



Political Ecology and Environmental Change Lectures
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A critical study of the relation between climate change and insecurity: the CLICO project

Christos Zografos

czografos@gmail.com



Purpose

- Present results of research project CLICO
- Outline
 - The CLICO project
 - Research and findings
 - Discussion of findings and conclusions

Climate change and security



Chris Huhne (UK Secretary of the State for Energy & Climate Change) talking to defense experts (The Guardian, 6 July 2011)

“Climate change will increase threat of war”

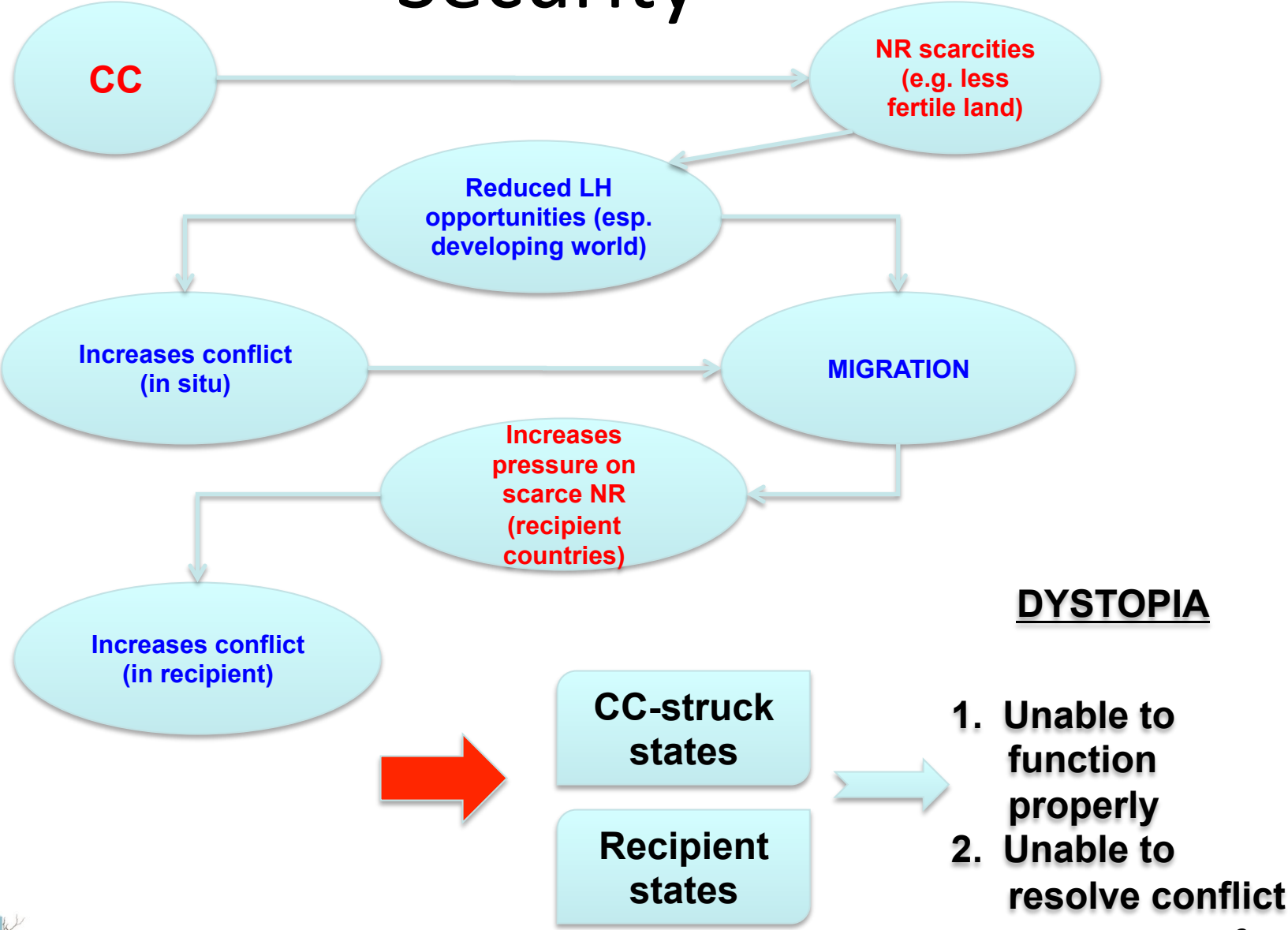
“Conflict caused by climate change risks reversing the progress of civilisation”

