Highlights of DRAFT Eco-City Action Plan for Sangli Miraj Kupwad

Prepared By

Environmental Management Centre

November 14, 2014

What is Eco-City?

"Eco-City" is a city that decreases environmental burden/stress, improves living conditions and helps in achieving sustainable development through a comprehensive urban improvement system involving planning and management of land and its resources and implementation of environmental improvement measures.

The Eco-cities include area-wide improvements and providing of infrastructure and services.

- **http://cpcbenvis.nic.in/ar2002/ar1-2ch14.htm**

Eco-City is not……

- **A basket of projects or Just about**

    – **Planting trees**
    – **Building fountains**
    – **Putting posters**

- **It's a PROCESS – and a realization of MAINSTREAMING Eco-considerations through PARTNERSHIPs**

- **Projects are then logical outcomes and not the sole objective……**

- **Community involvement and institutional capacity building are key ingredients of Eco-City PROCSS.**
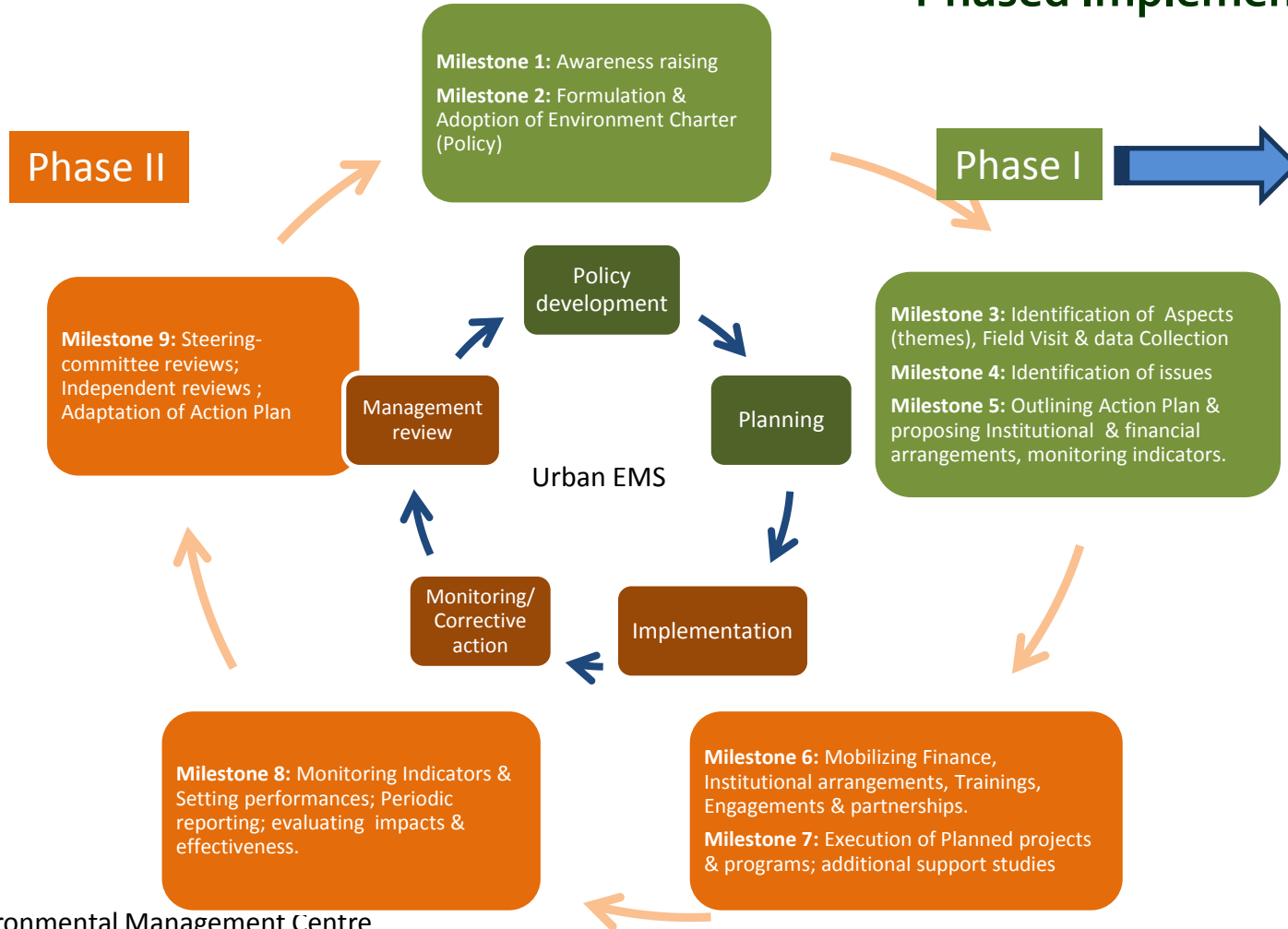
Why Eco-City ?

- Improve **quality of life** for all

- Make Urban investments **sustainable**

- Ensure that these investments are **effective**

- Improve **equity** and **transparency**

- Build a **brand** that every citizen is proud of

- **Inspire** and **guide** others to follow

Relation between Master Plan-CDP-Action Plan

Eco-City Policy / Charter

Eco-City Action Plan

Complementary Plans

Master Plan / City Development Plan (CDP)

- Involvement of stakeholders
- Green jobs and careers
- Programmatic approach ("systems perspective")

- Essential infrastructure
- Public-Private Partnerships (PPP)

Considering the Eco-City Action Plan **together** with the CDP leads to:

1. Improved quality of life for SMK's citizens

2. Improved governance

3. Sustainable investments

4. Mainstreaming environmental and social issues in city planning

Phased Implementation Approach

Phase II

Phase I

Milestone 1: Awareness raising

Milestone 2: Formulation & Adoption of Environment Charter (Policy)

Milestone 3: Identification of Aspects (themes), Field Visit & data Collection

Milestone 4: Identification of issues

Milestone 5: Outlining Action Plan & proposing Institutional & financial arrangements, monitoring indicators.

Milestone 9: Steering-committee reviews; Independent reviews; Adaptation of Action Plan

Policy development

Planning

Management review

Urban EMS

Monitoring/ Corrective action

Implementation

Milestone 8: Monitoring Indicators & Setting performances; Periodic reporting; evaluating impacts & effectiveness.

Milestone 6: Mobilizing Finance, Institutional arrangements, Trainings, Engagements & partnerships.

