Think Globaly, Act Locally

Disaster Prevention and Management in Asia:

The Context of Human Security and Its Relevance to Infrastructure Planning and Management

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  - Gujarat Earthquake, India 2001
  - Indian Ocean Tsunami, 2004
  - Pakistan Earthquake, 2005
- Climate Risk
- Way Ahead

Disaster Definition is Changing

- Disaster Risk = Function of Hazard and Vulnerability
- Disaster Risk = Function of Hazard, Vulnerability and Capacity
- Disaster Risk = Function of Hazard, Vulnerability, Capacity, and Uncertainty

How Do We Define Uncertainty?

- Dynamic Pressure:
  - Population
  - Urbanization
  - Environmental Degradation
- Climate Risk: Change in disaster pattern/ Rainfall intensity/ Typhoon paths: Hydro-met disasters
- Geo-political Context:
  - Decentralization
  - Globalization

Sources of Security/ Threats

	Military	Non-Military
States	National Security (Conventional approach of security studies)	Redefined Security (environment/ economic)
Societies/ Groups/ Individuals	Intrastate Security (civil war, ethnic conflict)	Human Security (Environmental and economic threats to the survival of societies, groups and individuals)

People Oriented

- Human Security and Human Development
- Human security is to protect people from different types of “downside risks” (equity, dignity, human rights, freedom)
- Empowerment of human beings
- Development needs (hunger, water, population and environment)

Global Issues

"At the center of sustainable development is the delicate balance between human security and the environment"

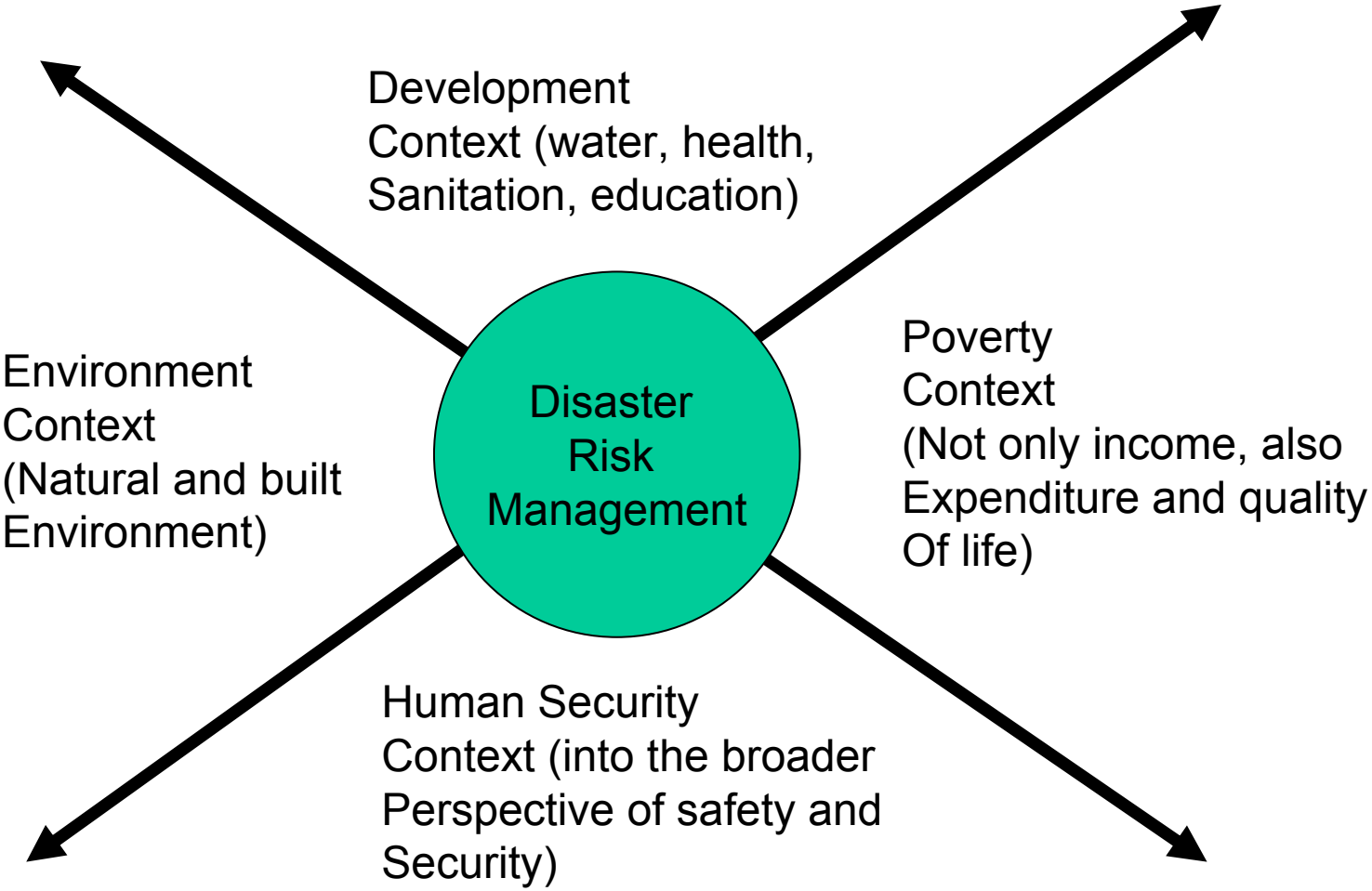
Sadako Ogata and Amartya Sen in

"**Human Security Now**", May 2003

- **Governments and other stakeholders are increasingly aware of the relationship between ecological stability and human security. The emphasis is more on the *environment management*. However, there has been *little concrete actions at local level* to ensure the *participation of affected communities and people* in such management.**

- **Critical to this is the need to explicitly plans for improved environment management and sustainable development to disaster prevention and preparedness.**

Disaster Context at Present



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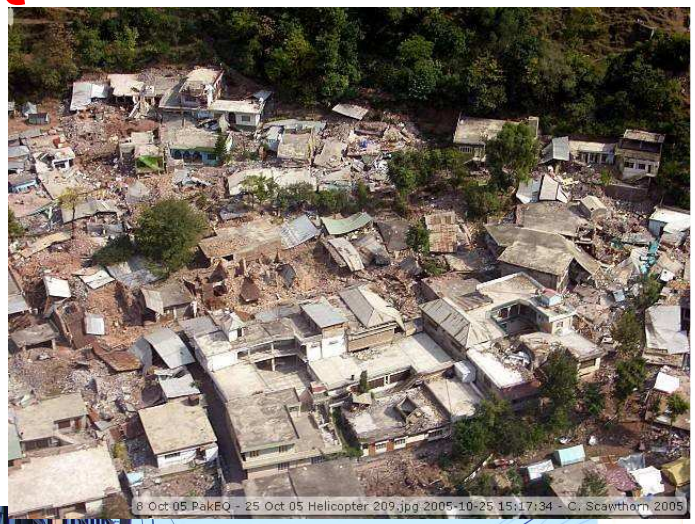
Post-Disaster Information Management

