

Natural Environmental Factors and Human Settlement in Western Sicily. The Example of *Lilybaeum*

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Premise

We are going to focus on the relationship between environmental factors and human settlement in Western Sicily from the 4th century BC until Late Antiquity in the district east of *Lilybaeum*, between the river Sosio and the lower course of the Mazaro.

The interdependence between cultural landscape and natural environmental factors has been analyzed during archaeological surveys we undertook to understand the changes in settlement patterns.¹ Evidence points to a widespread settlement developed approximately from the end of the 4th century BC but established in the second century BC.² At the end of the 7th century AD, there was an apparent contraction of the settlement (fig. 1).

Settlement patterns are linked mainly to the available water and environmental resources, especially with regard to agriculture, but also quarrying activity and sheep farming.

What stands out most is the organization of the settlement: it was possible to identify both large sites and sometimes veritable villages, extending over several hectares, in this case, similar to what has been found in other Sicilian districts. The minor sites are addressed as *villae* or villages.

The Mazara's District in Antiquity

The most important center located near the coast was *Lilybaeum*, characterized by a significant settlement beginning in the 4th century BC, following the arrival of Punics from after the conquest of *Motya* in 396 BC by the tyrant Dionysus.³

This center remains, even in Roman times, a first rank administrative headquarters in the heart of what had been the Punic *eparcheia* formed in western Sicily.⁴ *Lilybaeum*, therefore, continued to be a center where multiple cultural elements converged as well as a prominent maritime port, in front of Egadi Islands, with basins surrounded by a series of smaller moors designed to allow the circulation of agricultural products and various goods coming from the *villae* in the hinterland.⁵ The city necessarily needed to exploit the resources of the surrounding territory.

The lower course of the Mazaro (about 23 kilometers southeast from *Lilybaeum*), although characterized at times in spring and autumn by the phenomenon called “marrobbio”, with sudden changes in water levels due to atmospheric pressure imbalances, was also formerly a safe port for boats (fig. 2). A shelter for boats at the mouth

