Arab Republic of Egypt
Ministry of Environment
Egyptian Environmental Affairs Agency
Climate Change Central Department

Just Energy Transition in Egypt's Climate Action Profile

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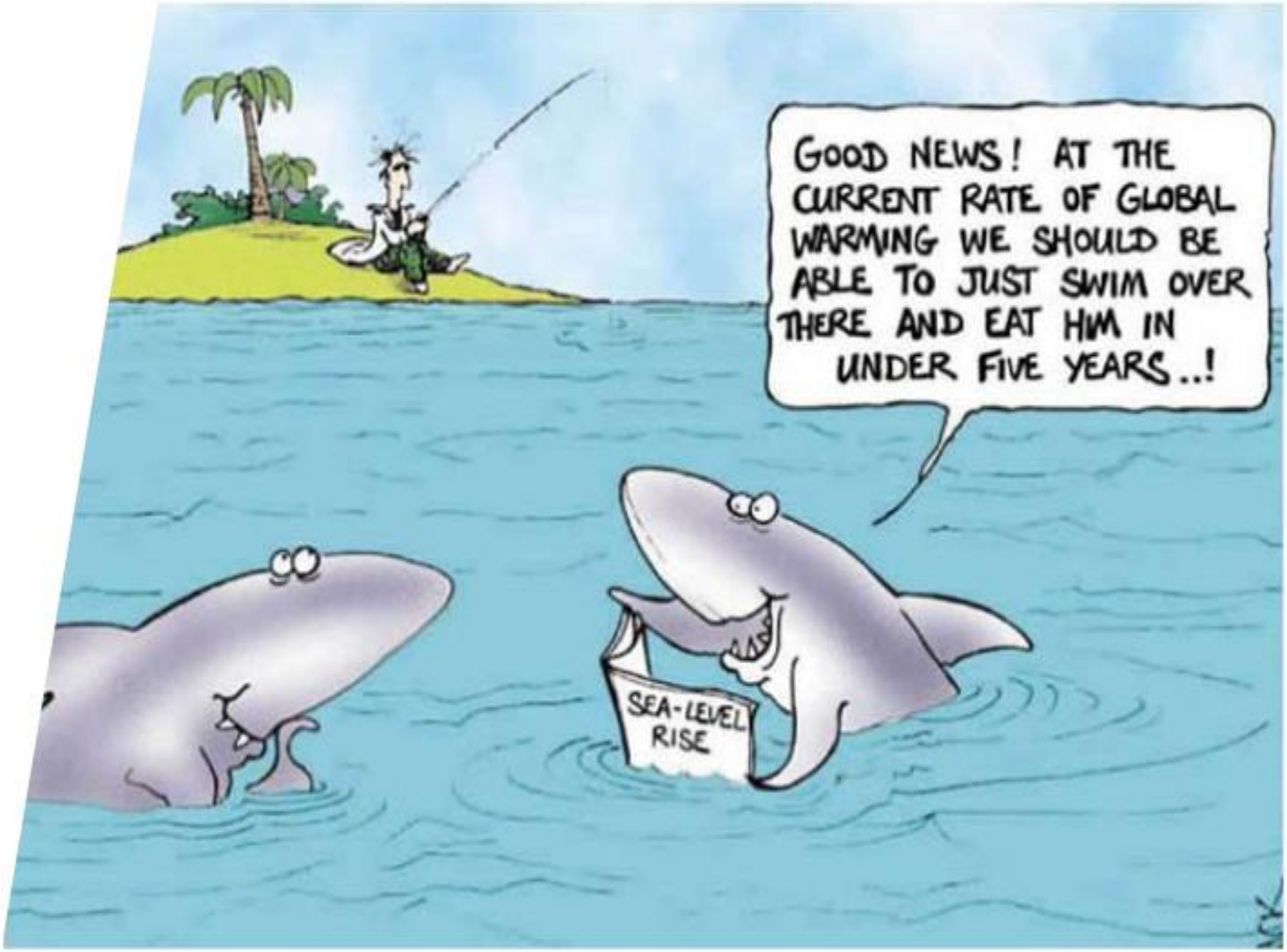

GOOD NEWS! AT THE CURRENT RATE OF GLOBAL WARMING WE SHOULD BE ABLE TO JUST SWIM OVER THERE AND EAT HIM IN UNDER FIVE YEARS..!
SEA-LEVEL RISE

OUTLINE

- **Key data**
- **Egypt's Emissions Vs Climate Vulnerability**
- **Measures Taken to Address Climate Challenges with focus on Energy Transition Measures.**
- **Challenges & Recommendations**

Key Data - Egypt

- UNFCCC:

- Signed: 09 June 1992
- Ratified: 05 December 1994
- Entry into force: 05 March 1995

- Kyoto Protocol:

- Signed: 15 March 1999
- Ratified: 12 January 2005
- Entry into force: 12 April 2005
- Egyptian DNA established in 2005 & 2009

- Paris Agreement:

- Signed: 22April 2016
- Ratified: 29 June 2017
- Entry into force: 29 July 2017

Reporting:

- 1st, 2nd, 3rd NCs, BUR1, NDC 1.

