

Climate Change in Syria

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The Syrian coastal region occupies only around 2% of Syrian national territory but is home to 11% of the population and is of national importance in terms of agriculture , contributing about 11% to gross national product .

Energy production is high (35% of the national total) and some industrial activities such as cement production (38% of national production) and petroleum refining (50% of national total) are well developed in the region .

The coastal region is well supplied with transport links , including maritime , air and land-based system of roads and railways .

The climate is typically Mediterranean with cool wet winters and hot dry summers. The coastal region is dominated by the Jibal as Sahel mountain range that runs parallel to the coast some 20-40 Km inland and affects the coastal climate .rainfall increases from around 760-900 mm/yr in the coastal plains to a maximum of 2000 mm/yr in the mountains .

The soils of the area reflect the underlying geology, which is dominated by limestones and dolomite and which are of typical Mediterranean red-brown types .

Freshwater supplies are adequate although some streams dry up during the summer . Irrigation is practiced on 16% of the cultivated land , which covers in excess of a quarter of a million hectares .

Although water resources are at present adequate , the hydrological system was seen as one that is vulnerable to the impacts of climatic change and sea level rise , particularly since the demand for freshwater is likely to rise with population growth and increased agricultural production .

water quality may be adversely affected by salinization of ground water ; vegetation cover may decline and soil erosion may increase in a warmer world although these systems will be more affected by the other sources of change indicated above .

Under scenarios of climatic change , temperatures will rise, more in the highlands areas than along the coast with consequent impacts on natural and managed ecosystem and agricultural production .

it is believed that the frequency of extreme events could increase , particularly the frequency of torrential rainstorms with consequent increase in soil and slop erosion. The rather uncertain scenarios of future rainfall suggest that the region may be slightly drier than at present .

Under scenarios of moderate sea level rise (20 cm higher than present) the vulnerability of the Syrian coastal region may be increased but the researchers concluded that the impacts of such a rise would be less significant than the impacts of non-climatic factors, including population increase and present development trends.

- Over a decade, Syria has set environmental conservation and protection as a priority issue .

In cooperation with the International Community Syria developed its National Environmental Strategy and Action plan and ratified the UNFCCC in 1996.

Recognizing the importance of Kyoto protocol in GHG Reduction , Syria ratified the protocol in 2005.

Law No.50 for Environmental protection

Establishment of the Environmental -
Protection Council.

Establishment of the General Commission -
for Environmental Affairs.

Law No.8 of 2003

Establishment of the National Energy
Research Center.

Achievements

Syria has ratified the UNFCCC on 3/4/1996 by the presidential decree no.363 dated 10/12/1995.

A national committee on climate change has been established in 20/3/2003 including representatives from all stakeholders.

The Syrian Environmental research center in cooperation with GTZ prepared in 1998 a national study on the climate change in Syria.

- Inventory study of GHG emissions and sinks
- Main scenario of GHG emissions.
- Technical and non technical options for GHG emission reductions.
- Conclusions and recommendations to be included in a national strategy for GHG emission reduction .

5. Results of Inventory Study for the years 1990-1994

TABLE (42): Estimated emissions of greenhouse gases (GHG) in Syria during 1990. (except the change of using the land and forests).

Potential Sources of Greenhouse Gases	CO ₂ kt	CH ₄ kt	N ₂ O kt	NO _x kt	CO kt	NMVOC kt	SO ₂ kt
1- Energy	25300	2.5	1.06	169	259	35	354
2- Industry	2400	1.4	-	-	-	0.035	-
3- Solvents and chemicals use	-	-	-	-	-	9.9	-
4- Agriculture	-	162	14	18	190	-	-
5- Land use change and forestry		2.2	0.15	0.55	19.4	-	-
Release	(2020)						
Removal	(180)						
Uptake	(2200)						
6- Household waste and sewage water	530	102.8	-	-	-	-	-
Total of Emissions	28500	271	15.21	187.0	448.4	40	354

Note: “-” represents not available or not applicable, “kt” represents kilotons,. Numbers between brackets are approximate estimation and not an accurate calculation.

