

# MEMOLA project: How can social innovation and ICT tools be used to promote cultural heritage based on traditional agrosystems



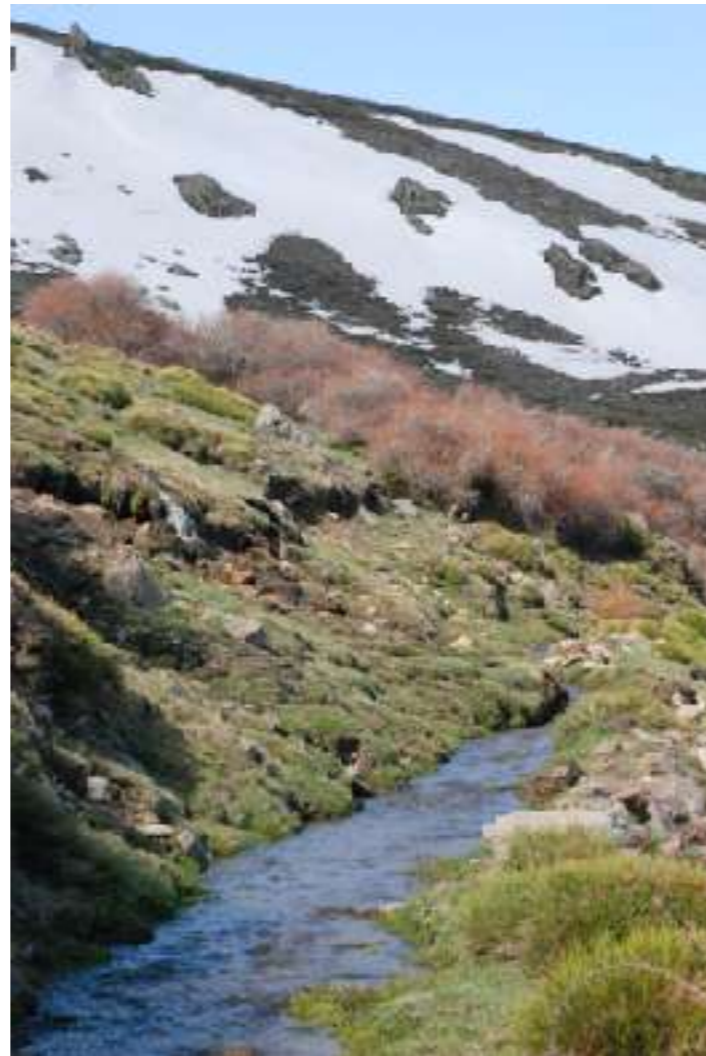
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MEMOLab. Biocultural  
Archaeology Laboratory

# MEditerranean MOuntainous LAndscapes

an historical approach to cultural heritage based on traditional agrosystems

José María Martín Civantos  
Project Coordinator





The implementation of **MEMOLA** project is framed under the analysis of Cultural Landscapes from late antiquity to modern times, evaluating the relationship between human societies and natural resources. The project aims to analyse, from an interdisciplinary perspective, the management of water and soil. The **MEMOLA** project counts with a total of ten partners and its central coordination is based at the University of Granada, Spain

-  **UNIVERSIDAD DE GRANADA**  
Historians, archaeologists and anthropologists
-  **UNIVERSITÀ DEGLI STUDI DI PADOVA**  
Historians, archaeologists and geoarchaeologists
-  **DENBIA E KËRKIMEVE DHE PROMOVIMIT TE PËRSËZHEVE HISTORIKO-ARKEOLOGJIKE SHQIPTARE**  
Historians and archaeologists
-  **UNIVERSIDAD DE CORDOBA**  
Agronomists and hydrologists
-  **UNIVERSITÀ DEGLI STUDI DI PALERMO**  
Botanists and pedologists



-  **UNIVERSITY OF SHEFFIELD**  
Archaeologists and archaeometrists
-  **EACHTRA ARCHAEOLOGICAL PROJECTS LIMITED**  
Archaeologists, GIS specialists and Web developers
-  **ARQUEOANDALUSI ARQUEOLOGIA Y PATRIMONIO**  
Historians, archaeologists and heritage managers
-  **CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS**  
Paleobotanists
-  **CENTRO UNESCO DE ANDALUCÍA**  
Historians, archaeologists and heritage managers



# **Theoretical framework**

- **Biocultural heritage**
- **Agrarian heritage**
- **Social-ecological systems**
- **Transdisciplinarity**
- **Participatory approaches / Dialogue of knowledge**
- **Archaeology of complexity/Archaeology of relationships**





