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# Changing for nothing: institutionalized collective action and socio- economic evolution in the hydraulic system of Murcia (XVIII<sup>th</sup>-XX<sup>th</sup> c.)

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**Abstract — Changing for nothing: institutionalized collective action and socio- economic evolution in the hydraulic system of Murcia (XVIII<sup>th</sup>-XX<sup>th</sup> c.)** The hydraulic system surrounding the City of Murcia (South East Spain) shows a contradiction in terms of social justice. In spite of the existence of a number of elements in favour of the development of a well-balanced socio-economic structure, such as several irrigation principles, rules and institutions based on common sense and the practical use of irrigation, the system was distorted by the ambitions of a well-established oligarchy and the creation of a class of poor tenants and day labourers. The paradox of the hydraulic system of Murcia lies on the fact that once an acceptable democratisation and social balance level were reached, its economic capacity failed. As a matter of fact, social justice was not provided by the system itself, but by the general positive social evolution and economic growth since the 60s-70s. A number of socio-economic features are explored in addition to institutional parameters to measure the evolution of the equity of the system.

**Résumé — Changement et continuité : action collective institutionnalisée et évolution socio-économique dans le système hydraulique de Murcie (XVIII<sup>e</sup> XX<sup>e</sup> siècle)** Le système hydraulique de Murcie montre une contradiction historique en termes de justice sociale. Malgré la présence de certains éléments favorables au développement d'une structure socio-économique équilibrée (certains principes, règles et institutions sur la distribution de l'eau et l'administration des arrosages), le système s'est altéré sous l'effet des ambitions d'une oligarchie séculaire et de la formation d'un groupe social appauvri composé de colons et de journaliers. Le paradoxe du système est lié au fait fait que l'équilibre démocratique et de la justice sociale une fois acquis, sa viabilité économique s'est affaiblie. La justice sociale n'a pas, en fait, été obtenue à travers le système lui-même mais par une croissance économique soutenue et d'une évolution sociale favorable depuis les années 1960-1970.

## Introduction

In strict terms, the sense of fairness within a society is developed both through the legal framework that regulates different relationships between the citizens, and the institutions that conceive and execute such a framework. The concept of equity refers then to the nature and the contents of justice. Nevertheless, this "legal approach" does not provide a concise definition of what is fair for everybody. As a matter of fact, according to Kelsen (Kelsen 1971) universal laws applicable to all social groups at all times do not exist. In other words, rules change when the social values of the group do, or, in the context of a community dominated by an influential leading group, when the elite decides so (Boelens 1998). In order to define what is equitable, it is necessary to examine the features of the different social groups within a community and its economic structure. The characteristics of a social group (its evolution and principles, the strategies followed by its components) determine the particularities of a

hydraulic system (the structure of property, the management of water, the organization of irrigation) and consequently the socio-economic disparities between the different sub-groups and the existence or absence of individuals below the minimum standard of life. The historical evolution of the hydraulic system of Murcia shows a number of different combinations between institutional models and social and economic principles that suggest a number of parameters as indicators of a well-balanced situation in terms of social justice. The influence of a dominant social group distorted a relatively equalitarian system of water distribution and administration and provoked an increasing difference of wealth between the ruling oligarchic group and the lower classes. During the Modern and Contemporary ages, a significant percentage of the population of Murcia found itself reduced to a subsistence level, even suffering misery and famine. This distortion, introduced as a process since the XIVth-XVth centuries, continued till the first half of the XXth century, when the situation improved.

The identification of the parameters in order to measure how equitable is a community depends on the structural values adopted. An interesting approach concerning the contemporary analysis of hydraulic systems comes from the concept of sustainability, which tries to combine environmental protection and economic and social development. Nevertheless, scholars do not agree about the identification of the sustainable key factors (Merrey 1996). As showed in Table I, the existence of independent management institutions ruled by an effective participation of the users through a set of clear rules that define duties and responsibilities for the irrigators are considered some expressions of the robustness of long-enduring common pool resources (Ostrom 1990 and 2000, Tang 1992). It must be stressed that institutional principles as such cannot explain the reasons why a hydraulic system ruled by a highly autonomous management body and framed by a technically correct code of regulations at its disposal may not offer equity for its users from a social and economic point of view. The socio-economic parameters showed in Table II consider some additional features to be analyzed, namely socio-economic unbalances, the nature of the land and water, the efficiency of the irrigated exploitations from an economic perspective, as well as State intervention.

