

# Eighth Meeting of the Expert Group on Environment Statistics

New York, 12-14 and 19-20 October 2021



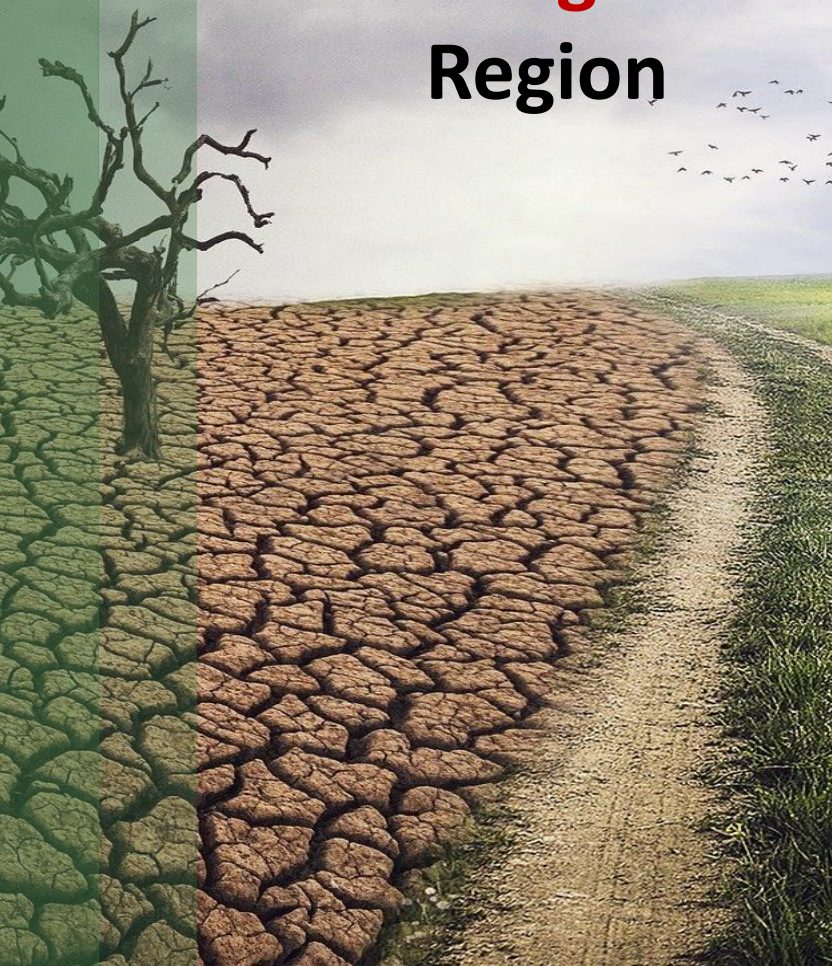
Shared Prosperity **Dignified Life**



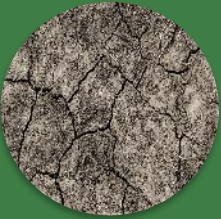
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# Consecutive Records on Global **Warming** in the Region



The Region Has Been Subject to Extreme Climate Events, such as Droughts, Floods and Flash Floods, Sand and Dust Storms, and Intense Heat Waves



Record Temperatures Occurred in Parts of The MENA, 54 Celsius In Mitribah, Kuwait, on 21 July 2016 - The Highest Temperature on Record For Asia



Other Extreme Temperatures Included 53.9 Degrees Celsius In Basra, Iraq, High Temperatures Reported In Libya, Morocco, Tunisia, UAE

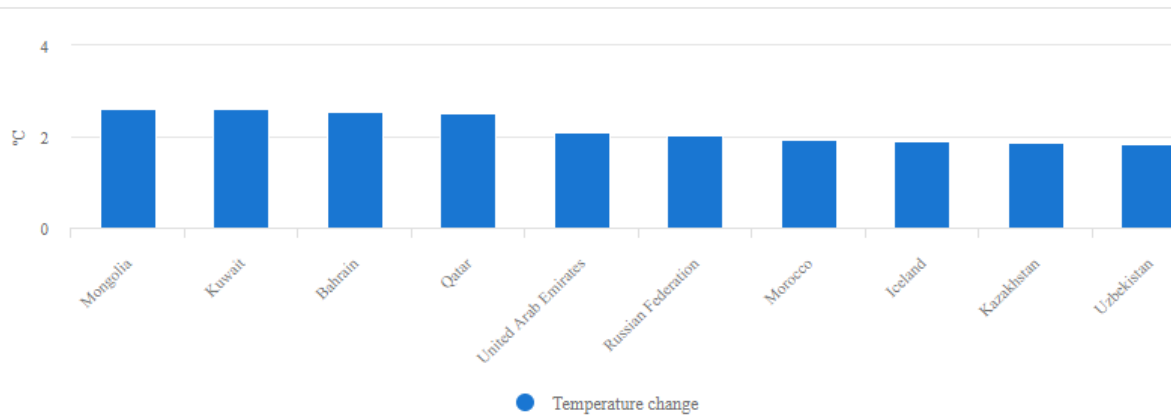


Models Using High-resolution Regional Climate Model Simulations Have Projected That Extremes Of Wet-bulb Temperature In The Region Around The Arabian Gulf Are Likely To Approach And Exceed A Critical Threshold, Which Defines A Limit Of Survivability For Human Beings Under The Business-as-usual Scenario Of Future Greenhouse Gas Concentrations.