# **Landscapes: productive systems, irrigation systems and settlement network linked to them**









# Why?

- **Concept of heritage**
- **Social and territorial significance**

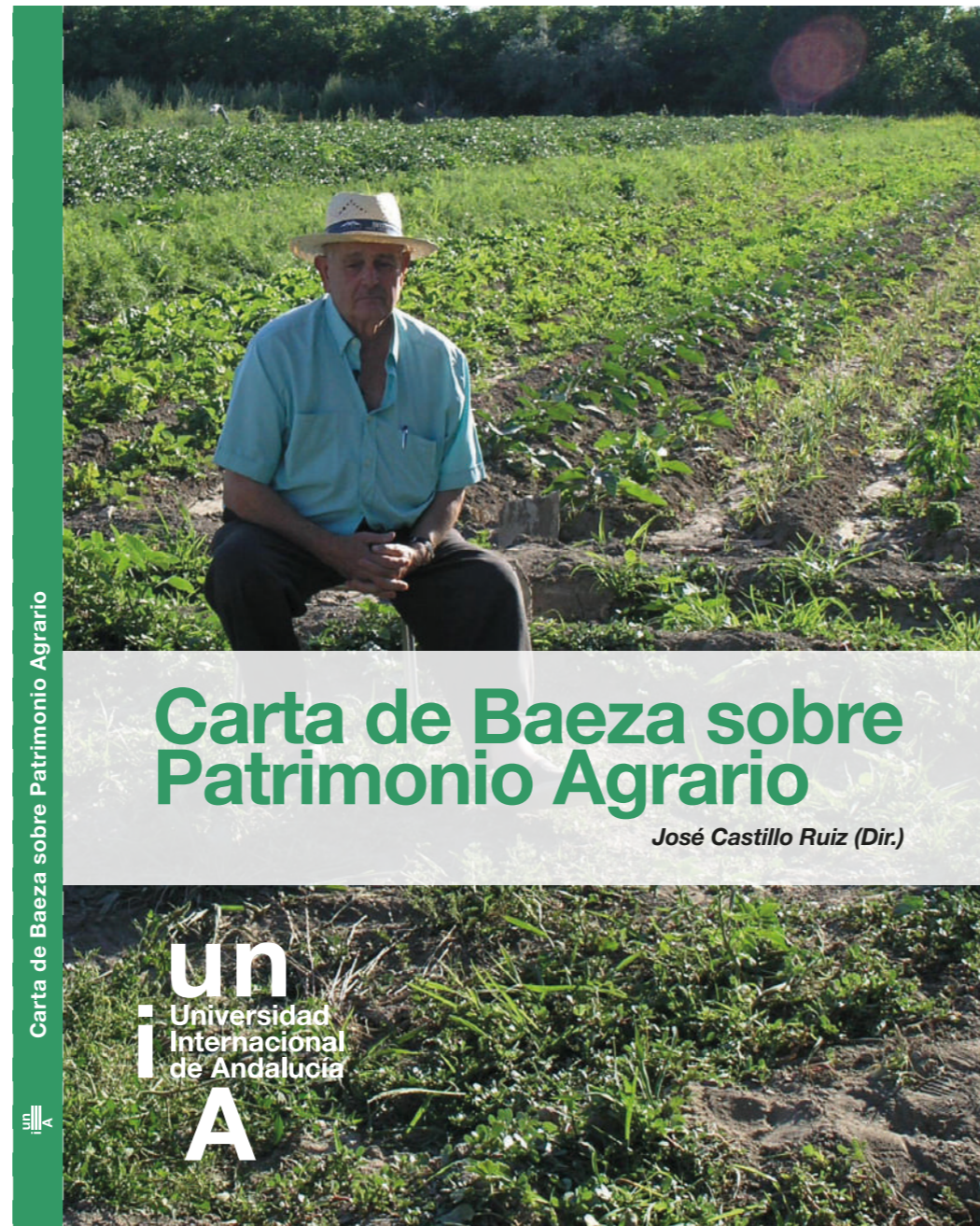


# Concept of heritage

- Open, complex, integrated, holistic...
- Agrarian heritage



# Rural heritage/ Agrarian heritage



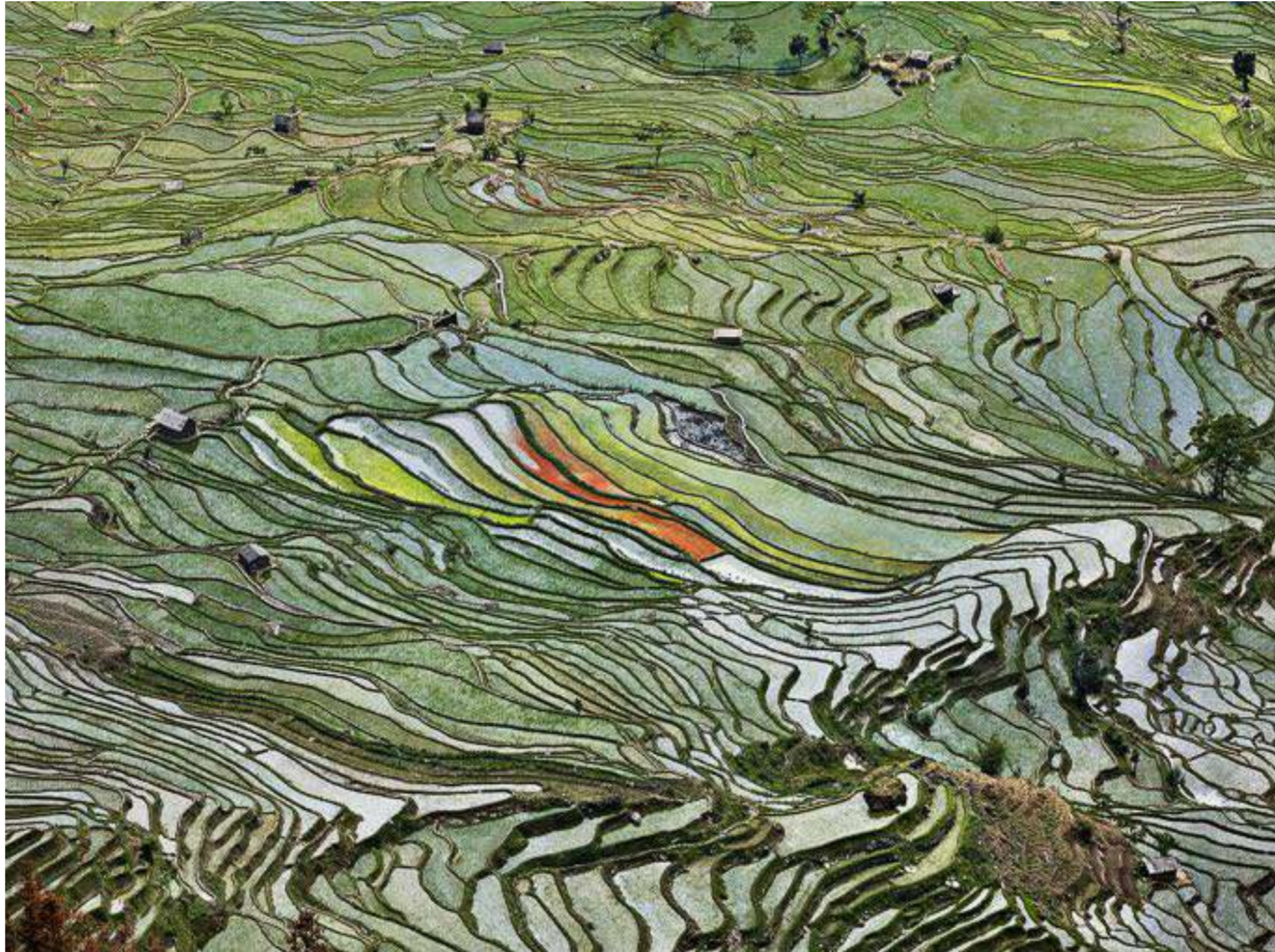
