

Completion Report

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MODIFYING RIVER FOR LIFE: JAPAN-FUNDED IRRIGATION INFRASTRUCTURE AND ITS IMPACT ON THE AGRICULTURAL ECONOMY AND THE ENVIRONMENTAL CONDITIONS IN EAST JAVA

This study has revealed the paramount importance of Japan in the development of irrigation infrastructure in the Brantas river basin of East Java during the New Order Era. It is the agency of Japan, rather than the Dutch, that has shaped the face of irrigation infrastructure and impacted greatly the region's agricultural sector and physical environment. Starting with the Karangates dam funded with the war compensation funds, other Japan-assisted projects later followed. The payment of war compensation funds was initially seen as a burden, but later it paved the way for the growing influence of Japan. The projects involved not only the Japanese government but Japanese corporations as well. The Japanese government provided technical assistance through the Overseas Technical Cooperation Agency (OTCA), while financial assistance in the form of grants and project loans was channeled through the Overseas Economic Cooperation Fund (OECF). Some Japanese corporations took part in the construction process, including Nichiment Co Ltd, Sumitomo Shoji Kaisha, Tomen and Takada Kiko, and more importantly, Nippon Koei Co Ltd founded by Yutaka Kubota and Kajima Construction Corporation led by Kajima Morinosuke.

Japan-funded irrigation infrastructure formed the main foundation supporting the success story of Indonesia's New Order in promoting rice production in the Brantas River valley. By employing the statistical data available, this study clearly shows that the development of irrigation infrastructure resulted in remarkable increases in the irrigated lands and the changes in cropping patterns with rice as the main crop. More quantities of rice were produced as a result of the growing areas under rice, more frequent rice cultivations, and higher rice productivity. The operation of Japan-assisted irrigation infrastructure has strengthened the position and role played by the Brantas River basin area as an important food granary in Indonesia.

In addition to the food production sector, the Japan-assisted irrigation infrastructure also brought changes to the environment. One striking change is in the form of environmental transformation from landscape into waterscape. The creation of artificial freshwater ecosystems has replaced the old habitats with entirely new ones, supporting the proliferation of animals and plants that live in the water world. Despite the existing annual fluctuations, there has been a rising trend in freshwater fish production along the Brantas river and its tributaries. Moreover, the Japan-funded irrigation infrastructure improved the control of floods. For centuries, flood disasters have become a scourge for the people inhabiting the Brantas river basin from upstream to downstream. Japan-funded irrigation infrastructure provided a device for taming the ferocity of the Brantas river and its tributaries so as not to cause destruction and harm to the community. The technological intervention has brought beneficial effects on reducing considerably the flood disasters, even though the problems have not yet completely disappeared.

Undoubtedly, the Japan-funded irrigation infrastructure has improved the ability to harness the great potential of the Brantas river and its tributaries as a life-giving force and at once, also taming their life-destroying ferocity.

Publication of the Results of Research Project

Verbal Presentation (Date, Venue, Name of Conference, Title of Presentation, Presenter, etc.)

1. 22 November 2022, LP3M University of Jember, National Seminar on Harmonization of Sciences, Technology and Arts in Realizing Agricultural Resilience towards Modern Indonesia”, *Developing River for Life: Japan –Funded Irrigation Infrastructure in the Brantas River Basin Area of East Java*, Keynote Speaker (Prof. Nawiyanto).

Thesis (Name of Journal and its Date, Title and Author of Thesis, etc.)

1. Journal article tentatively entitled “Japan-funded Irrigation Infrastructure in the Brantas River Basin Area: Motives, construction process and contributions”, (for possible publication in Asian Studies Review, United Kingdom).

Book (Publisher and Date of the Book, Title and Author of the Book, etc.)

1. Best Publisher, Yogyakarta. 2022, *Modifying River for Life: Japan –Funded Irrigation Infrastructure and Its Impacts on the Agricultural Economy and the Environment in East Java*.
2. Best Publisher, Yogyakarta. 2022, *Membangun Sungai untuk Kehidupan: Kajian Historis Infrastruktur Irigasi Berbantuan Jepang dan Dampaknya Bagi Pertanian dan Lingkungan di Daerah Aliran Sungai Brantas Jawa Timur*.