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THE NEED TO PRESERVE HISTORICAL "SOURCES": AN ACTUAL EXAMPLE

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SUMMARY – Water is the best thing in the world: a primeval factor in the making of Universe, it is the most widely spread and the oddest element on Earth. Since the Neolithic (10,000 years ago) mankind has undergone its progressive conversion from the former nomad hunting-picking habits to the latter sedentary tilling-breeding ones. Water supply has been a propulsive factor in this development process. In fact, the earliest kinds of tilling organisations are to be found in flatlands, where water could be taken from natural stocks. The building of works aimed to take water from rivers or springs is a latter experience. The really historical time of irrigation in Italy starts in the Middle Age, beginning from the Po Valley. Mostly in the western part of Po Valley (Piedmont and Lombardy), a close network of canals had been built since the 11th century. These canals take waters from the specially flow-powerful Alpine rivers and make a thousand-years example of a wise and respectful use of natural resources like water and soil for productive purposes. The development path of irrigation has been a long and thorny one; there has been room for findings, testing and improving of the "doing" techniques, but also for handing on "know-how", i.e. a irrigation culture. For this purpose the preservation and the spreading of the historical witness of the age-old process that has been taking place on the territory is of the utmost worth. In order to accomplish this target the "Associazione Irrigazione Est Sesia" in Novara has carried out some projects aiming to supporting a "water culture". Water issues linked to a wiser exploitation of available resources and to a sharper evaluation of the needs uttered in other areas of this planet are getting more and more urgent now. This is the time historical thought becomes a deeper qualifying knowledge item to look for possible answers.

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1. FOREWORD

Φριστον μέν ύδωρ (the best thing is water) wrote Pindar the poet in the 5th century B.C.. In fact, water is the best among all things in the world. A primeval factor in the making of Universe, it is the most widely spread and the oddest element on Earth as it shows under different natures: liquid, solid or gasiform and non-stop shifts among these natures. All living beings are made of water, all need to take it in for feeding. They are borne in water, yet they can die because of it.

2. THE ORIGIN OF IRRIGATION

Since the Neolithic (10,000 years ago) mankind has undergone its progressive conversion from the former nomad hunting-picking habits to the latter sedentary tilling-breeding ones. Water supply has been a propulsive factor in this development process. In fact, the earliest kinds of tilling organisations are to be found in flatlands, where water could be taken from natural stocks. The building of works aimed to take water from rivers or springs is a latter experience.

In a former time, the humans settled in areas with short water supply. They had to make use of atmospheric dampness (dew) or of underground-settled waters. As shown by reconstructions which followed archaeological investigations, in the earlier Neolithic human settlements did not rise because of the presence of a spring, which often was missing or was some kilometres afar; in fact, drinking water, which was less needed than the one used for irrigation, could be gathered and brought by leather containers or by wicker baskets waterproofed with clay. On the contrary, tilling compulsorily asked for soils with a special hydromorphic structure; this situation is still to be seen in wide African Saharan and Sub-saharan territories lacking of sources of water supply.

In that context the birth of oases is emblematic as manly achievements rising from a perfect environmental knowledge. A small hollow hosts some dampness, a stone gives shadow, a seed takes root; this way positive dynamics begin: trees shelter themselves from sunrays, concentrate steam, draw insects, produce biomass and enrich the soil, which in turn makes their own feeding supply.

Some thousands of years later five higher civilisations, linked to water availability and exploitation also for irrigation, grew and established. Those were the so-called "river-valleys civilisations": the Egyptian in the Nile Valley, the Mesopotamian in the Tigris-Euphrates Valley, the Indian in the Indus Valley, the Chinese in the Yellow River basin, the Andean in the Peru coast valleys. As Karl Wittfogel stated in his studies issued in the work called "Eastern Despotism", irrigation techniques did not make a pre-requisite to the building of any of those highly civilised social systems; yet they stood for a crucial point in their development and made also key factors for the rise and the growth of tightly centralised political, economical and organisational structures. In fact, building big irrigation works to handle and spread huge quantities of water bring about knotty technical, managing and administrative problems only strong and very centralised governments could solve.

At the time of the rise and growth of the Hellenic society in the 6th century B.C. a different approach to the natural phenomena was introduced: they were no longer thought about as mysteries man had to feel afraid of and shelter from, but as events to be examined, to get acquainted with and – possibly, after understanding their nature – to exploit at man's benefit.

