

# DEATH BY CERTAINTY

## THE VINCA DAM AND THE WITHERING OF CANAL ASSOCIATIONS IN THE TÊT BASIN OF THE EASTERN FRENCH PYRENEES

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# INTRODUCTION

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# Aim of the research

We consider the ongoing social effects of a large dam in the Eastern Pyrenees region of France.

In 1976, the French state constructed a dam near the town of Vinça on the Têt River, altering the hydrological conditions that had co-produced a complex system of hydro-social relations evolved since the Middle Ages.



Figure: Vinça Dam (2016-02-10)

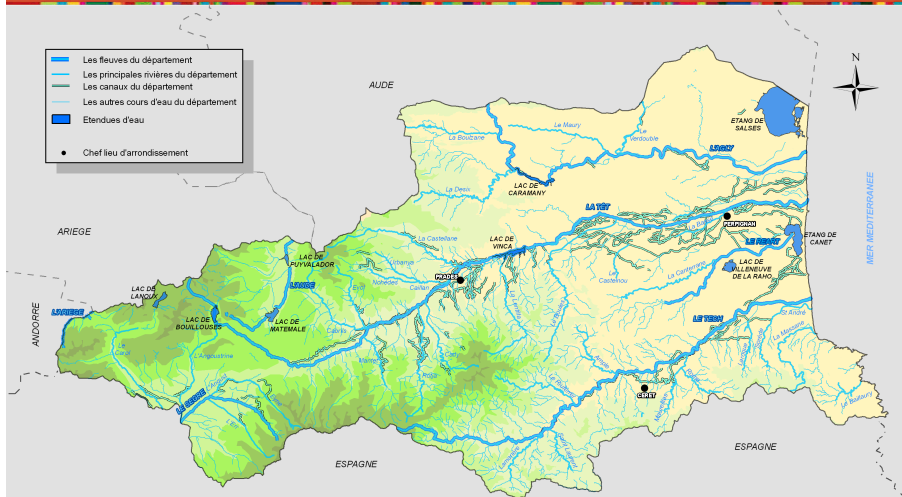
# CONTEXT

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# Surface water in Eastern Pyrenees region

## Le réseau hydrographique des Pyrénées Orientales



# Context

- Study focused on the Têt basin between Vinça and Perpignan
- Mediterranean climate
- Irrigation history

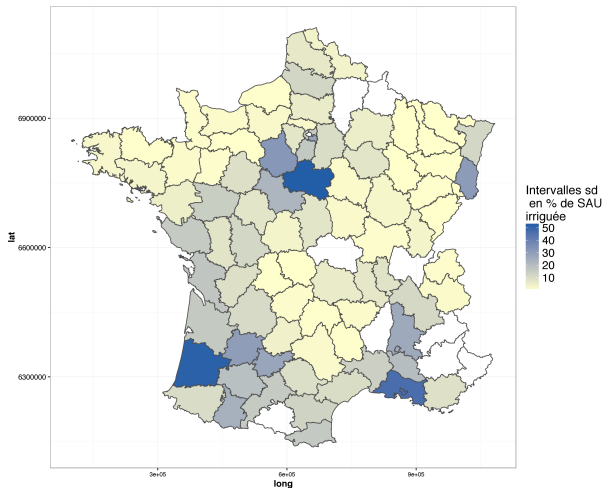


(a)



(b)

# Irrigated agricultural land in France



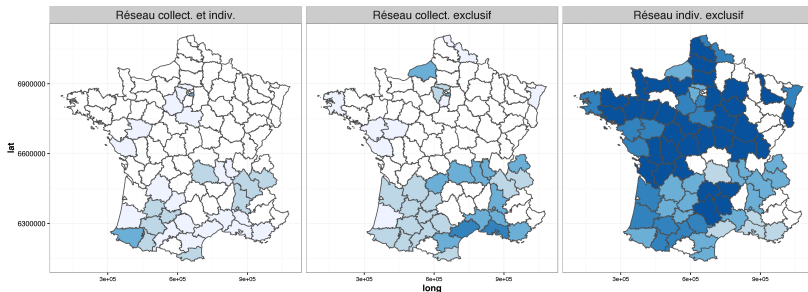
Source : GEOFLA, Agreste – Disar, RA 2010



# Collective irrigation

Intervalles : quantile en % d'exploitations en fonction du type d'accès

3.63 - 15.75	15.75 - 34.29	34.29 - 61.73	61.73 - 100	100 - 100
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Source : GEOFLA, Agreste – Disar, RA 2010

