Promoting the Science-Policy Interface in the Arab Region

Content

About

This working paper was prepared by the Food and Environment Policies Section[1] to inform the session organized by the United Nations Economic and Social Commissions for Western Asia (ESCWA) during the 3rd Arab Forum for Scientific Research and Sustainable Development (Beirut, 10-12 December 2015). Details on the session objective, format, and speakers, as well as a summary of discussions are provided in the Annex.

1 What is the science-policy interface and why does it matter for the Arab region?

The world is changing rapidly and becoming increasingly complex with ever-more interlinked challenges. The Arab region exemplifies this global trend: it faces a unique combination of interlinked economic, social, environmental, political and governance challenges. Challenges include, among others, dramatic increases in conflict, violence and terrorism; rising numbers of refugees and internally displaced; increasing inequality, unemployment and poverty; environmental degradation; and unsustainable rates of consumption of scarce water and other natural resources. Many of these complex problems can be solved only if approached more holistically than in the past, using science and evidence to find integrated and cost-effective solutions.

The concept of sustainable development has experienced an extraordinary rise over the past two decades and now pervades the agendas of governments and corporations as well as educational and

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research programs worldwide. It is a powerful concept that tries to reconcile the apparently 'irreconcilable trinity' of economic growth, social development and environmental sustainability.[2] In September 2015, governments worldwide adopted the 2030 Agenda for Sustainable Development with a set of 17 Sustainable Development Goals at its core. This ambitious agenda represents a global acknowledgement of the need to converge all efforts towards the achievement of sustainable development, which represents an overarching aim.

In practice, however, the cross-disciplinary, holistic and integrated nature of sustainable development has rendered it notoriously difficult to implement. Traditionally, scientific methods and institutions have tended to emphasize the study of processes rather than systems, analysis more than synthesis, and understanding rather than predicting.[3] However, over the past decade, the trend has shifted towards a more holistic approach that promotes multidisciplinary research, encourages cooperation between the social and natural sciences, and draws lessons from the humanities, local knowledge systems and cultural wisdom. Importantly, there is also a focus on science and research that is policy-relevant, providing evidence that enables countries to better address their development priorities.

Scientific knowledge is becoming an increasingly important ingredient of policy making, and is often called upon to provide solutions to societal problems. Science can provide both explanations regarding how the world works, as well as 'predictions' regarding the future evolution of the world based on scenarios and narratives that evaluate the robustness and resilience of different policy and investment choices over time. Integrated scientific assessments, monitoring and data collection, and scenario analysis and modeling have emerged as key tools for the sustainable development planner in the 21st century.

The term **"science-policy interface"** (SPI) has been coined to refer to social processes which encompass relations between scientists and other actors in the policy process, and which allow for exchanges, co-evolution, and joint construction of knowledge with the aim of enriching decision-making.[4] Put more simply, SPI is a means for channeling scientific advice to policymakers to ensure that policy decisions are soundly based in science and are more effective in meeting society's needs. An important SPI objective is to advance **'evidence-based policy'**, which has also been gaining currency over the last decade. It requires making better use of quantitative information, which is often sourced from the monitoring of indicators, assessments and data collection.

While SPI is not a new notion, it is increasingly seen as a crucial aspect of governance in the new millennia, and has gained a renewed focus in recent years. This is particularly prominent in the environmental field, where there is an acute need for scientific information on which to ground policy responses to emerging and complex environmental crises such as biodiversity degradation and climate change. In the latter case, the Intergovernmental Panel on Climate Change (IPCC) is *the* scientific advisory body on climate change and is often cited as an outstanding illustration of the science-policy interface at the global level. It should be noted, however, that scientific information to address environmental problems need not be generated solely from the earth sciences: social sciences can help elucidate human behavior, which in turn plays a significant role in shaping environmental outcomes.[5]

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[2] Ghosh N (2008) *The Road from Economic Growth to Sustainable Development: How was it traversed?*, MCX Academia of Economic Research, India.

[3] UNESCO, 1998: *Toward a New Contract between Science and Society*, Executive Summary, http://www.unesco.org/science/wcs/meetings/eur_alberta_98_e.htm.

