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Urban Development in the City of Hippo Regius in Algeria according to Ancient Iconography. Case Study of the Mosaic of the Seafront Villa

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Abstract

The study of ancient cities is of great importance in understanding today's cities. Information on the way of life of ancient populations and urban organization in this period can be obtained from various archaeological elements unearthed, particularly in mosaics and iconography, which prove to be loaded with symbols and meanings. This study aims to highlight the role of archaeological sources in the representation of architectural and urban elements, and to interpret their symbolism and significant imprint. For this purpose, the research takes as its case study the Hippo seafront mosaic dating from the 3rd century A.D., which represents Hippo Regius, currently the city of Annaba in Algeria, founded in the 3rd century BC as a Roman colony on the Mediterranean coast. Reading the mosaic has enriched our knowledge of the city of Hippo, providing visual information on its landscape, architecture, socio-economic activities, and importance as a seaport. Its credibility was demonstrated using a comparative approach that compares the depicted details with evidence from archaeological, historical, and iconographic discoveries.

Keywords: Hippo Regius; iconography; mosaic; antiquity urban development; maritime city.

1. Introduction

Archaeological sources are essential for understanding the organization of ancient cities, they reveal aspects such as historical topography, urban evolution, and social practices. This research makes it possible to reconstruct urban patterns, lifestyles, interactions of ancient social systems, thus shedding light on the organization of ancient cities (Galinié, 2002).

Algeria's ancient cities, such as Annaba, Djemila, Timgad and Tipaza, present a rich archaeological heritage. These sites include amphitheatres, forums, thermal baths, basilicas and mosaics, testifying to Roman heritage offering a valuable insight into ancient urban life.

The city of Hippo, actually Annaba, offers a rich archaeological and urban heritage, in particular the remains such as the seafront villa, which testify to the historical importance of the city and its heritage diversity. Archaeological excavations at Hippo Regius have brought to light significant elements of its history, making it a site of major interest for the study of antiquity's city and archeology in Algeria (Aouf, 2017). Among the most noteworthy discoveries, the mosaic of the seafront villa of Hippo (nowadays Annaba) which is a remarkable element of the archaeological heritage of the ancient city, and a precious visual testimony to the wealth of the city of Hippo in the Roman era (Boulinguez & Napoli, 2006). This mosaic was the subject of previous works which contribute to the description and interpretation of the elements of the mosaic from an iconographic point of view to understand the urban development and economy of the ancient city, such as the works conducted by (Boulinguez et al., 2006; Bali., 2022). Our present work seeks to complete and enrich these previous works regarding this interesting mosaic, it's undertaken for several reasons:

- To identify the city represented: The objective is to determine whether the city represented on the mosaic was indeed that of Hippo, based on iconographic elements and comparisons with the topography and urban configuration of the ancient city.
- To understand the architectural characteristics: analyze the architectural elements represented on the mosaic to evaluate their correspondence with the archaeological remains and the topography of the ancient city.
- To highlight the historical, economic, and cultural importance of the port of Hippo, and to contribute to a better understanding of its role in maritime trade in Antiquity.
- To interpret the significant symbolism of this mosaic of the port city of Hippo through its iconographic study.

Our approach, which aims to highlight aspects linked to the city's urban dynamics and, more specifically, its port during the Late Empire, is in line with UNESCO's guidelines for the preservation of intangible heritage (UNESCO, 2003), which represents a witness to past civilizations and, at the same time, offers elements for understanding that past.

2. The city of Hippo Regius and its port

Hippo Regius is located southwest of the present-day city of Annaba. In ancient times, it played a crucial role as a major commercial center, highlighting its vital role in the ancient maritime trade. The city was founded by the Phoenicians and went through several historical stages, coming under the control of the Carthaginians, then the Greeks, before becoming a royal city under the Numidians. Under the Roman Empire, Hippo became one of the richest cities in ancient North Africa (Bali, 2022).

The port of Hippo Regius played a crucial role in maritime trade in ancient times. It was considered one of the most active in ancient North Africa and was a vital center for the export of products to Rome, including African wheat, oil, and timber (Bali, 2022). Despite the lack of precise descriptions of the port in literary sources, frescoes discovered in the area confirmed the existence of warehouses for storing goods and products before their export. The port of Hippo was also connected by a network of roads, making it easier to transport products to the port (Bali, 2022).

