

DOI: 10.5575/nairjssh.2024.10.02.02

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KAUTILYA'S ARTHASHASTRA AS ECOLOGICAL TEXT

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ABSTRACT

In early human civilization, the environment was crucial in determining people's livelihood. Historical literature revealed that they lived close to forests and natural resources. Kautilya's Arthaśāstra is a vital source in determining the Ecological sustainability in ancient India. Kautilya, also known as Chanakya, was a mentor and minister of Chandragupta Mauryan and authored "Arthaśāstra" which provided crucial evidence of statecraft and administration in ancient India and ecological evidence along with aptly mentioning the responsibilities of the Director of Agriculture. This paper analyzes Kautilya's Arthaśāstra as a prime source of ancient ecological knowledge. This paper is divided into three sections: Arthaśāstra as a source for forest and animal conservation policy, natural sources like water minerals and land conservation, and agricultural and irrigation management.

KEYWORDS: Arthaśāstra, Ecology, Water Management, Irrigation, Water Bodies

INTRODUCTION

Among the ancient texts, Arthaśāstra is India's first historical evidence of ecological conservation. It is a significant prime document of India's early ecological history. It stated most contemporary literary sources of his times which provided an early history of India as it referred to Gita, Manu Sanhita and Vedas and others. In these respects, it is closely related to that of Susrūta and Caraka, which are known as medicinal herbs texts. Very few

sources are found in the form of environmental authorities in early India. Historically, a religious or mythological view was applied to understand the ecological perspective of it. At the same time, Kautilīya's Arthaśāstra is the most secular and pragmaticⁱ. Arthaśāstra discusses statecraft and administration as well as political aspects. It is not known whether the treatise describes a referred to as the constitutional of an ideal state.ⁱⁱ Yet there can be no doubt about its environmental accountability. The Arthaśāstra, an economic treatise, is a precious source in these respects to formulate a set of economic policies to create prosperity. He developed trade, labor, growth, and fiscal policies, including taxation principles, budgeting, and accounting, to prevent fraudulent accounting practicesⁱⁱⁱ. According to Kautilīya, the conservation of the environment and ecology was an integral part of human beings, and he imposed strict legal provisions for the defaulters. Kautilya was aware of the crucial role played by the tax system in ensuring the economic welfare of society. The key feature of his tax system was certainty - of time, rate, and payment method^{iv}. Stability in the tax regime was essential in ensuring active trade and commerce in the Mauryan empire. This, in turn, strengthened the state's revenue base and enabled it to maintain a massive standing army and the welfare apparatus. Kautilīya's Arthaśāstra provides much information for managing natural resources, such as pastureland, water bodies, and forests.

FOREST AND ANIMALS CONSERVATION POLICY IN ARTHAŚĀSTRA

Forests were a crucial resource in ancient times which considered fodder, timber, fuel, and animals, as well as source as a form of wealth and economy. Forest products should be used sensibly, and new forest products, elephant forests, irrigation works, and mines were made in ancient times, as, Kautilīya mentioned in Arthaśāstra^v. According to Kautilīya, the preservation of forests became a principle of the state. A king must conserve the environment, ecology, and other natural resources through different state officials. Forest and craft production tax was attempted for the first time in Indian history by the Maurya time and, it emphasized that both forest and grazing lands should generate revenue for the treasury^{vi}. Further, if the trees of places of pilgrimage, forests of hermits, and cremation grounds were cut, penalties should be inflicted on the offenders. If the trees situated on boundaries, a place of religious worship, or in a royal forest are assaulted, the acceptable amount was doubled. Ashoka declared in his proclamations, 'Forests must not be set on fire either wantonly or for the destruction of life^{vii} and imposed enormous fines for destroying trees, sacred groves, and forests. Therefore, multiple attempts by Kings were made to protect forests. Animal parks were sometimes established on non-agricultural lands, where animals were given full protection^{viii}, and another animal park was established where all animals would be treated as guests^{ix}. Moreover, the pasture land should be adequately protected through tree planting, and the dry land should be grown with trees and plants suitable for cattle to preserve it. A particular position was occupied by the Director of Forests, who supervises the slaughter of animals, pastures, and cattle.

