

# THE THARROS NETWORK PROJECT. ORIGIN, EVOLUTION AND DEVELOPMENT OF PUNIC ECONOMY AND DIET IN CENTRAL-WESTERN SARDINIA (ITALY)

CARLA DEL VAIS, ANNA CHIARA FARISELLI, ALFREDO CARANNANTE, SALVATORE CHILARDI\*

*Abstract:* The Tharros Network Project is an interdisciplinary project focused on the Punic-Roman city of Tharros and the Sinis Peninsula in Sardinia, an area characterized by a high density of archaeological sites dating from Neolithic to Early Middle Ages. The project aims to reconstruct the diachronic evolution of the Sinis economy and ecology through bioarchaeological, geoarchaeological and archaeometric analyses.

*Keywords:* Sardinia; Tharros; Bioarchaeology; Palaeoecology.

## 1. INTRODUCTION

Tharros is a Punic-Roman city in the Sinis Peninsula (Western Sardinia) situated on the isthmus between the open sea and the Gulf of Oristano (FIG. 1). Different ecosystems – beaches, cliffs, lagoons, lowlands and hills – characterize the area.

The Sinis Peninsula was a densely populated area from the Middle Neolithic to Early Middle Ages. During the Neolithic period, several villages arose around the Cabras pond whose exploitation was the main source of supply. After a Chalcolithic-Early Bronze phase of contraction of the anthropization, numerous nuraghes and Nuragic villages arose between the 16th and the 8th century BC controlling the environments of the Sinis – basaltic plateaus, plains, coasts, lagoons –, suggesting a wider exploitation of the natural resources.

Tharros was founded as colony by Carthage during the 7th century BC.<sup>1</sup> The North African metropolis influenced the urban evolution to this site through the installation of the *tofet* and two funeral districts. Between the end of the 5th and the 4th century BC the city was monumentalized<sup>2</sup> and numerous small agricultural villages appeared in its hinterland.<sup>3</sup> Tharros came under Roman rule at the end of the 3rd century BC. Latifundium land exploitation characterized the Roman Imperial period. From the 4th century AD the slow depopulation of Tharros corresponded to the birth of large settlements in the Sinis with diversified economy, until the region was abandoned. This abandonment favoured the preservation of numerous ancient sites, some of which are already excavated.

Despite the central importance of the Sinis area in the Sardinian past, but also in the Western Mediterranean ancient trade networks, the available data about the sites economy and its evolution is regrettably scarce.

---

\* Carla Del Vais: Department of Humanities, Languages and Cultural Heritage, University of Cagliari; cdelvais@unica.it; Anna Chiara Fariselli: Department of Cultural Heritage, University of Bologna; annachiara.fariselli@unibo.it; Alfredo Carannante: Mediterranean Archaeology Department, International Institute for Archaeology and Ethnology (IRIAE); alfredo.carannante@iriae.com, mediterranean@iriae.com; Salvatore Chilardi: Mediterranean Archaeology Department, International Institute for Archaeology and Ethnology (IRIAE); schilar@virgilio.it

1 Secci 2019.

2 Fariselli 2018.

3 Del Vais 2014.



FIG. 1. Orthophoto of the Tharros area with the excavation sectors (Ikonos 2005).

## 2. THE PROJECT

As the ecosystem management by the human population determines the economy of the sites, its reconstruction should be one of the main goals of archaeological research.

Punic Tharros grew, flourished and died as part of a complex ecological network attested by the high density of sites spanning from Neolithic up to the Early Middle Ages detected and partially excavated in the area. However far too little attention has been paid to the diachronic evolution of the economy in these sites and, as a consequence, paramount data as bioarchaeological, archaeometric, geoarchaeological analyses results are very scarce.

Since 2018, a preliminary work, result of a collaboration between the University of Cagliari, the Municipal Museum of Cabras and the International Research Institute for Archaeology and Ethnology (IRIAE), started on some bioarchaeological assemblages from some Punic, Roman and Early Medieval contexts of the territory. In addition, collaboration between the University of Cagliari, the IAMC-CNR Oristano centre and IRIAE is contributing to reconstruct the coastal morphology evolution through sedimentological and palaeoecological analyses.<sup>4</sup>

The first data obtained present us with the need to extend the research to a larger set of contexts in order to frame them in a wider and coherent chronological reconstruction.