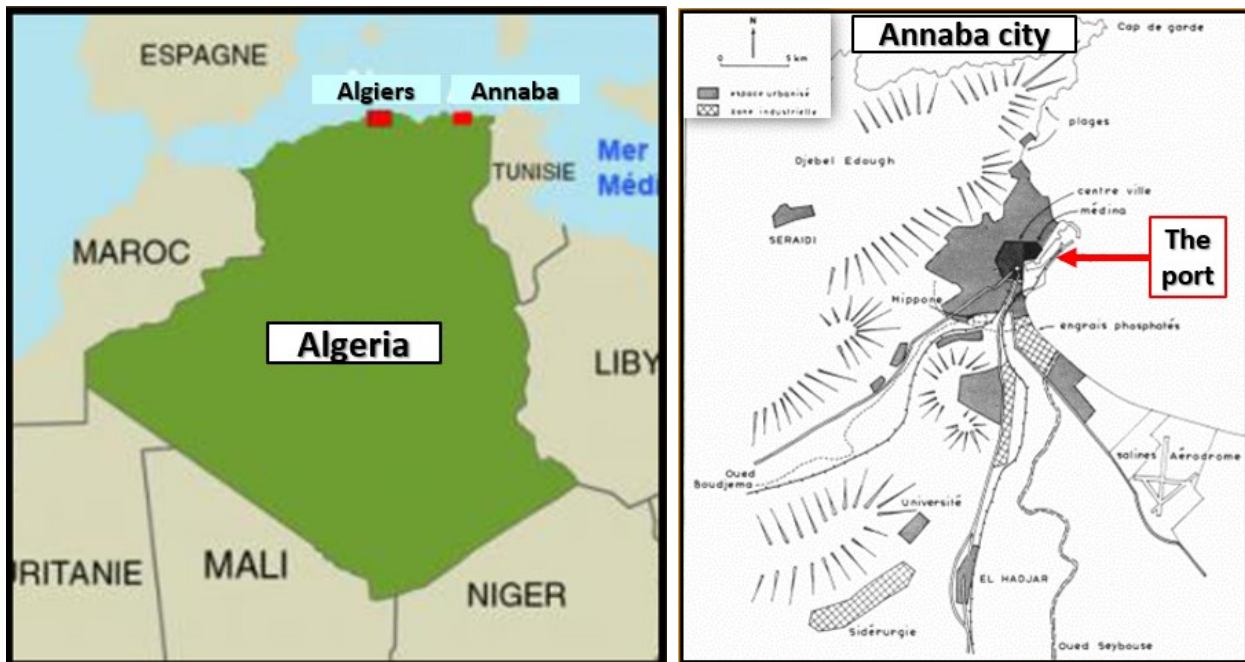


Figure 1. location of the city of Annaba in Algeria, and the port in the city. source: (Berrato, 2015), (Cote & Camps, 1988).

4. Material and Methods

4.1 Hippo Regius mosaic presentation

Originally, the mosaic was found in the "seaside villa", located on the shore of the ancient Hippo Regius. The first state of this house, to which the mosaic belongs, is dated between 210 and 260 A. D (Hamrouni, 2019). The mosaic is made up of three fragments forming a single painting, two of which are exposed at the Annaba Museum under the names "General view of Hippo" and "Fishing mosaic", while the third is still covered in situ (in the seafront villa) and has not yet been analyzed (Boulinguez & Napoli, 2006; Ferdi, 2001). This mosaic is a source of valuable visual information that can contribute significantly to the understanding of the history, economic activity, and culture of

this period, providing a unique perspective on the maritime and port life of the antiquity. Figures 4 and 5 show the three fragments of the mosaic.



General view of Hippo Regius fragment

Fishing mosaic fragment

Figure 2. Assembled fragments of the mosaic at the Annaba Museum. Source: (Leguidetouristique, s.d.)

