

# Triora and the Water System of the Republic of Genoa (1261 – 1797)

Silvana Vernazza\*, & Caterina Gardella

GB Massone Foundation Recco, Italy

\*Corresponding author: Silvana Vernazza, GB Massone Foundation Recco, Italy.

Submitted: 05 March 2025 Accepted: 11 March 2025 Published: 17 March 2025

 <https://doi.org/10.63620/MKAMSR.2025.1011>

**Citation:** Vernazza, S., Gardella, C. (2025). Triora and the Water System of the Republic of Genoa (1261 – 1797). *A of Mar Sci Res*, 2(2), 01-07.

## Abstract

Triora, ancient and unconquered Podesteria of the Republic of Genoa (1261 – 1797) is the city of medieval origins built in the Upper Argentina Valley, in the Ligurian Alps, in the extreme west of Liguria on the border with France. The area along the Argentina stream had been inhabited since the Middle Neolithic and, above all, due to the barbarian and Saracen incursions, the population increasingly moved towards the mountains, giving rise to a fortified city during the Middle Ages, first subjected to the control of the Counts of Ventimiglia and from 1261 of the expanding Republic of Genoa. The urban nature of Triora, attested by its Statutes and the control it exercised over the surrounding territories as head of a Jurisdiction led by a Podestà appointed by the Republic of Genoa, combined with the vital need to have water to sustain long sieges, explain the presence of a complex, organized and widespread system of water collection, conservation and flow. This system deserves to be preserved, protected and studied in all its many aspects.

**Keywords:** Streams, Mountains, Fortress, Sieges, Fountains, Cisterns

## Introduction

Triora, a historic town in the Upper Argentina Valley of the Ligurian Alps, played a significant role in the water management systems of the Republic of Genoa between 1261 and 1797. Positioned at the convergence of multiple watercourses, Triora developed an intricate network of fountains, cisterns, and aqueducts that ensured a stable water supply for its inhabitants. This system not only supported daily life but also proved essential during prolonged sieges, reinforcing the town's strategic importance as a fortified stronghold under Genoese rule.

The study of Triora's water system provides insights into both the engineering expertise of the time and the broader historical and cultural dynamics that influenced water management in medieval and early modern Liguria. With a population that adapted to the challenges of mountainous terrain and shifting political landscapes, Triora exemplifies a community that effectively harnessed its natural water resources while preserving its autonomy and resilience.

This article explores the historical significance of Triora's water infrastructure, examining its origins, development, and last-

ing impact. Through the analysis of ancient statutes, archival records, and architectural remnants, we seek to highlight the advanced hydrological strategies employed in Triora and their relevance in the broader context of the Republic of Genoa's territorial administration.

## Water at the Heart of the First Human Presences in the High Valley of Argentina

Human settlements have always strictly obeyed the attraction of certain favorable conditions, firstly the presence of water. It is precisely this element that has allowed and influenced the settlement of the High Valley of Argentina.

The territory is crossed by the Argentine stream, the Tanarello, which corresponds to the source of the Tanaro River, the main tributary of the Po, and the Negrone. The name Triora is attributed to the presence of the three watercourses, the three 'mouths' from the Latin *os*, *oris*. This wealth of water has favored the collection of the numerous sources in the fountains and cisterns of the village, which still preserves them today.

The oldest archaeological remains that testify to the presence of human life in the area occupied today by the Municipality of Triora, date back to the Middle Neolithic period, which can be dated approximately between 3800 and 3000 BC. The results of the excavations and archaeological studies in their original materials are exhibited at the "Civic Museum of Palazzo Nota" in Sanremo, an important city in the far west of the Ligurian coast, near the border with France, but at the "Ethnographic and Witchcraft Museum" of Triora we can appreciate their copies.

