# *Integrating Climate Change Adaptation and Mitigation Measures in Urban Management*


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# *Presentation Outline*

*1. Introduction*

*2. Impacts of Climate Change*

*3. Climate Change Adaptation & Mitigation Measures*

*4. Urban Management Objectives, Sectors, Functions & Process*

*5. The integration of climate change adaptation and mitigation measures in Urban Management*

*6. Conclusions*

# *Why should climate change adaptation and mitigation measures be integrated in urban management?*

## *Because:*

**1. urban areas are major contributors to global warming (due to CO2 emissions) which cause climate change;**

**2. urban areas now house 50% of the world's total population, and the figure is rising; and**

**3. urban areas are centers as well as engines of economic growth and development.**

# *Philippine Laws Relating to Climate Change and Urban Management*

- **PD 1566 – 1978; Creation of multi-sectoral disaster coordinating councils at the national, provincial, city / town, and barangay levels**
- **RA 7176 – Local Government Code of 1991: providing autonomy to LGUs and prescribing their duties and responsibilities the needs of their communities**
- **RA 7279 – Urban Development and Housing Act of 1992: prescribes policies and LGUs' duties and responsibilities on urban planning and provision of housing**
- **RA 10121 – Disaster Risk Reduction and Management Act of 2010: policies and programs for disaster risk reduction, mitigation, and preparedness instead of just disaster response**
- **RA 9727 – Climate Change Act of 2009: Mainstreaming climate change into government policy and programs to build national and local resilience to climate change-related disasters**

# *Impacts of Climate Change*

- CC will exacerbate water shortages.
- Agricultural and aquaculture productivity will decrease due to thermal and water stress, sea-level rise, floods and droughts.
- Tropical cyclones will diminish food security.
- Human health would be threatened by possible increased exposure to vector-borne infectious diseases and heat stress.

# *Impacts of Climate Change*

- Accelerated sea level rise will expose many human settlements to increased risk of coastal flooding and erosion and saltwater intrusion into freshwater resources.
- Coral reefs and thus aquaculture would be negatively affected.
- Tourism, especially for islands, would face severe disruption.

# *Downstream Effects of Climate Change*

- More towns and cities will be flooded, with much more damaging human impact.
- Flooding will worsen habitat degradation and species loss.
- Forests will shrink and turn dry, thus prone to fires.
- Less as well as too much rain means less harvest.
- Decrease in rainfall means less water for hydro-electricity and, thus, more reliance on imported fuel.

# *Downstream Effects of Climate Change*

- Disease vectors (eg, mosquitoes) will expand their range.
- Displacement of people due to disasters will worsen human health problems.
- Water resources will diminish.
- Marine resources will be damaged.

# *Climate Change Adaptation & Mitigation Measures*

- **Reduce CO2 emissions** for cleaner air, cheaper energy, and less oil dependency
- **Promote compact, mixed-use communities** to improve location efficiency and thus reduce the need for long travel and facilitate walking and bicycling.
- **Conserve existing areas of vegetative cover, wetland, permeable ground, river basins, etc.** to protect "ecosystem services" and to mitigate floods.

# *Climate Change Adaptation & Mitigation Measures*

- **Improve solid waste management** thru waste segregation, 3-Rs, zero trash burning, composting
- **Build new dams and dikes** for flood control, irrigation, energy, and water supply
- **Enhance disaster mitigation and preparedness** by lessening exposure and vulnerability

# *Urban Management **Sectors***

1. Urban Land
2. Environment & Natural Resources
3. Infrastructure & Utilities
4. Shelter & Community Facilities
5. Social Services
6. Economic Development

# *Urban Management Functions*

1. Operations Management / Delivery of Services
2. Development (Growth) Management
3. Information Management
4. Financial Management
5. Human Resource Management
6. Organizational Development
7. Marketing and Promotions

# *Urban Management Process*

1. Definition of Problems and Opportunities
2. Development of Policies, Goals, Objectives and Strategies
3. Development of Institutional Arrangements
4. Planning, Programming and Budgeting
5. Implementation
6. Operations and Maintenance
7. Monitoring, Evaluation and Feedback