On the institutional side, the hydraulic system of the traditional Huerta of Murcia has proven to be a sustainable model of water management. The principles and values applied constitute an original and effective collective action to solve the well-known problem of sharing a scarce good and the equal use of a common good (Maas 1978, Ostrom 1990). In spite of the institutional maturity of this model, the socio-economic transformations since the second half of the XXth century have deeply affected the appearance of the Huerta: an increasing urbanization pressure and a continuous division of the land have resulted in the loss of cultivated land (nowadays the traditional Huerta of Murcia has a surface of around 11.000 Ha) and the elimination of certain cultural and environmental values. In the worst of scenarios, the traditional hydraulic system of Murcia would virtually disappear by 2025 (Martínez & Esteve, 2003).

On the other hand, although the traditional irrigation system of Murcia is not economically efficient according to the standards of the modern agriculture techniques, it is important to underline the historical, cultural and environmental values behind its apparent decadence.

## **Organizational principles, institutions and law**

It is a common place to stress the relationship between the effective participation of irrigators in the institutions in charge of the management of the hydraulic system (an “effective democratization” of the system) and the development of the principles of social justice. Throughout the centuries, the organization of the hydraulic system of Murcia has been based on the following principles:

- water is considered a public good, and free market rules are not applicable; water has a community character: the volume of water is an abstract whole that is distributed between the members of the system;
- the principle of proportional distribution; water is attached to the land; it is distributed in proportion to the surface of land that receives it;
- participation of the irrigators in the control of the distribution of water and the management of the system, through their representative bodies;
- clear rules that define the duties and rights of the irrigators, rules that are closely related to the practices of the users of the system: since the XIVth century a Code of written rules exists, although the Ordinances currently in force were compiled essentially in 1848;
- a jurisdictional body competent to deal with disputes between irrigators and to sanction the infractions of the irrigation ordinances.

It is important to stress that the apparent equity of the two first principles come from an age prior to the Christian conquest in the XIIIth century, and therefore have not been transformed by the circumstances provided by the new political, economic and social framework. Certain scholars underline the role of rural communities during Muslim times. Those communities, linked by family ties, managed the irrigation system and enjoyed a substantial autonomy or self-government. Their links with the State were reduced to the regular payment of taxes. Ideally, Muslim communities would apply strict principles of proportionality and equality (Guichard 1977). Nevertheless, the principle of proportionality is distorted today, because of the successive enlargements of the system: the longest canals have not increased their share of water in proportion to the enlargement of their surface.

In spite of the continuity of those principles, relevant changes took place concerning the institutions in charge of the administration of the system and the distribution of water. Although the essential part remained in place (the rules necessary for the continuity of the system), the old autonomy of the communities was substituted by the increasing control of the municipal council (Concejo). From an institutional point of view, there are two levels of representation in the Huerta: the community (restricted to the area watered by a canal), and the Huerta as a whole. A community (*heredamiento*) is constituted of both a secondary canal (*acequia menor*) and the lands that have the right to receive its water. Each community has a representative or executive officer (*procurador*), appointed by an assembly of irrigators/landowners. Irrigators are bound to participate in the activities of the community through the assemblies (*Juntamentos particulares*) to decide upon matters concerning a particular community, at least twice a year<sup>1</sup>. Those assemblies and posts have always existed, and show an apparent strength of the representation of the irrigators in collective decision-making procedures. Nevertheless, we should emphasize the fact that historically the wealthiest irrigators have controlled the decisions of the assemblies, and normally the community itself was directed by a *procurador* who was also one of the largest landowners. Absence of irrigators in the assemblies was very frequent, and so were the examples of appointments of the head of the community by the *Corregidor* due to the lack of electors<sup>2</sup>.