# Top 10 Mean Temperature Change of Meteorological year

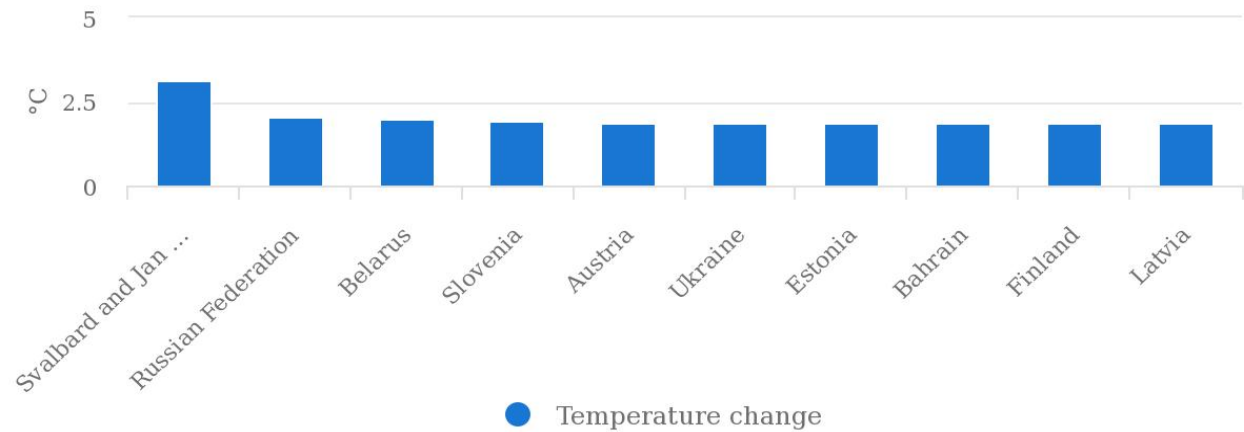
Top 10 values by Meteorological year

2017



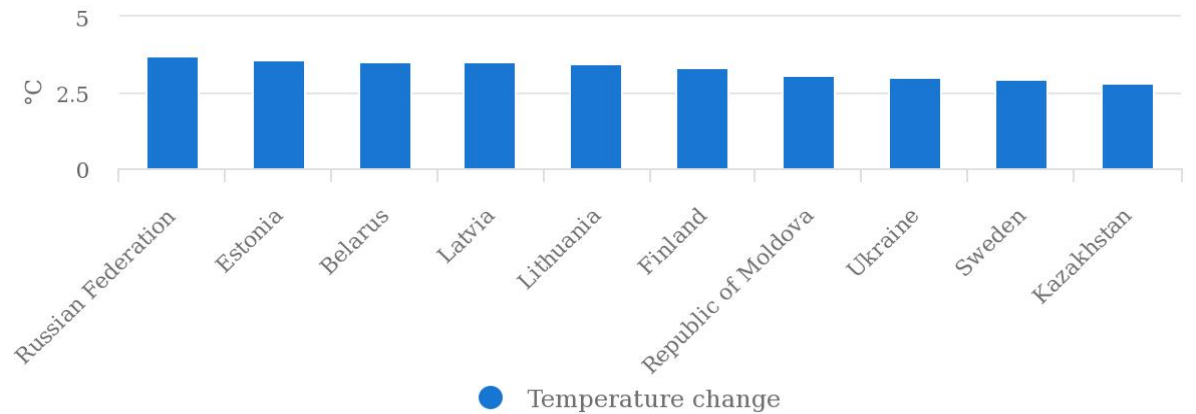
Top 10 values by Meteorological year