- In process: Updated NDC, FNC.

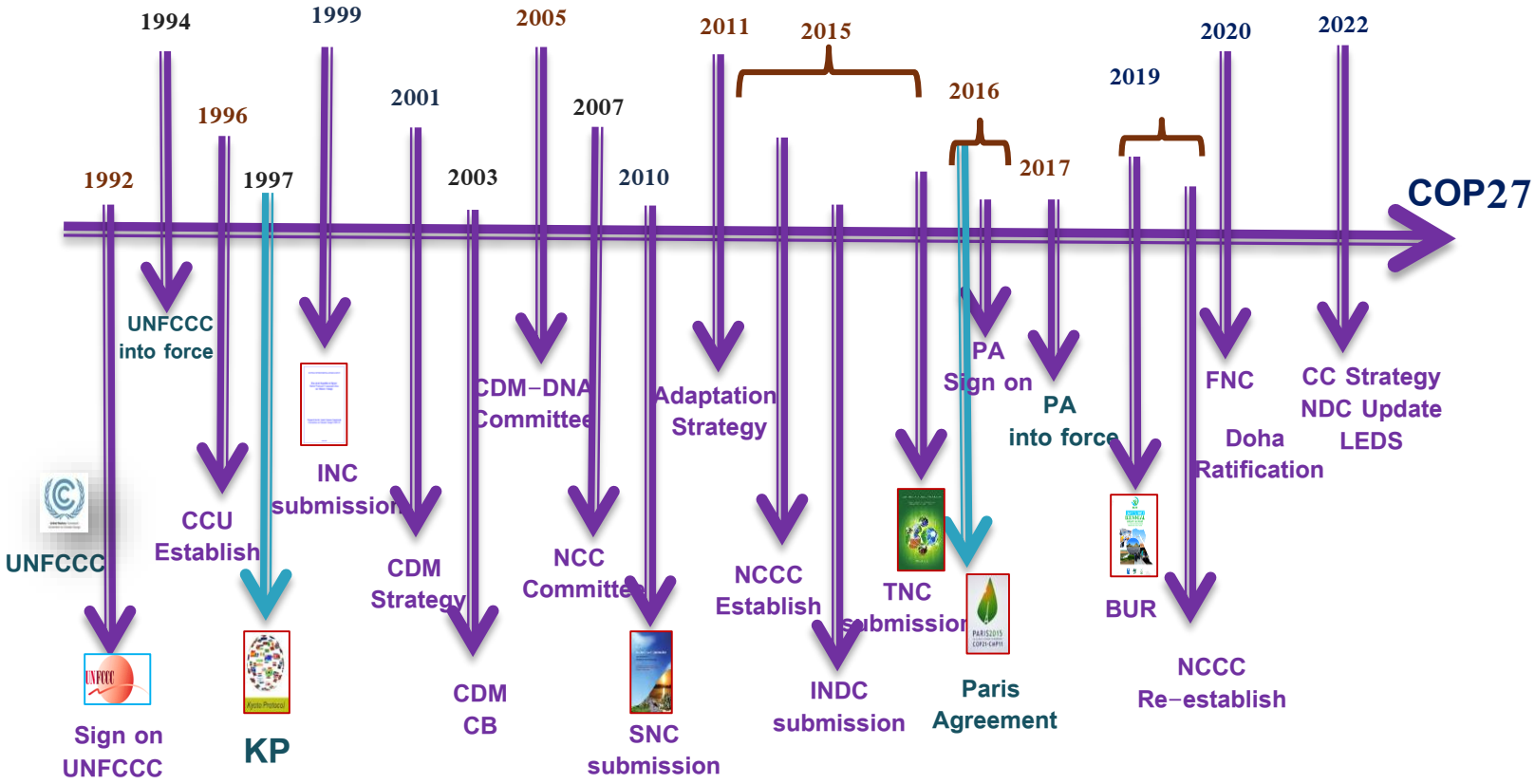
Institutional:

-Establishing National Committee for Climate Change in 2007.

- Upgraded to National Council for climate change in 2015 & 2019.

-In process: Climate Change Units in all sectors.

