THE IMPACT OF THE 2020-2021 RISING WATER LEVELS IN UGANDA'S MAJOR LAKES AND LESSON LEARNT, A CASE STUDY OF LAKE KYOGA AND ALBERT.

BY AJOK PASKA

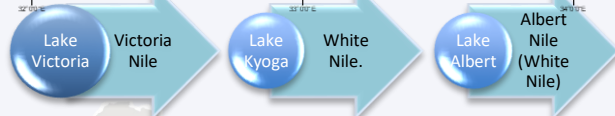Email. paskaajok01@gmail.com

Introduction.
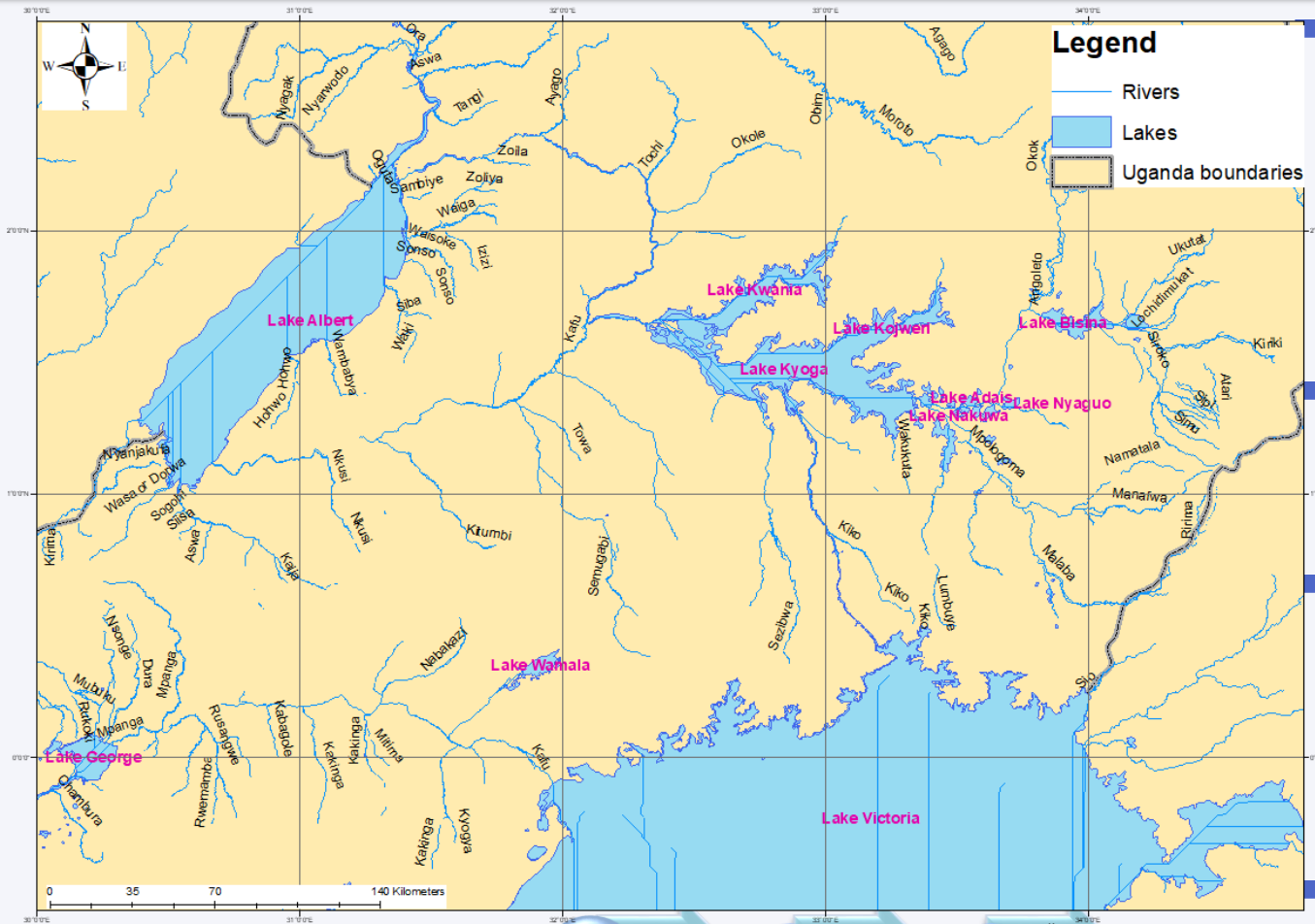
- Lake Victoria covers an area of about 59,947 km^2, catchment area of about 169,858 km^2

- 80% of its water from direct precipitation and

- The Kagera River is the major river that empties into the lake.

- Increase in precipitation

- Lake Kyoga is the largest shallow lake in Uganda, about 1,720 km2 (660 sq mi) in area and at an elevation of 1,033 meters.

- The deepest part of the lake is about 7m. The lake has an average depth of 3m and catchment area of 75000km2

- Fishing is the main economic activity with 46 different fish species, Farming and Livestock keeping.