# Practices



# Knowledge



# Landscapes



# Sustainability/Resilience





# Flavours/Identity

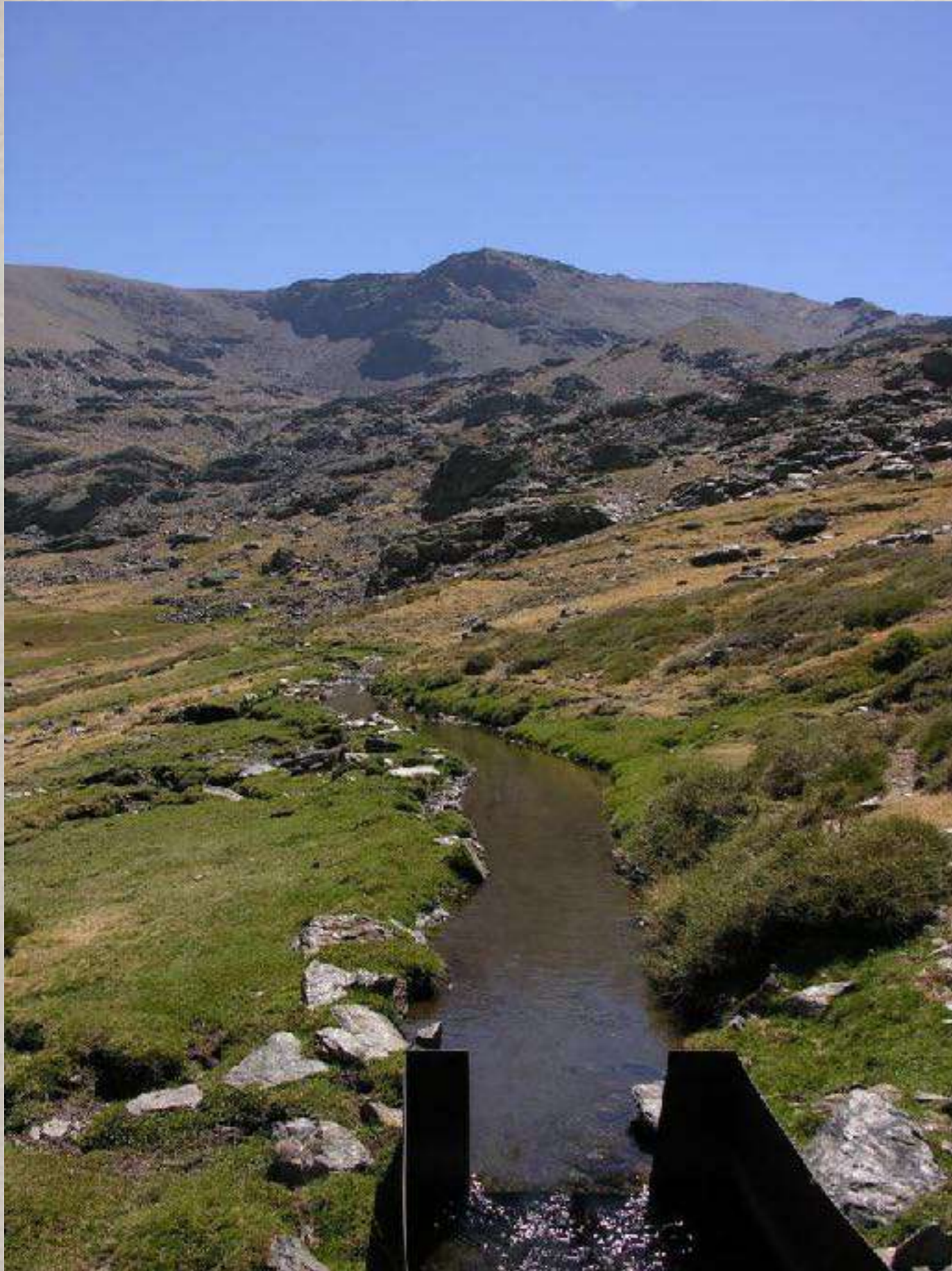


# Social Significance



# Historical and traditional irrigation systems





A great collective effort

# Ferreira irrigation system

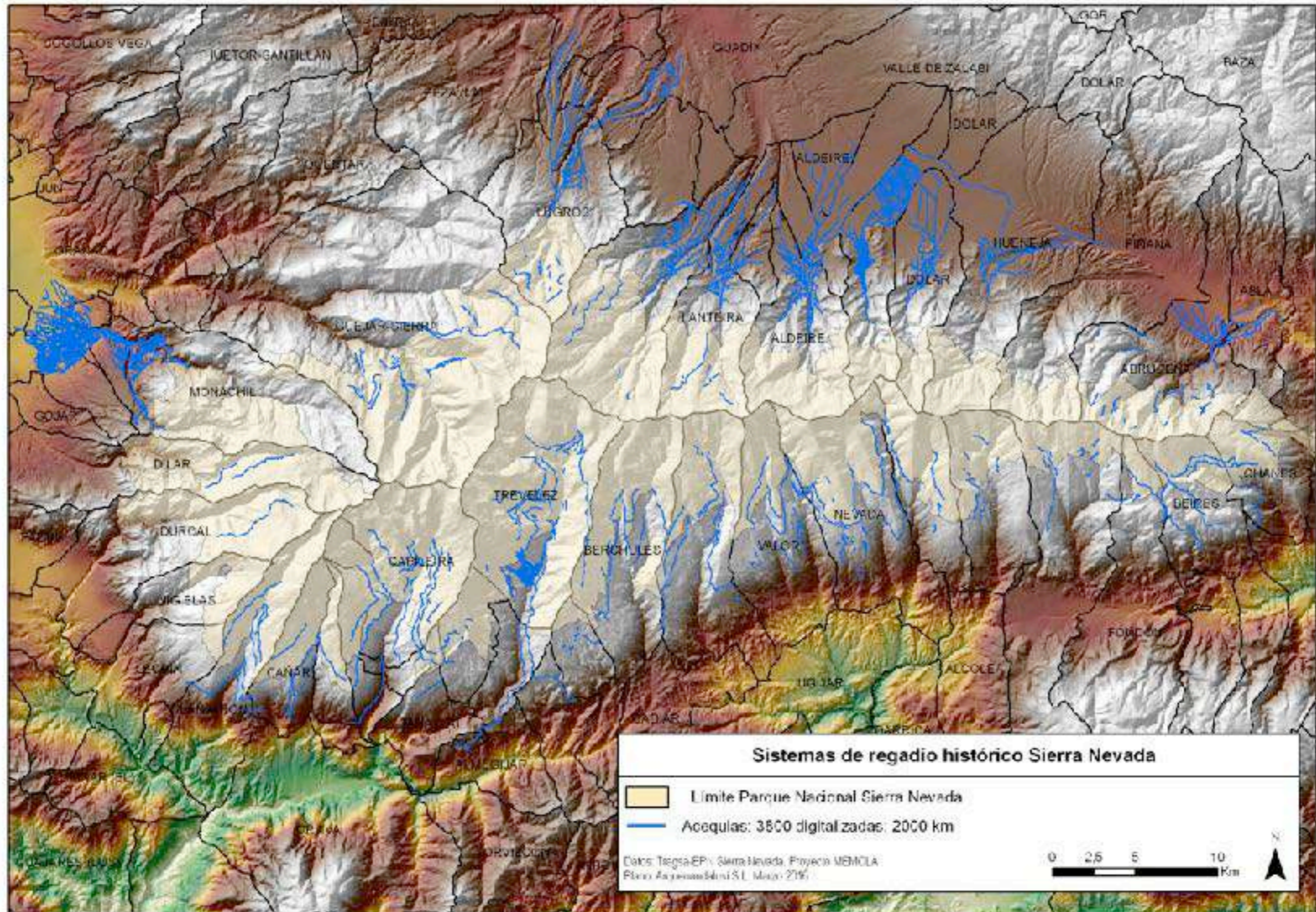
118 km channels / canals

62 Ha intensive irrigation

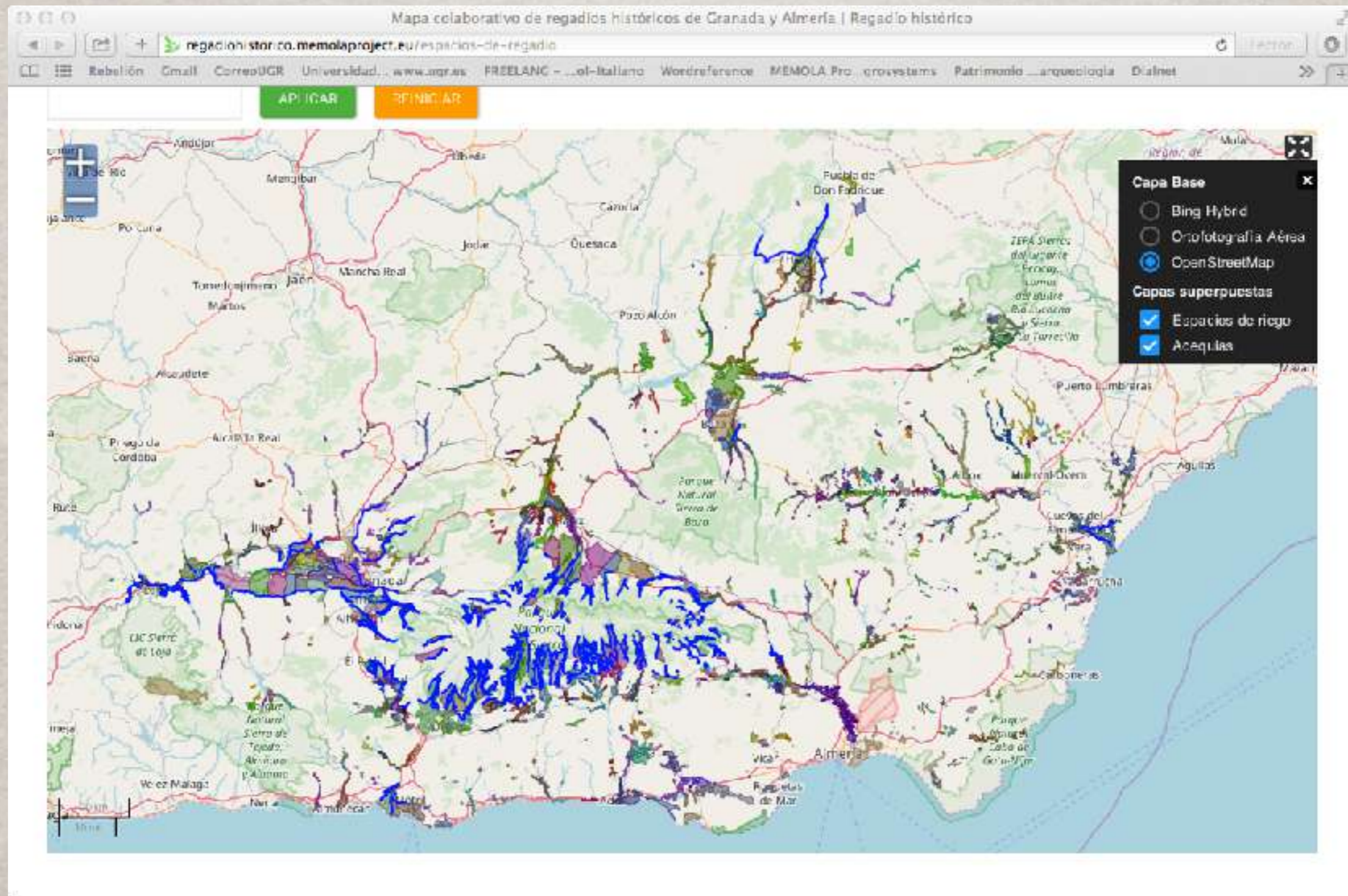
139 Ha occasional irrigation



More than 3000 kms of channels mapped,  
just in Sierra Nevada Mountains!