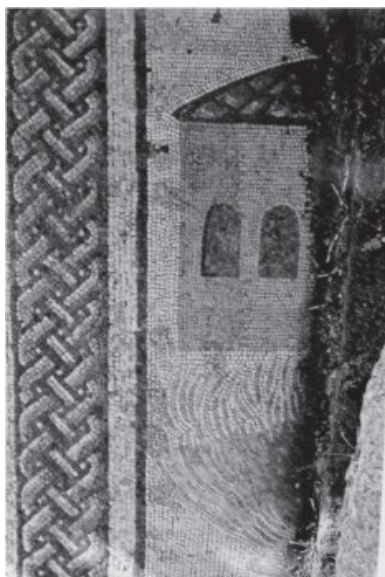


Figure 3. - The In-situ fragment (Boulinguez & Napoli, 2006)

4.2. Comparative approach

A combination of archaeological, iconographic, and historical approaches is used to study the mosaic and interpret its depiction of the ancient city of Hippo Regius: Historical research based on the consultation of historical sources, inscriptions, ancient texts, and other documents to gather information about the ancient city of Hippo and its socio-economic characteristics; Archaeological research by examining finds from archaeological excavations on the Hippo Regius site to collect data on the ancient city, including architectural elements, artifacts, and evidence of urban and port life; Iconographic analysis which consists of the study of the mosaic by examining the elements represented, symbols, motifs and architectural characteristics to draw conclusions about the ancient city; and finally, Comparison of the mosaic with other sources, as well as archaeological data from other similar sites such as Russicada present-day Skikda in Algeria.

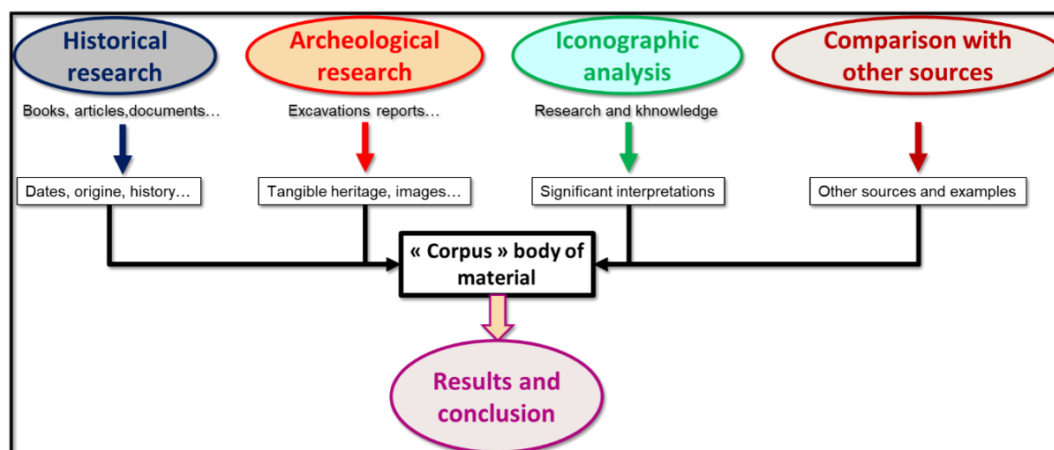


Figure 4. Summary diagram of the methodological approach – source: author

5. Results and discussion

5.1 Mosaic analysis: Visual description with interpretations and symbolism

The Hippo Regius mosaic is a work of great artistic finesse and remarkable iconographic richness. It represents a port city set in a seascape, where we can see different elements like constructions, boats, fishermen, fish, all arranged in a paratactic way, bathed in the sea, without using perspective in the representation an orthogonal projection such as a plan view of an architectural façade without using perspective. Furthermore, the sea is symbolized by lines broken into two segments or by zigzags, and it is abundantly populated with marine fauna. The representation of a port city in a seascape is unique in the corpus of known mosaics (Boulinguez & Napoli, 2006). Hereafter is a detailed visual description of some key elements of this mosaic:

- **In the “General view of hippo regius” Fragment**

1- Building surmounted by a quadriga: At the center of the mosaic, we can observe an imposing building surmounted by a quadriga, a chariot drawn by four horses. This quadriga symbolizes power, victory and refers to the image of a triumphant emperor, probably Septimius Severus (Boulinguez & Napoli, 2006) who reigned from 193 to 211 (Daguet-Gagey, 2004).

2- Bridge with parapet: Above the central building, a bridge with a parapet evokes the remains of the Hippo Regius bridge discovered on Oued Boudjimah connecting the city to the western road leading to Rusicade, present-day Skikda. This architectural detail adds depth to the port landscape depicted and symbolizes the connection and trade between different regions (Hamrouni, 2019).