[4] Sybille Van den Hove, A rationale for science–policy interfaces, Futures, Volume 39, Issue 7, September 2007, Pages 807-826, ISSN 0016-3287, http://dx.doi.org/10.1016/j.futures.2006.12.004.

[5] Van den Hove (2007).

2 How strong is the science-policy interface in the Arab region?

Different contexts and cultures influence how, and to which degree, science feeds into policy decisions, and conversely how policy influences science. In the Arab region and other developing countries, science and other forms of knowledge are not often used effectively in policymaking; and policymakers do not always inform scientists about their needs for scientific knowledge. This is true at both the Arab national and regional levels.

A functional SPI requires three strong elements: a) Reliable and usable science and data (supply of knowledge and evidence); b) accountable policy-making processes (demand for and use of knowledge); and c) adequate platforms of exchange between the two (institutional mechanism). Deficiency in any of the three will necessarily cause a science-policy divide.

2.1 Reliable science and data

Despite the progress achieved over the past years in several countries, the Arab region continues to lag behind other regions in terms of scientific achievements, in both quality and quantity. Among the root causes of this lag is low quality and unequal access to education at all levels, which result in youth that are not ready to access the knowledge society.[6] Furthermore, Arab countries spend on average 0.2% of their gross domestic expenditure on research and development (R&D), way below the world average of 1.7%. A similar pattern appears in terms of the full-time equivalent number of researchers per million inhabitants, where the Arab States' average of 373 researchers per million inhabitants fell below the average of developing countries (580) and equalled one third of the world average (1,080).[7] In terms of R&D output, around 7,800 scientific and technical journal articles were published in 2011 in the Arab region, amounting to 1.3% of the world's total. On average, 22 articles were published per million inhabitants compared to a global rate of 117.[8]

Historically, the integration of the Arab region into international research programs on global environmental change has not been well-advanced, resulting in a lack of a strongly established scientific community in the region with experience in scientific assessments.[9] In particular, there is a lack of research and scientific effort in the region with an emphasis on observing, explaining, understanding and projecting environmental and societal trends, drivers and processes and their interactions at the regional level.[10] While research in the sustainability sciences has spread throughout the world in recent years, the contribution of countries in the Arab region is still very limited.[11]

Nevertheless, there are several organizations and institutes already working in the Arab region at the science-policy interface, as well as coalitions of non-government organizations and other centres whose efforts focus on engaging policy makers in addressing sustainability challenges. Several countries in the Arab region have also established national science academies or similar institutes with membership of the International Council for Science, a non-governmental global organization which aims at identifying and addressing major issues of importance to science *and* society.[12] In fact, the Arab region witnessed a mushrooming of research institutes since the early 2000s: this trend has particularly accentuated as of 2010 with the creation of 31 new think tanks in a number of

[6] UNDP and Mohammed Bin Rashid Al Maktoum Foundation 2011. Arab Knowledge Report 2010/2011. The four countries where the field study was conducted are Jordan, Morocco, the United Arab Emirates and Yemen.
[7] UNESCO Science Report 2010.
[8] National Science Foundation data as obtained from the World Bank's World Development Indicators (accessed 3 August 2015).
[9] International Council for Science (2013) 'Future Earth Regional Workshop for Middle East and North Africa'.
[10] International Council for Science (2013).
[11] Bettencourt and Kaur (2011) 'Evolution and Structure of Sustainability Science', *PNAS*, December 6, 2011; vol 108; n 49.
[12] The organization is comparable to the Organization for Economic Co-operation and Development. See http://www.icsu.org/science-for-policy/ for more information.

Arab countries.[13] However, according to the Global Competitiveness Index, the quality of scientific research institutions across the majority of Arab countries is below other regions in the world.[14] Additionally, the Association of Arab universities, in a study conducted to assess scientific research in the Arab world[15], states that one of the challenges facing scientific research is the absence of national policies or clear national strategic plans for scientific research, which poses a theory of a lack of coordination between research institutes and policy-makers.

There is a plethora of scientific assessments, UN flagship reports and other resources relating to various aspects of sustainable development that are available to decision makers in the Arab region. They span a diverse range of disciplines, topics, timeframes and spatial scales and provide an invaluable source of knowledge that can be used to identify priorities, inform policy making and measure progress on sustainable development.