830 irrigation systems, 530 communities, 190.000 farmers,  
200.000 has, 24000 kms of canals,  
just in Granada and Almeria provinces!



# A great collective effort





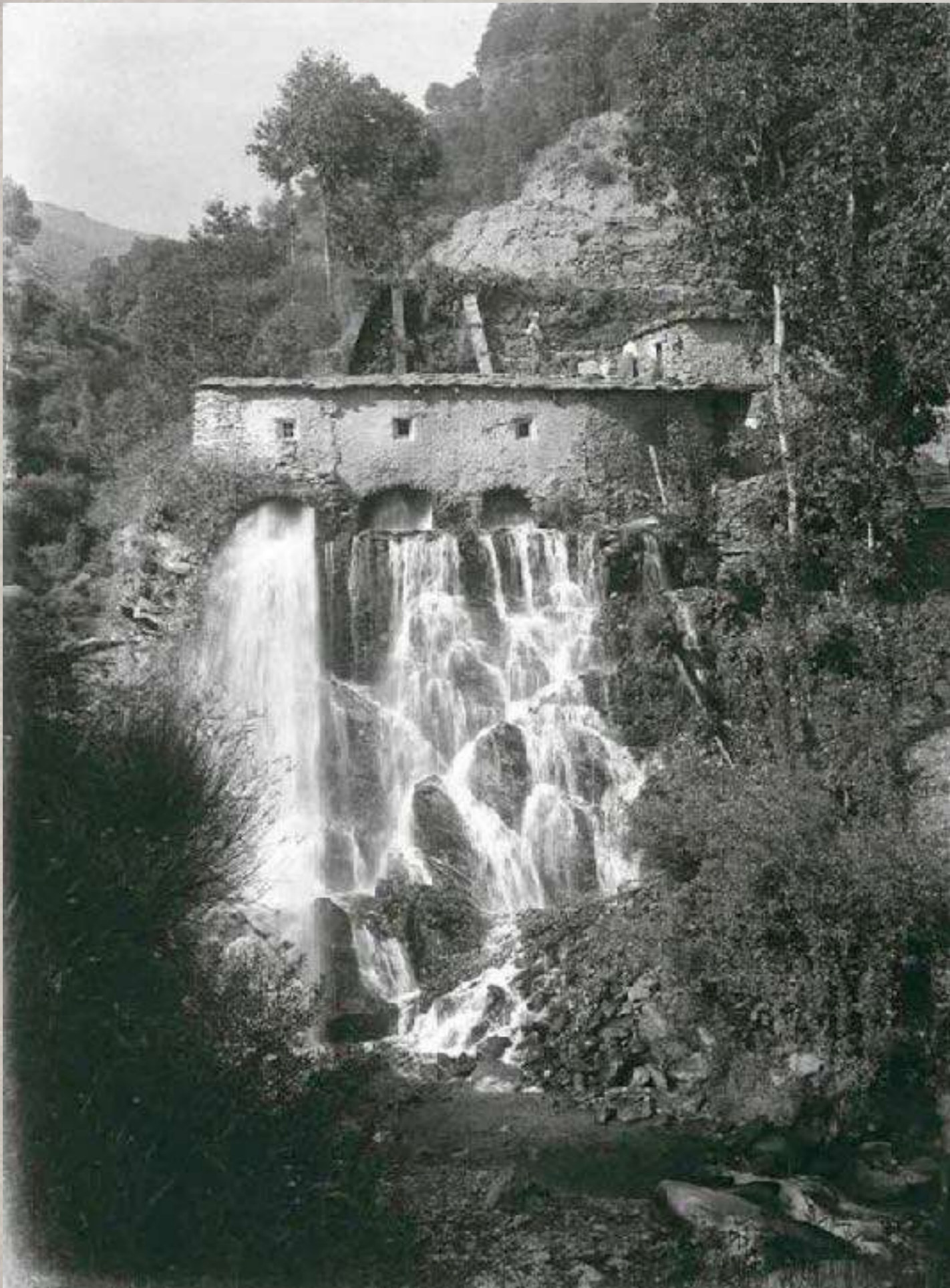




# A coevolutive process

(R. Sánchez Arana)

# Local/Traditional Ecological Knowledge



(P. Sollman)

