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# Cognitive mapping as a relevant tool to capture small-scale fishers' perceptions on fish resources and Upper Maroni River environment (Amazonian French Guiana)

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## Abstract

When we have too little information on small-scale subsistence fishing within remote areas, it seems now relevant to incorporate traditional knowledge into our scope before contributing to environmental management. Embedded in a participatory science approach, our project aims at using cognitive mapping to consider the state of ecological status of Upper Maroni River (French Guiana) from 45 semi-directed interviews of small-scale fishers who belong to various ethnic communities (Amerindians & Alukus). This methodology allows to capture how fishers perceive their environment and resources they depend on. In addition, this is the only way to get a timeline basis to address the evolution issue of the river without any previous recorded knowledge. The obtained mental maps translate the dynamics of their social ecosystem. By comparing these maps, we found that all fishers share the same view despite their different ethnic group or way of life: (i) the environment is getting worse mainly due to illegal gold panning that changes the aquatic environment and fish viability; (ii) the fishing effort has increased with a change of fishing gear by using more and more cheap gillnets, which probably leads to lower fish daily diets per capita; (iii) a higher availability of technologies within remote villages are being changing their relationships with the river and the fish status. These results should contribute to a co-management of the fisheries.

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