National Climate Action Footsteps Evolution

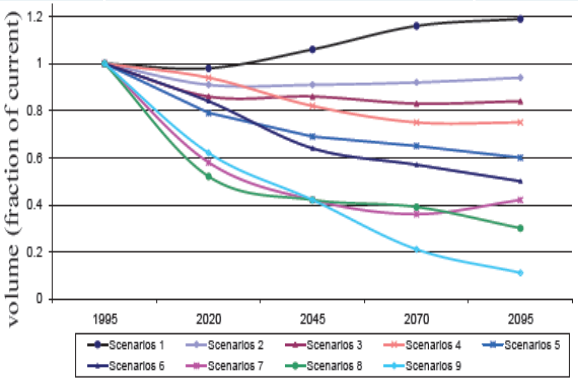


Source: Ministry of Environment

Emissions / Vulnerability

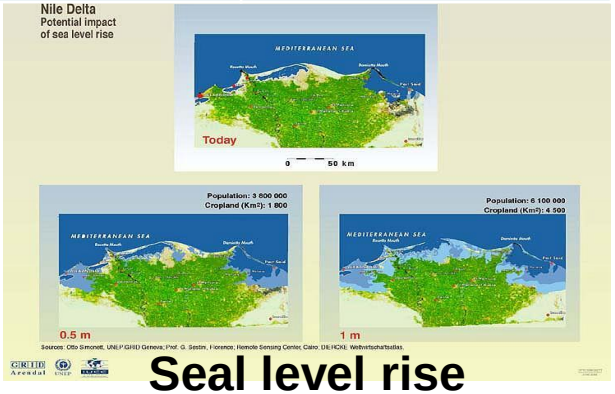
Year	1990 (INC,99)	2000 (SNC, 10)	2005 (TNC, 16)	2015 (BUR,2019)
GHG Emissions	116.7	193.3	247.9	325.6
Egypt's Global share	0.4 %	0.58%	0.6%	0.6%

Extreme weather events



Water stress

Source: ر: Strezpek et al., 2001



Seal level rise

Salt water intrusion

Source[Simonett & Sestini, 2002]