Milestone 7: Execution of Planned projects & programs; additional support studies

Milestones covered

Milestone 1 – Awareness Raising

Awareness Raising Activities

Awareness workshop

Drawing and slogan competition

Awareness lectures in colleges

| Dec. 2009 | Feb. 2010 | Feb. 2010 | Feb. 2010 | Apr. 2010 | June 2010 |

Launch workshop

Launch of website

Promotion of website through stickers

Ekovoices- Innovative Tool for Community Participation

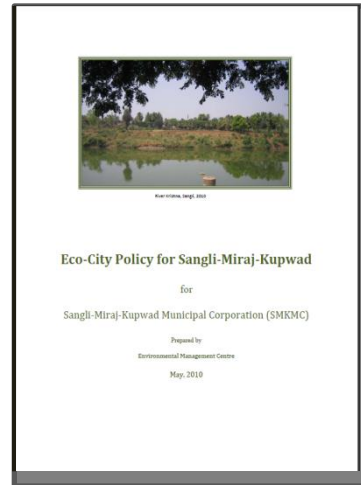|	
Number of members	92
Number of experts	8
Number of postings on map	17

Milestone 2: Formulation of Policy Vision, Goals and Guiding Principles

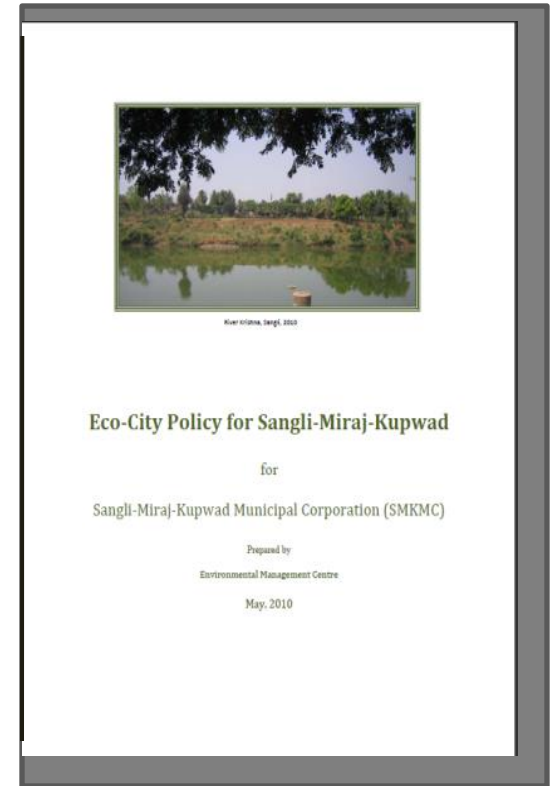# Formulation of Policy - Vision, Goals, Principles

Participatory approach

- **Consultation workshop with core committee on policy development March, 3, 2010.**

- **Draft Eco-City policy later discussed with core committee on April, 26, 2010**

Eco-City Policy for Sangli-Miraj-Kupwad

for

Sangli-Miraj-Kupwad Municipal Corporation (SMKMC)

Prepared by

Environmental Management Centre

May, 2010

Components of Environmental Policy

Components of Policy

- **Vision**

- **Guiding principles**

- **Goals**

- **Roles and responsibilities**

- **Pledge and Commitment**

Eco-City Policy for Sangli-Miraj-Kupwad

for

Sangli-Miraj-Kupwad Municipal Corporation (SMKMC)

Prepared by
Environmental Management Centre

May, 2010

Components of Policy

Vision statement for SMK Eco-City –
The residents of Sangli-Miraj-Kupwad (SMK) shall work together to help make their cities a clean, healthy and safe place. SMK as an emerging Eco-City shall grow by following the path of sustainable development where decisions for development will be inclusive and integrate economic, environmental and social considerations.

Guiding Principles :

1) Sustainable use of natural resources
2) Manage waste to reduce risks and meet compliance
3) Reduce pollution to acceptable levels
4) Promote modes of transport that are environmentally friendly
5) Incorporate 'green' building practices into all future plans
6) Ensure land use to create a healthy & safe place to live in
7) Ensure efficient use of energy and seek to reduce climate change impacts
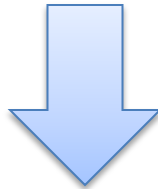
Goals

Milestone 3: Identification of Themes , Field Visits and Data Collection

Theme Identification

Themes identified based upon –

- **Situation Analyses**

- **Feedback from consultation workshops**

- **Field interactions**
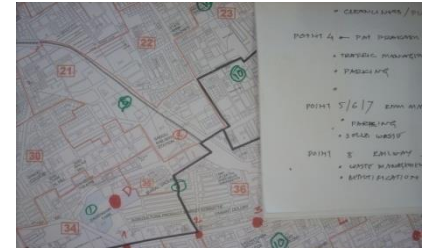
Thematic Approach

The thematic approach provides-

- **Focused information collection**
- **Provides specific attention to legal compliance**
- **Leads to identification of specific investment projects, progress and associated polices**
- **Guides institutional arrangements**
- **Provides opportunity to harmonize with budgetary plan**

Themes for Action Plan
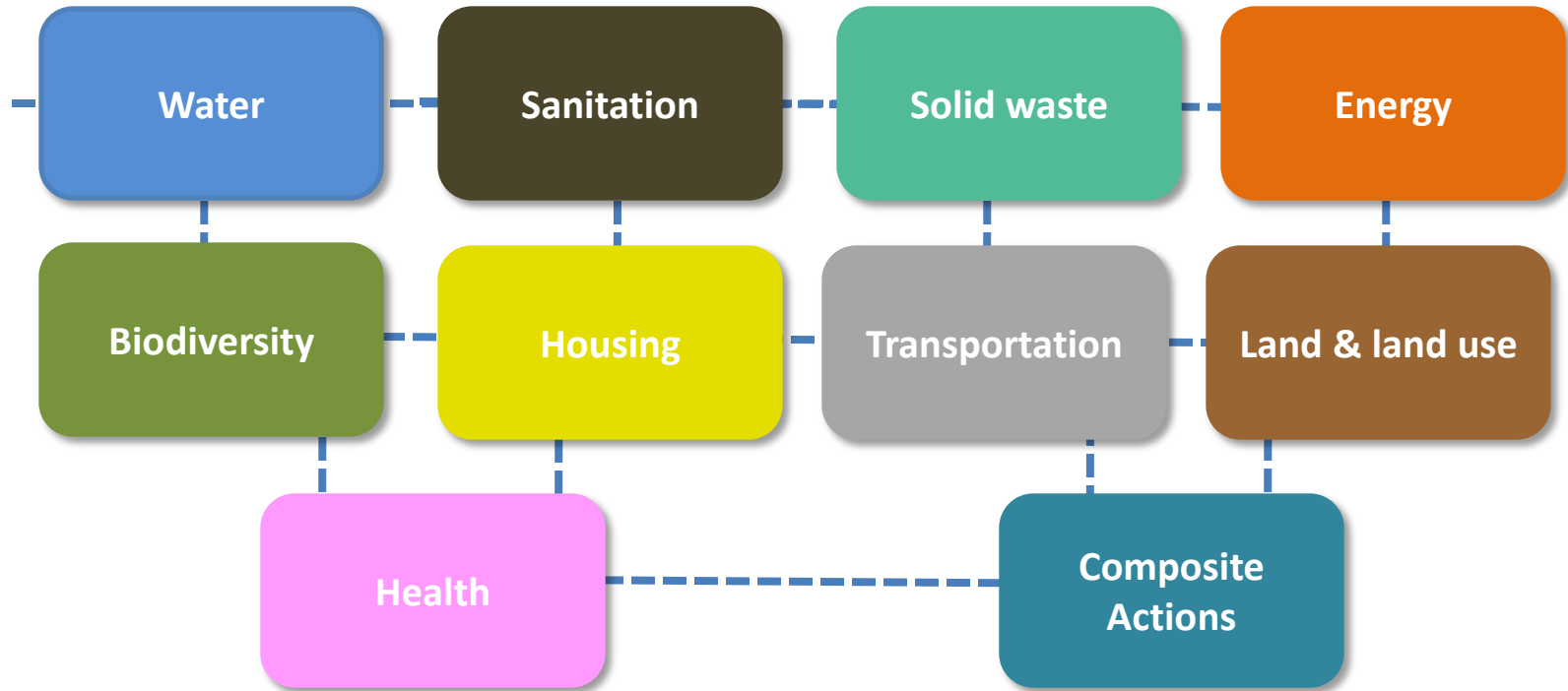
Many of the themes are interlinked.