The Tharros Network Project is born as a natural consequence of such a multidisciplinary approach in this archaeologically important area, involving the University of Bologna which manages some sectors of the area of Tharros.

The aims of this project are to reconstruct diachronically:

<sup>4</sup> This collaboration started within the project *Interactions between man and environment in the evolution of the ancient coastal landscape of Sardinia*, funded by the Autonomous Region of Sardinia (Project of Fundamental or Basic Research, L.R. 7 August 2007, n. 7, Ban 2013, scientific coordinator C. Del Vais).

FIG. 2. Area of the Punic-Roman city of Tharros: 1) Metallurgical district of Su Murru Mannu (photo: C. Del Vais); 2) *Cardo maximus* area (photo: C. Del Vais); 3) Hill of San Giovanni (photo: C. Matzuzzi).



- the geomorphological evolution of the Sinis Peninsula, with special attention to the lagoon/coastal dynamics;
- the marine and lagoon resources exploitation;
- the wild fauna and flora exploitation;
- the husbandry strategies and the relative importance of different products: milk, wool, meat;
- the ancient gastronomy: food practises, processing and consumption;
- the social role of food and banquets;
- cultural, ritual and religious role of the natural resources;
- the import of exotic products.

### 3. MATERIALS

The first step of the project will be focused on the archaeological remains from the excavations carried out by the University of Cagliari and Bologna at Tharros where they revealed important contexts related to different periods:

- Food remains from the metallurgical district of Su Murru Mannu providing an important diachronic observation point (FIG. 2,1), whereas other remains may reveal the ritual activities in the nearby *tofet*.<sup>5</sup>
- Bioarchaeological remains from Punic-Late Roman shops and houses along the *cardo maximus* in the very heart of the town<sup>6</sup> (FIG. 2,2). Particularly interesting is the recent discovery of shell and red-coral remains from the courtyard of a Late Roman structure revealing a marine raw materials workshop connected to the nearby sacred areas.

5 Fedele 1979; Fedele – Foster 1988. The study of the materials from Su Murru Mannu is in progress as part of a project by the Universities of Bologna and Cagliari.

6 A large area adjacent to the *cardo maximus* falls under the ministerial concession to the University of Bologna (scientific direction A.C. Fariselli, years 2018-2020 , Concessione di ricerche e scavi archeologici DG-ABAP\_SERV\_II\_UO1|05/06/2018|0015247-P| [34.31.07/13.6.2/2018]). Cfr. Marano 2020, *passim*.