TABLE (43): Estimated emissions of greenhouse gases (GHG) in Syria during 1994.(except the change of using the land and forests)

Potential sources of Greenhouse gases	CO ₂ Mt	CH ₄ Kt	N ₂ O kt	NO _x kt	CO kt	NMVOC kt	SO ₂ kt
1- Energy	31000	2.8	1.27	196	297	40	367
2- Industry	3000	1.4	-	-	-	0.016	-
3- Solvents and chemicals use	-	-	-	-	-	19.8	-
4- Agriculture	-	132.3	14.3	33	333	-	-
5- Land use change and forestry		2.0	0.14	0.5	17.8	-	-
Release	(2020)						
Removal	(180)						
Uptake	(2200)						
6- Household waste and sewage water	600	116.7	-	-	-	-	-
Total of Emissions	35000	255	15.71	229	648	7.8	367

Note: “-” represents not available or not applicable, “kt” represents kilotons , Numbers between brackets are approximate estimation and not an accurate calculation.

**Expected GHG in the energy sector in 2000
(CO2 equivalent)**

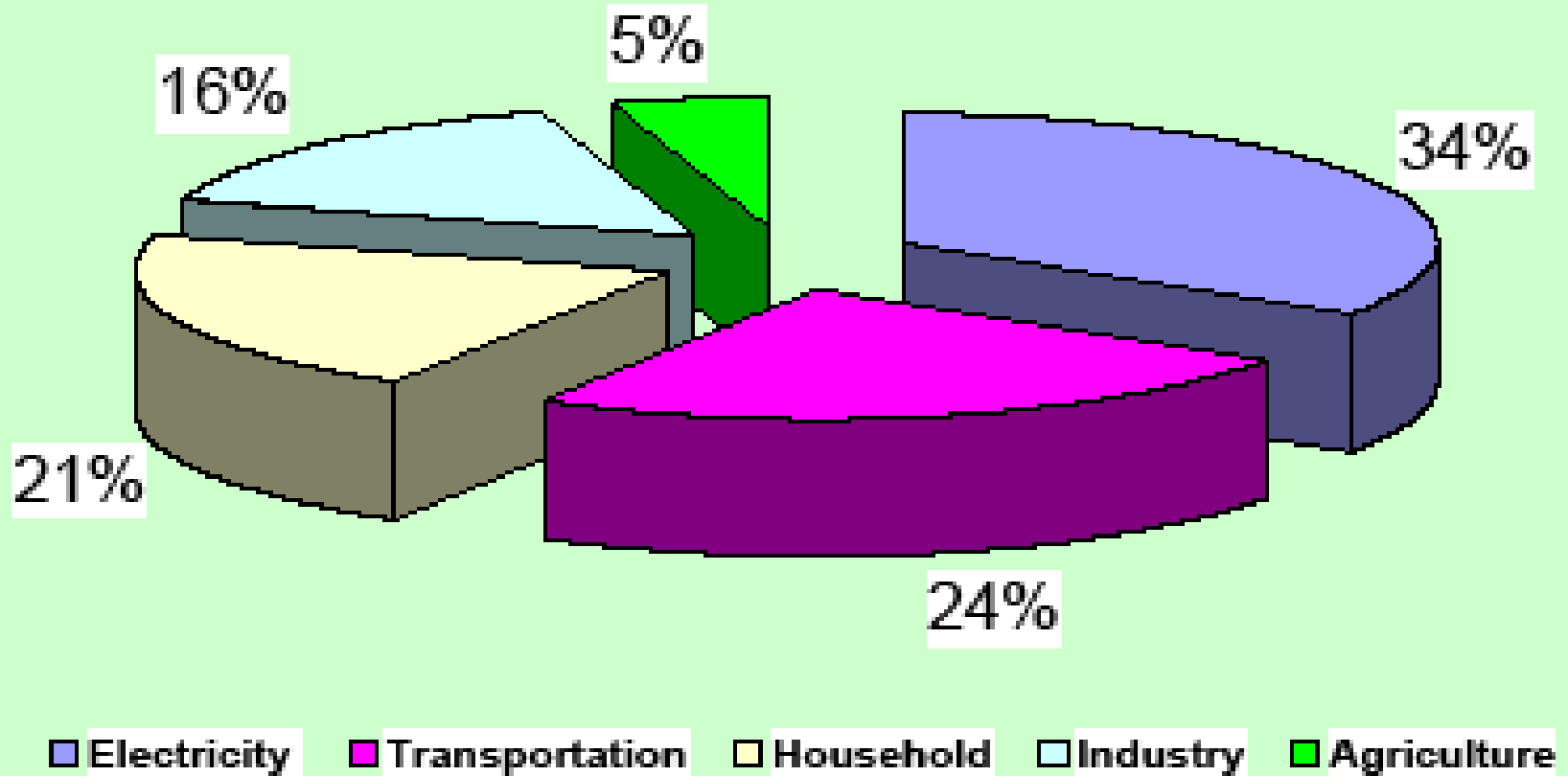


Figure No 5

Expected GHG in the energy sector in 2005 (CO2 equivalent)