2010 - 2020

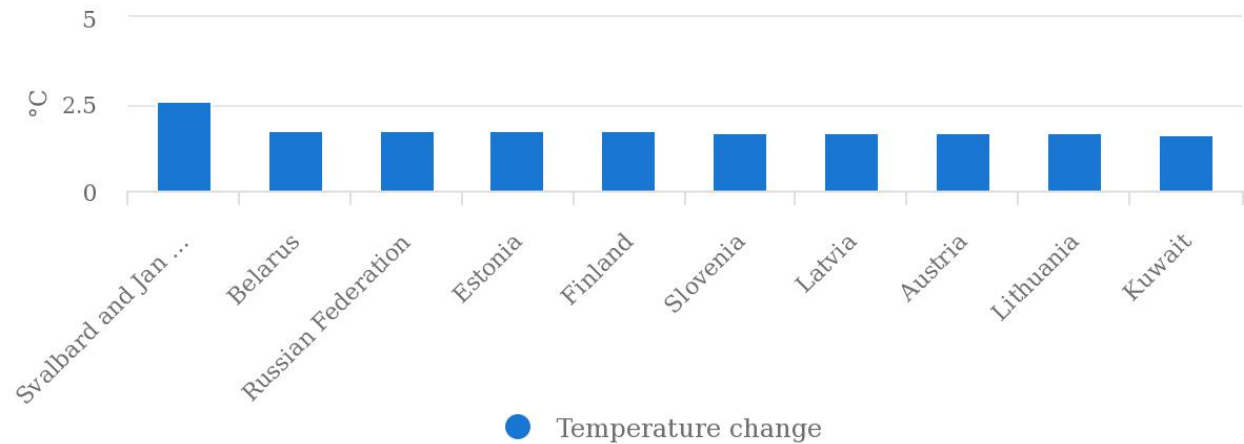


Source: FAOSTAT (Sep 09, 2021)

2020

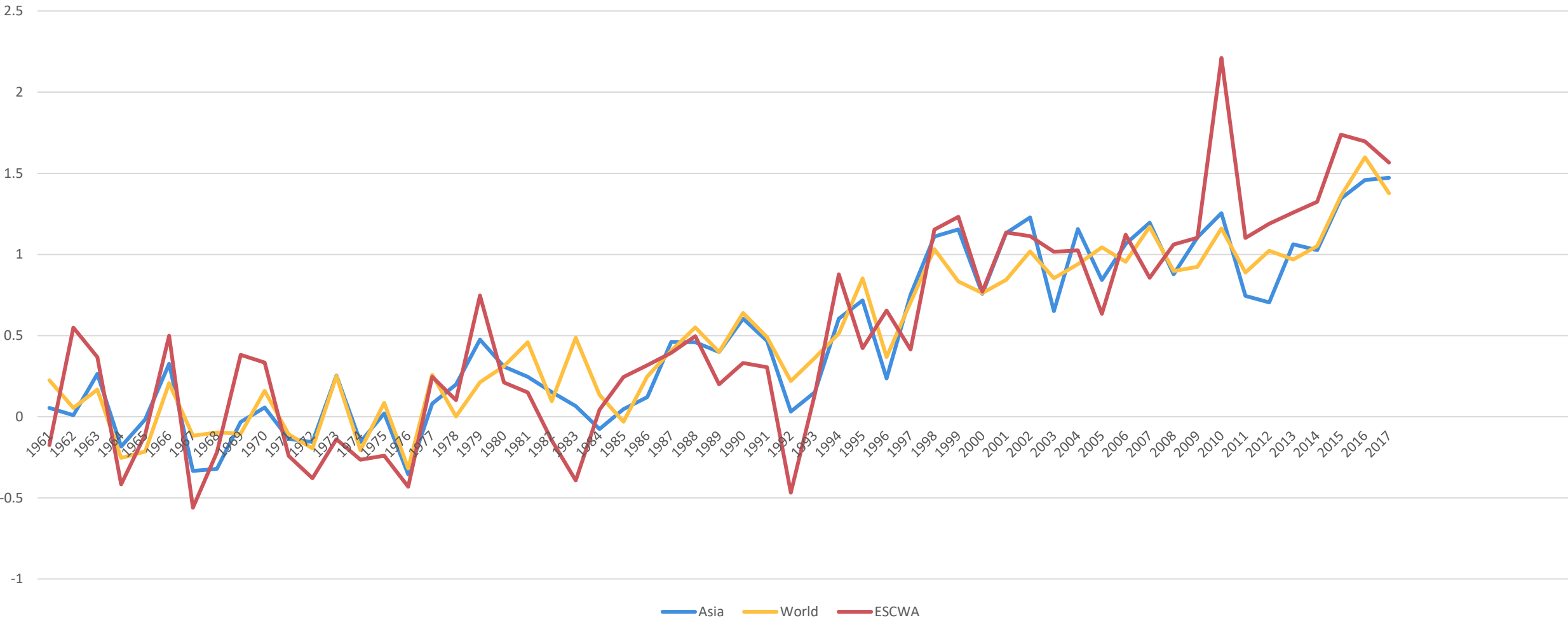


Source: FAOSTAT (Sep 09, 2021)



Source: FAOSTAT (Sep 09, 2021)