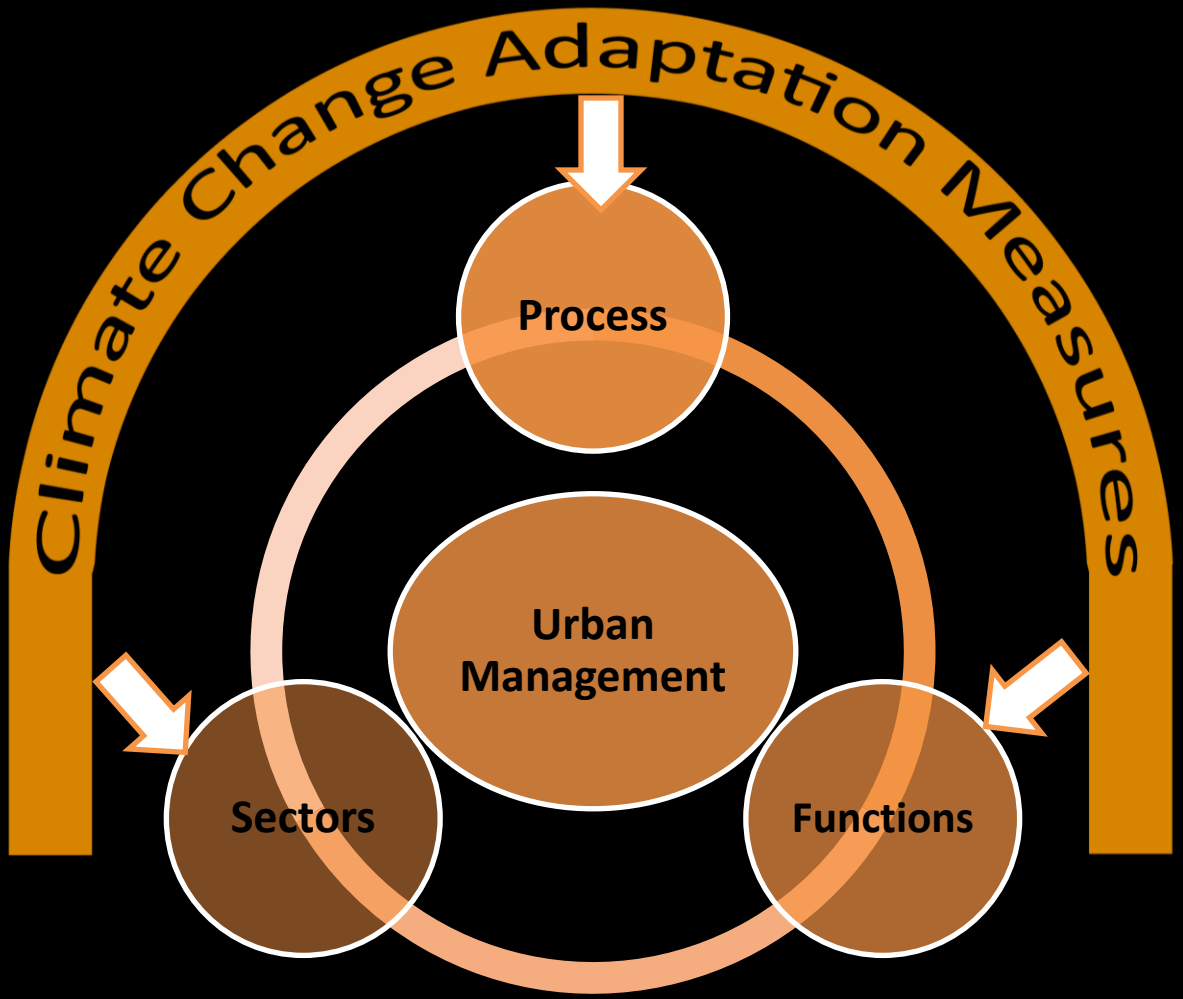
# *The basic objective of urban management*

- . . . is to improve urban economic efficiency, promote equity in the distribution of development costs and benefits, prevent unnecessary foreclosure of future development options, and ensure long-term sustainability of urban development.

- The neglect of environmental considerations, including the impacts of climate change, in urban planning and management carries with it negative health and social impacts as well as economic and financial costs which affect urban productivity.

- This impairs the ability of cities to exercise their vital role in the wider national economy and constrains prospects for social and economic development.

# *The basic objective of urban management*




***Integrating Climate Change Adaptation and Mitigation Measures in Urban Management***

# *The integration of climate change adaptation and mitigation measures*

- . . . as a core element of urban management, particularly as a preventive measure to ensure that new problems do not arise or are minimized, is essential to the management of sustainable development.

- This integration will enable and facilitate cooperation among what are often disparate sectoral development activities at the municipal level and thus contribute to greater efficiency in urban management practice and procedures.

# *An ecology-based urban planning and management system (EPM)*

. . . is a continuing process to:

- identify critical urban environmental issues, especially disaster risks and climate change impacts, before they turn onto deadly and costly emergencies;
- agree on strategies to resolve these issues among all those whose cooperation is required; and
- implement these strategies through coordinated actions by the public and private sectors as well as the community itself.

# *The EPM system's basic steps*

1. Clarifying environmental issues / CC impacts to be addressed
2. Involving actors whose cooperation is required
3. Setting priorities
4. Negotiating issue-specific environmental management / disaster risk reduction / CC adaptation and mitigation strategies
5. Aggregating an urban environmental management strategy
6. Agreeing on environmental / DRR / CC adaptation action plans
7. Initiating priority projects
8. Strengthening environmental planning and management capacity

# *Conclusions*

- **The EPM process builds upon a participatory approach, beginning with the consultation phase, proceeding thru the strategic planning phase, and resulting in the preparation of action plans that identify both project investments and necessary policy and institutional changes.**

# *Conclusions*

- **It is essential to involve all those who can contribute information and expertise to the resolution of urban environmental issues, whose interests are affected by environmental management strategies and action plans, and whose support and cooperation is required in implementing these action plans.**

**The first and most crucial step in achieving success is to ensure that the stakeholders are involved in the climate-sensitive urban management process right from the very beginning. They must have a sense of ownership in the process and action plans. They must see these as vehicles for accomplishing their own purposes.**

# *Thank you for your attention*

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