

NOTICE OF PUBLICATION



AQUAFISH COLLABORATIVE RESEARCH SUPPORT PROGRAM

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: The potential for culture of Nile tilapia and African catfish in the river Njoro watershed

Author(s): David Liti
Moi University
Sustainable Management of Rural Watershed Project

Date: January 26, 2011

Publication Number: CRSP Research Report 09-A10

The CRSP will not be distributing this publication. Copies may be obtained by writing to the authors.

Abstract: Aquaculture systems have the benefit of being highly intensive with demonstrated economic returns. Aquaculture can be an efficient strategy for economical land use and serve as an alternative means of livelihood for rural communities. Consequently, fish farming can play a major role in environmental conservation and restoration programs by reducing extensive land use. However, regional variability in climate, soils, and water quality are limiting constraints on aquaculture success. This study was conducted to assess the potential for culture of two warm water fish species, Nile tilapia (*Oreochromis niloticus*, Linnaeus) and African catfish (*Clarias gariepinus*, Burchell) at high altitudes of the River Njoro watershed. Growth performance of Nile tilapia and African catfish were evaluated for 180 days in ponds and fertilized with organic manure and stocked at a rate of two fish per square meter for tilapia, and 0.5 fish per square meter for catfish. Results from this study demonstrated remarkable growth in Nile tilapia but poor growth and condition in African catfish. After several attempts, African catfish eggs fertilized for the study failed to hatch, most notably due to low temperatures and the poor water quality of the Njoro River. These results demonstrate the feasibility of Nile tilapia culture at high altitudes of the watershed, while African catfish culture was limited by poor growth performance and seed availability. The farming of Nile tilapia is therefore recommended in the Njoro River watershed as a potential livelihood strategy to intensive agriculture.

This abstract was excerpted from the original paper, which was published in Global Livestock CRSP Research Brief 09-08-SUMAWA, April 2009.

CRSP RESEARCH REPORTS are published as occasional papers by the Management Entity, AquaFish Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The AquaFish CRSP is supported by the US Agency for International Development under CRSP Grant No. EPP-A-00-06-00012-00. See the website at <aquafishcrsp.oregonstate.edu>.