# A social option, a productive strategy

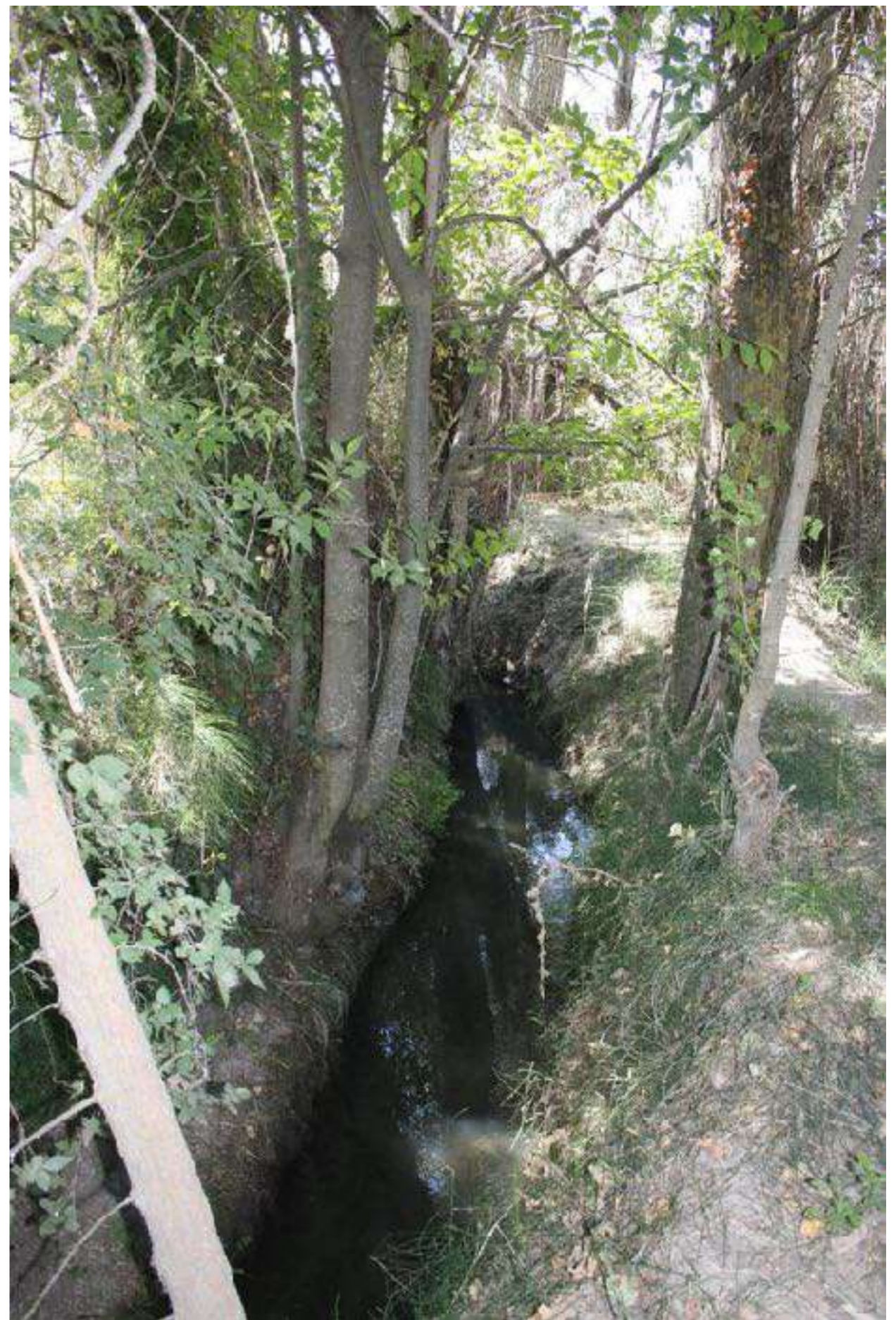


# Communal management



# Governance





# Social distribution of water





# Knowledge creation and transmission

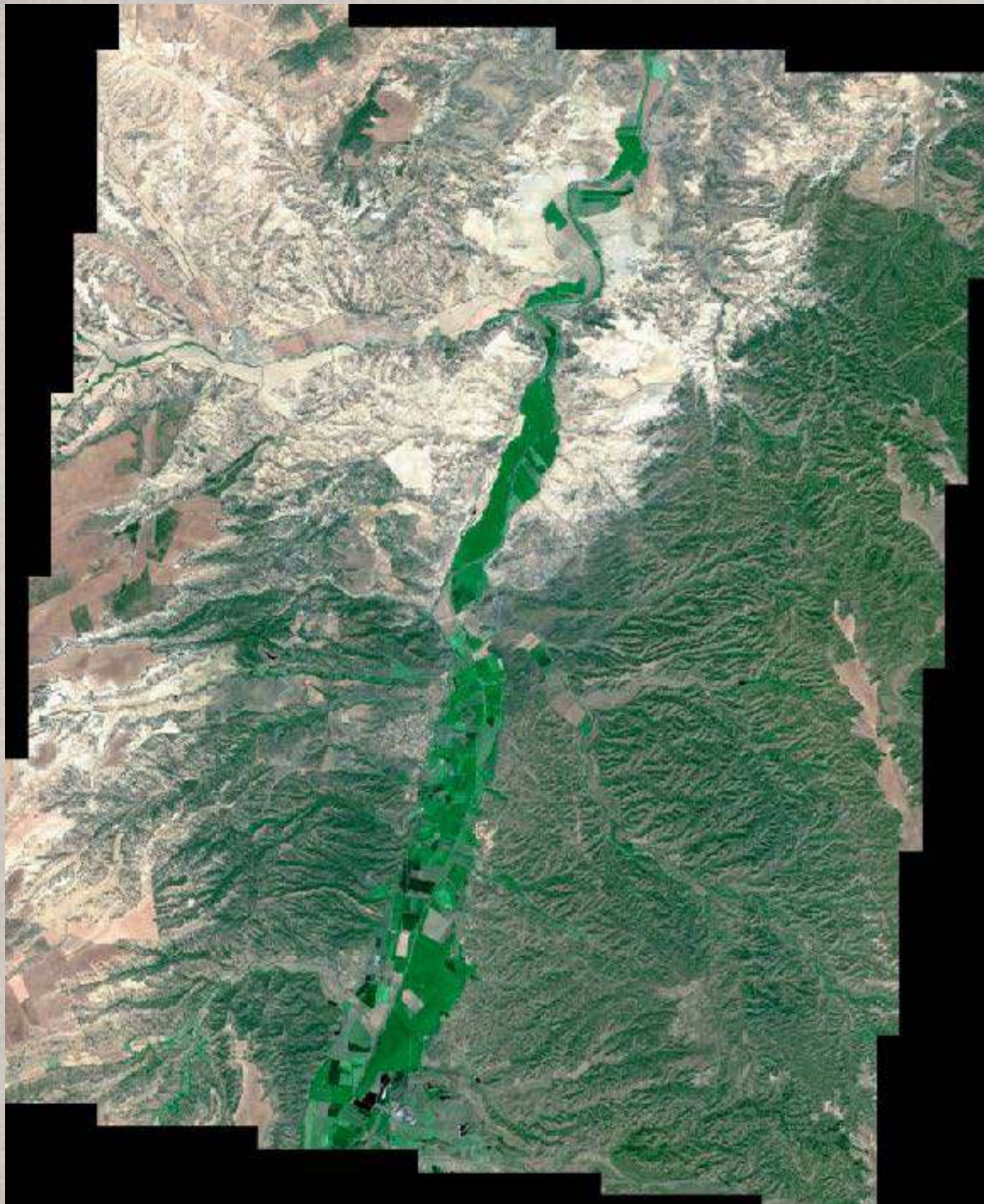


# Soil fertility



# Relationship between water, soil, crops, animals





Ecosystem  
services and  
values

# Landscape destruction



# Economical framework



# Marginalization



# Abandonment

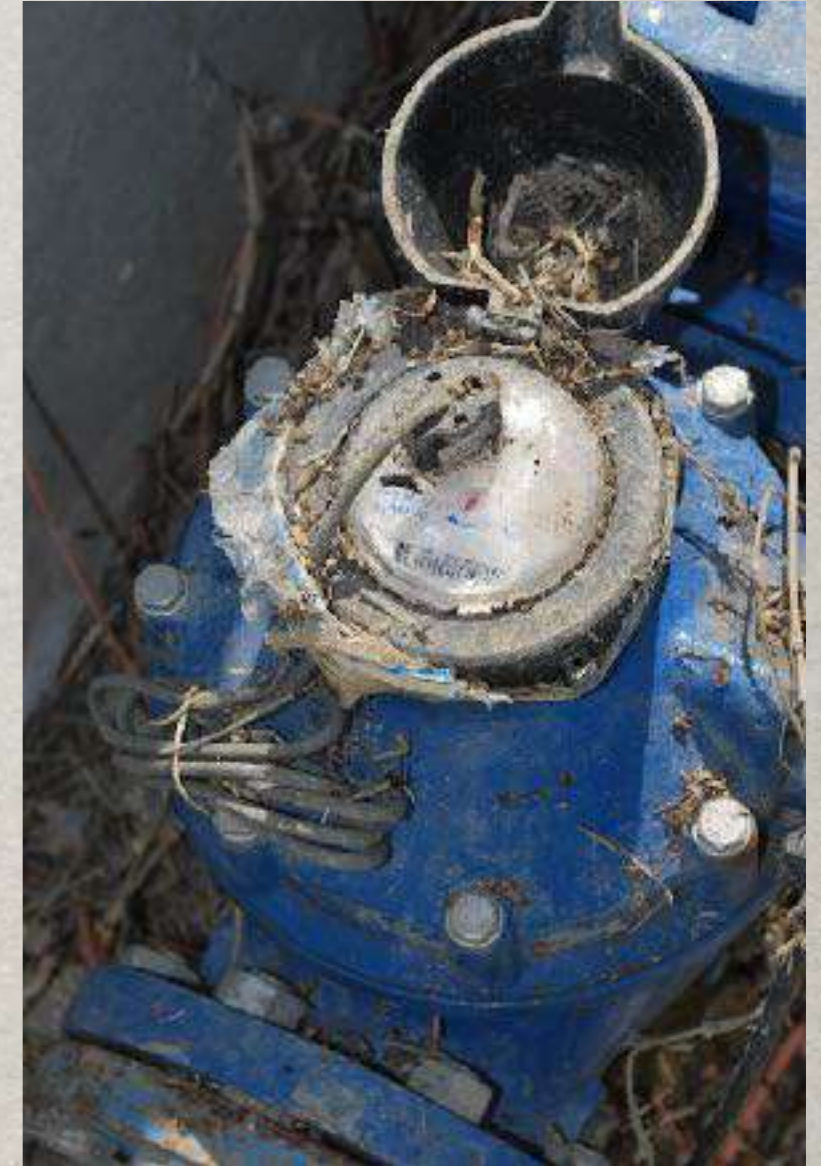




# Urbanization and land use changes



# “Modernization” / substitution



# Modernization

- ¿How to preserve cultural values (also environmental) of Agrarian Heritage in the current context?
- ¿How to apply innovation in communication and technology to preserve?



