STI observatory would come from its members.

C. STATUS OF STI DATA COLLECTION IN ESCWA MEMBER COUNTRIES

16. The status of STI data systems was reviewed over two sessions for the following represented ESCWA members: Egypt, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, the Sudan and the Syrian Arab Republic.

1. *Egypt*

17. A presentation, entitled “Sustainable development education, research and innovation: Vision for knowledge economy”, outlined the landscape of STI activities in Egypt where STI indicators receive significant importance in supporting national policies. These indicators profile national performance towards developing a national innovation system. Reliance on STI indicators in the development activities in Egypt enables the identification of challenges that include, among others, the lack of STI data.

18. National efforts in STI include R and D surveys, and the identification of indicators for five sectors in the economy. The partners in the STI efforts are the European Union and the Central Agency for Public Mobilization and Statistics (CAPMAS), and the surveys cover all the Governorates of Egypt. Results have shown that most innovation lies in the services sector and to a greater degree than the manufacturing sector. The survey covered the whole span of enterprises, from small companies that have innovative ideas and success stories. The number of small companies is growing within an expanding industry. Innovation, which was shown to have had an impact on enhancing the quality of products and services, requires significant funding.

19. Another presentation, entitled “Measuring the impact of STDF on STI indicators in Egypt”, discussed the experience of Egypt in funding STI initiatives through the Science and Technology Development Fund (STDF). It profiled the restructuring of science and technology in Egypt that resulted with the establishment of the Higher Council of Science and Technology (HCST) and STDF aimed at providing support to the political system on STI activities. STDF distributes funds for STI activities and faces a number of challenges in working within its objectives, including the absence of a national science and technology strategy, lack of available human resources capabilities and an incomplete cycle of innovation. Given the brain drain, research institutions need to retain capable researchers and enhance the quality of their research.

20. STDF needs to develop funding mechanisms that could promote the cycle of the STI system. Currently, the national research grants provided to science research proposals have reasonable conditions that enable any researcher to apply for grants up to 1 million Egyptian pounds. These grants enable the reintegration of graduates at the doctorate level in the research system. Another programme is the joint research grant that enables collaborative applied research between countries. Starting at 600,000 euros, this grant was increased to 2 million euros to fund scientific research. Furthermore, there are targeted calls for higher funds directed to renewable energy, especially wind and solar energy, as well as research in health, agriculture and water.

2. Iraq

21. The presentation briefed participants on the data collection in the Ministry of Science and Technology (MoST) and the national needs in Iraq. Owing to international sanctions, Iraq was isolated from the rest of the world over the period 1990-2003. Since 2003, Iraq has been undergoing deep economic and political changes towards a democratic State with a free market economy. As an economy in transition after a long period of isolation, an STI observatory in Iraq is needed urgently in order to provide STI indicators for development planning and monitoring. MoST was established in 2003 in the wake of increasing awareness of science and technology in the past three decades.

22. STI statistical indicators are not available generally in Iraq. Educational indicators are collected by the Ministry of Education. The current situation shows that other statistical science and technology indicators are mainly collected by the National Board of Statistics. Tertiary educational and research data are collected by the Ministry of Higher Education (MoHE), albeit on an irregular basis, and few indicators are measured and made available. MoST has recently started collecting statistics on research within the Ministry and current efforts aim to cooperate with and collect STI data from all ministries.

23. For the assessment of the science and technology situation in Iraq, two national projects were initiated. The first project to review the national STI policy, which was initiated in 2008, involved the cooperation between MoST and the United Nations Conference on Trade and Development (UNCTAD). The second project to develop an STI five-year plan is expected to start in the near future with the collaboration between MoST, MoHE and the Ministry of Planning and UNESCO. Both projects will involve the collection and processing of STI-related data at the national level, and building national capacities in terms of processing STI indicators and in line with international standards.

3. Jordan

24. The presentation, entitled “Who observes STI in Jordan?”, provided a comprehensive profile on the current science and technology system in Jordan, including some background information. Given the scattered STI data collection in Jordan, a national STI observatory was considered essential. The science and technology (ST) system started in 1961 and was developed in 1977 to include a directorate for science and technology that prepares plans and programmes and links activities with ST objectives. In 1978, a science and technology policy conference in Jordan recommended the grouping of ST activities under a national umbrella that, 10 years later, resulted in the establishment of the Higher Council for Science and Technology (HCST).