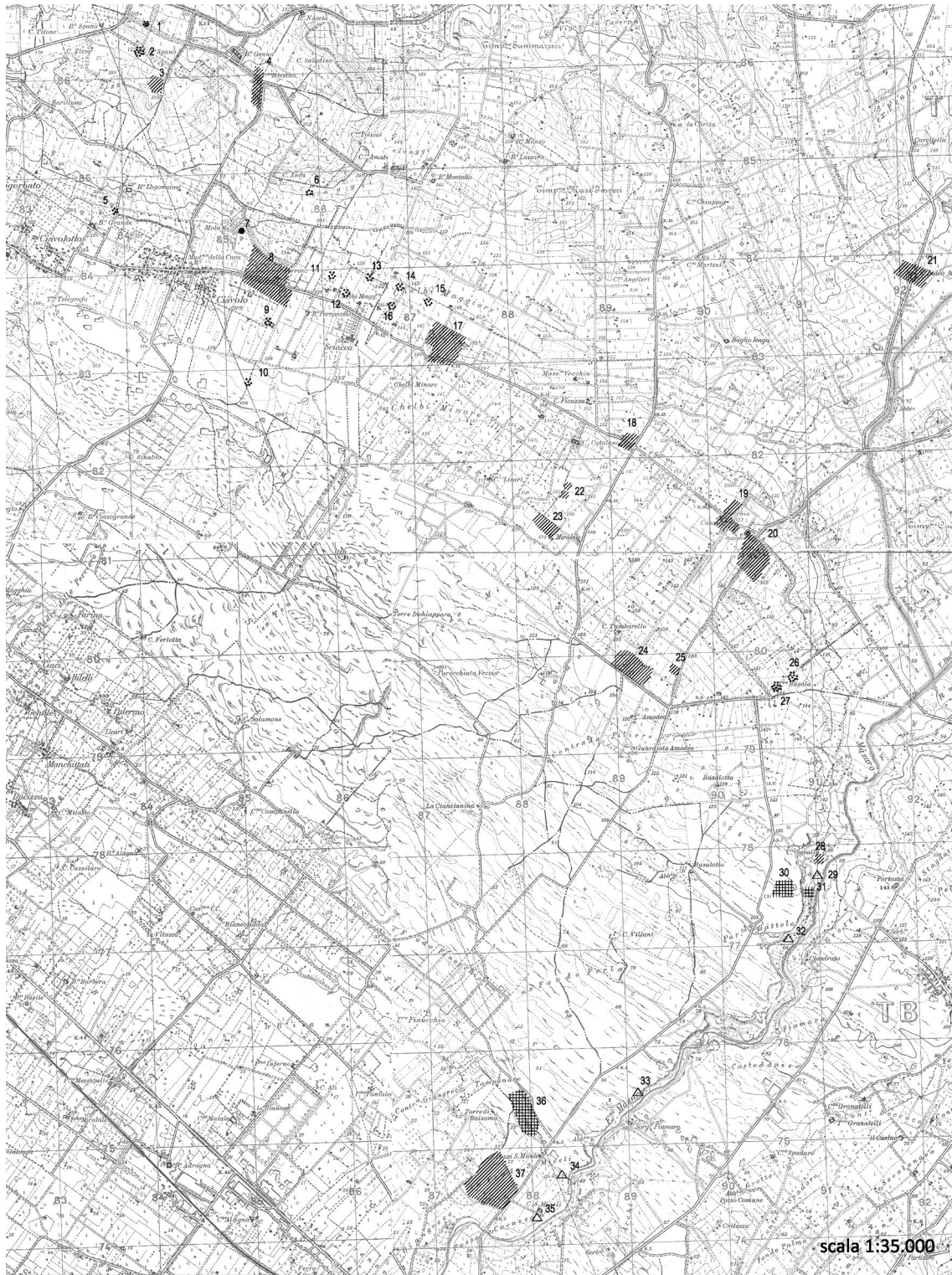


Fig. 1: Archaeological map.



Fig. 2: The lower course of the Mazaro river. The canal-port.

of Mazaro River must have existed since ancient times, as mentioned by Diodorus when he recalls the existence, at the end of the 5th century BC, of a settlement at the mouth of Mazaro.⁶ A hoard of coins of the central 5th century BC, with silver coins from the most important cities of Sicily, was discovered there.⁷ The lower course of the Mazaro had to be on a border, as it seemed to be controlled for a time by the Selinuntinoi, but also contended by the Punic.⁸ The existence of traces of ancient port facilities at the mouth of the canal harbor was confirmed in archaeological excavations.⁹ Around the port, there were productive activities since the 4th century BC, with changes in the 3rd century BC.¹⁰ Rhodian amphorae dating back to the 3rd century BC are attested too.¹¹

The area connected with the lower course of Mazarò (the subject of the survey) had to acquire progressively importance, especially since the end of the Roman Republican age. Strabo remembers the hydronym, from which the entire district takes its name and he reports that the emporion that belonged to the inhabitants of Segesta (in the area of modern Mazara del Vallo) is 38 *stadia* from *Lilybaeum*.¹²

At the state of research, it is difficult to understand if the territorial district of *Mazaris* was administratively dependent on *Lilybaeum* in Roman times or if it was independent, at least in the Roman imperial age.

Why was this district between the Sosio and the Mazarò important in Antiquity? It was connected to the ports of Mazara and *Lilybaeum*. Plinius highlights the proximity of



Fig. 3: A well covered by a modern domed structure in Chelbi, in an area of ancient settlement.

this territory, especially of the town of *Lilybaeum*, to the African coast, but he emphasizes the possibility of reaching Sardinia or Malta, too.¹³ It was not only the possibility of commercial exchanges or the strategic importance facing Africa that made this district prominent, but this area of Sicily was also rich in natural resources.

Water and Settlement Pattern

How can the supply of water in this territory be described? The medieval and modern Mazara del Vallo had water collection tanks, water being furnished by the hinterland.¹⁴

The ancient settlements owed their vitality also to the abundant presence of water. It was water, in fact, that allowed for settlement. It has indeed been noticed during the archaeological surveys carried out in the project “Costituzione di poli formativi per la ricerca nel campo dei Beni Culturali, con finalità culturali e di conoscenza dei siti nella provincia di Trapani” that the organization of the settlement was mainly characterized by the presence of groundwater. We have not identified cisterns as in other parts of Sicily or northern Africa. Fragments of *opus signinum* have been highlighted only in Casale Visir / Casale Vecchio (19) and in Biesina (4) and we wonder if they belonged to cisterns where rainwater was collected or if we can hypothesize the presence of *balnea*.

