PAST LANDSCAPES TO SHAPE FUTURE SOCIETIES: RESEARCH IN THE HORN OF AFRICA

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Sommario

Il contributo presenta l'esperienza maturata nel Corno d'Africa nell'ambito del progetto archeologico eritreo-italiano avviato nel 2011 nel sito dell'antica Adulis. Uno degli obiettivi del progetto è la tutela e la gestione del sito con la creazione del Parco Naturale e Archeologico di Adulis. La tutela del patrimonio culturale e naturale è strettamente legata allo studio e alla valorizzazione delle conoscenze tradizionali, al fine non solo di contribuire allo sviluppo locale ma anche di promuovere la consapevolezza di una interdipendenza di fattori, con particolare attenzione alle sfide mondiali relative a scarsità di risorse idriche, impoverimento del suolo e sviluppo sostenibile.

Abstract

The paper presents the experience achieved in the Horn of Africa thanks to the joint Eritrean-Italian archaeological project in the ancient area of Adulis, started in 2011. A first objective is the protection and management of the site with the creation of the National Archaeological and Natural Park of Adulis. The preservation of the cultural and natural heritage is linked to the study and enhancement of the traditional technological heritage, in order not only to contribute tolocal development, but also to increase awareness about mutual interdependency with regard to the worldwide challenges of drought, soil depletion and sustainable development.

Keywords

Archaeology, intangible heritage, natural heritage, cultural heritage, preservation

Premises: the Eritrean-Italian Adulis Project

In 2011, the Eritrean Government and the Local Authorities of the Northern Red Sea Region, started a collaboration with the Research Centre on Eastern Desert (Cerdo) that resulted in the Eritrean-Italian Archaeological Project at Adulis. The main goal was to promote Eritrean Cultural Heritage, but also to boost the touristic attractiveness of the Country. This cooperative ties have been formalized and regulated through official agreements between the Eritrean Ministry of Culture and Sport and Cerdo.

The project aims at the rediscovery, study and valorisation of the archaeological remains of the town, *emporium* and harbor of the capital Axum (now in Ethiopia), also with the intent to create the first archaeological park in sub-Saharan Africa, for the touristic development of the region.

Principal goal of this project is to valorise the economic impact of the archaeological research in the domain of sustainability. To assess sustainability in past civilizations helps us to understand the limitations of present society and to look for alternatives, which may have great potential. The study of eco-systems, like the Eritrean Lowlands and the Dahlak Archipelago, where agriculture techniques used in ancient societies can offer solutions to actual problems and turn out to be more sustainable then modern ones, thus ensuring the preservation not only of Cultural Heritage but also biodiversity.

To understand contemporary problems, it is crucial to know how humans in the past related to and exploited the environment: sustainable development of past and modern societies are strictly linked. It is important to study how environmental risk was perceived and evaluated in the past and how ancient societies reacted to sudden and long-term changes, focusing also on adaptive strategies in the face of environmental challenges and variations in situations as mobility, migration, conflict and internal collapse.

The way we understand and value landscapes directly affects how we change them, this is just as true today as it was for people in the past.