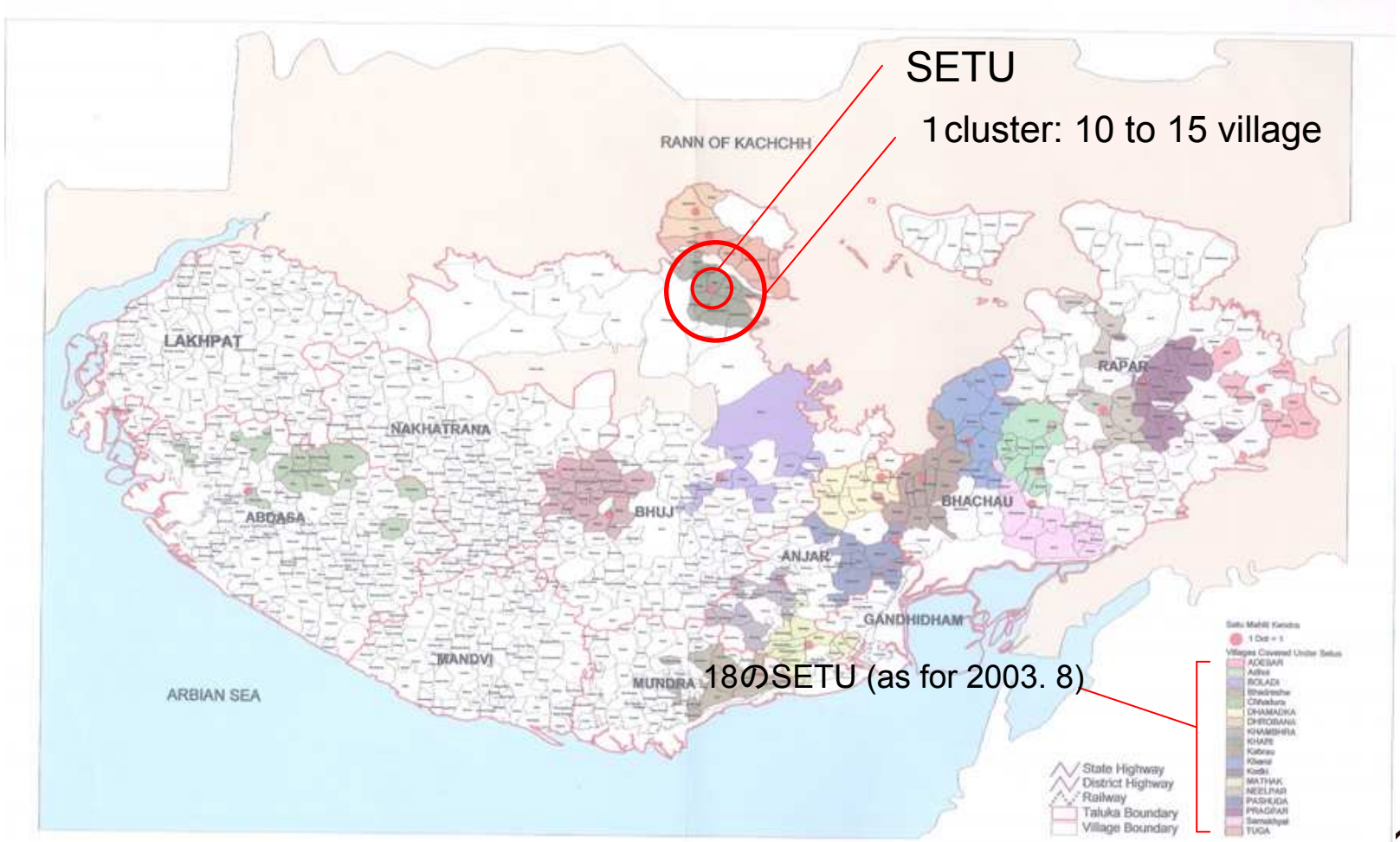
- Challenges:
  - Too many roles players in post-disaster scenario
  - Tremendous resources come in within a short period
  - Strong or week governance play a role
  - Accountability, Transparency
  - Lacks sustainability

Example of Information Management

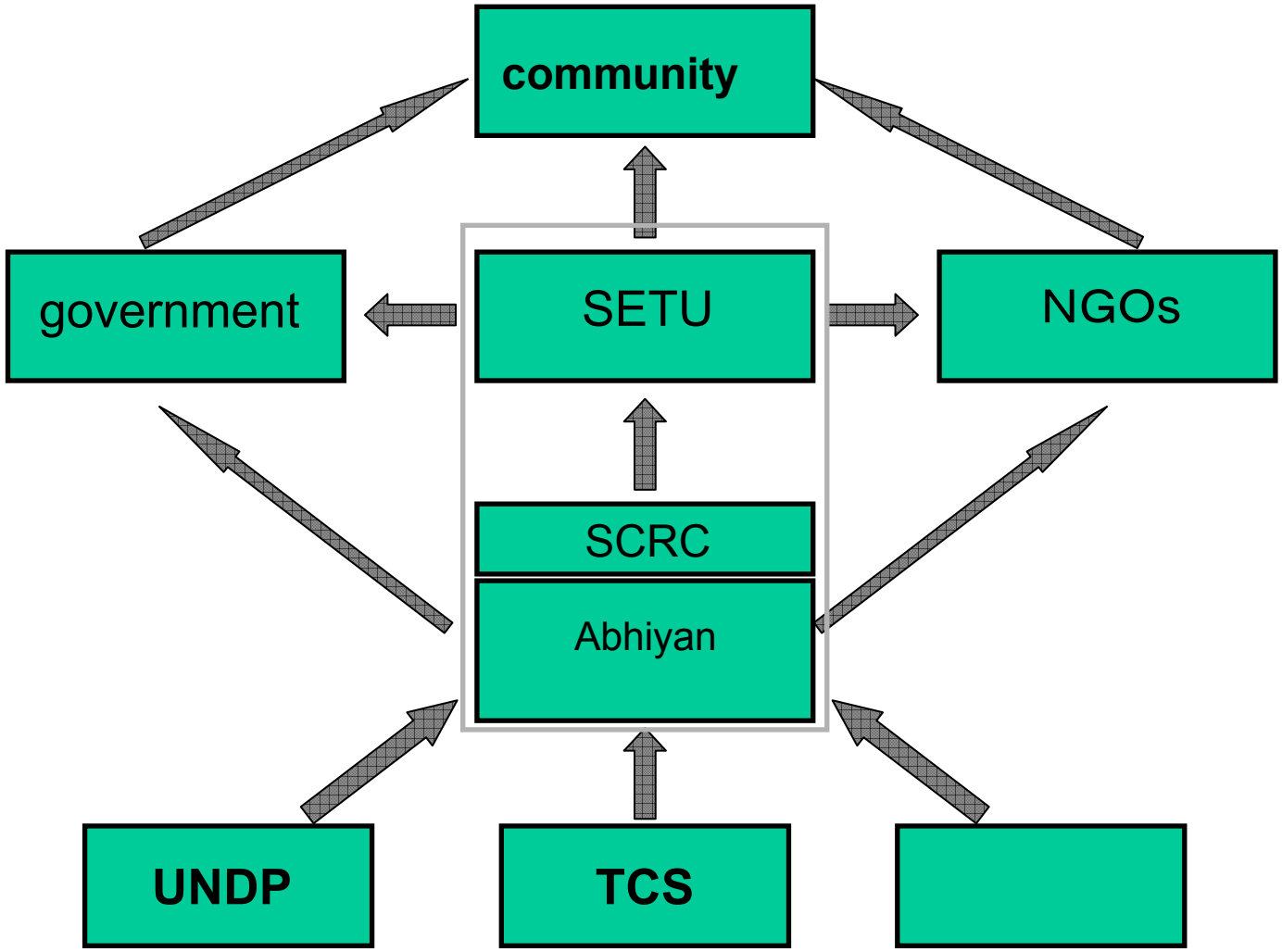
- Gujarat Earthquake, 2001
- Indian Ocean Tsunami, 2004
- Pakistan Earthquake, 2005