# Temperature Changes with respect to the Baseline Period\* from 1961 - 2017 for the World, Asia & ESCWA Countries

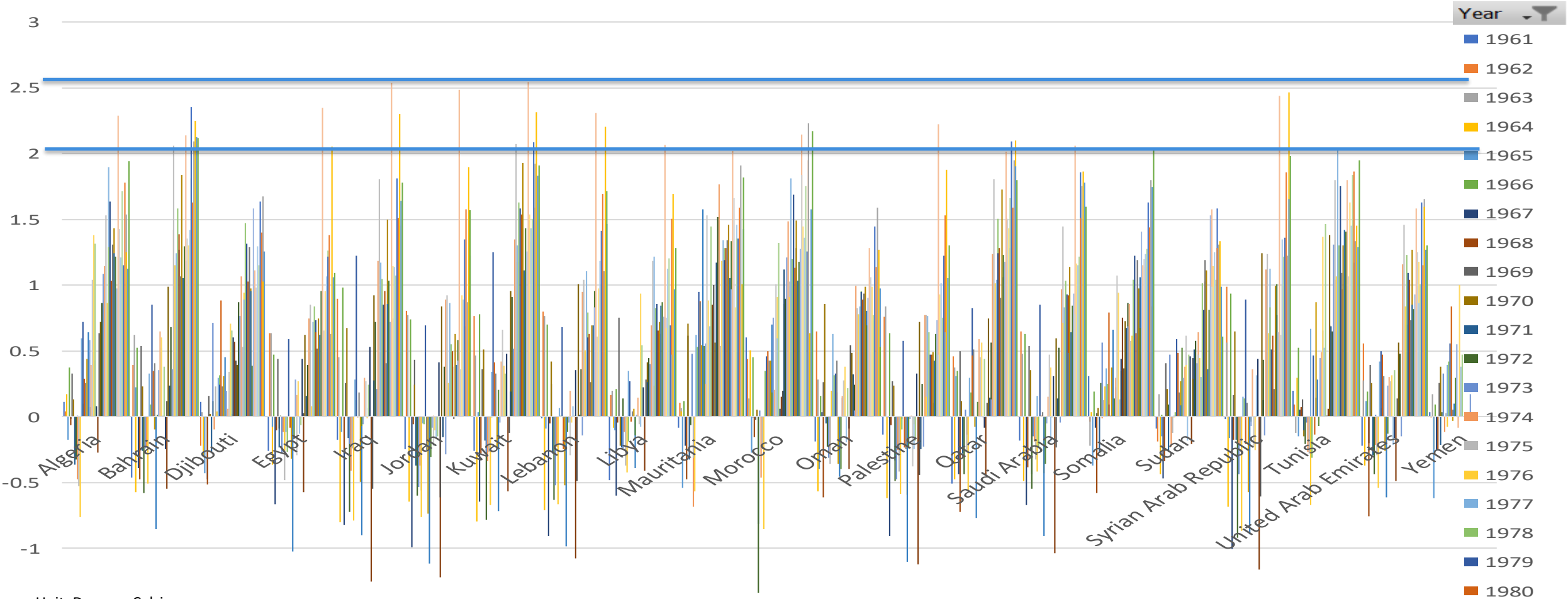


Unit: Degrees Celsius  
 Source: Food and Agriculture Organization(FOA) of the United Nations. Link: <http://www.fao.org/faostat/en/#data/ET/visualize>  
 Baseline Period\*: The data provide information on monthly, seasonal and annual mean temperature anomalies, i.e., temperature changes with respect to a baseline period, 1951–1980

Source: The FAOSTAT temperature change database contributes to the set of climate change relevant statistics that are being developed by UNECE and UNSD in cooperation with FAO.

# Temperature Change – ESCWA Member Countries

Sum of Temperature Change °C



Unit: Degrees Celsius

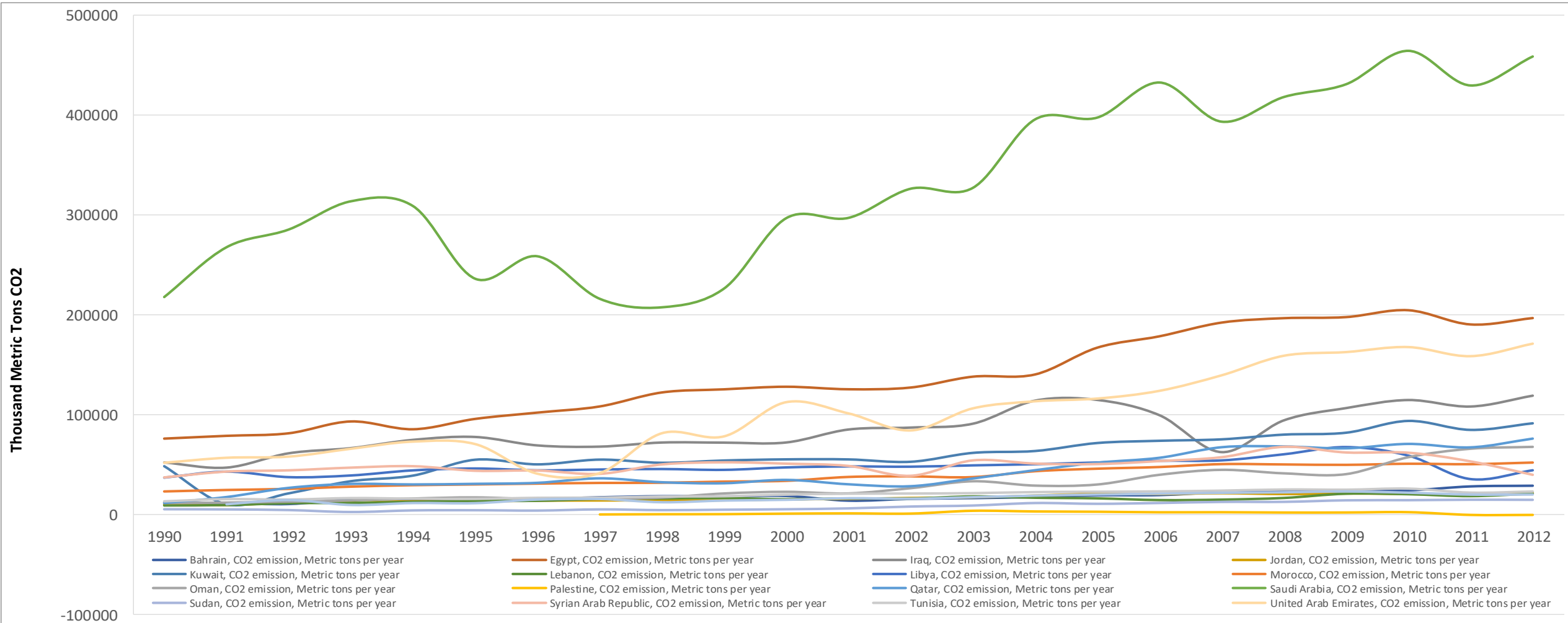
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Baseline Period\*: The data provide information on monthly, seasonal and annual mean temperature anomalies, i.e., temperature changes with respect to a baseline period, 1951–1980

