

INTRODUCTION

Water demands are constantly increasing worldwide. Population growth, industrialization of economies and the consequences of climate change result in a persistent pressure on global water resources. Thus, such is the importance of water today that it is recognized not only for its environmental contribution, but also for its great value as an economic and social resource. Moreover, due to its limited availability, especially in arid and semi-arid countries, the proper water management is considered one of the main future challenges. Traditionally in Spain, the most arid country in Europe, water has been a matter of debate and, even, a source of conflict among water users, mainly among irrigation communities since the agricultural sector has traditionally been the main economic activity. However, there exists a limited literature on the possible debates and conflicts concerning other major water uses in Spain such as the power generation, despite its high dependence on thermal power.

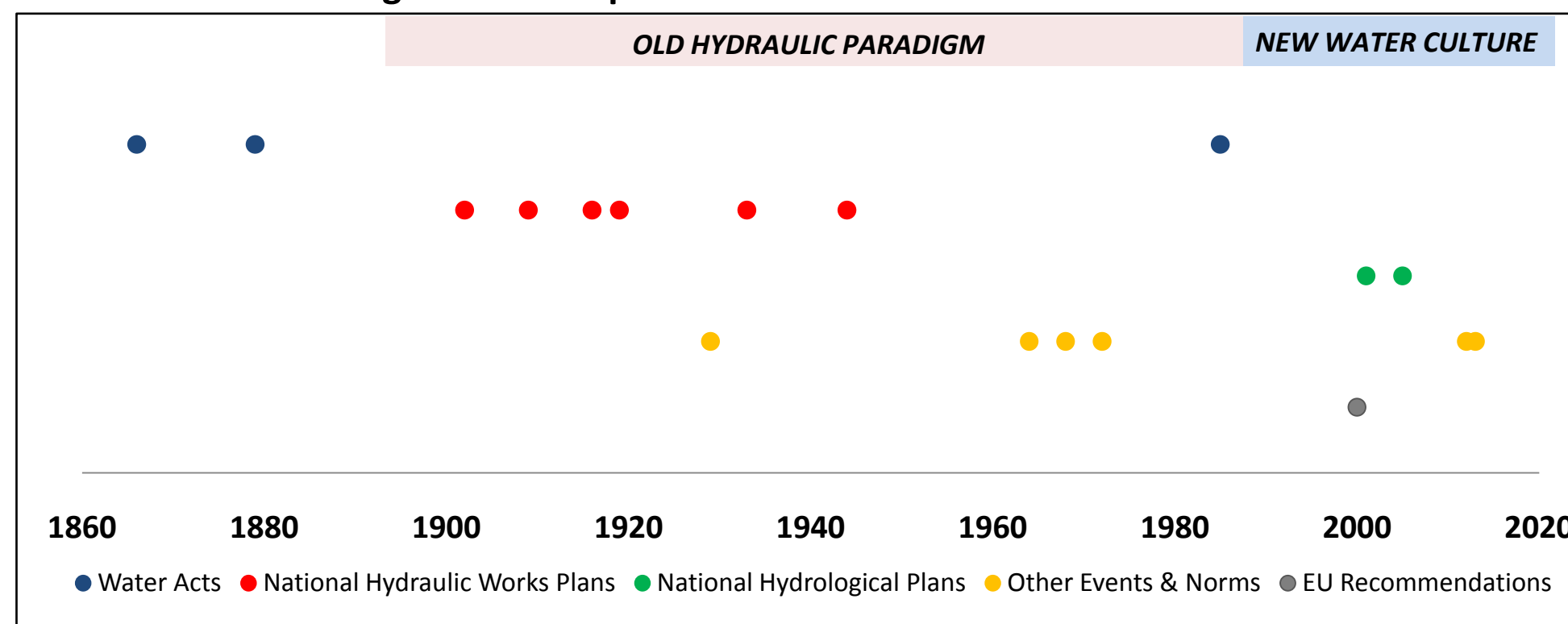
OBJECTIVES

This ongoing work is part of a more extensive doctoral thesis which aims to provide an estimate of water needs for thermoelectric production in Spain covering the entire electrical history from 1900 to the present. In this context, this paper seeks to highlight the main role of water within the Spanish history, observing how water management and institutions in Spain have changed over the long term to understand the causes of water conflicts, and finally, focusing on all those possible conflicts rarely discussed in the literature.

METHODS

Literature and normative review. Historical analysis.

Evolution of water regulations in Spain



PRELIMINARY FINDINGS

- Traditionally, water management in Spain has been focused on the paradigm of large hydraulic works. However, since the late 20th century a new water management model has emerged: the New Water Culture.
- Throughout the 20th and early 21st centuries, new productive activities have emerged generating new water usages and, hence, additional pressures on water resources, which make their proper management even more important.
- Conflicts over water: flooded villages by large hydraulic works; between irrigators and hydropower plants; between irrigators and electric companies due to the location of nuclear and thermal power stations in areas of water scarcity; conflicts between dry Spain and wet Spain over the Ebro and Tajo-Segura water transfers.