Gujarat Earthquake SETU



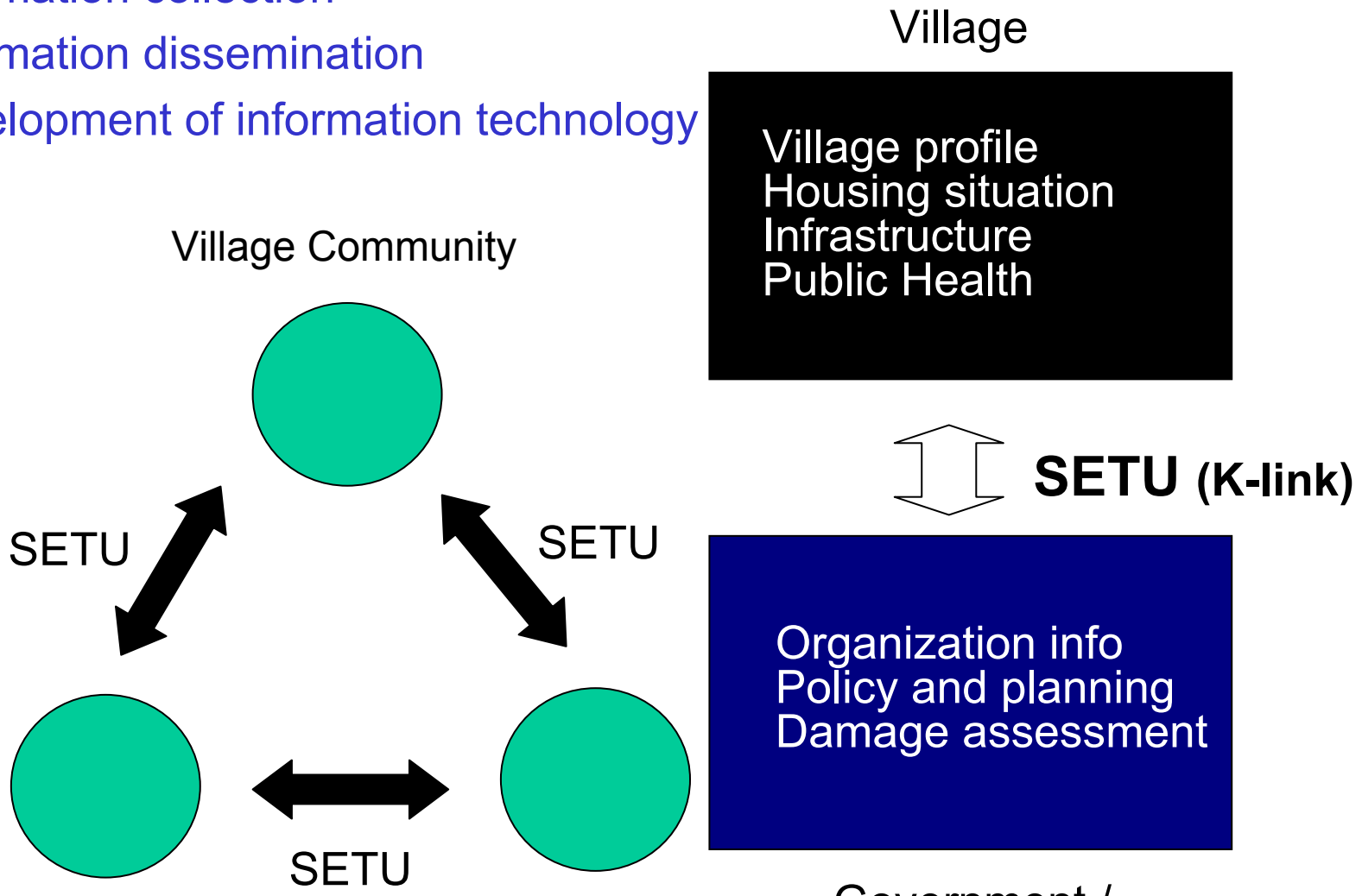
SETU - relationship



SETU - activity

Information Coordination

- Information collection
- Information dissemination
- Development of information technology

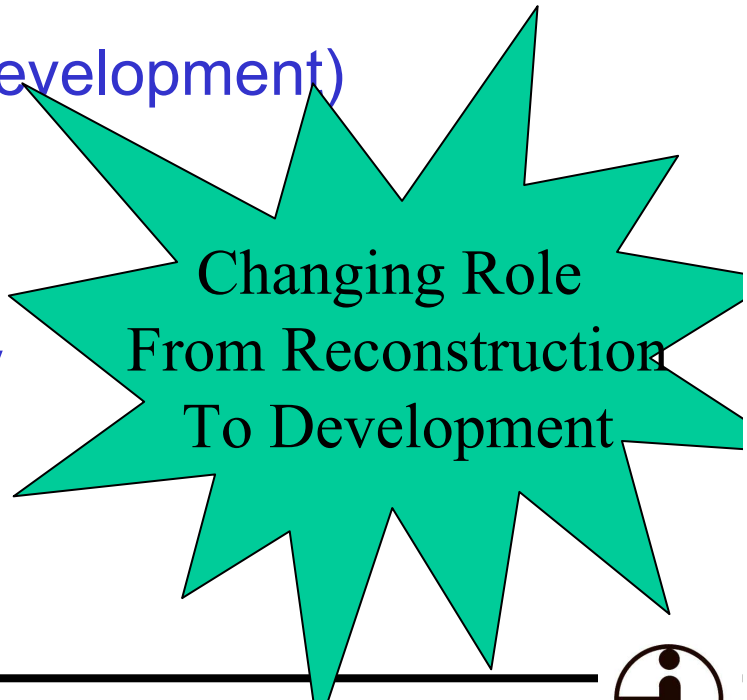


SETU - activity

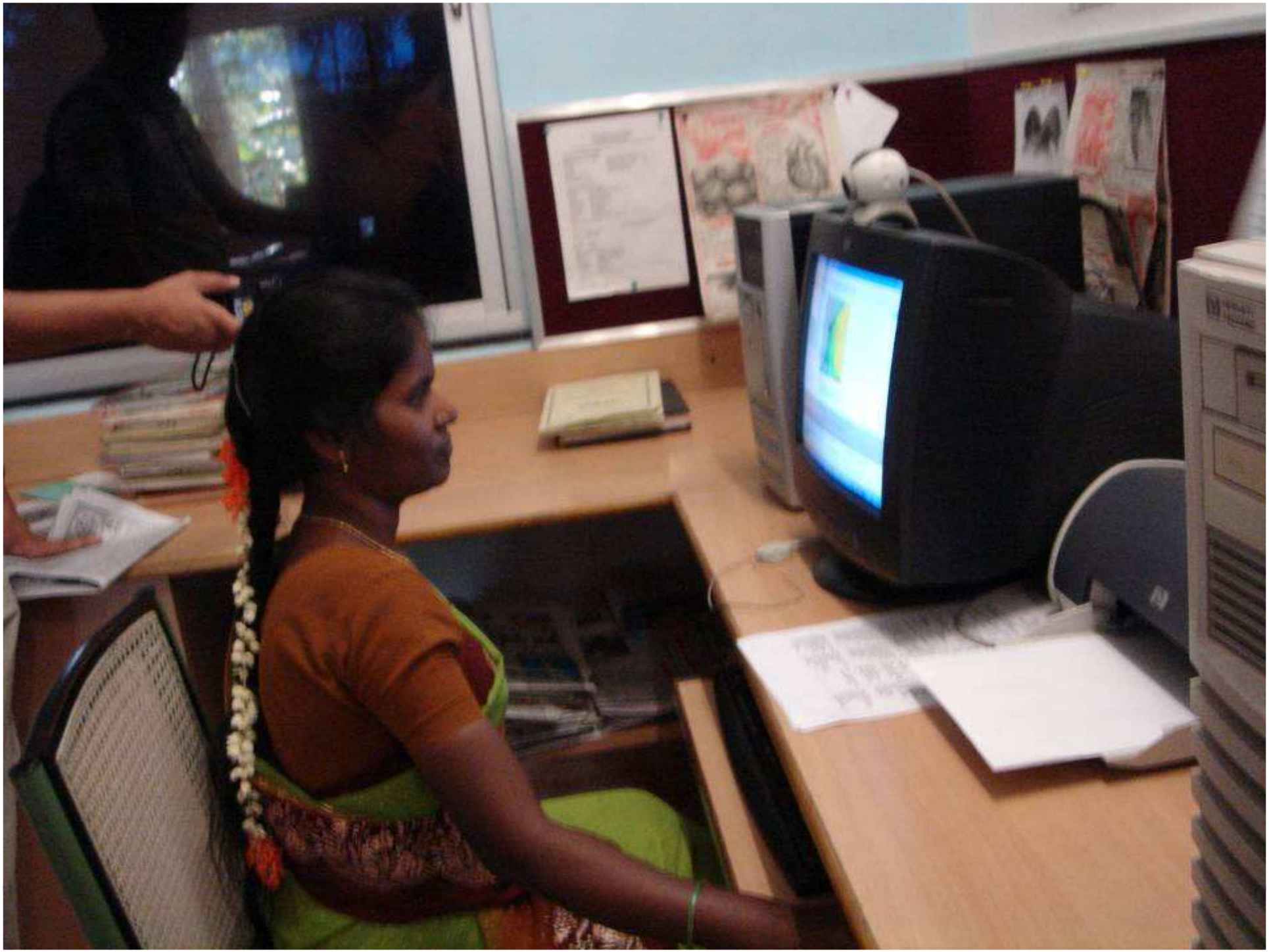
Characteristics

- Information management and coordination
- Objectives (community participation and community empowerment)

- Transition (rescue, rehabilitation, development)
- Current target
  - Education, development, health
- Future target
  - Climate Risk, towards Human Security



Resource Center in TamilNadu



Experience of Knowledge Resource Centers in Recovery & Preparedness

Gujarat, 2001

- Concept of "SETU" , a body which acts as a bridge between the affected people, NGOs and Government, and donors and enables them to dialogue effectively with each other.