At the global level, the Global Sustainable Development Report, issued yearly since 2014, provides an inventory of selected assessments and flagship reports, highlighting that there are thousands of scientific assessments as well as at least 125 regular flagship UN publications and 23 outlook reports prepared by intergovernmental organizations.[16] These publications often include regional chapters which are of relevance for Arab decision makers and stakeholders, with the regional edition of UNEP's Global Environmental Outlook being a prominent example.[17] Another positive development is the establishment of a branch of the Sustainable Development Solutions Network (SDSN) in the Mediterranean region as well as several national networks.[18]

Nationally, assessment reports can take many forms: Amongst others, Arab countries have prepared national MDG progress reports, environmental performance reviews, investment policy reviews, technology needs assessments, national human development reports, and universal periodic reviews (under the Human Rights Council). The frequency and quality of these reports, and the level of translation of their findings into policy, require further assessment.

Despite some good advancements,[19] the region overall may still be less advanced in the use of new data technologies compared to other regions. There is still a significant gap in official national statistics throughout the Arab countries, now often compensated through the use of internationally-funded surveys, non-official national statistics and modeling on the part of international organizations. For example, a review of the data contained in the global Millennium Development Goals database for selected Arab countries revealed that only about 42 per cent of the 45 MDG indicators were being compiled by national governments using their own official statistics.[20]

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[13] http://www.foundationforfuture.org/en/Portals/0/Conferences/Think%20Tank%20Forum/Directory%20of%20Arab%20Think%20Tanks.pdf

[14] World Economic Forum (2014). According to the report, 11 countries out of 15 Arab countries included in the survey scored under 3.5 on the index, which ranges between 1 (worst) and 7 (best). These rankings may be considered to be subjective.

[15] http://www.ub.edu/LinkingMedGulf/docs/kickoff_meeting/scientific_research.pdf

[16] UNDESA (2014) 'Prototype Global Sustainable Development Report' , available at: https://sustainabledevelopment.un.org/content/documents/1454Prototype%20Global%20SD%20Report2.pdf

[17] See for example the West Asia chapter in GEO 5, available at: http://www.unep.org/geo/pdfs/geo5/GEO5_report_C14.pdf.

[18] The SDSN's objective is to build a global network of universities, research centres, civil society organizations, and other knowledge centres for sustainable development and the SDGs. Several national networks have also been established in Tunisia, Egypt, Palestine, Iraq, United Arab Emirates (UAE), and Oman.

[19] For example, the Abu Dhabi Global Environmental Data Initiative (AGEDI) is a world-class effort devoted to improving data for environmental monitoring using, among others, remote sensing techniques.

[20] Smith R (2015) Sustainable Development Monitoring in the Arab Region: A Review of Country Experiences and Recommendations for the Post-2015 Agenda, Report prepared for ESCWA. The countries selected are Egypt, Iraq, Jordan, Morocco, Saudi Arabia and Tunisia.

2.2 Accountable policy-making processes

Maybe one of the most important factors driving good policy making is accountability, where tax payers hold their governments accountable to their action. According to the World Bank's Worldwide Governance Indicators, the 17 Arab countries included scored well below 0 on "Voice and Accountability" indicator with more than half scoring less than -1.[21]

The Bertelsmann Stiftung's Transformation Index seems to confirm this.[22] Looking at the "efficient use of assets" indicator, which tackles the extent to which a government makes efficient use of available human, financial and organizational resources, 16 out of the 19 Arab countries included in the report scored 5 or less (on a scale of 1 (worst) to 10 (best)). Another BTI indicator of relevance is the extent to which religion interferes with legal order and political institutions. The scores of all 19 Arab countries reflect a high degree of influence by religion in the policy-making process.[23]

While by the nature of things, policies are driven by political considerations all over the world, this feature is even more prominent in the Arab region. This is especially true after the advent of the Arab Spring, as governments adopted populist policies that appeal to the general population for fear of instability. A vivid example is the issue of fuel subsidies where decisions to reform or lift these subsidies were deferred, supposedly to support the poor, whereas more targeted subsidy policies could be explored.[24] A recent study of the role of policy research institutes in the Arab region identified several threats that weaken SPI in the region, notably the lack of transparency in governments' decision-making processes, low cultural acceptance to make policies evidence-based, as well as governmental interference in research institutes' research agenda (thus undermining the legitimacy of research findings).[25]