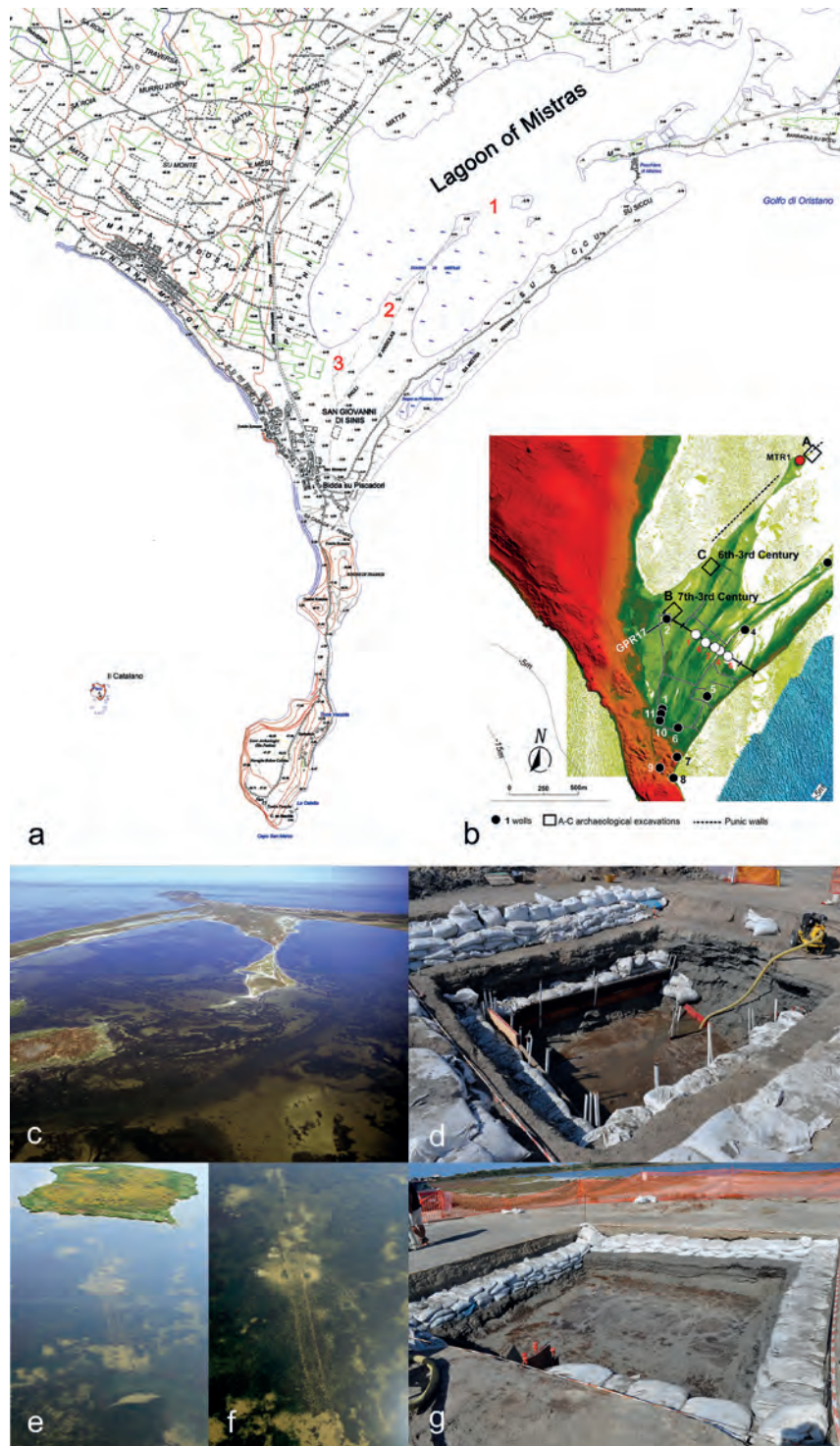


FIG. 3. Punic harbour of the Mistras lagoon: a) CTR map (scale 1:10.000); b) DTM; c) Lagoon of Mistras (photo: AMP); d) Archaeological excavation of 2014 (n. 3) (photo: C. Del Vais); e-f) Punic structure in the lagoon (n. 1) (photos: F. Cubeddu); g) Archaeological excavation of 2015 (n. 2) (photo: C. Del Vais).