Archaeological data evidences an overlap of settlement phases, although there seems to be a difference in extension between the Hellenistic phases and Imperial times or Late Antiquity. The artifacts that can be dated to the middle Imperial period and late Antiquity seem to be more consistent and occupy a larger surface than the artifacts of the previous phases. Some settlements survive even longer, exactly where sources of

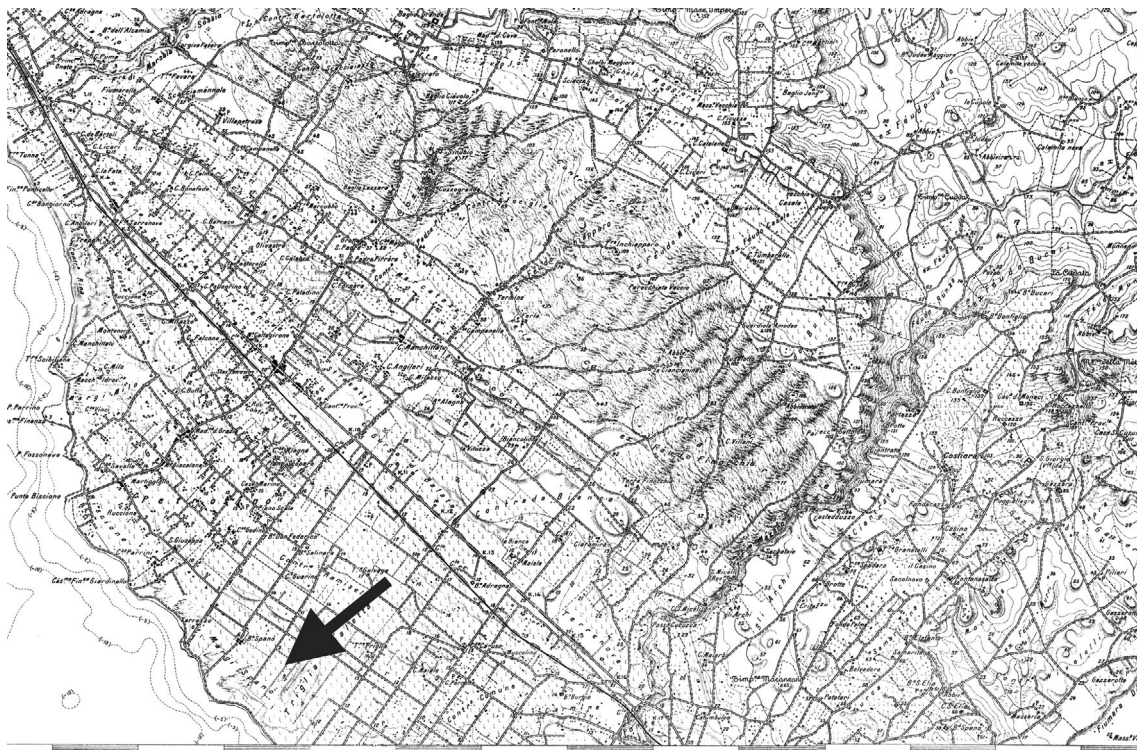


Fig. 5: The area west of Capo Feto.

Along the coast, there were internal lakes, which were caused by marine intrusion. Now they are dried up. These bodies of water were represented in maps of the 19th century¹⁹ (fig. 4) and were probably an important source of income for the local economy, as they had to be containers of a much-diversified fauna and with peculiar vegetation. Over these lakes or around them, migrating birds had to stop. Along the coasts, poplars grew (*Populus alba* L. and *Populus nigra* L.).²⁰ As the water was seawater, maybe salt was collected in these lakes: as we know, salt was very important in Antiquity, as it was used to preserve food, but it was also essential for animals. Behind the coastal area, there is a strip of land suitable for agriculture (vineyards, cereal crops, olive trees). Traces of a settlement, with an evident phase that can be dated to Imperial Times, have been noted in the area of Baglio Spanò, west of Capo Feto. This settlement had to take advantage of both the natural resources along the coast and the agricultural products of the hinterland. It was located in a sort of hinge between sea and countryside; it was not far from the road that from *Lilybaeum* went towards the river Mazaro (fig. 5).²¹

Some ancient roads led from the coast to the hinterland and had to be travelled by the shepherds who led the flocks from the coast to the Erice Mountain and vice-versa.²²

The central part of the survey area is called “sciara”, a rocky soil left uncultivated, as any type of agricultural farming is impracticable here.



Fig. 6: “Casale Tumbarello”: foundations.