25. HCST collects data through surveys, and collaborates with the European Union on the “ESTIME” project that was completed in 2007 at the pan-Arab level. In addition to HCST, the Ministry of Higher Education and Scientific Research (MHESR) produces science and technology data and reports that include ST indicators. The Department of Statistics in Jordan also produces employment reports and sectoral economic data related to STI.

26. HCST surveys include the science and technology Potential and Requirements Surveys. The 2003 survey included information on the STI system in Jordan and the key STI players. The survey identified the players as HCST and its affiliated seven centres, public and private universities, research centres, incubators, technical advisory centres, and professional and business associations. Moreover, the survey documents included information on the mandate, main activities and size of these key players. Results showed that a total of 524 institutions dealt with STI data in 2006. Current plans have embarked on finding national information systems for STI, part of which would be the STI observatory, and on enhancing cooperation with international agencies, including ESCWA and UNESCO.

4. *Kuwait*

27. The presentation provided an overview of the activities of the Kuwait Institute for Scientific Research (KISR), which was established in 1967 and became a government agency in 1973. Its mandate covers research in many sectors, including petroleum, industry, environment, natural resources, water and energy, and agriculture practices. With six locations in Kuwait and more than 70 specialized research laboratories, KISR has extensive research capabilities. Furthermore, KISR collaborates with many international organizations through various agreements.

28. The transformation plan for KISR for 2030 aims to change the master plan, ICT structure, branding, leadership and development programme and strategy. This strategy will be built on customer focus, technology leadership, application-oriented centres aimed at delivering programmes of activities, and commercialization. Moreover, this transformation will focus on human factors and on developing leadership skills that moves KISR into the next era. Research centres will have a matrix structure, with the strongest axis being the programme supervisor. Discipline communities stretch across more than one centre and will be headed by mentors in charge of structuring development in that area. The key performance indicators for success are crucial and will be developed to monitor progress both at the top level as well as at the operational level of the centres.

5. *Lebanon*

29. The experience of Lebanon in relation to its STI observatory was summarized. Specifically, while the observatory is nascent and set to be hosted by the National Council for Scientific Research (NCSR), that institution has not yet succeeded in mobilizing sufficient resources, and is at the initial stage of acquiring tools for accumulating primary information. Moreover, while the primary data are still not very reliable, the database is set to be established in terms of structure in 2010.

6. *Oman*

30. The development of the national science and technology database in Oman was the subject of a presentation, within which the national science and technology strategy was reviewed, as well as its objectives and supporting programmes and funding mechanisms. A researcher directory was established and a national research database was developed, thereby building on research capacity. Through the directory, local researchers are linked and connected together, which allows them to share their work and results. The contents of the directory produce the institutional and national science and technology profile. Researchers register and complete their profiles in the researcher directory in order to be able to apply for research grants. The accumulation of data in the directory builds the institutional and national science and technology profile. Furthermore, the researcher directory is supported by a search engine that enables users to find local

expertise based on their research experience or location. The research organizations are listed in the researcher directory by categories and by different science and technology indicators. The information still needs to be updated and further developed in order to be fully complete.

7. Palestine

31. Established in 1998 in Jerusalem, the Palestine Academy is recognized by the Palestinian Authority as an STI umbrella organization. It was given the status of a non-governmental organization in 2004, with administrative and financial independence, and funding mostly from international and regional organizations. The Academy participated in the Med-Ibtikar Programme aimed at assessing innovation in the private sector. The Academy collaborates with the Ministry of Education and Higher Education and other ministries, such as the Ministry of National Economy, to assess innovation in local industries. Collaboration with various United Nations agencies and the Ministry of Science and Technology in Germany aims at building the climate change adaptation strategy for Palestine and will bring about scenarios for the next years. Its activities target schoolchildren by developing an STI culture among them from the early stages of education. The future plans of the Palestine Academy include allocating a science fund for promoting directive research innovation.