### **Prehistoric Caves Clues to Understand the Spiritual World of the Ancient Inhabitants of the High Valley of Argentina**

Following the archaeological excavations in the caves of the High Valley of Argentina, in addition to the objects mentioned above, bones with a particular arrangement inside the cave have also been found. From these findings, Melania D'Alessandro hypothesized an absolutely non-random arrangement of the bones, but determined by deep spiritual knowledge, which today we could define as esoteric. Melania D'Alessandro is a researcher and writer of ancient civilizations, fairy tales and folklore, according to the definition of the Genoese newspaper "Il Secolo XIX" in an article dedicated to her on January 23, 2019. She studied the arrangement of the bone remains found in the caves of the Upper Argentina Valley near the stream and identified an ancient wisdom on the meaning of life and death that characterized these populations of transhumant shepherds, who continued to live in these caves from the Neolithic to the Bronze Age. Studies on the archaic religiosity of the populations of the Upper Valley of Argentina deserve to be very deepened, because if in Triora and in the neighboring localities the ancestral naturalist knowledge had remained so alive and so widespread even in modern times (see on this subject the witchcraft trials held between 1587 and 1589 with the participation of more than twenty accused, among them members of noble families of the place), it is reasonable to think that in the Upper Valley of Argentina naturalist cults of very distant origins in time were widespread and had become deeply rooted in this area, transmitted through many generations. An echo of this deep and ancient naturalist knowledge, linked to the therapeutic practices inherited from the local tradition, is still alive and present in Triora and this same tradition is also represented inside the "Ethnohistorical Museum of Witchcraft" (MES), in the rooms dedicated to the "Goddesses, Spirits and Female Creatures" and to the "Dominiae herbarum", but also throughout the museum's route. In the archaic religiosity evoked by Melania D'Alessandro, water played a central role, as evidenced by the representations, the graphic signs evoking cult practices, the sacred buildings dedicated, in the Christian era, to the Madonna dell'Acqua or dell'Acqua Santa, but before to the naturalist divinities evoking or personifying water. Such evidence related to the cult of water has been found all over the world and also in the Upper Valley of Argentina. We can think first of all of the Sanctuary of the Madonna dell'Acqua Santa in Montalto Ligure in the same Valle dell'Argentina.

The inauguration of the "Ethnohistorical Museum of Witchcraft" in Triora in December 2016 truly opened a new season to advance studies on the ancient naturalistic religions of the Valle dell'Argentina, to understand and deepen their meaning and the multiple meanings of these ancient rituals often mainly linked to the presence of water, the source of life par excellence.

The planned opening of the "International Documentation Center on Witchcraft" linked to the aforementioned Triora Ethnohistorical Museum will be the main engine for research, comparisons and insights into all the ancient legacies that have nourished the culture, finally criminalized, of diabolical witchcraft.

### **The Tenacious and Proud Resistance of the Alpine Populations to Roman Aggression**

The pastoral civilization of the populations living in the caves near the Argentine stream continued to exist in the territory of the Upper Argentina Valley even during the period of the later Bronze Age (1800-750 BC).

Significant evidence attests to the presence of an advanced Alpine community in the Triora area during the Iron Age, from 750 BC until the Romanization of the region during the 2nd century BC.<sup>1</sup>

Among the 46 Alpine tribes or peoples subjected to Roman domination that are reported on the plaque of the Augustan trophy in La Turbie (France), there is also the Triullates tribe, which, according to some historians, were the ancient inhabitants of Triola, as Triora was called in ancient and medieval times. The Roman monument had been erected in the years 7-6 BC as an emblem of the triumphs and therefore trophies of Augustus, and it was located on the Via Iulia Augusta, the road that was the continuation of the ancient Via Aurelia that led from Rome to Liguria and that connected Aquileia (in the north-east of Roman Italy) to Noricum (a province of the Roman Empire, located in present-day Austria, Slovenia and a small part of north-east Italy), in honour of Augustus to commemorate the victories won by his generals (including Drusus and Tiberius) and the definitive submission of 46 Alpine tribes. The majestic monument also served to demarcate the border between Roman Italy and Narbonensis Gaul along the Via Julia Augusta.

This testimony confirms the role that the territory now included in the borders of the municipality of Triora played already in Roman times, a territory where water flowed abundantly and allowed important opportunities for life and trade.

During the period of the Roman Empire Triora and the rest of Liguria experienced particular prosperity and wealth. In the 4th century Triora was evangelized, together with other cities in the Albenga and Ventimiglia valleys.

### **The Population is Moving to the Mountains**

During the period of the barbarian invasions and the Roman barbarian kingdoms, Triora probably saw a remarkable increase in the number of its residents, because many inhabitants of the underlying coast took refuge in the nearby mountains to escape the frequent devastations caused by the barbarian and Saracen incursions, among which those of 641 and 730.