Field Visits

EMC team made various field visits for data collection -

- **February, 10-13, 2010**

- **March, 2-5, 2010**

- **April, 26-30, 2010**

Aspects considered

- **Existing scenario**

- **Issues and concerns**

- **Proposed /ongoing activities in terms of projects, programs etc.**

Data Collection

Data for following themes/sectors was collected :

- **Water supply and treatment**
- **Wastewater management**
- **Solid waste management**
- **Energy consumption for street lighting and signaling**
- **Health status of city**
- **Garden and land use**
- **Housing related policies**
- **Transport**
- **City development plan**
- **Municipal Governance and Budgets**

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Sources for Data Collection

- SMKMC

Hon. Commissioner,

Hon. Mayor

Hon. Dy. Mayor and all office bearers

Medical Health Officer

City Engineer

Head, Water works

Town planning Engineer

- Maharashtra Jeevan Pradhikaran, Sangli Office
- Maharashtra Pollution Control Board, Sangli SRO office
- Civil hospital, Sangli
- Core committee members

Key Issues - Situation Analysis

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Situation analysis  →  Gap Assessment
                              ↓
Actions  ←  Gap Filling Measures
```
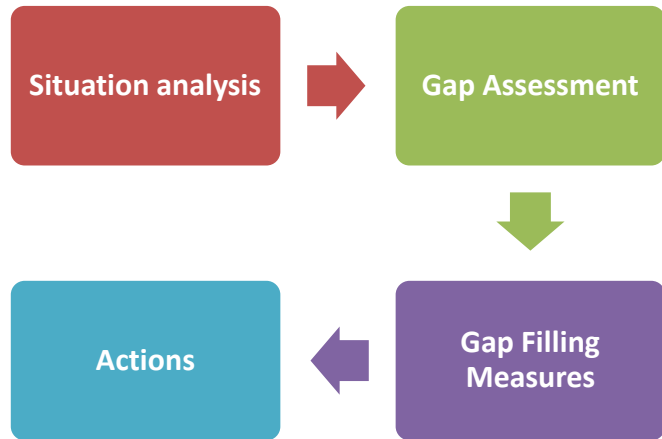
- **Non-compliance on Solid Waste Management**
- **Poor wastewater management infrastructure**
- **Unsafe quality of drinking water**
- **No systematic efforts to conserve urban biodiversity**
- **Inadequate public transport**
- **City vulnerable to epidemic and transmissible diseases**
- **Citizen interest on environment not well nurtured and supported**
- **Low capacity of SMK-MC (from technical , institutional as well as financial perspective)**

Milestone 4: identification of Issues

Milestone 5: Outlining Projects, Programs Plans and Enabling Policy Measures- The Action Plan

Logical Process for Action Plan Evolution

4P Actions

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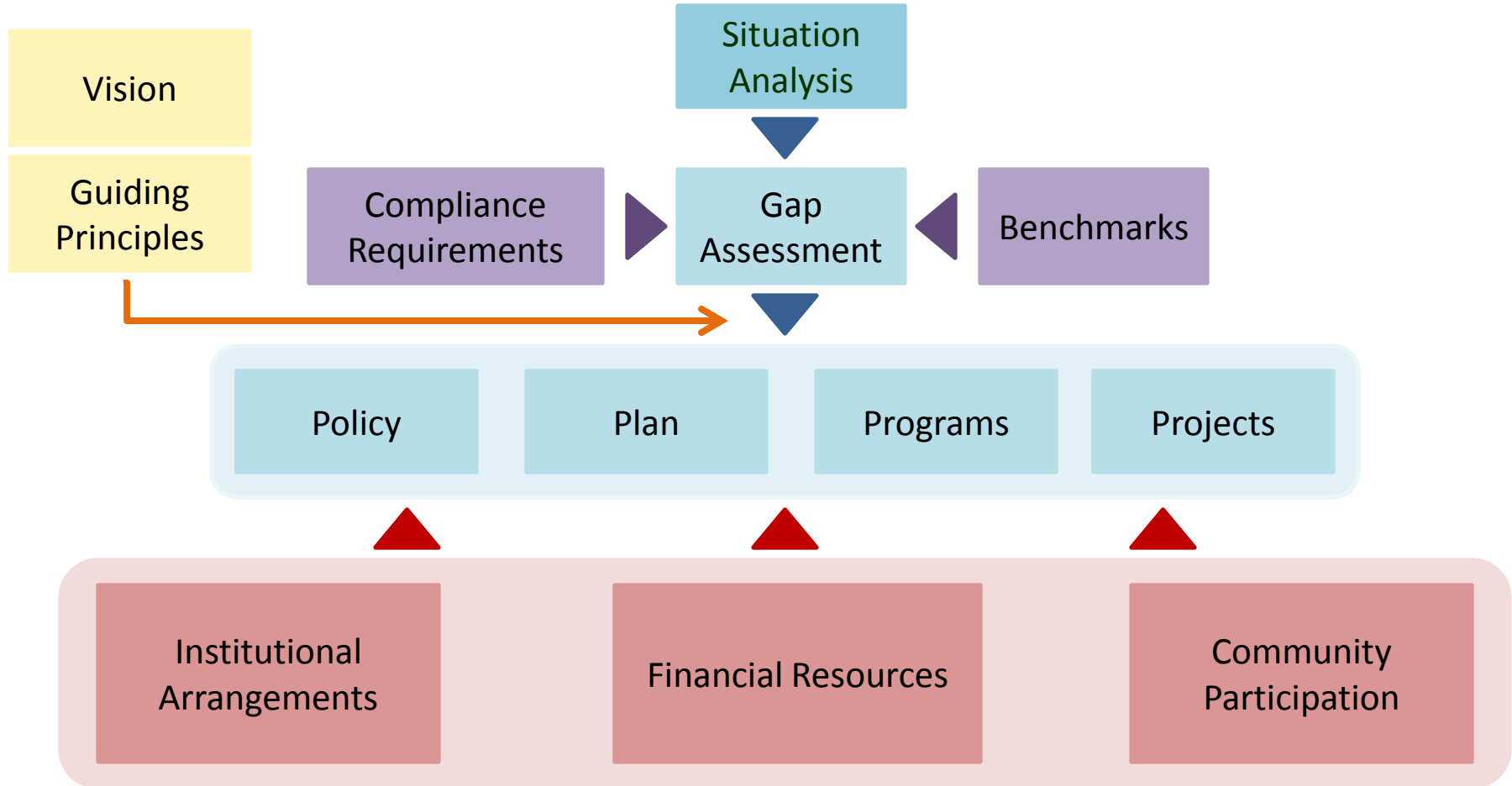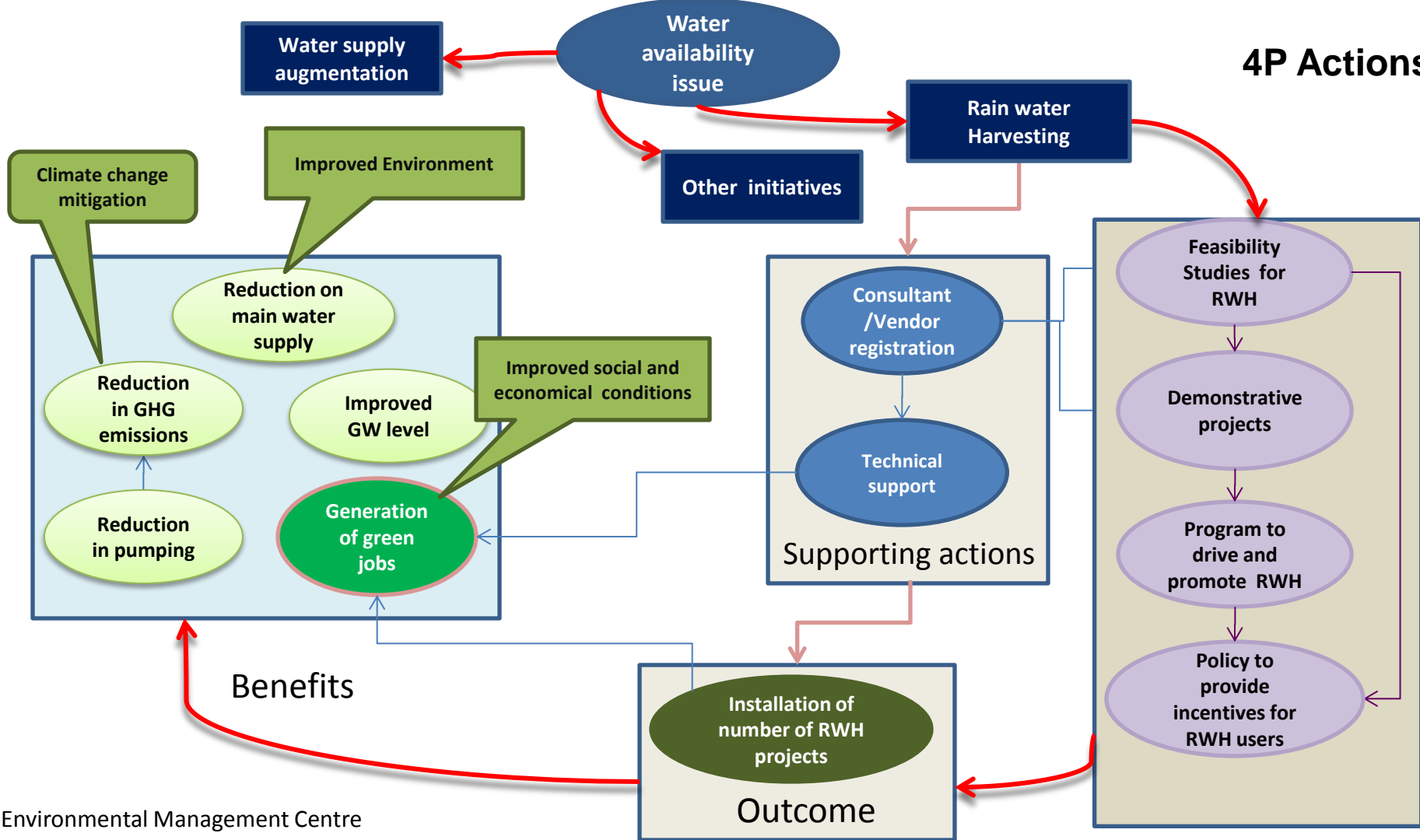
In 2004, Bangalore became the first city in the state of Karnataka, India to include Rainwater Harvesting (RWH) into its byelaws.

The law says that, every building with a plinth area of exceeding 100 sq mtrs and built on a site measuring not less than 200 sq mtrs must have one or more RWH structures

This policy was implemented Karnataka was facing a situation where more than 70% of the state was drought prone