8. The Sudan

32. The national innovation system in the Sudan is based on many institutions. With no explicit innovation policies in the government system, there is an increasing need for formulating a national STI policy. The service sector in the Sudan dominates the contribution to GDP. While there are many academic and research organizations, their focus is primarily on research rather than on building capabilities or solving national operational problems. Furthermore, there is limited funding for R and D, a high degree of multiplicity and limited specialization. The new Ministry of Science and Technology in the Sudan has inadequate financial resources and limited R and D skills, and there is a need to establish science and technology incubators.

9. Syrian Arab Republic

33. In 2006, the Higher Council for Scientific Research (HCSR) was established with the main objective of setting a national STI policy and coordinating between the Syrian science and technology institutions and funding research projects. Currently, HCSR is formulating research policy and setting science and technology priorities. Subsequently, it is set to develop an information system for scientific research in order to provide a continuous update of the status of research in the Syrian Arab Republic.

34. HCSR published an annual report on the state of scientific research in 2009, and is supervising the establishment of a knowledge network on renewable energy. This network includes Syrian experts who are specialized in renewable energy, particularly wind and solar energy. A national committee provides a link between research and industry stakeholders, and coordinates efforts towards the establishment of the Syrian STI observatory starting with an STI information system.

35. The STI data collection goes through an information workflow that involves specialized bodies governed by a main public body. An information system collects data both electronically via a dedicated website and through a hard-copy procedure. Comprehensive data is then analyzed and a synthesis is generated by a statistical programme. The obstacles facing a national STI system include defining terminology, specialized skills in STI, data collection and analysis, weak response of institutions and under-developed ICT infrastructure.

D. TOWARDS A REGIONAL STI OBSERVATORY

36. Mr. Hratch Kouyoumjian, consultant with the ICT Division of ESCWA, gave a presentation on the regional STI observatory, covering its functions and structure. A critical evaluation of the STI potential of

ESCWA member countries necessitates monitoring the STI scene in order to raise awareness of prevailing conditions and take timely and remedial actions at the national and regional levels. Consequently, the collection and monitoring of indicators aimed at charting the state of STI in the region becomes a major challenge for member countries. In that respect, the decision of ESCWA to establish a regional technology centre is both timely and highly relevant.

37. This centre would enable member countries to engage in the following:

(a) Proposing mechanisms for more effective use of national infrastructures and available human capital in the region;

(b) Facilitating access to information at a low cost, and identifying and disseminating best practices in the region;

(c) Providing assistance to member countries in achieving the Millennium Development Goals.

38. Three ESCWA member countries, namely, Jordan, Lebanon and the Syrian Arab Republic, have taken active steps towards establishing national STI observatories. The plans for these national STI observatories differ in terms of context, structure, hosting and financing arrangements. Once established, these observatories and other national observatories would be connected through a regional network of STI observatories.

E. ROUND TABLE ON GUIDELINES FOR SETTING UP NATIONAL STI OBSERVATORIES

39. Ms. Laurance Esterle led the round table on setting up national STI observatories, and deliberations resulted in a consensus on the main characteristics of STI observatories in the region. The main concerns addressed in this round table were as follows:

(a) Role of STI observatories: As main tools for high-level decision makers, STI observatories assist policymakers in making informed decisions. Specifically, they play an important role in monitoring and evaluating the national innovation system (NIS) at various levels and according to national needs. Moreover, they enable international and regional comparisons, and contribute to the transparency and visibility of national policies in favour of the NIS development;

(b) General objectives: The main objective of STI observatories is to produce regular and robust indicators on NIS. According to country needs, STI observatories could contribute to the acquisition of primary data in standard formats. They should promote the methodologies to collect data. STI observatories validate and aggregate primary data and build indicators using internationally validated methods. They interpret and disseminate the results, promote the use of STI indicators by policymakers and, with an eye on national needs, can serve such purposes as producing studies and analyses and/or realizing forecasting exercises;

(c) Positioning and funding: The positioning of a national STI observatory is a matter for local authorities. It could be an independent and autonomous body or it could be hosted by the administration or within an existing structure. While the authorities are best placed to choose the most appropriate plan and structure, efforts are needed to guarantee the autonomous operations of STI observatories. Moreover, while government funding is the most applicable source of budgeting for observatories, this contribution needs to be sustainable. In addition, STI observatories could benefit from specific funding on a project basis from institutions in the public or private sector. However, such funding needs to be approved by the respective board of directors;

(d) Organization: STI observatories can benefit from sustainable governance with a board of directors. Provisions need to be made for the participation of the stakeholders, for example in the core

members or in the directorate. Partnerships can be developed at the national, regional and international levels.

