To connect or not to connect – floods, fisheries and livelihoods in the Lower Rufiji floodplain lakes, Tanzania.

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Abstract

For seven years, village-based recorders monitored fish catches and water levels in seven floodplainassociated lakes of the Lower Rufiji, Tanzania. The lakes differ in the number of days and volume of inflows from the river, and thus provide a natural experiment to explore the links between catch composition, income per hour of

fishing (IPHF) and hydrological connectivity, and to analyse the response of the users. The fishers adapt their fishing

mode and equipment to achieve a rather constant IPHF of between 0.2 and 0.8 US$/fisher/hour. In situations

of low connectivity, during a series of drought years, the less well-connected lakes lost many species and became a virtual monoculture of Oreochromis urolepis. Only in one extreme case was average fish size significantly reduced, indicating a high fishing pressure. Catch was therefore highly resilient to shifts toward illegal, non-selective and active fishing techniques. Fish diversity and lake productivity were quickly re-established when the larger lakes

reconnected. The potential impacts of changes in the flood hydrograph (through dams, increased abstraction or climate/land-use changes) are assessed, and management options discus

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