On the other hand, concerning the Huerta as a whole, the shape and functions of institutions have deeply changed. During the XVth century, the high level representative institutions of the irrigators disappeared gradually, so that there is no reference to them in the different Compilations after the XIVth century until the Project Code of 1821. Meetings and assemblies of irrigators did take place on the community level, taking decisions concerning basic operations such as the cleaning of the canal and its maintenance. General Assemblies were held from time to time, but they lacked any structural character. General *Juntamentos* met after the call made by the municipal Council, generally in order to require the general support for specific purposes (i.e. tax collections) or the further involvement of the irrigators in a particularly important issue. By 1830 the municipal Council had lost its patrimony (*bienes de propios*); its budget could not meet any obligation concerning the protection and maintenance of the Huerta. Therefore, the irrigation system was about to collapse. In the *Juntamento General* of November 1834, the irrigators/landowners took the control over the maintenance of the system and the financial powers required for its management. Although a clear involvement of the associations of irrigators was actually taking place at the beginning of the XIXth century (the 1821 Project failed due to the general political instability in the context of the confrontation between the liberals and the supporters of the absolute powers of the king), this role was recognized formally within the political framework of the moderate government of general Narváez in 1849.

Table I indicates the existence of a set of clear rules as the first institutional parameter for social justice. Rules should be based on practical solutions provided by the common behaviour of the users, free from the influence of institutions, organizations or individuals whose interests do not coincide with those of the community of irrigators.

On the other hand, nowadays an executive board (the Commission of Landowners, or *Comisión Representativa de Hacendados*), chaired by a President, is elected and monitored by the General Assembly (*Juntamento General*) of landowners-irrigators. The General Assembly is the supreme institution of the Huerta<sup>3</sup>, since the most important competences concerning irrigation have been conferred to this body<sup>4</sup>. The Assembly approves the revisions of the *Ordenanzas*, the collection of taxes and the general

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<sup>1</sup> Art. 101 of the current *Ordenanzas*.

<sup>2</sup> For example in 1747 in the *heredamiento* of Aljadeta (Municipal Archives of Murcia, MAM, leg. 3946), in 1779 (MAM, leg. 3969 (8) in the *azarbe del Gilico*.

<sup>3</sup> Art. 89. Art. 90 and 91 declare that the General Assembly is composed by all the landowners and representatives of the canals, or those of one half of the Huerta (Northern or Southern).

<sup>4</sup> Art. 89.

budget; it elects the President and the Vice-President of the Community of Irrigators, and controls and monitors the activities of its executive body. Decisions are taken by qualified majority, taking into account that the number of votes at the disposal of each landowner varies according to the surface of land entitled to irrigate<sup>5</sup>. Those institutions exercise their authority over the entire system, and they are not subordinated to alien institutions (e.g. the municipality). Nevertheless, till the XIXth century, the municipality was in charge of the administration of the hydraulic system (including the distribution of water). At the same time, the members of the municipal Council accumulated lands and power enough to reach an oligarchic position in the City. Access to a reduced number of municipal executive posts (regidurías) became restricted to the members of the most important families; municipal positions were considered just a part of their patrimonies. This situation formally lasted till the XIXth century, when the representative bodies of the irrigators regained the administration of the irrigation system. We must take into account the influence of the municipal Council and the individual and group interests of its members in the development of the irrigation system. The most powerful members of the Council were at the same time the largest landowners of the Huerta and tended to ensure their possessions within family lines. Therefore, it could be said that the institutional changes introduced by the intervention of the municipal Council in the hydraulic system implied a significant distortion of the social balance, and favored the development of social breaches between landowners on the one hand, and tenants farmers and day laborers on the other.

As the rest of general institutions, the jurisdictional body (in charge of applying the code of *Ordenanzas* to the disputes between the irrigators) has changed throughout the centuries: nowadays the *Consejo de Hombres Buenos*, composed by representatives of the different canals, plays this jurisdictional role, and therefore the participation of the irrigators in the administration of justice is guaranteed. Nevertheless, since 1708 this function was performed by the president of the municipal Council, the *Corregidor*, who was in fact a royal agent, since he was appointed by the Crown. The independence of the *Corregidor* proved to be an element of moderation amongst the ambitions of the most powerful clans within the Council. The quick justice provided by the *Corregidor* or his officials enforced the *Ordenanzas* even against the will of certain influential persons or institutions, both religious and secular<sup>6</sup>. As a matter of fact, the *Corregidor* acted as an instrument of social equity (maybe not social justice) by trying to enforce the principles of proportionality and equity registered in the *Ordenanzas*. His executive powers are used to ensure the maintenance of the system<sup>7</sup> or the distribution of water<sup>8</sup> (frequently jeopardized by the activities of certain powerful landowners<sup>9</sup>).

