# Narrowing the gap

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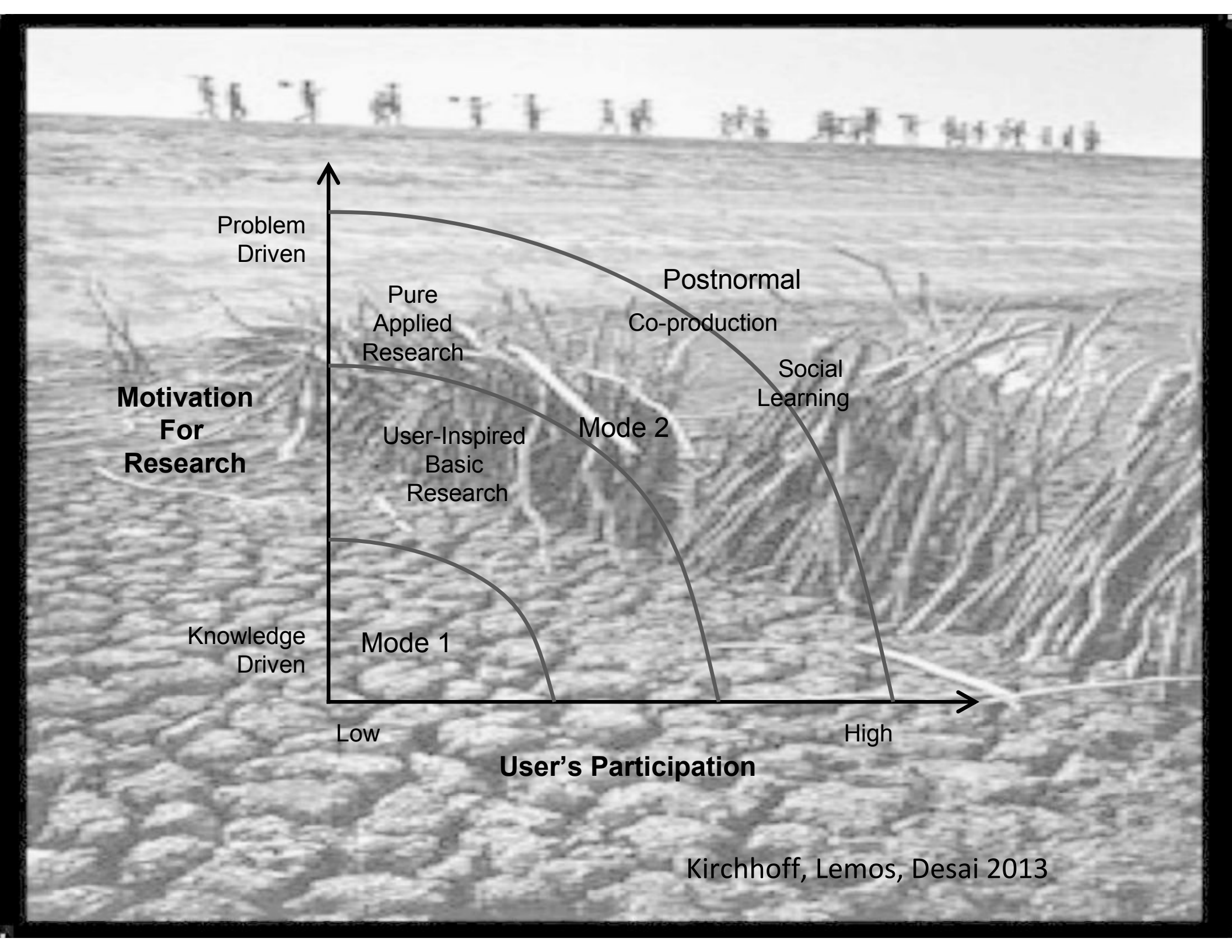
# Useful to Usable: why should we care?

