



Assessment of Dam Removal Mechanisms Based on Functional Conditions

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ABSTRACT

To support the domestic and industry water uses with stable quantity and quality, various weirs were constructed for irrigation and waterpower in the river systems and farming irrigation systems in Taiwan. In this study, the two-stage assessment and investigation procedures for the removal decision of diversion weirs were developed based on the weir functionality and environmental consideration. Followed the procedures, the functionality of a investigated weir is defined as good, poor, or lost, while the environmental influence made by the weir is classified as apparent or ignorable. Hence, the appropriate counter-policies on the removal, renovation, or maintenance decision for all the six combinations of the functionality and environmental influence were also recommended. To verify the viability of this decision model, 54 diversion weirs and dams in Taiwan were chosen and evaluated. There are only seven weirs identified as those with degraded or lost functionality. Beside these seven weirs and dams, the other 47 weirs and dams were in good conditions and provide excellent services in water supply, hydro-power, irrigation, and sediment control. However, the necessary ecological investigation is strongly recommended along with detailed environmental impact evaluation and planning before removing of the suggested weirs.