2.3 Adequate platforms of exchange

Depending on the institutional mechanisms adopted for strengthening the SPI, scientists and researchers can take different roles ranging from neutral knowledge providers (at a minimum) to being strategic partners who are fully integrated in the policymaking process (at best). Science-policy exchange mechanisms can be institutionalized or formal such as those provided by inter-governmental organizations (e.g. the Organization for Economic Cooperation and Development – OECD) and national research councils (e.g. the Food and Drug Administration in the United States) – See Box below for examples. However, the SPI very often involve fluid processes that make it difficult to assess how and to what extent scientific evaluations, appraisals and impact assessments influence decision-making.[26] Indeed, a multitude of stakeholders may be involved in SPI, including universities, United Nations agencies, non-governmental organizations (NGOs) and the media.

For example, NGOs may lobby for positive change based on the results of their empirical research. This research can provide better evidence to support or denounce a certain policy, as it is usually coupled with case studies from the field, giving it more credibility and strength in voicing public

[21] Worldwide Governance Indicators project, available at: www.govindicators.org. Indicator ranges between -2.5 (worst) and 2.5 (best). Arab countries' scores ranged between -0.33 and -1.78.
[22] Bertelsmann Stiftung's Transformation Index, 2014, available at: http://www.bti-project.org/downloads/bti-2014/
[23] On a scale of 1 (total influence of religion) to 10 (no influence of religion), 10 Arab countries scored below 5while the 9 others scored in the range 6 to 7.
[24] Arif S. (2015) 'A Strategic Investment Framework for Green Economy in Arab Countries from Energy Perspective'. Report prepared for ESCWA.
[25] Hana A. El-Ghali & Farah Yehia (2014) 'A Preliminary Overview of Policy Research Institutes in the Arab World: A Compilation and Synthesis Report Consortium of Arab Policy Research Institutes'. Issam Fares Institute for Public Policy and International Affairs, American University of Beirut.
[26] Karin Ingold and Muriel Gschwend 2013. Science in Policy Making: neutral experts or strategic policymakers? Available at: http://www.icpublicpolicy.org/IMG/pdf/panel_19_s1_ingold.pdf.

concern. In this regard, local NGOs have the advantage of operating in various geographical areas of a country and being in close proximity with the most vulnerable and marginalized people who need to benefit the most from development policy. On the other hand, international NGOs benefit from wide experience in other countries and regions, and have relatively large budgets that can also be allocated to fund research of importance for policy formulation. In this case, independent agenda setting is a critical factor for making the best benefit of these resources.

Box. Examples of formal organizations working at the science-policy interface, globally and in the Arab region

The Organization for Economic Cooperation and Development (OECD) provides a forum in which the governments of its 34 member states can work together to share experiences about the difficulties which they encounter in the decision-making process and seek solutions to common problems. Drawing on scientific facts, data analysis and comparison, and a shared commitment to democratic institutions and the wellbeing of all citizens, the OECD recommends policies to their member states and partners. At the same it attempts to understand what drives economic, social and environmental change, in order to provide comprehensive recommendations. Hence, the OECD can be seen as the interface between science and policy at the European or 'developed countries' level.

The League of Arab States (LAS) was created to "strengthen the close relations and numerous ties which bind the Arab States" and serves to promote political, economic, cultural, and scientific cooperation among Arab states. The League also provides a forum for Arab states to debate and coordinate policy positions on matters of common concern. Over time, 13 specialized ministerial councils were created in various fields, which were charged with reinforcing cooperation, coordinating efforts in their respective areas of work, harmonizing Arab legislation and unifying the Arab position in international forums. Most of these councils are guided in their policy work by a technical body. For example, the Joint Committee on Environment and Development in the Arab Region (JCEDAR) is the technical arm of the Council of Arab Ministers Responsible for the Environment, and its Secretariat includes LAS, ESCWA and UNEP. JECDAR also benefits from the participation of civil society organizations in its meetings. In addition, 18 specialized organizations have been established since the 1950s, whose scope of work covers various development sectors in the Arab countries. Among these, the Arab League Educational, Cultural and Scientific Organization (ALECSO) plays a leading role in promoting scientific research.