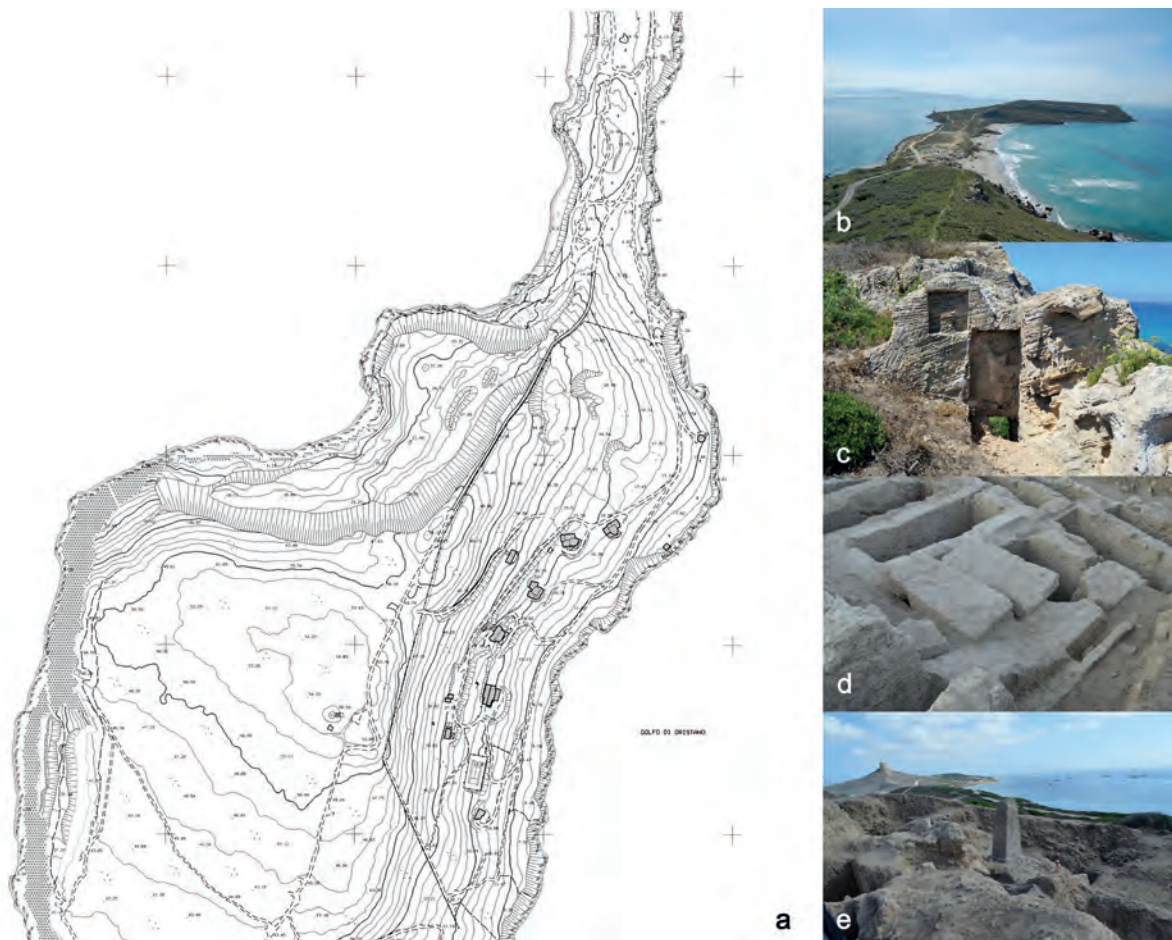


FIG. 4. Southern necropolis: a) Map of Capo San Marco (from E. Acquaro *et al.* 1999); b) View of the isthmus and the promontory of Capo San Marco (photo: C. Del Vais); c) Entrance of a collapsed chamber tomb on the western cliff, with beryl in relief in a niche (photo: C. Del Vais); d) Pit tombs on the eastern slope of the Capo San Marco with original roofing slabs (photo: A.C. Fariselli); e) Sector with pit and chamber tombs on the east side of the promontory, with a cippus in original position above a hypogeum tomb (photo: A.C. Fariselli).

- Archaeozoological remains from habitation levels on the eastern slopes of the San Giovanni hill (area of the Temple K) dating back to Punic, Roman and Early Medieval periods (FIG. 2,3).<sup>7</sup>
- Materials from the beach contexts excavated in the humid environment in the Mistras Lagoon where geoarchaeological investigations revealed the location of the Archaic-Punic harbour of Tharros (FIG. 3).<sup>8</sup>
- Funerary meals remains from the Southern necropolis (FIG. 4), where hundred of graves, hypogeum chambers and cremation burials dating from 7th to 3rd century BC have been excavated recently.<sup>9</sup>

<sup>7</sup> Excavations under ministerial concession to the University of Cagliari (scientific direction C. Del Vais, years 2018-2020, Concessione di ricerche e scavi archeologici DG-ABAP\_SERV II\_UO1|05/06/2018|0015248-P| [34.31.07/13.6.1/2018]).

<sup>8</sup> Pascucci *et al.* 2018; Del Vais *et al.* 2020 (Concessione di ricerche e scavi archeologici DG Prot. 4892, Class. 34.31.07/345.2, 21/05/2013).

<sup>9</sup> Fariselli – Vandini 2014; Secci 2014-2015; Fariselli – Silani – Vandini 2017 (Concessione di ricerche e scavi archeologici DG-ABAP Prot. 9426, Class. 34.31.07/15. 3, 27/03/2017)..





