water and landscape
AGUA y TERRITORIO

Hydraulic potentials: ideas, projects and policies in Southern Europe (20th century)

Potenciales hidráulicos: ideas, proyectos y políticas en el sur de Europa (siglo XX)

Francesco D'Amaro
Universidad Autónoma de Madrid
Madrid, Spain
francesco.damaro@uam.es
ORCID: 0000-0002-3302-3853

Sergio Riesco Roche
Universidad Complutense de Madrid
Madrid, Spain
sriesco01@ucm.es
ORCID: 0000-0003-1429-8111

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ABSTRACT

This dossier brings together the research of a group of historians on the question of 'hydraulic potentials'. Demographic pressure and increasing demand for water have been parallel processes. The countries of Southern Europe share common problems which are analysed. The projects emerged around the turn of the 19th century, either because of the birth of nation-states or the consolidation of the liberal state. By analysing the existing literature with sources, many of them unpublished, from archives in the different territories, a comparative methodology is adopted. The articles share the institutional difficulties that prolonged the conversion of projects into effective achievements that allowed the modernisation of hydraulic infrastructures. Technicians are also given a leading role throughout the process. The specificities of each case encourage us to deepen this comparative approach in countries that have not traditionally exchanged much knowledge.

KEYWORDS: Water policy, Irrigation, Alternative energy sources, Dams, Marshes.

RESUMEN

Este dossier pone en común las investigaciones de un grupo de historiadores en torno a la cuestión de los "potenciales hidráulicos". Presión demográfica y aumento de la demanda de agua han sido procesos paralelos. Los países de Europa del Sur comparten problemáticas comunes que son analizadas. Los proyectos emergen en el entorno del siglo XIX, bien por el nacimiento de los Estados-nación, bien por la consolidación del Estado liberal. Analizando la literatura existente con fuentes, muchas de ellas inéditas, de archivos de los diferentes territorios, se adopta una metodología comparativa. Los artículos comparten las dificultades institucionales que alargaron la conversión de proyectos en logros efectivos que permitieran modernizar las infraestructuras hidráulicas. Se otorga también un gran protagonismo a los técnicos durante todo el proceso. Las especificidades de cada caso nos animan a profundizar en ese enfoque comparativo en países que tradicionalmente no han intercambiado demasiados conocimientos.

PALABRAS CLAVE: Política hidráulica, Regadío, Fuentes de energía alternativa, Presas, Embalses.

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Potenciais hidráulicos: ideias, projetos e políticas no sul da Europa (século XX)

RESUMO

Este dossier reúne os trabalhos de investigação de um grupo de historiadores sobre a questão dos "potenciais hidráulicos". A pressão demográfica e a procura crescente de água foram processos paralelos. Os países do Sul da Europa partilham problemas comuns que são analisados. Os projectos surgiram na viragem do século XIX, quer devido ao nascimento dos Estados-nação, quer devido à consolidação do Estado liberal. Através da análise da literatura existente com fontes, muitas delas inéditas, provenientes de arquivos dos diferentes territórios, é adoptada uma metodologia comparativa. Os artigos partilham as dificuldades institucionais que prolongaram a conversão dos projectos em realizações efectivas que permitiram a modernização das infra-estruturas hidráulicas. O papel dos técnicos é também destacado ao longo do processo. As especificidades de cada caso incitam-nos a aprofundar esta abordagem comparativa em países que tradicionalmente não trocam muitos conhecimentos.

PALAVRAS-CHAVE: Política da água, Irrigação, Fontes de energia alternativas, Barragens, Reservatórios.