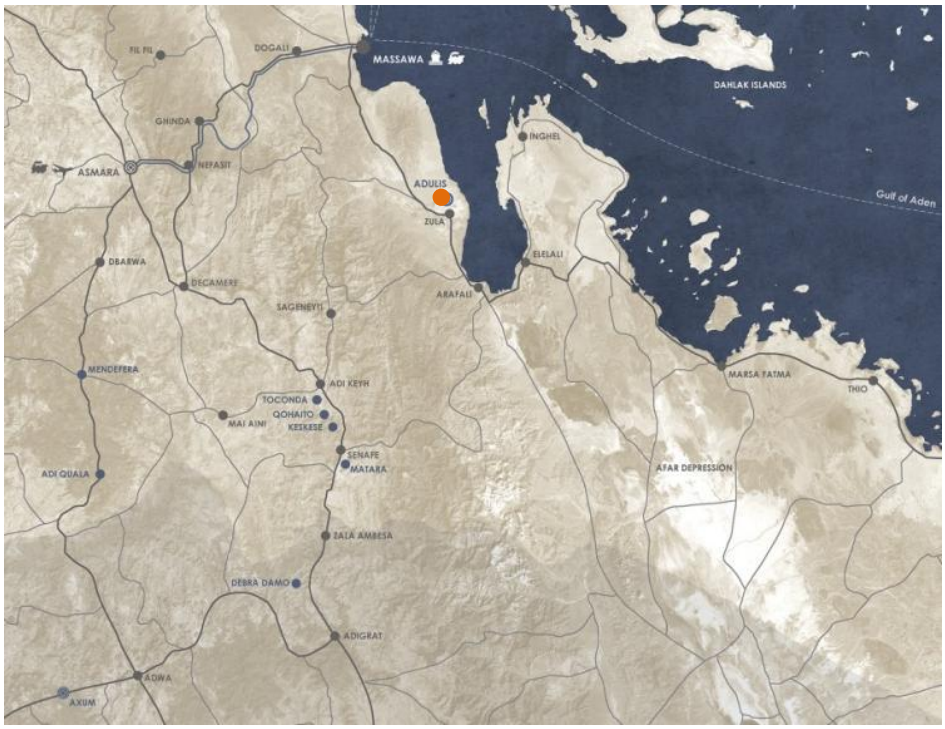

Figure 1 – Eritrean territorial setting.

'Landscape archaeology'and 'Public archaeology' should have something to contribute not only to understanding how people lived in past landscapes, but also to managing landscapes today and planning them for the future. Understanding the development of the cultural landscape is a crucial issue for academics and policy makers alike. Its importance goes far beyond this, however.

Cultural landscapes form the backdrop to all our lives and provide a key element in our sense of place and identity. It is essential that we understand them so that we can manage them effectively and develop them sustainably. By revealing the value in regional landscapes and the real nature of the similarities and differences between regions, this type of research can have important implications for ordinary people, planners and policy-makers from the local to the international level (Citter 2015).

Adulis Archaeological site: state of the art

The importance of the Red Sea in Antiquity is comparable to that of the 'Silk Route' or to that of the 'Amber Route', and its fate is intertwined with the 'African Route of Aromas' (De Romanis 2006) and the 'Route of Gold'. Legendary itineraries along which luxury goods, merchants, men and ideas travelled: one of the biggest commercial artery of the ancient world. And they had a nodal point in the present Eritrean territory, and in its most important port, Adulis.

Adulis commercial vocation was probably already active in the Pharaonic era (Ancient Kingdom, 2650-2150BC), in the context of the traffic in precious materials not found in Egypt and sought in the fabulous *Land of Punt*. The location of Adulis can be included in the area of the Land of Punt, identified in the regions bordering the southern Red Sea. Archaeological levels dating to the latter half of the second millennium-early first millennium BC were documented by the excavations: Adulis in this period is part of the Afro-Arabian cultural complex, which extends from southern Arabian regions to the Eritrean plateau.

From the size of village and *oppidum* reported by the sources (*Periplus Maris Erythraei*; Pliny the Elder) in the second half of the first century AD, an increasing development and importance of the site until the Byzantine period is concomitant with the rise of the Aksumite kingdom, of which Adulis represented the gate to the sea (Casson 1989).

The destruction and abandonment of Adulis between the seventh and eighth centuries AD, probably due to natural catastrophic events more or less concurrent with the Arabic conquest led to the isolation of the kingdom from the access to the sea, while the Islamic communities who settled along the coast took over the role of Aksum in the control of the trade between the Mediterranean and the Indian Ocean (Fattovich 2014; Bowersock 2013).

The Research in 19th and 20th centuries

The name of Adulis in the modern era is reported in the cartography from the sixteenth century.The rediscovery of the ancient town ruins is described in the reports of travellers, scientists, and military who, since the early nineteenth century, visited the region for different purposes.

The first survey of the site dates to 1840; in 1868 the first excavations, conducted by the British army after an initiative of the British Museum, led to the discovery of a large church at the south eastern end of the town.In 1906 the Swede Richard Sundström performed limited investigations northwest of the British excavation, bringing to light a building that he identified as 'palace' (Salt, 1814;Sundström 1907; Munro-Hay 1989).

