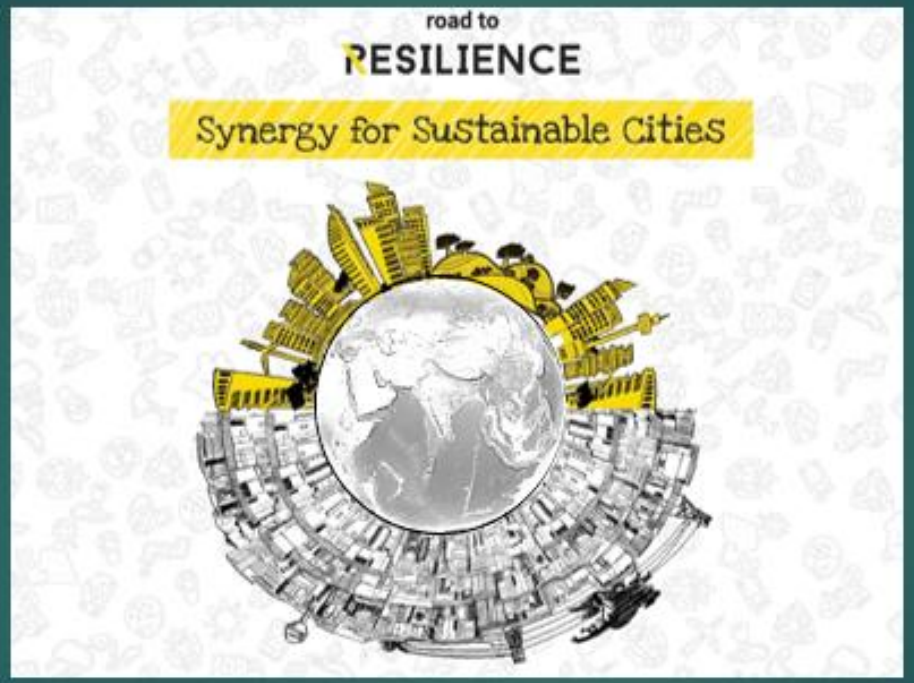
A Road map to Urban Resilience

G.K.BHAT

Lessons from ACCCRN

- The **city scenarios** provide storylines to communicate urban futures.
- **Synergy across scales, stakeholders and sectors** are essential components to increase resilience against shocks and stresses.
- City level multistakeholder Platforms such as **Surat Climate Change Trust** are necessary for collective resilience building actions.
- There are multiple options to improve energy and water resilience through **bottom up** actions (Households, neighbourhoods)
- The urban local bodies are **open to new ideas** to incorporate resilience, but have **virtually no autonomy, policies or programmes.**



Most cities in developing countries face challenges of increasing competition & recurring conflicts

Drawing lessons from ACCCRN, this book provides framework for synergistic actions driven by multiple stakeholders.

WHY do we need sustainable cities?

- Any city that uses its critical resources **unsustainably** will collapse.
- We have been wasteful and are **polluting critical resources**
- The current growth rates of **material and energy consumption** cannot be sustained.
- Climate change is amplifying the **uncertainties**.
  - We need resilience against changing patterns of **extreme events**.
- **Anticipatory culture** is necessary to understand & deal with uncertainty
- Our legacy urban planning & management is **increasing our vulnerability**.