The Kuwait Institute for Science and Research (KISR) is one example of many national research institutions in the Arab region. KISR aims to develop, deploy, and exploit the best science, technology, knowledge, and innovation for the benefit of Kuwait and others facing similar challenges and opportunities. KISR obtains its knowledge by partnering with highly-regarded national and international institutes. For example, KISR collaborated with NASA and other international scientific organizations to map the earth's subsurface water resources. A better understanding of the characteristics of its aquifers will enable Kuwait to enhance their natural recharge and use the aquifers for storage, thereby increasing the country's water reserves and establishing a more balanced strategy for their management.

Sources: http://www.oecd.org/about/; ESCWA (2015) 'The Institutional Framework of Sustainable Development in the Arab Region: Integrated Planning for the Post-2015'; http://www.kisr.edu.kw/en/partnering/strategic-relationships/88-centers/water/229-kisr-nasa-collaborate-on-aquifer-locating-technology

Additionally, considering the wealth of information and resources publicly available through the internet, and which are of varying quality and reliability, media outlets play a critical role in conveying the right information to the public. The power of the media in shaping the public opinion puts significant responsibility on these institutions to favor the dissemination of quality research results over the pressure to increase their ratings.

Finally, given the above-mentioned data gaps which are hindering evidence-based policy-making in the Arab region, a data partnership is needed that involves public and private partners as well as UN agencies and international organizations to fill data gaps, mobilize the resources needed to build statistical capacities, and make the best use of new technologies and data sources.

3 How is ESCWA contributing to a stronger science-policy interface?

ESCWA acts as a think tank for the Arab region. It undertakes innovative research in various fields and supports quality data collection and analysis for evidence-based policy. As an inter-governmental organization with nine inter-governmental committees and a strategic partnership with the League of Arab States (LAS), ESCWA uses its convening powers to facilitate regional

consultations, knowledge exchange, and consensus building on sustainable development issues. The following examples illustrate some of ESCWA's on-going activities promoting SPI in the Arab region:

- Through the UN-LAS Regional Initiative for the Assessment of the Impact of Climate Change on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR),[27] an ensemble of temperature and rainfall distribution projections were generated for the Arab region up to the year 2100. The RICCAR findings will be instrumental for devising climate change adaptation policies that are grounded in science. For example, ESCWA is currently undertaking additional modeling to assess the impacts of expected changes in water availability on agricultural production. This will be important for guiding agricultural and food security policy development in the region.
- Through its Technology Center and the work of its different substantive divisions, ESCWA supports member countries to attain technological parity with other nations and regions of the world and achieve economies that are based on scientific and technological knowledge.[28] In particular, ESCWA has been supporting policy research for the promotion of appropriate green technologies in rural areas, notably renewable energy technologies.
- ESCWA supports the various Arab ministerial councils and Arab specialized agencies working under the umbrella of the League of Arab States for evidence-based regional policies and to guide national policy-making. For example, ESCWA prepared the Inventory of Shared Water Resources in Western Asia, a comprehensive knowledge base that guides debates and policies for the shared management of water resources in the region.[29] ESCWA also supported the Council of Arab Ministers Responsible for the Environment in identifying a roadmap for the transition to a green economy in the region through the preparation of a strategic investment framework for green economy in the Arab countries from an energy perspective.[30]
- ESCWA provides support to National Statistical Offices in its member countries to improve statistical standards in the collection, analysis and dissemination of data. At the regional level, and within the context of follow-up and review of the 2030 Agenda for Sustainable Development, ESCWA will expand its work in the area of data harmonization through the design of regional surveys and the production of regular regional reports to monitor progress in the achievement of the Sustainable Development Goals (SDGs). In this regard, the prototype edition of the Arab Sustainable Development Report, to be issued in December 2015, summarizes trends and progress achieves over the past two decades. ESCWA is also supporting the League of Arab States in the revision of their Arab Sustainable Development Indicators for alignment with the global SDG indicator set, which is currently under preparation.
- As an advisor to the region, ESCWA provides technical assistance to its member countries in the formulation of adequate sectoral policies and programmes to meet the targets articulated in their national development strategies. For example, ESCWA is applying approaches including Computable General Equilibrium (CGE) models in Saudi Arabia and Cost of Environmental Degradation in Palestine to help quantify socio-economic and environmental impacts and guide resource allocation.[31]