F. ROUND TABLE ON PRACTICAL STEPS TO ESTABLISH A REGIONAL STI OBSERVATORY

40. Mr. Hratch Kouyoumjian led the second round table of the Workshop on the steps for the establishment of a regional STI observatory. Deliberations covered the coordination between national observatories and within the regional network of stakeholders as essential components for the development of an effective regional STI system that involves the following:

- (a) Identifying indicators for the region in order to measure the STI effort;
- (b) Analysing the problems in the region and introducing solutions, such as the methodological issues of collecting data, designing databases and building relevant STI indicators;
- (c) Promoting methodological knowledge in the production of STI indicators and their use in forecasting trends and needs of the region;
- (d) Organizing capacity-building programmes for enhancing professionalism of operators in order to improve the input and output of STI data;
- (e) Integrating the region's STI observatories within the international systems by adopting common methodologies;
- (f) Establishing methods and mechanisms of disseminating STI-related information in order to raise the profile of the region;
- (g) Providing seed money and identifying the resources for implementation.

41. Establishing a regional STI observatory plays an important role within the overall policy of regional integration. However, it remains conditional on having a regional network of observatories capable of promoting regional socio-economic development. The regional STI observatory would receive data from national observatories, and it represents an advantage for those member countries that would need such data. In essence, the need for a regional STI observatory is almost the same as that for a national one.

42. STI data are part of the set of development indicators, and STI indicators would complement the overall set of development indicators. STI indicators, manuals and updates represent the theme for the second phase of the Workshop.

D. DISCUSSIONS

43. Following the presentations and during the round table discussions, participants gave an insight on national experiences in the region, and underscored the main challenges facing STI systems. Identifying these challenges helps to improve the plans of work that meet the needs in the region.

44. Discussions of the impact of STI on socio-economic development highlighted the role of STI observatories and focused on the guidelines for setting up national and regional observatories, while fostering regional cooperation among STI policymakers in the region. The weak research and development capabilities in the region were considered to require significant efforts and long-term planning in order for member countries to join the knowledge societies.

45. The adoption of appropriate technologies strengthens the abilities of developing countries in the development process and promotes competitiveness within an increasingly globalized world. Furthermore,

the use of suitable indicators enables countries to monitor progress in terms of converting knowledge into socio-economic output.

46. Moreover, the establishment of national and regional STI observatories strengthens the collection of STI data and their analysis in support of evidence-based policymaking. Coordination between national observatories and their connectivity with regional observatories would make room for the harmonization of indicators and methodologies among observatories. Following the first phase, the second phase of the Workshop, in January 2009, aims to address the implementation of STI observatories and the development and adoption of STI indicators at the national and regional levels. Participants at the second phase of the Workshop include specialists and technology experts from those institutions that took part in the first phase, and who are involved in the establishment of STI observatories.

47. A combination of issues was tackled during discussions, including financial support, culture, education, policies, political will, industry, entrepreneurship, research and development, and appropriate management and linkages, all of which contribute to the application of STI in the development process.

48. Owing to the absence of regulations at the national level, comparisons between member countries in this regard are unfeasible, and decision makers do not have the basic information required to assess the STI status at the national and regional level. Regional integration is set to impose its own conditions and challenges, including statistical ones.

49. In order to measure the impact of STI in the Arab region and promote innovation, knowledge performance indicators are needed that enable measuring the status and progress. The enabling environment for education would need support and more budget allocations to R and D. Enhancing research in the education sector and allocating more funds could support the growth of an innovation culture. Moreover, global partnerships on projects with the private sector and greater funding can strengthen reporting and monitoring. Programmes could be designed such that they economize on resources and their use in focused research.