Around the middle of the 10th century, the King of Italy Berengar II, to defend the Maritime Alps from Saracen attacks, divided the territory of Liguria into three marches: Arduinica, Aleramica and Obertenga. Triora was assigned to the Arduinica mark or county of Albenga. The mark ceased to exist in 1091 with the death of the last Countess of Albenga, Adelaide.

During the first half of the 12th century, after the extinction of the Counts of Albenga and the consequent dissolution of the Arduinica brand, Triora came under the rule of the Counts of Ventimiglia, while remaining under the religious jurisdiction of the Bishop of Albenga [1].

Around 1190, Triora and the rest of western Liguria definitively passed under the political and economic sphere of influence of the Republic of Genoa. At the same time, civic associations arose, called Companies or Compagnes, which aimed to encourage the practice of trade and guarantee mutual collaboration between the citizens of the country. The merchants, elected to exercise the functions of commercial judges of the Companies, therefore began to be called consuls. It was at this time that the first centre of the urban plan of Triora took shape, the district of San Dalmazzo, which was the highest point of the city and almost inaccessible from three sides, with its fort, church and public palace. The five or six houses built outside the Peirana gate (or Carriera Velli gate) instead formed the first nucleus of the city, the so-called "burnus" (mantle), directly adjacent to the "castrum" or castle. As in Genoa, in Triora too the population was divided into two distinct factions, the nobility and the plebs, each occupying a district of the city: the lower one (Camurata and Sambughea) was intended for the plebs, while the upper one (Carriera and Cima or Rizettu) was inhabited by the wealthy nobility [2].

### **Triora Becomes a City**

Subsequently, the Companies, to give greater legal force to their action and to counter the excessive power of the feudal lords, formed themselves into municipalities, all this also happened in Triora, which at that time was erected into a municipality (not yet free, but properly a fief-municipality), governed first by consuls, then by a podestà, with the power to issue its own laws and elect local magistrates. Many inhabitants of the surrounding area then took refuge in Triora in the hope of living safe from possible enemy attacks by placing themselves under the protection of the powerful local lords [3].

The ability to resist feudal power and to create its own magistracies and subsequently its own statutes are fundamental indicators of the evolution of Triora from a village to a city. And as a city that benefited from exemptions from the many feudal charges that were instead imposed on communities of less strategic and productive importance, it attracted new inhabitants, often also animated by a particular spirit of enterprise, both in the economic and political fields.

It is our imaginary city, built on today's urban civilization, that leads us to seek these same founding characteristics of the urban model widespread today, even when we come across a city from the past. With this way of proceeding, we have difficulty identifying the urban fabric of the Middle Ages as such, especially when it appears in a mountainous area, or even perched on the slopes of a mountain.

It is precisely the urban character of Triora, already in medieval times, that explains the presence of a capillary and organized network that will distribute water to the fountains and cisterns of the city and which allows it to be used for all essential uses.

The concept of a city is associated with the concept of its 'easy' accessibility thanks to a road network of significant or at least sufficient importance. These concepts are always spontaneously linked to the current conformation of the road system, which, in a coastal and mountainous territory such as that of Liguria, is revealed to be radically modified in its main directions compared to the past. Today, in fact, the main road network of the region is the coastal network in the west-east and south-north direction, but the latter only in correspondence with the main centers. The historical roads were characterized by their adaptation to the natural conformation of the territory and, depending on these natural conditions, they could be considered more or less safe and direct. Triora is a place favored by its natural position both from the point of view of safety and that of traffic, it possessed characteristics of fundamental value to become also an important center from the strategic and economic point of view. In addition, Triora was favoured by strips of land suitable for the cultivation of vines and cereals, mainly wheat, which made it the "granary" of the Republic of Genoa.

The other fundamental natural factor that has always favoured Triora is undoubtedly the presence of water, abundant and available in the territory around the mountainous rock, thanks to the presence of numerous springs.

The possibility of having a significant amount of water explains the interest in the management of this vital resource during the centuries when Triora was Podestà of the Republic of Genoa.