Potentiels hydrauliques : idées, projets et politiques en Europe du Sud (XXe siècle)

RÉSUMÉ

Ce dossier rassemble les recherches d'un groupe d'historiens sur la question des « potentiels hydrauliques ». La pression démographique et la demande croissante en eau ont été des processus parallèles. Les pays du sud de l'Europe partagent des problématiques communes qui sont analysées. Les projets ont émergé au tournant du 19e siècle, soit en raison de la naissance des États-nations, soit en raison de la consolidation de l'État libéral. En analysant la littérature existante à l'aide de sources, souvent inédites, provenant des archives des différents territoires, une méthodologie comparative est adoptée. Les articles font état des difficultés institutionnelles qui ont prolongé la conversion des projets en réalisations effectives permettant la modernisation des infrastructures hydrauliques. Les techniciens sont également mis à l'honneur tout au long du processus. Les spécificités de chaque cas nous incitent à approfondir cette approche comparative dans des pays qui n'ont pas traditionnellement échangé beaucoup de connaissances.

MOTS-CLÉS : Politique de l'eau, Irrigation, Sources d'énergie alternatives, Barrages, Réservoirs.

Potenziali idraulici: idee, progetti e politiche nell'Europa meridionale (XX secolo)

SOMMARIO

Questo dossier mette in comune le ricerche di un gruppo di storici intorno alla questione dei "potenziali idraulici". Pressione demografica e aumento della domanda di acqua sono stati processi paralleli. I paesi dell'Europa meridionale condividono problematiche comuni che vengono analizzate. I progetti emergono nell'ambito del XIX secolo, sia per la nascita degli Stati-nazione, sia per la consolidazione dello Stato liberale. Analizzando la letteratura esistente con fonti, molte delle quali inedite, di archivi dei diversi territori, si adotta una metodologia comparativa. Gli articoli condividono le difficoltà istituzionali che hanno allungato la conversione dei progetti in risultati effettivi che hanno permesso di modernizzare le infrastrutture idrauliche. Si attribuisce anche un grande protagonismo ai tecnici durante tutto il processo. Le specificità di ogni caso ci incoraggiano a approfondire questo approccio comparativo in paesi che tradizionalmente non hanno scambiato troppi conoscimenti.

PAROLE CHIAVE: Politica idraulica, Irrigazione, Fonti di energia alternativa, Dighe, Laghi artificiali

Introduction

Water is a common good that has been essential to the development of modern societies. Not just that, though. We can identify two theories throughout history expressed by the various social and natural sciences that have examined these processes. On the one hand, those that relate the control of water resources to despotic forms of administration and, therefore, to the great civilisations such as Egypt, the Mesopotamian peoples, India and China[1]. On the other hand, there are those who have focused on the human capacity to associate and even implement systems of democratic participation. The forms of appropriation and access to water are conditioned by an institutional background in both dominant models. This generates relationships that are not always egalitarian, in which "management, cultural and technological uses, together with the quality and quantity of use of the resource that is made come into play"[2].

From any point of view, there has always been a pattern that accompanies any water regulation policy. In fact, the four main objectives of water regulation are the supply of urban centres, flood control to prevent flooding, the increase of energy possibilities and the expansion of intensive agriculture. Water issue is a front of collision between different interests[3]. The complexity of the different targets implies the need to deal with both private agents, interested in its proper functioning, and the state, as the provider of an essential good. The wealth of literature on water demonstrates the interest generated by its study and its implications in the common goods framework[4]. More recently, environmental historians linked worldwide problems, such as the climate crisis and the alteration of the hydrosphere, with large dams. The discussions about water politics are frequently brought up and connected to the massive change in river management[5].

