



Agricultural Economy in Early Medieval Assam and Bengal

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ABSTRACT

In Assam, archaeological and inscriptional evidence show that wetlands of the Brahmaputra valley and sal forests in the foothills were gradually converted to paddy fields from the 6th century onward (especially under successive Kamarupa dynasties). A key feature was widespread revenue-free grants (Brahmadeya) of land to Brahmanas and temples, which rulers used to legitimize authority and expand cultivation. Epigraphic records also note land assignments to officials in lieu of salary. Lands granted were often newly cleared forest, yielding additional output for the donees but remaining exempt from royal taxes. Bengal's deltaic agronomy, by contrast, featured state-sponsored irrigation (tanks, canals) and multiple cropping cycles. Medieval texts and inscriptions list a diversity of crops beyond rice – including cotton (for muslin), sugarcane, pulses, oilseeds, fruits and vegetables. Politically, Bengal kings claimed state ownership of village lands and often granted whole villages as tax-exempt endowments (e.g. Gupta–Pala charters). Peasant raiyats tilled these lands and paid the king's share of produce in kind. Contemporary travelers (e.g. Xuanzang) praised Bengal's fertility and "intensive" farming. In sum, both regions were agrarian and rice-centered, but Assam's agriculture grew through royal land grants and settler initiatives, whereas Bengal's grew through irrigation infrastructure and diversified crops.



Bengal's agricultural prosperity during the early medieval period was primarily driven by its fertile Gangetic plain, extensive water resources, and favorable climate. Under the Pala dynasty, which ruled from 750 to 1161 CE, agriculture flourished due to several factors: The Pala rulers actively supported agricultural development. The agricultural economy of early medieval Bengal and Assam was primarily based on wet-rice cultivation, which formed the backbone of rural production and subsistence.¹ They granted land to Brahmins and religious institutions, often providing them with agricultural estates that contributed to increased productivity. The Pala dynasty made notable advancements in irrigation. They built numerous canals, reservoirs, and embankments to ensure water supply throughout the year, especially during the monsoon. This helped mitigate the impact of droughts and floods, ensuring a steady food supply. Extensive river systems such as the Brahmaputra River and the Ganges River created fertile alluvial plains that encouraged agricultural expansion and settlement.² The climate and soil of Bengal were ideal for rice cultivation, which became the primary crop. The Pala rulers not only promoted rice farming but also improved farming techniques. Their emphasis on agrarian expansion contributed to a surplus, enabling a thriving economy and the growth of trade. Overall, agriculture played a crucial role in Bengal's prosperity, with a combination of natural advantages and effective governance by the Pala dynasty that ensured its dominance during the early medieval period.

Land grants issued by regional dynasties like the Pala Dynasty and the Kamarupa Kingdom promoted the reclamation of forest land and the establishment of agrarian villages.³ These grants, often made to Brahmins and religious institutions, contributed to the growth of a land-based social hierarchy and the spread of Brahmanical culture in rural areas.⁴ The land revenue system under the Pala dynasty was indeed crucial to its economic stability and prosperity. Here's a more detailed look at how it functioned: The Pala kings appointed a network of local officials, often called Amatyas, to oversee the collection of land taxes. These officials played a critical role in ensuring that taxes were collected efficiently, and they acted as intermediaries between the central authority and local farmers. The land revenue system was closely tied to the productivity of the land. Taxes were levied based on the type of crops grown and their yield. For instance, rice, being the primary crop, likely attracted higher tax rates, but the tax rates could vary for other crops like pulses or oilseeds. This allowed for a more flexible and adaptive tax system that reflected the agricultural output. The Pala rulers emphasized improving irrigation infrastructure, such as the construction of canals, ponds, and reservoirs. These innovations helped boost agricultural productivity by ensuring reliable water supply for crops, especially rice, which requires substantial irrigation. The resulting surplus in agricultural production further contributed to the revenue system, as farmers could pay higher taxes due to increased yields. Taxes were typically paid in kind (in the form of