The historian of Western Liguria Alessandro Giacobbe has spoken several times on the definition of Triora as a real city during the Middle Ages and the Modern Age, not to mention Sandro Oddo, the historian of Triora who published all the public acts of the Municipality and the Podesteria, Andrea Gandolfo and going back further in time Father Francesco Ferraironi.

What often distorts the reading of an urbanized territory during historical periods far from our time is the influence of the city models that dominate today and that are part of our mental coordinates and our unconscious perceptions.

The Republic of Genoa had made Triora a real fortress with the system of tower houses that acted as walls to defend the city and were placed in places where the defensive system needed to be strengthened. Many of these vertically extending houses are still standing, but not all of them are in good health and conservative restoration work would be essential.

A sign, located just at the entrance to the town, where the ancient Porta di San Pietro once stood, sums up well the role that the town played during the centuries when it was a Genoese Podesteria: "Triora, an ancient Genoese Podesteria, an impregnable fortress city, rich in history and culture"

Given the importance assumed by the Municipality of Triora and the desire of its inhabitants to free themselves from the feudal yoke of the Counts of Ventimiglia, the inhabitants of Triora had already concluded a treaty with Genoa in 1202.

The leaders of the Municipality of Triora had concluded, during the first half of the 13th century, agreements with similar repre-

sentatives of the neighboring towns, such as Briga, Rezzo and Castelfranco. These events demonstrate in particular the extent of the territory used by the inhabitants of Triora for grazing and trade, also including areas of municipalities neighbouring that of Triora. The first drafting of the municipal statutes of Triora should also date back to this period, around the middle of the 13th century, which governed the civil and social life of the small mountain community without however compromising the rights belonging to the Count of Badalucco, of the family of the Counts of Ventimiglia, who was still the formal owner of the town [4].

#### **1261: Triora Swears Loyalty to the Republic of Genoa**

Subsequently, after having noted the Trioresi's desire to no longer depend on the Count of Ventimiglia, reaffirmed by the treaty of 1202 with Genoa, the Count of Badalucco Bonifacio, son of Oberto, former Count of Ventimiglia, sold to the Republic of Genoa to the lawyer Janella (also written in other spellings Gianello and Janello), his brother-in-law, representing the Republic of Genoa with Captain Guglielmo Boccanegra, by a deed stipulated in Genoa in front of the church of San Lorenzo on 21 February 1260, the castles of Triora and Do or Dho (Castelfranco and later Castelvittorio) and half of the castles of Arma and Bussana, with the estates, lordships, county rights, jurisdictions, income and products relating to them for the sum of 3,000 Genoese lire. Following the transition to Genoa, Do or Dho was exempted from certain tax obligations and the city took the name of "Castelfranco" from "franco", that is, "free" from tax duties [5].

On March 11, 1261 in Triora, in the presence of the Genoese ambassador and legate of Captain Guglielmo Boccanegra Lanfranco Bulbonino, the consuls and heads of families of the city of the Upper Valley of Argentina solemnly swore loyalty to the Republic of Genoa. The six consuls, who then governed the fate of the commune of Triora and who swore loyalty to Genoa, were Anselmo Morando, Ricolfo Donzella, Oberto Borrelli, Daniele Agagia, Sasso Beneadorno and Oberto Prete, while the heads of families of Triora, representing the entire population of the Alpine village, even if they probably did not all swear, amounted to 369, or about 1600-1700 people who probably lived in Triora at the time. After ratifying its annexation, Genoa erected Triora as the head of jurisdiction of a podestà, the ninth podestà jurisdiction of the Republic, placing at the top of the commune a Podestà, appointed directly by the Genoese government, who had the task of supervising the work of the local administrators and protecting the rights and interests of the commune of Genoa. The podestà also had full political and military powers, the power to administer justice and also the power to impose the death penalty.

Triora had become the defensive bastion of the Republic of Genoa towards the Duchy of Savoy to the north and the County of Nice, which had also become a possession of the Savoy in 1388, to the west.

In 1284, in the wake of the military collaboration with the Genoese Republic, Triora sent 200 crossbowmen to the Battle of Meloria, during which the Genoese fleet destroyed that of Pisa.

Between 1350 and 1351, there was a long and complex conflict between the inhabitants of Triora and those of Pigna, Buggio

and Castelfranco for the exploitation of the pastures and waters of Tenarda [6].