3. IRRIGATION IN ITALY

The rise and development of irrigations systems in Italy date back to the Etrurian and – a bit later on - the Roman eras. Even though we lack of sharp historical sources accounting of the irrigation activities by the Romans, we still can reckon upon the "centurial" land organisation as on a real "place of memory witness" for the Roman irrigation agriculture in Northern Italy that is still traceable nowadays. Among the several functions of that land sharing habit the irrigation one was surely not slight, at least in the case of naturally sloping grounds where waters ran by themselves into a network of drainage ditches made to border each estate – though their main purpose was the one of orderly and regularly sharing the different owners' estates.

The really historical time of irrigation starts in the Middle Age: documents begin to give time-surviving witness of irrigation works and documentation widens exponentially by getting closer to the present times.

The history of irrigation should be regarded as beginning so far back because that was the time the key plans for soil exploitation, water management and tilling methods have been drawn. As such developments always have had to match both with the economic and technical standards and with the institutional groundings which have been holding and steering the making of the European landscape, the history of agriculture – above all the history of irrigation agriculture – is the history of the making a landscape; in our case, the Po Valley.

By this geographic definition we mean the wide area physically designed by Po River by its erosional and sedimentary action in prehistoric eras, which became the broadest irrigation and the key production area in Italy.

Mostly in the western part of Po Valley (Piedmont and Lombardy), a close network of canals had been built since the 11th century. These canals take waters from the specially flow-powerful Alpine rivers and make a thousand-years example of a wise and respectful use of natural resources like water and soil for productive purposes.

The first big irrigation water spreading works were built by the Benedictine and the Cistercian cloister communities and later on by the City-states and the Seigniories. Those works made the grounds of the crucial improvements brought in this field during the 19th century.

The Savoy Piedmont had already made up to involve its State administration into the building and the management of the canal network that, following the statement included in the Savoy Princes

Edicts, should be targeted to “the economical advantage of their States, to foster agriculture and industry, to settle new communication routes”, and so on.

Since the late 18th century a new office was set up in Turin. It was an expression of the Ministry of Finance and managed the irrigation works; later on, after the Italian political union, it took on a special jurisdiction on the canals owned by the State, under the name of “Amministrazione Generale dei Canali Demaniali di Irrigazione – Canali Cavour” (Administrative Authority for the State-owned Irrigation Canals – Cavour Canals). The united Italian State took in the Savoy layout and started with the building of new huge irrigation works that should meet a standard for a public and rational use of the available water reserves, which was no longer bound by the borders sharing the former pre-unity States.

Undoubtedly, the most significant work was the building of Cavour Canal between 1863 and 1866. This canal, which is 85 kilometres long and flows 110 cubic metres per second, takes its water from the Po River close to Chivasso and makes the backbone of the irrigation networks in the East- and West-Sesia districts.

Together with its secondary canals, Cavour Canal greatly contributed to complete the conversion of the Novarese and Lomelline flatlands into well-irrigated grounds: the heathlands placed along the right Ticino River bank still dry underwent steady tilled and improved and the former local irrigation activities were integrated into a network irrigation system.

Just a few years later the same phenomenon took place on the left Ticino River bank by the building of Villoresi Canal at the end of the 19th century.

The Administrative Authority for the Cavour Canals took care of the irrigation systems in Piedmont and Lomelline up to the second half of the 20th century (1977). At that time the consortia gathering the irrigation waters users (the most important of them are the “Associazione Irrigazione Est Sesia” in Novara for the Novarese and Lomelline and the “Associazione Ovest Sesia” for the Vercelli district) were deemed to be the most effective, democratic and actively widespread Bodies to be entrusted with the huge irrigation networks and to run them for the common good.

4. PRESERVING HISTORICAL WITNESS: AN ACTUAL EXAMPLE

The development path of irrigation has been a long and thorny one; there has been room for findings, testing and improving of the “doing” techniques, but also for handing on ”know-how”, i.e. an irrigation culture.

The manly-dwelt landscape has been since long involved into an ongoing infrastructural standards evolution. The knowledge of this process is always useful and we are sometimes forced to go back to history in order to plan a proper and well-balanced development.