More knowledge

Better decisions

knowledge is available, accessible, and equitably distributed

System more adaptive

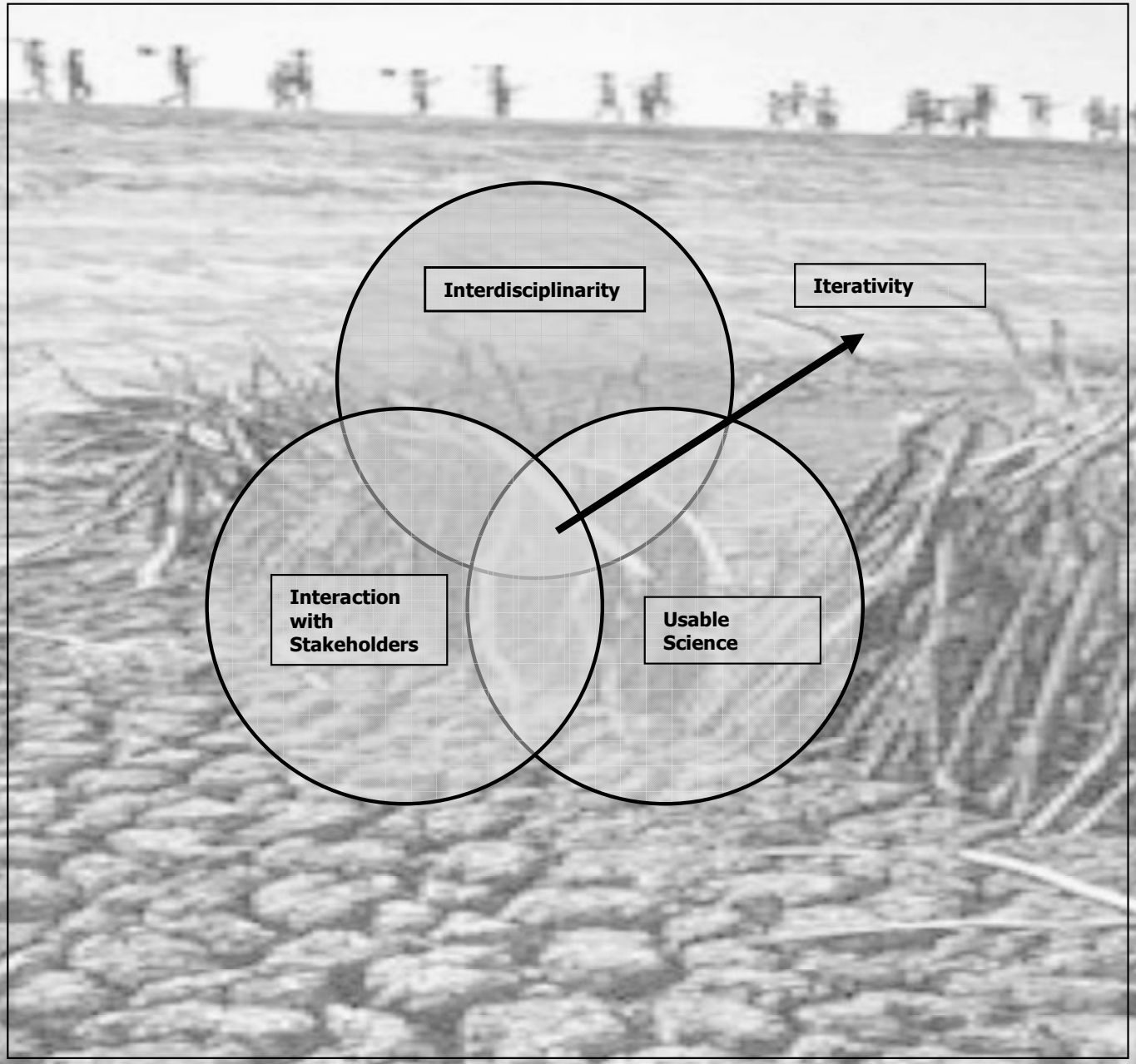

Problem
Driven
Pure
Applied
Research
Postnormal
Co-production
Social
Learning
Motivation
For
Research
User-Inspired
Basic
Research
Mode 2
Knowledge
Driven
Mode 1
Low
High
User's Participation
Kirchhoff, Lemos, Desai 2013

# What have we learned from SCFs?

**Table 1 | Summary of opportunities and barriers that affect usability derived from the literature.**

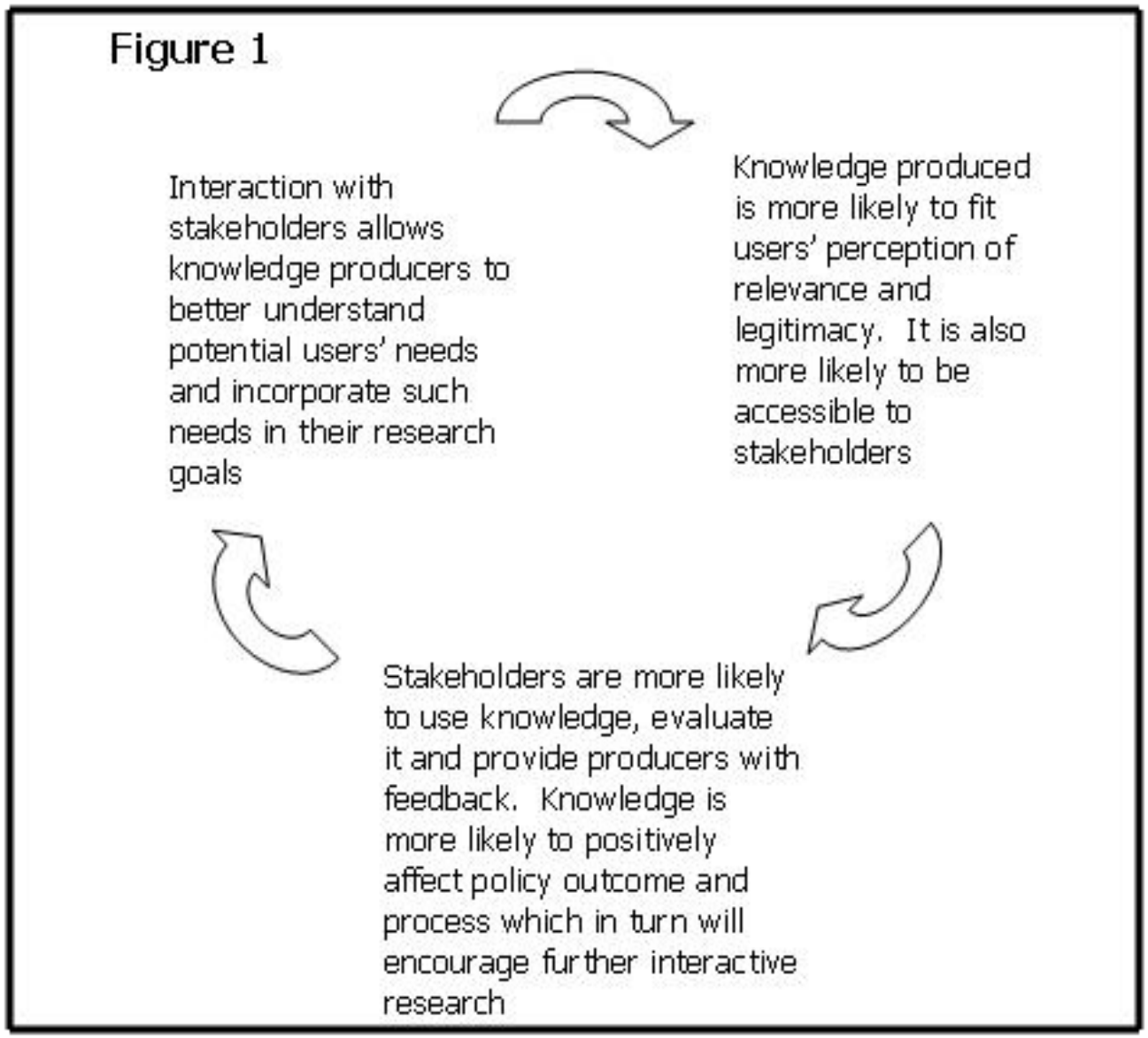
| | Barriers identified in the literature | | Opportunities identified in the literature | |
|---|---|---|---|---|
| Fit | Not accurate and reliable | Not timely | Accurate and reliable | Timely |
| | Not credible | Not useful; not usable | Credible | Useful; usable |
| | Not salient | Excessive uncertainty | Salient | |
| Interplay | Professional background | Insufficient technical capacity (for example lack of models) | Previous positive experience | Technocratic insulation |
| | Previous negative experience | Culture of risk aversion | Threat of public outcry; public pressure | Water scarcity |
| | Value routine, established practices, local knowledge | Insufficient human or financial capacity | Perception of climate vulnerability | In-house expertise |
| | Low or no perceived risk | Legal or similar | Sufficient human or technical capacity | Triggering event/crisis (drought, El Niño and so on) |
| | Difficulty incorporating information | Lack of discretion | More flexible decision framework | Organizational incentives |
| | | | | Value research; information seeking |
| Interaction | Not legitimate | Infrequent interaction | Legitimate | Trust |
| | One-way communication | End-user relationship | Two-way communication | Long-term relationship |
| | | | Iterative | Co-production |