For an example of animal husbandry, the work of Vrajpayrayāg suggests proper rearing of calf, bullock, and buffalo and marking their names in the register.^xThe official Gopal was appointed to manage young, old, and milky cows.^{xi}Sunādhyaksha official was there to protect the cows, and there was a provision of 50 pan penalties for those who harmed them.^{xii} Caring for horses, food management, and other things named Ashwadyaksh.^{xiii}Naroshtra was responsible for the complete upbringing of the horse.^{xiv}Kautilīya was perhaps the first authority to develop the Hastī Shastra or elephant-logy devoted to elephant conservation. Similarly, horse science was an important issue, as mentioned in Arthaśāstra. Hastyādhyaksha was responsible for the protection of elephants.^{xv} It created an elephant forest on the kingdom's border with surveillance.^{xvi} As the Arthaśāstra, the manual on statecraft, mentions, such boundary forests also served as a source of supply of elephants for the armies, and a person found to have killed elephants suffered the death penalty.^{xvii} The protection of elephants was considered a severe issue.^{xviii}The superintendent of the elephant forest, with the help of guards of the elephant forest, protects the elephant forest on the mountain, along a river, along lakes, or in marshy tracts, with its boundaries, entrances, and exits known.^{xix} They killed anyone who slayed the elephant.^{xx} Ashoka edicts also demonstrate several attempts by the Mauryan ruler to preserve animals. The fifth pillar edict of Ashoka is considered to be one of the earliest records of measures taken for the conservation of wildlife in India. Boundaries of the kingdom should be denoted by a river, a mountain, forests, bulbous plants, caves, artificial buildings, or by trees such as Salmālī (silk cotton tree), Samī (Acacia Suma), and Kshīravriksha (milky trees).^{xxi}

MANAGEMENT AND PROTECTION OF WATER AND WATER BODIES

Water is the source of life for all living beings in our universe. In the ancient traditions of India, protecting rivers, lakes, and other water bodies is the main thrust to maintain ecological balance. Developing reliable water sources like storage, reservoirs, ponds, lakes, irrigation, canals, rivers, and other water bodies is essential to good governance. Kautilīya gives an elaborate account of water and water bodies in Arthaśāstra. Kautilīya introduced new water sanitation methods and formed laws to punish people who acted against them. Kautilīya mentioned two types of barriers - Sahadakā, where water has a natural flow, and Aharyodkā, a storage tank where water is brought through channels specially dug for the purpose.^{xxii} At that time, more diverse water management techniques proliferated. There were also privately owned water bodies, and the owners of these water bodies were free to sell or mortgage them.^{xxiii}Semi-circular bunds were built near small hills and water bodies. In the absence of the owner, the people of the village were to maintain water bodies. Arthaśāstra informed the cultivators that they had to pay tax in kind for using water.^{xxiv} The king should give necessary land, water, and wood to the people who come forward to build these works. However, the ownership of these sources remained to the king.

Kautilya directed the king to construct suitable canals across mountains to provide water for agriculture and other purposes.^{xxv}

According to Arthaśāstra, water sources, temples, and government offices around holy sites must be kept clean and not contaminated by urination. People should pay attention to maintaining the purity of water and water bodies. Stringent rules and regulations were made to manage these water bodies. Violation of these rules was punishable. A set of punishments was prescribed for various breaches of water laws by the king, such as failure to maintain water bodies, causing damage to gardens, parks, and dams, and owner of the higher tanks preventing the lower tanks from filling, the death penalty was prescribed for breaking a reservoir or tank of filled water, etc. Natural resources like water, rivers, springs, lakes, manufactured tanks reservoirs, and wells were widely used for irrigation.^{xxvi} The government superintendence was responsible for constructing wells and waterworks in dry lands, and the city superintendence was responsible for water supply and courses. Pushyagupta, governor during the reign of Chandragupta Mauryan, built Sudarshan Lake to facilitate water bodies at Girnār in present-day Gujarat and indicate improved skills associated with water management practices in the past.