This dossier focuses on the twentieth century not by chance. This is the time when the link between state power and water control became most significant. From a bottom-up viewpoint, diary users of the good demanded an institutional framework that ensured a certain equality of access and clear rules to avoid indiscriminate uses[6]. The need to supply water to ever larger population centres and to produce goods and services —food and energy— for ever larger collectives, meant that the struggles between the different institutions involved were also greater[7]. Seen from a top-down perspective, the state was compelled to step in because of the ever-growing scale, reaching a point where smaller collectives or private businesses could not afford to. This also had political and ideological implications, since the profound interventions to regulate natural resources was pivotal for the legitimisation of governments and maintain power. Mussolini stated that "Italy will be unrecognisable!" after the intervention of its regime. The dictator meant State intervention would have transformed the landscape but also regenerated the people[8]. According to fascist propaganda —which was also widely disseminated in Republican Spain in the 1930s— hydro-geological reorganisation and internal colonisation aimed to "rescue the land". Only by winning the battle against nature could "men be rescued"[9]. Reclamation of marshes, large dams, and the subsequent internal colonisation became the paradigm of an "authoritarian modernisation" of the rural economy and societies. In this way, hydraulic infrastructures gradually became not only a form of power as in the civilisations of the ancient world, but also a way for the State to articulate the territory it managed[10].

In this introductory article, we will try to explain why these areas of Southern Europe have been selected and how the question of "water potential" has evolved over the course of the twentieth century. Then we will reflect on the role played by technicians in the whole process of water modernisation and what was achieved in the cases studied. Finally, we will draw some conclusions that should be complemented by the readers by reading the rest of the papers of this dossier.

Areas studied and the historical evolution of the water issue

Everything Everywhere All at Once? Clearly not. Due to the hydrological conditions of the countries in Northern Europe, massive infrastructures were not needed

[1] Wittfogel, 1964.
[2] Ávila Garcia, 1996, 29. Ortega Santos, 2012, 74.
[3] Molle; Mollinga; Wester, 2009.
[4] Glick, 1970. Hunt; Hunt, 1976. Maass; Anderson, 1978. Kelly, 1983. Ostrom, 1990.
[5] McCully, 1996. Ansar; Flyvbjerg; Budzier; Lunn, 2014. Evenden, 2018.
[6] Calatayud Giner, 2016. Calatayud Giner; D'Amaro, 2019.
[7] Bardhan, 2005.
[8] Armiero; Biasillo; Graf von Hardenberg, 2022.
[9] Baravelli, 1935, 49-50.
[10] Melgarejo, 2000.

for water storage and distribution network. This was necessary for both hydroelectric power generation and irrigated agriculture in Southern Europe. That is why, this dossier mentions Portugal, Italy, Greece, and Spain, all of which had quite different conditions. The need to regularise river basins so that their benefits could reach wider communities was considered a *sine qua non* for the development of the country. New techno-scientific bodies of the public administration, such the Spanish *confederaciones hidrográficas*, imposed their authority over the management of the river through no-political boundaries. This process implied a struggle between the State and the socio-economic and political local agents[11].

In the second half of the nineteenth century emerged the need to participate in the internationalisation of agricultural markets and to find of new sources of energy. In the drive to increase agricultural productivity, the shift from rainfed to irrigated agriculture became a priority. This process accompanied the fin-de-siècle agricultural crisis, which also forced the modernisation and adaptation of farms to the new markets. In addition, the emergence of electrical energy and the advancements in its transportation provided a significant boost to the growth of the agricultural sector[12].

What role did water play in these processes? It was essential. And it is also related to the formation of modern states. In Italy, it coincided with its stabilization as new state; in the cases of Spain and Portugal, it was associated with the consolidation of the liberal state; in Greece, it runs parallel to the annexation of Macedonia and the rest of the northern regions. At that time —the last third of the 19th century and the first third of the twentieth century— water became a state issue in the countries of Southern Europe. In fact, the Spanish water laws date back to 1866 and to 1879; the Portuguese one to 1868; the Italian one (Baccarini Law) dates from 1882. This last was also the year in which the first hydroelectric plant, the Appleton plant in the state of Wisconsin in the United States, went into operation. Greece decreed about water regulation during the 1920s, when the country began to govern its recently acquired territories following the Treaties of Bucharest (1913) and Sèvres (1920). As the state and property rights were consolidated, water was implicated in the modernisation processes of these countries. Indeed, in this dossier, the extraordinary case of the "Crazy Waters" of Euripus strait will be analysed as exemplary to show the state involvement. The Greek Thalassographic Committee was created in 1920; shortly afterwards, the Chalcis Station was set up to study the specific case of the Euripus strait, and after 1945, the study of its energy potential began. The study of hydraulic potentials, usually limited to river regulation, was extended to marine waters. This is the case of the French government, which set up an experimental plant to obtain energy from tidal waters in Brittany in 1925. The first steps in this field were followed by the United States and Canada, as shown in the study by Dorovithsa in this same dossier[13]. However, the energy potential of water regulation found its full expression in the construction of hydroelectric dams.