Tamil Nadu

- Concept of "Rural Knowledge Centres" to harness the power of ICT in the knowledge, skill, economic and social empowerment of rural families.....(has been useful in disseminating early warnings to fishermen)

Resource Knowledge Center in Aceh

PANEL 2:
EMERGENCY PHASE
- Medical relief
- Aid distribution (essentials)

PANEL 3:
RECOVERY PHASE
- Medical relief
- Set up of temporary shelter services
- Planning for permanent housing

PANEL 4:
REHABILITATION PHASE
- Build & handover permanent houses
- Education on disaster risk mgt

PANEL 1:
INTRODUCTION:
- Objective of setting up the Resource Center
- Introduction to Disaster (general)
- Introduction to the SEA Tsunami in Aceh, Sri Lanka and India

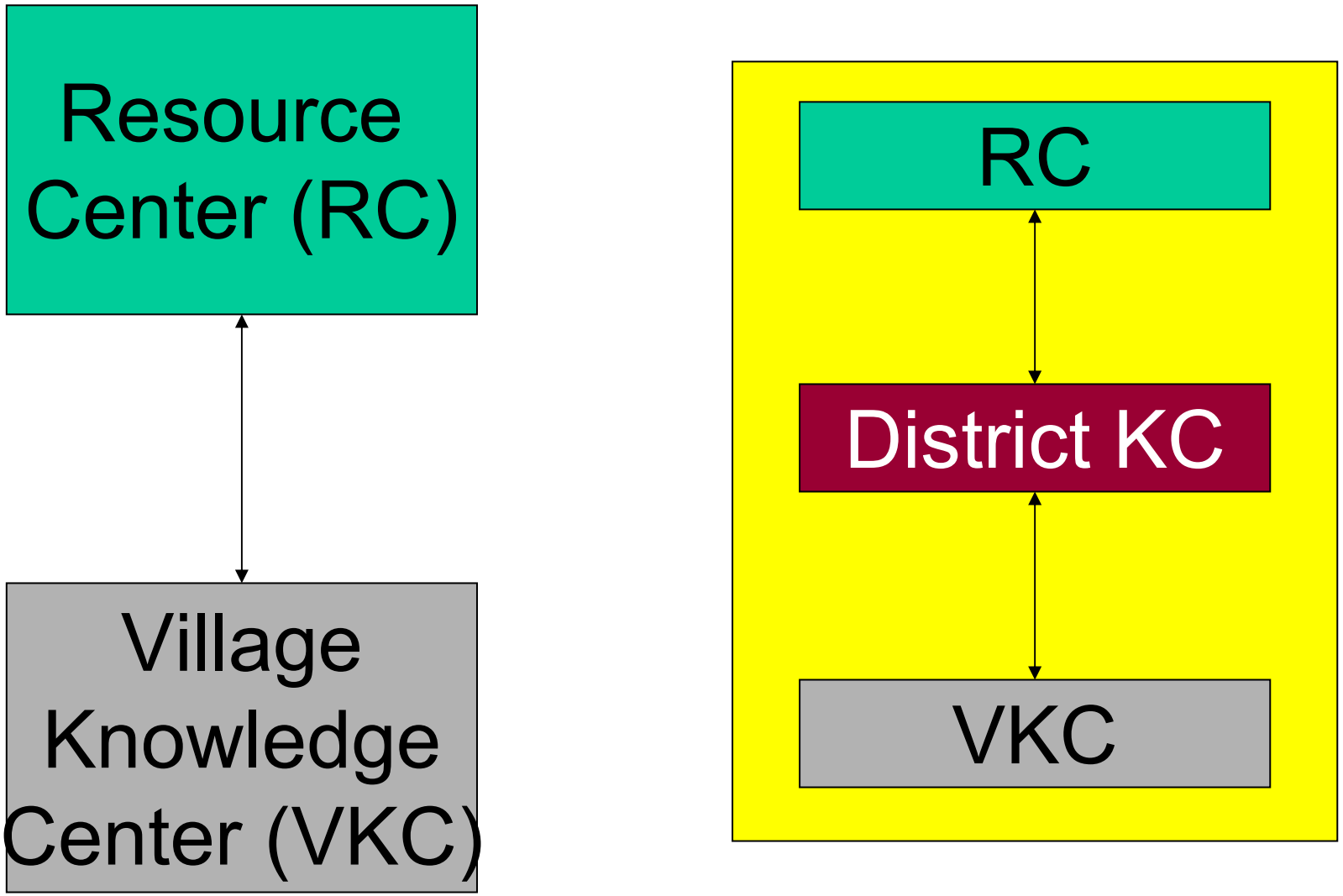
TRAINING CENTER
POSSIBLE ACTIVITIES AT SKILLS TRAINING – LIVELIHOOD PROGRAM:
- EDUCATION ON DISASTER PREPAREDNESS
- INFORMATION SHARING SEMINARS / WORKSHOPS ON TDRM AND DRM
- EVENTS AND ACTIVITIES RELEVANT TO DRM – CONCERTS, DANCE, ETC
- BASIC LIFE SUPPORT TRAINING, EVAC DRILLS EX, ETC

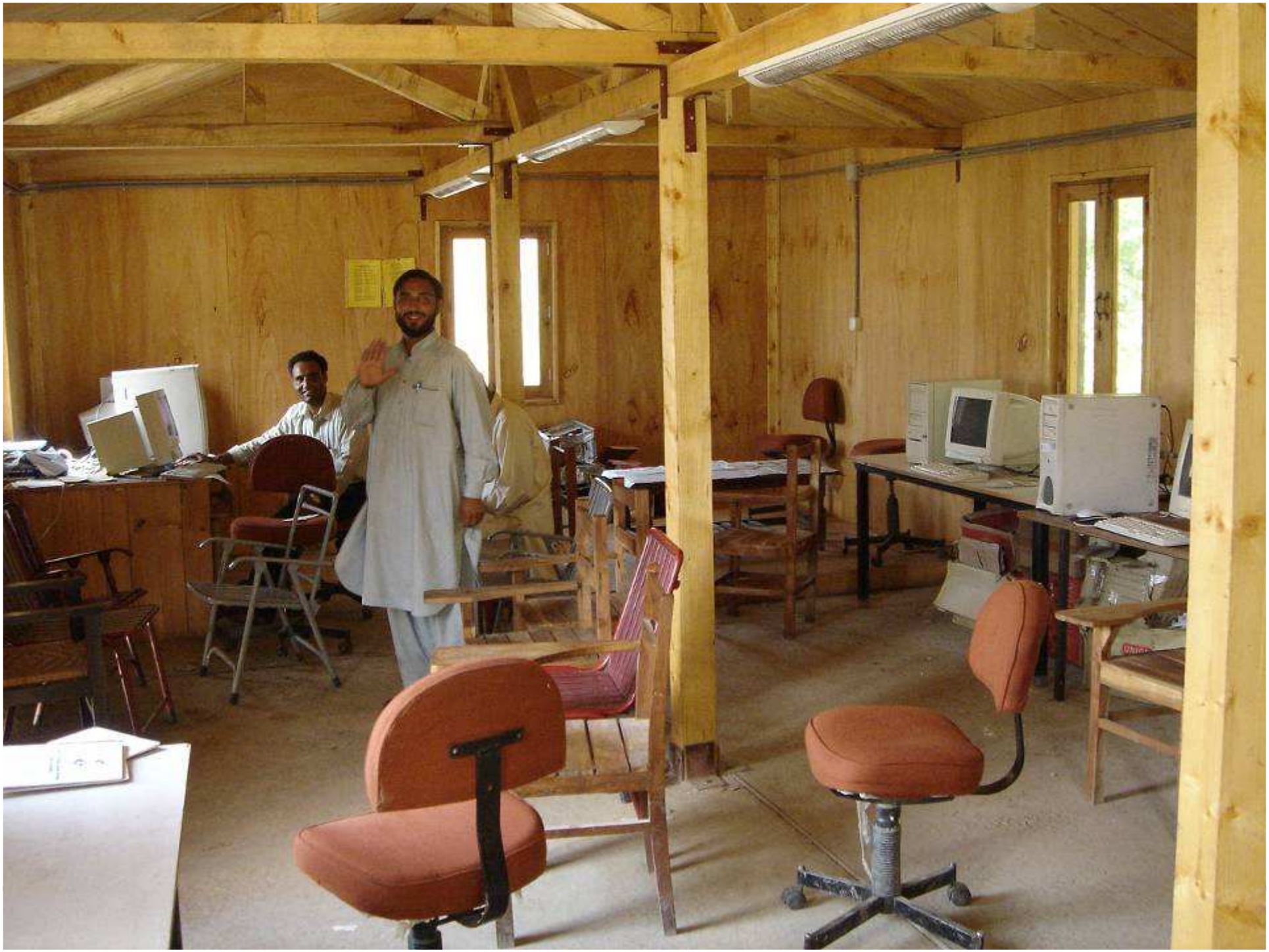
SUPPORT SERVICES AT RESOURCE CTR:
- COMMUNITY RADIO ?
- LIVELIHOOD EXHIBIT CORNER
- LIBRARY – DISASTER RESOURCE CORNER
- REFRESHMENT CORNER – 'WARKOP'