[27] See http://www.escwa.un.org/RICCAR/ri.asp?ReferenceNum=RI for further information.
[28] Economic and Social Council 2010, Statute of the ESCWA Technology Center (http://etc-un.org/PFiles/3.2.1%20ETCres10.pdf).
[29] The inventory may be accessed at: http://www.escwa.un.org/information/pubaction.asp?PubID=1362.
[30] Arif S. (2015).
[31] See for example ESCWA (2013) 'Economic Modeling for Enhanced Policymaking'. E/ESCWA/2013/C.8/6(Part III).

Annex. Note on the ESCWA session on the science-policy interface

A.1 Objective and format of the session

The session presented science-policy interfaces as experienced by different types of stakeholders and in different policy-making areas. The aim is to highlight key challenges in each case and identify good practices for maximizing the returns of scientific research for the benefit of sustainable development policy-making in the Arab region.

The session followed a panel discussion format. Starting with an introduction by the moderator, each discussant made a brief intervention from his experience, following which the floor was open for general discussion. During the wrap-up, discussants reacted to the discussions and presented closing messages.

A.2 Speakers' biographies and abstracts of interventions

Ms. Reem Nejdawi, Chief, Food and Environment Policies Section, ESCWA

Ms. Reem Nejdawi serves as the chief of the Food and Environment Policies Section within the Sustainable Development Policies Division at ESCWA. She has extended professional experience in the developmental arenas including designing and managing programs on sustainable development issues. Since 2011, she has been coordinating regional programs and processes related to the 2030 agenda on sustainable development.

As moderator, Ms. Nejdawi framed the discussion by highlighting the importance of the science-policy interface in the context of the new global sustainable development agenda. She introduced the main elements of the SPI problematique in the Arab region, including key challenges and requirements.

Dr. Hassan Charif, Expert in Science, Technology, and Sustainable Development Policies

Dr. Hassan Charif holds a Ph.D. in Nuclear Engineering of the University of California, Berkeley, and is currently the advisor on Science, Technology, and Innovation Policies in the Lebanese Council for Scientific Research. From 1982 till 2004 he worked for ESCWA, amongst others as the Chief of the Sustainable Development and Productivity Division.

Public research centers play a significant role in promoting the SPI, in principle being the closest to the 'ears' of policy-makers. Dr. Charif explored the contributions of national research centers in guiding policy-making in the Arab countries, taking the National Council for Scientific Research (CNRS) in Lebanon as a case study.

Dr. Abdelmenam Mohamed, Regional Officer, Science-Policy Interface, Division of Early Warning and Assessment – West Asia, United Nations Environment Programme (UNEP)

Dr. Abdelmenam Mohamed is the Regional Officer for the Science-Policy Interface at the Division of Early Warning and Assessment at UNEP. Previously, he served as Programme Manager at the EU Libya Support to Civil Society and as Programme Officer (Environmental Focal Point) at UNDP.

UNEP engages frequently with scientists and policy makers to raise awareness, improve access to scientific information relating to the environment, and promote the integration of this information in development planning. Dr. Mohamed highlighted UNEP's efforts to build knowledge about the environment in the Arab region by bringing together dispersed information and assessments, and the contribution of this work in bridging the science-policy divide.

Dr. Hassan Machlab, Country Manager, International Center for Agricultural Research in the Dry Areas (ICARDA) - Lebanon

Dr. Hassan Machlab has been the Country Manager for Lebanon for ICARDA since 2009, overseeing the Beirut office and the Terbol Research Station in the Bekaa plain. He holds a Ph.D. in Plant Biotechnology of the Rheinische Friedrich-Wilhelms-Universität in Bonn. Dr. Machlab received the IRS Staff of the Year award (Administrative and Technical) for assisting research and support staff following their relocation from ICARDA's headquarters in Aleppo.