In 1498, coinciding with the descent into Italy of the French troops led by Charles VIII, Triora was sacked and burned by Duke Serranono, who was part of the retinue of the King of France.

On 6 January 1592, under the government of Podestà Lodisio Canessa, the General Parliament entrusted a commission of experts and jurists with the task of reforming the municipal statutes of the city, the first draft of which dated back to the end of the 13th or the beginning of the 14th century.

On 7 August 1625, the Franco-Piedmontese troops with 500 soldiers from Sospello and commanded by the French commander Dandelot and by Don Felice of Savoy, besieged Triora. The population of Triore then decided to resist the siege until the end, offering a heroic and desperate resistance with the help of the city's militias and those sent from Genoa [7].

In May 1631, six years after the siege of 1625, the war magistrate of Genoa sent the Commissioner of Arms of the Republic Giovanni Vincenzo Imperiale to Triora with the mission of carrying out an inspection of the fortresses of the village. Imperiale then wrote a long report of his visit in which the strategic position of the Triorese forts and the military value, combined with the tenacity and ingenuity in work, of its inhabitants were highlighted. The following year, the Oratory of Saint John the Baptist, patron saint of Genoa, was built on very high pillars to raise it to the level of the Collegiate Square. The dedication of churches and oratories to the patron saints of the hegemonic power has always been a way of emphasizing the dominant role of this power in a territory. During the conflicts between Genoa and the Dukes of Savoy in the 17th and 18th centuries, on the occasion of the attacks on the Republic of Genoa by the Dukes of Savoy, Triora found itself involved in conflicts and sieges, without however ever being conquered.

The importance of water and the possibility of its availability during long sieges and battles around the city proved to be decisive factors in not being overwhelmed and in being able to resist even in the long term. Good water management was the prerequisite to be able to achieve the goal of safeguarding the north-western borders of the Republic of Genoa, threatened on several occasions in particular by the Dukes of Savoy and their

#### **Triora Real City and Head of Jurisdiction of a Podestà**

From what has been explained about the history of Triora, it can be said with certainty that it was a real city during the centuries in which it was governed by the Republic of Genoa between 1261 and 1797.

What favored it was its privileged position at the crossroads of vitally important communication routes (in particular the "salt road" by which Genoa exported minerals to the Po Valley), while allowing the initial village to develop into a real city, with its own Podestà office of the same name.

It was a city both from an administrative point of view, in relation to its internal organization and its contacts with other



neighboring cities and villages and in relation to the remarkable activities of agricultural production and trade.

Triora has equipped itself with its own Statutes, which represent a model of wise administration and in which the entire population participates in the management of public affairs. Rules and behaviors were established in all situations, from hunting to fishing, from agriculture and forestry to spinning, from finance to fairs, from the use of fountains and springs to the grinding of grain. Triora supplied the Republic with cereals and wine, as local needs were largely satisfied. Triora has been defined as the granary of the Republic of Genoa, thanks to the cereals grown on the terraces created along the sides of the mountains that surround it.

### **The Use of Water Regulated by the Statutes**

The Statutes of Triora also regulated the correct use of water, both from fountains and from springs. Over the years, complaints were made about the use of water from fountains: in which in particular, it was not possible to wash even nearby, unless the people who went there went to draw or take water. The water must not be cloudy, misused and it was forbidden to divert it.

Animals were absolutely not allowed to drink from the fountains or from the pipe of the spring from which the water of the village came.

It happened, near the spring of Curugalla, three kilometers from the city, that the shoemakers dug holes filled with water to soak the hides or tan them. It also happened that during the months of July, August and September, animals were slaughtered. It was common for spring water to be diverted from its natural bed or course. However, it was permissible to let spring water flow onto one's own land for irrigation purposes for a period of two hours every other day, provided that the water returned to its natural course and that no one was harmed. Anyone who owned land bordering watercourses could not obstruct them in any way, but had to keep them clean and clear along the entire length of his land.

The owners or managers of shared vegetable gardens had to agree on the change of irrigation. Once this rule was established, no one could divert water onto his own land when someone else was irrigating on his own day and at his own time.

