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(Un)sustainable Use of Frogs in West Africa and the Resulting Effects for the Ecosystem

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Abstract

Amphibian populations are declining world wide. One of the major reasons for this decline is overexploitation. All over the tropics many anuran species are caught from the wild, mainly for food, but also for medicinal purposes or the pet trade.

In West Africa the frog trade seems to increase dramatically in recent years. It so far was mainly restricted to local or national scale. However, we now could also detect intense cross-border trade of frogs from Benin to Nigeria. Whereas particular West African tribes have always used frogs as food, medicine or for cultural reasons, the current increase in frog hunting seems to be new. As savannah frogs are key-species for the functioning of temporary savannah waters, their decrease or even local extinction are likely to have unforeseen and negative ecological consequences, including effects on human welfare and health. In rural savannah regions of West Africa, freshwater ecosystems are essential water resources for humans and cattle. Altering these ecosystems therefore may have important economic and health consequences. Prospective impacts on water chemistry, algae and aquatic invertebrate taxa are therefore likely. In our project we are investigating the extent, the social, socioeconomic and the ecological aspects of a probably unsustainable use of frogs in northern Benin, south-eastern Burkina Faso and Nigeria. To address these topics we carried out semi-structured interviews in different areas in the respective countries. Surveys of natural freshwater ponds were undertaken in proximity to villages where frogs are exploited and in protected areas for comparative reasons in Burkina Faso. Additionally, we set up artificial tadpole communities involving species from different trophic levels. This approach allowed us to study the effects of a tadpoles species loss on species survival, algae growth, water quality and mosquito species and density. First analyses of experimental runs in 2007 and 2008 could already reveal significant differences in the survival rate of tadpole species, in water quality and in the survival rate of mosquitoes.

Keywords: Amphibians, temporary freshwater ponds, tadpoles, sustainability, West Africa