ICARDA supports science-policy dialogues between researchers and national governments in the area of agriculture, thus helping to initiate adequate responses to agricultural challenges at the global, regional and national levels. Dr. Machlab illustrated the modalities followed by ICARDA to guide policy-makers in the Arab region, focusing on challenges faced and solutions proposed.

Mr. Anis Ismail, SWEEP-Net Senior Coordinator

Mr. Anis Ismail has served as a Senior Coordinator for SWEEP-Net since 2009. Previously, he has provided consultancy services and technical assistance in the field of environmental and solid waste management to a number of institutions such as GIZ and the World Bank. He also served as the Regional Coordinator for the World Bank/METAP Solid Waste Management Project in the MENA region and the Head of Division of the Tunisian National Environmental Protection Agency.

As a regional solid waste exchange of information and expertise network, SWEEP-Net provides a platform for the exchange of best practices, expertise and experiences and technical assistance, and policy advice in the field of solid waste management. Mr. Ismail presented the choice of waste management technologies in the Arab Region and discussed the extent to which this choice is based on science.

Mr. Imad Sleiman, Project Coordinator, Energy Section, ESCWA

Mr. Imad Sleiman has been working with ESCWA since 2005. In 2011 he joined the Sustainable Development Policies Division where he contributes to the services and support that ESCWA provides to its member countries in the field of sustainable energy, with a special focus on the promising capacity of renewable energy technology (RE) in alleviating rural poverty, mitigating climate change and enhancing energy security. Prior to that, he had worked with the Emerging and Conflict Related Issues Division managing five development projects in post-conflict Iraq. He holds a master degree in Chemical Engineering from Clemson University.

Rural development programmes in the Arab region benefit little from the fruits of scientific research. Mr. Sleiman presented the lessons learned from an ESCWA capacity building project on appropriate green technologies for rural communities in the region, focusing particularly on the challenges associated with the use of renewable energy in rural areas and the research requirements to guarantee the sustainability of renewable energy programmes in the Arab region.

A.3 Summary of discussions

The panel discussion on the science-policy interface in the Arab region highlighted the importance of this evolving concept in light of the interlinked challenges facing the region and the world. Indeed, emerging sustainable development challenges can only be resolved using integrated, evidence-based and scientific solutions. In its paper on the subject, ESCWA demonstrated that the weak science-policy interface in the Arab region can be attributed to three reasons: insufficient scientific production and data gaps, ineffective platforms of exchange between science and policy, and weak

governance, transparency and accountability. Strengthening the science-policy interface will be essential if the region is to succeed in achieving the 2030 Agenda for Sustainable Development.

Panelists presented practical experiences in promoting the science-policy interface in different sectors and institutional frameworks. Success stories were highlighted including the establishment of important research institutions that became the scientific arm of the State, as was the case in Lebanon, Kuwait, Algeria and other Arab countries. However, scientists and policy-makers remained disconnected due to complex reasons relating to both parties. Among the successful examples cited, the Global Environment Outlook issued by the United Nations Environment Programme promotes a participatory approach in identifying environmental priorities in the region. The International Center for Agricultural Research in the Dry Areas succeeded in influencing agricultural policies in a number of countries such as Lebanon, Syria and Morocco through specialized research and capacity-development targeting both researchers and decision-makers. The Regional Solid Waste Exchange of Information and Expertise Network helped to simplify the scientific discourse in the sector, translate scientific terms into Arabic, and develop laws that allow the localization of waste management technologies. In the field of energy, ESCWA adopted an approach based on the potential of renewable energy systems in improving business productivity and income-generation as a way of promoting the dissemination and sustainable use of these technologies in rural areas.

In the ensuing discussion, participants recommended to improve data quantity and quality, with the possibility of involving civil society and the private sector in data production. They called for the development of existing laws and legislations to bridge the legal gaps that hinder the use of technology. Participants stressed the need to strengthen the science-policy interface by simplifying the scientific discourse and promoting a constructive dialogue between scientific researchers and policy makers, in order to make the best use of research outcomes in the sustainable development of the Arab region.