Regarding complaints about the use of water, we can mention the case of Castelfranco (today called Castelvittorio following the creation in 1861 of the Kingdom of Italy, governed by King Vittorio Emanuele II) a village near Pigna, but subject to the jurisdiction of the Podestà of Triora. Between 1350 and 1351 there was a long and complex conflict between the inhabitants of Triora and those of Pigna, Buggio and Castelfranco for the exploitation of the pastures and waters of Tenarda, as perhaps attested by a sentence pronounced on 5 April 1351 in the territory of Castelfranco in the church of Santa Maria di Migaleto, which settled a controversy that arose between Triora, Castelfranco and Pigna concerning an alleged intrusion by shepherds [9].

In 1541 the inhabitants of Castelfranco complained either because the 'pignaschi' were disturbing them, often breaking a

lock, that is, an aqueduct, which brought water to their mills. In this way, the water flowed into the Pignaschi properties.

They then addressed a virulent protest to the mayor of Triora, but their complaint having had no effect, they turned to the governors of Genoa. On 30 May 1541, they wrote to the Duke of Savoy, in whose territory Pigna was located, that they would no longer dare to enter the territory of Castelfranco or, in any other way, break the dams and draw water from their lands against their will, because by building in the river that is common, they can accommodate the parts of its dam and let theirs pass intact". This, in their opinion, was "a truly honest and correct thing" because otherwise they would have been forced to take severe measures" [10].

### **The Ancient Water System and the Changes in Water Supply that Occurred with Modernity Through Local Historians**

The historian of Triora Sandro Oddo, belonging to an important local family, author of four volumes dedicated to "The great podesteria: civil and religious history of an ancient village: Triora" written between 2017 and 2020 and other important volumes concerning different aspects of the history and traditions of Triora and the Upper Argentina Valley, describes, in a synthesis expressly requested for the writing of this text, the characteristics of water management in Triora during the centuries of domination of the Republic of Genoa, when the city was characterized by the presence of fountains and cisterns and he also reminds us of the subsequent developments with the creation of modern aqueducts.

"In past centuries in Triora water was collected in cisterns located near the many fountains of the city, the main ones being the upper and lower fountains ("Fontana Soprana" and "Fontana Sottana"), the latter built in 1480, hence the inscription affixed, also bearing the names of the leaders ("massari"), of the nearby religious Brotherhood, Bertone Oddo and Matteo Stella. The water, through stone channels, covered with slate tiles ("ciappe") that ran close to the walls of the houses, came from the fountain located above ("fontana soprana"), which can be considered the oldest in the city. The central cistern, located between the square (i.e. "Piazza della Collegiata") and the Via Camurata below, is inserted in a semi-dark area between a tangle of arches and vaults; the fountain is surmounted by two artistic dolphins, symbolizing water.

A large well was dug in the square to collect water from distant sources and to collect them inside the large cistern, which is located just below the Church square. Among these sources is that of Curugalla, about three kilometers from the city. The cistern proved to be of vital importance in case of siege and drought. Other fountains were those of the castle, Poggio, Manè, Spianate and San Dalmazzo, where the ancient cistern still exists.

The fountains of Campumavue and that of Santa Caterina, near the church of the same name, dated 1552, are also artistic.

During some years of drought, such as those of the 1890s, the muleteers obtained water, using barrels, from the ancient springs of Noce (where the wash houses are still located), Riora and Morella. In 1898, the engineer Antonio Capponi prepared a project for the construction of a new channel for the public fountains

of Triora. A catchment tank for the Truna spring was built and with concrete and iron pipes, the water was brought to the castle cistern, the upper fountain, the central cistern and the lower fountain. The work, costing 10,967.44 lire, was carried out by the company Ottone Gabriele, domiciled in Molini di Triora. The first "real" aqueduct, designed by the engineer. Francesco Lupi, was built in the locality of Lercaira and Gorda Soprana in 1928, on the initiative of the prefectural commissioner Carlo Viale (resolution of 23 June 1928). The economic works were coordinated by the craftsman Giuseppe Bogliolo. The total cost was 77,000 lire, covered by a loan of 74,000 lire from the Cassa Depositi e Prestiti.

In 1941, the State Military Property built an aqueduct to serve the Tamagni barracks, where the soldiers of the border guards were housed for a short time. In this case too, the waters coming from the Gorda springs were used.