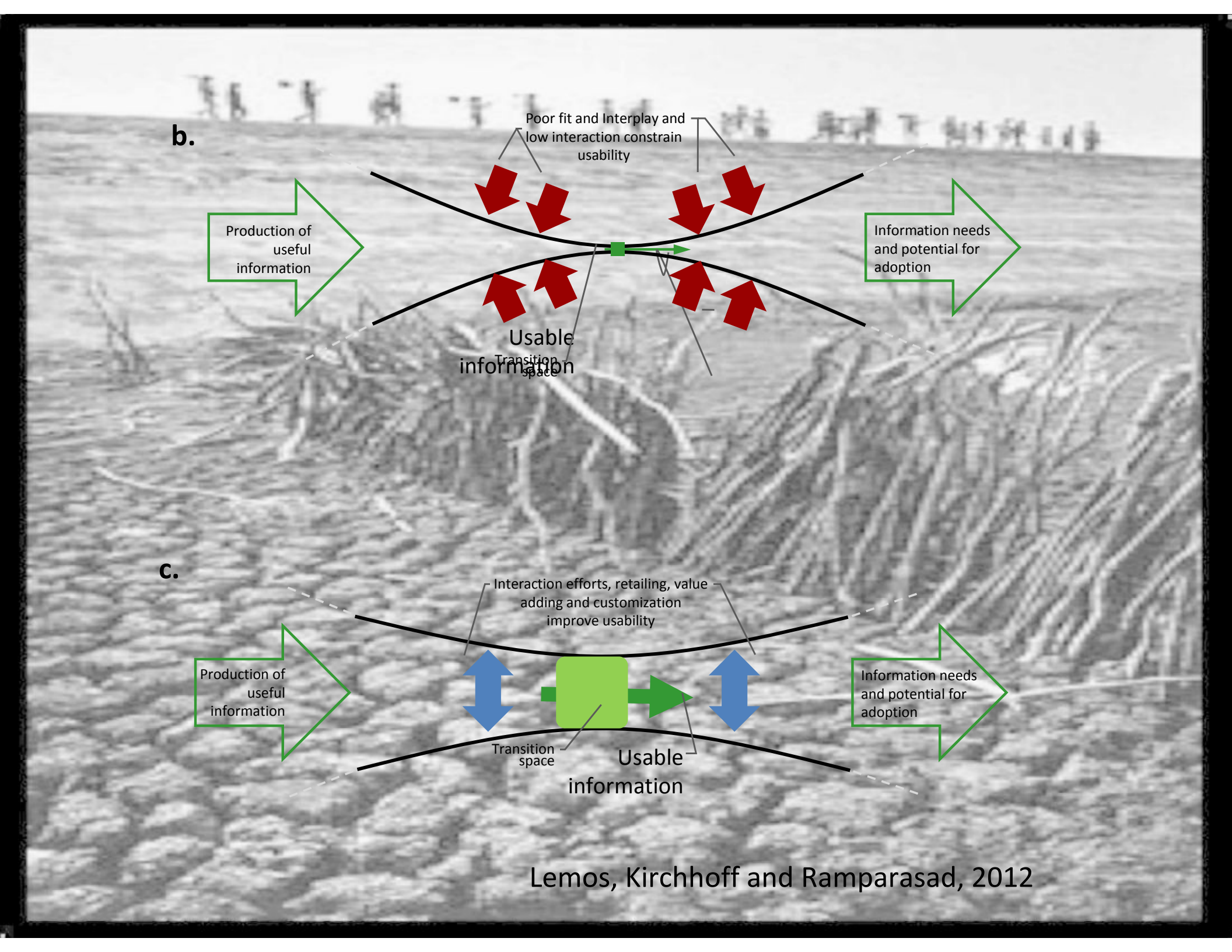
Lemos, Kirchhoff, Ramparasad, 2012

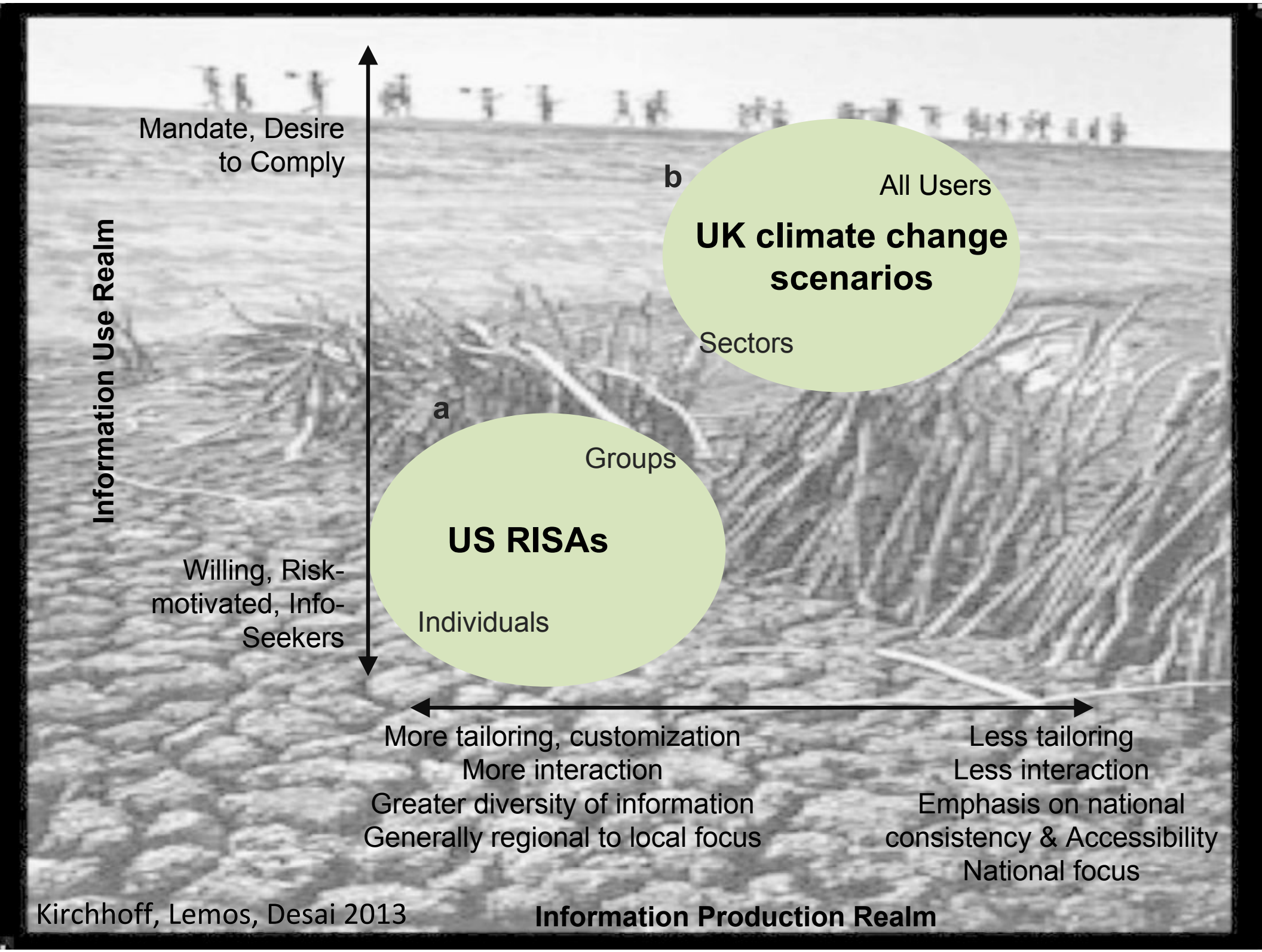



Lemos and Morehouse 2005

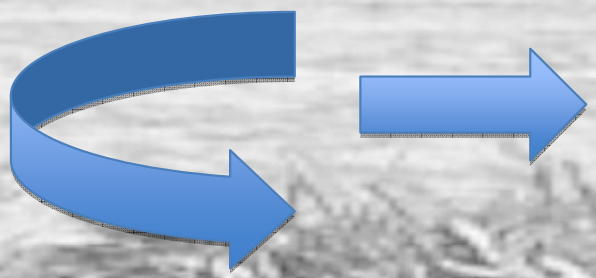
Figure 1


Interaction with stakeholders allows knowledge producers to better understand potential users' needs and incorporate such needs in their research goals
Knowledge produced is more likely to fit users' perception of relevance and legitimacy. It is also more likely to be accessible to stakeholders
Stakeholders are more likely to use knowledge, evaluate it and provide producers with feedback. Knowledge is more likely to positively affect policy outcome and process which in turn will encourage further interactive research


b.
Poor fit and Interplay and low interaction constrain usability
Production of useful information
Information needs and potential for adoption
Usable information
Transition space
c.
Interaction efforts, retailing, value adding and customization improve usability
Production of useful information
Information needs and potential for adoption
Transition space
Usable information
Lemos, Kirchhoff and Ramparasad, 2012