Country



# CO2 Emission – ESCWA Member Countries



Source: <https://data.unescwa.org/portal/e28b867b-13b6-4d97-ad5e-85264879c2ef>

# Progress on MEA

## Paris Agreement Dec 2015 COP

20 Arab countries have signed the Paris Agreement, including 11 that have ratified



19 Arab countries prepared statements of their INDCs , although they non-Annex I parties to the Framework Convention, and not formally bound to reducing GHG



As at June 2016, 7 Arab countries among non-Annex I parties had submitted their third national communication, and 4 had submitted their biennial update reports (Lebanon, Mauritania, Morocco and Tunisia), providing information on national greenhouse gas inventories, mitigation actions, constraints and gaps, including support needed and received.



In November 2016, COP was held in Marrakesh.

**Nov 2106 COP 22 - Marrakech Partnership for Global Climate Action**

# Climate Change Indicators and Official Statistics



At the Global and regional Statistical Work at UNS: FDES and Global Set of CC Statistics and Indicators (Global Consultation 2020-2021)



Regional Commissions: ECE, UNESCWA and UNESCAP recommended a regional sets of indicators on Climate Change and Disaster-related Statistics



Facilitating the enhancement of developing countries' transparency arrangements under the Convention and the Paris Agreement, to mainstream data collection and analysis activities for climate reporting, as well as for optimal use of the existing resources and capacity at the national level.



Dedicated entities to coordinate climate change reporting, how this will be aligned with the data coordinated by the national statistical office



Addressed specific sector such as Transport Sector that was particularly difficult to integrate into the climate reporting process through XB Projects