Table I indicates the effective participation of the irrigators in the management bodies and independent management bodies as two institutional parameters of social justice. Institutions enjoying an autonomous status free from the influence of external actors, such as the municipal power of the State itself have more chances for sustainability and therefore for a better balanced social justice. If the hydraulic system reaches a certain extension and complexity, then a differentiation between a community representation (i.e. irrigators taking water from a single canal) and an overall representative institution appears. In the case of Murcia, the community level ensures an effective representation and participation of all irrigators in the management of the canal; at a higher level, general bodies ensure democratic participation. It is important to differentiate a “formal” from an “actual” participation. In Murcia it is possible to find a paradigmatic example of a perfect system of participation in the management structures without a real democratization till the XXth century. The influence of the oligarchic groups distorted completely democratic participation, as it will be explained.

The institutional framework in Murcia has changed (although not formally) since the creation of the Segura Basin Authority (Confederación Hidrográfica del Segura) in 1926. The CHS was an answer both to the environmental constraints of the Mediterranean climate (violent and destructive floods combined with one of the most arid environments in Europe<sup>10</sup>) and to the need to enlarge the control

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<sup>5</sup> Art. 94.

<sup>6</sup> The king granted the *Corregidor* the jurisdiction over the whole Huerta, including certain seigniories such as La Ñora, Javalí, Alquerías or Beniel.

<sup>7</sup> Examples of intervention in the *mondas* or canal cleaning could be found in MAM 1740, leg. 3941 (9); 1761, leg. 3969; 1785, leg. 3969 (13); 1807, leg. 3961 (9).

<sup>8</sup> For example in 1725 (MAM, leg. 3976); in 1748, (MAM leg. 2901) he revised the accounts after the operation.

<sup>9</sup> See, as an example, the execution of works to eliminate certain meanders of the river from Raal to Casillas in 1711, against the will of the Society of Jesus, an important landowner, MAM, leg. 397.

<sup>10</sup> Especially hot summer periods limit agricultural production to the zones closer to the rivers and water sources. Rainfalls are irregular and scarce, although particularly heavy in certain seasons (an average of 34 days a year, mainly in October and April), and determine the flow of the river. Summer time is especially dry, with almost no rain at all during July and August.

of water resources. In fact, the ruling class of Murcia was interested in the growth of its own power; on the other hand, the central State intervened to solve the continuous conflicts between the different irrigation systems in the Segura basin. The State backed the implementation of a water storage and a floods control system based on a structure of barrages that implied a new dimension in the management of the hydrological resources: for the traditional system of Murcia, it meant the end of the irregular flows of the river and a certain amount of water available during the dry season (Hérin 1980). Nevertheless, the shift in the scale and conception of the management of the water resources also meant the rise of new conflicts between different basins. This is the basis of the current debate in Spain on the need to transfer water resources from one basin to another. Concerning the specific case of the traditional irrigation system of Murcia, the new basin authorities did not provoke a major distortion in its institutional structure and did not absorb its competences, as Table I shows. Taking into account the formal and actual democratization of the system, it would have been a mistake to introduce a hierarchically superior body, which would have led to a less direct participation of the users in the decision-making procedures.