Health – Diseases

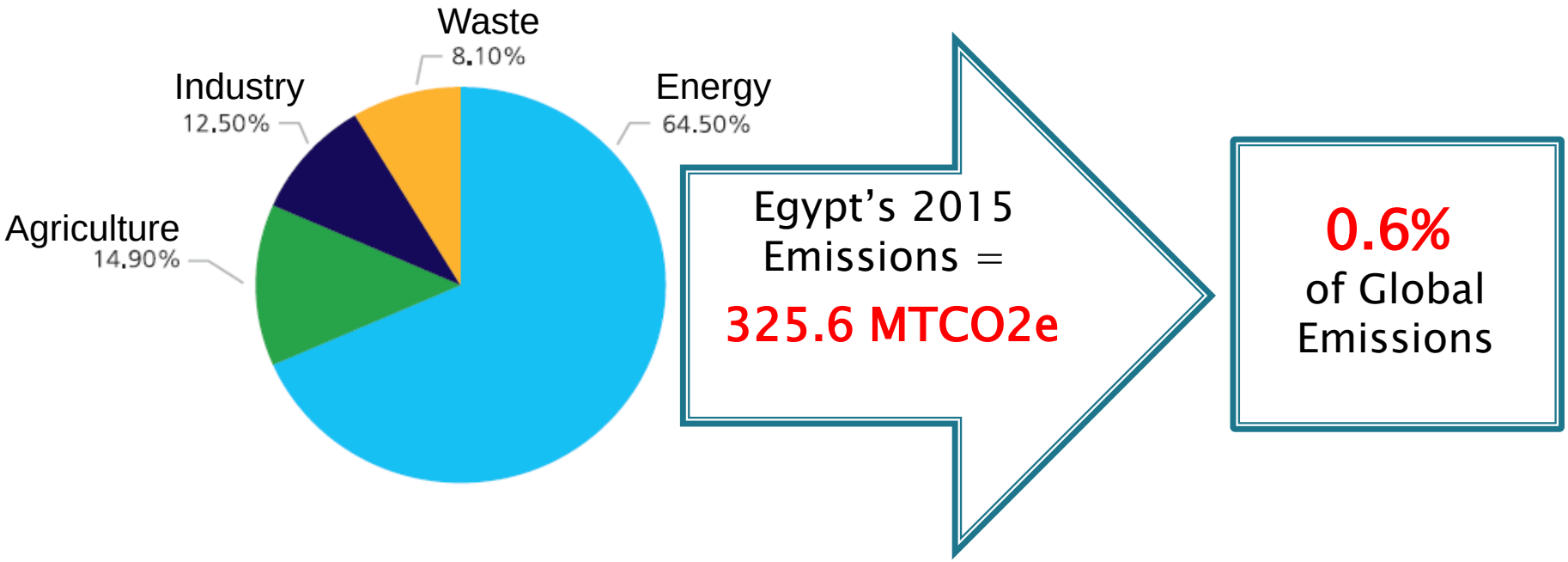
Food Security

Source: IPCC AR3

Biodiversity

Coral reefs bleaching

Egypt's GHGs Emissions



2030 EGYPT VISION

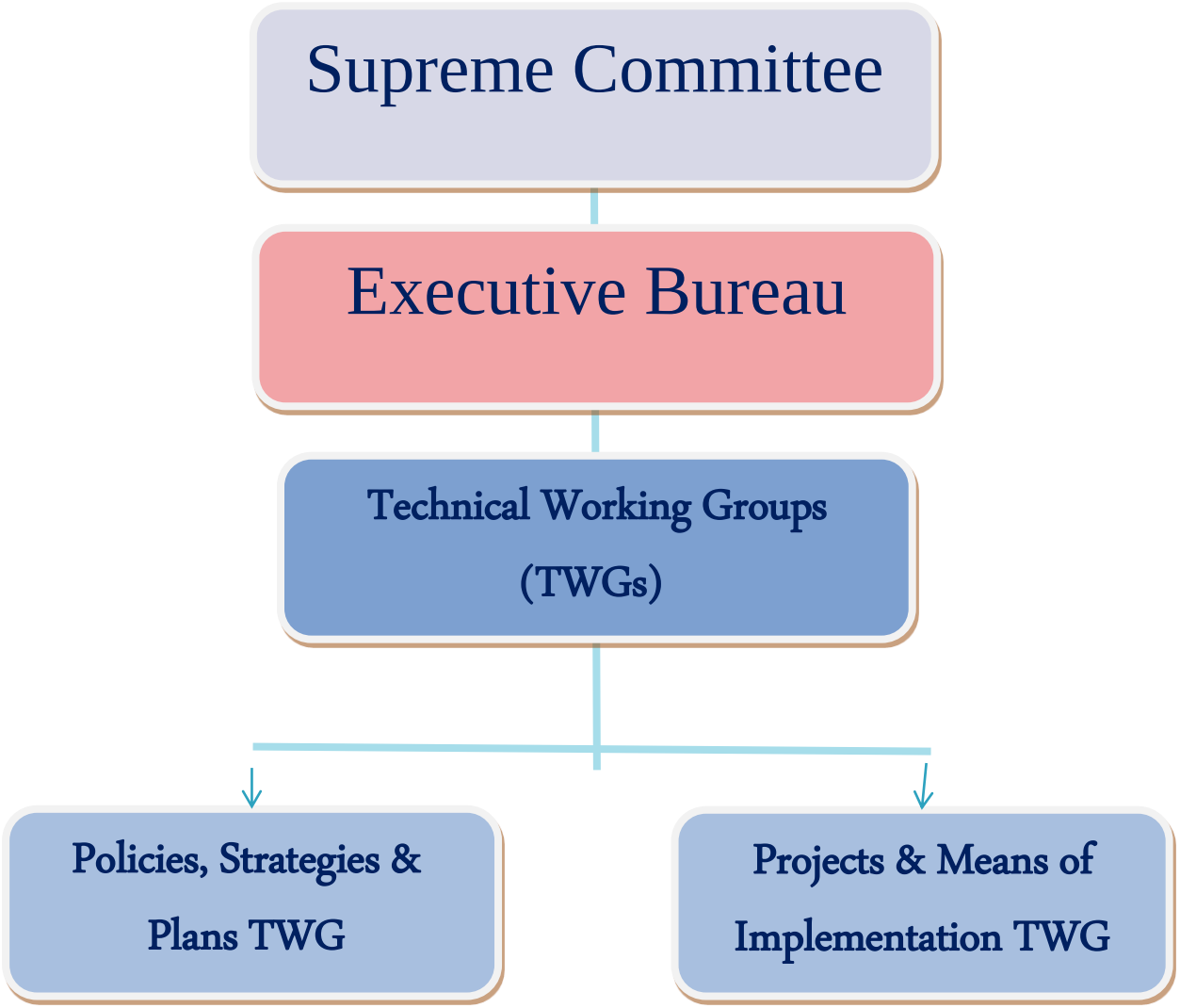
By 2030, the new Egypt will achieve a competitive, balanced, diversified, and knowledge based economy, characterized by justice, social integration and participation, with a balanced and diversified ecosystem, benefiting from its strategic location and human capital to achieve sustainable development for a better life of all Egyptians

The SDS serves as the national umbrella; through which the SDGs will be implemented in the light of national circumstances

