

CONGO NETWORK

Workshop Kisangani
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CSB-UNIKIS

Assessment of Fish Diversity in the
Eastern part of the Congo Basin (Kahuzi-
Bièga National Park).



Introduction

The Kivu region is scientifically well known for its biological diversity with many habitats on low and high altitude.

There are **Lakes** (Kivu, Tanganyika, Edouard, Lungwe) and their tributaries and the **Congo River** system.

Introduction

Studies so far conducted in these lakes show the existence of numerous **endemic fish** species. The degree of endemism differs. Lake Tanganyika has the highest endemism degree.

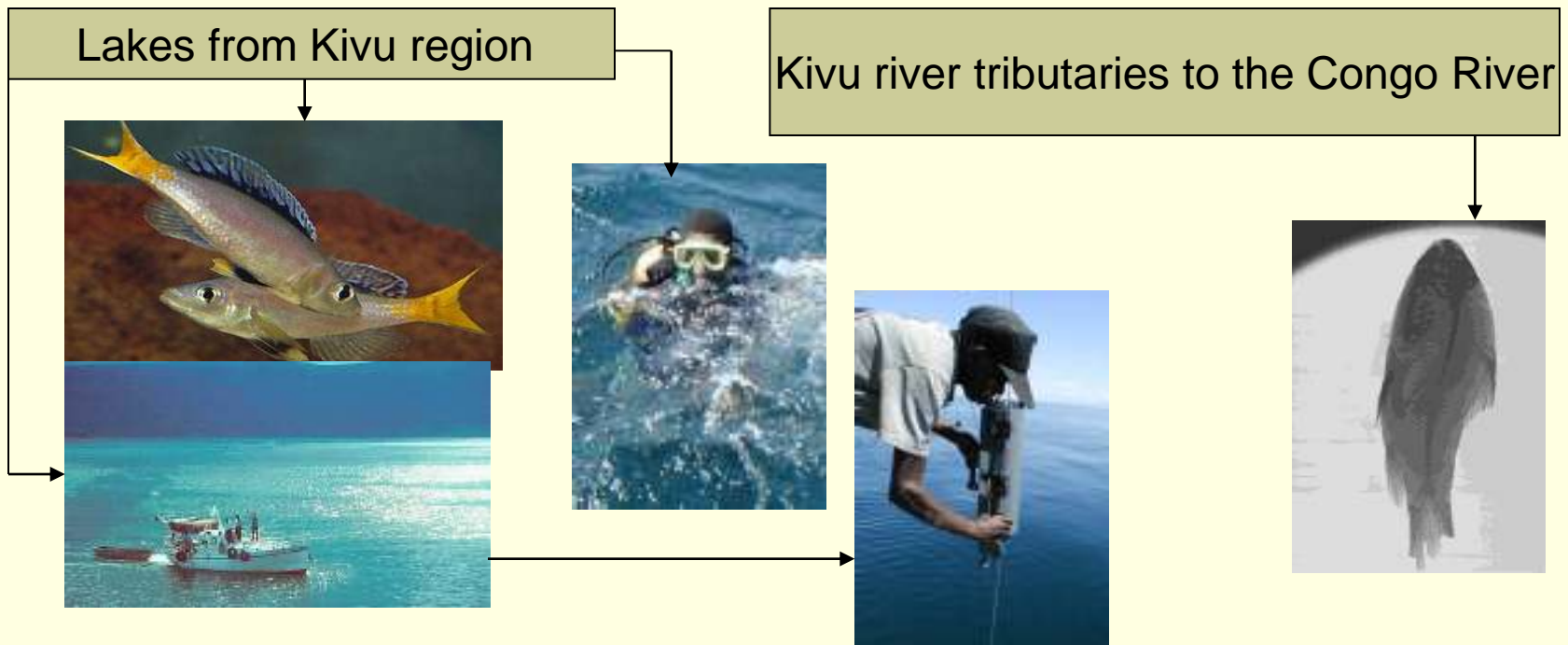


Ecological and biological studies have been realised since the **systematic** status of fish species from these lakes have been established.