FIG. 5. Northern necropolis: a) Map (map scale 1: 5000); b) Aerial view (photo: F. Cubeddu); c) Punic tombs collapsed to the sea (photo: C. Del Vais); d-e) Area A (n. 1) (photos: C. Del Vais); f) Area D (n. 2) (photo: C. Del Vais); g) Area B (n. 3) (photo: A.C. Fariselli).

- Materials from numerous Archaic, Punic and Roman tombs excavated in the Northern necropolis (FIG. 5). Particularly interesting is the recent discovery of a sector of intact Archaic cremation tombs.<sup>10</sup>
- Remains which have not been studied from Neolithic, Bronze and Iron Age old excavations in the Sinis.
- Archaeozoological remains from recent excavations at the important Late Nuragic sanctuary of Mont'e Prama.<sup>11</sup>

#### 4. METHODS

In order to achieve the goals, the first step of the project will examine the existing bioarchaeological assemblages and their contextualization in the terms of chronology and spatial distribution. The analyses will show the range of exploited species and the different ecosystems on which the subsistence economy was based.

The geoarchaeological/palaeoecological investigations are revealing the diachronic evolution of the Sinis landscape. Crossing the palaeoecological with bioarchaeological data will contribute to define the ecological network of the human communities and their response to the detected changes.

The reconstruction of the relationships between humans and the exploited ecosystems will allow to define the various economic activities and the different uses and roles of natural resources through time.

In detail, taxonomical and taphonomical analyses will reveal the exploited species and the anthropic marks testifying to the working of raw materials (coral, shell, bone), butchery processes, culinary practises.

The breeds age and seasonality of death will be examined in order to assess the resources management, dairy and wool production and the annual calendar of the economic activities.

Biometrical studies and DNA analysis on specific samples will be important to identify different breeds and variability in domestic species through time. Patterns emerging will be compared with those coming both from Sardinia and other geographical areas in order to highlight possible introductions of allogetic breeds.

Chemical analysis on food traces in pottery and isotopic analysis on human bones for diet reconstruction are both planned.

The study of pottery and of kitchen tools and structures will be crossed with bioarchaeological data allowing the reconstruction of ancient gastronomy and its evolution.

Peculiar contexts characterized by special association of food remains and specific pottery types suggesting their involvement in ceremonial banquets will receive special attention.

Same attention will be devoted to materials from funerary, ceremonial and religious contexts in order to identify the cultural role of different organisms.

The presence of exotic materials attesting to overseas trades will be analysed in order to evidence wider ecological networks mutually connecting far regions of the Mediterranean Sea.

<sup>10</sup> Del Vais 2017; Del Vais – Fariselli 2019 (Concessione di ricerche e scavi archeologici DG Prot. 2145, Class. 34.31.07/382.1, 2/03/2009).

<sup>11</sup> Usai *et al.* 2018.