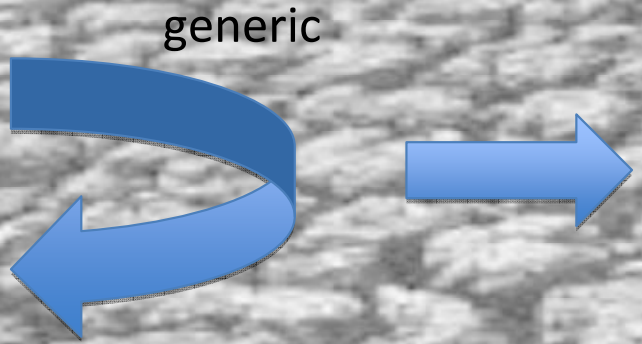

Mandate, Desire to Comply
Information Use Realm
Willing, Risk-motivated, Info-Seekers
b
All Users
UK climate change scenarios
Sectors
a
Groups
US RISAs
Individuals
More tailoring, customization
More interaction
Greater diversity of information
Generally regional to local focus
Less tailoring
Less interaction
Emphasis on national consistency & Accessibility
National focus
Kirchhoff, Lemos, Desai 2013
Information Production Realm

# Generic and Specific Capacities




Ability to benefit from Specific AC may be contingent to minimum generic AC

Higher AC

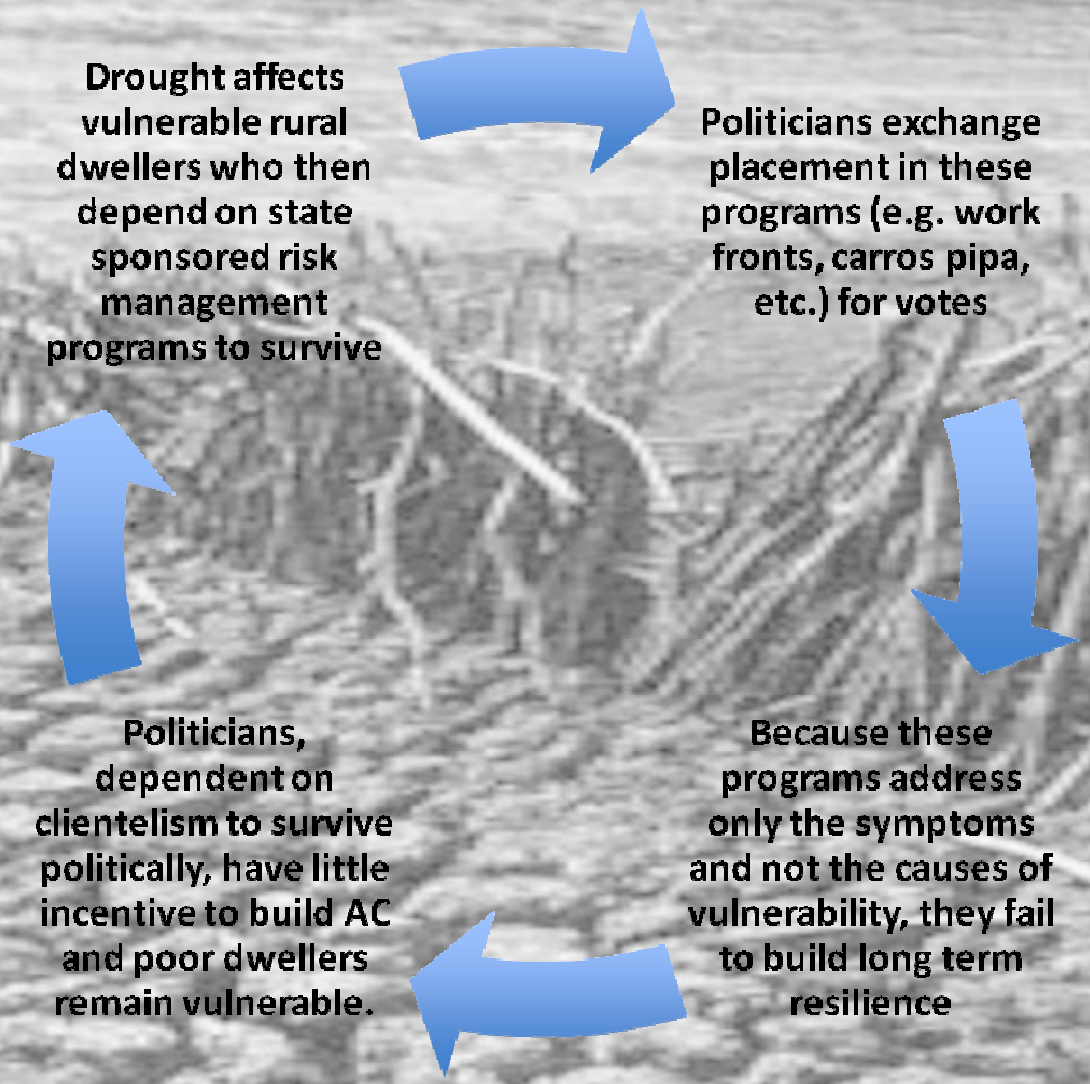



Overreliance on cash transfers may crowd out other solutions, result in rigidity (lock in) and complacency