There were problems faced when it can to retrofitting existing buildings with RWH units. Though there had been a deadline of May-2010 set for buildings to install RWH units, the deadline has been postponed by a month due to lack of pop-up filters required in RWH units.

Also, no list of recommended technical reliable contractors who can install the RWH system at residential plots at reasonable costs was provided by the government. As a result, citizens were skeptical to install units as they were afraid of being taken advantage of by local consultants due to the deadline issued for installation.

Rainwater Harvesting in Bangalore – why it did not work?

Example of Structured Actions – Theme of Water

GAPS

ACTIONS

BENEFITS

Water (Quantity & Quality issues)

- Supply deficit
- GW falling

Rain water harvesting
- Policy on RWH
- Pilots on RWH
- Hydro-geological Study

- Supplement water requirement – towards water sustainability
- Augmentation of ground water
- Reduction in GHG emissions

Low –flow plumbing fixtures
- Policy on Low-flow Plumbing fixtures
- Door-to door Leak detection program

- Water Saving
- Reduction in demand

Poor water quality

WQ Monitoring Plan
- Planning Study
- Implementation program including corrective actions

- Awareness development on WQ issues amongst masses
- Identification of Corrective Actions
- Improved health of people of SMK

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Illustration of Project costs, Linkage to Guiding Principles - Theme - Waste water

Self sustenance of park and waste management for residents

Sewage recycling for meeting water requirements at Aambarai

Decentralized wastewater treatment for residential complexes as a policy

Reduction in load to central facility

Improved water quality of nalla and river, reduced health risks, possible replication as interim solution

Cost savings, Reduced health risks

Decentralized wastewater treatment for Kupwad

Project

Conservation of resources , waste mgmt to reduce risk

Project

Sustainable use of resources, efficient use of energy and reduce CC, manage waste to reduce risks

policy

Improvement of water quality of Sherry nalla using phyto and bio remediation technology

Project

Conservation of resources , waste mgmt to reduce risk

Project

Reduce pollution

Reduction of load on Dhulgaon STP by new STPs at Dhamni road, sangliwadi, Madhavnagar