# Community-led traditional cultural landscape management



## **Improving and dignifying farmer's lives and rural areas :**

- Income**
- Social, academic, administrative acknowledgment and recognition**
- Services, policies and territorial planning**



# The restoration of irrigation canals as a social tool



# Work with local communities managing irrigation systems



# Volunteers and students





# Collaboration with other institutions





**More than 25 kms  
recovered in 5  
communities**

**Involving directly  
more than 400  
people**



**With a great social...**





**...academic...**

....political...



# ...and environmental impact





## Participatory approach

## Dialogue of knowledge





# Involving.....

Rural areas

Rural communities

Cultural landscapes

Agrarian activities

Tangible heritage

Intangible heritage

Territorial planning

Agrarian policies

Environmental policies

Global change

Climate change

Cultural challenges

urban/urbanization



# Involving.....

Local ecological knowledge

Dialogue of knowledge

Elder population

Gender role

Agrodiversity

Biodiversity

Ecosystem services

Governance

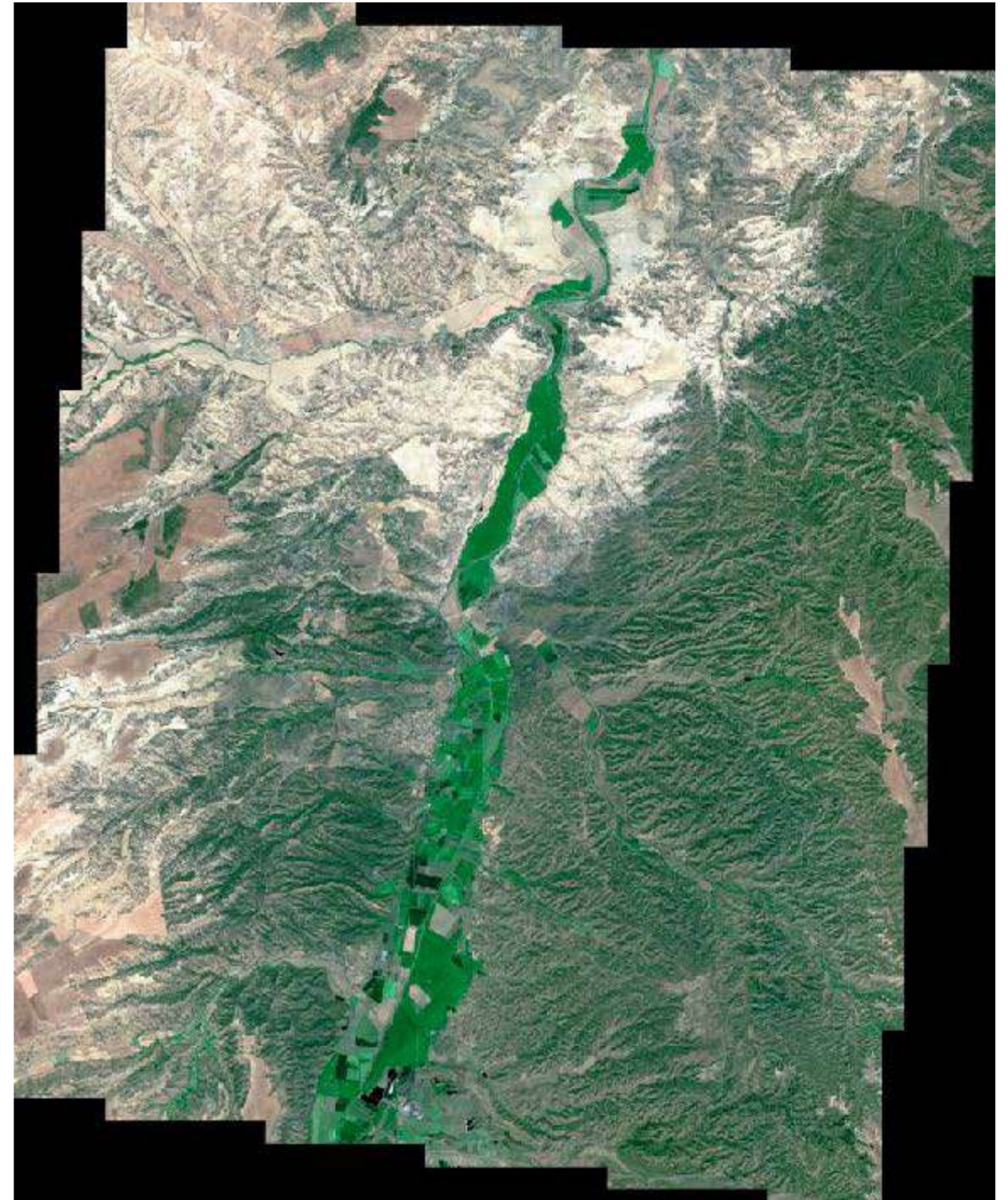
Land Stewardship

Production

Productivity

Economic development

Resilience



# Involving.....

Water policies &  
water planning

Mediation &

Environmental Mediation

Building restoring  
community & identity

Inter & Transdisciplinarity

Epistemologies

Role of humanities

Participation

Public/communal/private  
relationships



# CITIZIENSHIP

Young, 2000; Yuval-Davis, 2006

BELONGING

PARTICIPATION

RIGHTS

Local level



Farmers



Schools



Municipalities

Regional level



Associations



Regional governments

European level



Policy brief



International meetings

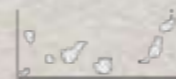


Academia

# From local level to global context



**Historical and Traditional  
irrigators Communities  
Association of Andalucía**



**EU Water Framework  
Directive**



**Meetings with policy decision  
makers- River Basin  
Management Plans**



# EUROPEAN POLICY BRIEF



## THE IMPACT OF EUROPEAN WATER POLICY ON THE WATER CULTURAL HERITAGE

This policy brief summarises the findings of the MEMOLA project with regard to the impact of European water policy on the water cultural heritage associated with historical irrigation systems. The brief also presents suggestions for policy interventions in order to establish the mechanisms and criteria for the delimitation of their values and for their protection.

June 2015

Abbreviations: Historical Irrigation Systems (HIS); EU Water Framework Directive (WFD); River Basin Management Plans (RBMPs).

### INTRODUCTION

#### Historical irrigation systems as cultural and environmental heritage

Since antiquity, irrigated agriculture has had a significant impact on ecosystems in the Mediterranean basin, where water resources are limited and irregular in time. Furthermore, the 'historical irrigation systems' (HIS) have played a particular role in the ecological history of landscape, not only in southern Europe, but also in very different environmental regions across Europe<sup>1</sup>. The HIS should be understood as complex land and water management systems, which use the water gravitational potential through distribution networks with simple structures, operated on a small scale and managed by local farmer communities. They work as a socio-ecological constructs which have been able to survive during centuries, thanks to a relevant resilience capacity and a sustainable use of the natural resources. These systems, which are still operational in many places, are agroecological systems of great socio-economic, environmental and cultural interest. They have generated peculiar cultural landscapes as a result of centuries of sustainable interactions between people and nature. The water cultural heritage associated with these systems relates not only to the technology, items and architecture developed, but also to practices, based on traditional environmental knowledge, which have generated intangible heritage values.