agricultural produce) or sometimes in the form of money. The local officials were tasked with overseeing this process, ensuring that farmers met their tax obligations. The effectiveness of this system helped maintain a steady flow of resources to the royal treasury. The Pala land revenue system was thus a well-organized structure that not only provided the state with much-needed resources but also incentivized agricultural productivity, contributing to the economic stability and growth of the region. Indeed, the crop production system in Bengal during the Pala dynasty was highly productive, with rice being the dominant crop. Here's a breakdown of the key agricultural products: As the primary staple, rice was the backbone of Bengal's agrarian economy. The fertile Gangetic plain, combined with an efficient irrigation system, allowed for multiple rice harvests throughout the year. The region's abundant water resources, such as the Ganges, Brahmaputra, and their tributaries, ensured that rice cultivation flourished. Bengal was also known for the cultivation of jute, which became a significant agricultural product. The region's climatic conditions and soil were ideal for jute, making it an essential cash crop for both domestic use and trade. Mustard and other oilseeds were grown extensively in Bengal. The seeds were important for oil extraction, which was used for cooking, lighting, and as a base for medicinal and cosmetic products. These crops also played a role in crop rotation, maintaining soil health. The warm climate of Bengal supported the cultivation of sugarcane. This crop was processed into sugar and molasses, which were important for local consumption and trade. The annual flooding of the rivers brought rich silt to the land, replenishing the soil's fertility and enhancing crop yields. This natural irrigation system played a critical role in maintaining the high productivity of the region's agriculture. Along with these main crops, pulses, vegetables, and fruits were also cultivated. The diversity of crops helped stabilize the economy by reducing the risks associated with relying on a single crop. This combination of favorable natural conditions, effective irrigation, and diverse crop production made Bengal one of the most agriculturally advanced and productive regions in India during the early medieval period, ensuring not just food security but also contributing to the region's wealth and trade.

Irrigation and water management played a critical role in sustaining Bengal's agricultural economy under the Pala dynasty. The region's natural waterways, including the Ganges, Padma, and Brahmaputra rivers, were central to the irrigation systems, but the Pala rulers went beyond just utilizing these rivers—they actively promoted the construction of various water management infrastructures to enhance agricultural productivity. Here's how irrigation and water management were managed during the Pala dynasty: The Pala rulers constructed an extensive network of canals and reservoirs, which provided controlled irrigation throughout the year. These were vital for managing the seasonal flooding of rivers and ensuring that water was available during drier months, especially for rice cultivation. These artificial water sources



complemented the natural rivers, distributing water more effectively to different agricultural zones. To prevent flooding during the monsoon season, embankments and dams were constructed along the riverbanks. These structures not only protected agricultural fields from floodwaters but also helped regulate the flow of water, enabling more precise irrigation control. The Pala rulers recognized the importance of managing the unpredictable flooding caused by the monsoon rains. By diverting river water into canals and reservoirs, they were able to minimize the destruction caused by floods while ensuring the water was used for irrigation. This proactive approach allowed farmers to harvest multiple crops per year, particularly rice. The vast network of rivers, including the Ganges and Brahmaputra, formed the backbone of Bengal's irrigation system. Their seasonal floods deposited nutrient-rich silt on agricultural lands, boosting soil fertility. The rivers also served as transportation routes for agricultural goods, enhancing trade and the economy. With such a robust irrigation system, Bengal's agricultural landscape was optimized for the cultivation of rice and other crops. The availability of water year-round supported rice production, which was the primary crop, while other crops like jute, mustard, and pulses flourished as well. In summary, the Pala dynasty's investment in water management systems was essential to the region's agricultural success. By expanding and maintaining irrigation infrastructure, the rulers ensured that Bengal remained one of the most agriculturally prosperous regions in India during this period.

Agriculture in Assam, much like Bengal, was central to the region's economy, with the fertile plains along the Brahmaputra River providing optimal conditions for farming. The Kamarupa kingdom (6th to 12th century), which ruled over Assam, made significant contributions to the development of agriculture. Here's a closer look at the agricultural practices and their economic impact during this period: Brahmaputra River and its tributaries created a fertile alluvial plain, perfect for farming. The annual flooding of the river deposited nutrient-rich silt, making the soil highly productive for agriculture. This natural irrigation system was crucial for crop cultivation. Like in Bengal, rice was the primary crop grown in Assam. The climate and soil conditions were ideal for growing both wet and dry rice. The Kamarupa kingdom's agriculture heavily relied on rice, which formed the staple diet and was a key agricultural export. In addition to rice, farmers in Assam cultivated a variety of other crops, including pulses, mustard, and sugarcane. Assam was also known for its tea cultivation in later periods, though this gained prominence much after the Kamarupa kingdom. The region was also rich in bamboo, used for construction and making various goods, which contributed to the local economy. The Kamarupa kingdom, benefiting from the Brahmaputra's seasonal flooding, didn't require the extensive irrigation systems that Bengal had under the Pala dynasty. However, local canals and irrigation channels may have



been constructed to distribute water more effectively for agriculture. Farmers relied heavily on the river's cycles for planting and harvesting. The surplus agricultural production, especially rice, played a key role in the economy of Assam. It facilitated trade with neighboring regions. The fertile lands around the Brahmaputra Valley allowed the kingdom to sustain not only its population but also engage in trade with other parts of India and Southeast Asia. Agriculture provided the necessary revenue for the Kamarupa kings, enabling them to maintain their armies and administration. The economic prosperity from agriculture also allowed for cultural and architectural development during the kingdom's peak. Consequently, agriculture not only shaped the economic structure of Bengal and Assam but also influenced social organization, settlement patterns, and regional political authority during the early medieval period.⁵

In summary, agriculture under the Kamarupa kingdom, especially rice cultivation, was the backbone of Assam's economy. The natural irrigation provided by the Brahmaputra River, combined with effective farming practices, made Assam one of the most agriculturally prosperous regions of the time.