3- Horrea ports: These port warehouses bear witness to the intense commercial activity that must have taken place in the port, underlining its economic importance (Hamrouni, 2019).

4- Quay and pillars: A quay resting on ten pillars forming a wharf for mooring ships is also visible. This detail highlights the logistical importance of the port for loading and unloading operations and symbolizes maritime activity and trade (Hamrouni, 2019).

5- Conch-blowing Triton: Near the quay, a Triton blowing a conch shell suggests the proximity of the entrance of the port (Boulinguez & Napoli, 2006).

6- Imposing facade of a building: A main facade of an imposing building, probably a warehouse or a relay hall, pierced by three doors of which the middle one is closed, also attracts attention by its imposing structure symbolizing the port's commercial and logistical function (Boulinguez & Napoli, 2006).

7- Storage complex with upper silos: These storage structures symbolize the management of goods and commercial goods from the port (Hamrouni, 2019).

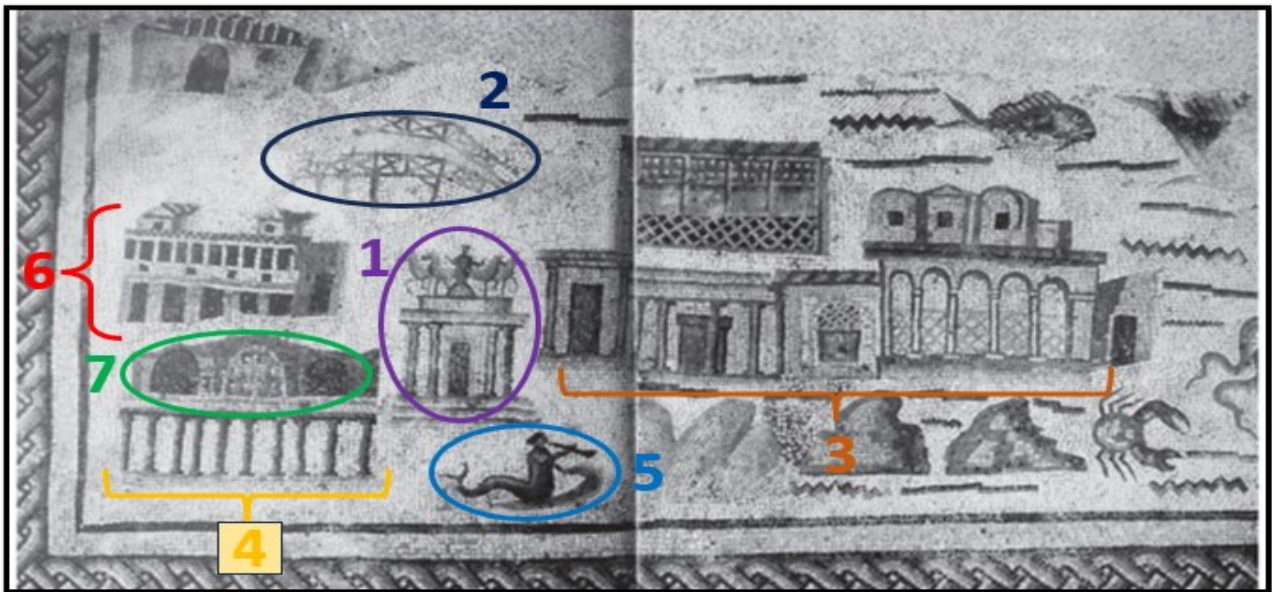


Figure 5. The "General view of hippo regius" Fragment. Source: author

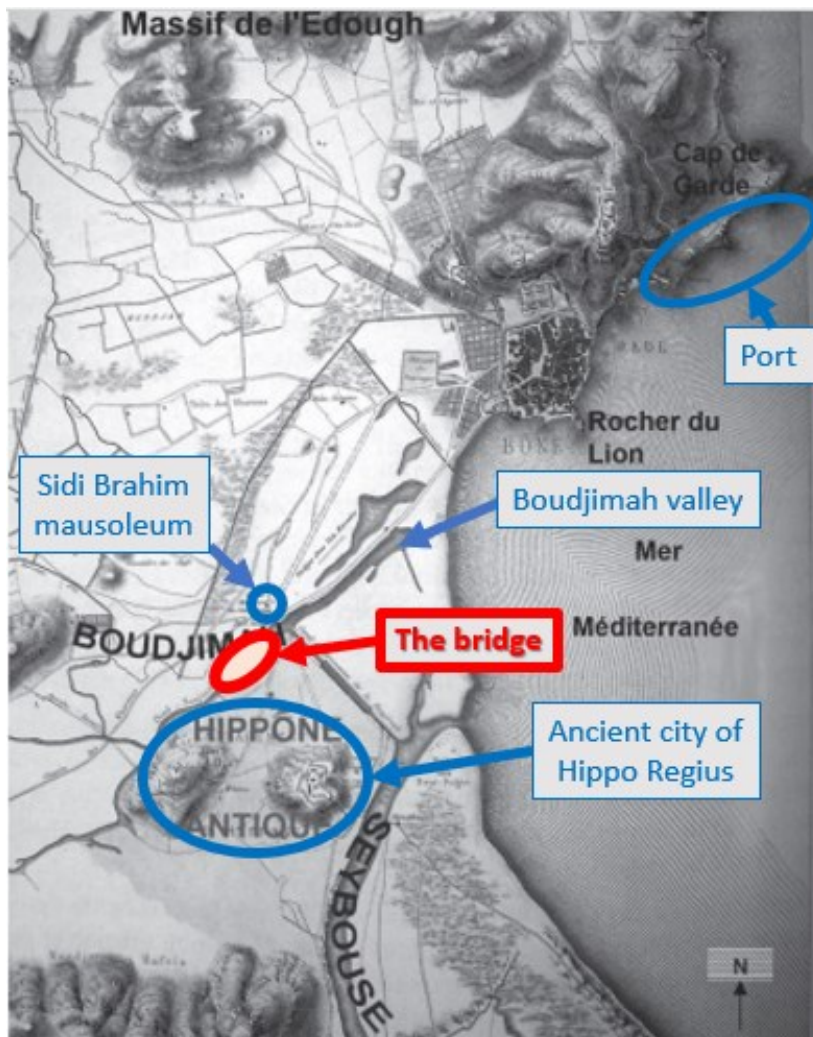


Figure 6. The approximate location of the ancient Roman bridge of Hippo Regius connecting the mausoleum of Sidi Brahim to the ancient city passing through the Boudjemaa valley (Slimani, 2016), source: Author



Figure 7. Painting of the ancient Roman bridge of Hippo Regius connecting the mausoleum of Sidi Brahim to the ancient city passing through the Boudjemaa valley, source: leguidetouristique.com; Author.

- **In the fishing fragment**

1- The fishing scene with boats, a fishing net, and various types of fish in the sea symbolize abundance and fertility, the richness of marine resources, and also symbolizing the deep connection between man and nature (Photini, 2016).