Cost savings, GHG emission reduction,

Project

Sustainable use of resources, efficient use of energy and reduce CC

Wastewater

(addressing issue of poor infrastructure)

Project

land use to create a healthy and safe place to live in

Ecological sanitation demonstration at public places

Demonstration of Ecological sanitation for replication

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Inclusive approach for Financial Sustainability – Example of Solid Waste

Estimated 250 lakhs savings per year due to optimization of collection system
CDM benefits in composting

WASTE
(poor collection, unscientific management of waste)

Reduced air emissions
Compliance with the MSW Rules
Increased landfill life
Increased income generation to rag pickers
Reduced health risks

Reliable waste data to facilitate further planning

Solid Waste Inventorization → *Project*

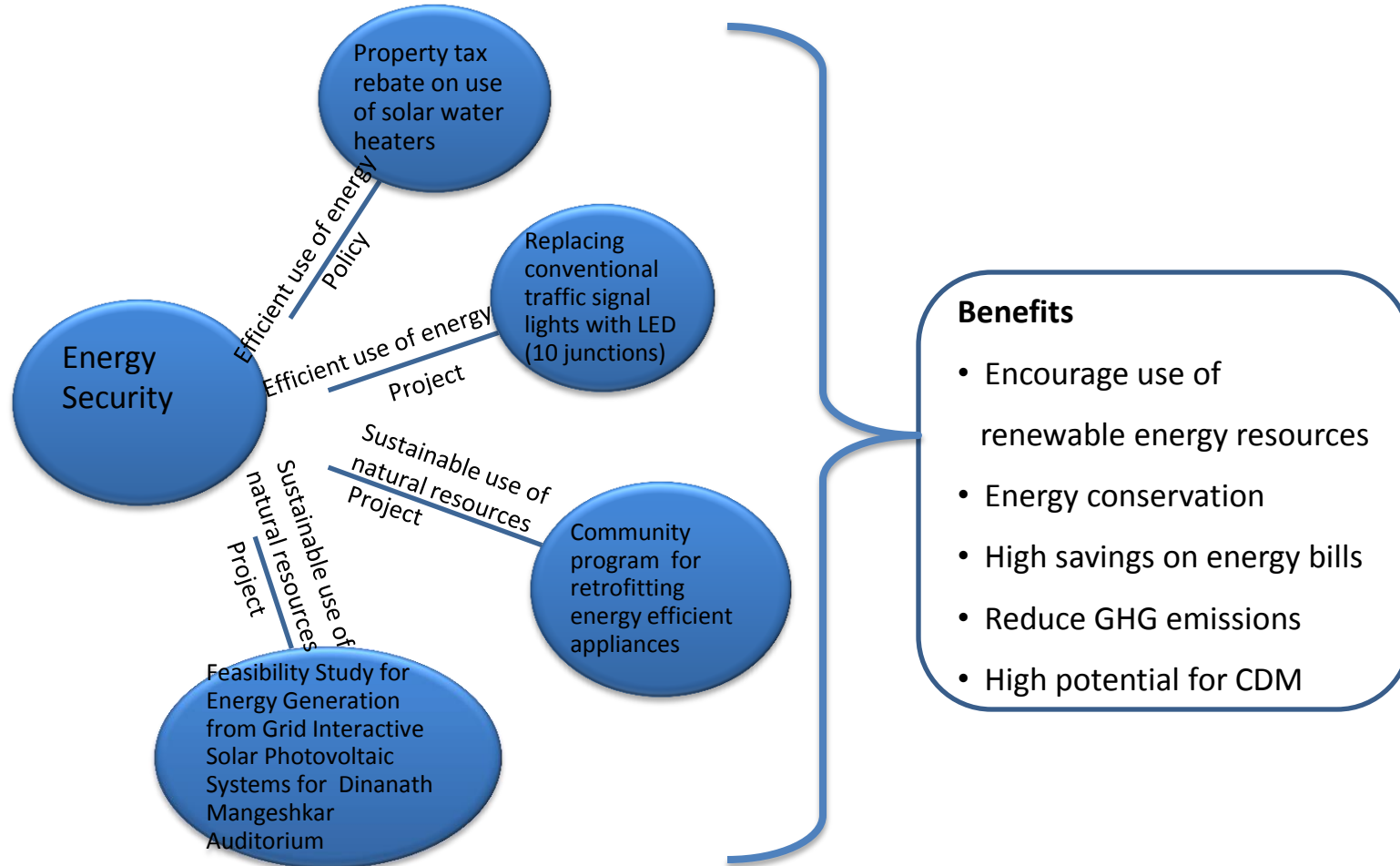Residential Communities → *Project*

Decentralized Treatment of Biodegradable Waste Food waste from restaurants

Reduced transportation charges, saving landfill space

Primary Collection

Community Sorting Centres → *Project*

Improved operation, Cost efficiency

Route Optimization & Strengthening of MSW Collection - Vehicles → *Project*

Informal rag pickers and recyclers

Formalizing rag pickers, better recycling efficiency, cost saving, better environment

Secondary Collection

Extended landfill life and better environment

Transfer Stations, Bulk Refuse Carriers, Rehabilitation of existing dumpsites → *Project*

Dumpsites in Sangli & Miraj

CDM Possibility → *Project*

Reduced GHG Emissions, Carbon credits

Centralized Treatment of Biodegradable Waste → *Project*

Management of biodegradable waste, savings in landfill space

Energy

Benefits

- Encourage use of renewable energy resources
- Energy conservation
- High savings on energy bills
- Reduce GHG emissions
- High potential for CDM

Energy Security

- Property tax rebate on use of solar water heaters — *Efficient use of energy, Policy*
- Replacing conventional traffic signal lights with LED (10 junctions) — *Efficient use of energy, Project*
- Community program for retrofitting energy efficient appliances — *Sustainable use of natural resources, Project*
- Feasibility Study for Energy Generation from Grid Interactive Solar Photovoltaic Systems for Dinanath Mangeshkar Auditorium — *Sustainable use of natural resources, Project*

