

HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

INITIATIVES AND EFFORTS OF



DEPARTMENT OF ENVIRONMENTAL PLANNING
SCHOOL OF PLANNING AND ARCHITECTURE
NEW DELHI, INDIA

Prof. Dr. Mahavir
Head of the Department of Environmental Planning
mahavir57@yahoo.com

SEMINARS - ORGANISED

BIODIVERSITY AND CLIMATE CHANGE (APRIL 2010)

Coincided with the International Year of Bio-diversity, declared by the UN. Helped in identifying the inter-linkages between Climate Change and Urban Bio-diversity.

Issues Emerged

- The importance of conserving biodiversity;
- Possibility of propagating the diversity that could adapt to the modified ecological regimes and climate change issues;
- Reduction of the ecological footprint in rural and urban areas;
- The need to have sensitive Land Use Planning for Bio-diversity conservation and Climate Change;
- The need to understand the impacts at regional and local levels;
- Role of bio-diversity as an indicator of health of an ecosystem and the capacity of an area to withstand change; and
- The need for appropriate land use planning at various scales – regional, urban, rural and site.

SEMINAR - CO-ORGANISED

RESPONDING TO CLIMATE CHANGE: UK-INDIAN PERSPECTIVES (AUG 2010)

- Stimulate cross-national understanding of the policy and research priorities for Climate Change action in built environment,
- Kindle exchanges amongst academic staff and students around the concept of Climate Change, and
- Initiate research collaboration between researchers and institutions in the two countries of UK and India.

- Portrayed the Land Use pattern of New Delhi, emphasizing the open space and bio-diversity pattern that exists therein.
- Focus on formulating an integrated approach involving control of emissions and sequestration of gases with judicious allocation of green spaces with variations at different levels of planning, from building to city level; and
- Methods of assessment and conservation.

Department of Environmental Planning, School of Planning and Architecture, New Delhi, INDIA

TRAINING COURSE –PARTICIPATED IN

GIZ's – (Deutsche Gesellschaft für Internationale Zusammenarbeit, GmbH)

INTRODUCTION TO TRAINING COURSES ON CLIMATE CHANGE ADAPTATION AND CLIMATE CHANGE IN CITIES (MAY 2011)

Objectives

- provide an introduction to the theory and practical starting point of adaptation to the effects of climate change; and
- raise awareness of challenges and opportunities in integrating climate change issues (mitigation and adaptation) into local policies.

By providing knowledge on

- How climate change is interlinked with development;
- Where to find relevant climate information and how to use it; and
- How to think through systematic steps aiming at defining concrete adaptation options at national, sector, local and project level.

Department of Environmental Planning, School of Planning and Architecture, New Delhi, INDIA

WORKSHOP ORGANISED

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE (MARCH 2012)

- Vital role played by human settlements and the need for mainstreaming the climate responsive approach in planning and design of Human Settlements,
- Areas for focussed research in related fields,
- Threats being faced by human settlements due to Climate Change and approaches to address them through spatial planning tools,
- Brought together academicians, scientists, planning practitioners, professionals and students to deliberate on how the Department can better address Climate Change mitigation and adaptation by initiating focused research in this area and by incorporating climate conscious planning as an integral part of its curricula.

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

RECOMMENDATIONS

(Draft; release of Proceedings in Final stage)

The scientific basis of monitoring Climate Change is through GHG emissions, which for a city, are influenced by various factors, viz.,

- **Geophysical** - climate, access to energy sources, potential for renewable sources of energy,
- **Technological** - power generation within the industry, development of efficient systems,
- **Socio-economic** - energy consumption patterns, and
- **Spatial planning** - transportation and infrastructure network system, city form, green cover etc.

Climate responsive spatial planning of a city can have a major contribution towards mitigating and adapting to Climate Change.

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

RECOMMENDATIONS, contd...

(Draft; release of Proceedings in Final stage)

As planner, one needs to adopt innovative, effective and efficient measures for coping with the climate change which can be manifested in:

- **Principles and concepts** - green buildings, green-field cities, eco2 cities (ecological city as economic city), sustainable cities, mixed land use planning and transit oriented development,
- **Planning norms and standards, Planning laws, bye-laws & rules** - Special norms, laws and rules could be adopted for coastal zone management, disaster management, MSW management, potable water management, etc. in the development plan of the city.
- **Good practices** - zero-carbon, zero-waste, car-free city planning, etc.

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

RECOMMENDATIONS, contd...

(Draft; release of Proceedings in Final stage)

Low Carbon Society Scenario

Different city development scenarios, quantifying the energy demand and emissions for each of them and preparation of a roadmap to achieve the low carbon scenario. While planning for an LCS, one first sets the future conditions/ scenario that one wants to achieve and then back-cast to evolve ways of achieving it. Essentially it consists of three components: Storylines, Quantification and Model Analysis and Back-casting.

Seven Actions Concept

Green Governance: Government initiatives towards LCS,

Holistic Habitat: Energy efficiency in buildings,

Sustainable Style: Low Carbon lifestyle,

Cellular City: Multi-nuclei land use planning,

Form and Flow: Integrating transport with city structure,

Nurturing Nature: Leveraging on the natural and historic assets, and

Rural Riches: Promoting a better lifestyle in rural areas.