50. The guidelines for establishing national STI observatories, which could network through a regional observatory, were developed based on requests from member countries for assistance in formulating STI strategies.

III. ORGANIZATION OF WORK

A. VENUE AND DATE

51. The Workshop was organized by ESCWA and was held at the United Nations House in Beirut, 11-12 November 2009.

B. OPENING

52. Mr. Yousef Nusseir, Chief of the ICT Division of ESCWA, gave the opening statement of the Workshop, highlighting its main objective of promoting the establishment of national and regional STI observatories in the region towards enhancing the contribution of STI for socio-economic development. In his speech, Mr. Nusseir recognized the region's increasing efforts aimed at acquiring capabilities for the effective management and use of STI systems, and towards the realization of the development goals and a competitive status with the rest of the world.

53. Many ESCWA member countries have given priority to STI activities and have allocated the required funding, especially in the field of higher education and scientific research. However, the region is still lagging behind in terms of adopting appropriate STI systems for catching up with scientific developments and bridging the technological divide between developed and developing countries. With a widening

technological divide in the region and in comparison with other regions in the world, the ESCWA region faces a growing challenge that necessitates collaborative and coordinated efforts for the attainment of an effective STI management system.

54. The establishment of the ESCWA Technology Centre contributes to this objective and falls within the efforts of enhancing the production, transfer, adoption and use of STI for socio-economic development in the region. This can be realized by setting the framework for STI systems and the priorities in knowledge transfer, networking and cooperation among the various stakeholders, including universities, research councils, governmental and non-governmental organizations, and the private sector.

55. The efforts of ESCWA are directed towards bridging the technology divide that obstructs socio-economic development in the region, and enhancing the competitiveness of member countries in comparison with other countries in the world. STI observatories periodically assess progress in the use of science and technology in the development process and, subsequently, take a key role in formulating STI strategies and policies, and set their objectives and plans of action.

C. PARTICIPANTS

56. The Workshop was attended by 20 participants, including high-level decision makers and experts in STI methodologies and policies, representing institutions involved in STI activities in Egypt, France, Iraq, Jordan, Kuwait, Lebanon, Oman, Palestine, the Sudan and the Syrian Arab Republic. Participants also included regional and international experts in STI methodologies and policies. The list of participants is contained in annex I of this report.

D. DOCUMENTS

57. The documents submitted to the Workshop are listed in annex II of this report and are available online on a dedicated website.*

* Available at: <http://www.escwa.un.org/information/meetingdetails.asp?referenceNum=1179E>.

Annex I**

LIST OF PARTICIPANTS

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Annex II

LIST OF DOCUMENTS

- (a) Background documents
 - Information Note
 - Agenda
- (b) Opening speech, Mr. Yousef Nusseir
- (c) Keynote address
 - Impact of science, technology and innovation on socio-economic development in Arab States, Mr. Tarek Shawki
- (d) Presentations
 - Guidelines for setting up STI observatories, Ms. Laurence Esterle
 - Who Observes Science and Technology in Jordan?, Mr. Adel Tweissi
 - Kuwait Institute for Scientific Research: An Overview, Mr. Naji Al-Mutairy
 - Sustainable Development Education, Research and Innovation – Vision for Knowledge Economy in Egypt, Mr. Maged Al-Sherbiny
 - The situation of the national innovation system in Sudan, Mr. Ahmed Gubelnour
 - Ministry of Science and Technology plans for STI data collection in Iraq, Mr. Samir Raouf
 - Measuring the impact of STDF on STI indicators in Egypt, Mr. Aly El-Shafei
 - Palestine Academy for Science and Technology (PALAST): Profile, achievements and future actions, Mr. Imad Khatib
 - Development of National Science, Technology and Innovation Database System in the Sultanate of Oman, Mr. Saoud Al Shoaili
 - Collecting STI data in the Syrian Arab Republic, Mr. Ghassan Assi
 - Towards a regional STI observatory (RSTIO), Mr. Hratch Kouyoumjian
 - Round-table on guidelines for setting up national STI observatories, Ms. Laurence Esterle