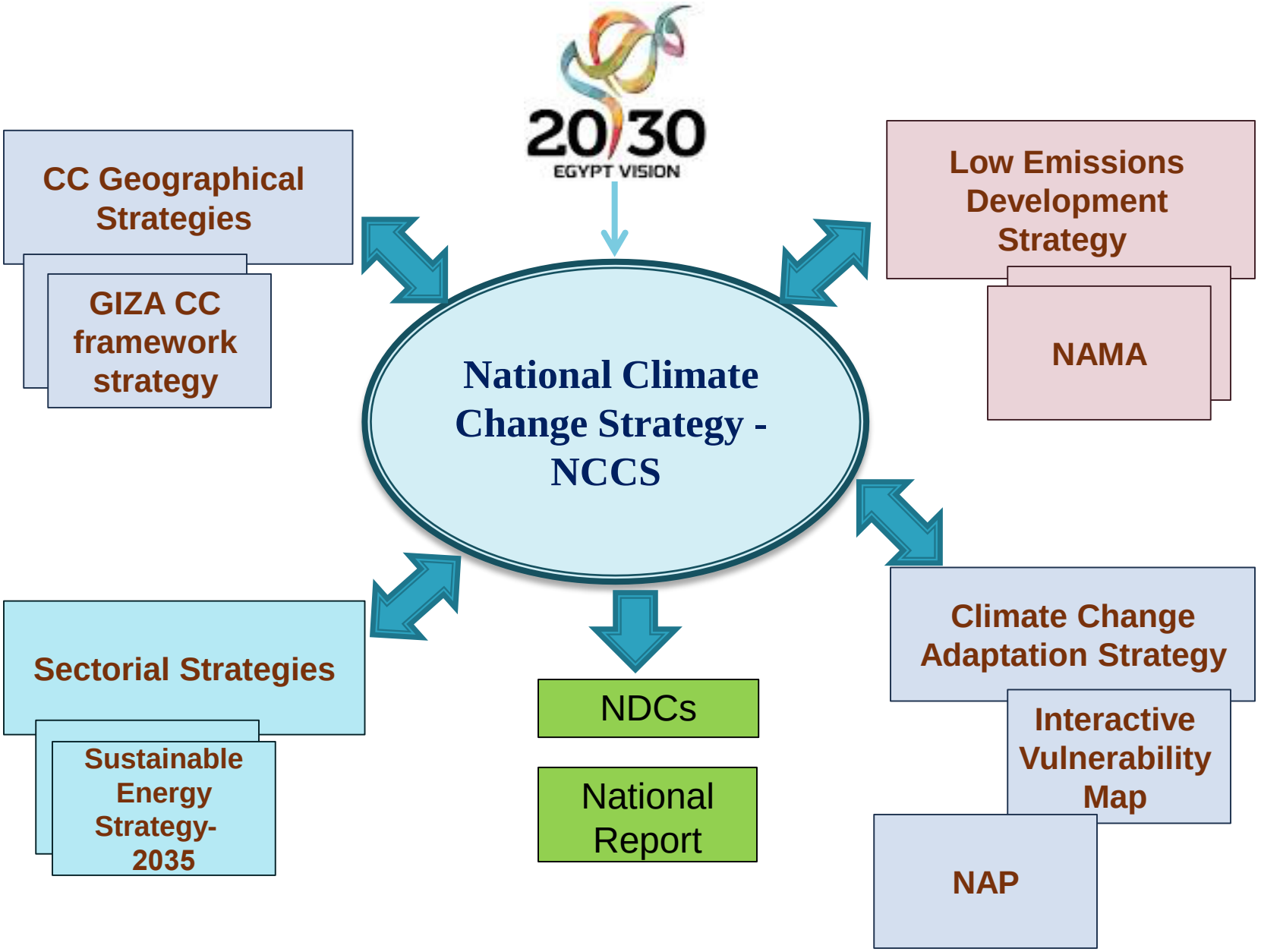
Institutional Set-up

National Council on Climate Change

- Formulation and updating of a comprehensive national climate change strategy.
- Approval of the national climate plans and linking them with SDS 2030.



Strategic


2030
EGYPT VISION
National Climate Change Strategy - NCCS
CC Geographical Strategies
GIZA CC framework strategy
Low Emissions Development Strategy
NAMA
Sectorial Strategies
Sustainable Energy Strategy- 2035
NDCs
National Report
Climate Change Adaptation Strategy
Interactive Vulnerability Map
NAP

NCCS Vision

Effectively addressing the impacts of climate change which contributes to improving the quality of life for the Egyptian citizen, achieving sustainable development and sustainable economic growth, preserving natural resources and ecosystems, and strengthening Egypt's leadership at the international level in the field of climate change.


Strategic Vision
Goals
Objectives
Directions
Policies
and
Tools

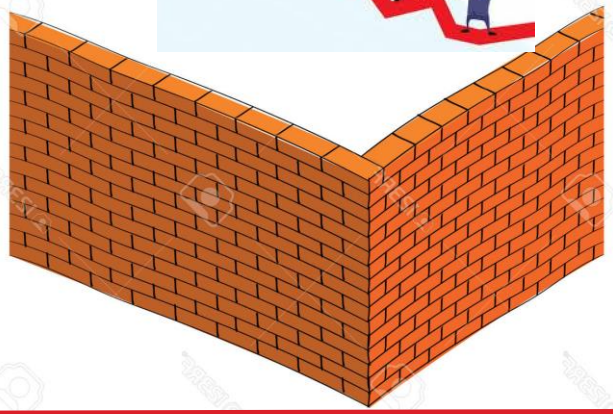
Energy Transition in NCCS

NCCS Goals

Goal 1: Achieving Sustainable Economic Growth and Low-Emission Development in Various Sectors

Goal 4: Enhancing Climate Financing Infrastructure

Goal 2: Enhancing Adaptive Capacity and Resilience to Climate Change, and Alleviating the Associated Negative Impacts



Goal 5: Enhancing Scientific Research, Technology Transfer, Knowledge Management and Awareness to Combat Climate Change

Goal 3: Enhancing Climate Change Action Governance

Goals and Objectives

Goal 1: Achieving Sustainable Economic Growth and Low-Emission Development in Various Sectors

Objective (1.a): Energy transition by increasing the share of all renewable and alternative energy sources in the energy mix