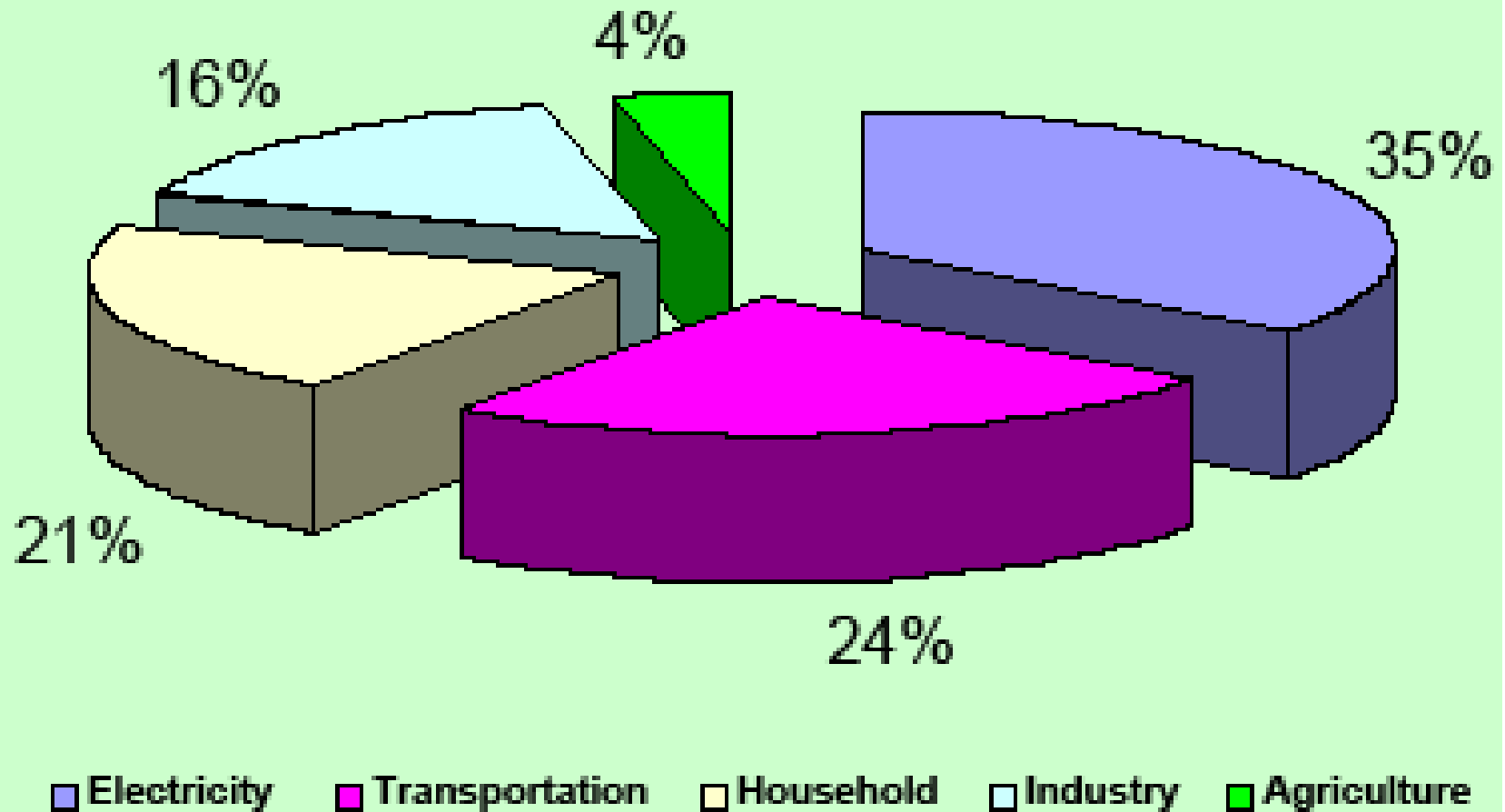


Figure 6

Expected GHG in the energy sector in 2010 (CO2 equivalent)

