



The stone bridges in Vjosa basin (Albania): Hidden values following roman tradition to the middle of 19th centuries

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Keywords

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Abstract

The bridge is basically a utilitarian structure created to maintain communications in the face of difficulties in both an open natural environment and the man-made physical structure. The urge for people "to cross over to the other side" for existential concerns is related to the bridge's first appearance. As each time the conditional natural characteristics (geomorphology, river flows, water reservoirs, etc.) are presented, on the path of his physical barriers that frequently occur, they redirect travel routes and govern the lives of people and their communities, from the level of the individual man to the highest state level. Nowadays, bridges are present in entire Vjosa basin and its tributaries enabling communication along Vjosa itself, Shushica, Drino, Langarica, Zagoria etc.

Introduction

Rivers and river gods played an important role in Greek mythology [1]. Potamoi (Rivers) were thought to be offsprings of the Titan Okeanos (Ocean), son of Gaea (Earth) and Ouranos (Sky), and Tethys. On the long historical contexts, the mountain ranges on both flow sides of River Vjosa provide no barriers against human invasions from the north or east. Their presence shaped different aspects of hydrology, land use and resources utilization. Rivers of the Balkan area has been inhabited permanently since the Middle Palaeolithic [1-3]. It was the first area in Europe where farming cultures and livestock raising were established during the Neolithic era [4-8].

In most of instances within Vjosa, limestone was used for riverbank walls, as bridge cobble stone, and for the lower parts of the structure to the height that can be attained by water at higher water levels. Within regard the spectacular example is Brataj Bridge of 18 centuries connecting Shushica with Vjosa basin.

A historical context enables us to get a precise understanding of the effects a communication route with regional character has. Within southeast Albania where landscape diversity and inhabited centers were scattered the communication needs were of primar importance. The Road of Aous (spread along Vjosa) was used in antiquity to connect fortified villages along the Valley of Vjosa with political and administrative hubs. Additionally, it acted as a transitional area between the era's political and economic entities. Cities like Apollonia, Bylis, Amantia, Antigonea, Adrianopoli, etc., which were not by mistake positioned on the banks of the Vjosa, and therefore had extensive economic, political, and cultural relationships. This route was especially notable for its numerous connection hubs, including Stefana, Nymfeu, Gurzeza Klosi, etc., through which products, armies, travelers, etc. were transported, elevating this region's prestige to that of the Balkans [9]. Historically, the markets created the communication arteries where bridges were the most significant components.

Material and Methods

Site visit along the Vjosa valley (covering main river and its tributariues Drini, Shushica, Benca, Langarica and Zagoria) has been conducted in the period of May 2022 until June 2023. Site documentation (measurement, photography) was combined with a systematic review of the literature. The work was focused on peer-reviewed

studies, and scientific reports regarding Vjosa basin that were written in English and published online. The data search was conducted in three comprehensive databases of scholarly publications- Web of Science, Google Scholar and Scopus between January 1995 and December 2022. All results were evaluated for relevancy and to avoid papers that were not related to our focus for each search-string. Examples of the search-strings include: ottoman period, architecture of bridges, Vjosa landscape, old bridges, medieval bridges, conservation, heritage profile, southeast Albania, etc.



Figure 1. Most notable bridges of Vjosa basin: (a) Brataj-Shushica; (b) Nivani-Zagoria; (c) Kadiu-Langarica and (d) Kordhoca-Drino

Results and Discussions

Following the analyses, the bridges along Vjosa valley falls into three construction types: (a) bridges with typical continuous of similar or almost similar shapes; (b) bridges with arches of odd number, in ascending and descending order, where the highest arch is located at the middle of the section and (c) with even number in ascending and descending order with a highest pie in the middle of the bridge [6, 10, 11].

Following [15] in similar period of time and style of construction, when processing stone for use in a masonry structure, the first working operation is usually the stone splitting so that a suitable form for grinding and further processing can be obtained. This has been observed in all bridges in our case, particularly in that of Nivani and Langarica. Further on according to [15], completely carved or semi-finished stone is processed in free form from natural banks or from already cut out regular pieces of stone. Pieces of stone and smaller monoliths can be carved as a fully-scaled stone (fully carved stone with a prominent middle part of the forehead) and as semi-finished stone with a flat front surface. The shape of the stone element that is being processed represents a carving characteristic as well. The form is usually parallelepipedic or prismatic, although the form can also be quite complex. This description was clearly evidenced in our visited locations along Vjosa valley.

Bridges construction is fitting with period of 16th – 19th century, once the territory of Albania was part of the Ottoman Empire, and in that part of the periphery of the empire where the appearance: large desire and enormous efforts for its expansion to the west of Europe. That has been confirmed by [6] for the Bosnia and Herzegovina. The practice of construction of persistent, demanding and expensive engineering stone bridges communications provided stability and intensity of life of the Empire, and enabling local communities to secure movement, trade, communication. For the case of large bridges as Vjosa and scattered communities this has been

of vital importance. Looking to the style in nowadays bridges were built experienced engineers enabling survival upon large period of time. Since an existence, the bridge should be reliable and stable construction, which summarizes its totality best and most sublime of human essence [6]. The aesthetic values and right integration into landscape is also a message that need to be translated within current construction activities that include roads, bridges, housing, etc.

Conclusion

The bridges are testimony of engineering capacities and visions, while the importance of communication, and thus the importance along the communication barriers reflect the society needs and concerns for integrating development into surrounding landscape. This article intends to confirm the values along Vjosa Bridges, needs for conservation measures. Further on it examine the effect of the bridge, explore the range of its complexity on regional contexts, in line with society needs and development.

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