

**Report on
The Fourth International Conference of
the Egyptian Society for Environmental
Sciences**

**“Impacts of Climate Change on Natural
Resources”**

10 -11 November 2009

Ismalia – Egypt

Submitted to WANA Forum Secretariat

By

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Introduction:

The Conference was held in the premises of Suez Canal University and Mercure Hotel in the city of Ismailia, Egypt on 10 -11 November 2009 under the auspices of Prof. Hany Helal, Minister of Higher Education and Scientific Research, and Eng. Maged G. Ghatas, Minister of State for Environmental Affairs.

Around 300 people attended the conference from 22 countries. The conference was structured as follows:

- Opening ceremony
- Lectures
- Scientific poster session
- Scientific oral sessions

Programme Summary

TUESDAY, 10/11/2009

Conference Hall Building, Suez Canal University, Ismailia

09:00 – 10:00 Registration

10:00 – 11:00 Welcome and Opening Ceremony

11:00 – 11:30 Coffee Break

11:30 – 01:00 Lectures Session I

"Impacts of climate change on ecosystem stability and water resources"

01:00 – 02:00 Light Lunch

02:00 – 04:15 Lectures Session II

"Climate Change and Biodiversity"

04:15 – 04:45 Coffee Break

04:45 – 05:45 Scientific Poster session

Duration: 11:00am – 07:15pm

Author Available: 04:45pm – 05:45pm



05:45 – 07:15 One Scientific Oral sessions

07:15 – 08:00 Dinner

WEDNESDAY, 11 / 11 / 2009

Mercure Hotel and Conference Hall Building, Suez Canal University, Ismailia

09.00 - 12.00 Four Scientific Oral sessions

12.00 - 12.30 Coffee Break

12.30 - 02.00 Two Scientific Oral sessions and One Lecture Session

02.30 - 03.00 Moving to SCU Conference Hall

03.00 - 04.00 Lunch

N.B. The conference consisted of many parallel sessions running at the same time, so I had to choose which sessions are of importance and relevance to my expertise. I mention briefly some of the sessions I attended:

The Popular Climate Change and the Illusion of Ecosystem Stability. How to React on the Dynamics of Nature?

Kehl H., Department of Ecology, Section Ecosystem Science and Plant Ecology, Berlin University of Technology, Germany

Climate change will be the greatest environmental challenge facing future generations unless we stop overstressing the carrying capacities of the world's terrestrial and marine ecosystems. The over-exploitation and over-consumption of fundamental natural resources will increase day by day and human environments with their vital infrastructure for sources supply, traffic and living conditions in complex settlements are getting more and more sensitive against the normal dynamics of nature, especially abrupt changes of weather. In addition to the normal and natural dynamics of weather and climate, anthropogenic impacts on the climate system may exacerbate the effects and intensities of weather events. To encounter these challenges the development of adaptation

and risk prevention strategies has to be one of the most urgent aims of decision makers all over the world. This contribution is a critical reflection on current debates on climate change impacts, which often disregard important questions and necessary solutions related to climate change adaptation and the exponential world population growth.

Climate Change and Water Resources in Morocco

Scherer D., Department of Ecology, Chair of Climatology, Berlin University of Technology, Germany

As in many countries of the world, climate change has already been observed in Morocco during the last decades, and is expected to continue throughout this century. Based on the multi-model data set used for the IPCC AR4, analyses show that projected change in air temperature is significant and will lead to higher-than-average rise in air temperature in Morocco. However, the slight decrease in precipitation projected for Morocco is not significant, since present-day interannual variability in precipitation is too strong. As part of a large research project entitled "Urban Agriculture (UA) as an Integrated Factor of Climate-Optimised Urban Development, Casablanca/Morocco", funded by the German Federal Ministry of Education and Research (BMBF), the question of climate change and subsequent consequences for the environment and the society is addressed by an inter- and transdisciplinary bi-national research consortium.

The possible impact of climate change on water resources is one of the research topics studied in detail both by observational and modelling techniques. The presentation will present the basic concepts and first results on the problem, including a discussion on possible adaptation strategies. However, the studies also revealed that it is both possible and necessary to include the aspect of mitigation in our research. The advantages of synergistically address adaptation and mitigation in Moroccan agriculture will be discussed. In conclusion, the results for Morocco are expected to be transferable to other countries of semi-arid climates.

Contribution of Sinai in Adaptation to the Impacts of Climatic Changes and Sea level rise in Egypt

Hassan M. A.G., Nuclear Matera Authority, Cairo, Egypt

The world is facing climatic changes resulting into sea level rise which will exacerbate environmental problems and loss of coastal lands. These effects are caused by: (1) expansion of the ocean water by the global temperature rise, (2) subsidence of coastal land, (3) melting of glacial ice, (4) coastal erosion.