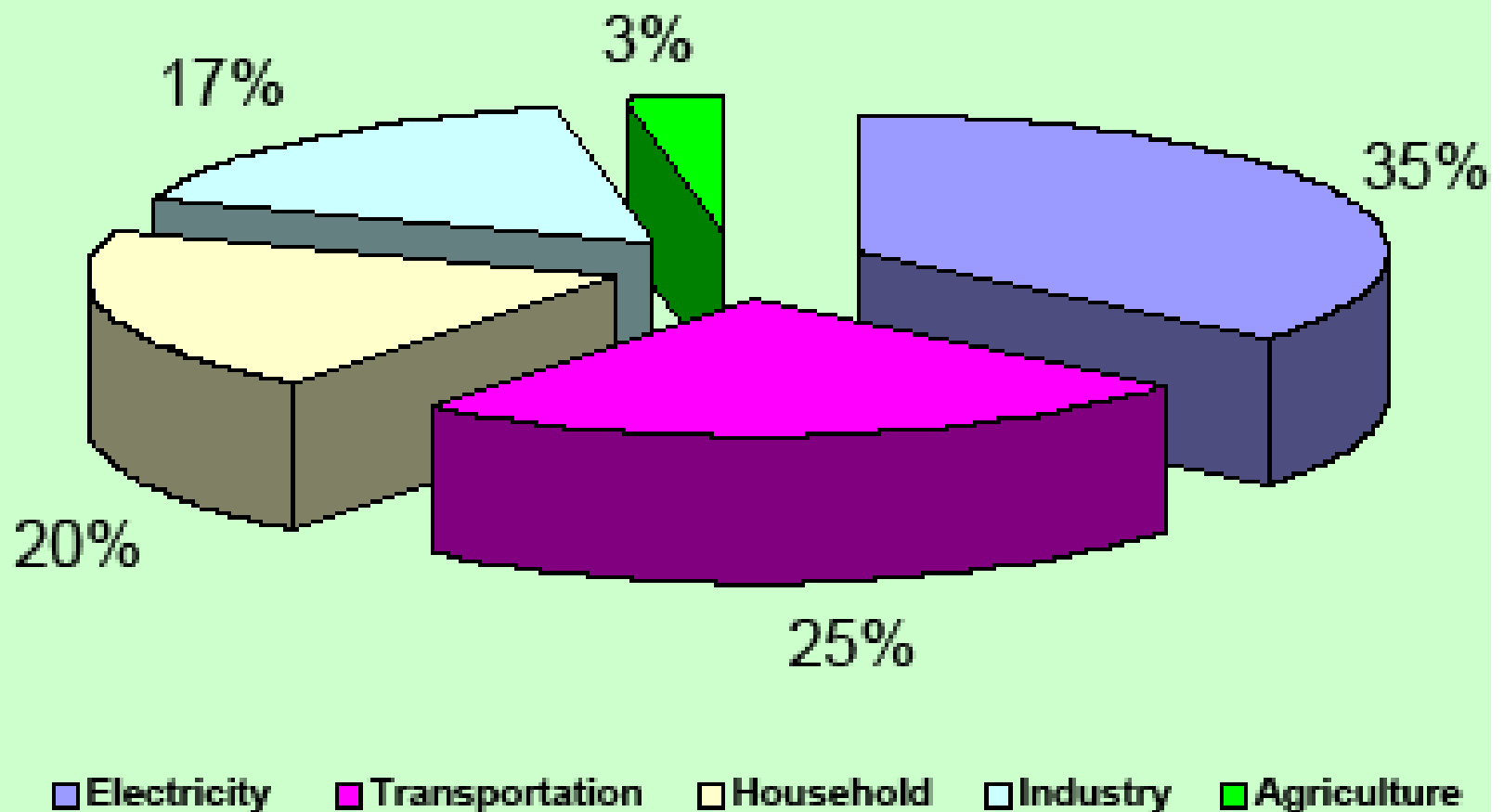


Figure No7

Main outputs of the study

230% increase in GHG until 2005.

288% increase in GHG until 2010.

There is a great potential for GHG emission reduction in all sectors.

Energy and industrial processes
(fuel switching ,energy efficiency ,
cogeneration, fertilizer factories,
cement factories).
Electricity (wind farms , solar
energy.....) .

Transportation (fuel switching).

Wastes (landfills, wastewater treatment stations).

Agriculture (afforestation , methane recovery from agricultural wastes , ...etc).

Current and future activities

- Advanced implementation of the planning and energy conservation project .
- Advanced implementation of installation of 20 wind speed measuring stations.
- Advanced implementation of the wind farm project in Sendiana (1).
- Implementation the wind farm project in Sendiana (2).

- Implementation of the national project for promoting the solar heating of water for houses .
- Conversion of power stations to use CNG.
- Promotion of building thermal insulation and preparation of national code for energy conservation .

Therefore , financial and technical assistance are required to strengthen the national capacity for the implementation of the CDM and other UNFCCC related activities.

Thank you for your
attention