- **Deployment of centralized systems of renewable energy**

- **Promoting small-scale decentralized systems**

- **Increasing the use of renewable energy within industrial sector**

- **Optimizing the use of renewable energy in off-grid applications**

- **Deployment of energy storage technologies**

- **Inclusion of new alternative energy sources such as green and blue hydrogen**

- **Phasing out coal and switching to low carbon fuels**

- **Stimulating the increased production and use of biofuels**

Goals and Objectives

Goal 1: Achieving Sustainable Economic Growth and Low-Emission Development in Various Sectors

Objective (1.b): Reducing emissions associated with the use of fossil fuels

Conversion of vehicles to compressed natural gas

Raising the efficiency of road infrastructure

Expansion of electrified mass transit systems

Conversion of ships to operate on natural gas and liquefied natural gas

Explore using carbon capture, utilization and storage technologies

Developing freight train network as an alternative to road transport

Transformation to non-motorized transportation

Goals and Objectives

Goal 1: Achieving Sustainable Economic Growth and Low-Emission Development in Various Sectors

Objective (1.c): Maximizing energy efficiency

- Improving the efficiency of thermal power plants, transmission and distribution networks

- Improving the energy efficiency of electrical appliances and equipment

- Promote energy management systems

ISO 50001
ENERGY MANAGEMENT

- Increasing energy efficiency in tourism and commercial facilities

- Improving energy efficiency of different modes of transportation

- Improving energy efficiency in buildings

GREEN BUILDING COUNCIL EGYPT

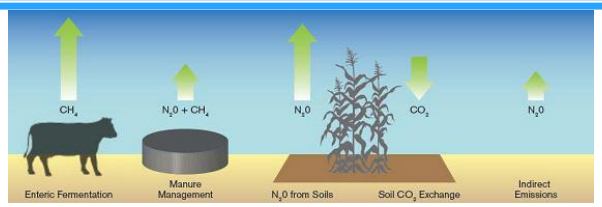
- Enhancing the energy efficiency of industrial processes

Goals and Objectives

Goal 1: Achieving Sustainable Economic Growth and Low-Emission Development in Various Sectors

Objective (1.d): Adopt sustainable consumption and production trends for reduction of greenhouse gas emissions from other non-energy activities

Reducing greenhouse gas emissions from animal production activities through the use of modern technologies and various feeding systems



Promote the concept of '4Rs' Reduce, reuse, recycle and recovery

Safe and proper disposal of solid waste and collection and utilization of landfill gas

Source reduction such as limiting the use of single-use plastic

Goals and Objectives

Goal 2: Enhancing Adaptive Capacity and Resilience to Climate Change, and Alleviating the Associated Negative Impacts

Objective (2.a): Protect citizens from the negative health impacts of climate change

Objective (2.b): Minimize loss and damage to country assets and ecosystems by preserving them from the impacts of climate change

Objective (2.c): Preserving the country's resources from the impacts of climate change

Objective (2.d): Resilient infrastructure and services to be able to combat climate change impacts

Objective (2.e): Implementation of disaster risk reduction concepts

Objective (2.f): Preserving and expanding green spaces

Objective (2.g): Enhance women's response considerations to help them adapt to climate change

Goals and Objectives

Goal 3: Enhancing Climate Change Action Governance

Objective (3.a): Defining the roles and responsibilities of the different stakeholders in order to achieve the strategic goals

Objective (3.b): Improving the rank of Egypt in the international profile of climate change actions to attract further investments and climate finance opportunities

Objective (3.c): Sectoral policy reform to capture the required climate change mitigation and adaptation interventions

Objective (3.d): Enhancing institutional, procedural and legal arrangements such as Monitoring, Reporting and Verification (MRV) system

Goal 4: Enhancing Climate Financing Infrastructure

Objective (4.a): Promoting local green banking and green credit lines

Objective (4.b): Promoting innovative financing mechanisms prioritizing adaptation actions, e.g., green bonds

Objective (4.c): Private sector engagement in climate finance and promotion of green jobs

Objective (4.d): Compliance with Multilateral Development Banks (MDB) guidelines for climate finance

Objective (4.e): Building on success of the current climate finance programs

Goals and Objectives

Goal 5: Enhancing Scientific Research, Technology Transfer, Knowledge Management and Awareness to Combat Climate Change

Objective (5.a): Strengthening the role of scientific research and technology transfer in climate change mitigation and adaptation

Objective (5.b): Facilitating the dissemination of climate-relevant information and knowledge management among government institutions and citizens

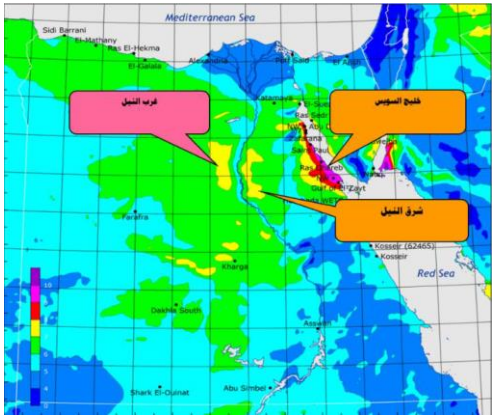
Objective (5.c): Raising awareness on climate change among different stakeholders (high-level policy/decision makers, citizens, and students)

