Information flows & Policy
Use of Climate Diagnostics and Cyclone Prediction for Adaptive Water Resources Management Under Climatic Uncertainty in Western North America

Task B
Assess Urban Vulnerability
The cases of Hermosillo & Cananea

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Timeline

Sept 07-Feb 08 Data Collection
- Statistic overview
- Document review

Mar 08 – Aug 08 Field Work
- Visits and observation
- Interviews/ focus groups

Sep 08 – Feb 09 Reporting
- Draft writing
- Peer reviews

Feb 09 – Sep 09 Outreach
- Discussion panels
- Workshops
Products

- Data collection
- Document analysis
- Field Work
  - Observation
  - Interviews
  - Surveys
- Discussion panels
  - Seminars and panels
  - Report peer reviews
- Statistical History
- Institutional Anal.
- Research Reports
  - Discussion drafts
  - Articles?
  - Book?
- Outreach/dissemnation
  - Info meetings
  - Seminars and panels
  - Press releases
Activities

- Data collection
- Document analysis
- Field Work
  - Observation
  - Interviews
  - Surveys
- Discussion panels
  - Seminars and panels
  - Report peer reviews
Multiple Levels of Analysis

Operational situations (How good outcomes?)
- Operational rules in use:
- Actions that affect physical conditions
- Provision, production, distribution, appropriation, assignment, consumption, waste, treatment

Collective choice situations (How good decisions?)
- Collective rules in use:
- Actions/Rules that affect operation
- Prescribing, Monitoring, Enforcing

Constitutional situations (How good rules?)
- Actions/Rules that affect collective-choice situations

Metaconstitutional situations (How good beliefs?)
- Actions/Rules that affect constitutional situations
Evaluation Outcomes

Economic Efficiency
- Unaccounted for water
- Water not paid for
- Water waste

Equity
- Coverage (people served)
- Privileged sectors

Adaptability
- Remedial actions
- Social learning outlook
- Resilience
Predicting outcomes
Within the action arena

- Climate behavior
- Water supply patterns & projection
- Water demand factors
- Water availability
- Management adaptability
- Change challenges
- Threats/Risks/Vulnerability
Main Actors

- Water utility
- Municipal government (Mayor)
- CEA (Comisión Estatal del Agua)
- CNA (Comisión Nacional del Agua)
- Large consumers
- Citizen organization?
- Local political opposition (parties)
- Local experts and media
Action Arena

- Problem perception
  - Scarcity-waste
- Change goals
- Ideas on climate change
- Challenges
Rules-in-use

- Water Planning
- Water management/decision-making (utility)
- Patterns of consumption
- Payment behavior/free riders
- Public participation
- Civil Protection (Preparedness)
Attributes of Community

Water consumers

Residential
  Industrial
  Other
  Uncovered population

Unaccounted for water

Waste water
  With treatment
  Untreated

Vulnerability Assessment
Physical/Natural Water Conditions (Cananea & Hermosillo)

- Precipitation historical records
- Temperatures historical records
- Water Fountains (river/acquifer/basin)
  - Size/cycle
  - Availability
  - Sustainability
- Water Extractions/Supply
- Disaster History/Memory
Inputs so far?

My questions:
- Is this compatible w/the rest of the project?
- Is task B only for Hermosillo and Cananea?
- Or is it for pairs of cities?
Rules
Where it comes from
- POLITICAL MANAGEMENT
  - Run by politicians
  - Political appointees
  - High turn over of authorities
  - Biased investment criteria

Whither
- CONSERVATION TECHNICAL MANAGEMENT
  - Run by experts
  - Incentives for good use
  - More stable management
  - Improved planning
A model of analysis for Water management
Where from

- POLITICAL-CONTROL MANAGEMENT
- Vote-harvesting-oriented
- Political Control
- Political Stability

Whither to

- WATER-CONSERVATION MANAGEMENT
- Water-conservation oriented
- Water efficiency
- Sustainability
Notes for theory building

How things are

- Drought
- Flood
- Wasteful Consumption patterns
- Lack of Run off Drainage/Storage
- Lack of Planning
- No Conservation

What to do

- Better use of Resource
- Improve Planning/management
- Change Rules
A previous caveat

The next ideas are preliminary
They draw from my background and disciplinary orientation
However, my purpose here is to get inputs and project orientation
Any advise/comment/critique is welcome
Main claims
(Some according to IPCC 2007)

Water is likely to become scarcer in the future
Water demand is increasing
There is lack of information, lack of fit and preparedness for threats of drought/floods
There is room for improved efficient/adaptable management
We can contribute to increase climate awareness and to improve water management
Research Questions

How adaptable is urban water management to scarcer water supplies due to climate variability?

- What is current/future outlook of water availability/supply?
- What is current/future outlook of water consumption/demand?
- Which are the prospects/agents for change/adaptation?
- Which are the main risks/threats and the preparedness for them?
Objective

To examine how climate variability affects scarce water supplies
- Assess urban and industrial water demand
- Explore climate effects on availability of water resources
Resources

- Staff
- Equipment
- Budget