

THE IMPORTANCE OF ULU MUDA FOREST RESERVE TO MADA AND NATIONAL FOOD SECURITY

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Abstract - The Muda Agriculture Development Authority (MADA), established in 1970 is the main driving force for the rice industry in the Muda Area. Apart from helping to increase the income of 57,635 registered farmers in the Muda Area, MADA also plays an important role in increasing the rice production for the country's needs. Muda Area, which is the largest paddy granary area in Malaysia, has a physical area of 130,282 hectares and a rice cultivation area of 100,685 hectares, covering the northern part of Kedah and the southern part of Perlis. Among the important roles of MADA is managing 3 large-scale dams, namely the Pedu Dam, the Muda Dam, and the Ahning Dam. These three dams are reservoirs for 3 catchment areas, namely Pedu Forest Reserve, Ulu Muda Forest Reserve, and Bukit Keramat Forest Reserve respectively. The catchment area of the Ulu Muda Forest Reserve, with an area of 984 km², is the main water contributor to the Muda and Pedu Dams. Water from the Ulu Muda Forest Reserve is transferred from the Muda Dam to the Pedu Dam through the Saiong Tunnel which is 6.8 km long and 4.41 m in diameter. This inter-basin transfer concept is used because the size of Muda Dam reservoir is small, 15.5 km², compared to the size of Pedu Dam reservoir which is 52 km². The water released from the Pedu Dam is what guarantees the sustainability of twice-a-year rice cultivation in the Muda Area. The total rice production of Area Muda in 2020 is 1,123,086 tons which is 41.29% of the total rice production in the country. In addition, water from MADA dams is also important for domestic and industrial use. A total of 8 water treatment plants in Kedah and 3 water treatment plants in Perlis depend on the MADA irrigation system. These water treatment plants serve to supply domestic water to nearly 50% of the population of both Kedah and Perlis. In summary, if the ecosystem of the Ulu Muda catchment area is disturbed, the water source for the MADA dams will also be disturbed. Therefore, MADA always monitors the condition of the dam catchment areas and takes action to study the ecosystem and sedimentation of all MADA dams. As a result of this monitoring and study, MADA will plan strategies and programs to ensure that the resources and the reservoirs are in optimal conditions. Subsequently, MADA will ensure that the domestic and industrial water supply remains sufficient, the country's rice production will not be affected, and most importantly, the National Food Security to stay unthreatened.

Keywords: Ulu Muda, MADA, paddy, rice, dam, catchment area, food security