A more extensive excavation campaign was carried out by Roberto Paribeni in the same year, 1906, the results of which are still fundamental for the reconstruction of the topography of the site and its chronological phases, from prehistory to the seventh century AD (Paribeni 1907).

In 1961-62 new archaeological research was carried out at Adulis by the Institut Ethiopien d'Archéologie directed by Francis Anfray(Anfray 1974). Trenches were opened in the western sector of the town, revealing rooms pertinent to different chronological phases, still visible today.

In 2004-2005 the survey project conducted by the University of Southampton led to the identification of the port of the town in Aksumite times, in relation to the locality of Gabaza, and of a more ancient harbour at the island of Diodorus, near the Galala Hills, asknown by the literary sources.

The new Research Project

At the time of launch of the Eritrean-Italian cooperation project in 2011, the site appeared almost completely buried by the sand and bushes, a landscape not dissimilar from the one described by the first explorers of the nineteenth and twentieth centuries (Bortolotto *et al*. 2013, Castiglioni *et al*. 2013).

The new research, started in 2011 and still ongoing, has been concentrated in some sectors of the town, which is estimated to be about 40 hectares. The sectors have been chosen to return to the site the major monuments already known from previous research, beginning with the complex excavated by Paribeni in 1906 in the northern sector and referred to as 'Altar of the Sun' (sector 2). Four other areas were also investigated, two at the south western limit of the town and along the river Haddas, sector 1 and sector 5, another close to the place where the British Museum excavated

a monumental church in 1868, currently buried, called sector 3, and an area located at the eastern limit of the city, referred to as sector 4[1].

Figure 2 - Adulis camp, 2011.