The construction of the new aqueduct to capture the Rugli and Gumbazza springs was important, the work of which was carried out by the Bracco Lino company of Triora in the years 1968-1969.

However, the problems of the village and some hamlets, including Verdeggia and Realdo, were solved by collecting the Rudesco and Maravenna springs (this means "mother vein" in dialect). Aqueducts were built in all the hamlets immediately after the war, and then improved to capture the many springs" [11].

Giancarlo Stella, descendant of a historic local family, has verified how, since the 1930s, the methods of maintaining the traditional system that regulated the flow of water to the vegetable gardens have gradually but substantially changed. The maintenance of the water system that crosses the streets and alleys of Triora was once entrusted to municipal technicians and workers, who knew all the characteristics and secrets of this ancient water drainage system and used lime-based mortars. Since the 1950s and 1960s, maintenance has been entrusted to external companies, less attentive to the use of traditional and permeable materials. In this way, many pipes that brought water to the vegetable gardens have been closed.

### **The Old Water System is Still Visible**

If we visit Triora on a rainy day, we can personally verify that the water system could still function and also drain rainwater into the complex underground channels or along the edges of the "caruggi". It is no longer necessary to fill the tanks, but they are still visible with all their construction and operating features, all their constructive and functional details and even their artistic decorations.

The aspects still visible today of the water management implemented by the Republic of Genoa through local authorities are in most cases still visible, but their functionality has been largely erased, either to adapt to the innovations of modernity or due to inadequate maintenance of historical systems and a lack of sensitivity to understand their historical and architectural value as a very interesting cultural testimony.

Silvano Oddo, director of the "Ethnographic and Witchcraft Museum" however, still accompanied us to visit the main route

dug inside the urban fabric of the city, for the flow of water. It involves passing through partially underground places, well maintained where you can access by a few stone steps and, while going down, reach iron railings from where you can see the water flowing. Giancarlo Stella indicated in detail the route, mostly underground, of the water in the heart of the old city. If we follow the itinerary that he describes in detail, we understand how the system was also functional to supply water to the noble palaces, including Palazzo Borelli.

"Via Cria is the highest, at the height of via Poggio the water crosses the beginning of the tunnel incorporated in Palazzo Borelli, the rains then flowed into vicolo Poggio, a branch that starts from via Camurata (near the Central Cistern) joining the two main streets: via Poggio and the main branch of via Camurata, which is the only one that goes out towards Molini di Triora (territory below Triora and once subject to its administration), which is sloping towards the strips that go down towards Molini and towards the area of Cianfregheo, area because it was a very large area, it was the whole countryside. Vicolo Zunzelli represents the other main branch of this maze of streets and alleys and it is characterized by the presence of tunnels next to the houses called "Case Torri" (the houses already mentioned that rose very high vertically). From the water drainage channel located along the streets, water must be introduced into the irrigation sites and when the sites are full there is or better there was the obligation to let it flow downstream. A detail of this route concerning via Zunzelli crosses the central street of Triora, Corso Italia, through the vicolo "Borgo sano" in the heart of the old town.

Giancarlo Stella also reminds us that inside the castle there was a large cistern and from there there was a fountain from which the castellans drew water. Near the fountain there was an aqueduct that reached Fontana Soprana where there was a decantation cistern. Next to Fontana Soprana there is a tunnel that ends in Ciagge, a typical and uncultivated place over the centuries. Five meters from Fontana Soprana there is today a construction to defend the decline of the mountain that has disturbed the natural flow of water".

### **The Historic Town of Triora is Now Experiencing a Serious Loss of Inhabitants**

As a city Triora was the seat of important palaces of the local and western Ligurian nobility. The portals worked in local black stone, numerous and of varied character, religious, noble and allegorical, represent the coats of arms of the families and testify to the presence of particularly important potentas. In the Napoleonic era the portals were partially chiselled, but they retain their ancient charm.

Triora had a population of about 3,000 inhabitants at the end of the 19th century, while today it has only 300 inhabitants, of which about thirty are foreigners. English, Swiss, Norwegians, Germans, who fell in love with this place and bought and renovated, fortunately, important noble houses in the village, such as Palazzo Capponi. This palace belonged to a noble family, probably originally from Florence, who had built the Church of Santa Caterina in the 14th century. The wooden panel dating back to 1397, painted by the Tuscan painter Taddeo di Bartolo,

preserved in the Collegiate Church, could be linked to a commission from the Capponi family.