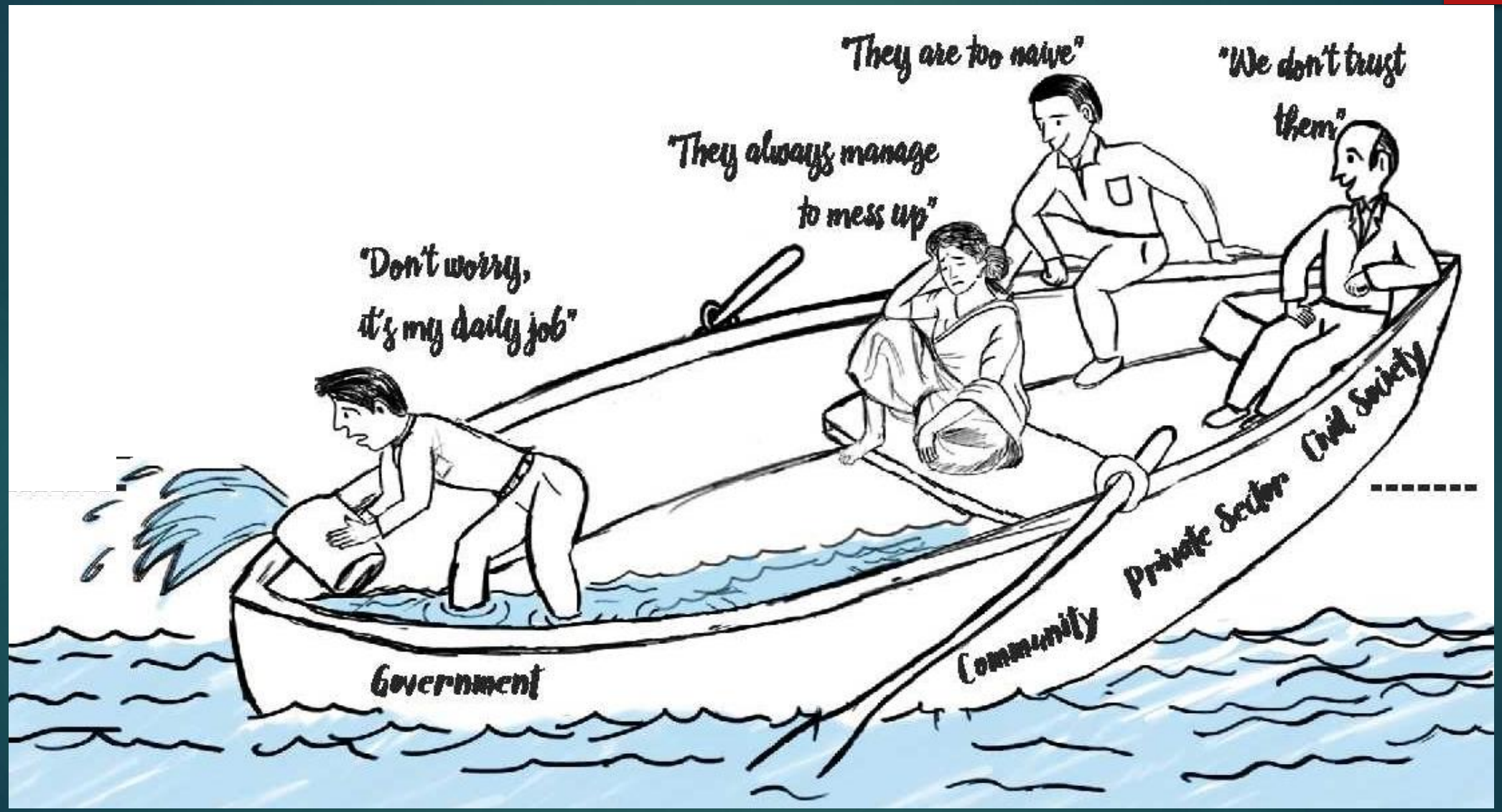
HOW can we transform our cities?

- Unleash the city's capacities for **learning & innovation**.
- **Look backwards**, identify the past mistakes of planning and management.
- Develop an **anticipatory culture** to live in the age of limited resources and uncertainty.
- Reduce ecological and environmental **footprints**.
- Increase **autonomy** of communities starting from micro to city/region/basin levels. (**Cellular autonomy**)
- Build options for **synergistic actions** across scales by empowering stakeholders.
- Use innovations in **social communication** to foster cross learning and coherent collective action.

WHERE are the challenges?

- It is the "**Municipality's problem**" attitude.
- **Legacy urban institutions** lacking anticipatory culture.
- "**One size fits all**" national programmes without contextualized solutions.
- **Capacity and knowledge gaps** in ULBs.
- Booming cities managed by **dysfunctional poor municipalities**.
- People **willing to pay** for good quality services, but ULBs **unwilling to increase** ta riffs.
- **Selfish individual coping measures**.
- **Conflicts** during scarcities.
- Excessive focus on land, but **not on network integrity**.
- **Communicating contextualized risks** and resilience options

It is their responsibility



WHAT are the benefits?