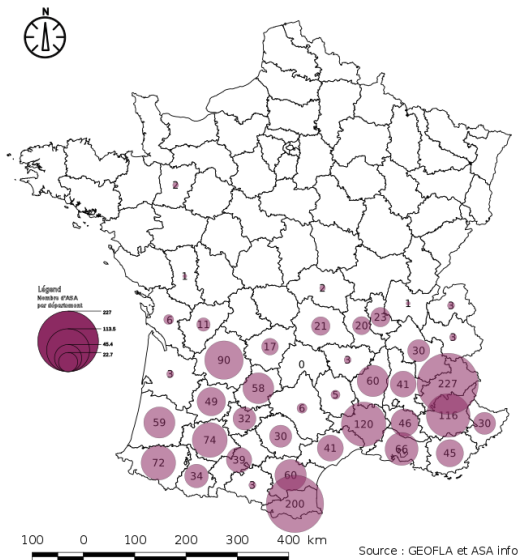
# Authorized Syndicated Association

An Authorized Syndicated Association is a legal entity that brings together owners of adjacent properties to collectivize and coordinate the development, use, and maintenance of irrigation canals.



Figure: Development work carried out by ASA of Vinca (2016-02-12)

# Authorized Syndicated Associations (France)



# HYDRAULIC SOCIETY IN THE EASTERN PYRENEES?

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# Wittfogel ?

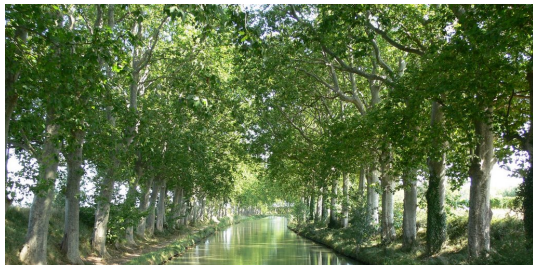
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- Wittfogel's dialectical insights into the relations between the control of water and the control of people help explain the effects of the Vinça dam, which we argue was built partly as a means of gaining territorial presence in a region historically resistant to the control of the French state.
- We suggest that the dam has had the effect of weakening local social relations that were sustained by the need to deal with hydrological uncertainty.

# Water control and the French state

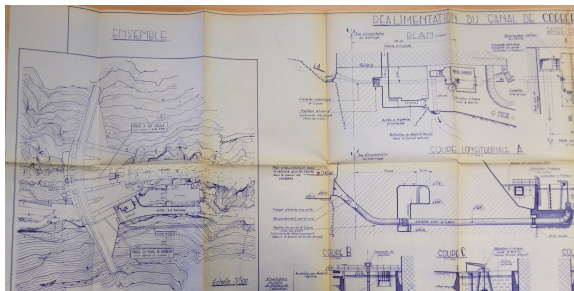
A Long history!

- Rosenthal (1988) shows how this process accelerated after the Revolution for irrigation and drainage
- However, the Eastern Pyrenees region avoided or resisted these encroachments until very late
- Jaubert de Passa (1820)
  - Local irrigation traditions
  - Isolation from French state



# The Vinça Dam

- First proposal to build a dam at Vinça to control floods and facilitate irrigation was put forward early 20th century
- Leon Jean Grégory (1909-1982): “Surface water for irrigation; groundwater for drinking”
- Preliminary studies found a deficit between availability of water and the needs of farmers.



## Justifying the Vinça Dam (producing scarcity)

*"To illustrate the imbalance between needs and resources, we will quote two figures, one of  $14\text{m}^3$  / second, corresponding to the water rights of the ASAs, and 5.5 , 2.4, and  $4\text{m}^3$  / second, corresponding to the average flows at Vinça in July, August and September, given the release of water made from the dam at Bouillouse, it being understood that the actual flow rates during drought significantly falls below these values."*

D.U.P. (Declaration of Public Utility) for the Vinça Dam project,  
August 27, 1970



# Hostility or indifference to the dam

Public inquiry revealed that contrary to expectations, the farmers did not particularly want a dam

- Impact on farmland
- Money better applied to improvement of canals
- Preference for small upland dams