Lower AC

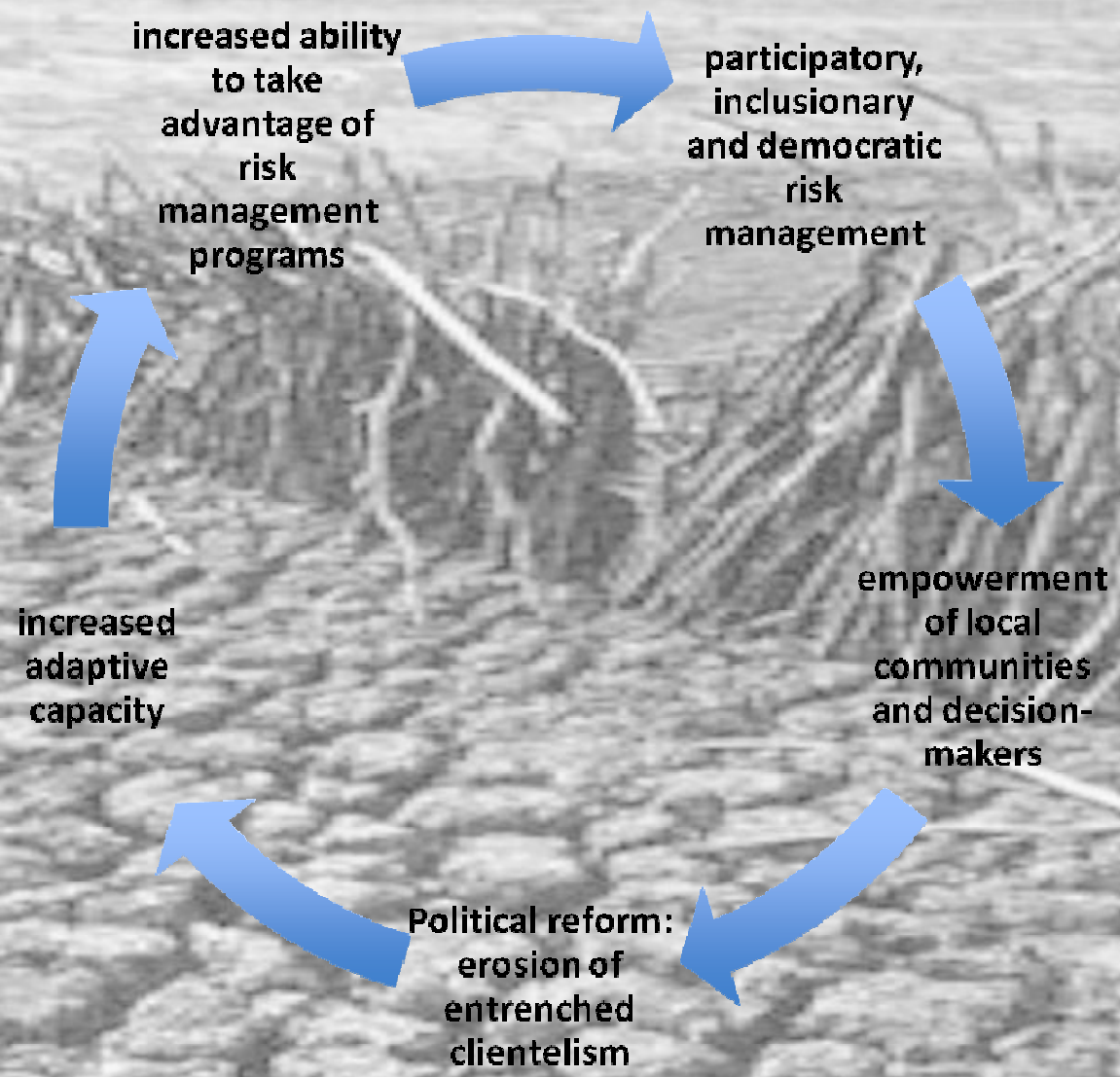
Lemos et al. 2013

# Vicious cycle




Lemos 2007

# Virtuous Cycle




Lemos 2007

# NE Brazil: Relative Importance of different interventions

- Generic:  interventions to address structural deficit (income, education, health, safety, political access, etc.)

- Specific: risk management to address specific climate-related stressors (drought response, disaster relief, climate information, infrastructure, etc)