Since the end of the nineteenth century, but most notably since the fifties of the twentieth century, the construction of dams was a major pillar of the State intervention in economy and landscape transformation. Ever larger and higher dams demonstrated the ability of States to organise materials and people to carry out great public works; but also, the ability of engineers to master and correct nature. Some scholars stressed that large dams reconfigure the territories that became the materialization of contested ideas, knowledges, and practices. They refute "the emphasis on man's agency and ability to actively shape the physical and social environment", because this idea keeps separating the humans and the nature, the order and the savage[14]. Notwithstanding, the civil engineers were the makers of the hydraulic works, deemed as secular temples of modernity and impressive expressions of technological and social progress. Water and electricity got together as resources of the country's development. But the new infrastructures policies were also linked to the question of agrarian reform. The processes of agricultural modernisation in the first post-war period Europe required a major overhaul of agrarian structures. In some cases, such as Greece, this process had to do again with the construction of a new geographical space that required proactive policies towards the new citizens. But what seemed increasingly clear was that in an agriculture, with certain environmental limits due to irregular rainfall, the reforms needed to incorporate technical aspects. Reform of property and production

[11] Bonan, 2019, 326. D'Amaro, 2022, 16. See also Parrinello; Serneri, 2022.
[12] Garrabou, 1988, 7-34. Antolín, 1988, 635-655.
[13] Guillé, 2009, 133-146.
[14] Boelens; Shah; Bruins, 2019, 6-7.

became to be linked to the hydraulic infrastructures: they were essential to turn unirrigated land into fertile and more productive areas. These ambitious water policies implied the intervention of the State; which was considered the only agent able to undertake the construction of these immense infrastructures[15].

The so called European Civil War (1914-1945) largely conditioned the rate of growth in the construction of dams and other hydraulic infrastructures, although it gained political weight thanks to the propaganda of regimes as different as the one of Roosevelt's, Stalin's or Mussolini's. Its global dimension gained recognition when the International Commission on Large Dams (ICOLD) was created in Paris in July 1928.

The water issue once again gained prominence after 1945. USA and URSS starred in this hydraulic race; and other European countries, such as France and Switzerland, or recently decolonised countries, as India or Egypt, joined to it[16]. Public works based on hydraulic engineering were the symbols of a nation that wanted to consolidate and modernise itself. As Nehru said, dams were the temples of modern India[17]. Although we are now familiar to thinking of major water interventions as an element of social conflict, environmental protest, or diplomatic problem[18], during the Cold War this was less evident. The reasons were mainly twofold: on the one hand, opposition was silenced, often disorganised or, in many of the countries analysed here, repressed by an authoritarian government; on the other hand, there was a certain consensus of confidence in the achievements of hydropower dams. During the Cold War, the "hydraulic mission" of the States became a part of the clash for ideological and scientific superiority and this increased the influences of the "hydraulic bureaucracies": jurists, economists, and civil engineers. This institutional framework present in several countries of the world, was the result of various initiatives for schooling and agronomic research[19].