- We can create **comfortable, healthy and stress free** cities.
- Efficient and healthy people can make the **city more efficient** and attract investments.
- **Healthy urban ecosystems** and biodiversity can provide many ecological services at low cost.
- The **ecological services** can reduce stresses and shocks and their impacts.
- An inclusive society ensures equitable access to lifeline services and **improves efficiency and productivity**.
- Strong stakeholder linkages can **catalyze a healthier economy** and improve livelihoods.

Synergy across Stakeholders & Scales

Stakeholder groups

Communities (C)

- Poor and migrants
- Informal workers
- Colony resident groups (RWAs)
- Self-help groups

Government(G)

- Local Authorities
- Parastatals (water supply and sewerage board, UDA, smart city SPV etc.)
- National Govt.
- Regional Govt.
- Parliamentarians

Private Sector(P)

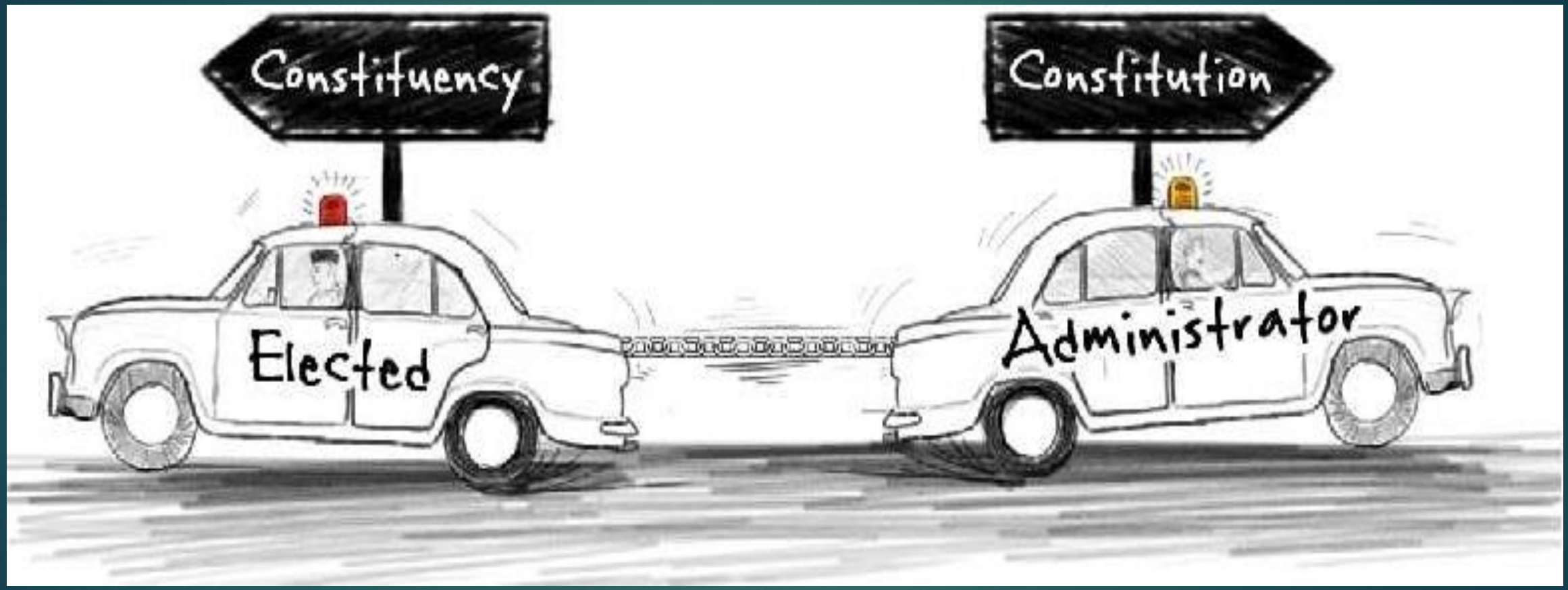
- Business and Industry
- Trade associations (CII, FICCI, CREDAI etc.)
- Financial Institutions (housing and infrastructure development banks)