CLIMATE KNOWLEDGE IN MOTION:
NE BRAZIL

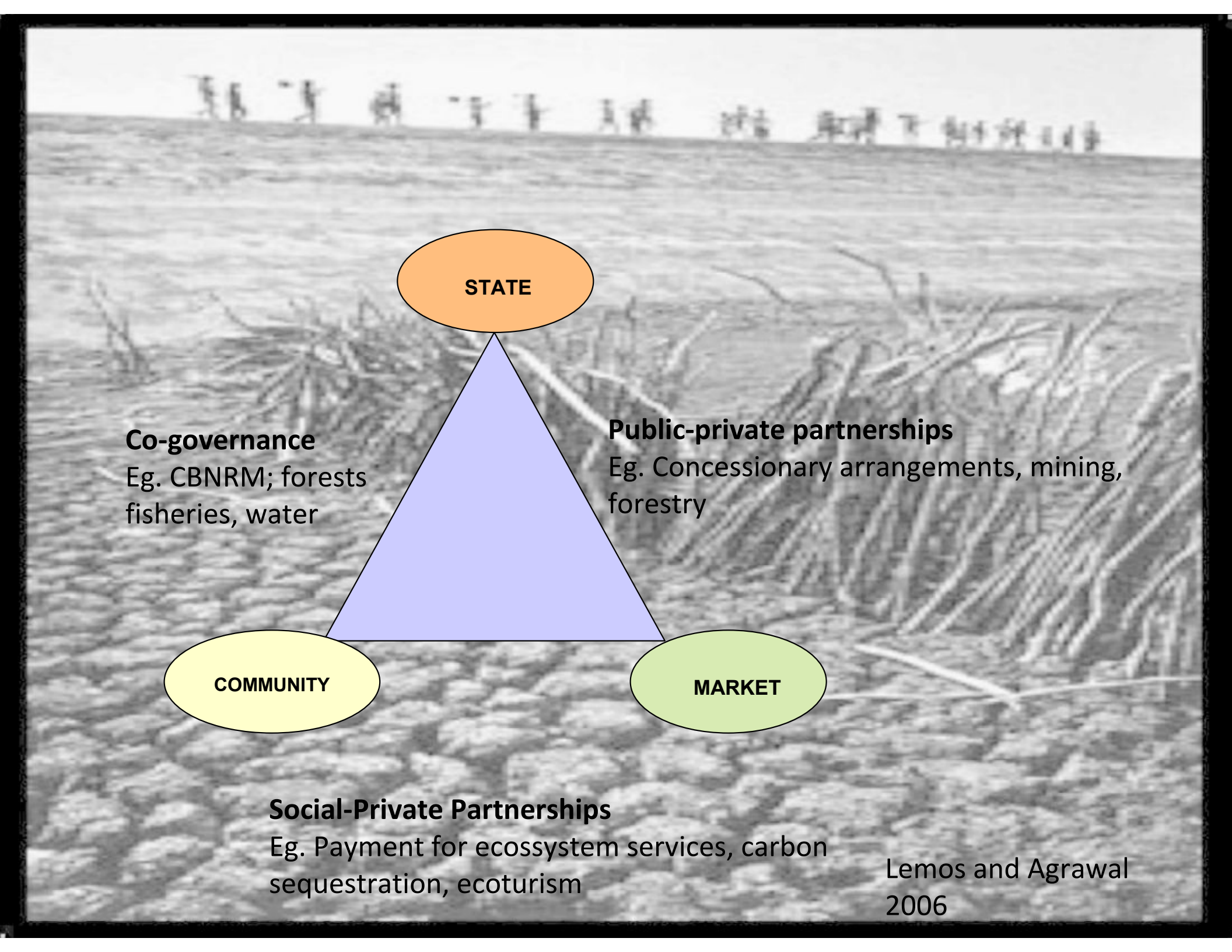
# Knowledge (SGK), governance and Adaptive Capacity

**More knowledge**

**Better decisions**

**knowledge is available, accessible, and equitably distributed**

**System more adaptive**


STATE
COMMUNITY
MARKET
Co-governance
Eg. CBNRM; forests fisheries, water
Public-private partnerships
Eg. Concessionary arrangements, mining, forestry
Social-Private Partnerships
Eg. Payment for ecossystem services, carbon sequestration, ecoturism
Lemos and Agrawal 2006

# Unpacking the role of technical knowledge: Equity issues, trade-offs

- Unequal access may harm the most vulnerable
- Communication and dissemination constraints persist
- Opportunity costs
- How does knowledge relate to other determinants of adaptive capacity?

| | Relevance of climate info (score 1-10) | Tech info makes decisions easier | Unequal tech knowledge | Unequal economic power | Unequal political power |
|---|---|---|---|---|---|
| **CEIVAP** | 7.6 | 100.0 | 64.4 | 52.5 | 57.6 |
| **Itajaí** | 7.1 | 93.1 | 75.9 | 34.5 | 67.2 |
| **Alto Tietê** | 6.5 | 80.0 | 83.3 | 40.0 | 60.0 |
| **Araçuaí** | 6.8 | 100.0 | 78.6 | 35.7 | 50.0 |
| **Velhas** | 6.9 | 87.5 | 82.6 | 37.5 | 41.7 |
| **Pará** | 7.1 | 92.0 | 69.2 | 23.1 | 50.0 |
| **Pirapama** | 7.2 | 94.1 | 88.2 | 52.9 | 47.1 |
| **Sapucaí Mirim** | 5.9 | 91.3 | 60.9 | 26.1 | 65.2 |
| **Litoral Norte** | 6.9 | 88.2 | 44.1 | 14.7 | 33.3 |
| **Baixo Jaguaribe** | 7.8 | 93.1 | 79.3 | 27.6 | 62.1 |
| **Paracatu** | 7.1 | 87.5 | 37.5 | 31.3 | 31.3 |
| **Lagoa da Conceição** | 5.9 | 83.3 | 88.0 | 24.0 | 54.2 |
| **Gravataí** | 7.5 | 100.0 | 66.7 | 11.1 | 44.4 |
| **Santa Maria** | 8.0 | 96.6 | 72.4 | 31.0 | 27.6 |
| **Piracicaba** | 7.3 | 88.2 | 35.3 | 52.9 | 52.9 |
| **Tibagi** | 6.8 | 96.7 | 61.3 | 35.5 | 77.4 |
| **Itapicuru** | 8.2 | 96.0 | 64.0 | 32.0 | 20.0 |
| **Lagos de São João** | 6.8 | 100.0 | 43.8 | 6.3 | 43.8 |
| **Total** | 7.1 | 92.9 | 67.5 | 32.6 | 51.4 |

| Governance/ democracy / Knowledge | **High** | **Low** |
|---|---|---|
| **High** | Higher levels of adaptive capacity | Technocratic Insulation |
| **Low** | Potential for ill informed decisions | Maladaptation |

