United Nations Economic and Social Commission for Western Asia

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ESCWA
الاسكوا

Study on Official statistics in support of the Climate Change and Energy related indicators for SGs in the Arab region

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Worrying Records on Global Warming in the Region

⚠️ 2016 new global annual temperature record for the third consecutive year in NOAA's 137-year series

⚠️ 54 degrees C: Record World high in 2 Arab Countries Kuwait and Iraq

⚠️ Saudi Arabia among top ten total CO_2 emitters and all 6 Gulf countries among top 10 CO_2 per Capita (WDI 2015)

Background for the Study

Climate change a major challenge to sustainable development in Arab countries

2030 Agenda for Sustainable Development address climate change in Goal 13: urges countries "to take urgent action to combat climate change and its impacts".

Requirement of new and improved statistics on resilience, adaptive capacity and resource mobilization for measuring and monitoring its economic and social impacts at the national and regional levels.

UN Statistical Commission urged countries to develop climate change related statistics at 47th session in 2016 (1).

National statistical offices (NSOs) in the Arab region aware of the complexity of climate change and the challenge related to the compilation of statistics.

Support the recommendations of the Statistical Commission on climate change-related statistics

Requested ESCWA 's assistance to build statistical capacity to respond to the need for climate change-related statistics.

Statistics Division in ESCWA commissioned a study on Statistics and Climate Change in 2016 (2).

1. http://unstats.un.org/unsd/statcom/47th-session/documents/2016-1-Provisional-agenda-and-annotations-E.pdf).

2, Draft Prepared by Robert Smith MidSummer Analytics

ESCWA's Study on the Role of Official Statistics in CC Indicators in the Arab Region*

EXECUTIVE SUMMARY
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Existing Frameworks

Task Force on a Set of Key Climate Change-Related Statistics

The UN Sustainable Development Goals (SDG)

The UN System of Environmental-Economic Accounting (SEEA)

The UN Framework for Developing Environmental Statistics (FDES)

The Sendai Framework for Disaster Risk Reduction (SF)

Role of National Statistical Offices
Official Statistics

Independence
- Trusted source of info
- Neutrality in compilation and publication

Sound/Transparent methodologies
- Harmonized definitions, classifications, collection methods ensured through global processes

Data quality
- internationally accepted criteria

Conceptual and methodological coherence
- coherent across the environmental, economic and social domains/integration /greater understanding of trade-offs

Methods for time-series analysis

The Scope of Climate Change-Related Statistics

Emissions

Statistics describing the human-induced emissions of the "greenhouse gases" that contribute to climate change

Adaptation

Statistics describing the efforts of humans to adapt to the impacts of climate change (e.g., adoption of sustainable farming practices).

Drivers

Statistics describing the human activities (e.g., fossil fuel combustion) that are the drivers of emission

Mitigation

Statistics describing human efforts to limit climate change (e.g., energy efficiency measures)

Impacts

Statistics describing the human and natural consequences of climate change (e.g., deaths from extreme weather events and changes in precipitation patterns)

Proposed Set of Indicators For CC

	UNESCWA	UNECE
Drivers	4	8
Emissions	3	7
Impacts	7	13
Mitigation	4	6
Adaptation	3	5

Proposed Climate Change-Related Indicators for the Arab Region

Area	En	SDG	Indicator	Rationale
Emissions	x		**Total Greenhouse Gas Emissions**	Total GHG emissions represents the national contribution to the primary cause of human-induced climate change
3	x	x	**CO2 Emissions from Fossil Fuel Combustion**	Fossil fuel combustion is the largest source of CO2 emissions and CO2 is the most important greenhouse gas in terms of contribution to climate change
	x		**GHG Emissions Intensity of the Economy**	Emissions per unit of economic output are a useful means of tracking progress in decoupling growth of emissions from growth of the economy
Drivers	x		**Total Primary Energy Supply**	Energy use is the most important contributor to greenhouse gas emissions.
4	x		**Share of Fossil Fuels in Total Primary Energy Consumption**	Fossil fuel combustion is the largest source of greenhouse gas emissions.
	x		**Public Financial Support for Fossil Fuel Production**	Fossil fuel combustion is the largest source of greenhouse gas emissions. Subsidies reduce the cost of fossil fuels to consumers and, therefore, increase their consumption.
	x		**Energy Intensity of the Economy**	Energy use per unit of economic output is a useful means of tracking progress in decoupling growth of energy use from growth of the economy
Impacts			**Temperature Departure from Normal**	Departures of temperatures from historical normals are a means of tracking change in temperature over time. Surface air temperature is considered by the World Meteorological Organization-Global Climate Observing System as an Essential Climate Variable.[1]
7			**Precipitation Departure from Normal**	Departures of precipitation from historical normals are a means of tracking change in precipitation over time. Precipitation is considered by the World Meteorological Organization-Global Climate Observing System as an Essential Climate Variable.[2]
			Share of Agricultural Land Affected by Drought	Changes in precipitation patters associated with climate change are expected to lead to increased drought in the region (Verner, 2012).
			Freshwater Withdrawals as a Share of Renewable Freshwater Resources	Changes in precipitation as a result of climate change will change the availability of freshwater resources. Water is a key resource in the Arab region.
			Number of Heat-related Deaths	Climate change is expected to increase global average surface temperatures, which is a particular concern in the Arab region where normal summertime temperatures are already high.