2- The crab represents the diversity of marine species and can be interpreted as a symbol of resurrection, regeneration, or the life cycle due to its ability to moult and renew itself. Its inclusion in mosaics reflects the importance of marine fauna (Sterling, 1952).

3- The octopus is another symbol frequently depicted in ancient mosaics. Used to symbolize the richness of marine fauna, it can be associated with notions such as flexibility and intelligence due to its ability to adapt and manipulate its environment.

4- Jellyfish, although it represents the beauty and the diversity and complexity of marine ecosystems. It can be interpreted as symbols of beauty, transparency, and fluidity, due to their delicate appearance, they are also used in mosaics generally to punctuate the passages from one scene to another (Goy, Chakroun, & El Abed, 2002).

5- The frog among the fish in such a scene symbolizes metamorphosis and transformation: its presence among the fish can reinforce the idea of change and transition, emphasizing the diversity and variety of life forms in the marine ecosystem. Furthermore, it could be interpreted as a sign of good fortune or protection for fishermen and their activity.



Figure 8. The Fishing scene fragment, source: author

- **In the third in situ fragment**

It is simple to define the location of this third fragment of the mosaic in the entire piece through its border (braiding) these elements which generally in archeology help to recognize the mosaic and to replace the fragments as originally. The third fragment shows the image of a simple and ordinary house with a sloping tiled roof and arched windows which we assume to be intended for fishermen, according to the theme and context of the mosaic. This representation can be a very significant symbol of the richness of the fishing activity and the importance given to the practitioners of this activity as well as the architectural development of the time.