AGRICULTURE AND IRRIGATION MANAGEMENT

Kautilya's Arthaśāstra gives us an idea of the principles and methods of managing irrigation systems as well as the economic functioning of the state. The book states that the people knew about rainfall regimes, soil types, and appropriate irrigation techniques in specific ecological contexts^{xxvii}. It was revealed that many hydraulic structures (dams, canals, and lakes) were built during the Mauryan period in Indo-Gangetic plains and other parts of the country for irrigation. Before Mauryas, during the 4th century BC, the kings of the Nanda dynasty (c. 363-321 BC) started constructing irrigation canals to transport water from rivers to agricultural lands. Hāthigumphā inscriptions dating back to the 2nd century BC describe major irrigation works in Kalinga, Orissa, where artificial reservoirs were built for irrigation by damming smaller streams. Kautilya describes various irrigation techniques such as divining, lifting devices, etc., Megasthenes revealed that Mauryan kings took a keen interest in irrigation schemes. Kautilya contains scientific records of rainfall measurements techniques in various parts of India, which were used for revenue and relief work. During the time of Kautilya in the 4th century B.C., instrumental devices for measuring rainfall, known as Varshaman, were developed^{xxviii}. Ashtādhyāyī also mentioned using rain gauges to measure the amount of rainfall in different parts of India in 700 BC. Megasthenes mentioned a group of officers responsible for superintending the rivers, measuring the land as is done in Egypt, and inspecting the sluices through which water is released from the main canals into their branches so that everyone may have an equal supply^{xxix}. This irrigation cess was called udakabhāga. State-provided irrigation facilities were taxed

heavily; whereas locally constructed or self-constructed water structures were taxed less. Levying taxes on cultivators for water management was based on irrigation types that were attainable and located in the financial benefits of the state. The tax rates differed depending on the source of water usage. The tax levied was 25% of the produce if the water was obtained from natural resources. The tax was 20% for water drawn manually, while with the help of bullocks, the tax was 25%. Exemption from taxes for five years was given to those who did irrigation works like digging lakes, building tanks, etc.^{xxx} The Mauryan Empire raised revenue from charging farmers for irrigation services from rivers in the 3rd century BCE. The evolution of agriculture caused consistent development in the social, economic, political, and technological fields. Fertile land is identified as an agricultural resource and is known as a development of statehood. It was also mentioned that cultivable land is better than mines because mines fill only the treasury, while agricultural production fills the treasury and storehouse. Agriculture was done on a large scale, with extensive networks of canals for irrigation.^{xxxii} Sitā (superintendent of the storehouse) was responsible for agricultural produce brought in by the superintendent of agriculture^{xxxiii} and also attributed that Sitādhyakṣha (agriculture supervisor) should know about water management and plant protection and probably supervised the cultivation works^{xxxiii}. The king and state inherently possessed superior rights over the Sitā land, including possession, cultivation, mortgage, and sale. The state helped people bring new areas under cultivation by clearing the forest and fallow land. The state also provided state-owned agricultural lands and unique benefits for constructing or improving irrigation facilities subject to specific requirements.

CONCLUSION

Unlike other ancient texts that portrayed ecology through the mythological context, Arthaśāstra, authored by Kautilīya, provided practical suggestions for sustainable development. It helped establish the ecological balance and imposed law. These suggestions are still applicable and relevant in sustainable policies protecting our ecosystem from climate change and global warming. Therefore, it is evident that Kautilīya's Arthaśāstra is an ecological text that offers valuable insights into contemporary environmental conservation efforts. The environmental concerns addressed in the Arthaśāstra are still pertinent in modern times.

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