Civil Society(Cs)

- NGOs, CSOs, Advocacy /Faith groups. City Networks
- Academia and Universities
- Architects, planners, lawyers, economist, doctors and engineers)
- International Donors/Organisations/Foundations
- Media

Stakeholder Disconnect

Disconnect at ULB Level



Roles-I

Communities(C)

- **LEARN** about conservation and efficient use of resources.
- **REDUCE** coping costs by formalised local solutions.
- **INCREASE** autonomy through community action.
- **BUILD** circular water, energy & carbon economy.
- **CONSERVE** local natural resources.
- **MONITOR** environment and resources and share data.
- **INTERNALISE** the capacities to manage.
- **PARTICIPATE** actively in the policy making

Government(G)

- **DEVELOP** equitable and inclusive policies.
- **IMPLEMENT** policies and legislations.
- **DESIGN** incentives around conservation.
- **MONITOR** and manage resources.
- **PROVIDE** open access to information
- **BUILD** and strengthen institutions across scales
- **FACILITATE** stakeholder's participation.
- **RESOLVE** conflicts between stakeholders.

Roles-II

Private Sector(G)

- **DEVELOP** and market clean and disruptive innovations.
- **ENABLE** fast diffusion of clean technologies and services.
- **REDUCE** resource and pollution foot prints.
- **BUILD** urban scenarios informed by innovations.
- **PROVIDE** inputs to enable innovation informed policies.
- **DEVELOP** environmentally and socially responsible culture.
- **SUPPORT** communities to improve autonomy

Civil society(Cs)

- **CONDUCT** applied research to surface challenges and options.
- **GUIDE** policies to enable sustainable urbanization.
- **CAMPAIGN** for equity and inclusive development.
- **EDUCATE** stakeholders on challenges and options.
- **PROMOTE** innovations to improve quality of life.
- **DEVELOP** networks to ensure coherent action.

Actions

Enable Information Symmetry

- Design IOT network for integrating data from public and ULB sources.
- Enable visualization of data and Information.
- Create web enabled platforms to share information.

Develop Anticipatory culture

- Regularly analyze IOT and other data.
- Build urbanization, economy and Climate Change informed scenarios.
- Map innovations and contextualize them.
- Understand challenges and opportunities.

Devolve functions

- Devolve functions incorporating subsidiarity principle.
- Create formal institutions across scales &stakeholder dialogue platforms.
- Build synergistic "cellular autonomy" based city networks.
- Create start-up ecosystems to design, build & manage "cells" and ensure synergy.

Strengthen urban services

- Stress-test cell level and network level integrity during extremes.
- Harden infrastructure &services across scales.

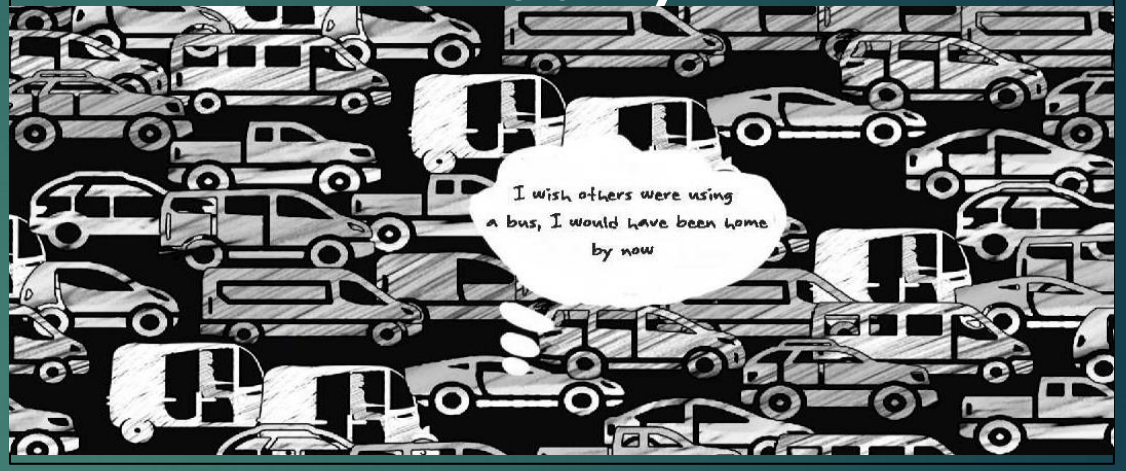
Build capacities

- Establish information sharing& dialogue platforms.
- Support, train and strengthen institutions across scales.