Barcelona enforced the "Solar Ordinance", a new standard in August 2000. As per this standard, buildings should use thermal solar energy for 60% of their sanitary hot water supplies. The Barcelona City Municipal authorities drafted the rules and made them mandatory. This initiative was also supported by different European Commission programmes, including the Campaign for Energy Sustainable Europe 2005-2008.
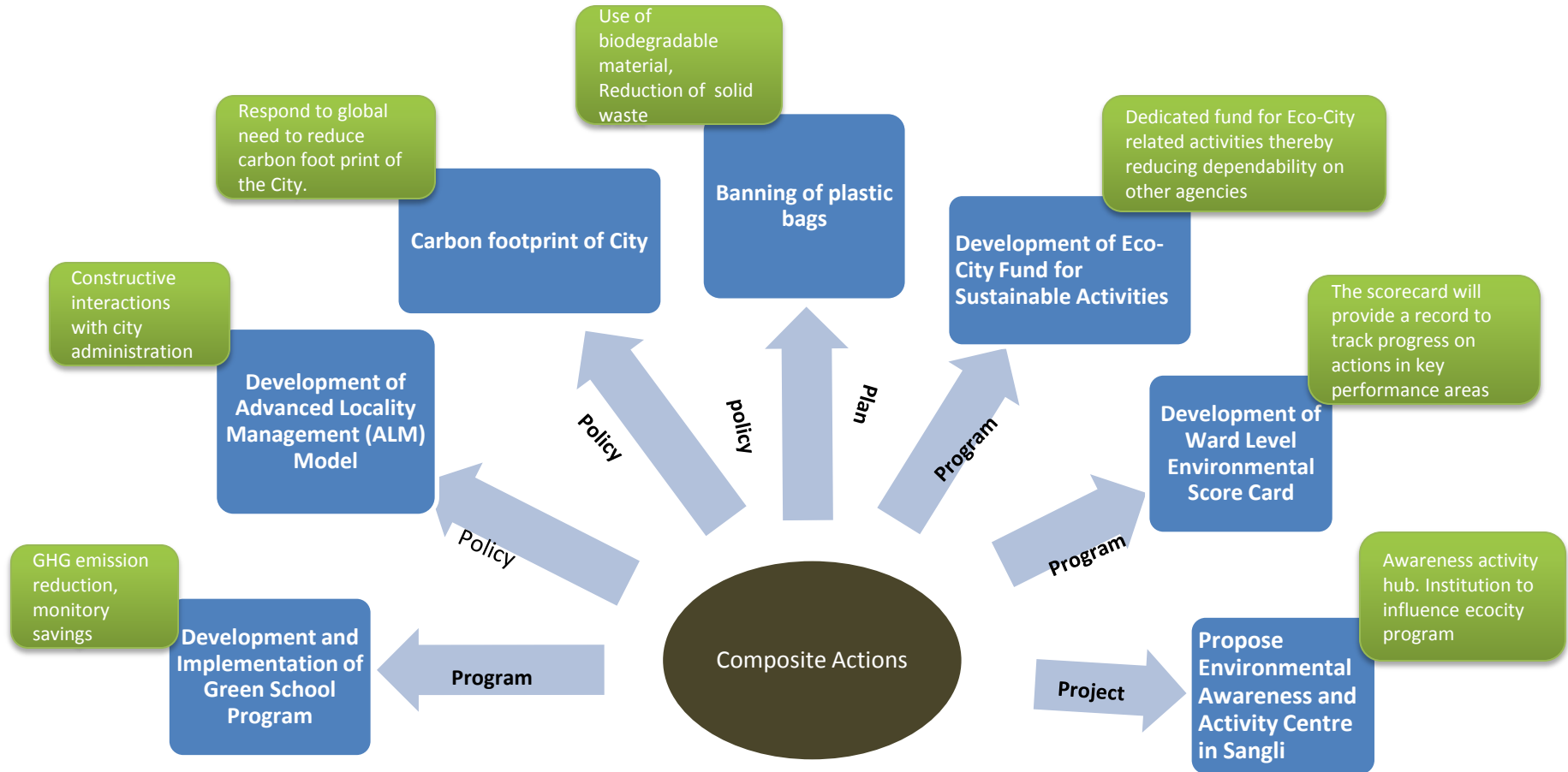
Solar Ordinance in Barcelona

Sangli-Solar City?

Spain was the first European country to make the implementation of solar thermal energy obligatory in new and refurbished buildings. Each building would reduce energy consumption by between 30% and 40%. Moreover, the CO_2 emissions associated with energy production and consumption would be reduced by 40% to 55%. It has also been estimated that for each household (4 people, 100 m^2) one or two m^2 of photovoltaic panels would be needed, which would involve an additional cost of 600 to 2,000 euros (1% of the total cost of the house). This initial cost would be paid off in 5-10 years. After that period, each family would save up to 80 euros per year.

The Ministry of Housing and the professional unions of architects and engineers started to offer intensive training courses in order to prepare and educate professionals on this matter. The companies that produced and commercialized solar energy systems and equipment benefited the most as revenues multiplied and approximately 5000 jobs were generated.

# Low investment – High Impact Initiatives

Use of biodegradable material, Reduction of solid waste

Respond to global need to reduce carbon foot print of the City.

Dedicated fund for Eco-City related activities thereby reducing dependability on other agencies

Banning of plastic bags

Carbon footprint of City

Development of Eco-City Fund for Sustainable Activities

Constructive interactions with city administration

The scorecard will provide a record to track progress on actions in key performance areas

Development of Advanced Locality Management (ALM) Model

Development of Ward Level Environmental Score Card

Policy

policy

Plan

Program

Policy

Program

GHG emission reduction, monitory savings

Awareness activity hub. Institution to influence ecocity program

Development and Implementation of Green School Program

Composite Actions

Propose Environmental Awareness and Activity Centre in Sangli

Program

Project

Distribution of Awareness Activities across Themes