## Socio-economic developments

Table II suggests the existence/absence of a dominant class and consequently the formation of a subordinated group as two socio-economic parameters. Obviously, the creation and consolidation of an oligarchic group as the last step of a historical process of concentration of land and power implies a serious obstacle for social justice. As it was mentioned before, the municipal Council acted, till the beginning of the XIXth century, as an instrument the largest landowners' interests. Sooner or later, the most successful local dynasties (that accumulated both lands and municipal posts) obtained from the Crown a title of nobility based on their lands, position and influence (Lemeunier 1998). As a matter of fact, certain members of the oligarchic group and a number of powerful religious communities were committed to the expansion of the Huerta. Once the municipal Council acknowledged their property rights, landowners immediately tried to settle groups of peasants in order to ensure the cultivation and production of their new fields. Tenants were offered advantageous emphyteusis contracts until the XVIIIth century, when landowners changed the leasing contracts and hardened their conditions. In Table II, the presence of a less favoured class is measured through the identification of patronized tenants and deprived day-labourers. The patronizing protection offered by landlords to tenants meant an unconditional support, both in terms of political indifference and acceptance of the existing social situation. In spite of the apparent adoption of "democratic" principles in the management of the hydraulic system since the Ordinances of 1848 (creation of administrative institutions, such as the *Juntamento General*, where participation has been granted to all irrigators), the members of the old oligarchy kept control over the new organization of the Huerta. As a matter of fact, democratic participation was distorted by the influence exerted by the big landowners. During the XIXth century and the beginning of the XXth century, a patronage system kept the population of the Huerta under the domination of a reduced number of patronizing masters in the sense explained by Joaquín Costa, the so-called *caciquismo* (Costa 1901-1902; Nicolás & Maset 1976). That explains again the differentiation between "formal" and "actual" participation of the irrigators in the management institutions as indicated in Table I.

Above all since the XVIIIth century, a large class of peasants constituted the labour force of the system. As Table II shows, the creation of an increasing group of seasonal laborers constituted a source of social disturbance and a clear indicator of social inequality: their precarious situation, sometimes on the verge of famine, lasted till the XXth century, above all in the event of bad harvests, economic crisis or catastrophic floods. It can be said that since the XVIIIth century, the process of consolidation of family patrimonies and large estates promoted by the oligarchy contributed to harden the conditions of life of the laborers without land and the less favored tenants, which constituted the majority of the population.

The third parameter introduced in Table II is the establishment of a land free-market structure. This feature is to be seen as part of the strategies of the oligarchy in order to maintain its own wealth and position. The institution of the *mayorazgo* constituted since the XVth century an effective means of

the oligarchic group to achieve their objectives<sup>11</sup>. It allowed no sale of the protected property whatsoever and ensured the right of the eldest son to inherit an indivisible land. In the XIXth century, the sale of protected or entailed lands (the so-called *desvinculación* and *desamortización*, a process related to the support of the new liberal State) did not improve the situation of the poorest sectors of the population. Property rights became clearly defined, frequently supporting the members of the oligarchy, and the liberalized lands were acquired by them. Nevertheless, the components of this selected group varied slightly. Only certain families that invested their capital based on trade activities in the acquisition of part of the liberalized lands succeeded in having access to local power and social preeminence. It is important to underline that the definition of property rights and the sale of municipal lands that were of common use eliminated a source of income for the lowest strata of the population, as they provided free wood or pasture. Common lands were bought by the wealthy families and increased their estates. In terms of social justice, perfect competition is offered only when land markets opens acquisition to a large sector of the population and are not restricted to the wealthiest classes (i.e., through a powerful bank/credit system that allows tenants to buy lands). Table II includes those obstacles as “other limits” to free access to property.

On the other hand, the economic efficiency of exploitations is considered as the fifth socio-economic element for social justice. It is not enough that the tenant has access to property, but also that the plot acquired is able to feed him and his family. Although historically agriculture production in the Huerta has been the source of high revenues for landlords, and plots have been large enough to cover the basic needs of the tenants, two relatively recent socio-economic developments have altered radically this perspective

