

the struggle for environmental resources and the production of maps in the XVIII-XIX Centuries.

Case studies in Liguria, Trentino and Tuscany (Italy).

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Introduction - The role of historical cartographies in the documentation of historical and environmental contexts, as well as in the cultural and environmental heritages governance, are by now universally recognized (Dai Prà, Tanzarella, 2013). At the same time maps, as any other historical source, needs a **critical and analytical approach**, in order to identify the quality of data inscribed in them. The **Italian micro-history school** suggested to consider historical sources as the result of social actors strategies to legitimize their jurisdictional and economical rights. In many cases, historical documents had been produced during conflicts, as the **struggles for environmental resources control** (Ingold, 2011).

Methodology - In order to validate the starting hypothesis, three case studies have been selected in Italy (Fig. 1). Each map has been analysed in different steps: 1) We identify the **aims** of the map production, the **committee** and the **techniques** of producing. In some cases, documents related with the map creation have been found in different archives than those in which maps are located (Quaini, 1980). 2) A philological analysis of the sources (Harley, 1989). 3) A crossing of data collected from maps with data from other sources (Moreno et al, 2005). We use **textual and iconographic sources**, as well as **field surveys**. 4) A diachronical comparison of historical data with the current situation.

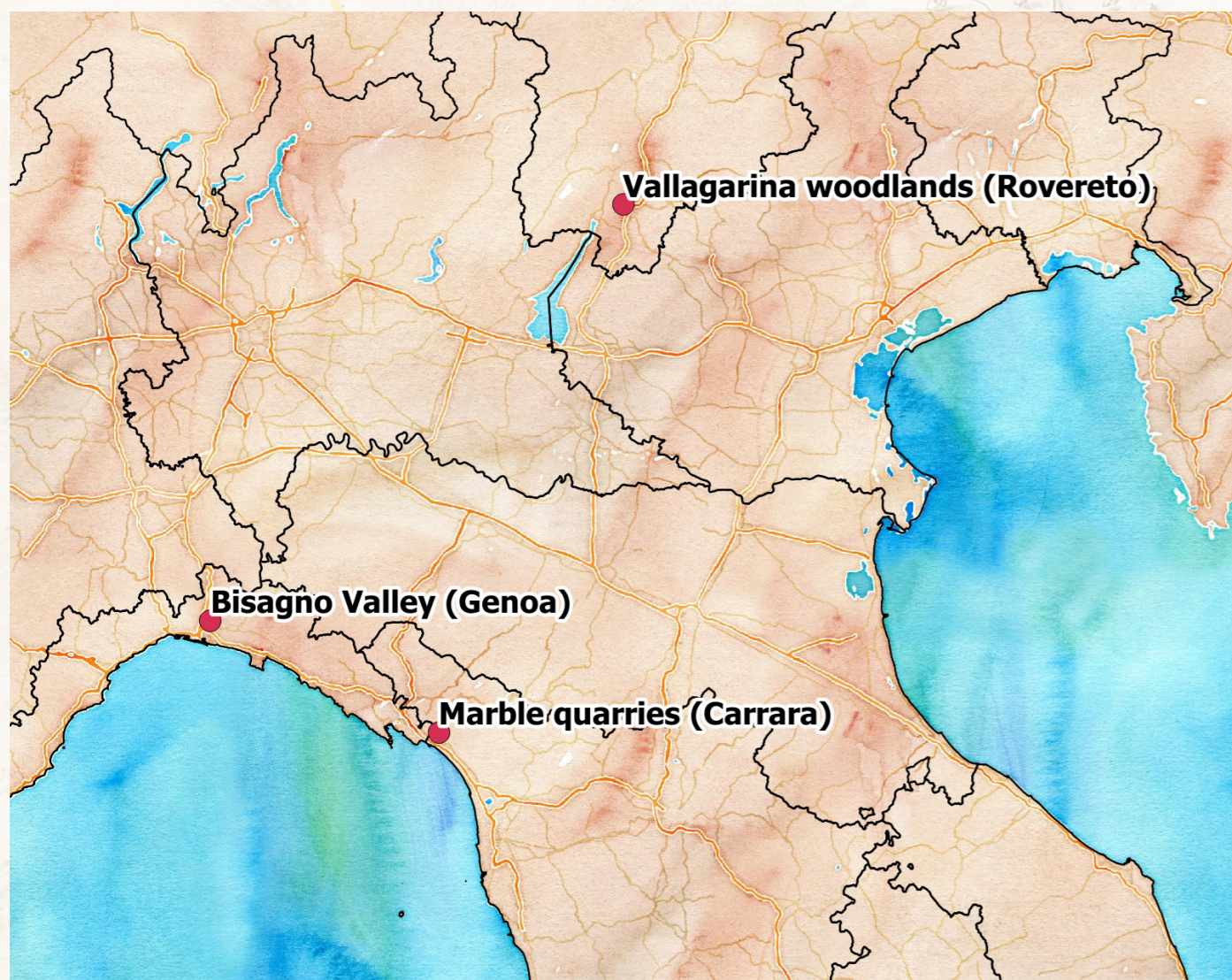


Fig. 1. Localisation map.

The historical aqueduct cartography to reconstruct the woodland management of Bisagno Valley (GE)

The starting point of the research has been the discovery of different maps of XVIII century of the historical aqueduct of Genoa: a cartography of 1729 of the aqueduct in the Bisagno Valley, by Matteo Vinzoni, and a map of 1788 of the water springs in the high Valley, by Francesco Storace (Fig. 3).

Both documents contained different information: the XVIII c. tenure systems, the land use and coverage, the woodlands management and the rural artifacts. Historical research carried on in different archives allow us to reconstruct the historical context and the purposes of documents production: the struggle on water resources between Genoa city and Bisagno Valley communities. To legitimize its rights on the Valley river and springs, Genoa cartographers realised maps in order to show how the water and land management of local communities affected water supply for the city and the port. Maps have been geo-referenced and vectorialised in Qgis; geolocalised data allow us to identify terraced areas which are actually covered by reforestations (fig. 2), as well as the localisation of past commons land for local communities.



