

*Quality Agriculture: Historical Heritage and Environmental Resources
for the Integrated Development of Territories*



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Editors

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THE NEAPOLITAN PLAINS (CAMPANIA)

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GENESIS AND RECLAMATION

The orographical features of Campania are comprised of ridges, diverse in nature and form, which are the result of two factors: the orogenic thrust which brought about the formation of the Campania Apennines and the aggregation of materials from the region's numerous magmatic basins (Figure 1).

Thus the genesis of the vast plain which extends from the Flegrean Fields, the area of Vesuvius, the Agro Nolano and the Caserta Plains, which dates back to the last part of the Tertiary Period, is the result of the massive eruptions of the volcanic system comprised of three volcanoes: of Vesuvius, the Flegrean Fields and Roccamonfina. The numerous explosions of pyroclastic material transported by the force of volcanic activity, wind and water, gave rise to a land with multiple stratigraphic characteristics, which varied in relation to the consistency of the materials including lapillus, pozzolana, tuff and trachytic rock, and well as in form and colour. (CANTILE, 1994).

Over the millenniums, the calcareous ridges crowning the territory, have favoured alluvial and sedimentation processes which led to the formation of the plains, bordered to the North-west by the Massico massif and, to the sea, by a series of littoral belts and a lower-lying area behind the dunes where, in the past, the waters became swamps or formed lakes. In the interior, instead, the plains gradually rose with certain regularity towards the base of the ridges. This phenomenon created environmental



Fig. 1 - The Neapolitan Plains - De Agostini Geographic Atlas.

conditions more favourable to the settling and development of veritable centres such as Mondragone, Sparanise, Calvi, Pignataro Maggiore and Bellona.

The marked fertility of this volcanic soil prompted the Romans to reclaim the plains territory by canalizing the waters and subsequently organizing a *centuriatio* which served to distribute most of these lands to 240 colonists. Traces of the land-surveying reticulate are still visible in the areas of Giugliano and Agro Aversano whereas they have been completely cancelled along the coastal strip by the occasionally swampy course of the former Clanio River which was once a tributary of the Volturno River.

The Roman reclamation did not, however, manage to halt to process of accumulation of volcanic and alluvial materials in the region's more depressed, peripheral areas. These areas, which in this manner progressively lost permeability, were subsequently re-presented with the atavic problem of draining water from the numerous courses of water in the area, particularly in the strips behind the dunes. Development of the coastal area was significantly hindered even after the subsequent building of the *Via Domitiana* (1st century A.D.) which linked *Puteoli* to Rome along the coast.

Additionally, during the Middle Ages, it was precisely in the coastal area that large landed estates (*latifundiums*) began absorbing small and medium properties, thus further reducing the most vital part of the plains. This area was criss-crossed by waterways which were no longer controlled and thus frequently swollen. Consequently, the land along the coast became swampland which was characterised by the presence of buffalo.

It was not until the land reclamation in the sixteenth century under Spanish domain, that the few scattered homes along the plains began to multiply and, following further reclamation and subsequent irrigation works, nucleuses were formed giving rise to veritable rural hamlets. (RUOCCO, 1976). The works, under the direction of the architect Domenico Fontana, involved those areas located east of the Volturno, where the waters were drained by the Lanzi-Savone and Regia Agnena canals, and the Regi Lagni, a network of collecting canals extending to Agro Aversano, the Caudina Valley and the hills of Somma Vesuvio, were built and, still today together with the Volturno, constitute the cornerstone of the hydrographic system for the entire southern section of the Campania Plains. Thus, a manifold for the waters of the Clanio was constructed to facilitate the backwash towards the sea and to avoid that it run through the depressed furrows of the plains and be blocked by the littoral belt of dunes and create a swamp. As a result, 10,000 hectares of sullage-covered, coastal area was recuperated. In order make the reclamation more effective, a rather complex system of irrigation, created by building a dyke at Ponte Annibale, north of Capua and in the Caiazzo Plain, provided for tapping off 23,000 litres of water from the Volturno (Frallicciardi).

In the second half of the nineteenth-century, following a period of swamp resurgence, drainage work was resumed with the establishment of veritable reclamation consortiums which involved the entire coastal area from Licola to the Garigliano. In 1919, the *Opera Nazionale Combattenti* (National Veterans Works), took over from the Civil Engineer Corps and

conducted integral reclamation of the entire territory and eradicated malaria. Between 1920 and 1940, the depressed areas of the Campagna Vicina were reclaimed, the land was dried with draining pumps and the banks of the Volturno were strengthened thereby regulating the mountain torrents so that they could flow directly into the central canal. Subsequently, land drainage was conducted and a road network was completed in the lower Volturno basin and to the left of the Garigliano. Accordingly, the population increased, lands were parcelled and small residential hamlets were created in Licola and Mazzadrino as well as a few service centres such as La Riccia and La Rotonda.

AGRICULTURE AND SETTLEMENTS

The territorial area south of the Regi Lagni in the Campania Plains is, according to Elio Manzi (1974), justly defined as the Neapolitan Plain because, during the course of history, this area has enjoyed a close relationship with the city of Naples for which it served as an *agricultural district* as well as in light of its contraposition to the Caserta Plains further to the north.