enter

exit

Resource Center in Pakistan





Criterion of selection of location of KCs

KCs should be established in the place where people can access easily (where people often visit)

→ Market/Health center

KCs should be established in the useful place to distribute information.

→ Schools

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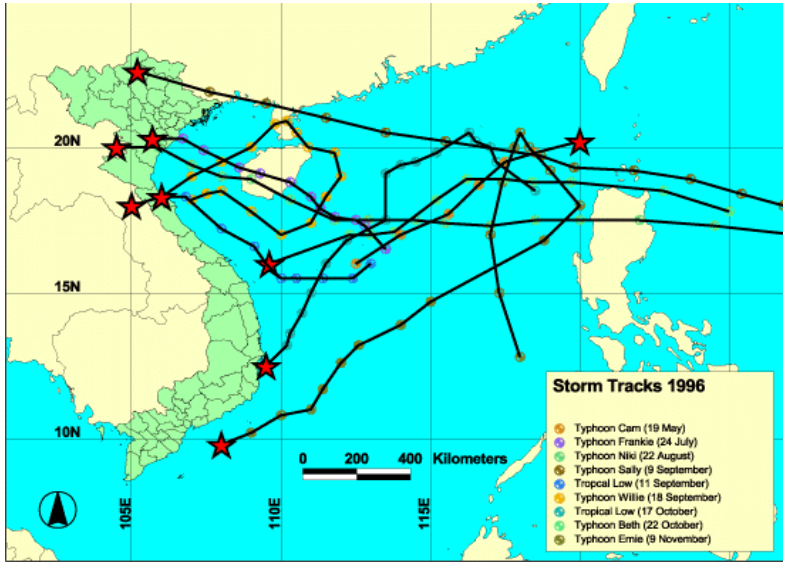
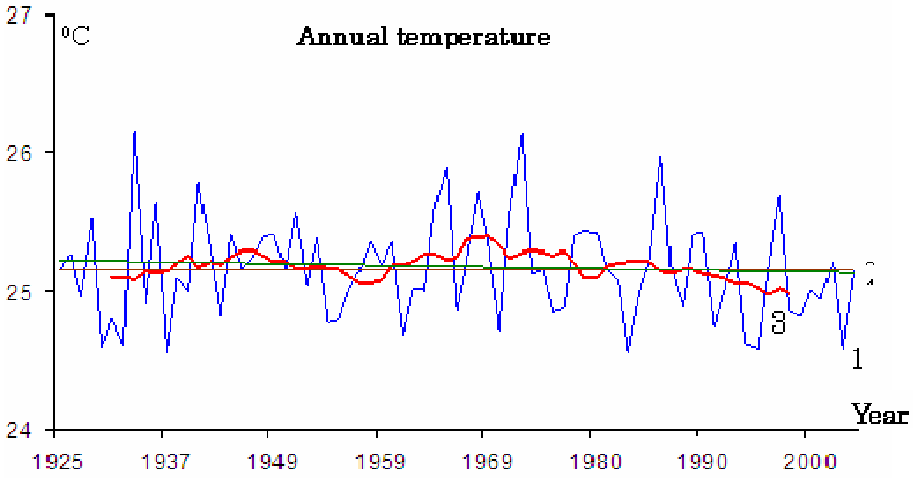
Climate Change Risk and Community Infrastructures

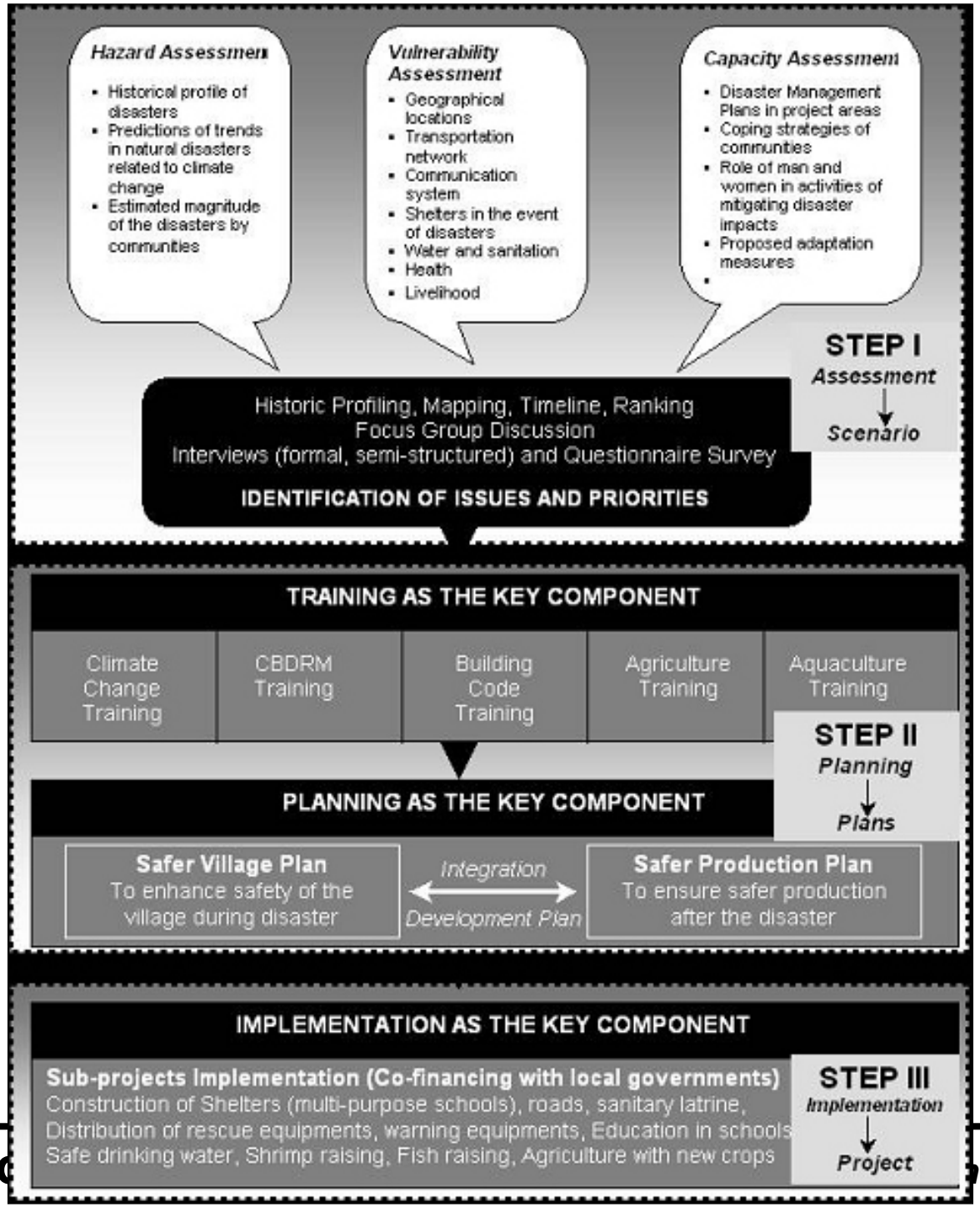
- Vietnam Example
- Sri Lanka Experience