Some of the Awareness Activities :

- **Paryawaran Vyakhyanmala**
- **Climate Change Communication Kit**
- **Not just walk in the park**
- **Maaja Shaharchya Nisarg Rang – Photo Competition**
- **Environmental Film Festival**
- **Adarsh Galli Sundar Galli**

Activities presented in the form of a Calender
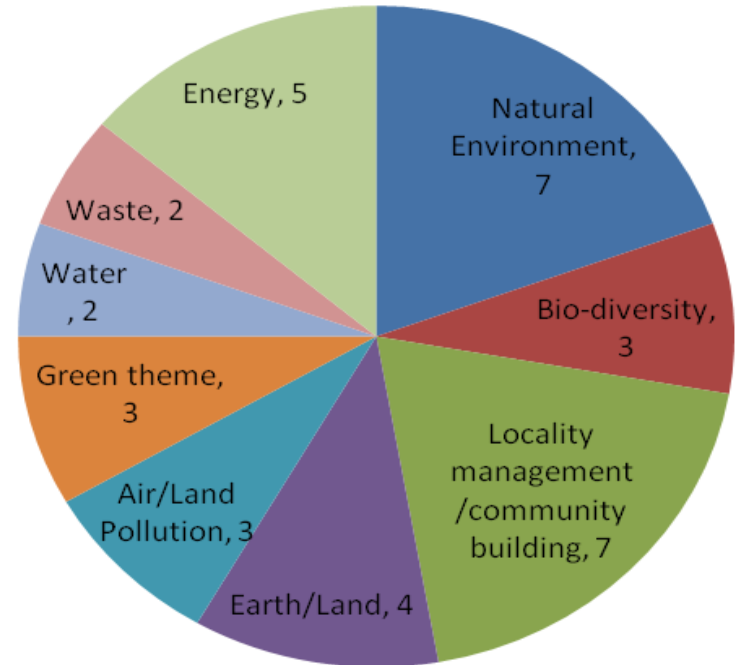
Number denotes number of activities for a particular theme
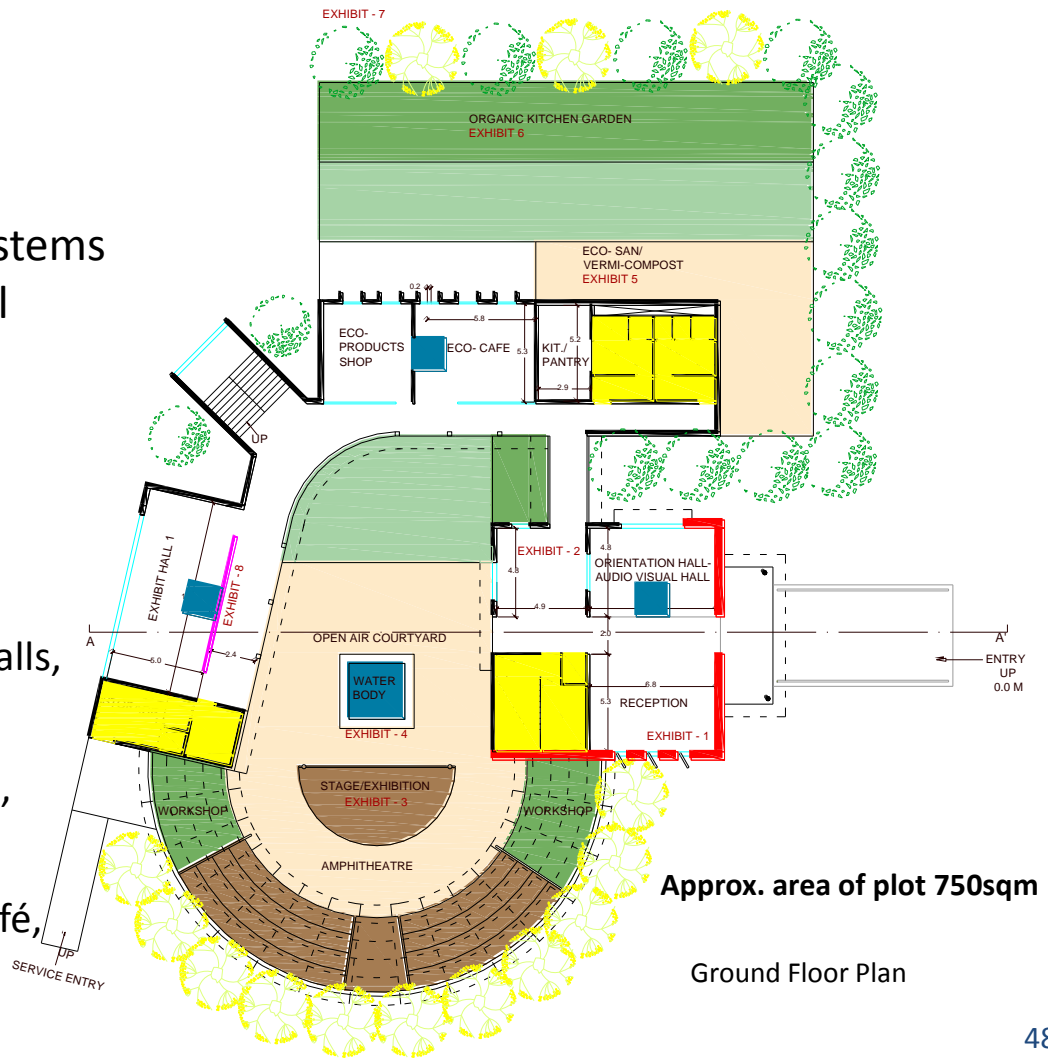
Example of detailing - Environment Awareness and Activity Centre

EAAC will-

- Provide **resources, awareness and expertise** on environment

- Provide a **platform for communication** between public authorities, developers, citizens, students and professionals

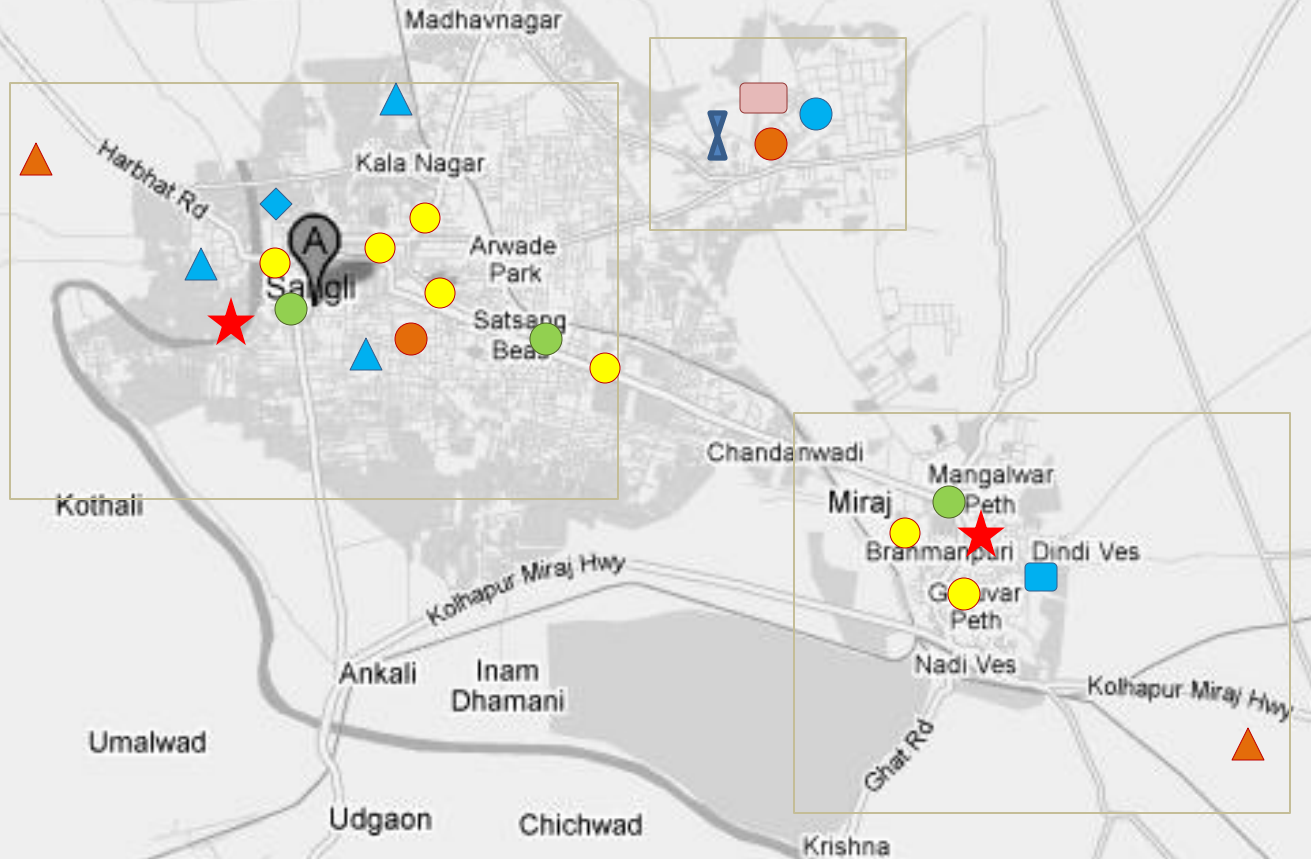- Provide a **venue** for environmental awareness and outreach programs

Concept

- Designed as an exhibit itself

- The EAAC is a GREEN BUILDING

- Illustrates passive architecture design systems such as green roofs, north lights, internal courtyards etc.

- EAAC comprises of

  - administration centre,

  - exhibit and resources centre (exhibit halls, library, education and entertainment cell),

  - activity and training centre (workshops, multipurpose hall) and

  - cultural and commercial centre (eco café, eco-shop, organic garden, community wall)

ORGANIC KITCHEN GARDEN
EXHIBIT 6

ECO- SAN/
VERMI-COMPOST
EXHIBIT 5

ECO-
PRODUCTS
SHOP

ECO- CAFE

KIT./
PANTRY

EXHIBIT - 7

EXHIBIT HALL 1

EXHIBIT - 8

OPEN AIR COURTYARD

WATER
BODY

EXHIBIT - 4

STAGE/EXHIBITION
EXHIBIT - 3

WORKSHOP

WORKSHOP

AMPHITHEATRE

EXHIBIT - 2

ORIENTATION HALL-
AUDIO VISUAL HALL

RECEPTION

EXHIBIT - 1

ENTRY
UP
0.0 M

UP

SERVICE ENTRY

Approx. area of plot 750sqm

Ground Floor Plan

Spatial Distribution of Actions

WASTE - WATER
- Decentralized Treatment Plants
- Sheri nalla in-stream treatment
- STP for reducing load on Dhulgaon STP
- EcoSan Pilot Project

SOLID-WASTE
- Biomethanation Plants
- Composting plants

ENERGY
- Energy Saving at Traffic Signals

LAND-USE
- Creation and Enhancement of Public Spaces

AIR, TRANSPORT
- Landscaping at Traffic Islands

HEALTH
- Organic based Mosquito Control

Structure of Action Plan Report

- **Action plan report comprises of 2 Volumes**

- **Volume I describes entire process of Eco-City action plan preparation, situation analysis summarized actions with financial considerations**

- **Actions presented in the form of priority, time charts and summary of budgets**