The extreme fertility of this volcanic soil, rich in sulphur anhydride and potash, enhanced by the abundance of water-bearing layers and favourable, not dry, Mediterranean-type climatic conditions has always made the central Neapolitan Plain an agricultural area par excellence.

With the reclamations of the Bourbon period, a distinct functional diversification arose between the Caserta Plain, where industrial cultivation and a form of partially stalled, partially in the wild breeding developed, and the Neapolitan Plain, where fruit and vegetable cultivation and stalled breeding continued to prevail. As then, small farms which had grown in the 18th and 19th century following the sale and allocation of church lands to farmers, are still today the most wide-spread system of management. Mid- to large-size properties, located fairly near former buffalo grazing lands are numerous in cities and towns with the greatest territorial extensions such as Giugliano, Acerra, Caivano, Afragola and Villa Literno.

In the mixed cultivations of the plain, leguminosae play a primary role although grapes and tobacco are also fairly widespread. Nonetheless, the agrarian landscape of the plains has undergone significant changes in the past fifty years: much land has been taken over by industrial fruit and vegetable firms to the detriment of typical, mixed rotation cultivation of three

or four crops a year. The cultivation of wheat and grain, formerly one of the rotation crops sown over large areas, was utilized by both the local population as well as the once common small pasta making establishment. This type of cultivation, however, gave way to the cultivation of corn, planted either in spring and summer, which provided greater yields (MANZI, 1974). At present on the coastal strip, particularly near the cities of Villa Literno and Mondragone, in addition to olive groves and forestry, there is a prevalence of fruit and vegetable cultivation including peaches, for use in the production of fruit in syrup and as a base for all kinds of preserves, and apricots. The intense development of these cultivations on an industrial level may be, for the most part, attributed to the proximity of the metropolis of Naples as well as to the market needs. Then, as today, this makes the problem of the progressive reduction of arable land all the more relevant for the plains, the very area delegated to agrarian development, which have suffered the greatest impact of encroachment by industrial and urban expansion (CUPO, DELIA, 1972).

At the time, many observers (MANZI, 1974) indicated the Neapolitan Plains as the most evident example the territorial imbalance existing in southern Italy. If, on one hand, this area, owing to the fertility of its soil, the high population density and the continuous demand for agricultural produce in Naples, on the other, it had succumbed to a mindless form of speculation, which reached a peak of unregulated building and camorra infiltration of the agrarian markets during the 70s (Figure 2).

The dynamics involved in the settlement of the Neapolitan Plains appear to be strongly influenced by altimetric-hydrographic conditions. The large, compact centres follow an arch-like pattern which reproduces, at a distance of about 10 km, that of the Regi Lagni curve. Manzi defines this area as "a safety strip against flooding and, especially against malaria from the swamps and the residual ponds during the summer". Nonetheless, malaria and the presence of large properties, as opposed to the fragmentation of the central plains area, influenced the localisation of settlements on the coast although, more plausibly, the need for defence must have induced the population to settle in the large hamlets in the median part of the plains and along the main communication routes where industries, commercial centres and the appendages of the larger inhabited centres gradually flourished.

Once the danger of incursions from the sea ceased to be a problem, settlements, in the form of scattered homes and small hamlets, expanded



Fig. 2 - The Plains: backdrop of the Massiccio Massif (photo M. Ronza).

beyond the large centres along the plains towards the coast. However, beginning in the sixties and the seventies, there was a veritable invasion of the coastal area between Monte di Cuma and the mouth of the Garigliano River: settlements, both concentrated and scattered, were developed along the large beaches or near the pine forests behind the dunes for tourism, recreational and balneary purposes.

This phenomenon quickly reached such dimensions as to further accentuate the contrast, which was already evident in the early twentieth century, between the high density of the Neapolitan coast and the lower population of the Cuma coast line.

Particularly in the cities of Castel Volturno, including the large Coppola Pinetamare Complex, and Mondragone, which includes the well-known tourist complexes of Baia Domizia, Baia Azzurra and Baia Verde, growth of the concentration index was concurrent with the construction boom which took place between the 1961 and the 1981 censuses. How-

ever, in contrast to Mondragone, in Castel Volturno, here the population was already concentrated in 1961 and 1971 in excess of 70% of the total and would exceed 90% in the following decade. In 1961 in Mondragone, however, the figure was nearly 15% of the total, but here as well, reached 90% by the nineties. Clearly Castel Volturno's residential function preceded its role as a tourist centre: a boom of new houses and infrastructure during the seventies and the eighties further spurred growth which had begun in the Sixties. Instead, the development of Mondragone can be associated, for the most part, to the construction of large tourism complexes along the coast and the building of second homes and infrastructure which sharply transformed the territory and the landscape. Frequently, those same houses are no longer summer homes, but stable residences, as confirmed by the 4,000 unit increase in Mondragone's resident population between 1981 and 2001. This is in sharp contrast with the data related to unoccupied homes: in 1981 in Mondragone, they were almost half of the total, in 2001 the figures had decreased to 38.4%, which, in light of the fact that the number of buildings has almost remained unchanged, substantiates a variation in the use to which many homes are put, once merely used for holidays, now habitual places of residence.