- On the one hand, the distribution of the property suffered a fragmentation process. The trend towards the division of the plots accelerated since 1929, as a strategy of the landowners to maintain their income, and forced the peasants to cultivate different pieces of land at the same time and to work simultaneously as day labourers (Ayala 1984, GHAM 1992). Only the special relationship between both classes, based on patronizing patterns, kept the social breach far from open confrontation (Ruiz-Funes 1916; Victoria 1986), while in other agriculture areas of Spain an often violent antagonism was being hatched. This inferior position of the peasants is evident also in the legal texts concerning the decision-making procedure within the irrigation system, since law ignored them: only landlords counted at the time of decisions. Precisely, one of the demands of the revolutionaries in the Juntamento General of 1937 was to give more power to the peasants, and even to prevent the landowners that did not cultivate directly their lands from the right to vote. The property fragmentation process began in the Second Republic, when large landlords started to sell their estates. This process accelerated in 1932 under the government of Azaña and the implementation of the Republican Agriculture Reform Act, whose objective was to expropriate unexploited lands, so that it could be shared among the peasants. Nevertheless, once the Civil War finished, although the Franco régime imposed the restitution of the lands expropriated during the Republic, the process of land sales continued between 1940 and 1948. Expropriation and restitution measures were not frequent in the Huerta (González 1999). The agriculture market framework changed. It was no longer possible to maintain an agriculture production model based on exports, since the economic policy of the new régime required a strict isolationism and economic autarchy. Prices were subsidized by the State, and benefits fell drastically, so that tenants were allowed to buy the property of a plot of land. The property fragmentation process continued because of two reasons: successive divisions of the land through heritage, and the high demographic growth. Nowadays, even though large properties still exist (8,6% of the total surface), half of the land is in the hands of little or very little landlords (Hérin 1980, Calvo 1982). It is to be underlined that most of the landlords, including those that are not large or the largest ones, have their residence in the City and not in the Huerta; they conceive their agriculture activities as complementary to other main incomes. This fact explains why such little plots of land survive in a time of highly productive and intensive agriculture. The new agriculture methods are applied on relatively large surfaces to keep the exploitation economically efficient.

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<sup>11</sup> In the second half of the XVIIIth century the surface of entailed land reached 73% in the Huerta (Pérez Picazo & Lemeunier, 1990)

- On the other hand, the economic development initiated in the 60s altered substantially the existing economic structure. For the first time, the agriculture production of the Huerta (the economic basis of the City since its foundation) lost its position in favor of other economic sectors, industry and services. At the same time, and concerning the agriculture sector itself, production based on traditional schemes become less interesting than modern irrigation systems, as the latter offered high profitability and yield rates. Three factors explain the new impetus towards the creation of new cultivation areas: high economic growth since the 60s, expectations of additional water resources (through the building of a system of multiple barrages in the Segura basin, and the construction of a large transfer system from the Tajo basin, the so-called *travase Tajo-Segura*, finished in 1979), and the opening of the international markets to the Spanish agriculture products. As a result, the property structure of the Huerta, based on little exploitations cultivated by former tenants, could not assume the advantages offered by the increasing external demand of agriculture products. Little farmers developed the so-called “part-time agriculture”, in other words, the combination of agriculture work and a salaried work in the industry or service sectors. Agriculture dynamism abandoned traditional irrigation systems and developed new irrigated surfaces. The size of the exploitations enlarged, investments were required from the financial system in order to improve yield rates (introduction of mechanization, new fertilizers and better adapted plants), and industries based on agriculture products were created and associated to the modernization process, the so-called *agribusiness* (Cortina 1981). In sum, the socio-economic pillars that have made of the Huerta the very basis of the economy of the City for centuries (and its characteristic symbiotic model) had vanished by the 70s.

## Social balances and unbalances for a historical model

A number of parameters have been suggested as diachronic indicators of the level of social justice enjoyed by the different actors within the hydraulic system of Murcia.

- On the institutional side, three elements are taken into account to consider the existence of a democratic framework. A democratized decision-making procedure is accepted as the main element for a sustainable management of hydraulic systems. Firstly, an effective participation of the irrigators in the decision-making process, both formally and actually. It is clear that a gap between the appearance of the law and practice might result in a mere declaration of democratic principles without a real participation of the users. Secondly, equity is stressed through institutions in charge of the management of the system which are independent both at a “canal” level and at a “supra-canal” level depending on the level of complexity of the system. Although the State, the municipality or certain basin authorities could have an influence on the hydraulic system (i.e. providing a general water legal framework), users’ institutions have to enjoy financial (the power to collect money to be used in the maintenance of the system) and decisional autonomy for organizational purposes. Otherwise additional interests apart from the strict administration of the system would appear as a distortion of its sustainability. Thirdly, social justice is ensured with clear and defined rules applicable to all irrigators. The definition of the responsibilities and duties of the irrigators are to be based on the day-to-day practice, which guarantees its acceptance by all users. Irrigators perceive these rules as inefficient or unequal as external influences increase.