Agriculture in Assam, especially under the Kamarupa kingdom, was deeply intertwined with the region's natural resources, particularly the Brahmaputra River. The fertile floodplains and favorable climate allowed for a diverse range of crops to be grown, with rice remaining the dominant crop. Here's a closer look at the key crops and agricultural practices in Assam: Rice was the staple crop of Assam, and its cultivation was the cornerstone of the region's agrarian economy. The fertile floodplains along the Brahmaputra River allowed for the cultivation of both wet and dry rice varieties. The annual flooding from the river provided water for irrigation, and the silt deposited by the floods enriched the soil, making it ideal for multiple rice harvests each year. This enabled farmers to grow two to three rice crops annually, enhancing productivity. In addition to rice, jute was another important crop in Assam. The region's climate and soil conditions were well-suited for jute cultivation, which became an important cash crop. Mustard was also widely grown for oil extraction and as a rotational crop that helped improve soil fertility. Assam's agricultural landscape was also diverse, with vegetables and fruits being cultivated alongside staple crops. Common vegetables included tomatoes, potatoes, and leafy greens. Fruits like oranges, bananas, and pineapples were also grown. These crops not only contributed to local consumption but also supported trade. Assam was known for the cultivation of valuable spices such as cardamom and ginger. These crops had both local and regional demand, and their cultivation added to the agricultural diversity of the region. The rich soil and favorable climate supported the growth of high-quality spices. The Brahmaputra River played a pivotal role in Assam's agricultural success. The seasonal flooding of the river brought nutrient-rich silt to the fields, replenishing the soil and ensuring high



productivity. Farmers utilized the floodplains to cultivate rice and other crops. The regular flooding allowed for multiple harvests, further boosting agricultural output. While river floods provided a significant source of irrigation, rainfall also played an important role in supporting crop growth, particularly during the monsoon season. The combination of river flooding and rainfall ensured that Assam's agricultural land remained fertile and productive throughout the year. In summary, Assam's agriculture, supported by the Brahmaputra River's annual floods, was diverse and productive. The region thrived on rice cultivation, but jute, mustard, vegetables, fruits, and spices also played vital roles in sustaining the economy. This diversified agriculture, alongside natural irrigation systems, made Assam a highly productive and prosperous region during the Kamarupa kingdom.

In Assam, the irrigation systems were less complex compared to Bengal under the Pala dynasty, but the natural advantages provided by the Brahmaputra River and other local water sources made irrigation effective and sufficient for agricultural needs. Here's an overview of the irrigation and water systems in Assam during the Kamarupa kingdom: The Brahmaputra River played a central role in irrigation, as its seasonal floods brought water to vast agricultural fields, particularly in the floodplains. The annual inundation not only provided water but also deposited nutrient-rich silt on the fields, enhancing soil fertility. This natural flood irrigation system was key to the cultivation of rice and other crops in Assam, allowing for multiple harvests throughout the year. While large-scale irrigation infrastructure like that in Bengal was not present, Assam did have a network of smaller local channels, rivulets, and canals used by farmers to divert river water to their fields. These canals were primarily used to distribute water more evenly across agricultural lands, especially during the dry spells between floods. This localized irrigation system ensured that crops had enough water to thrive, even when the river levels were lower. Assam's climate was also conducive to agriculture due to the heavy monsoon rainfall the region received. The abundant rainfall supplemented river water, particularly in the months when floodwaters receded. This combination of rainfall and river floods allowed farmers to cultivate crops like rice, mustard, jute, and vegetables throughout the year. The floodplains of the Brahmaputra and its tributaries were ideal for growing rice, as the natural flooding replenished the soil and provided water for cultivation. Floodwaters helped wash away salinity and ensured the land remained fertile for successive cropping seasons. While irrigation systems were not as advanced as those in Bengal, there was likely some level of flood management through embankments and water channels. These helped to control and direct floodwaters, reducing the risks of crop damage while ensuring that water was available for agriculture. In conclusion, Assam's irrigation system relied on the natural water sources of the Brahmaputra River, supplemented by rainfall and local irrigation channels. While it lacked the large-scale infrastructure of Bengal, the natural



flooding of the river, combined with the effective use of local water systems, supported the region's highly productive agriculture.

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