2008



Source: <http://theboldcorsicantlame.wordpress.com>

Security



Motivation

- “Usual” scenario questioned:
 - Scarcity and **co-operation** – e.g. Commons dominant in drylands (Øygard et al., 1999)
 - NR **abundance** and conflict (Iraq, Kuwait, Nigeria, Congo, etc...)
 - CC effect on violent conflict *contingent* on **political** and **socio-economic** variables – e.g. 17th century “general crisis” e.g. Ottoman Empire (White, 2011)

Moreover: security for whom?

National security: the secure

- Object (unit) of reference: state
- Conflict routes: cross-border tensions; immigration
- Solutions: militarised – refugee camps (Kenya)

Human security: vulnerable

- Object of reference: individual, community
- Sources of insecurity: consumerism; globalisation
- Intervention: support for SD development; justice



Photo: AP

Human security

- Adger (2010):
 - a state whereby individuals and localities have the necessary **options to respond** to threats to their human, environmental and social well-being imposed by climate change,
 - and have the **capacity** and **freedom** to exercise these options

Research challenge: rationale

- The **chain** climate change → social impacts is **long** and **fraught with uncertainty** and has rarely been substantiated with reliable **evidence** (Nordås and Gleditsch, 2007)
- The **human security** focus

CLICO

- **CLICO**: Climate Change, Hydro-conflicts, and Human Security
- Collaborative **3-year** research project (Jan. 2010 – Dec. 2012)
- **Area of study**: med-Eur, Maghreb, Middle East, and Sahel
- **Funded**: EC FP7 Co-operation Work Programme: SSH (2009)
- Led by **ICTA**, Universitat Autònoma de Barcelona (Spain)
- **14 partners** in Europe (EU +non-EU), Middle East, and Sahel
- World's **leading researchers**: water resource, peace & security, and vulnerability studies



[ICTA, Universitat Autònoma de Barcelona, \(coordinator\)](#)



[United Nations University, Institute for Environment and Human Security](#)



[Tyndall Centre for Climate Change Research, University of East Anglia](#)



[Addis Ababa University](#)



[Israeli-Palestinian Science Organization, Brussels](#)



[Centre de Recerca Ecològica i Aplicacions Forestals, Barcelona](#)



[Palestinian Hydrology Group For Water And Environmental Resources](#)



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[Department of Geography, The Hebrew University of Jerusalem](#)



[Centre for the Study of Civil War \(CSCW\), International Peace Research Institute](#)



[Ecologic Institute](#)



[School of Global Studies, University of Sussex](#)

