

BALANCING ENVIRONMENTAL CONSERVATION AND SOCIOECONOMIC WELFARE: SUSTAINABLE CULTIVATION OF SUBOPTIMAL LANDS IN PULAU BURUNG DISTRICT OF RIAU PROVINCE

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ABSTRACT

The circumstance of suboptimal land has been scrutinizing by multiple stakeholders for a long time. Due to its complex and often difficult nature, it is either under-utilized and left as abandoned space or over-utilized and generate environment problems. In fact, suboptimal land can be the answer to address the challenge in the age where global population is estimated to be 10 billion in 2050. As this number of population needs a place to live and fulfill their primary need to eat, it results in an intense competition between land conversion to agriculture field and settlement area. This paper introduces “water management trinity” as an integrated water management system used to exert the highest benefits from a sustainable suboptimal land cultivation practice. This approach has sustainably supported the existing ecosystem in Pulau Burung District in Indragiri Hilir Regency (Riau Province, Indonesia) for at least 50 years. The trinity was erected by a private entity called Sambu Group and is comprised of three main components: the canal, the dike, also the dam and water gate. Using the interplay of the components, this system principally regulates the freshwater from the precipitation events. The various dimensions of the canal with a cumulative length of more than 8000 km were designed to hold a volume of at least 85 million m³ of freshwater within the area. Combined with the soil technology also developed by multiple stakeholders, the current agriculture practice is proven to reduce environmental damage by maintaining the humidity within the soil so that the fire and flooding risk are both diminished while the annual land subsidence rate is kept under 0-4 cm in the last 10 years. At the same time, the local socioeconomic sector flourishes as the water management trinity secures the water requirement for plant commodities production and supports freshwater supply.

Keywords: suboptimal land, sustainable agriculture, water management, local empowerment.

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