Examples on Taken Efforts to Mitigate GHGs Emissions (Energy Transition)

- Policies
  Strategies
- Projects / Activities

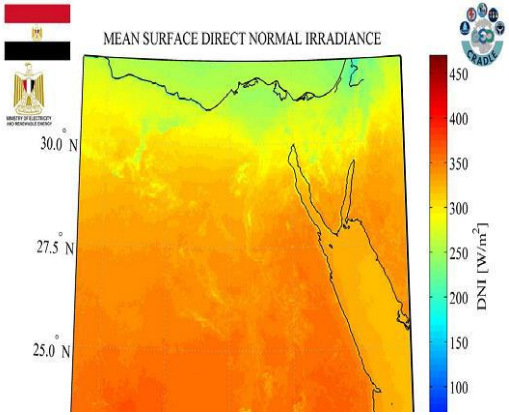
Egypt is rich in Renewable Energy resources especially wind and solar that qualify it to be one of the major renewable energy producers.

There is About 7650 KM^2 (square kilometers) have been allocated for Implementing RE projects with expected potential of 35 GW from wind energy and 55 GW from Solar.



Egypt Wind Atlas

To utilize this potential



Egypt Solar Atlas

In 2008, National RE Strategy to achieve a generation of 20% of the country's electricity from renewable resources by 2022.

In 2015, a new Strategy for Integrated Sustainable Energy 2035 targeting energy diversification through renewable energy and a subsidy reform plan:

A target to reach the share of renewable energy in electricity production to 42% by 2035.

Currently reviewing and updating the strategy by **excluding the coal in electricity production and replacing its capacity with renewable energy sources**

National Energy Efficiency Action Plan (NEEAP) of Electricity Sector, to reinforces EE standards, labeling for household appliances, application of EE code for buildings and disseminating efficient lighting.

Source: Ministry of Electricity & RE

To achieve our ambitious vision in utilizing the renewable resources

Multiple measures have been taken and incentives offered to encourage private sector participation in the energy sector projects based on our conviction that the private investments will play a major role in achieving our target.

Introducing a legislative amendment that aimed to encourage private sector to invest in power sector projects especially renewable energy (RE Law Decree No 2013/2014).

Feed in Tariff program succeeded in attracting a 32 international and local investors to implement Benban Solar Park project, the largest one in the Middle East and Africa located near the city of Aswan with total capacity 1465 megawatts. **This project won the best project prize worldwide by the World Bank**

As a result, foreign and local investors have been encouraged to invest in the RE sector projects. The latest prices got under the BOO Scheme are less than 2 cents /kwh for solar and less than 3 cents /kwh for wind.

Integration of Egyptian environmental sustainability standards into the national plans and budget, that involved increasing the share of green projects in the state budget allocation for investments to 30% in 2021/2022 and target to raise it to reach 50% by 2024/2025.

The first country in North Africa and the Middle East to issue green bonds 750 Million USD to finance 15 climate projects in the field of clean transportation and sustainable waste water management.

In the process for updating a framework for low Emission Development Strategy, in line with Egypt NCCS & SDS.

-Having both national development planning and national climate change planning in more coordinated, coherent and synergistic manner.

Started the preparation of a study on the establishment of a national carbon market in Egypt:

-A comparative study on the various mechanisms that the carbon market includes and recommending one or some of these mechanisms in the Egyptian market.

-Setting the institutional, legal & technical arrangements.

Source: Ministry of Environment

Projects/ Activities

Energy (RE – EE)

Benban Solar PV Farm (Private Sector)

To generate 1465 MW through Feed in Tariff Program

(In 2019, won the best project prize worldwide by the World Bank)

2011- Kureimat Hybrid Concentrated Solar Power (CSP) plant: 20 MW CSP installed

EGYSOL Project for Solar Water Heaters in Hotels (Red Sea, South Sinai), in cooperation with UNEP & Italy, 2012

Covered 3820 m2 in 30 hotels/ target 5000 m2

Source: Ministry of Electricity & RE

Solar PVs for Off-grid villages, with capacity 300 Watt per each covering 6943 households, funded by Emirates

- 1125 MW in Zafarana and Gabal Elzeit Wind Farms in the Red Sea (545 & 580 MW) installed (NREA)

- 250 MW in Ras Ghareb Wind Farm (Private Sector- BOO)

Source: Ministry of Electricity & RE

- **Dissemination of efficient lighting system (CFL)** that resulted in total energy saving in 2010 of 4.96 TOE and 14.8 million tCO2.

The installation 6 million LED lamps in 2015 (from total target of 13 million lamps) resulted in electricity savings of 519 GWh (equivalent to 323,337 tCO2).