Other interesting **studies** still continue (e.g. climate change impact on sustainable use of Lake Tanganyika fisheries)

Introduction

The available literature leads one to note that more **scientific attention** was given to the lakes than to the rivers in this area. Consequently, **fishes** of the Kivu lakes are relatively well known compared to those of the Congo River system.



Introduction

Importance of Upper Congo River tributaries

For a long time **few** studies revealed the fish variety in the rivers of the Kivu region.



Large rivers originating from the Kahuzi National Park or from the Itombwe Reserve are connected to other rivers before flowing into the Congo River.

Introduction

Importance of Upper Congo River tributaries

→ provide water to the native population

→ take care of water and waste discharge

→ many inhabitants along these rivers
depend on fishing

Statement of the problem

The degradation of freshwater ecosystems is severe in many parts of the world and fish species are among the most endangered species.

Statement of the problem

Particularly, the tributaries of the Congo River in the Kivu region are victims of mining activities and human pressure by overfishing.



ferme d'or dans un coin au Congo

The disappearance of fish species, even before they are discovered, is a possibility

Statement of the problem

Despite their importance, those rivers have not yet been largely investigated and their biodiversity is still unknown by the scientific world.



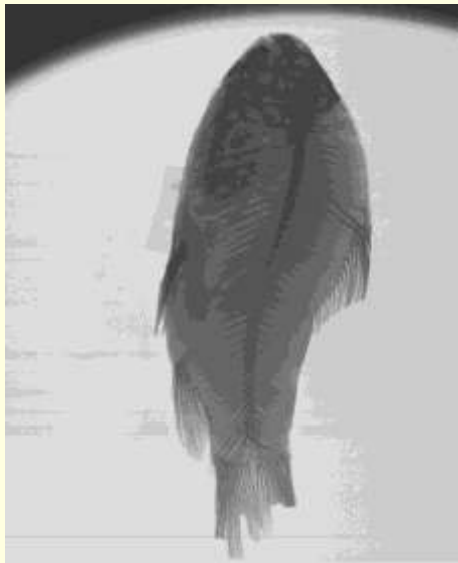
Statement of the problem

- In addition, recent studies in these areas focused on terrestrial biodiversity: plants, mammals and birds being the main groups.



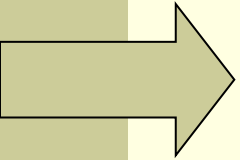
Justification

Little is known on fishes from these rivers.



There is a need to investigate fish diversity in those areas and eventual threats for their survival

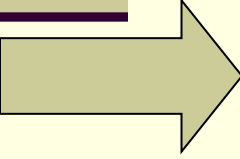
Objectives



Collection and inventory of fish diversity in the tributaries of the Luhoho river and in the Itombwe Reserve



Characterization of fish habitats in the study areas.



Identification of the impact of mining activities on the fish community

Study area

There are many rivers originating from the Kahuzi Biega National Park mountains flowing into the Luhoho River, a secondary tributary of Congo River.

Fishes from the Itombwe Reserve will also be investigated.

Scope of the Study

For reasons of efficiency, we propose sampling fishes on the River **Luhoho** in and outside the Kahuzi Biega National Park.



Material and Methods

Physico-chemical parameters will be taken into account.

Other environmental characteristics at the sample area will also be sensed (substrates, depth, vegetation, water velocity, existence or not of **mining activities** in vicinity of the study area)

Material and Methods

- Fish will be collected using gillnets, hooks and traps where applicable
- Fish will be conserved in formalin 4% and/or alcohol >70% (for further genetic studies)
- Geographical coordinates will also be recorded for referencing the study area and fish distribution.
- Univariate (Mann-Whitney U test or Kruskal-Wallis test) and multivariate (Principal component analyses) techniques will help to collect fish morphometric and meristic data.
- The fish community will be assessed using the Simpson and Shannon diversity indices for each site.
- The isolated impact of both mining activities and other qualitative environment parameters on fish diversity or distribution will be estimated using ANOVA (Analyse of variance).

Expected outputs

- The fish composition in Luhoho River (in and outside the Kahuzi Biega National park),
- The impact of mining activities on fish community in the Luhoho River
- Water parameters of the Luhoho River and in the Itombwe Reserve.

Conclusion and Perspectives

Recommendations will be formulated for sustainable management and conservation according to the study findings.



Thank you for your attention!