Department of Environmental Planning, School of Planning and Architecture, New Delhi, INDIA

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

RECOMMENDATIONS, contd...

(Draft; release of Proceedings in Final stage)

Time frame of the sustainability paradigm

Long-term measures are more effective. Sustainable development cannot be a 'one-time exercise'. An adequate time-frame for the planning and implementation of such measures is necessary.

Fundamental actions to be considered:

- Building a reliable and exhaustive database regarding various aspects within the city, including housing stock,
- number of vehicles, industries, etc. and consumption patterns, waste generated, etc.
- Relating this data to the distinct milieu and culture of the city as well as the city demography, and
- Drawing sector-wise relationships with the database.

WORKSHOP ON HUMAN SETTLEMENTS' RESPONSE TO CLIMATE CHANGE

RECOMMENDATIONS, contd...

(Draft; release of Proceedings in Final stage)



- serious knowledge deficit, data deficit and teaching deficit in the area of Climate Change in relation to Human Settlements,
- Urgent need to translate 'awareness' into 'Action',
- 'Land Use planning' and 'Land Use control' alone would not solve the problems of Climate Change in relation to Human Settlements,
- Borrowed models developed on situations elsewhere may not work. We may have to develop our own models, which would provide results even in 'data-poor' situations.

Department of Environmental Planning, School of Planning and Architecture, New Delhi, INDIA

STUDENT RESEARCH

Representative Selection from Depts. of Environmental Planning, Urban Planning and Physical Planning

- Mishra, Shubham (2006 UP), Urban Development and **Climate Change** – Bangalore.
- Rai, Vishal (2008 UP), **Sustainable Energy Management** for a City – Jaipur.
- Mahakul, Alok (2009 EP), Strategies for **Green City Development** – Greater Jamshedpur.
- Sharma, Amit (2009 TP), **Carbon Rating** for Indian Cities.
- Seshardri, Aryana (2009 EP), Application of **Green Principles** on East Delhi – Subzone E-11.
- Aziz, Zeba (2009 PP), **Ecological Footprint** as a Tool to Assess **Sustainability** of Urban Areas – Rewari
- Kumari, Jyoti (2010 EP), Application of **Clean Technologies** in Small Scale Textile Industries –Ludhiana
- Singh, Raina (2010 EP), Planning for **Climate Resilient Cities** – Dehradun.
- Bhattacharya, Tamosi (2010 EP), **Reducing Vulnerability to Flood** through Spatial Planning -Kaikhali Island, West Bengal.
- Premamani, P. S. (2009 EP), **Impact of Human Interference on Protected Areas**, Kalakad Mundanthurai Tiger Reserve, Tamil Nadu.

Department of Environmental Planning, School of Planning and Architecture, New Delhi, INDIA

REVISION IN CURRICULUM, RESPONDING TO CLIMATE CHANGE ISSUES

- Addition of “Climate Change and Clean Development Mechanism” as a part of the subject, EP–C-2 Theory of Environmental Design, in the Curriculum of Master’s of Planning (with specialisation in Environmental Planning).
- Major revision of Curriculum underway.
- Inclusion of ‘Climate Change’ as added an elective subject in the Curriculum of Master’s of Planning (with specialisation in Regional Planning).
- Inclusion of B. Tech. (Environmental Engg.), Master’s in Environmental Science and Master's in Environmental Management as additional Intake Qualification for admission to Master’s of Planning (with specialisation in Environmental Planning).

ESTABLISHMENT OF A CENTRE FOR HUMAN SETTLEMENTS AND CLIMATE CHANGE

(in principle approval granted)

to enable dedicated studies, to strengthen the requisite knowledge base, and to support the requirement of development of planning and design tools and techniques to address the Climate Change issues.

Objectives

- Comprehensive Database relating to Human Settlements and Climate Change – emission trends, sectoral aspects – geo-physical, technological, socio-economic, planning, vulnerability, etc.,
- Research in drivers of Climate Change in Human Settlements, policy and program integration, economic and legal dimensions, etc.,
- Document best practices and State-of-the-Art tools and techniques,
- Establishing an Information Network through collation, documentation and dissemination of knowledge base in the area, and
- Capacity building and Advisory inputs in Climate Responsive Human Settlement Planning and Design.

PLANNED ACTIVITIES

Short Course on Human Settlements Planning for Climate Change

Objectives of starting a dialogue on:

- How better planning and design can contribute to Climate Change mitigation and adaptation, and
- how to equip professionals to deal with Climate Change so as it causes minimum impact on human settlements.

Aims at disseminating the knowledge on mitigating the impacts of Climate Change on human settlements, through innovative spatial planning practices.

Beneficiaries

- climate change experts; environmental engineers
- urban and environmental planners; urban design experts
- persons from private sector, government agencies, NGOs and
- students, researchers and academicians.

OUR LIKELY COLLABORATORS

Ministry of Earth Sciences
Ministry of Urban Development
Ministry of Environment and Forests
DST, TERI, CSE, SPA Bhopal, VNIT Nagpur,
QUB...



Acknowledgements

Meenakshi, Swati and Dilip

SCHOOL OF PLANNING AND ARCHITECTURE

NEW DELHI, INDIA