Fig. 2. Terraces found in Val Bisagno

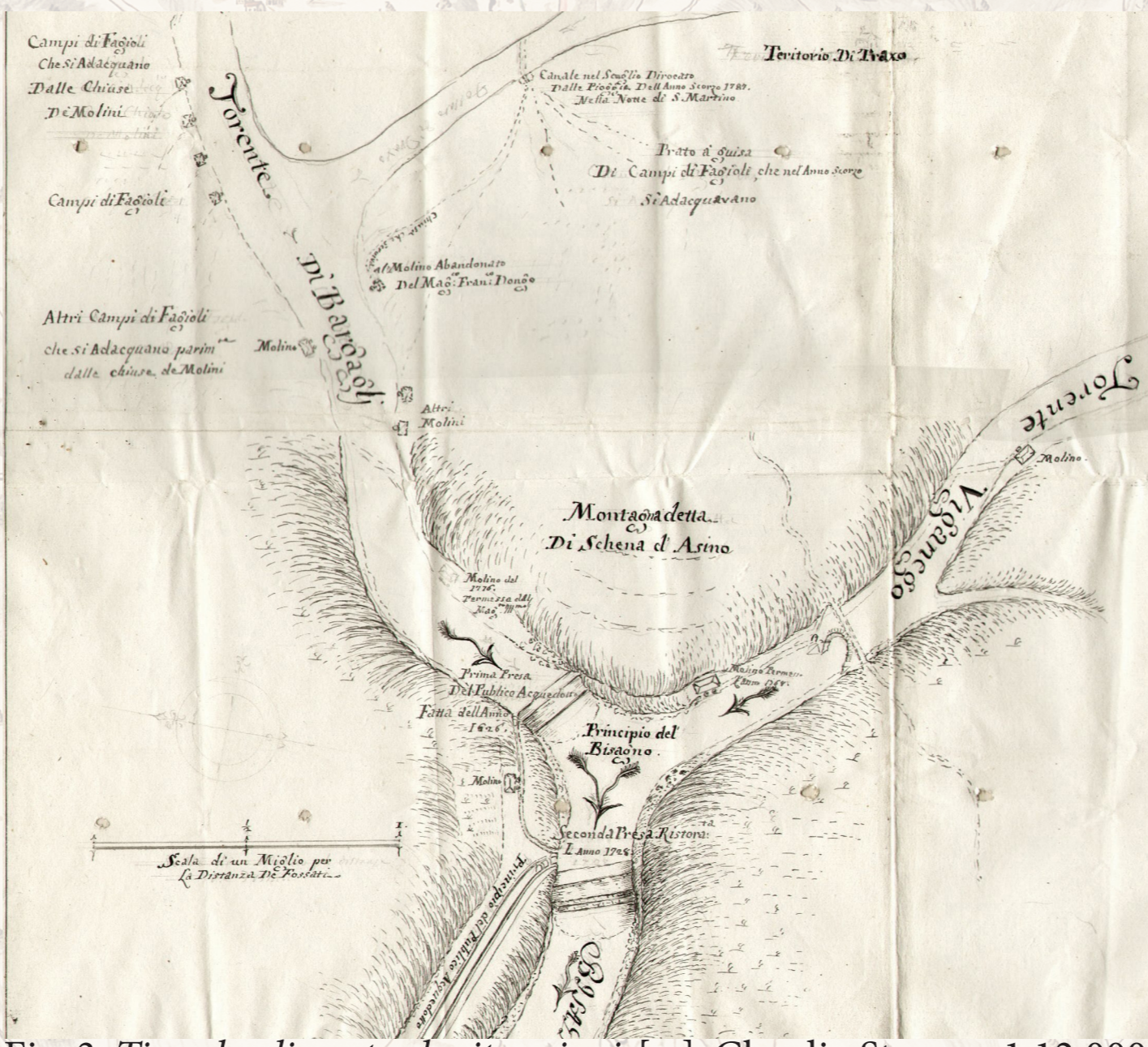


Fig. 3. Tipo che dimostra le situazioni [...], Claudio Storace, 1:12.000, 1788. Archivio di Stato di Genova, Fondo cartografico, C.02.28.0926-Genova-[B.7.331]

Carrara marble quarries between State, privates and local communities

In 1820 Maria Betrice Ricciarda d'Este, Duchess of Massa and Carrara, ordered the creation of a modern cadastre and land register for the Massa territory. In the 1824 the new cadastre, composed by a parcels list and geometric particle maps (1:2000 or 1:4000), was completed. In order to promote marble trade, initially the marble quarries were exempted to pay the taxes, and not recorded in the parcel lists. However, in 1822 the Governor of Massa decided to create special lists of marble quarries with maps, as consequences of the long series of conflicts between private possessors, diggers and local communities on extracting rights.

The discovery of the marble quarries list and maps in the Archivio di Stato di Carrara allow us to recreate the property system and quarries landscape of XIX Century Apuane Alps (Fig. 4). A geotabase and a digital cartography has been created to be compared with current state of marble quarries (Gabellieri, Grava, 2017).