The “sciara” was used for the mining of local limestone in the past, in canyons, and via underground exploitation.²³ Squared blocks were extracted in the quarries. Squared blocks were used in buildings, as e.g. it is still possible to see in the area of Tumbarello (24) (fig. 6).²⁴ Some quarries near the Mazaro River seem to have been abandoned for centuries. The quarries were very close to ancient settlements. For example, the wide quarry called “Garrebbe” (36) was close to San Miceli (37), a settlement that following archaeological data collected during the survey, seems to be datable from the late Republican period to Late Antiquity. It was located at the southern edge of the “sciara”, not far from the river Mazaro, in a flat plain where it is possible to practice cereal cultivation.²⁵

In the “sciara”, where garrigue is widespread, grow dwarf palms called in Sicilian dialect “giummare” (fig. 7). Their name is *chamaerepes*; in Greek language *chamairepes*. These plants could be used to prepare baskets or could provide insulation from the heat, as Plinius tells us. The leaves were also collected to prepare ropes, folding fans, hats, and other woven goods. The tender shoots are edible. From these palms can be obtained a type of coal that burns slowly.²⁶ In some ancient settlements in the vicinity



Fig. 7: The “Garrebbe” quarry with a dwarf palm.

of the “sciara”-San Miceli (37), Tumbarello (24), Amodeo (25), Torre Busala (27)-could be practiced some craft activities connected to the “giummare”. We have no definite proof; only the ethnographic tradition and Plinius allow us to suppose that some activity, of which no documentation remains, could have been practiced.

In the “sciara” and mostly in the low hills above, as well as long the river Mazaro, there is a widespread presence of *Ferula communis* that characterizes the landscape (fig. 8). It is an umbrelliferous plant of the Mediterranean and known to grow up to three meters. It was widespread in northern Africa and in Sicily, even at higher altitudes than the Marsala- Mazara del Vallo area,²⁷ in Sardegna, as well as in Greece. It was also known in Rome.²⁸ This plant was used to make chairs when the stems of the plants were intertwined; with the stems, one could also create “zufoli” (little flutes) for the shepherds.²⁹ The Greeks distinguished two kinds of *ferula*: *nartheca*, that is to say, the highest plant, and *narthecia*, the one that always remains little.³⁰ The *Ferula communis* could be used to transport the fire since inside it has a white part that it is consumed only gradually when it catches fire.³¹ A resin gum, obtained by incision of the root, was used in traditional medicine against skin diseases, rheumatism, hysteria, and given as vermifugal and analgesic. The seeds and preserved stems of giant *ferula*



Fig. 8: *Ferulae* in the hinterland.

(*Ferula communis*) were eaten in Italy.³² In Martial *ferula* has been retained to designate the wooden stick used in schools.³³ Some ancient sites – Casa Perrone (8), Chelbi Maggiore (12;16;17) – were inserted in the area between the “sciara” and the hills where *ferula* is more widespread. In the maps of the 19th century, a large property called “Feudo Ferla” is attested in this area.

The northern part of the district is characterized by rolling hills with stony soils, with a maximum altitude of around 180 meters. Cereal crops, plantations, olive trees, and vineyards may have played an important role in the inland economy and it has been hypothesized that there were oaks (*Quercus suber* and *Quercus calliprinus*)³⁴ in lands unsuitable for agriculture.

Probably agriculture was practiced in this northern area since the end of the 4th century BC: in the Zizza settlement (3) amphorae Vanderersch V, V/VI e VI, probably produced locally, suggest dating the settlement from the end of the 4th century BC until the end of the 3rd century BC. No fragment of black glaze pottery has been found there, but only deteriorated flat tiles. These data lead us to believe that the site was a farm in the middle of a large fertile plateau.³⁵

During the archaeological surveys we have carried out, in Chelbi fragments of coarse pottery containers (*pithoi*) have been noted in three sites (13,14,15). These containers coexisted with Greek-Italic amphorae, but no fragment of black glaze pottery has been found; this made us believe that the sites were chiefly designed for farming and storage.³⁶

In the settlement of Biesina (4), one of the innermost sites in the territory under examination, it was possible to distinguish a residential part, with an evident phase of 1st–2nd century AD (red slip ware Form Hayes 2,3,8 A) and a productive part, with coarse pottery and containers.

The Ancient Organization of the Settlement in the Landscape

The organization of the settlement, attested in the investigated area starting from the 4th century BC, with a take-off starting from the Roman Republican age, is determined primarily by the presence of water and other natural resources.

We can say that coastal lagoons and ponds, salt flats, wells of drinkable water, quarries, fertile soil, and the peculiar vegetation have characterized the organization of ancient settlement in the area between *Lilybaeum* and Mazara del Vallo. The irregular distribution of the settlement, characterized by the concentration of sites in some points and not inhabited areas, is due to the distribution of water resources and the presence of the rocky “sciara”.

Particular spontaneous vegetation (“giummare” and *ferula*) may have contributed to the local, predominantly agricultural economy (vineyards, cereal crops, olive trees).