Implemented Standards and Labeling programme on home appliances for electricity rating (2011-2015):

Source: Ministry of Electricity & RE

Sustainable Transport

Expanding the greater Cairo underground metro network

Monorail linking Cairo with the New Administrative Capital

Natural gas in commercial vehicles

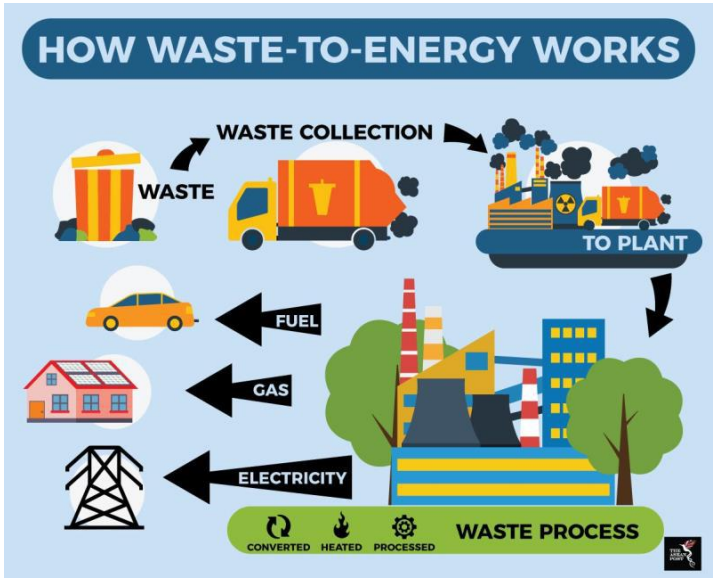
Intensifying the use of environmentally sound river transport;

Investment in Electric Vehicles Infrastructure

Source: Ministry of Transport

Waste to Energy

- **Energy-from- waste is the process of generating energy in the form of electricity and / or heat.**
- **Private sector is invited to participate in electricity generation from waste.**
- **The Egyptian Cabinet has approved the Waste-to-Energy tariff at EGP 1.4/Kwh. (Decree no. 41 of 2019).**
- **Such tariff shall be applicable until reaching the maximum contractual capacity of 300 MW.**



Bio-energy for Sustainable Rural Development (2010 - 2015) (GEF/ UNDP)

- The use of renewable biomass as an energy resource for cooking and lighting.
- Contribution to alleviation of poverty in rural areas by promoting their economic and social development and, as a part of that, by creating additional job opportunities.
- Improved environmental conditions through better and environmentally sound management of agricultural and other domestic solid wastes.
- Reduction of GHG emissions through substitution of fossil fuels and better management of organic waste.

Applied more than 1200 units in households

More than new 20 companies specialized in biogas

On-job training for workers on biogas units

Source: Ministry of Environment

Green Hydrogen

- Several measures have been taken to on Hydrogen in Egypt.
- A prime minister decree has been issued for forming a high-level working group from various ministries to set a road map for future steps for producing and using hydrogen.
- Started preparing a national strategy for hydrogen production.
- Studying the opportunities for localizing the hydrogen industry in Egypt.

Sustainable energy transition requires:

- Significant reduction in costs of produced energy from renewables.
- Evolution in the energy storage technologies.
- Regional and International energy interconnection to take advantage of all forms of renewable energy.
- Policy frameworks and market instruments – increasing private sector participation.
- Global synergy among countries, adequate resource mobilization and measures tailored to the challenges various countries face

Challenges

Training, capacity building & development on the new technologies.

Finding practical solutions to ensure that (IPR) does not make any burden to transfer technology from developed to developing countries, while encouraging research and development, and creating operation and maintenance facilities in developing countries.

Adequacy and accessibility to climate finance needs to be simpler and more efficient, aligned with the needs of developing countries.

Recommendations

- There is a need to set policies including just transition models that support maximization of positives and minimization of negative impacts of response measures

1) Measure the impacts of response measures

2) Determine impacted areas and, accordingly, evaluate and design policy response solutions

3) Measure the effects of the policy solutions.

SOCIAL PROTECTION PROGRAMS

Recommendations

In-depth assessment and analysis is needed to quantify the impacts (such as loss of jobs, etc.) and guide policy makers .

Accurate data and expertise for using modelling tools to assess impacts that produces highly accurate quantitative results

MRV System needs to be designed and implemented to allow for accurate data availability (one of the most crucial elements for constructing an accurate model)

Sustainability and commitment of government to protect labors and the poor people.

The need to conduct more region- and sector-specific studies to support developing country Parties in their economic diversification initiatives.

A critical need to focus on training and education policies that facilitate job transitions and improve workers' employability.
(As Without skilled workers and competent enterprises, the shift to a low-carbon economy will be neither technically feasible nor economically viable.)

The greening of economies in the context of SD and poverty eradication **requires a country-specific mix of macroeconomic, industrial, sectoral, social protection, skills-development, social dialogue** and labour policies that **establish an enabling environment for the creation of decent work opportunities** by the provision of support towards environmentally sustainable activities.


Thank You