Sectors

Water

Mobility



Energy

Environmental Health

Example: Water Ethics

Water poverty, recurrent floods & pollution are growing challenges in cities. Water ethics should address challenges of water poverty, conservation, sanitation, sustainability, biodiversity & health etc. It should be based on principles of equal respect for human dignity, equity, solidarity, common good, responsible stewardship & deliberative participation. It should respect geophysical & ecological rules, cultural & democratic values.

What Problems does it Address?

- Competition for water between cities & their hinterlands.
- Hoarding by few, "water poverty" for the rest.
- Wastage & pilferage.
- Pollution of water resources & downstream impacts.
- Flooding due to encroachment of flood plains & inappropriate construction.
- Degradation of water bodies of religious & cultural importance

For many of us, water simply flows from a faucet and we think little about it beyond this point of contact. We have lost a sense of respect for the wild river, for the complex workings ofa wetland, , for the intricate web of life that water supports. Today's water institutions-the policies and laws, government agencies and planning and engineering practices that shape patterns of water use-are steeped in a supply-side management philosophy no longer appropriate

-Sandra Postel

What should we do?

Science & Technology

- Develop IOT sensor network to monitor water resources, quality & use
- across consumers & scales.
- Develop water resource models & scenarios. ….

Policy & Praxis

- Develop, document & disseminate water ethics.
- Create equitable sharing frameworks & embed circular water economy……

Information

- Collect data on different aspects of urban & regional water cycle & usage
- Create open access platforms to share water information….

Economy & Finance

- Conduct social & environmental cost benefit of available options.
- Create incentive & disincentives to promote water conservation and to prevent pollution.

Example : Water Ethics: Actions-I

Communities (C)

- Use IOT sensors to monitor water quality, usage. (G+Cs)
- Establish social rules to discourage water
- Develop mechanisms to share water with poor neighborhoods
- Conjunctive use of surface & groundwater. (Cs)
- Promote "Waste Not-Pollute Not" attitudes & behaviors. (G+P)
- Enforce use of recycled water for low end uses (Cs+P)
- Promote ecologically sound water use practices.
- Inculcate respect for cultural values towards water.

Government(G)

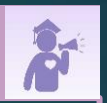
- Set up open access IOT networks to understand the full water cycle from colony upwards. (C+Cs)
- Develop near real-time database on resources, quality, demand, access, use etc. (Cs)
- Develop water scenarios informed by climate change, demand growth & innovations. (Cs)
- Engage stakeholders, experts & develop 'Water Ethics" in simple language. (C+Cs+P)
- Develop water policy informed by water ethics. (Cs)
- Declare water as a basic right & provide to all citizens on demand. (Cs)
- Set & enforce "Water Drop Rating" standards for water consuming appliances. (Cs+P)
- Conserve drainage systems & water bodies including one with cultural significance. (C+Cs+P)

Example : Water Ethics: Actions-II

Private Sector (P)

- Include water ethics in environmental policy of organization.
- Respect other users' rights over water & solve competition through negotiations. (C+Cs+G)
- Prevent encroachment of natural drainage & water bodies. (Cs+G)
- Ensure water sensitive real estate development. (C+Cs)
- Refrain from dumping waste or effluents in to water bodies.
- Allocate CSR funds for revitalizing water resources. (Cs+G)