Mitigation 4	x		**Renewable Energy Share in Total Primary Energy Supply**	Production of energy from renewable sources is a means of meeting energy needs without (or with substantially reduced) greenhouse gas emissions.
SDG 13.2 Int. CC measures in Policies	x		**Share of Environmental Protection Expenditures Devoted to Climate Change Mitigation**	Environmental protection expenditures represent a measure of the effort on the part of governments and business to address the need to maintain environmental quality. The share of these expenditures devoted to climate change is an indicator of the seriousness with which climate change is considered.
			Environmentally related tax revenue and structure by tax base	Taxes on energy and transportation products are a means of ensuring that their prices reflect the true social cost of their use, including the costs of damages associated with climate change.
			Carbon Price	Placing a price on emissions of CO_2 and other greenhouse gases is a means of ensuring users pay a price for fossil fuels and other products that includes the costs of damages associated with climate change.
Adaptation 3	x		**Proportion of Population Living in Dwellings with Air Conditioning**	Air conditioning is a means of reducing the heat stress associated with climate change.
SDG 13.1 Resilience Adaptive cap			**Proportion of Farmland Area using Sustainable Management Practices**	In order to cope with changing temperature and precipitation patters due to climate change, farmers will have to adopt new management practices that increase yields while requiring less water and increasing tolerance to heat and prolonged drought.
			Adoption of Disaster Risk Management Strategies	Formal disaster risk reduction strategies are a means of ensuring that the impacts of climate change have the minimum possible effect on the well-being of individuals, society and the economy.

- Seven of the proposed indicators are SDG indicators (or conceptually identical)
- Four are indicators derived from the recommended global indicators for measuring the targets of the Sendai Framework on Disaster Risk Reduction
- Proposed indicators can be produced from accounts of the SEEA-Central Framework (SEEA-CF),
- Some indicators are already produced in the countries.

Interlinkages of SDG 13 with SDG Goals

Goal 1. End poverty in all its forms everywhere	
1.5 By 2030, build the **resilience of the poor** and those in vulnerable situations and reduce their **exposure and vulnerability to climate-related extreme events** and other economic, social and **environmental shocks and disasters**	1.5.1* Number of deaths, missing people, injured, relocated or evacuated due to disasters per 100,000 people 1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP) 1.5.3 Number of countries with national and local disaster risk reduction strategiesa
1.b Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	1.b.1* Number of national action plans related to multilateral environmental agreements that support accelerated investment in actions that eradicate poverty and sustainably use natural resources
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2.4.1* Percentage of agricultural area under sustainable agricultural practices 2.4.2* Percentage of agricultural households using irrigation systems compared to all agricultural households 2.4.3* Percentage of agricultural households using eco-friendly fertilizers compared to all agricultural households using fertilizers
Goal 3. Ensure healthy lives and promote well-being for all at all ages	
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution 3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)
Goal 6. Ensure availability and sustainable management of water and sanitation for all	
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity 7.1.2 Proportion of population with primary reliance on clean fuels and technology
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and gross domestic product (GDP)
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 Mobilized amount of United States dollar per year starting in 2020 accountable towards the $100 billion commitment

Interlinkages of SDG 13 with SDG Goals

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	9.4.1 CO_2 emission per unit of value added

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by age, sex and persons with disabilities
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	11.5.1* Number of deaths, missing people, injured, relocated or evacuated due to disasters per 100,000 people
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated, by cities

Goal 12. Ensure sustainable consumption and production patterns

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Recommendations of the Study

- **Recommendation #1** – *All NSOs in the Arab region are encouraged to consider the development of climate change-related statistics a priority, taking into consideration available resources and other national priorities. In this, they are encouraged to develop productive relationships with other agencies and organizations with an interest in either producing or using climate change-related statistics, partnerships are essential to success.*

- **Recommendation #2** – *All NSOs and relevant organizations in the Arab region are encouraged to review the Recommendations on Climate Change-Related Statistics and the Statistical Commission's related call for countries to do more in this area. taking into consideration available resources and national and regional priorities*

- ***Recommendation #3*** – *Relevant organizations and NSOs in the Arab region, along with UNESCWA, are encouraged to consider and, with appropriate changes as required, agree upon the set of indicators*

Key guiding questions for Discussion

1. How do you find the role of official statistics in the Arab region in support of the availability of the climate change and energy related statistics in the context of the 2030 Agenda for Sustainable Development?

2. What are your views on the proposed set of indicators relevant to the region that assist in measuring priority sectors such as the energy sector in the Arab region and subregions?

3. What are the challenges with NSOs in the Arab region to compile the indicators? (Institutional, Data, Coordination)

4. How can we improve methods of compilation and availability of quality data that are accessible to the users (Surveys, Administrative Data, Big Data..)?