- **Volume II describes each theme based action in detail with scope of work, cost, technology options, case studies, benefits, supporting actions, institutional and financial arrangements etc.**

Structure of Action Plan Report

Volume I

- **Introduction**
- **Methodology**
- **Eco-City Charter**
- **Situation Analysis**
- **Strategy to Develop Action Plan**
- **Summary of Actions**
- **Financial Arrangements**

Volume II

Section I – Theme based actions

- **Water**
- **Wastewater**
- **Solid waste**
- **Energy**
- **Air**
- **Transport**
- **Land and land use**
- **Biodiversity**
- **Health**
- **Building Construction**
- **Society Involvement**

Section II -Awareness Activities

- **Calender of Activities**
- **Detailed Activities**

Taking Ahead Eco-City Action Plan…..

- **The Action Plan will act as a guide for the Development Planning (DP) process.**

- **The Action Plan will provide a basic structure for arranging and implementing specific urban environmental projects and programmes.**

- **The Eco-City Action Plan will help SMKMC to apply for funding from national agencies, international development partners, private investors.**

Taking Ahead Eco-City Action Plan…..

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Financing Options
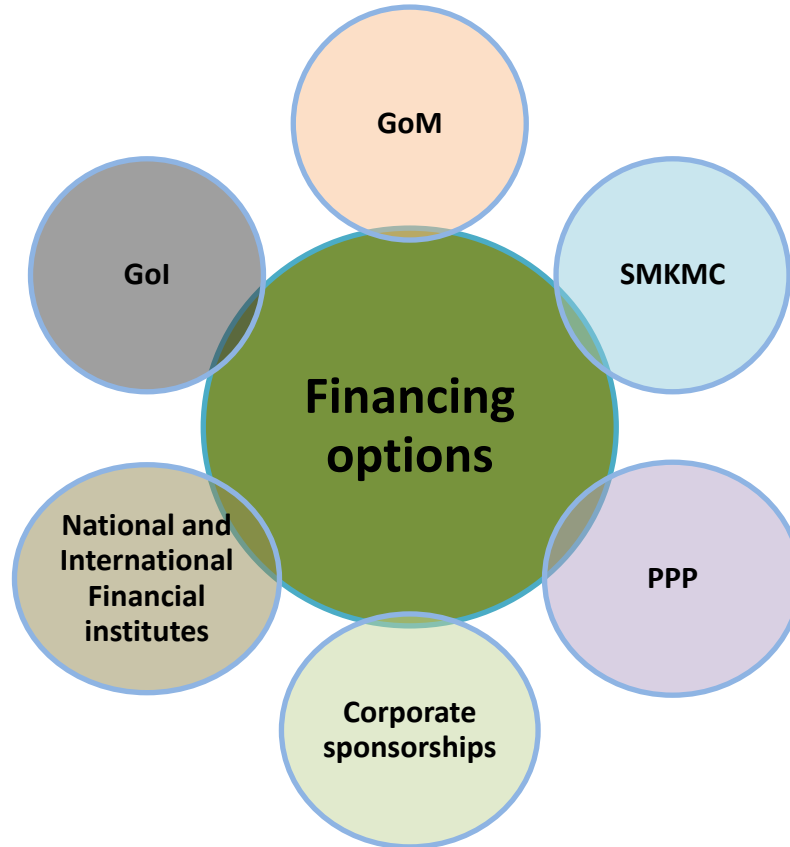
Potential Agencies

- **<u>GTZ-ASEM for DPRs, Institutional Support and Capacity Building</u>**
- **Eco2Cities Program of the World Bank**
- **<u>City Development Initiative of Asia –supported by ADB, SIDA, KfW</u>**
- **ICLEI**

- **Solar Cities Program, MNES, GoI**
- **Clinton Climate Initiative**

- **Ecocity Program of MOEF, GoI**
- **Pooled Municipal Debt Fund (PMDO)**

Recommendations

- **Formal <u>Adoption</u> of Vision, Goals and Principles**

- **Vigorous launch/campaigning – especially on community participation and awareness related events**

- **Setting of the <u>Ecocity Cell at SMK-MC</u> with twinning arrangement with key institutions – Building understanding, interest and capacity**

- **Action Plan as <u>products for submission</u> to various agencies and for discussions**

- **State level and National workshops on Ecocities**

- **Presentation at <u>World Ecocity Summit at Montreal</u>, August 22-26, 2011 <u>Mobilizing financial resources for DPRs of select projects</u>**

- **<u>Mobilizing financial resources for investments</u>**

- **Updation of the Action Plan**

THANK YOU....