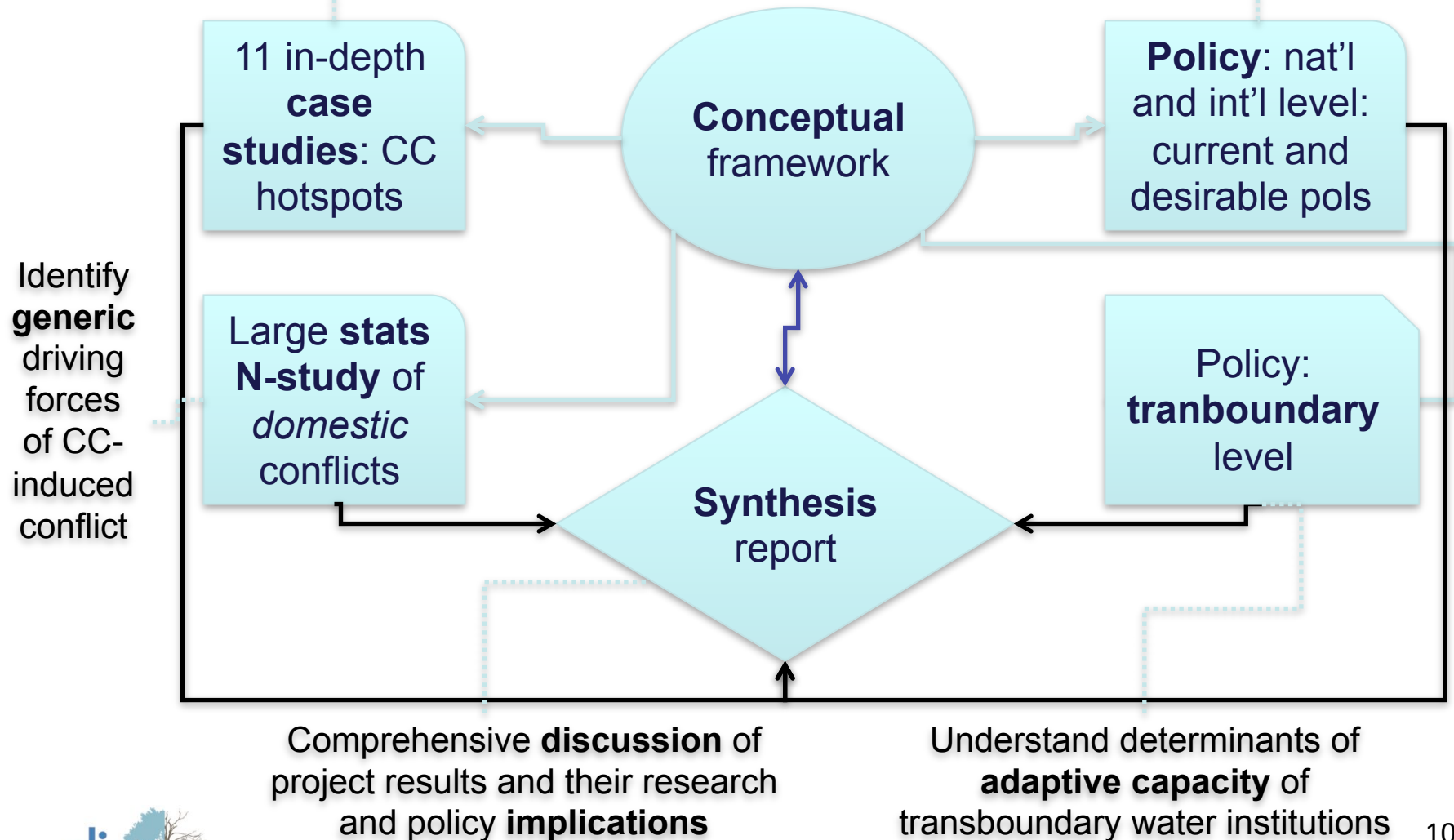
Focus

- **Water-related events** such as droughts, floods and sea level rise expected to
 - intensify with climate change
 - put pressure on security of populations (e.g. lower agricultural yields, conflict over scarcer water resources)
- CLICO explored **social dimensions** of climate change, i.e. conditions under which hydro-climatic hazards infringe upon **security** of human populations