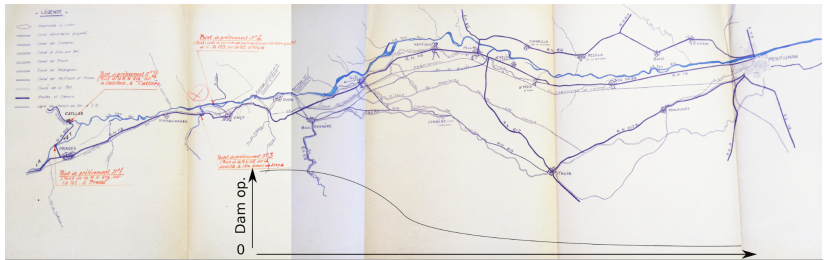


Figure: hostility towards the dam

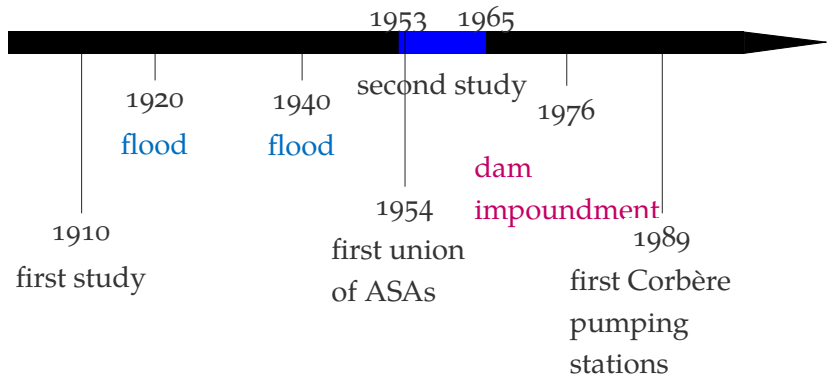
# DEATH BY CERTAINTY

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# The dam history

1900

2000



## Dam goals

- pool of water for agriculture,
- reduce flood peaks ,
- drinking water storage.

# Death by certainty

We argue that the dam has had the effect of transferring expertise and social power from local to central authority, but not just in a direct way:

- The state controls the dam (through the Department)
- But the most important means by which local control has been reduced is indirectly through the state's (Agence de l'eau) promotion of pressurized irrigation, which the dam makes possible
- Gravity irrigation structures a set of social relations that are different from those structured by pressurized irrigation
- Pressurized irrigation is more efficient and less arduous, but weakens the social tissues that are put in place and maintained by the condition of hydrological uncertainty

## CONCLUSIONS

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## Conclusions and next steps...

- The scarcity argument used in 1970 to build the dam and produce certainty for agricultural production is now used to support reductions in the use of water by farmers through promotion of pressurized irrigation.
- This threatens traditional ASAs, which are wary of the state's encroachment on their water rights.
- Unintended implications for groundwater recharge.
- We hypothesize that longer-term consequences of the dam include unintended impacts on the agricultural sector.

Thank you for your attention

Photo credit : Thomas m-louis. sur 

You can find this presentation on github 



# BOULANGERIE

*Pain cuit au  
four à bois*

Christine et Henri POCH  
Meilleur Ouvrier de France

*Boulangerie  
Salon de Dégustation  
Ecole de boulangerie  
Chambres d'hôtes*

*Ouvert du vendredi au lundi  
04.68.84.15.65*

Photo credit : James Linton





Photo credit : James Linton



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# The hydro social cycle

We employ the concept of the hydro social cycle - which borrows from Wittfogel's dialectic, but demands a more complex account of hydro social relations – to explain these developments.

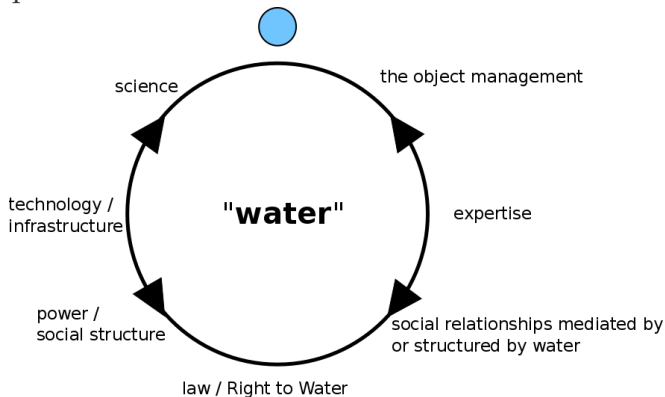


Figure: hydrosocial cycle