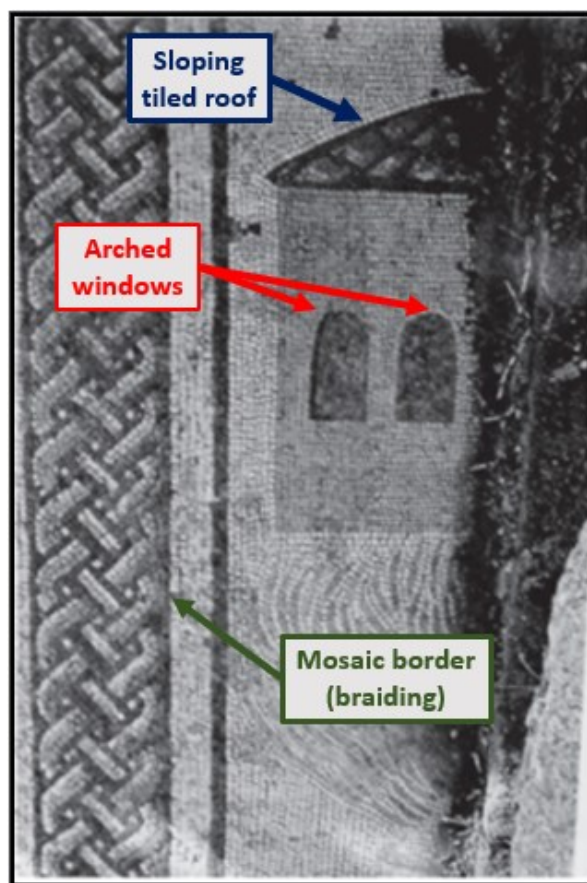


Figure 9. The third fragment of the mosaic which still in-situ, source: author

5.2 Authentication and validation of the spatio-temporal identity of the mosaic

This visual description of the Seafront mosaic highlights the complexity and diversity of the symbolic elements present on the Hippo mosaic, providing a captivating insight into the life and activity of a Roman-era trading port in Africa. As far as credibility is concerned, it is demonstrated by several specific elements, namely:

- Positioning of elements: The elements of the mosaic are positioned to correspond to their actual position in the city of Hippo Regius, suggesting a faithful representation of the topography and architecture of the city, such as the bridge, the triumphal monument (Boulinguez & Napoli, 2006).
- Precise architectural features: The architectural details of the mosaic elements, such as the public granaries, have specific features corresponding to known structures of the time such as exterior buttresses and air vents, reinforcing the idea that the mosaic depicts actual city structures (Boulinguez & Napoli, 2006).
- Compliance with archaeological knowledge: The representation of the monuments and elements of the port city is in agreement with the archaeological and geomorphological knowledge of the region.

- Remains of buildings: Archaeological excavations have uncovered the remains of various buildings and structures in Hippo, such as dwellings, granaries, public monuments, baths, etc. These archaeological discoveries provide valuable information on the town planning and architecture of the ancient city. (Boulinguez & Napoli, 2006)
- Topography of the city: Archaeological research has made it possible to reconstruct the topography of the ancient city, including the location of the different districts, public buildings and infrastructure such as bridges, ports, etc. These topographical data help to understand the spatial layout of the city and its characteristic elements. (Boulinguez & Napoli, 2006)
- Geomorphological evolution of the coastline: Archaeological and geomorphological studies have made it possible to trace the evolution of the Hippo coastline over time, notably changes in the shoreline, modifications to the coastal landscape and the impact of these developments on the city and its port infrastructure. (Boulinguez & Napoli, 2006)

In summary, the mosaic's credibility is supported by its precise positioning of elements, its detailed architectural features, the presence of recognizable symbols, and its conformity to archaeological knowledge, making it a reliable historical record of the port city of Hippo Regius.

5.3 Relationship between the mosaic representation and its historical context

During the Late Roman Empire, North African cities were the scene of multiple challenges and transformations. Iconographic elements from the 3rd century served as tools of political and religious propaganda, reflecting a period of decline and withdrawal of the Roman Empire. This period was marked by a deep economic crisis, military and security unrest, as well as an unprecedented religious and health crisis.