The opportunity to practice herding due to the proximity of the coastal salt plains and to the mountain pastures of Erice has also contributed to the formation of ancient settlement and to the creation of a road network that allowed the passage along the coast,

but especially from the coast inside. The presence of the port basins of *Lilybaeum* flanked by the port in the lower course of the Mazaro, was fundamental for the development of the coastal settlement and to ensure contacts with North Africa. The possibility of trade with North Africa due to the proximity to the African coasts probably influenced the wealthy owners in choosing this Sicilian area from the Hellenistic period onwards to build their houses, as well as the possibility of sailing along the coast, as documented by the *Itinerarium Maritimum* and by the presence of archaeological traces of coast settlements.³⁷

The likely exhaustion of some groundwater resources, together with the widespread practice of monoculture (as seems to be attested from the end of the 6th century and the beginning of the 7th century for the supply of the city of Rome), which could have depleted the soil in Late Antiquity, parallel to the cultural and economic change that took place in the Mediterranean at the end of the 7th century, led to an apparent contraction of the settlement. Some agricultural sites, where water resources are still abundant, survived in the following centuries (e.g. Casale Nuovo; Chelbi). These are connected to *Lilybaeum* and *Mazara*,³⁸ the last one progressively acquired more and more importance in southwestern Sicily.

Notes

¹ Project “Costituzione di poli formativi per la ricerca nel campo dei Beni Culturali, con finalità culturali e di conoscenza dei siti nella provincia di Trapani”; Mosca 2016, 110–118.

² Mosca 2016, 115 f.; vd. Belvedere 1998; Wilson 2000; di Stefano 2002; Cambi 2005; Bowes et al. 2011.

³ Diod. Sic. 22,10,4.

⁴ Tusa 1990; De Vincenzo 2013

⁵ Schmiedt 1963; Giglio 2006; Palazzo – Vecchio 2013; Giglio 2014; Giglio 2017.

⁶ Diod. Sic. 13,54,6: he uses the word *emporion*.

⁷ Tusa Cutroni 1989; the hoard of coins, made up of silver coins from Agrigento, Catania, Gela, Imera, Leontini, Selinunte, Siracusa, has been dispersed in various collections; it has been dated between 445–435 BC, despite several problems.

⁸ Diod. Sic. 13.54: during the march of the Punics from Lilybaeum towards Selinunte, the *emporion* near the river Mazaro is conquered in 409 BC; see also Steph. Byz. s.v. Mazare: he refers to a *phrourion* belonging to the Selinuntinoi.

⁹ Bonanno Marzo 1931.

¹⁰ Giglio 1998.

¹¹ Denaro 1995.

¹² Strabo 6,2,9; Strabo 6,2,1.

¹³ Strabo 6, 2,1, C 265-266; Plinius nat. 3, 87 (distance from the Cap Bon area and from Caralis); 3, 92 (distance from Malta).

¹⁴ See Mosca 2016, 99.

- ¹⁵ Mosca 2016, 121 f.
- ¹⁶ Mosca 2016,
- ¹⁷ Molinari – Valente 1995; Mosca 2016, 120
- ¹⁸ Gini – Misuraca 2009, 178 f.
- ¹⁹ Caruso – Nobili 2001, maps of the 19th century nos 403 and 405 (Archivio Mortillaro di Villarena).
- ²⁰ Gini – Misuraca 2009, 66.
- ²¹ Uggeri 2004, 164; see *It. Ant.* 88,8
- ²² Blake – Shon 2009; Mosca 2016, 110. 122.
- ²³ Gini – Misuraca 2009, 25 f.
- ²⁴ Mosca 2016, 109 fig. 9, 24.
- ²⁵ Mosca 2016, 112 fig. 11.
- ²⁶ *Plin. nat.* 13. 28-29; 39; 97; Tamburello 1990, 230.
- ²⁷ See Giancuzzi – La Mantia 2004, 265–326.
- ²⁸ Ceschin et al. 2004, 73–96.
- ²⁹ *Plin. nat.* 13, 122–126.
- ³⁰ *Plin. nat.* 13, 123.
- ³¹ *Hes. Theog.* 567; *Op.* 51: he speaks of a hollow cane. See Frazer 1930, 195.
- ³² *Plin. nat.* 19, 175.
- ³³ *Mart. ep.* X.
- ³⁴ Gini – Misuraca 2009, 65–71.
- ³⁵ Mosca 2016, 111 f.
- ³⁶ Mosca 2016, 113.
- ³⁷ Fentress 1998.
- ³⁸ Mosca 2016, 119 f.

Image Credits

Fig. 1: Map from Mosca 2016. – Fig. 2: Satellite image IGM. – Fig. 3. 6–8: Photos by the author. – Fig. 4: Map from Caruso-Nobili 2001. – Fig. 5: Map IGM.

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