

Spencer Boeh
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Innovations of the Resource-Poor

Looking at early civilizations, it seems that those with fewer natural resources, or more competition over them turned to efficiency, conquest, or both. In contrast, civilizations with vast natural resources and little adversity seemed to do less of either. The Japanese quickly found themselves to be confined by the resources of their archipelago. Accordingly, as Hanley States, the Japanese found manufacturing methods using as few resources as possible. Clothing was designed to use little cloth, Houses less timber, and rooms less furniture. Hanley contrasts this to what the Japanese would regard as the excesses of the west. Though Europe had abundant arable land, timber, and minable resources they also had significant international competition leading to the development of technology for warfare. On the note of scarcity and warfare, one of the original fantasies about samurai regards their finely honed skills, their ability in compensation of their smaller number. Notably, Nobunaga was able to mass ranks of well equipped Ashigaru which threw off the traditional structure of Japanese warfare, he used numbers in an area that usually did not have many.

Japan was not blessed with the excess land of north America, or the mineral wealth of the south. Japanese timber was quickly relegated to inaccessible mountain sides and thusly there was need for innovation. Buildings that could adapt to greatly varying seasons and temperatures. Thusly lumber was primarily used for framing and other materials made up the walls and roofs of Japanese dwellings. The most significant resource to the Japanese was the food-currency rice. Totman spends many pages discussing the intricacies and change in the Japanese agricultural system and how the government prioritized its efficiency. The population was limited by agricultural output which was limited by land, and despite the efficiency of wet rice farming, Japan could only support so many. Luckily, being an island nation, Japanese fishermen had the seas to boost overall calorie production. On page 262, Totman states that “the Tokugawa populace intensified its self-exploitation” in order to increase agricultural yields. This was a contributing factor of rising village autonomy and economic power, as their resource output relied on some self-governance and structure working routines. On page 263, Totman quotes Musumi Takehachi on the moral teachings of farmers, encouraging youth to virtuously work and receive compensation for their good efforts. These trait and teaching seem to exist today in modern Japanese industry and infrastructure. There is focus on making few things do as much as possible, notably their reliance on nuclear power which is space and resource efficient. Additionally, Tokyo relies on a robust subway system, lowering overall fuel consumption for their greatest population concentration. Knowledge of the natural limits of the Japanese archipelago was definitely a factor in their imperialist expansion before and during the second world war, especially in the resource revolution of steel and oil. I think that scarcity of resources has and always will encourage the Japanese to innovate in the fields of efficiency and energy production.

(494 words)