THE TRADITIONAL PARADIGM

PERIOD
Late 19th century and most of the 20th century

GREATEST EXPONENT
Joaquin Costa

SUPPLY POLICY
Construction of large hydraulic works with a single purpose: the expansion of irrigation

MAIN BENEFICIARIES
Politicians and engineers at the service of the Administration, farmers, irrigators, construction companies and electric companies

WATER USES
Agriculture and irrigation, and hydropower generation

POLITICAL-ADMINISTRATIVE SCENARIO
Authoritarian regimes closed to social participation in political decisions until 1975

CENTRALIZED WATER MANAGEMENT
Despite the creation of the Hydrographic Confederations (1926), management remained centralized until they became financially independent

DISCOURSE
In favour of water transfers under the slogan "Water for everybody"

THE NEW WATER CULTURE

PERIOD
From 1980 onwards

DEMAND MANAGEMENT
Institutional mechanisms. Greater weight is given to environmental considerations, qualitative aspects of water resources and economic criteria

DEVELOPMENT OF A WATER ECONOMY
Pricing possibilities, viability of water markets and forms of organization

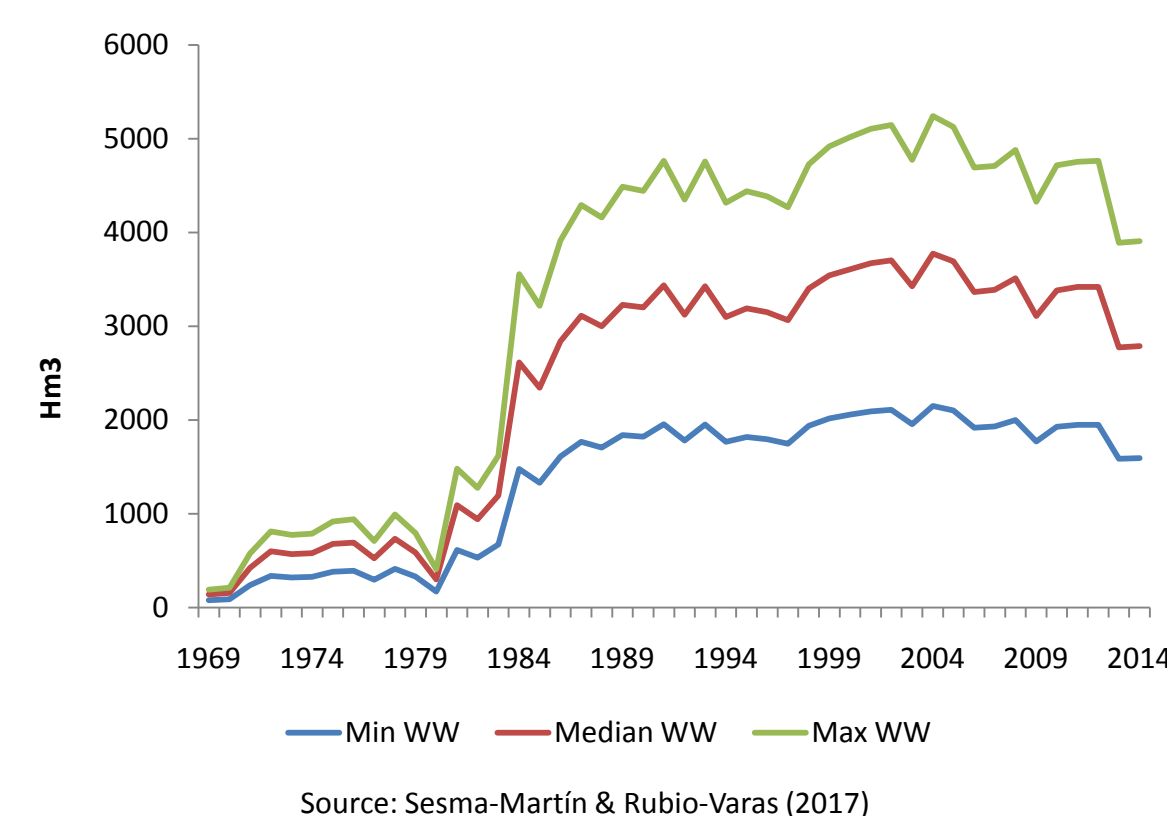
NEW WATER USAGES
Industrial and urban uses, water for thermoelectric production, recreational and leisure activities

PUBLIC OPINION & NEW ACTORS
Incorporating new arguments (environmental groups, local associations, professional associations, etc).

EXTERNAL INFLUENCES
European Water Directives

DISCOURSE
In favour of desalination under the slogan "Water for ever"

Evolution of total water withdrawals of Spanish nuclear power plants (1969–2014), by using technical factors



BASIC BIBLIOGRAPHY

- Fernández Clemente, E. (2000). *Un siglo de obras hidráulicas en España. De la utopía de Joaquín Costa a la intervención del Estado*. Zaragoza, Facultad de Ciencias Económicas y Empresariales de la Universidad de Zaragoza.
- García, V. A., & Balibrea, L. F. (2013). *Agua: la construcción discursiva de un conflicto*. Documentos de Trabajo de Sociología Aplicada, (2).
- Gorostiza, J. L. R. (2001). *La formulación de la política hidrológica en el siglo XX: ideas e intereses, actores y procesos políticos*. *Economía: Revista vasca de economía*, (47), 126-151.
- Naredo, J. M. (2006). *La encrucijada de la gestión del agua en España. El Agua en el siglo XXI: gestión y planificación*. Zaragoza. Institución Fernando El Católico.
- Sesma-Martín, D. & del Mar Rubio-Varas, M. (2017). *Freshwater for Cooling Needs: A Long-Run Approach to the Nuclear Water Footprint in Spain*. *Ecological Economics*, 140, 146-156.
- Spanish Government. Ministerio de Medio Ambiente. Secretaria de Estado de Aguas y Costas. Dirección General de Obras Hidráulicas y Calidad de Aguas, 2000. Libro Blanco del Agua.