In-depth study of links between CC and HS

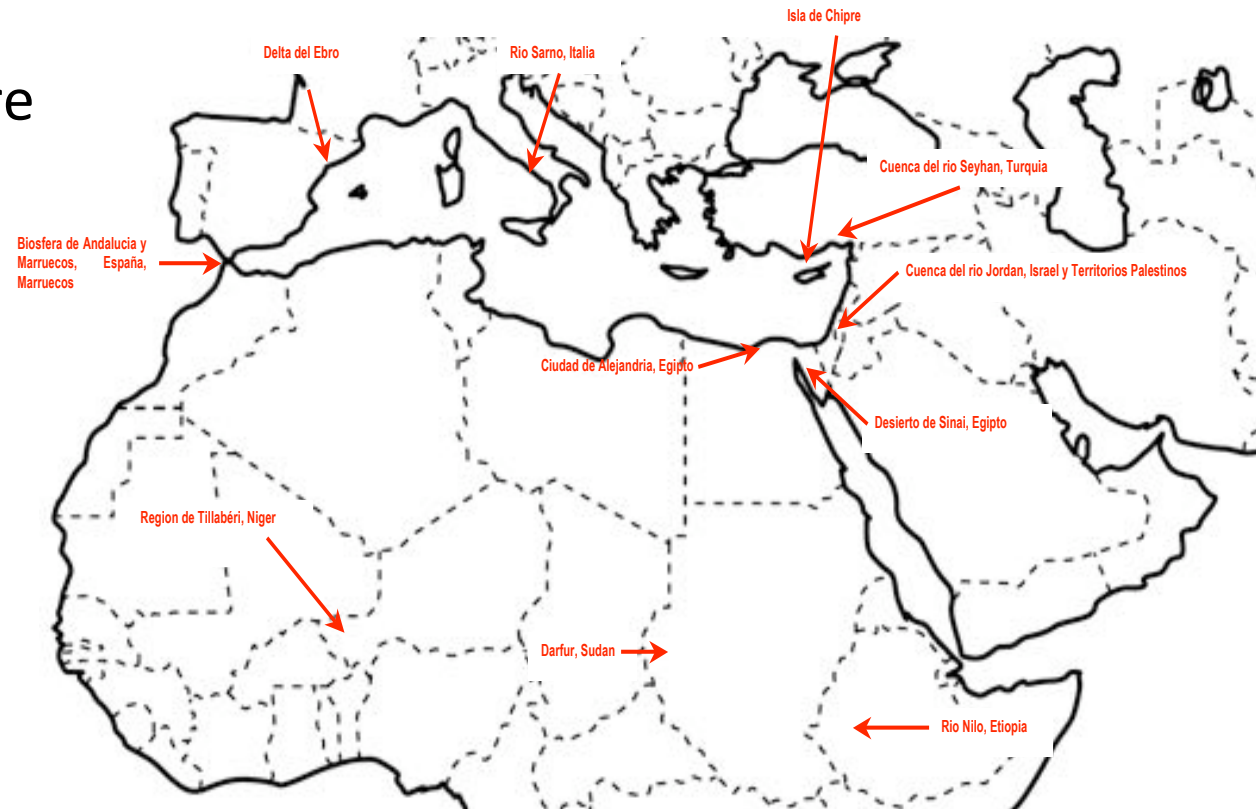
CLICO research design: 4 main research blocks

Int'l + nat'l (study area)
policies re: hydro-climatic variability +CC adaptation (view HS)



11 in-depth case studies in CC hotspots

- Analyse + compare the dynamics of hydro-climatic change, security and conflict in a variety of geographical and socio-economic contexts



Findings

Three crucial sources of insecurity:

1. Democratic deficits
2. Mal-adaptations
3. Structural violence

Finding 1

- *Democratic deficits are crucial sources of human insecurity*
 - Domestic water conflict: *f* water demand for development; democracy; political stability
 - Democracies: more conflict but less violent
 - Democratic deficits within democracies (Italy) conducive to insecurity



Finding 2

- *Mal-adaptation has adverse consequences for human security*

- Divergent adaptation (Niger)



- Adaptation for growth (Ethiopia)



Finding 3

- *Violence related to insecurity: is also structural*
 - “built into the structure” (Galtung, 1969)
 - Human insecurity in context of climate change reveals occurrence of structural violence (Turkey)



Discussion

- **Systemic contradiction** at heart of current relation hydro-climatic change – human security:
 - ❑ Insofar as: the pursuit of adaptation through state-led economic growth projects ends up producing new insecurities for parts of the population
 - ❑ Inherent tension when pursuing development through growth
- The **state**: what role?

Research and policy lessons

Policy relevance

- The policy debate: transformational vs. incremental adaptation
- Transformation:
 - Economic system imperatives
 - Mindsets and logics
- Incremental changes too
- Genuine democratisation

Research

- Study: states of insecurity
 - socio-economic and political conditions and processes that produce **absence of options**
 - E.g. growth: not direct decrease security, but depriving options
- Understudied links:
structural violence <—>
human security <—> climate change

Summary and conclusions

- Direct, linear connection climate -> conflict (insecurity): wanting
- Three sources of insecurity:
 - Democratic deficits
 - Mal-adaptation
 - Structural violence
- Systemic contradiction:
 - Adaptation that pursues insecurity reduction via interventions oriented towards economic growth produces new insecurities

A photograph of a desert landscape. In the foreground, a dirt road winds through the scene. To the left, there are several palm trees and other desert vegetation. To the right, a large, rocky hillside rises. In the background, a prominent, jagged rock formation stands out against a hazy sky. The overall atmosphere is arid and somewhat somber.