However, there are great debates about the authenticity of the data and the future expectations based on it. The most affected parts of coastal areas are the deltas of major rivers; the Nile Delta is an acute case, because it sustains a large percentage of the Egyptian Population which is about 76 millions as estimated in 2006. From this perspective, we consider Sinai as a remedy of these effects in Egypt. Actually, Sinai is a natural extension of the Nile Delta eastwards across the Suez Canal. Furthermore, Sinai has some merits which nominate it as the first target in desert development in Egypt, such as: (1) Sinai represents about 1/6 of the Egyptian Land, and can sustain 1/6 of the 76 millions Egyptian People (about 12 millions), but its population is only about 0.5% of the total population of Egypt So Sinai can take a major role in adaptation to climatic changes as well as detaching the population in the Nile Valley, which is already overpopulated. (2) Sinai is a miniature of Egypt and other desert environments in general. So it can be the arena of desert development of Egypt and other desert countries. (3) Sinai includes all geological and geographical features of all other desert lands of Egypt. If the desert environments are well developed and populated in Sinai, the outcomes could be applied to the vast spans of the Eastern and Western deserts of Egypt, and also extended to other countries. (4) The southern triangle of Sinai links the Precambrian Arabian-Nubian Shield in Egypt, Saudi Arabia, Sudan, Yemen and Somalia. Also the sedimentary cover in Sinai is better represented than in other parts of Egypt. (5) Extensive plains in northern Sinai can be reclaimed for growing crops. Similarly, the valleys of southern Sinai are very good for growing vegetables, fruits etc. Its extensive coasts on the Mediterranean and the two gulfs of the Red Sea sustain fisheries. (6) Two sources of black sand deposits occur in Egypt: the first at the northern coast of the Delta which could be flooded by sea level rise, and the second in Sinai which would not be much affected by sea level rises, In addition, to great potential for other mineral resources. Sinai has several worldwide tourist attractions, in addition to two unique ones: the route of the Sacred Family from Palestine to Upper Egypt in northern Sinai and Saint Katherine Monastery in southern Sinai.

Climate change impacts on biodiversity

Walther G.R., Department of Plant Ecology, University of Bayreuth, Germany

Climate change is considered a major driver for recent changes in the behaviour and distribution of species as well as the composition and structure of communities and ecosystems (Walther et al. 2002, Parmesan 2006, Rosenzweig et al. 2007). Case studies of already noticeable impacts of climate change on biodiversity will be presented and discussed with regard to the role and importance that climate change plays for the observed biotic changes. Based on the presented findings, gaps in the present knowledge of climate impact research will be highlighted and needs identified with respect to the future impacts of climate change on biodiversity.

The Public Perceptions of Climate Change in Korea: The Role of News Reporting

Hyun-Chul Kim, Sung-Kyum Cho and Hak-Soo Kim

Science Communication Laboratory, Sogang University, Seoul Korea,
Department of Communication, Chungnam National University, Daejeon, Korea,
College of Communication, Sogang University, Seoul, Korea

Focusing on the representation of climate change in the Korean newspapers, the purpose of this study is to identify key patterns and trends in public perceptions, and to see the role of news reports in social discourse on climate change. We examined more than 1,700 news articles conducted by three major daily newspapers during the period 1999-2009. The results show that the news contents were significantly changed from simple reports of 'fact' to more detailed reports of 'attitude' and 'behaviour' with greater public awareness and better understanding of climate change. Also, ideology has implications for the interpretation of 'attitude' and 'behaviour' as well as 'fact', and it works as a powerful selection device in deciding what scientific news is by newspaper companies.

Real and Spurious Sustainable Consumption Behavior in Turkey: A field Research

Hakan Kiraci, Aydın Kayabasi, Dumlupinar University, Kutahya, Turkey

Like people living in other countries, Turkey's citizens have contributed to the destruction of natural resources and to the problem of environmental pollution by consuming unsustainably natural resource. Hence, sustainable consumption behaviors (SCB) have been important roles to reduce effects of climate change and other environmental problems to save the planet. Although there is an increasing search about SCB, it has not been taken care of real and spurious SCB adequately. The study aims to analyse the frequency of SCB and conceive the real and spurious SCB. For this aim, a questionnaire was given to 500 students who study at Dumlupinar University in Kutahya, Turkey. At the end of this study, it was found that the frequency of SCB was mid-level and some of SCB (energy conservation, organic product consumption e.g) was spurious SCB. The results of this research have significant implications for both the practice of strategic plans of business and action plan of public institution.

Community Based Adaptation approach – Strengthening people's capacities to revive and regenerate natural resources to threat climate change



Sanjeeta Singh Negi, Negi J .S., National Organisation for Sustainable Development (NOSD), Anand, Gujarat, India

This presentation framed community based adaptation in the context of the uncertainties surrounding future climate change on communities and natural resources. What is the nature of vulnerability and resilience to climate change at the rural community in the western Gujarat, India? Role of traditional wisdom of experiences, culture, gender perception and experiences were explored. In this context, approaches to climate change adaptation were explored and implemented in the Water First Project of the National Organisation for Sustainable Development by increasing community resilience and building adaptive capacities.

Temperature, Aridity Thresholds, and Population Growth Dynamics in China over the Last Millennium

Lee H.F., Department of Geography, University of Hong Kong

The relationship between climate and population has long been discussed, but rarely has it been quantitatively measured. Hence, the relationship remains ambiguous. In the present study, we employ fine-grained temperature, aridity threshold, and population data, together with logistic models and spatial statistics, to quantitatively explore how far climate change affected population growth dynamics in China from 1000 to 1979. Statistical results confirm that cold climate was associated with below average population growth, mediated by regional geographic contexts. In addition, cold climate triggered a southward shift of populations. In short, the climate–population relationship was evident in historical China, and temperature was more influential than the aridity threshold in explaining the fluctuation of population size and shifts in population distribution. The strong influence of temperature change on northward and southward population shifts and the weak influence of the change in the aridity threshold on population growth dynamics are further discussed. The observed temperature–population relationship may give some indication of future demographic effects from climate warming.