



**Royal University of Agriculture**  
Graduate School of Agricultural Sciences



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## ***M.Sc. Thesis***

# ***Migration and Productivity of Wild Fish in Stung Chinit Reservoir, Kampong Thom Province, Cambodia***

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# **Migration and Productivity of Wild Fish in Stung Chinit Reservoir, Kampong Thom Province**

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## **ABSTRACT**

The main purposes of this study were (i) to monitor fish pass after fish ladder built on Stung Chinit diversion weir to allow fish migration and (ii) to observe wild fish productivity (yield and biomass) on which depends an important part of the local population's consumption. The appropriate method in the study was collecting data from fish ladder structure and from fishermen logbook in the reservoir and downstream.

The fish ladder was the first structure in Kompong Thom province, Cambodia. It was built in 2005 to allow fish migrate from downstream to upstream. Fish ladder has 43 pools. Fish migration in fish ladder was monitored one year through fish cage checked everyday in front of the structure, and 8 fishermen were selected to make logbook to study about fish productivity.

During one year of fish ladder monitoring (Sep-2006 to Aug-2007), 41,980 fish individuals for 850 kilograms migrated through fish ladder. There were only 4 orders with 10 families and 55 fish species which migrated from downstream to upstream and only 5 orders with 11 family and 40 fish species from upstream to downstream through spill way structure. Only 18 of 55 fish species was occurrence in fish ladder. Most fish species migrated were in Cypriniformes orders, especially in September and October 2006. Fish prefer migration at day to night time which Cipriniformes at day time and Siluriformes at night time. Fish species migrated to find new habitat than spawning. Fish migration had not relationship with rainfall factor, but it had relationship with water level in reservoir and in downstream, especially fish migration had relationship with lunar calendar (waxing moon). For fish catch estimation by fishermen logbook (6 fishermen in reservoir and 2 fishermen in downstream), there were 8 orders with 18 families and 69 fish species was recorded in Chinit reservoir and 44 fish species recorded in Chinit downstream. The total catch in the both sites were around 11 tons per year which the figure was higher than in 2002-2003. But for the total catch was estimated 653 tons per year in Chinit reservoir that meant 0.9 kilograms/family/day and 74 tons per year in Chinit River that meant 0.6 kilograms/family/day. The abundant of fish was caught by gill net and seine net.

After Chinit reservoir rehabilitation, fish stock in Chinit reservoir has increased from 141 tons to 151 tons. It meant that the fish stock high potential to support in local consumption, because just after dam construction, fish stock increased 10 tons, and moreover, fish ladder structure has attracted fish to migrate from downstream to reservoir, which fish around 40,000 with 750 kilograms a year. But high fish yield was caught by fishermen using Brush Park during December 2006 to April 2007, which this fishing gear is prohibited by fishery law. If this fishing gear is reduced or eliminated from Chinit downstream, the fish stock in Chinit reservoir will be high potential.

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