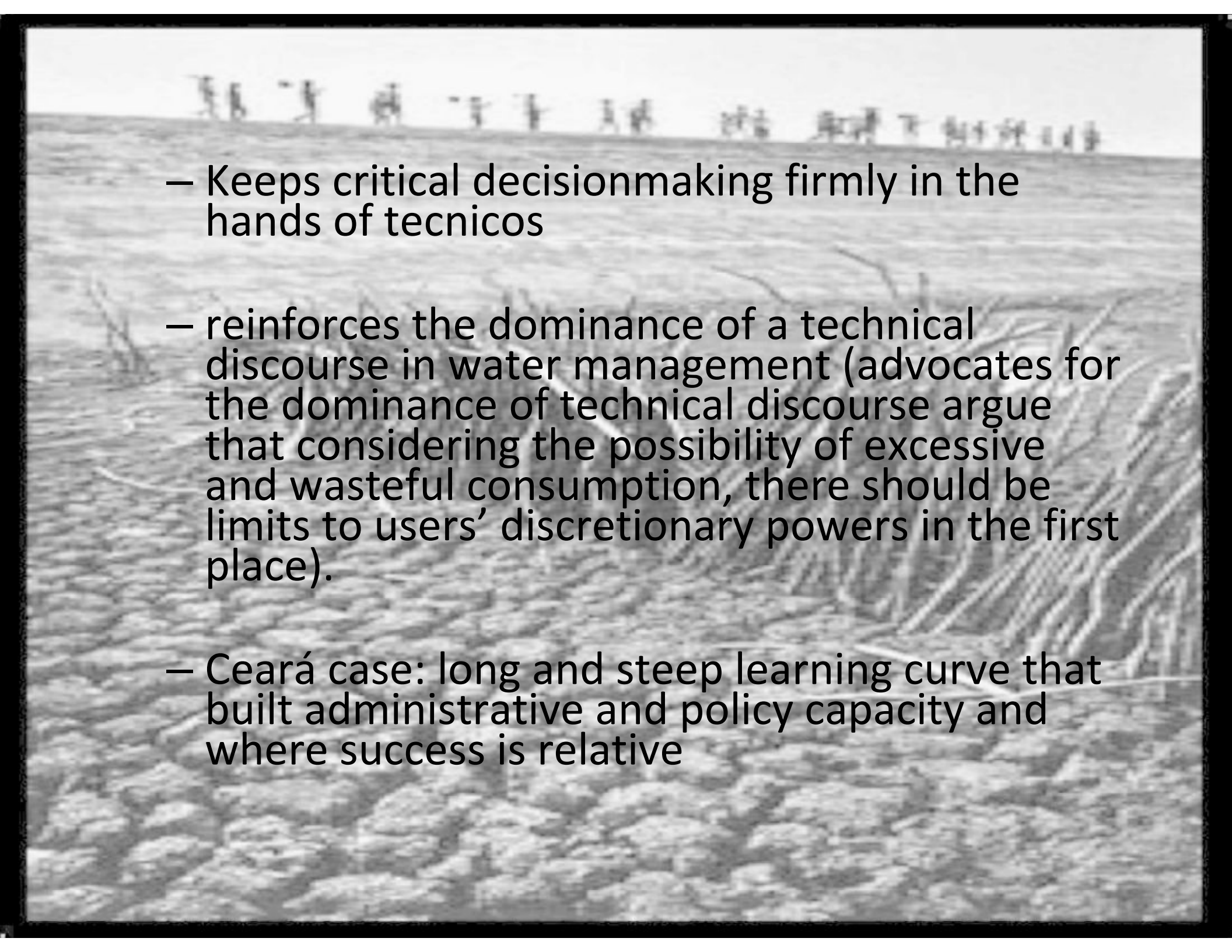
# Water management, Knowledge and Adaptive Capacity

- Reservoir scenarios; illusion of relevance?

- Why does it work?
  - Role of reform-oriented técnicos, perception of "fit"
  - Conflict between
    - » different users
    - » Ajuzante/montante
    - » Amounts of water discharged from three different reservoirs

# Technical information:

- May signal increased adaptive capacity
- may allow for more participation for water users, especially elites which contributes to the continuation of traditional patterns of non-elite exclusion.



- Keeps critical decisionmaking firmly in the hands of tecnicos
- reinforces the dominance of a technical discourse in water management (advocates for the dominance of technical discourse argue that considering the possibility of excessive and wasteful consumption, there should be limits to users' discretionary powers in the first place).
- Ceará case: long and steep learning curve that built administrative and policy capacity and where success is relative

# Water managers in Ceara

- Conservative at a professional level but less accountable; have more discretion in part because of water reform
- Organization culture matters (Users Department)—networks with social scientists, activists
- Shift the blame and “fascination” effect that also contributes to diffuse attention.