Title: Cage-pond integration of African catfish (*Clarias gariepinus*) and Nile tilapia (*Oreochromis niloticus*) with carps

Author(s): Ram Bhajan Mandal¹, Dilip Kumar Jha¹, Madhav Kumar Shrestha¹, Jharendu Pant², Sunila Rai¹, and Narayan Prasad Pandit³

1. Tribhuvan University, Institute of Agriculture and Animal Science (IAAS), Rampur Campus, Chitwan, Nepal
2. The WorldFish Center, Penang, Malaysia
3. Tribhuvan University, Institute of Agriculture and Animal Science (IAAS), Paklishawa Campus, Rupendehi, Nepal

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Abstract: Cage-pond integration system is a new model for enhancing productivity of pond aquaculture system. A field trial was conducted using African catfish (*Clarias gariepinus*) and Nile tilapia (*Oreochromis niloticus*) in cages and carps in earthen ponds. There were four treatments replicated five times: (1) carps in ponds without cage, (2) tilapia at 30 fish m⁻³ in cage and carps in open pond, (3) catfish at 100 fish m⁻³ in cage and carps in open pond, (4) tilapia and catfish at 30 and 100 fish m⁻³, respectively, in separate cages and carps in open pond. The carps were stocked at 1 fish m⁻². The cage occupied about 3% of the pond area. The caged tilapia and catfish were fed and the control ponds were fertilized. Results showed that the combined extrapolated net yield was significantly higher (P < 0.05) in the catfish, tilapia and carps integration system (9.4 ± 1.6 t ha⁻¹ year⁻¹) than in the carp polyculture (3.3 ± 0.7 t ha⁻¹ year⁻¹). The net return from the tilapia and carps (6860 US$ ha⁻¹ year⁻¹) and catfish, tilapia and carps integration systems (6668 US$ ha⁻¹ year⁻¹) was significantly higher than in the carp polyculture (1709 US$ ha⁻¹ year⁻¹) (P < 0.05). This experiment demonstrated that the cage-pond integration of African catfish and Nile tilapia with carps is the best technology to increase production; whereas integration of tilapia and carp for profitability.
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