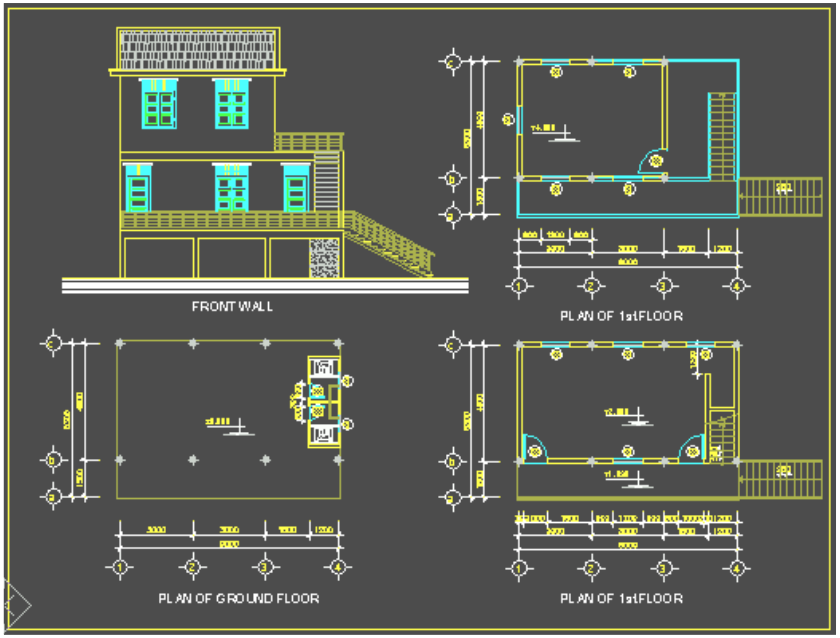


Pic. Variability (1), climatological average (2), moving average (time step - 11 year) (3) and linear trend (4) of annual temperature at Hue

Central Vietnam: Thua Thien Hue Province


Hazard Assessment
Historical profile of disasters
Predictions of trends in natural disasters related to climate change
Estimated magnitude of the disasters by communities
Vulnerability Assessment
Geographical locations
Transportation network
Communication system
Shelters in the event of disasters
Water and sanitation
Health
Livelihood
Capacity Assessment
Disaster Management Plans in project areas
Coping strategies of communities
Role of man and women in activities of mitigating disaster impacts
Proposed adaptation measures
STEP I
Assessment
Scenario
Historic Profiling, Mapping, Timeline, Ranking
Focus Group Discussion
Interviews (formal, semi-structured) and Questionnaire Survey
IDENTIFICATION OF ISSUES AND PRIORITIES
TRAINING AS THE KEY COMPONENT
Climate Change Training
CBDRM Training
Building Code Training
Agriculture Training
Aquaculture Training
STEP II
Planning
Plans
PLANNING AS THE KEY COMPONENT
Safer Village Plan
To enhance safety of the village during disaster
Integration
Development Plan
Safer Production Plan
To ensure safer production after the disaster
IMPLEMENTATION AS THE KEY COMPONENT
Sub-projects Implementation (Co-financing with local governments)
Construction of Shelters (multi-purpose schools), roads, sanitary latrine,
Distribution of rescue equipments, warning equipments, Education in schools
Safe drinking water, Shrimp raising, Fish raising, Agriculture with new crops
STEP III
Implementation
Project

TRAINING ON
DISASTER RESISTANT CONSTRUCTION PRACTICES



Guidelines for disaster resistant construction practices were produced.

Participants (engineers, technical supervisors, and local builders 2 districts, 4 communes, and 8 villages) were trained

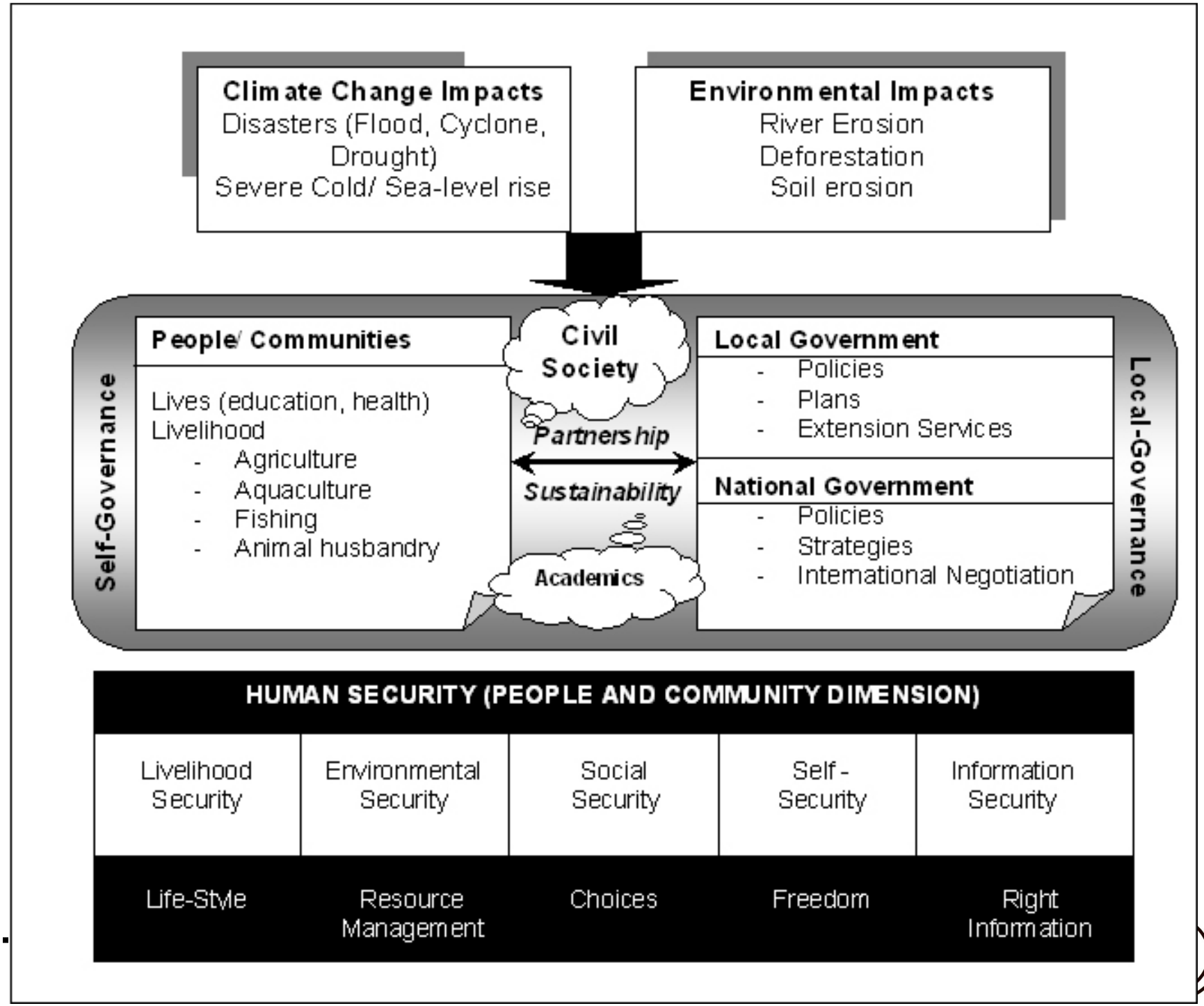
ADAPTATION STRATEGIES

Support to Safer Village Plans through the Community Adaptation Fund (CAF)

Sanitation

Road

Multi purpose building


Climate Change Impacts
Disasters (Flood, Cyclone, Drought)
Severe Cold/ Sea-level rise
Environmental Impacts
River Erosion
Deforestation
Soil erosion
Self-Governance
People/ Communities
Lives (education, health)
Livelihood
- Agriculture
- Aquaculture
- Fishing
- Animal husbandry
Civil Society
Partnership
Sustainability
Academics
Local Government
- Policies
- Plans
- Extension Services
National Government
- Policies
- Strategies
- International Negotiation
Local-Governance
HUMAN SECURITY (PEOPLE AND COMMUNITY DIMENSION)
Livelihood Security
Environmental Security
Social Security
Self - Security
Information Security
Life-Style
Resource Management
Choices
Freedom
Right Information