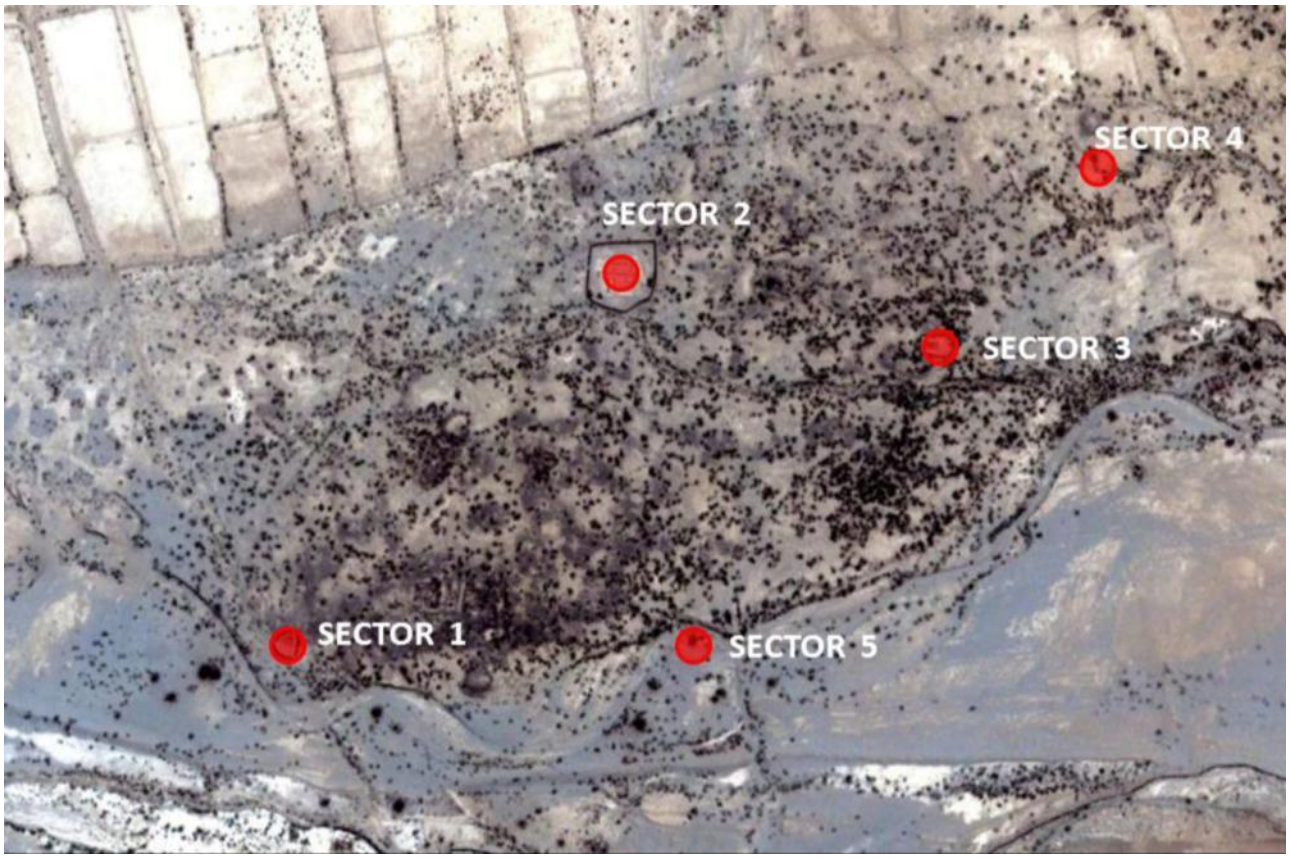

Figure 3 - Adulis 2011-2017, the excavation sectors.

[1]Annual Official Reports, 2011, 2012, 2013, 2014, 2015, 2017.

The most interesting result of excavations in sector 1 was the finding of an ancient phase of occupation at the site dating to the 1st- 2nd century AD. This occupation level was characterised by a concentration of pottery, bones, lithics and stone tools that can be referred to a domestic use of the area; associated with it, is the remains of a massive wall. Imported materials from this earlier phase include Nabatean fine ware and Egyptian amphorae, beside some almost complete pots and beakers with thin walls and incised and painted geometric decoration, probably imported from the highlands or similar to the highland production.

The most important monument of the site, so far, is located in sector 2. It is a building with basilical plan divided into three naves, east-west oriented, standing on a high base of truncated pyramidal shape. Its dimensions are 18,80 x 10 m. The monumental basement is constructed of basalt blocks carefully squared, alternating to courses of schist slabs and bound with clay. The perimeter contains projections and recesses and is elevated with offsets at regular intervals, in the typical mode of the Aksumite monumental architecture. It is the expression of an original architectural style, in which the Mediterranean model of the Christian basilica meet the local tradition.

The important, new information coming from the stratigraphic excavations is the chronology of the monument, dating to the second half of the fourth century: this new excavation data at Adulis provide for the first time a chronological reference for the early Christianization of Sub-Saharan Africa. This finding constitutes a valuable confirmation of the testimony of the textual sources about the early Christianization of the Aksumite kingdom, which is counted among the most ancientcivilisations of the Christian world.Impressive is the liturgical furnishing of the building, carved in marble coming from the Byzantine Mediterranean and probably donation by the Court of Byzantium or commissioned by local aristocracy. The marble furnishings of the Adulis church has so far no parallel within Ethiopia's ancient Christian architecture. This evidence lies chronologically in the background of the historical and political context that, in the sixth century, involved the port town in international events around 525 AD at Adulis was gathered the allied fleet of the Byzantine and Aksumite empires, led by Kaleb, the Aksumite kings of Aksum Kaleb, to move to the other side of the Red Sea, in South Arabian territory, against Yusuf, the King of Himyar, supported by the Persian Empire.Archaeological investigations in sector 3 revealed a series of rooms near the monument excavated in 1868 by the British Museum. The walls and their collapses provide almost intact evidence of the abandonment of the town; the finds included imported amphoras and Glazed Ware, local pottery fragments - some forming almost complete pots - many *Cypraea moneta* specie of shells - some of which burnt - few fish and animal bones, fragments of glass vessels and ostrich eggs, one blue beads bracelet. The most outstanding find from room ‘C’ consisted in an

anthropomorphic ceramic figurine showing oriental features ascribable to the Indian 'Gupta' art of the 4th-6th century AD.Architectural features and quality of the material culture evidence the high level of this building, probably an aristocratic residence for an important personage.