## REFERENCES

- Acquaro *et al.* 1999 = E. Acquaro – M.T. Francisi – T.K. Kirova – A. Melucco Vaccaro (edd.), *Tharros Nomen*, Sarzana 1999.
- Del Vais 2014 = C. Del Vais, *Il Sinis di Cabras in età punica*, in M. Minoja – A. Usai (edd.), *Le sculture di Mont'e Prama. Contesto, scavi e materiali*, Roma 2014, pp. 103-136.
- Del Vais 2017 = C. Del Vais, *Nuove ricerche nella necropoli settentrionale di Tharros (Cabras-OR): gli scavi nell'area A (2009-2011, 2013)*, in M. Guirguis (ed.), *From the Mediterranean to the Atlantic: People, Goods and Ideas between East and West. 8th International Congress of Phoenician and Punic Studies* (Carbonia-Sant'Antioco, 21th-26th October 2012), I, Pisa-Roma 2017 («Folia Phoenicia», 1), pp. 314-320.
- Del Vais *et al.* 2020 = C. Del Vais – V. Pascucci – G. De Falco – I. Sanna – G. Pisanu – M. Mureddu – A. Carannante – S. Chilardi, *Scavi e ricerche geoarcheologiche e paleoambientali nell'area del porto di Tharros (laguna di Mistras, Cabras)*, in S. Celestino Pérez – E. Rodríguez González (edd.), *Un viaje entre el Oriente y el Occidente del Mediterraneo. Actas IX Congreso Internacional de estudios fenicios y púnicos* (Mérida, 22-26 de octubre 2018), Mérida 2020 («Mytra 5»), pp. 879-888.
- Del Vais – Fariselli 2019 = C. Del Vais – A.C. Fariselli, *Nuove ricerche nella necropoli settentrionale di Tharros*, in A. Ferjaoui – T. Redissi (edd.), *La vie, la mort et la religion dans l'univers phénicien et punique. Actes du VIIème Congrès International des Études phéniciennes et puniques* (Hammamet, 9-14 novembre 2009), Tunis 2019, III, pp. 1239-1260.
- Fariselli 2018 = A.C. Fariselli, *Alla ricerca della "Cartagine di Sardegna": considerazioni storico-archeologiche attraverso i nuovi scavi*, in A.C. Fariselli – R. Secci (edd.), *Cartagine fuori da Cartagine. Mobilità nordafricana nel Mediterraneo centro-occidentale fra l'VIII e il II sec. a.C. Atti del Congresso Internazionale* (Ravenna, 30 novembre-1 dicembre 2017), Lugano 2018 («Byrsa», 33-34), pp. 109-131.
- Fariselli – Vandini 2014 = A.C. Fariselli – M. Vandini, *Ricerche archeologiche e strategie di conservazione nella "necropoli meridionale" di Tharros – Capo San Marco (Or): lo scavo del 2012*, in A.C. Fariselli (ed.), *Da Tharros a Bitia: nuove prospettive della ricerca archeologica nella Sardegna fenicia e punica. Atti della Giornata di Studio* (Bologna, 25 marzo 2013), Bologna 2014, pp. 19-32.
- Fariselli – Silani – Vandini 2017 = A.C. Fariselli – M. Silani – M. Vandini, *Ricerche a Capo San Marco (penisola del Sinis-OR). Nuove indagini dell'Università di Bologna nel quartiere funerario meridionale di Tharros fenicia e punica*, in M. Guirguis (ed.), *From the Mediterranean to the Atlantic: People, Goods and Ideas between East and West. 8th International Congress of Phoenician and Punic Studies* (Carbonia-Sant'Antioco, 21th-26th October 2012), I, Pisa-Roma 2017 («Folia Phoenicia», 1), pp. 308-313.
- Fedele 1979 = F. Fedele, *Tharros-VI. Antropologia e paleoecologia di Tharros. Ricerche sul tofet (1978) e prima campagna territoriale nel Sinis*, in «RStFen» 7, 1979, pp. 67-112.
- Fedele – Foster 1988 = F. Fedele – G.V. Foster, *Tharros: ovicaprini sacrificali e rituale del tofet*, in «RStFen» 16, 1988, pp. 29-46.
- Marano 2020 = M. Marano, *I quartieri abitativi punico-romani di Tharros. Indagine architettonica e urbanistica*, Lugano 2020 (Biblioteca di «Byrsa», 10).
- Pascucci *et al.* 2018 = V. Pascucci – G. De Falco – C. Del Vais – I. Sanna – R.T. Melis – S. Andreucci, *Climate Changes and Human Impact on the Mistras Coastal Barrier System (W Sardinia, Italy)*, in «Marine Geology» 395, 2018, pp. 271-284.
- Secci 2014-2015 = R. Secci, *Nuovi tipi tombali nella necropoli meridionale di Tharros (campagna di scavo 2015)*, in «Byrsa» 25-26/27-28, 2014-2015, pp. 185-202.
- Secci 2019 = R. Secci, *Giovanni Garbini e la "questione punica"*, in P. Callieri – A.C. Fariselli (edd.), *"E non appassisca il tuo germoglio spontaneo". Studi fenici e punic in ricordo di Giovanni Garbini*, Lugano 2019 (Biblioteca di «Byrsa», 11), pp. 179-209.
- Usai *et al.* 2018 = A. Usai – S. Vidili – C. Del Vais – A. Carannante, *Nuovi dati e nuove osservazioni sul complesso di Mont'e Prama (scavi 2015-2016)*, in «Quaderni. Rivista di Archeologia» 29, 2018, pp. 81-140 (<http://www.quaderniarcheoaoar.beniculturali.it/index.php/quaderni/article/view/383/237>).