Thank you!

For more information:

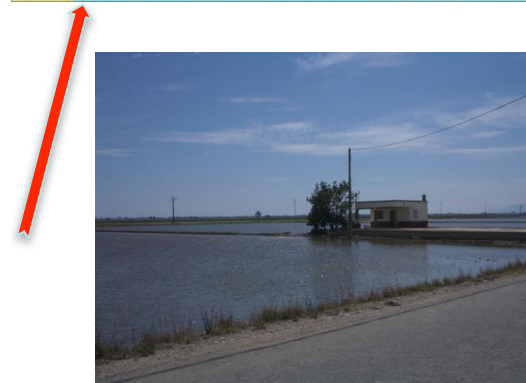
- www.clico.org
- Zografos, C., Goulden, M. C., & Kallis, G. (2014). Sources of human insecurity in the face of hydro-climatic change. *Global Environmental Change*, 29, 327-336.
- European Policy Brief: Climate change, water conflicts and human security in the Mediterranean, Middle East and Sahel. http://ec.europa.eu/research/social-sciences/pdf/policy-briefs-clico-112012_en.pdf

Annex I: Ebro Delta 4 studies

- Discourses of adaptation and vulnerability (Q study)
 - Albizua, A., Zografos, C. forthcoming *Environmental Policy & Governance*
- Vulnerability analysis and suggestions for adaptation
 - Fatorić, S., Chelleri, L. 2012. *Ocean Coastal Management*
- Scenario focus group workshop (2011)
 - Analyse effects and responses to combination of possible future climate and water management changes in the river basin
 - Calvo Boyero, D. & Zografos, C. CLICO Report (Ebro Delta profile)
- Qualitative case study of drivers of insecurity to climate change
 - Zografos, C. 2012. The micro-politics of climate security in the Ebro Delta, Catalonia (Spain). *CLICO Final conference*, December 2012, Nicosia, Cyprus

The case: the Ebro Delta

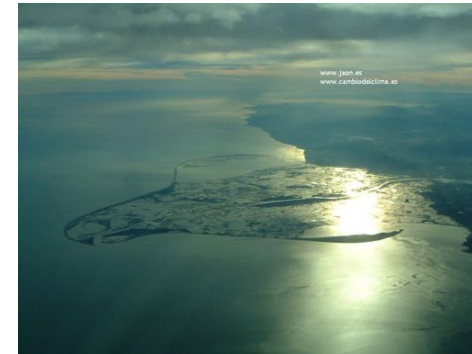
- South Catalonia
- 320 km² (Malta)
- Built: surplus Ebro river sediment discharge
- approx. 98% rice Catalonia (approx. 13% Spain)



Climate change in Ebro Delta

- Catalan Office for Climate Change, 2012: Ebro Delta
 - One of two (Pyrenees) areas in Catalonia “clearly vulnerable to CC”
 - “...basically due to SLR”

- Expected 0.4m sea-level rise could inundate nearly 50% of delta by end of century (no measures)