Sector 4involves a second very important building, a monumental church located at the eastern extremities of the town, oriented east-west and standing on an imposing basement. Its dimensions are 26 x 18 m, to which may be added the churchyard that stood in front. The church as a whole is rectangular in shape, but the main chamber is square and the central area bordered by eight pillars arranged in a circle; to the east, two rectangular rooms flank the apse. The room south of the apse contains the baptismal font: the tank is circular, two steps to the east and two to the west facilitated the immersion. A big staircase functional to the ascent to the church wasin front of the façade. Such centrally-planned churches with an ambulatory are rare not only in the kingdom of Aksum, but also in Nubia and Egypt.The date is estimated to the fifth - sixth centuries.

Sector 5 was opened in the southern limit of the town, on the edge of the river Haddas. Excavations in this area revealed the presence of an intense and continue building sequence in a period comprised between the 5th and early 7th century AD. The rooms investigated during this field season revealed the presence of a possible workshop area for the manufacture of the mother of pearl, ostrich shells and red coral, a food processing area with the evidence of three ovens similar to the contemporary *tannur*, still in use by the people inhabiting the Eritrean and South-Arabian coasts, and a domestic area characterised by fireplaces and by fragments of cooking pots and jars. It is worth to note the finding of a gold coin (Manzo 2014).

Environment and Landscape

The flourishing of Adulis, related to the trade of luxury items as well as of foodstuffs, had to be based also on a close connection with the surrounding area, supplying water and fresh food to its inhabitants also during the months of inactivity of the harbor. It was not by chance that the plain where Adulis rose is advantaged by the presence of seasonal floods: at its west the first mountains of the highlands raise, and the axumite site is nowadays not far from the place where Haddas, Alighede and Komailo rivers join their waters, collected during summer and winter rains. Seasonal rivers promoted the constructions of barriers and dams in order to collect the surplus of water, providing it during the dry season, and to control its violent flow.

Today one of the main dams of Eritrea, built in 1958-60, is in Foro, three kilometers upstream the archaeological site of Adulis, in a place where natural basaltic terrace provided a good anchorage of the barrier. In a few days during summer rains the water collected by the dam is directed in a fan of

canals down into the fields, using soil barriers and embankments. This technique is called 'spate irrigation': the fields are flooded and the embankments are meant to retain water long enough. It is an ancient technique, already in use in Yemen several centuries BC; from there, according to some scholars, it was introduced in Eritrea at the beginning of the 20th century, when many workers coming from Yemen were employed in the wide agricultural compounds promoted by colonial land tenure policies, but it might have been in use already at the time when the other side of the Red Sea was part of the Axumite kingdom.

The water flushing down from the mountains carries big amounts of soil, silt and stones, and as they deposit in the plain the ground level increases and the coastline moves towards the sea.

Figure 4 - Adulis archaeological site, the irrigation system and the cultivated areas.

Figure 5 - Embankments of the fields between Adulis and Afta

According to Peacock and Blue's archaeological investigations (2004-2005), the current coastline, compared to the ancient one, has an offset towards east of approximately 1 kilometer (Peacock, Blue 2007).

By an Abyssinian legend, Adulis was destroyed by a flood caused by an earthquake and the sudden total drain of a little lake upstream: the event was so violent that the sound could be heard in Axum. Beside seismic occurrences, the violence of Haddas river is still well known, and the good maintenance of Foro dam, as well as the important water management system carried out by the local community of farmers from Foro, Zula and Afta, are the main safeguard measures of the archaeological site of Adulis: the traditional way of farming in Foro and downstream is of paramount importance for the protection of the site. To maintain this water system efficient, a huge and permanent man-powered work is necessary, and this fact created very strong community ties. It is usual in Foro, Afta and Zula villages to work together for the community benefit. These strong ties can be clearly noticed also during the archaeological excavation activities.So Community is the first and main partner in the protection of the site. And community should be the first to benefit from it. The enhancement of the visibility of the site and the idea of making it more accessible to tourists thanks to the creation of an archaeological park, must be planned very carefully together with the local community.The main risk is that a narrow group of stakeholders may exploit in the future the touristic attractions of the area; this would create a not equal economy and at the same time would alienate the heritage from the community.The challenge of the next years will be to develop together actions able to raise awareness of the community in their capabilities to manage the manifold aspect related to their heritage.