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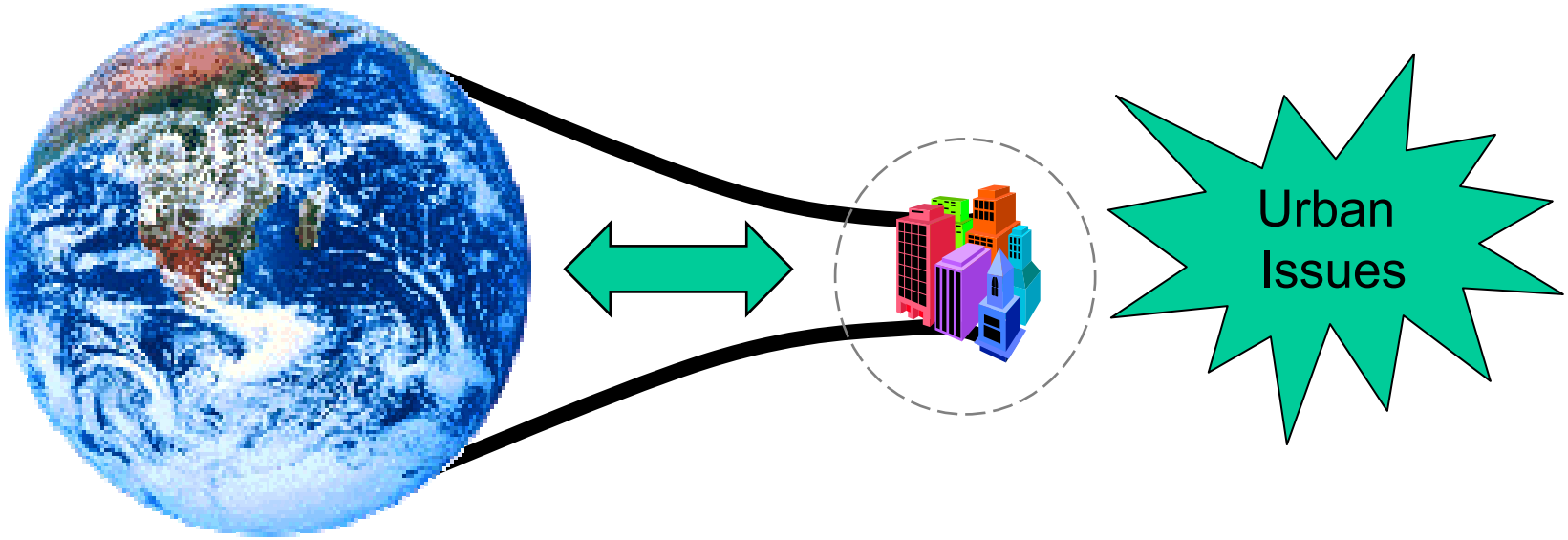
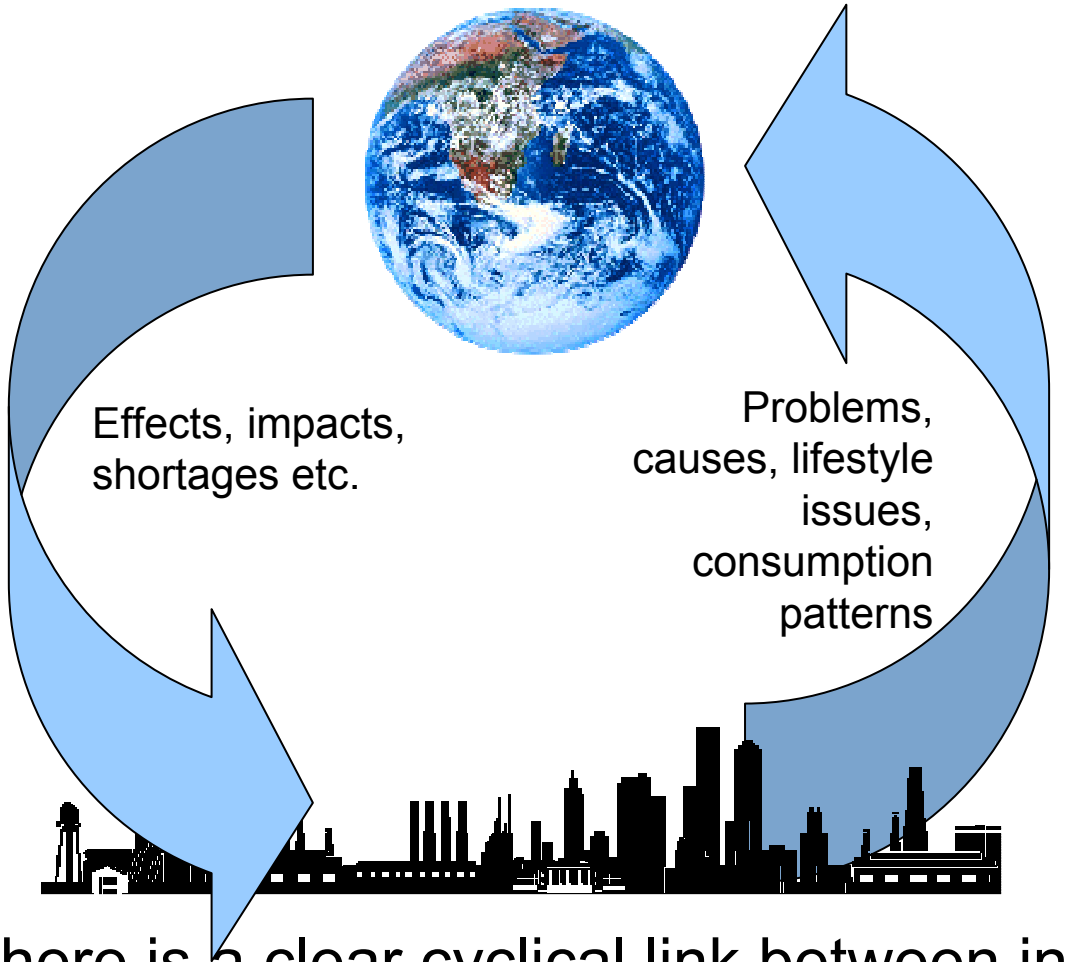
Rethinking Infrastructure Management



Take any of today's environmental problem faced by people, and its causes and pressures can easily be traced back, directly or indirectly, to urban areas.

The forces and processes that constitute 'urban activity' have far-reaching and long-term effects not only on its immediate boundaries, but also on the entire region in which it is positioned.