- Concerning the socio-economic parameters, the balance depends on the following factors:
  - existence/absence of a social breach between wealthy/poor classes, above all the presence of an oligarchy that could dominate the political, social and economic life;
  - free access/restrictions to land markets; the presence of entailed lands constitutes a major obstacle; actual restrictions such as the price of the land are to be taken into consideration;
  - the consideration of water either as a common good or subjected to the market rules: it could be assumed that if water is not priced, the objectives of social balance are more easily achieved;
  - the economic viability of the exploitations, taking into account the size of the plots and whether there is a full use of the technology available;
  - the intervention of the State; the State has intervened as a moderator of the different factions within the hydraulic system (i.e., the appointments of the different *Corregidores*), but nowadays it supports the general economic and social model oriented towards a more effective social justice.

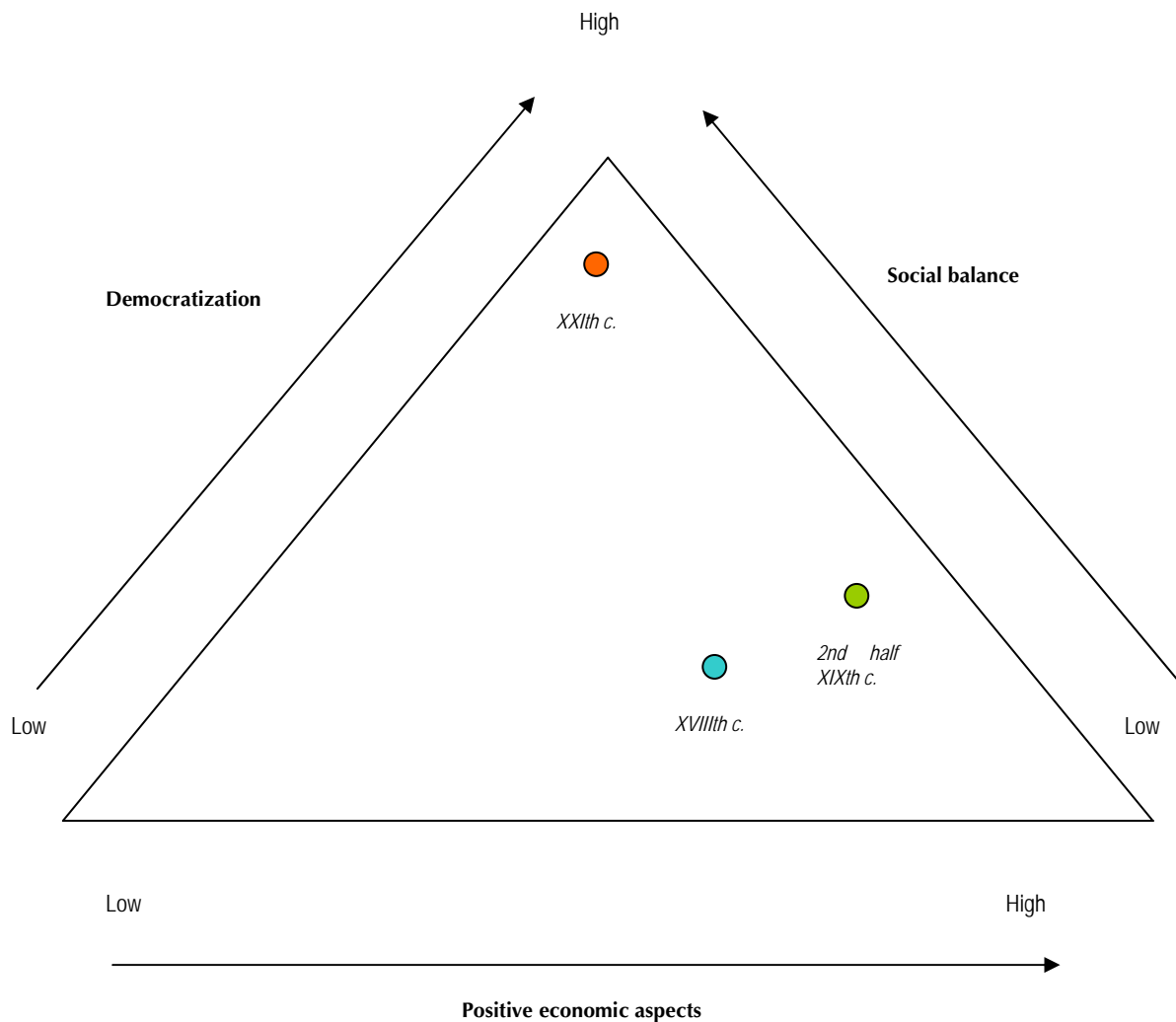


**Table I.** Institutional parameters.

	Clear rules		Effective participation		Independent management institutions		Basin authorities	
	Based on practical solutions	Not influenced by alien considerations	Formal	Actual	High/general level	Community level	Absence of distortion	Not absorbing competences
Nowadays	•	•	•	•	•	•	•	•
Since 2 <sup>nd</sup> half XIXth c.	•	•	•		•	•		
XVIIIth c.	•		•			•		

**Table II.** Socio-economic parameters

	Absence of a less-favoured class		Absence of dominant Class		Free access to property		Water as a non-market good		Economically efficient exploitations		State intervention	
	Patronized tenants	Deprived day-labourers	Oligarchy	Other	Absence of entailed lands	Absence of other limits	Linked to the land	Not priced	Appropriate size	Full use of contemp. technology	In general, to improve social justice	In the irrigation system
Nowadays	•	•	•	•	•	•	•	•			•	•
Since 2 <sup>nd</sup> half XIXth c.					•		•	•	•	•		•
XVIIIth c.							•	•	•	•		•



**Figure 1.** Social justice triangle.

Tables I and II show the institutional and socio-economic parameters taken into account in a positive manner, so that only the factors that contribute to the increase of the level of social justice are marked. Graphic 1 shows the relative situation of three different historical moments (XVIIIth century, second half of the XIXth century, and the current situation) in a tripartite diagram. The present situation seems to be quite positive in terms of social justice both from the institutional and socio-economic point of view. Nevertheless, the lack of economic efficiency is a major obstacle for the efficient consideration of equity of the hydraulic system *per se*, without taking into account the success of the local economy. Social