Beyond the intrinsic values held by the HIS, important ecosystem services are also provided by these systems, especially by those which are located in mountain areas. Among these services, it

<sup>1</sup> Leibundgut, C., Kohe, I. 2014. European traditional irrigation in transition. Part I: Irrigation in times past—a historic land use practice across Europe. *Irrig. and Drain.* 63: 273–293.



# EUROPEAN POLICY BRIEF



## SOIL AS ENVIRONMENTAL AND CULTURAL HERITAGE AND THE IMPORTANCE OF SOIL PROTECTION.

This policy brief summarises recently developed perspectives on soils that have emerged from the findings of the MEMOLA project. The critical environmental dependency of soils is well-established yet to date soils have been undervalued and poorly recognised as cultural materials. MEMOLA has demonstrated that soils are an extensive cultural resource and form part of Europe's rich cultural heritage. This brief stresses the need for a comprehensive European policy for soil protection and management that recognises the complex nature of soil and seeks to promote an awareness of soils as having a dual inheritance that stems from both cultural and natural processes.

The Italian Soil Science Society (SISS) and the European Society for Soil Conservation (ESSC) collaborated in writing this policy brief and is supported by the UK Soil Association.

December 2016

### INTRODUCTION

#### Soil-a vital resource

Soils support life in all its forms by playing a key role in all major earth cycles (Carbon, Nitrogen, Oxygen, Phosphorus, Sulphur and Water and Rock). Simply stated, it is Earth's life support system. Soils are not simply substrates composed on minerals and chemicals though. They are a living medium that is home to a myriad of microorganisms, fungi, animals and plants that are bound in system of co-dependency. Many soil deposits have developed over centuries and millennia and under highly specific local conditions which has in turn produced diverse soil ecosystems that are specific to particular regions.

Human impact on soil systems has increased with the gradual intensification of agriculture since the start of the Holocene (~10,000BP). Soils have not only been used and modified to support the shift to agriculture, but also as resources for building (adobe, piso and cob), material culture (clays for ceramics, pigments, mordants), and even as medicines (poultices, skin protection and more recently alternatives to antibiotics and existing immune suppressants –i.e Rapamycin). The long-established historic relationships that traditional communities have established with their environments has furnished us with a rich soil diversity that is the result of the complex interplay of specific regional environmental factors and culturally specific soil and land management strategies. MEMOLA has worked intensively to document the extent and character of this

# Critical, reflective action.

## Political, legislative and administrative proposals

### BOLETÍN OFICIAL DEL PARLAMENTO DE ANDALUCÍA

Núm. 415

X LEGISLATURA

3 de marzo de 2017

#### IMPULSO DE LA ACCIÓN DEL GOBIERNO

##### PROPOSICIÓN NO DE LEY EN COMISIÓN

**10-16/PNLC-000136, Proposición no de ley relativa al apoyo a las acequias históricas de Andalucía**

*Aprobada por la Comisión de Medio Ambiente y Ordenación del Territorio en sesión celebrada el 7 de febrero de 2017*

*Orden de publicación de 20 de febrero de 2017*

##### PROPOSICIÓN NO DE LEY RELATIVA AL APOYO A LAS ACEQUIAS HISTÓRICAS DE ANDALUCÍA

El Parlamento de Andalucía insta al Consejo de Gobierno a:

1. El reconocimiento público de que las acequias históricas de Andalucía son un patrimonio agrario, cultural, histórico y ambiental que hay que conservar para las futuras generaciones.
2. Promover la acción consensuada entre las comunidades de regantes y las administraciones públicas, especialmente las corporaciones locales, que faciliten la conservación de la importante red de acequias históricas que existen en Andalucía.
3. La creación de un catálogo de acequias históricas e infraestructuras hidráulicas, que incluya a aljibes y albercas, y a que tome las medidas necesarias para la conservación de las infraestructuras de regadío tradicional que emanen del mismo catálogo.



# Digital participative tools



## Mapa colaborativo de regadíos históricos de Granada y Almería



Los **sistemas históricos de regadío** constituyen un sistema agroecológico de interés socioeconómico, ambiental y cultural que han creado paisajes de gran belleza y que dotan (o han dotado) de identidad a los territorios donde se ubican.

El regadío es un paisaje realmente extraordinario, presente en una buena parte de nuestra tierra. Se trata de territorios modelados a lo largo de siglos de historia de coevolución entre el ser humano y la naturaleza. Sus valores, no solo patrimoniales, sino también ambientales, agrarios, identitarios e estéticos, son cada vez más reconocidos a nivel internacional.



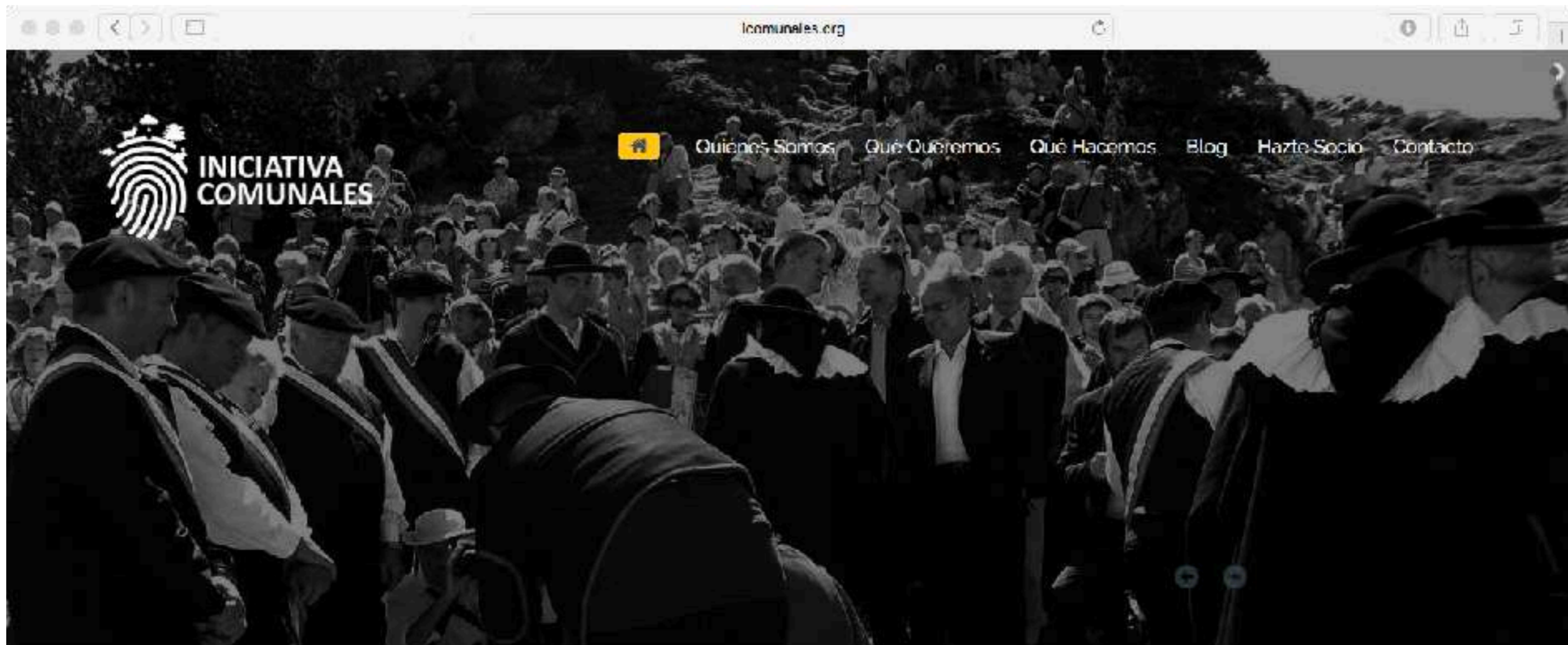
# Connect local reality with global context

The screenshot shows the homepage of the IHOPE website. At the top, there is a navigation menu with links for ABOUT, REGIONS, THEMES & CONCEPTS, EMERGING KNOWLEDGE HUBS, COMPLETED PROJECTS, and CONTACT. Below the navigation is a large banner image of a mountain landscape with the text "IHOPE" in large green letters and "Integrated History and Future of People on Earth" below it. A speech bubble on the right of the banner says "Website under construction!".