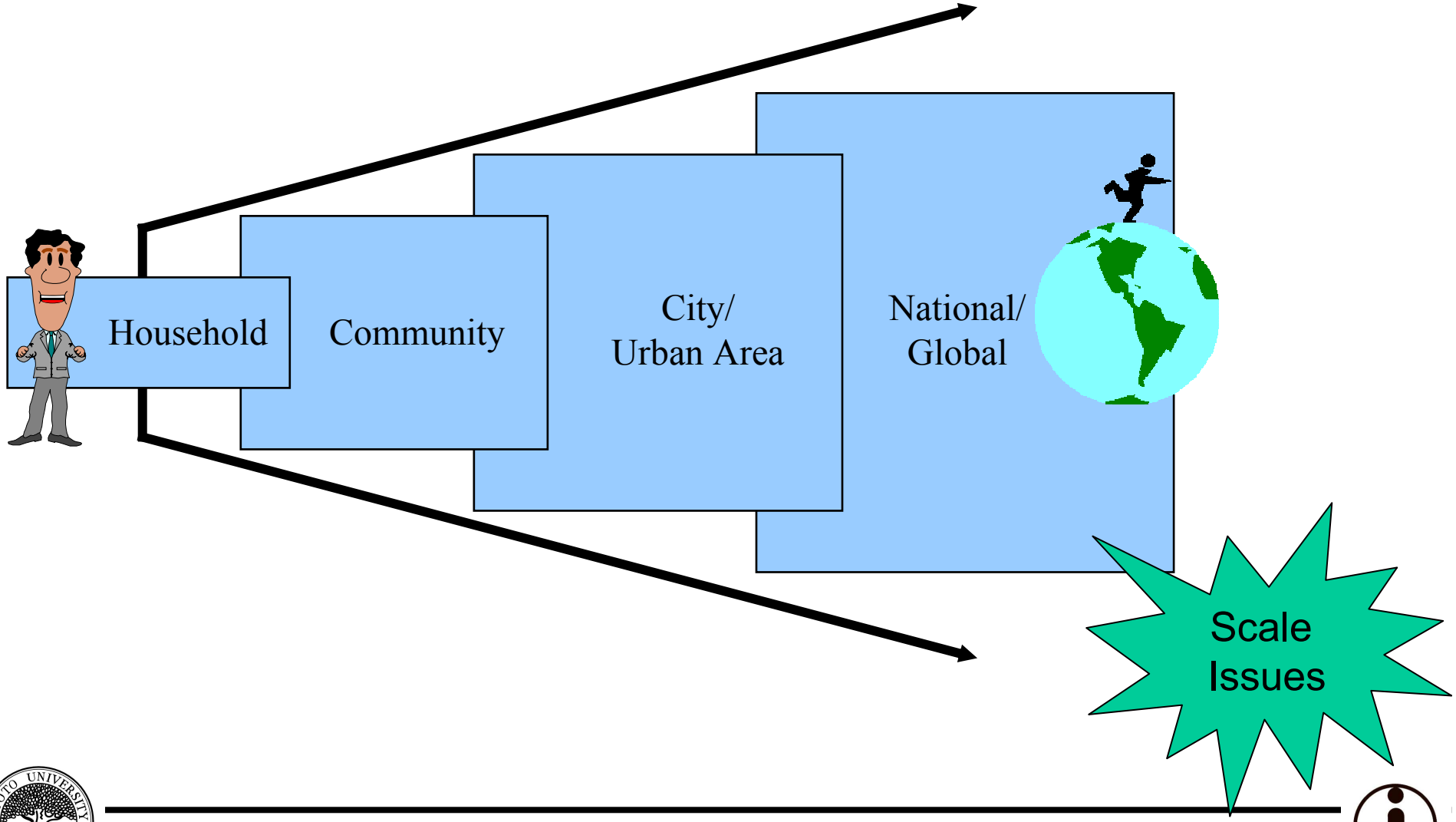
Cause and Effect Cycles



Cause/ Effect Issues

There is a clear cyclical link between infrastructure management on one hand, and global environmental problems on the other …

Understanding the Scale of Environmental Problems



Need for a New Approach

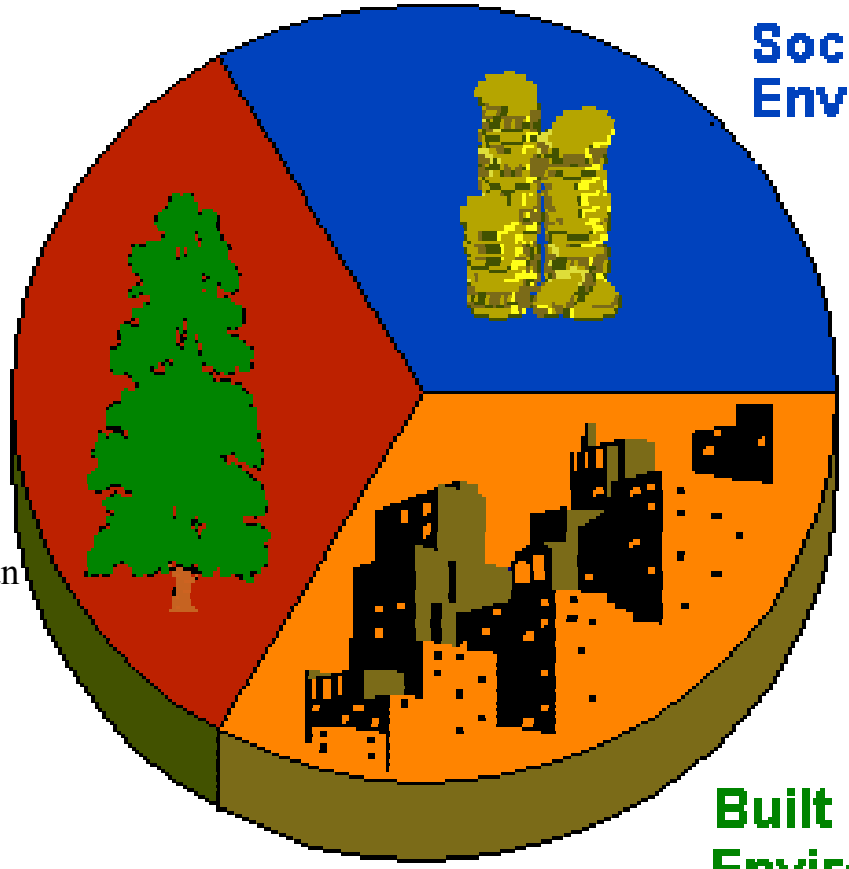
How can we (re)define Infra Management?

- IM as the core of human settlements and population concentrations
- IM as centers of economic activity
- IM related to areas with high quality of life (living and infrastructure)
- IM as repositories of knowledge, information and ideas
- IM as compact ecosystems

Innovation Issues

There is a clear need for a new, comprehensive and holistic approach

Environmental Dimensions of Infrastructure Management



Socio-economic Environment

Resources, processes and effects related to buildings, housing, roads, railways, electricity, water supply, gas etc.

Natural Environment

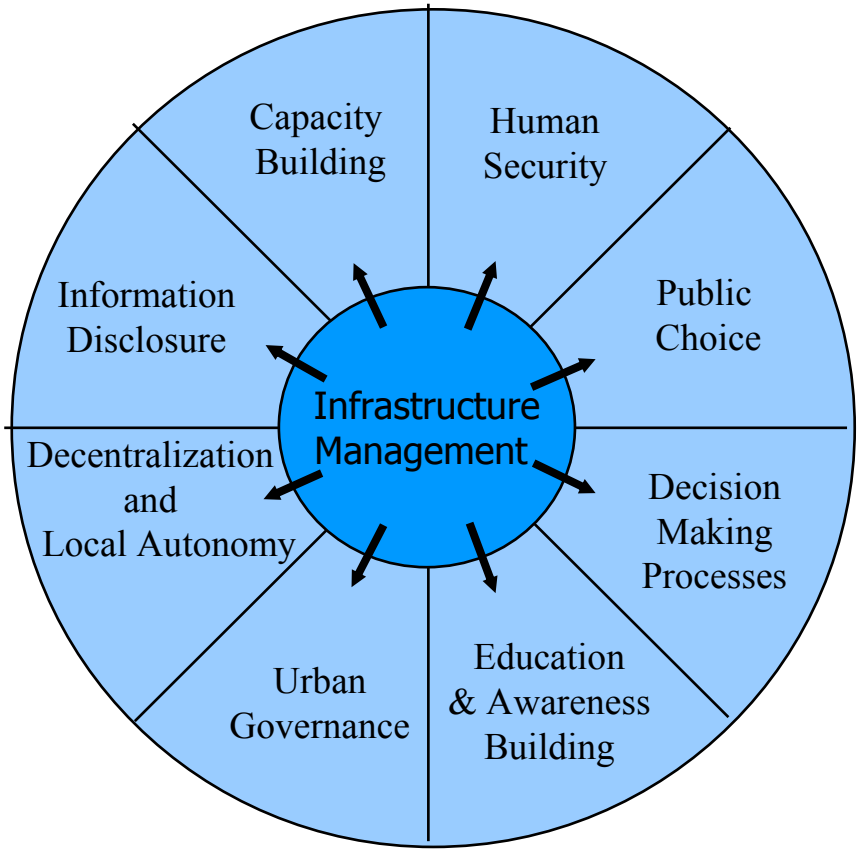
Resources, processes and effects related to flora and fauna, human beings, minerals, water, land, air, etc

Built Environment

Resources, processes and effects related to human activities, education, health, arts and culture, economic and business activities, heritage - urban lifestyles in general.

Environmental Issues

Expanding Paradigms



The paradigm of '**Infrastructure Management**' has now expanded to include many new ones …

Expanded Paradigm