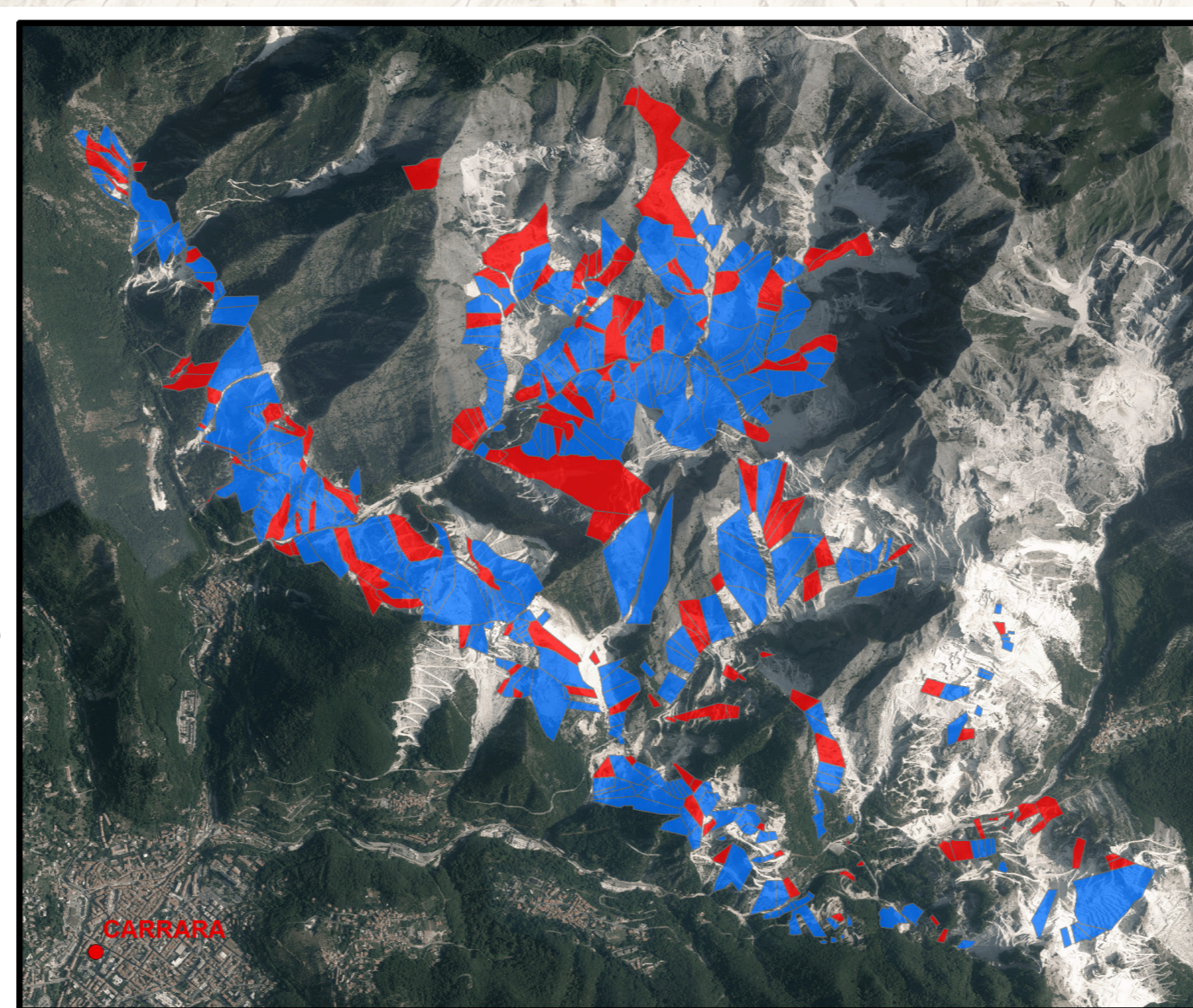


Fig. 4. Result of the vectorialisation of 1820s Cadastre and marble quarries list.

Woodland management, cultivations and boundary conflicts in Trentino.

According to the most recent research, commons areas have always been subjected to continuous conflicts on their jurisdictional values and property boundaries. In Trentino, the Capitanato Circolare di Rovereto was established in 1815 in the city of Rovereto with the aim of resolve disputes between different communities. The Capitanato archive, in the Archivio di Stato di Trento, has numerous files about this disputes in XIX Cen-

tury (Nequirito, 2010). In one of this files, a maps produced in 1821 by the expert Giuseppe Mario Moschini, in order to solve a boundary conflict between the Communities of Brentonico and Avio for the possession of a woodland. The map reproduced the woodland, as well as the claimed borders (Fig. 5). Different symbols have been used for coppice woodland, pastures and grasslands. In order to identify the borders, boundary stones and a charcoal kiln have been depicted. The area depicted in the map has been identify; the next step of the research will involve field surveys to locate the boundary stones and the charcoal kilns, which could be analysed by anthracological analysis to identify the wood species which were burned in the area.

