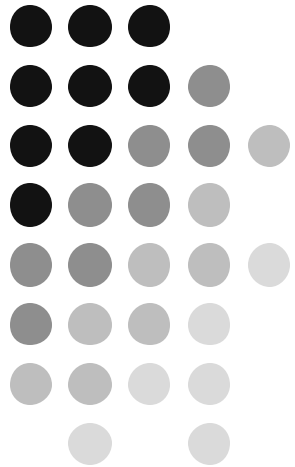
EA in an ecosystems approach to urban development

IAIA'04

Arne Dalfelt

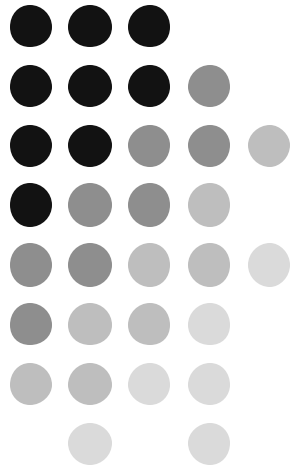
Norwegian Institute for Urban and Regional Research (NIBR)



EA in an ecosystems approach to urban development

What is an ecosystems approach?

- Comprehensive and holistic approach to understanding and anticipating ecological change, recognizing interconnections and humans as an integral part.
- Seeing development boundaries in terms of resources needed to sustain population. The ecological footprint.
- Urban growth – associated with a) poverty, and b) economic growth and affluence



EA in an ecosystems approach to urban development

- The Footprint of Development
  - Modern high-density human settlements cannot achieve sustainability on their own.
  - Japanese lifestyles generate demand for 6.25 Ha. per capita (energy, arable land, pasture, forest, construction, etc.), while only 1.88 Ha. available.
    "Ecological footprints of Nations"
  - The problem has to be reduced to manageable dimensions (reduction of pollution, management of upstream watersheds, forests etc.)

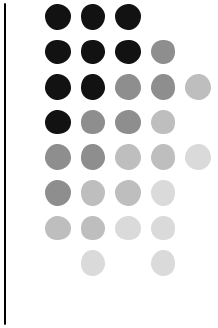
EA in an ecosystems approach to urban development

- Demography and trends
  - Population increases absorbed by urban areas
  - Uncontrolled influx of poor peasants to slum areas
  - Cities expanding into fragile ecosystems
  - Urban settlements in developing countries growing 5 times as fast as those in developed cities

EA in an ecosystems approach to urban development

- Common urban problems
  - The urban environment consist of three dimensions – natural environment – built environment – socio-economic environment
  - Urban slums are breeding grounds for diseases, crime, and sustained poverty
  - Insufficient water supply, deteriorating sanitation, air pollution, poor health, climate change, energy, backlogs in shelter, infrastructure, services, overcrowded transportation systems, poverty.
  - Urban slums can be preferred living areas

EA in an ecosystems approach to urban development



- Urban development policies
  - Assessment of human activities and environmental impacts
  - Planners need to consider the ecological footprint
  - Problems include: insufficient recognition of ecosystem functioning, plans too site specific, often single focused, solutions to be found beyond urban boundaries, inappropriate assignment of costs and benefits, lack of coordination
  - Demonstration projects, capacity building, partnership development, knowledge sharing

EA in an ecosystems approach to urban development

- Resources - processes – effects
  - Urban environmental policy is needed based on sustainable capacities as well as human -environment interactions.
  - A system of prioritization, including concerns for human life, health, productivity, depletion of resource stocks, capacity and resilience of environment, systematic accounting measures.
  - Ecosystems approach – bringing together resources, processes, and products into a coherent system of conservation, reduction of waste, reuse, and increased efficiency.

EA in an ecosystems approach to urban development

- Mainstreaming environment
  - Cities as sustainable ecosystems requires radical increase in efficiency and productivity of its resource use.
  - Closed – loop systems: returning every output harmlessly back to the ecosystem, or becoming an input to another process.
  - Municipal planners are increasingly seeking to mainstream the principles of an ecosystems approach to urban development in order to secure a sustainable input of natural resources.

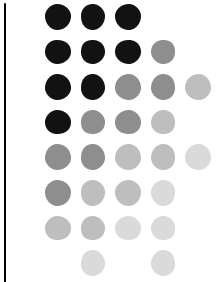
EA in an ecosystems approach to urban development

- Modelling urban ecosystems development
  - An ecosystem approach model is geographical inclusive, covering the ecological footprint, looking at constraints and obstacles, deal with economic productivity, social equity, environmental viability, sustainability, institutional coherence and communication.
  - Analysis of ecosystem services, resilience, processes, boundaries, equilibrium requirements, spatial scales, time scales, human population

EA in an ecosystems approach to urban development

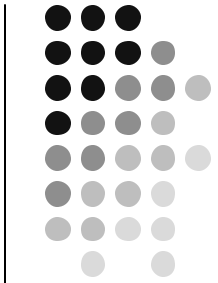
- Environmental Impacts Assessment
  - Assessing the impacts of the model on the urban situation, on the society, and on the upstream and downstream natural resources.
  - Regional SEA as an integral part of the ecosystems approach
  - Facilitates the integration of environmental issues into decision making
  - Providing data for strategic decision making
  - Useful tool for municipalities dependent on goods and services provided by natural resources

EA in an ecosystems approach to urban development



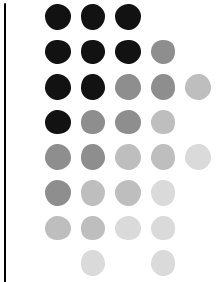
- Urban Ecosystems Management Plans
  - On the basis of the Urban Ecosystems Approach model and the SEA, an Ecosystems Management Plan (EMP) may be developed.
  - Contents of EMP: Regional assessment, city ecosystems profile, identification of priority issues, process oriented EMP action plan, mitigation measures, institutionalization, organizational frameworkpolicy dialogu, capacity building

EA in an ecosystems approach to urban development



- Capacity building
  - Capacity for urban ecosystems planning must be built in municipalities and urban councils
  - Semi-permanently hands-on training attached to urban ecosystems management planning is preferable
  - On-the-job training modules, including: Urban ecosystems planning, environmental problems, urban health, environmental impacts assessment, SEA, mitigation, city management action planning, conservation and efficiency, understanding interactions, monitoring progress, fiscal policies and taxation supporting of sustainable goals

EA in an ecosystems approach to urban development



- Monitoring
  - Long term monitoring perspective needed
  - Regular reporting to program coordinators
  - Building local follow-research capacity
  - Organizational training opportunities
  - Monitoring reports an important input for timely corrections and plan changes
  - Input data for future research