In this dossier, the political dimension of water policies is discussed as part of the socio-technical engineered hydro-social process[20]. Chatzis stated that "the technological dimension represented an important component of national identity" not just of the most industrial countries, such as USA or Germany, but, for example, of Greece and Portugal[21]. Civil engineers and agronomists were not only leaders in this process, but they used the government ambitions to apply and advance the achievements of the international scientific community. On the one hand, as Worster wrote, hydraulic requirements "favoured the formation of a powerful elite of scientists and engineers with the almost sacred knowledge to manipulate nature"[22]. On the other hand, this national technical elite legitimated its work, in dictatorial regimes too, through the participation in international meeting claiming its apolitical nature. An example of this was the eight congress of the International Commission on Large Dams (ICOLD) that, in 1964, brought together more than 1.500 participants from 52 countries. There were 11 reports from various national committees; 15 varied communications and more than 159 individual reports for the 4 main themes of the meeting, then summarised and commented on in the 4 General Reports. There were circulating some special publication prepared by the national committees. The British *Water Power* journal, the French *Travaux* journal, the Spanish *Revista de Obras Públicas* or the other ones from Austria, Japan, etc. were considered as other contribution to the congress[23]. The engineers working in different political regimes found in the congresses not only a safe space to share knowledge, but also a way to get the attention and approval of their peers in leading countries.

States and technical sectors became part of a massive water regulation which increased the quantity of resources available and changed the political and productive meaning of waterworks and their geographical distribution. Perhaps Spain may be considered as an example of this process. At the beginning of the century there were 14 dams, all below 50 m and only two of them on the Atlantic slopes. In 1934 there were 97 dams, 58 of them on the Mediterranean side (there were also works in the Canary Islands, but of little importance). They were gravity dams and none higher than 100 m, nor with a reservoir volume greater than 342 million m^3 (the average volume of the most recent dams was 25 million m^3). From the end of the forties, a "new phase of construction activity" began: 9 dams in 1947, 2 in 1948, 4 in 1949, 2 in 1950, all of them modest in height and volume and always gravity-fed. The pace of construction accelerated in the 1950s. Between 1950 and

[15] Brassley, 2010, 147-162. Camprubí, 2011.
[16] Sneddon, 2015.
[17] Cremin, 2009.
[18] Del Bene; Scheide; Temper, 2018. Schapper; Unrau; Killoh, 2020.
[19] Vivier, 2008.
[20] Swyngedow, 2015, 100.
[21] Chatzis, 2007, 194.
[22] Worster, 1982, 505-506.
[23] Siniscalchi, 1964, 58-73. Palomares Alarcón, 2025.

1955, 43 dams were completed, and between 1956 and 1961 further 61. In 1964, there were 344 dams in service or under construction: 140 on the Mediterranean side and 204 on the Atlantic side[24]. The undoubted growth of hydroelectric production and ambitious plans for internal colonisation, through the development of irrigation, attracted the attention of other countries, albeit with different chronologies and meanings. In this dossier, the papers of Francesco D'Amaro and Ignacio García Pereda expand this comparison and analysis by examining engineering output and social discourse both between Italy and Spain, and between Spain and Portugal. But all the articles can be seen as part of a comparative history of the hydraulic intervention in the Mediterranean countries.

From projects to real achievements

Comparative history allows us to identify subtle differences across various decades and countries. As previously mentioned, one of the common aspects is the coincidence in time of most of the first water laws, which occurred in the last third of the nineteen century. This indicated the interest that public policies were adopting on this issue. It is also noteworthy that, in the cases we looked at, some of the projects that were finally implemented date back to very ancient times. Thus, the most extraordinary example we have is the Strait of Euripus, whose almost countless tides and their possible uses attracted the attention of the Greco-Roman classics, as Effie Dorovithsa's work shows.

Another similar case would be that of the Bardenas channel in north-eastern Spain. The waters of the Aragón River, a tributary on the left of the Ebro River, have been observed for more than five centuries precisely because of the potential they offered for irrigation, but it was not until well into the twentieth century that they were definitively created. It is precisely from the fifteenth century onwards that wind mills for the generation of hydroelectric power experienced their golden age, especially in the Netherlands. The interest in harnessing tidal power was present in British and French research in the waters of the English Channel.