For this purpose the preservation and the spreading of the historical witness of the age-old process that has been taking place on the territory is of the utmost worth.

In order to accomplish this target the “Associazione Irrigazione Est Sesia” in Novara has carried out some projects aiming to fostering a “water culture”.

The first one has been the arrangement and the public opening of a Historic Archive for Waters and Irrigated Lands.

This is a scientific research centre for studies concerning the irrigated lands of the Piedmontese and Lombard districts on the left Ticino River bank. Because of its ancient documents, chronological continuity and wholeness, this Archive is a unique historical source in Italy not only on the developments in irrigation but also with reference to the genesis of landscapes.

The most noteworthy record collection among the ones being stored is the Historic Archive of Cavour Canals, i.e. the documents coming from the broken-up Administrative Authority for the State-owned Irrigation Canals (Cavour Canals) in Turin. This collection makes a State belongings which the

Ministry of Culture entrusted the Cavour Canals Co-use" by a special covenant and, therefore, to Est Sesia, the management headquarters of the abovementioned "Co-use".

But the Cavour Canals Archive is composed by several document series. These make reference to different historical periods when the State wielded the building, purchased and managed the Cavour canals irrigation network. The oldest documents (parchments) date back to the 15th century.

Besides documents, the Archive keeps a large figure of old drawings, maps, feudal land belongings registers and plans that portray the land through several historical periods. This collection gathers some 20,000 pieces and chronologically spreads from the 18th century as up to nowadays.

Together with this collection other document sets are kept: they concern the canals Est Sesia manages nowadays. Some of these sets are quite old and date back to the 15th century.

Every document kept in Novara is IT-managed and the archives can be browsed through Internet as well.

The research centre, which owns a branch in Vigevano, also hosts models of hydraulic buildings, old instruments for topography and water flow metering and a specialised library.

Yet the preservation of historical witness is not enough by itself, if knowledge is not popularised and spread. The Associazione Irrigazione Est Sesia is moving towards this direction as well, by setting up exhibitions specially devoted to items concerning water culture; these are easy to set up and have a great call for the public. Therewith comes a publishing action that has become significant by now: a magazine and monographic books are being issued. At the same time the relation with the educational Institutions is taken care by holding lessons, seminars and assistance to final year students' dissertations, so that the newer generations are allowed a better understanding of water as a resource.

The same grounds drove Est Sesia to set up a scientific research and hydraulic testing centre at an old restored mill close to Vigevano along the Mora Canal, a historic waterway built by Ludovico il Moro in the 15th century.

The "Mora Bassa" mill was restored with respect for its ancient architectural typology and by making use of old materials. Now it holds a permanent exhibition of some working models of the "machines" thought and designed by Leonardo da Vinci (who, among other things, worked in that district on behalf of the Sforzas) and a set of panels showing the history of landscapes shaped by waters. An outdoor space hosts a didactic walk-around path for the learning of the traditional water metering systems.

This way, that is the place where the history of irrigation and land can be learnt, where to see the most important Leonardian machines and have them run, where to check the way old irrigation waters metering and spreading tools worked. The stream of visitors – mainly of school groups – witness how far the young feel interested in these subjects.

5. UNDERSTANDING THE PAST IN ORDER TO FACE THE FUTURE

Water issues linked to a wiser exploitation of available resources and to a sharper evaluation of the needs uttered in other areas of this planet are getting more and more urgent. This is the time when historical thought becomes a deeper qualifying knowledge item to look for possible answers.

In fact, the skills in working knowledge up and, above all, in spreading and sharing it - which is culture in its highest meaning - will make the key factor for a next-to-come sustainable development. This way, social structures will take into account local peculiarities and will be in a position to answer those questions (sometimes made ordinary by overall visions) who's way out is crucial for their own survival.

The recovery and the spreading of traditional knowledge make an undertaking to uphold the essential values of cultural differences. The knowledge linked with the tilling techniques applied to

new soils could be a winning weapon to overcome food availability lacks in broad regions of our planet.

Not by chance, in 1999 UNESCO and ICSU (International Council for Scientific Unions) have adopted the following declaration: “The traditional and local knowledge system as a dynamic expression of perception and understanding of the world can give, as it has given in times, a valuable contribution to science and technology. Therefore the need is to preserve, shelter, investigate and promote this heritage of culture and empiric knowledge”.

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