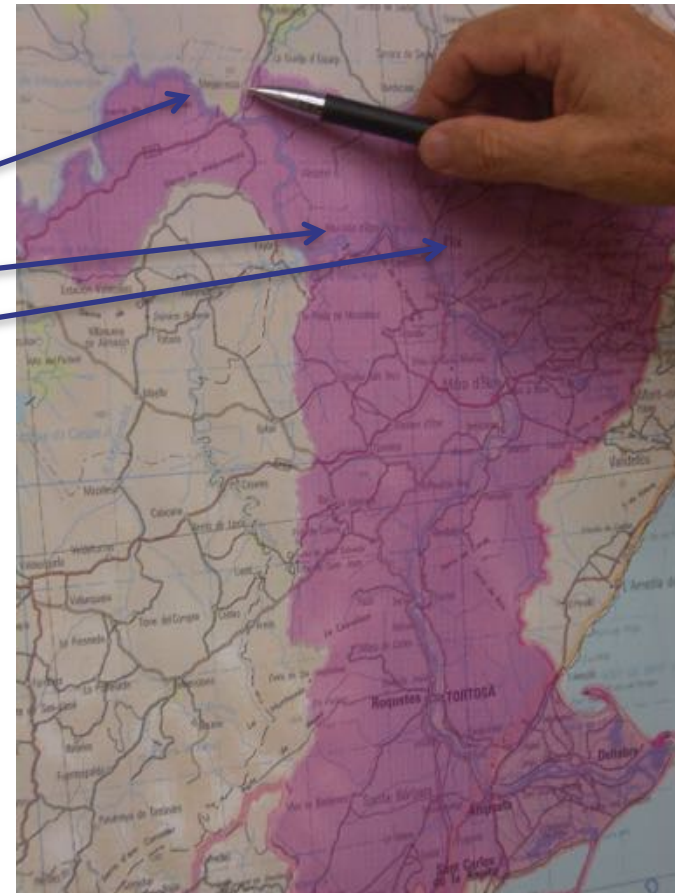
Source: Juan A Ortega Núñez



Source: Generalitat Catalunya (2008)

Sea-level rise

- Relative SLR: subsidence
 - Natural
 - Reduced sediment transport
 - Dam construction upstream: retain 90-99% sediments



Delta

Environmental flow

- Past, trapped: tricky
- Downstream flow of current and future
- EF: describes
 - “quantity, quality and timing of water flows required to sustain freshwater and estuarine ecosystems and human livelihoods and well-being that depend on these ecosystems” (Brisbane Declaration 2007)
- Polemic issue: annual average EF – last section of Ebro (Delta)

hm³/ year (values approx.)

New (Feb 2014) law:	3,300
GC (ACA):	7,000
NGOs:	9,000

Adaptation on the coast

- Land (rice) next to coast
- Abandon cultivation
 - ecological restoration: sand dunes
 - **natural buffers** inland rice-fields
 - flood (sea-storms): but no private property loss
- Footpaths + cycling behind dunes (tourism):
 - “**contain the effects** of sea-level rise due to climate change in Ebro Delta” (MMA 2010)
- Some (limited) conflict



Ricardo Torres Reina, alias “El Bombita”



Findings: adaptation challenges and opportunities

- Combine soft adaptation AND sediment transport
- Social justice and security, but at what scale?
- Future water management changes more crucial than climatic changes
- Increase role of local existing institutions

Findings: adverse impacts of adaptation

Adaptation on the coast:

- Maintenance of key sources of vulnerability
- Diminishing trust in decision-making
- Citizenship grievances

Annex II: N-study DEMOCRACY variable

- For **democracy**, we rely on the *polity2* variable from the **Polity IV dataset** (Marshall and Jaggers, 2013). This item captures a state's degree of democracy along 3 dimensions:
 1. presence of **institutions + procedures through which citizens can express effective preferences** about alternative policies and leaders
 2. existence of **institutionalized constraints on exercise of power** by the executive.
 3. **guarantee of civil liberties** to all citizens in their daily lives and in acts of political participation.” The final variable taken from this dataset ranges between -10 (full autocracy) and +10 (full democracy).
- Polity's evaluation of state's level of democracy: based on evaluation of state's **elections for competitiveness, openness** and level of **participation**

Annex II:

N-study POLITICAL STABILITY variable

- Second, **political (in-) stability** is measured by an indicator that counts the number of years since a country entered the Polity IV dataset in 1800 or had a three-point change (“most recent regime change”) in the polity2 score in either direction of the scale over a period of three years or less (Marshall and Jaggers, 2013, p. 17).
 - This coding rule also applies to the end of a transition period, i.e., “the lack of stable political institutions” (Marshall and Jaggers, 2013, p. 17). As soon as such a change occurs, this count item is reset to 0 and the count starts again. Hence, the higher the values on this variable, the more politically stable a country.