However, the complexity and enormous investment of the works to optimise these resources would have to wait until the twentieth century. As has been pointed out, major public works policies experienced their moment of splendour during the first third of the twentieth century. But not in all cases they were carried out at the expected pace, something shared by the countries of Southern Europe, whose lack of industrialisation acted as a restraint on this type of work. The Spanish case is paradigmatic, since what could be called a white book of the steps to be taken was drawn up in the so-called Gasset Plan (1902). Some three quarters of the proposals in this plan were materialised along the twentieth century. As can be seen in Pereda's work in this dossier, the Hydraulic Law of the Portuguese government in 1937, with Salazar already leading the dictatorship, combines the Spanish model with the reaffirmation of its rights over the international waters of the rivers that cross the two countries of the Iberian Peninsula: the Minho, the Douro, the Tagus and the Guadiana.

In the Greek case, the irregularities of the Mediterranean rivers, especially in Macedonia, led to an enormous effort of the state to simultaneously carry out an agrarian reform of structures and the creation of irrigation infrastructures. This debate between technicians and the state is the focus of Angelis-Dimakis' research, which brings new approaches to what has already been observed by historiography, in a process interrupted by World War II[25]. The state presence in the new territories has Italy as a reference point. The *bonifica integrale* policy initiated after the Great War, continued by Mussolini's dictatorship and finalised through the Italian agrarian reform of 1950 is the example to be followed[26]. In Italy, the integral *bonifica* —i.e., the massive hydraulic interventions and agricultural transformation of a rural area— was considered conducive to the social policies of internal colonisation and agrarian reform. New villages with public services were strictly linked with dams and irrigation canals, either during fascism or the republic[27].

The internal colonisation is the winning concept in all this time. It is used as an all-encompassing word that includes all operations involving the construction of hydraulic infrastructures, the transformation of land, the settlement of new settlers, the relocation of others. The propaganda of Mussolini's regime around the Bonifica was such that it has traditionally been associated

[24] See the special issue of the Spanish *Revista de Obras Públicas* of 1964, 112(2988).

[25] Karavas, 2010. Vlachos, 2023.

[26] Gómez Benito; Misiani, 2017.

[27] Bevilacqua; Rossi-Doria, 1984. Stampacchia, 2000. Misiani; Sansa; Vistoli, 2020.

with the period of the dictatorship[28]. This went on so Franco's Spain as Salazar's Portugal. It is important to underline that, still in the fifties, rural colonisation plans of the Italian Republic remained one of the most influential models for Mediterranean countries. In Italy, an impressive public works program was carried out with abundant financial resources in the decade after the Second War World[29]. As Misiani's paper of this dossier highlights, despite the continuity of the techno-scientific culture and institutional network, the socio-political rupture by the democratic regime implied an important change in the demography of the countryside and in the egalitarian access to water resources. While D'Amaro points out that political changes in one country can damage relations between technical sectors of two countries despite the claims of an entirely impartial international community of experts. Spanish engineers continued to look to Italy as a global reference in hydroelectric and internal colonization policies during the second post-war period. However, until Franco's developmentalist shift in the 1960s, Italian engineers exhibited a certain reluctance to consider the work of their Spanish counterparts.

Franco's policies in Badajoz or Ebro region during the fifties tried to realise something similar of what was achieved in Italy or USA. Actually, USA became the pivotal leader in the internal colonisation, thanks to the Cooperative Extension Service. It was a technical influence, especially in Spain, but also a political supervisor and economic assistant for agricultural modernization measures[30]. Spanish historiography paid great attention in recent decades to these agrarian policies and to the transnational ruralist discourse on twentieth century[31]. In particular, the comparison among public policies and agricultural life in different countries is a very fertile sector, especially in the case of fascist and authoritarian European regimes in Interwar and Postwar periods[32].