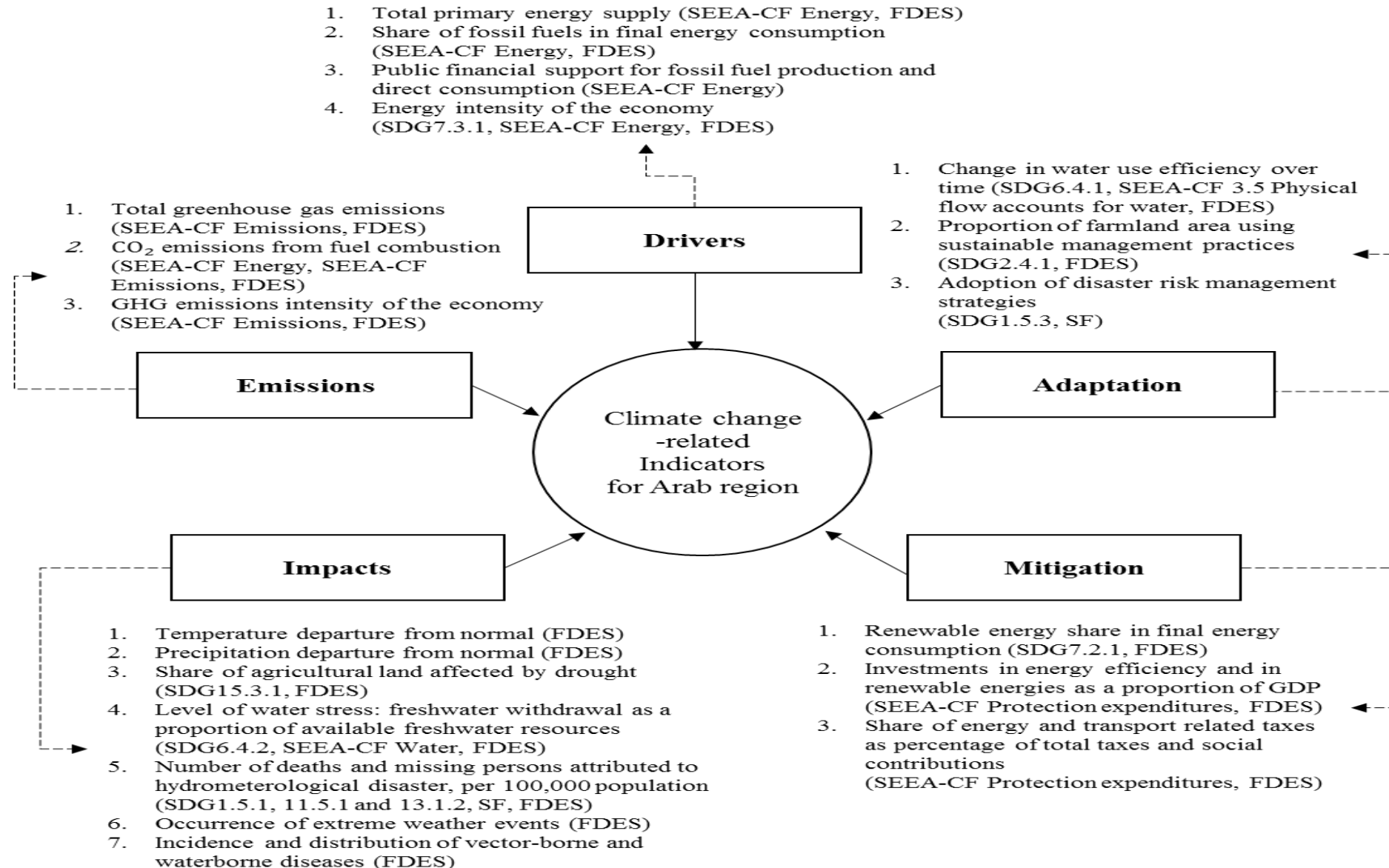


Embedding climate finance in national financial and fiduciary systems still not linked to NSOs





# SURVEY OF ECONOMIC AND SOCIAL DEVELOPMENTS IN THE ARAB REGION 2017-2018



# Proposed Indicators Related to Climate Change for the Arab Region

Area	Nbr.	Energy Related	SDG	Indicator	Rationale
Impacts	8			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]
	9			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]
	10		15.3.1	Share Of Agricultural Land Affected By Drought	Changes in precipitation patterns associated with climate change are expected to lead to increased drought in the region (Verner, 2012).
	11		6.4.2	Level Of Water Stress: 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.
	12		1.5.1 11.5.1 13.1.2	Number Of Deaths And Missing Persons Attributed To Hydrometeorological Disasters, Per 100,000 Population	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.
	13			Number Of Extreme Heat Events	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, resulting in desertification, drought, floods, landslides, storm surge, soil erosion, and saline water intrusion.
	14			Incidence And Distribution Of Vector-borne Diseases	Vector-borne disease transmission is expected to increase as a result of changes in temperature and rainfall patterns associated with climate change.

# Proposed Indicators Related to Climate Change for the Arab Region

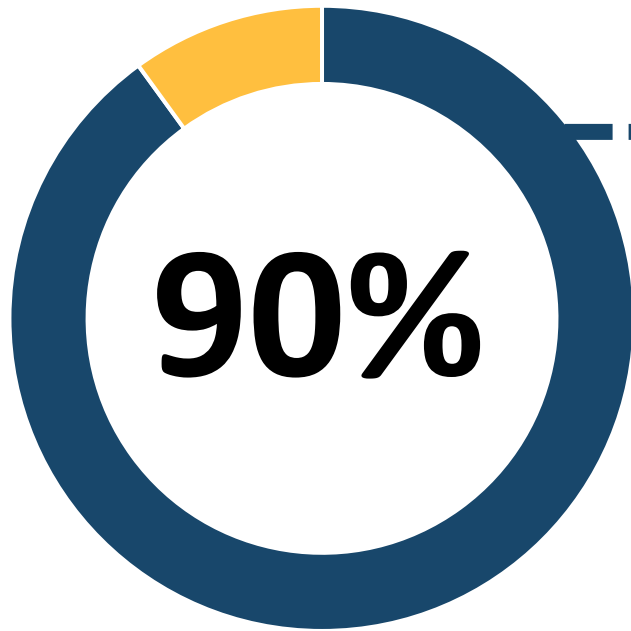
Area	Nbr.	Energy Related	SDG	Indicator	Rationale
Drivers	1	x		Total Primary Energy Supply	Energy use is the most important contributor to greenhouse gas emissions.
	2	x		Share Of Fossil Fuels In Total Primary Energy Consumption / Fossil Fuel Energy Consumption (% Of Total)	Fossil fuel combustion is the largest source of greenhouse gas emissions.
	3	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.
	4	X (GTF )	7.3.1	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
Emissions	5	x		Total Greenhouse Gas Emissions	Total GHG emissions represents the national contribution to the primary cause of human-induced climate change
	6	x		CO2 Emissions From Fossil Fuel Combustion (Suggestion To Remove Fossil However, CO2 Emissions Originate For 90% From Fossil-fuel Combustion)	Fuel combustion especially fossil fuel is the largest source of CO2 emissions and CO2 is the most important greenhouse gas in terms of contribution to climate change
	7	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