During the fifties, the masses were attracted by short-distance, day trips to the renown beach localities on the Sorrento Peninsula and the nearby islands until reaching a point of saturation. Only afterwards, later than other coastlines in Campania and throughout Italy, were other localities, such as the Domizio coast, chosen as tourist areas (RUOCCO, 1976).

Especially the *Via Domitiana*, which had replaced the *Via Appia* as a link between Naples in Rome, acted as a veritable axis of development for the coastline of the Plains and favoured the growth of settlements and the area's economic evolution. During the summer, this road carries large volumes of traffic which are comprised of tourist flows not only from the Naples area but also from the interior areas of the Plains, particularly from the Aversano and the Caserta areas. Since the fifties, along with the long chain of beach establishments which, over the course of time, have occupied increasingly large portions of the coast, there has been a proportional increase in the number of second homes. The economic and functional basis of this area underwent mutation with many farmers opting to channel their agricultural and zootechnic

products into new and more lucrative commercial endeavours, and other abandoning their traditional activities to work in other tourism related sectors such as construction, transport, commerce and hospitality. Based upon the census figures for 1961 and 1991, in Mondragone and Castel Volturno, there were respectively 1019 and 113 units employed in the service sector whereas in 1991 the figures had increased respectively to 1019 and 113.

Nonetheless, Manzi (1979) points out that the propulsive force of the Domiziano axis would not have been sufficient on its own to determine the creation of complexes such as that of Pinetamare or Baia Domitia without the additional thrust of intense speculative-entrepreneurial activity. The ensuing transformations are extremely evident even to the general public. If, indeed, reclamation and the building of the roadway, indispensable factors in the subsequent coastal evolution, had brought about significant change in the coastal landscape, the fast-paced rate of the expansion process of new settlements induced abrupt changes in this area which formerly had expressed numerous traditional lifestyles.

In light of the preceding and with the awareness that the territory extends from the estuary of the Volturno river along the Domizio Coast to the Licola pine forest including Lake Patria which is an area of natural and archaeological interest which needs to be more thoroughly and definitively protected, the Volturno-Licola Coast Natural Reserve was established with deliberation number 12/2/99. This reserve covers an area of nearly 1,550 hectares including portions of Castevolturno, Pozzuoli and Giugliano in Campania Region and aims to particularly protect the pine forest (both domestic and maritime pine) and the vegetation in general, primarily comprised of rush and cane and in the area near the beach, lenticus, cane apple trees and rosemary (Figure 3) (REGIONE CAMPANIA, 2000).

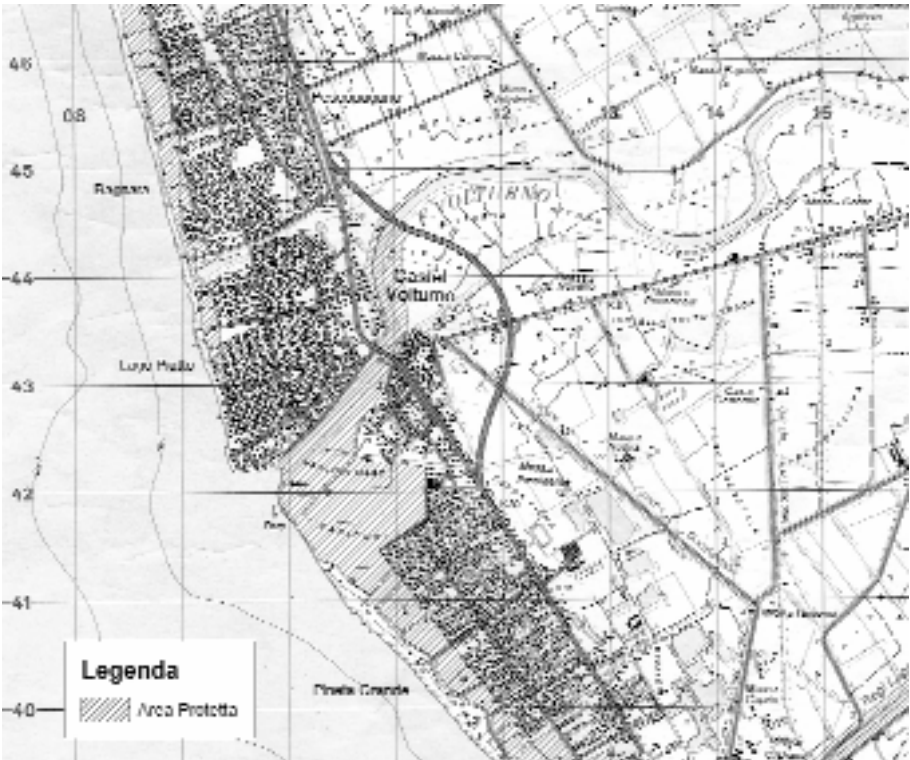


Fig. 3 - Coastal settlements near the mouth of the Voltorno River and the Voltorno - Licola Coast Reserve.

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