In the Spanish case, as we shall see in the works of Riesco & Rodríguez, and Alagón, announcements are one thing, but the completion of the projects is quite another. Both the Badajoz Plan, the great colonisation project of Franco's dictatorship, and the construction of the Bardenas Canal took a long time to complete. These were not minor projects, as both generated irrigation for 100,000 and 50,000 hectares respectively, but it is remarkable how persistent the propaganda linked to the dictatorships was. In the Portuguese case, Gª Pereda focuses on the case of the Caia reservoir, with its 200 hm3 and the creation of a whole lobby around its construction. The Iberian dictatorships presented these projects as reformist works. However, they conceal an enormously complex process of social engineering, as we will see in the different works. In addition, these mega infrastructures make the works and projects drag on for a long time.

In fact, through Faísca's work, we can understand the background to the construction of what is now the largest reservoir in Western Europe, the Alqueva. But his study, beyond the big figures, reflects on the capacity of this type of work to generate - or not - wealth. To do so, he takes as a reference the regions of Alentejo (Portugal) and Extremadura (Spain) over the last 70 years, to consider whether the construction of reservoirs ultimately serves to fix or to expel population. Because in the long term, when there is greater awareness of water through the development of the concept of the water footprint, what this dossier also asks is whether these hydraulic potentials have improved people's lives. If European agriculture reached its productivity peaks in the years of the Golden Age (1945-1973) at the same time as mechanisation led to a reduction in the percentage of the labour force dedicated to the primary sector, what is the balance that can be made of all these infrastructures?

Preliminary conclusions

This dossier focusses on the water regulation during the central decades of the twentieth century in the Southern European countries which saw infrastructure and techno-scientific intervention as necessary to both facilitate the desired industrial take-off and modernise agriculture and rural and urban life. In particular, the idea of poorly distributed and irregularly flowing water prompted governments and engineers to focus on the construction of hydroelectric dams and the expansion of irrigated land. We are aware that the vision presented here is essentially one of top-down intervention by politicians, economists, and engineers. These presented themselves as the builders of new landscapes and new, more modern and developed nations. But, in doing so, we do not want to hide the effects of this mega project on the environment, and social participation, both for and against large

[28] Riesco, 2020, 123-145.
[29] Rossi-Doria, 1958.
[30] Gómez Benito; Luque Pulgar, 2006. Pan-Montojo, 2016. Brendel, 2022.
[31] Lana Berasáin; Soto Fernández, 2019. Rodríguez Jiménez, 2022.
[32] Fernández Prieto; Pan-Montojo; Cabo Villaverde, 2014. Martiin; Pan-Montojo; Brassley, 2016.

infrastructures. The debate around the dam-building programmes is still going on. And several research are pointing out the displacement of communities, the elimination of traditional and sustainable forms of production, or the destruction of natural environments.

However, the papers in this dossier address some issue related to water policies, including their pivotal role in internal colonisation, both in dictatorial and democratic regimes; their effects on the evolution of legislation and economy about public resources; the emergence of the hydraulic engineering, as one of the most important scientific field of Cold War era; the exploitation of technical aspects to forge political ties between two states; the continuity of scientific culture and technical networks despite the socio-political rupture after a political transition; the shift in the paradigm from irrigation desires to the obsession for energy production, since electricity became one of the symbol of modernity; and, lastly, to reflect on the role of large infrastructures as an element of political legitimisation of mid-twentieth century regimes.

The collection of works here presents the idea that reciprocal influences and regional differences are components of transnational dynamics that, in practice, extend beyond the four nations under consideration. Greece, Italy, Spain, and Portugal are good candidates for comparative analysis because of their similar production and climate traits, the importance of agriculture and ruralist discourse, and their hydro-geological challenges. Moreover, given that there was a political transition in each of the four cases, with the arrival or the fall of an authoritarian regime, their study shows the entanglement between the technical intervention and its political meaning.

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Authorships

Francesco D'Amaro: conceptualization, formal analysis, investigation, methodology, writing – original draft, writing – review & editing.

Sergio Riesco: conceptualization, formal analysis, investigation, methodology, writing – original draft, writing – review & editing.

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