# Proposed Indicators Related to Climate Change for the Arab Region

Area	Nbr.	Energy Related	SDG	Indicator	Rationale
Mitigation	15		7.2.1	Renewable Energy Share In Final Energy Consumption	Production of energy from renewable sources is a means of meeting energy needs without (or with substantially reduced) greenhouse gas emissions.
	16			Investments In Energy Efficiency And In Renewable Energies As A Proportion Of GDP	Investments 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 mitigation is an indicator of the seriousness with which climate change is considered.
	17			Share Of Energy And Transport Related Taxes As Percentage Of Total Taxes And Social Contributions	Taxes on energy and transportation products area means of ensuring that their prices reflect the true social cost of their use, including the costs of damages associated with climate change.
Adaptation	18		6.4.1	Change in water use efficiency over time	For inclusion: This indicator is defined as the output over time of a given major sector per volume of (net) water withdrawn (showing the trend in water use efficiency).
	19		2.4.1	Proportion of farmland area using sustainable management practices	Adaptation Rationale for inclusion: 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.
	20		1.5.3	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.

# Climate Change Indicators

## List of Matched Indicators Between the Global Set and the Agreed Indicators for the Arab Region



- Total primary energy production from fossil fuels
- Share of fossil fuels in total primary energy supply
- Amount of fossil-fuel subsidies per unit of GDP (production and consumption)
- Energy intensity measured in terms of primary energy and
- Total greenhouse gas emissions per year
- Total greenhouse gas emissions per year
- Total greenhouse gas emissions from the national economy Mean surface temperature anomaly
- Total rainfall anomaly
- Crop loss due to climate extremes
- Freshwater abstracted as proportion of renewable freshwater resources
- Frequency of hazardous events and disasters
- Increase of cases of climate-related diseases
- Renewable energy share in the total final energy consumption
- Share of government adaptation expenditure in relation to GDP
- Share of energy and transport related taxes as percentage of total taxes and social contributions
- Proportion of agricultural area under productive and sustainable agriculture
- Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies



# Recommendations of the Study

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1

NSOs in the Arab region should give high priority to developing climate change-related statistics, cooperating with other relevant agencies and organizations. Reflecting regional priorities, emphasis should be placed on statistics dealing with adaptation and mitigation; statistics dealing with emissions can be considered a lower priority.

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2

Arab NSOs and other relevant organizations in the region are invited to consider the set of climate change-related indicators proposed in this study as the basis for an Arab set of Climate Change related indicators based set of indicators proposed by the UNECE Task Force on a Set of Key Climate Change-Related Statistics using the System of Environmental-Economic Accounting chosen carefully to be relevant to the region, consistent with global reporting standards (the Global Tracking Framework 2017, and United Nations SDG. Changes to the set should be considered if necessary and appropriate. ESCWA will act a source of assistance in implementing .

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# Recommendations of the Study

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Arab NSOs are invited to improve methodologies in the development of climate change-related statistics as they take into consideration the recommendations by the Conference of European Statisticians of the UNECE on climate change-related statistics and those of the Statistical Commission.

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The study recommends to have the proposed list of 20 indicators tested in volunteering number of pilot countries to see the applicability and the difficulties in data compilation, to scale up successful pilots from other regions and/or sectors, adapting them to the local context.

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# Support on CC Indicators - SDGs SEEA FDES



## Capacity Building and Coordination on International statistical standards

- Arab Working Group on Environment and Sustainable Development Indicators
- Consultative Meeting on the Implementation Framework for the Environmental Dimension of the 2030 Agenda in the Arab Region.
- National and Regional Workshop on Integrated Environmental and Economic Accounting Systems Sustainable Development Goals (SDGs) in the Arab Region
- Workshop on Environment Statistics and Information for Sustainable Development in the Arab Region (UNSD UNESCWA UNEP and EEA)



## eLearning, Arabic translation of manuals and metadata

- e-learning Course on the System of Environmental-Economic Accounting(Central Framework, Energy Accounts, Water Accounts, Waste Accounts)
- FDES IRES
- الدليل الإلكتروني لإطار أهداف التنمية المستدامة والبيانات الوصفية

# Regional Work in Relation with Climate Change and Disaster-related Statistics

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## Technology and Official Statistics

- Regional Workshop on the Integration of Big Data and Geospatial Information for the Compilation of SDG Indicators in Arab Countries 13-15 Oct 2020
- UN-ESCWA and ETC-UMA: 3 countries geospatial information assessment, national workflows to monitor SDGs, challenges to SDG monitoring
- Specific Projects: Energy Use in the Transport Sector funded by ISDB in Palestine, Jordan and Egypt



## Regional Perspectives

- GCA State and Trends in Adaptation Africa Report
- RICCAR, (Regional Initiative for the Assessment of Climate Change Impacts on Water Resources
- Cooperation: UN FAO WMO UNFCCC GCA for Mitigation and Adaptation
- More Pilot Countries for Arab Set of CC Indicators to inform on regional trends

# New Data Sources

## Geospatial and Satellite Imagery Use in official Statistics on Climate Change

Google Earth Engine Project with Egypt on Monitoring Disasters on Land Use in Egypt



GIS provides the contextual awareness to analyze the complex problem of methane emissions from natural and human-made sources.