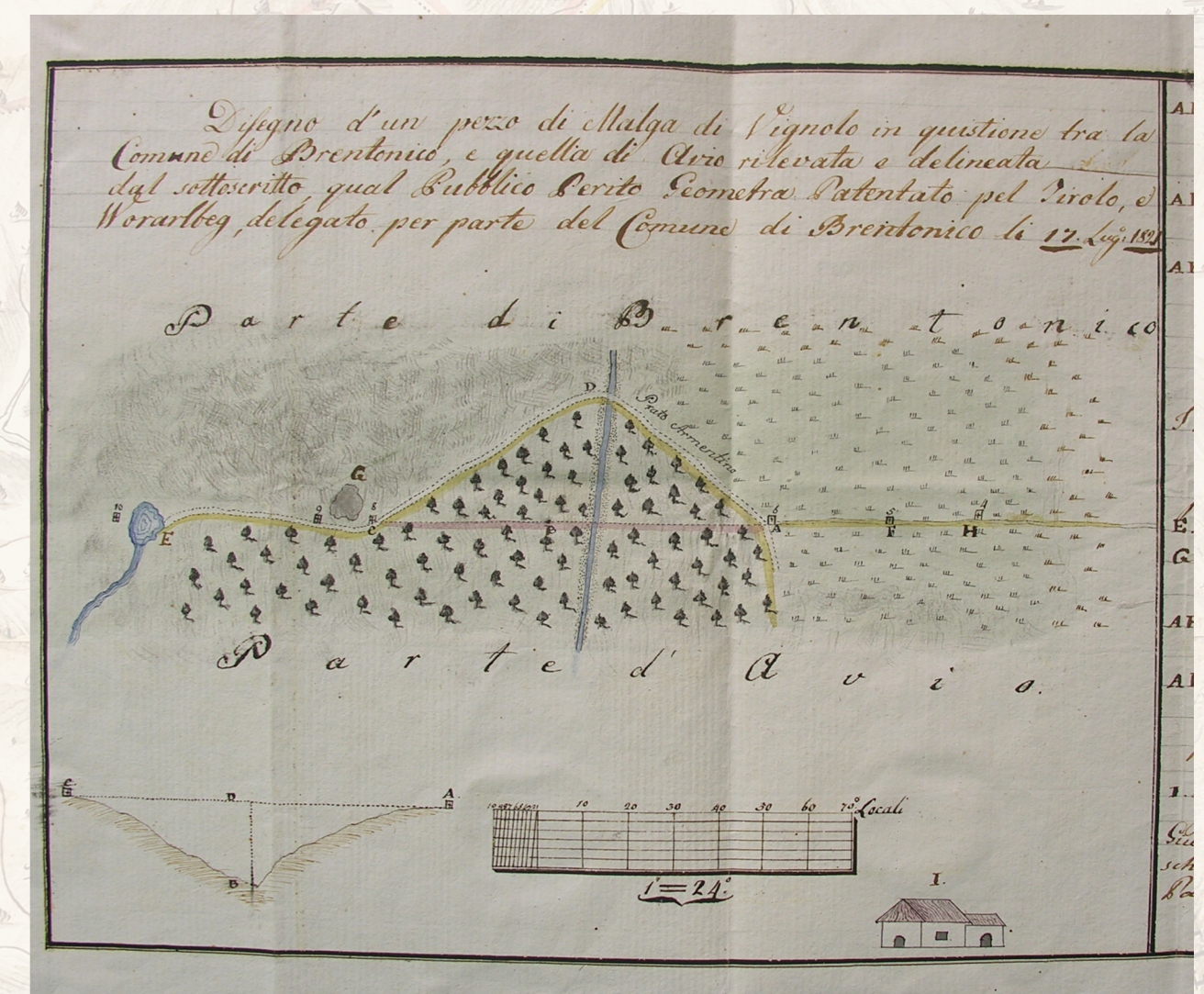


Fig. 5. Disegno di un pezzo di malga di Vignolo [...], Giuseppe Marco Moschini, 1821. Archivio di Stato di Trento, Capitanato Circolare di Rovereto, f. 96.

Conclusion

In all the selected cases, collected data has been use for a better understanding of spatial historical processes, for a **conservation and valorisation of local heritage** and individuation and **interpretation of local historical peculiarities**. Moreover, maps have been analysed as output of historical controversies for resources control; their production shows historical processes of jurisdictional construction by the cartographers and the committee institutions. The results shows the potentials offered by historical maps as **"multiple sources"**, which provide information both on the history of environmental resources and past landscapes, and on social actors strategies to control resources.

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