justice appears to increase in time. The XVIIIth century shows the worst scenario, with heavy socio-economic unbalances and a lack of autonomous management institutions, whereas after the XIXth century there is a formal free accession to lands and independent rules and management institutions. Surprisingly, there are a number of constant features that invariably appear since the XVIIIth and even before: written rules based on customary and practical solutions, formal participation of users in the management institutions, although only at a “canal” or community level, and the conception of water as a collective and not marketed good.

## Conclusions

The current situation of the hydraulic system of the Huerta of Murcia and its associated and contradictory elements of social justice is the result of a long-term historical process. A diachronic analysis has been necessary to understand the different stages reached and to assess the evolution of the different parameters of a suggested particular model. Although the concept of social justice cannot

be dissociated from the general social, economic and political framework, a number of factors have been identified as essentially linked to the hydraulic system, taking into account the historical evolution of the *Huerta*. The long-term analysis shows clearly how social structure imposed an “inertial force” over the different organizational changes. In terms of social justice, in spite of several factors for a well-balanced socio-economic development, the socio-economic structure produced a number of unbalances due to the pressure exerted by the secular oligarchy and the creation of a class of poor tenants and day labourers.

The paradox of the hydraulic system of Murcia lies on the fact that once an acceptable democratization and social balance level were reached, its economic capacity failed. Social justice was not provided by the system itself, but by the general positive socio-economic evolution and economic growth since the 60s-70s. Nowadays the elements of the socio-economic balance are not provided by the system itself, but obtained through exogenous inputs. Once the control of the system and the property of the land ceased to be a profitable objective for the historic oligarchy, there was no major obstacle for the *Huerta* to reach an equitable situation. Nevertheless, this transformation meant little more than an additional advantage for the irrigators, since the economic profit of the agriculture production in reduced plots could not maintain the family unit that cultivated it. Access to an effective participation of peasants to decisions concerning the management of the system implied at the same time the loss of economic efficiency of their plots. Social justice has been provided, but not because of the changes induced within the hydraulic system.

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