In 1797, during the occupation of the French, Triora was also the capital of the canton of the sixth Jurisdiction of Olives of the Napoleonic Ligurian Republic, and on 26 February 1798 a general census of the population of the municipality of Triora was carried out, which amounted to 9,133 units, of which 2,615 were in the capital, 1,779 in Badalucco and 1,155 in Castelfranco. On 2 June 1803, the government of the Ligurian Republic promulgated a law by virtue of which Triora was established as the capital of the eighth canton of the sixth jurisdiction, one of the six administrative divisions into which the Ligurian territory was divided, with residence of the commune and the cantonal judge of first order.

The last two hundred years have seen a dramatic decline: Triora today has only fifteen percent of its former population.

### Conclusions

What is essential to understand in order to correctly read the water system that Triora has been able to realize over the centuries is the historical and cultural context in which it has been designed and realized. In fact, it is a series of planned, precise and perfectly finished achievements, which have been designed by expert and qualified professionals and implemented by equally trained workers.

Another striking aspect is the high aesthetic quality of the various works, even those located below the alleys and visible only to the workers who have watched over and continue to watch over their maintenance.

Considering the high historical and cultural value of the Triora hydraulic system, which remains largely visible and legible in its masonry and in its finished and often decorative functions of use, it is reasonable to expect an increase in interest in the protection and study of this complex hydraulic and architectural system. This short text is simply intended to draw attention to this precious cultural treasure, which deserves to be preserved and protected in all its aspects.

The conservative restoration of all the remaining elements, most of them visible, of the old water system of Triora is a priority for this historic town in the Upper Valley of Argentina.

The intervention should take the form of a detailed check of all the still legible elements of the system, from the most obvious, such as fountains and cisterns, to the smallest and most hidden, in order to be able to give full legibility to all the elements still preserved.

The peculiarities and sometimes the uniqueness of the ancient water management that characterized for several centuries the ninth jurisdiction of Podestà of the Republic of Genoa, deserve to be preserved in the best possible way and enhanced in close relationship with the other treasures of art and culture that the city can offer.

To this end, the opening of the International Center for Documentation on Witchcraft at the Ethnohistorical Museum of Witchcraft will constitute a remarkable opportunity to also place the results of ethnohistorical research and historical-architectural specificities at the center of tourist valorization, while always keeping alive the attention on the distant religious cultures of the inhabitants of the Neolithic caves near the waters of the Upper Valley of Argentina.

### Competing Interest

The authors Silvana Vernazza and Caterina Gardella declare that they have no conflict of interest

### Funding

They also declare that they have not received any funding for their research

### Data Availability

They thank Mr. Sandro and Silvano Oddo and Mr. Giancarlo Stella for the valuable information provided and for their great availability.

### References

1. Oddo, S. (2017). The Great Podesteria: civil and religious history of an ancient village: Triora. vol. I From the beginning to the XVI century. Triora. Pro Triora.
2. Oddo, S. (2017). The Great Podesteria: civil and religious history of an ancient village: Triora. vol. II. The XVII century. Triora. Pro Triora.
3. Oddo, S. (2018). The Great Podesteria: civil and religious history of an ancient village: Triora. vol. III. The XVIII century, Triora. Pro Triora.
4. Giacobbe, A., Goggia, M. T. (2020). Santa Maria del Bosco. The upper chapel. An ancestral oasis tells Colomò.
5. Laiolo, G. P. The family clans of Western Liguria. "Hotels" and "Parentelle", a centuries-old social model. Sanremo. Lo Studiolo.
6. <https://www.trioradascoprire.it/>
7. <https://leterredelponenteligure.it/it/cultura/itinerari-culturali/61-itinerario-culturale-n-10/143-triora.html>
8. <http://www.cultura-barocca.com/imperia/triora.htm>
9. <https://www.comune.triora.im.it/Guidaalpaese?ID-Cat=7212>
10. <https://lamialiguria.it/2023/10/triora-il-paese-delle-streghe/>
11. <https://www.museotriora.it>