Fig. 6 - The dam of Foro and the natural basalt wall

Adulis Archaeological Site: strategies for the future of Eritrean Heritage

As already stated in the premise, sustainable development of past and modern societies are strictly linked. In recent decades, researchers have focused on sustainability by searching for new techniques and new methods through a holistic approach. Environment's capacity to sustain human communities, exploitation of natural resources, changing settlement patterns and human adaptive strategies are key themes, also linked with the topic of resilience.

Resilience, in relation to external changes, especially environmental ones, requires technical knowledge derived from a historical memory rooted locally and able to develop new adaptive landscapes.

Studying sustainability with a single source approach is insufficient. To understand environmental sustainability means to understand the complex relationship between the natural environment and the human communities in the long term.

A historic landscape may be defined as the context in which people realise the material needs of subsistence, social coexistence and psychological self-esteem.

Infrastructures determine the degree of inter-connection between different areas of a territory, local, regional and national. In other words, infrastructures define nodality.

In order to survive, an independent settlement must integrate different resources, including agricultural and uncultivated land, the potential for craft production and exchange.

The durability of an economic system depends on the organisation of settlement and economy and its social cohesion, which in turn is based on religion and on a common identity: in Eritrea the Christian and Islamic communities live peacefully in harmony.

From a theoretical perspective, the study of an historic landscape must be diachronic, complex and relational. A relational approach is crucial because all elements that create landscape are interconnected in different circuit of integration at local, regional or larger scales and with many relationships: economic, social, ideological. The study of historic landscape implies connectivity between the various elements that compose it: settlements, production sites and ideological and cultural places, within which there is a whole world linked to the supernatural and to the identity and collective memory of a community.

Every human activity is part of a sequence and archaeology is distinguished by the principles and standardizes methods that it uses to identify relative events. The modern archaeology operates under the principles of stratigraphy.

In this holistic perspective, the approach is multi and inter-disciplinary, without the presumption of an impossible global knowledge (Brogiolo 2015).

The Adulis project can demonstrate the high economic potential of Public Archaeology, and the effective role of culture in creating better life conditions.

Fig. 7 - Dinner at Adulis Camp.

Within the methodological framework stated above, specifically for the site of Adulis the strategies for the future should take into account the solution to the following problems:the training support and formation, required for the protection and management of the Eritrean Cultural and Natural Heritage, with the application of standard qualified procedures about research, conservation and preservation. This knowledge is needed for their valorisation as assets for the economic growth of the territory, compensating for the shortage of professionals capable of handling such pivotal resources. In this direction had been signed an Agreement between Politecnico di Milano and Eritrean Institute of Technology (E.I.T.), Mai Nefhi (2016). Therefore, a presence of the University teachers and experts can be assured for education and training courses (also for tourist guide) and the preparation of related materials (books, guidelines, scientific tools, etc). Essential is further the realization of the buildings and facilities of the Adulis ArchaeologicalPark, starting with a house, laboratory, store room for the preservation work; most important will be the building of the visitors' centre. To connect the site of Adulis to its territorial context should be necessary to link the archaeological itineraries with the rural/cultural landscape and villages. In a broader view,to create a system that can enhance the understanding and valorisation not only of the archaeological evidences, but also of its setting in relation to the environment and resources exploitation since

Antiquity, could be planned the net of the natural parks (Buri peninsula and Semenawi Sahri), and other places near Adulis as: salt flats, Galala Hills, basalt quarries, Foro dam, Zula Bay. This will also increase the time that tourists can spend in the territory and the economic activities of the local people.At the larger scale the connection of Adulis with the other Aksumite archaeological sites on the route to the Highlands (Qohaito, Matara, Kaskase, Tokhonda) will be profitable. Lastly, during the Unesco Council held in Nairobi in January 2017, the application of Adulis and the Highlands sites has been proposed for a future tentative list of inscription as serial sites in the World Heritage List[2].

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Nomenclature

Cerdo	Centro Ricerche sul Deserto Orientale
Eit	EritreanInstitute of Technology

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