The main content area is divided into several sections:

- MEMOLA project:** A featured article dated November 3, 2015, about the Mediterranean Mountainous Landscape in Europe (MEMOLA) project. The text describes the study of four landscapes in Europe: Sierra Nevada (Spain), Vjosa Val...
- News:** A section featuring a photo of Denise Pahl Schaan, with the text "Denise Pahl Schaan, 55, a major figure in..."
- Regions:** A section featuring a photo of a river and the text "The Herring School and the... Introduction Anthropological archaeologists often..."

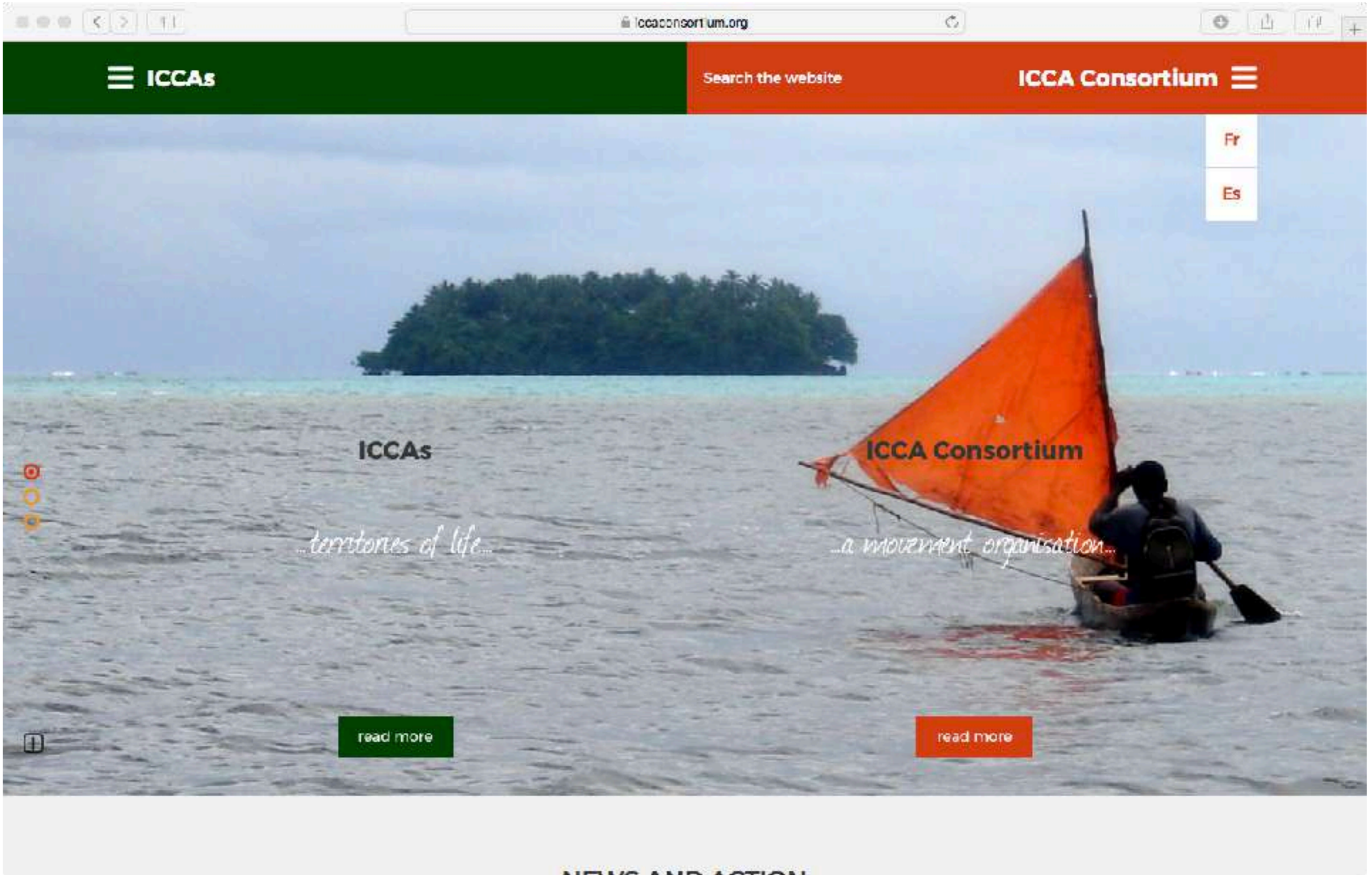
On the right side of the page, there is a search bar and a "Welcome to IHOPE" section. The welcome message states: "The integrated History and future of People on Earth (IHOPE) initiative is a global network of researchers and research projects that link human and Earth system history through the integration of knowledge and resources from the biophysical and the social sciences and the humanities. It is housed at Uppsala University in Sweden." Below this is a call to action: "Propose a regional Case Study or Theme Are you working on your own case study or theme that would fit well into IHOPE? Click here and let us know about your case study." At the bottom right, there is a "Follow us on Twitter" section with a tweet from @IHOPE\_updates and a retweet by Maurits Ertson.



## ¿Qué es iComunales?

iComunales somos una asociación de ámbito estatal, formada por comunidades que gobiernan aguas, tierras, bienes y derechos de forma comunal. Otros miembros clave de la asociación son ONG, universidades, empresas y otras entidades, además de personas a título individual. Nuestro objetivo común es el apoyo y reconocimiento de estos sistemas comunales de gobernanza, con particular atención a promover sus valores sociales, ambientales y económicos.





“territories and areas conserved by indigenous peoples and local communities” or “territories of life”

# Responsibility... long term action, strategy



# Responsibility... long term action, strategy



# Risks: expectations, dependence, idealization, romantic view...

CUANDO NO HAY TALENTO. ¡NO LO HAY!



# Some reflections...

- *Cultural Heritage (Archaeology) as dead places for dead people*
- *Adaptation to the context and specific circumstances (who, relationships...)*
- *Creativity*
- *Empathy, patience*
- *Dialogue of knowledge (equality)*
- *Dialogue tradition/innovation*
- *How far can we really get to? What is our real impact? (try to avoid frustration...)*
- *Role of new technologies (contextualize)*



## Some conclusions...

- *Cultural Heritage (Archaeology) as a tool for social transformation*
- *Participation as an strategy*
- *Humanities (Archaeology) as Activism*
- *Relationship between public/communal/private*
- *Dialogue of knowledge*
- *Transdisciplinarity*





**Yes, we could...**



**Gracias / Thank you / Merçi / Mulțumesc**





**MEMOLA project**  
**[www.memolaproject.eu](http://www.memolaproject.eu)**

**MEMOLab.**  
**Biocultural Archaeology**  
**Laboratory**  
**<https://blogs.ugr.es/memolab/>**

**[www.reach-culture.eu](http://www.reach-culture.eu)**