In this turbulent context, North African cities, such as Hippo sought to assert their identity and importance, they used iconographic elements rich in political, religious and cultural symbols. The Hippo mosaic offers an interesting insight into this dynamic. Representing fishing scenes, prosperous port landscapes and grandiose architecture, these works bear witness to the economic and cultural vitality of the region. Marine motifs evoke thriving economic activity linked to the sea, highlighting the importance of maritime trade to the city's prosperity.

At the same time, symbols and representations of the emperor and Roman deities, as well as signs of imperial victory, reinforced political authority and stability, contributing to the identity and cohesion of society.

Despite the multiple challenges, North African cities have maintained a certain splendor and thriving cultural activity. The mosaics and iconographic elements found in the region bear witness to this resilience and creativity in the face of the challenges of their time. They offer a valuable testimony to urban life and society in the Late Roman Empire, thus highlighting the importance of these cities in the context of the declining Roman Empire.

In conclusion, the Hippo mosaic offers much more than a simple artistic representation; it reflects a tumultuous era when cultural wealth and relative prosperity coexisted with political, economic, and religious challenges. This work of art invites us to explore and understand the complexity of urban life in ancient North Africa, while highlighting the resilience and creativity of the inhabitants in the face of the upheavals of their time (Kotula, 1974; Lepelley & Hilaire, 1977).

5.4 Limits and Prospects

Research on the Hippo regius mosaic has made it possible to propose interesting interpretations concerning the representation of a port city, as well as architectural elements and associated socio-economic activities. Using a combination of archaeological, iconographic, and historical approaches. However, it is important to note that uncertainties persist, particularly regarding the precise dating of the mosaic, the interpretation of certain architectural elements and the exact meaning of certain elements depicted, lack of direct proofs, evolution of the landscape through the ages. These uncertainties highlight the complexity of interpreting historical artifacts and the need for continued research to deepen our understanding of urban and port life in antiquity. Ultimately, Hippo Regius mosaic research highlights the importance of iconography for understanding ancient history, while emphasizing the need for a multidisciplinary approach and in-depth analysis to interpret historical artifacts in a precise and nuanced manner.

The contribution of this research appears in:

- The study of the mosaic in its entirety (the three fragments assembled);
- The 3rd fragment which is currently in situ was interpreted for the first time;
- The relationship between the mosaic and its historical context has been clearly highlighted to understand its symbolism.

Therefore, the prospects for this research could include a multitude of elements such as:

Precise dating: Further studies could be undertaken to refine the dating of the mosaic, which could provide crucial information about the period in which it was created and the city it represents.

In-depth analysis of the architectural elements: A more detailed analysis of the architectural elements represented on the mosaic could provide a better understanding of the structure and organization of the ancient city of Hippo Regius, as well as the port and commercial activities that took place there.

Comparisons with other sites: Comparisons with other archaeological and iconographic sites could help contextualize the Hippo Regius mosaic and expand our understanding of ancient port cities in the Mediterranean.

Interdisciplinary research: An interdisciplinary approach, involving archaeologists, art historians, historians, and other specialists, could provide a deeper understanding of the mosaic and its historical context.

Use of new technologies: The use of cutting-edge technologies such as 3D modeling, multispectral imaging and digital mapping could provide new insights into the mosaic and the ancient city of Hippo Regius.

Finally, it is also important to note that the mosaic remains incomplete and that it has damaged parts that must be completed and explored to extract as much additional information as possible.

6. Conclusion

The analysis of the seafront villa mosaic offers a fascinating insight into the city's development and symbolism of the ancient port city of Hippo Regius. Indeed, the detailed representation of architectural elements and specific symbols in the mosaic makes it possible to improve knowledge of the port city's architectural and urban components.

Furthermore, the paratactic arrangement of the buildings, the positioning of triumphal monuments, warehouses, public granaries, houses, and bridges, as well as the presence of marine symbols, all testify to the prosperity and importance of the port of Hippo Regius, and advanced urban organization. Combining the iconographic reading of visual representations with other archaeological and historical sources helps to refine understanding and seek accuracy in results and interpretations.

Mosaic analysis is a goldmine for studies on the history of ancient communities and cities, making it possible to illustrate texts and narratives, complete missing data or serve as a cross-check between the various sources of archaeological information available on the sites studied. In short, iconography, as a heritage that is both tangible (paintings, sculptures, manuscripts, engravings, etc.) and intangible through the symbolism and meanings inherent in it, plays an essential role in understanding the architectural and urban heritage inherited from ancient civilizations.

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