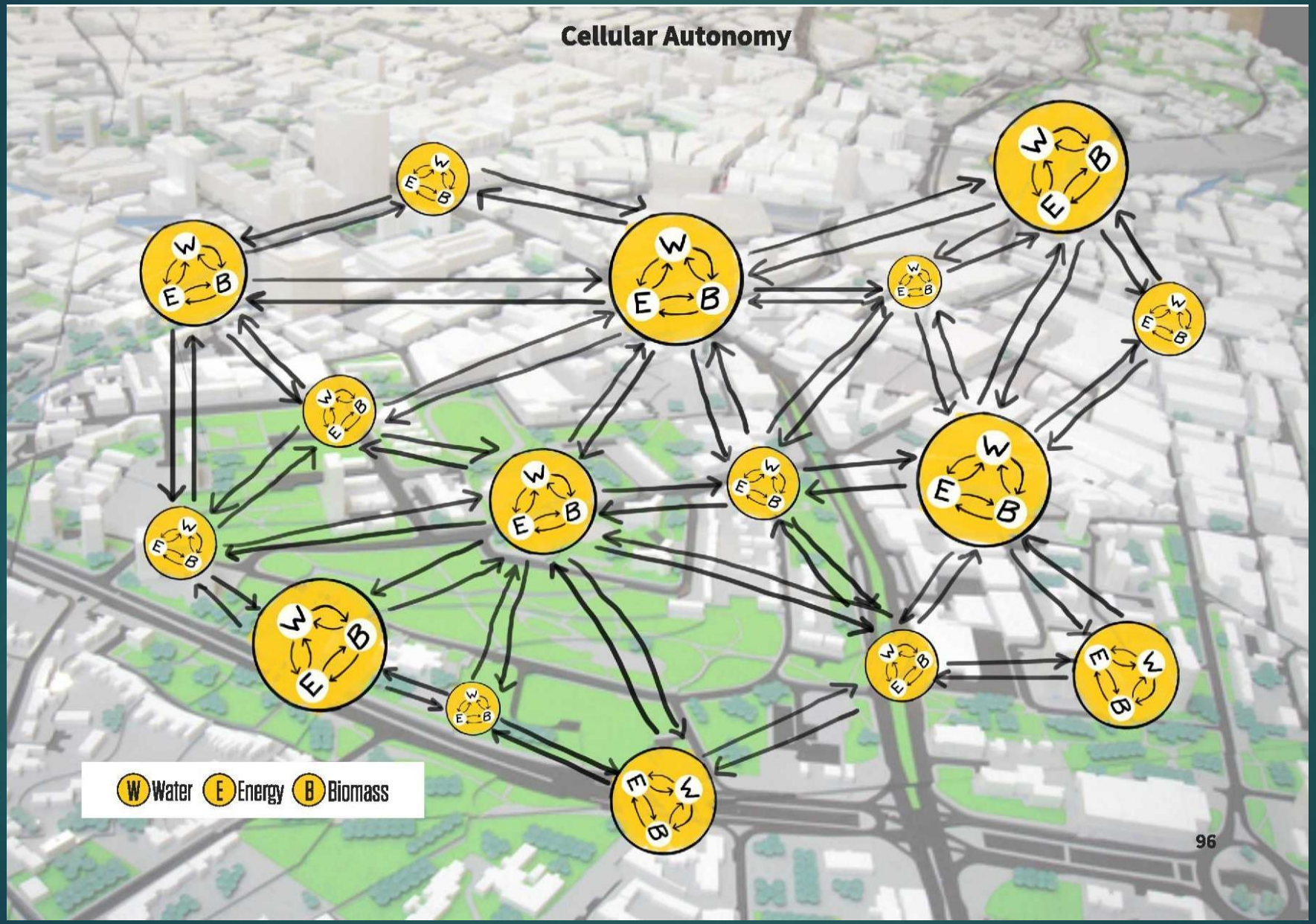
Civil society (Cs)



- Conduct social & environmental cost benefit of available options. (G)
- Facilitate a paradigm shift from consumerism to conservation. (C+G+P)
- Motivate lifestyle change to value water & the rights of others. (C+G)
- Ensure media coverage to mainstream water ethics. (C+G)
- Promote water harvesting & recycling & highlight the benefits. (C+G)
- Analysis & sharing of water utilisation & wastage data & its implications. (C+P+G)
- Motivate environmental friendly water behaviour & ecological awareness. (C+G+P)

Option 1: Bureaucratic solutions to urban challenges

Option 2 : Clumsy solutions through synergistic actions



Be the Change You Want to See in the World

-Mahatma Gandhi