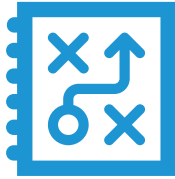
- Researchers can map both natural and human-made sources of methane.
- Satellite sensors are giving researchers a new understanding of methane emissions over broad areas.
- Useful Links

<https://spectrum.ieee.org/spotting-mystery-methane-leaks-from-space>

<https://e360.yale.edu/features/in-push-to-find-methane-leaks-satellites-gear-up-for-the-hunt>

<https://www.esri.com/about/newsroom/blog/mapping-methane-leaks/>

# Case Study - Jordan

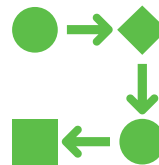


## Challenges and constraints

- GHG Inventories : Data Gaps
- GHG Mitigation 'Data Gaps in sectors other than energy;
- Vulnerability and Adaptation: Data gaps in climatological times series at the national stations, water resources monitoring, health data, socio-economic data
- Coarse spatial temporal resolution of climate scenarios, no regional climate models

- In 2015, Geospatial Population and Housing & Establishment Census undertaken
- ESCWA and UN Projects and assistance: Geospatial for SDG Environment Indicators, in cooperation with the European Topic Centre of the University of Malaga, Spain (ETC-UMA) in 2018  
[http://www.etc.uma.es/un\\_escwa\\_etc\\_uma/](http://www.etc.uma.es/un_escwa_etc_uma/)

## Progress from 2010 to 2018



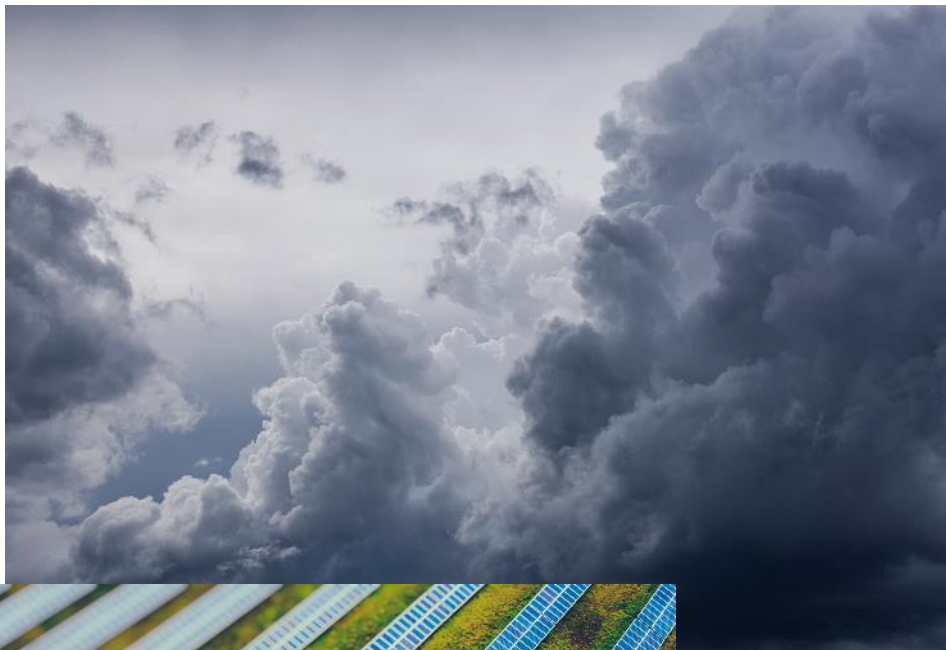
## National Coordination

- Climate Change Order number 97 (2019) that set the CC committee and its duties and power to coordinate the work within various ministries.
- Environmental Protection Law that sets the collaboration and coordination between ministries for protection of environmental components and identifies the penalties for any environmental violation.
- Other steps to be presented by Jordan



# Case Study - Lebanon

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## **In Lebanon Development of Standard Procedures for Improved Preparation and Communication of GHG Inventories in NCs and BURs (2018)**

The Information Matters project, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH support to the Lebanese Ministry of Environment to develop standard procedures for improved preparation and communication of GHG inventories in National Communications and BURs. A series of trainings was conducted in February 2018 for several departments at the Ministries of Environment, Energy and Water and Agriculture for over 40 experts.



## **Management and Information System for Climate Action (MISCA, 2018)**

The MISCA interface is a platform developed with the support of the EU-ClimaSouth project in order to track emissions and mitigation progress. A pilot phase includes the energy sector inventory and mitigation since it is the most emitting sector in Lebanon

Thank you

Economic And Social Commission For Western Asia



UNITED NATIONS

الاسكوا  
ESCWA