

DAM REMOVAL EUROPE WORKSHOP

14 -15 of November of 2016 in Leon city, Spain.

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INTRODUCTION

Questions

- Why River Basin Duero Authority started some years ago the removal of dams leading this type of actions in Spain



Legal issues and political support

- About the River Basin Duero Authority dam demolition policy



River Restoration Strategy

- Number of dams or river barriers removed



River Duero Basin Dam Inventory

- Main difficulties and constrains

- New challenges and future plans

LEGAL ISSUES

River connectivity is legal requirement

The River Basin Authority will promote the removal of hydraulic infrastructures **out of use, not linked to any water use.**

Once a water title right is extinguished, the hydraulic infrastructures will revert free of any charges to the state. In that case, if it is unfeasible any water use or its maintenance is opposite to the public interest, the demolition of any construction in the public domain can be required.



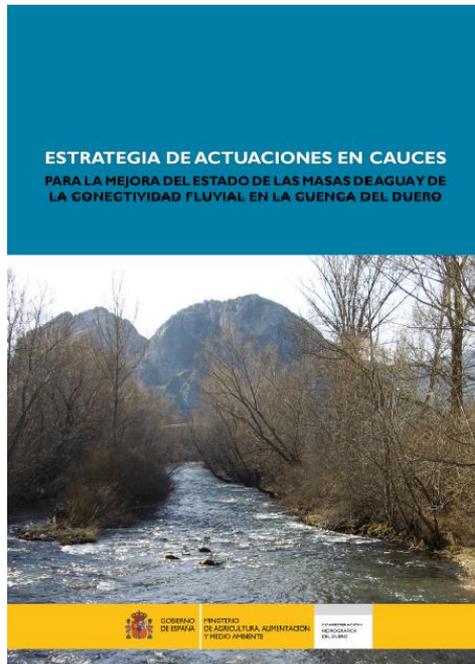
Example: Demolition in the river Almar (2011) of a dam out of use and with its water title right extinguished

WATER FRAMEWORK DIRECTIVE

River connectivity it is an important issue to be considered (hydromorphological index)

In the River Basin Duero, the hydro-morphology pressures, and specifically the effect of river barriers, are the main responsible for the failure to comply of the good status of water bodies.

Therefore, the RDBA has elaborate a *RIVER RESTORATION STRATEGY* in order to comply with the good status and improve the river connectivity by removing dams or river barriers, or by installing fish passages.



About 60% of the water bodies which not achieve “the good status” is because longitudinal connectivity reasons (more than 3.500 transverse obstacles in the RBD).

Therefore, one of the main objectives of the River Restoration Strategy is to tackle river connectivity by:

- Assessment of each water body (IC index).
- Identification an evaluation of every fish barrier (IF index).
- Restoration proposal (demolition or fish passages)

RIVER DUERO BASIN DAM INVENTORY

According to River Duero Basin Dam Inventory there are approximately 3.500 river barriers, which gives an idea of the degree of fragmentation of our rivers.

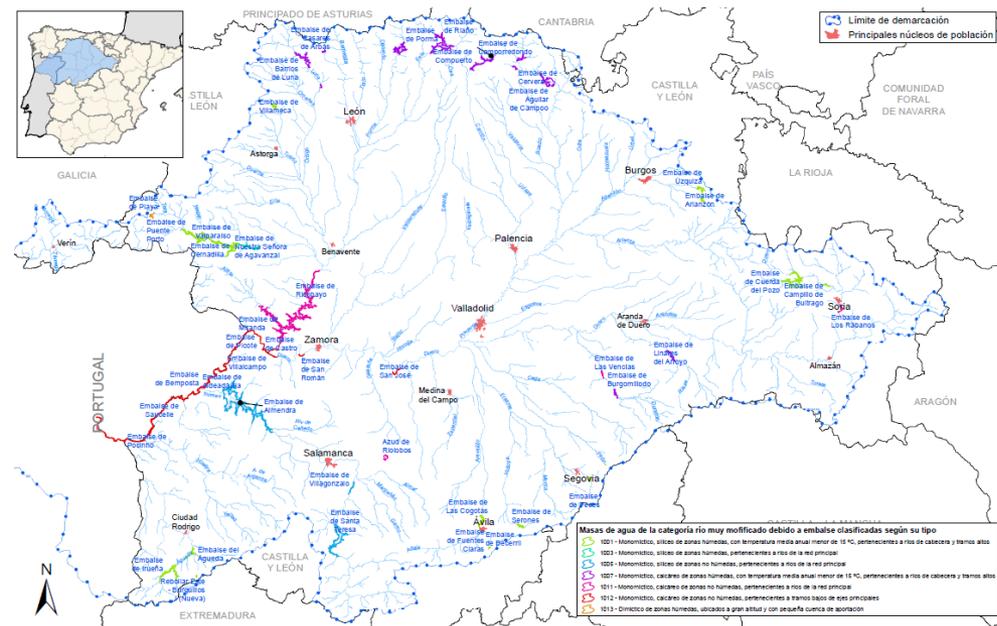
53 are considered “big dams” (> 15 m high or 10-15 m and > 100.000 m³ capacity)



Example of “big dam” in the river Porma (León)



Example of “small dam” approx. 1 m high



Number of dams or river barriers removed

The RBDA has removed 115 dams or river barriers, of which 3 are considered “big dams” (> 15 m high or 10-15 m and > 100.000 m³ capacity)

Biggest demolitions:

- Demolition of the La Gotera dam (river Bernesga, León)

<http://www.chduero.es/VerVideo-previo.aspx>



- Demolition of the Retuerta dam (river Aravalle, Avila)

<http://www.chduero.es/VerVideo-previo-aravalle-esp.aspx>



- Demolition of the Villaviciosa dam (river Garganta Honda, Ávila)
(construction 1996, 14.5 high, 115 m length) ●

FINAL CONSIDERATIONS

The River Connectivity is still considered mainly as Longitudinal Connectivity specifically related to fish, but should be considered as more wide concept linked to river ecosystem functionality and restoration of natural processes.

In any case, an hydraulic infrastructure will always have an impact that should be assessed, assumed if is considered feasible, and minimize all impacts as much as possible in order to achieve an equilibrium between the legitimate and necessary water uses and the requirement of preserve the functionality of river ecosystems.



Improve the environmental impact assessment procedures
Introduce not only environmental aspects but also economic and social aspects
(better cost-benefit analysis)

The Water Spanish Law is very protectionist law for the given water rights. The extinction of an existing water right is a long and difficult administrative process, and later on, sometimes it might end in courts.

The CHD, as a river basin authority, must ensure both, the sustainable and efficient use of the water resource and the compliance with the environmental objectives and requirements.

THANKS FOR YOUR ATTENTION

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