NILE BASIN INITIATIVE
INITIATIVE DU BASSIN DU NIL

Legend

	Rivers
	Wetlands
	Lakes
	Uganda boundaries

Lake Kwania
Lake Kojweri
Lake Bisina
Lake Kyoga
Lake Adais
Lake Nyaguo
Lake Nyasala
Lake Nakuwa
Lake Lemwa

- Lake Albert is part of the complicated system of the upper Nile.

- Its main sources are southeast, and the Semliki River, which issues from Lake Edward to the southwest.

- The maximum depth is 51m a catchment area of 37 000 km2

- Settlements along the shores and major economic activities is Fishing, Farming and the most recent discovered oil reserves (Oil exploration).
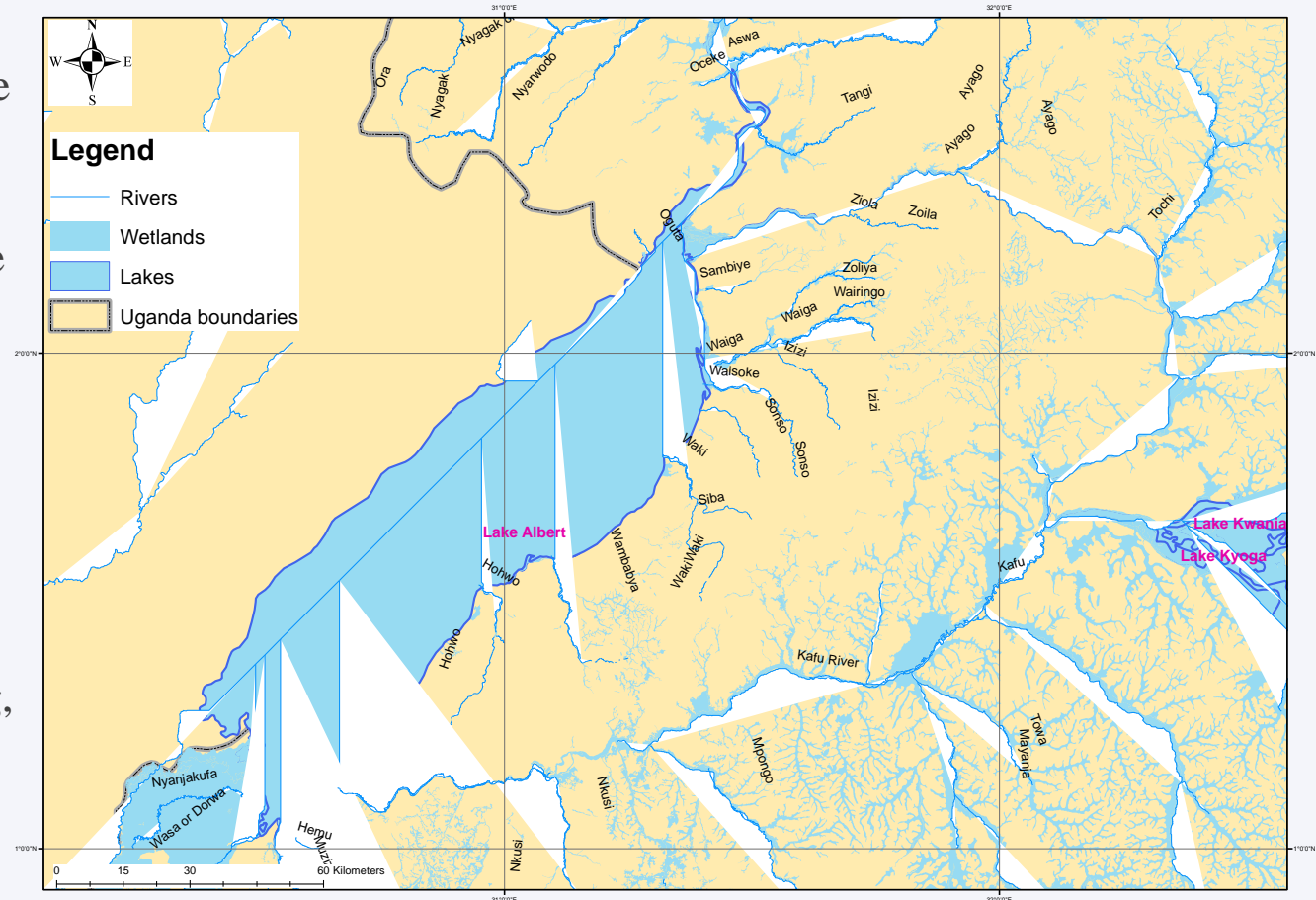
Objectives

➡ **Main Objective**.

Assess the impact of release from Lake Victoria on Lake Kyoga and Lake Albert.

➡ **Specific Objectives.**

1. Analyze the water levels of lake Kyoga and Albert

2. Carryout flood mapping of Lake Kyoga and Albert.

3. Conduct field studies to identify structures affected by the floods and ground proofing.

4. Lesson learnt throughout our the period.

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

CIWA

Methodology

➡ Desk study;

Historical Data was obtained from Aquarius database and analysed. Other materials from previous work done in terms of projection of was also used to understand the driving factor of the increase in the Lake levels.

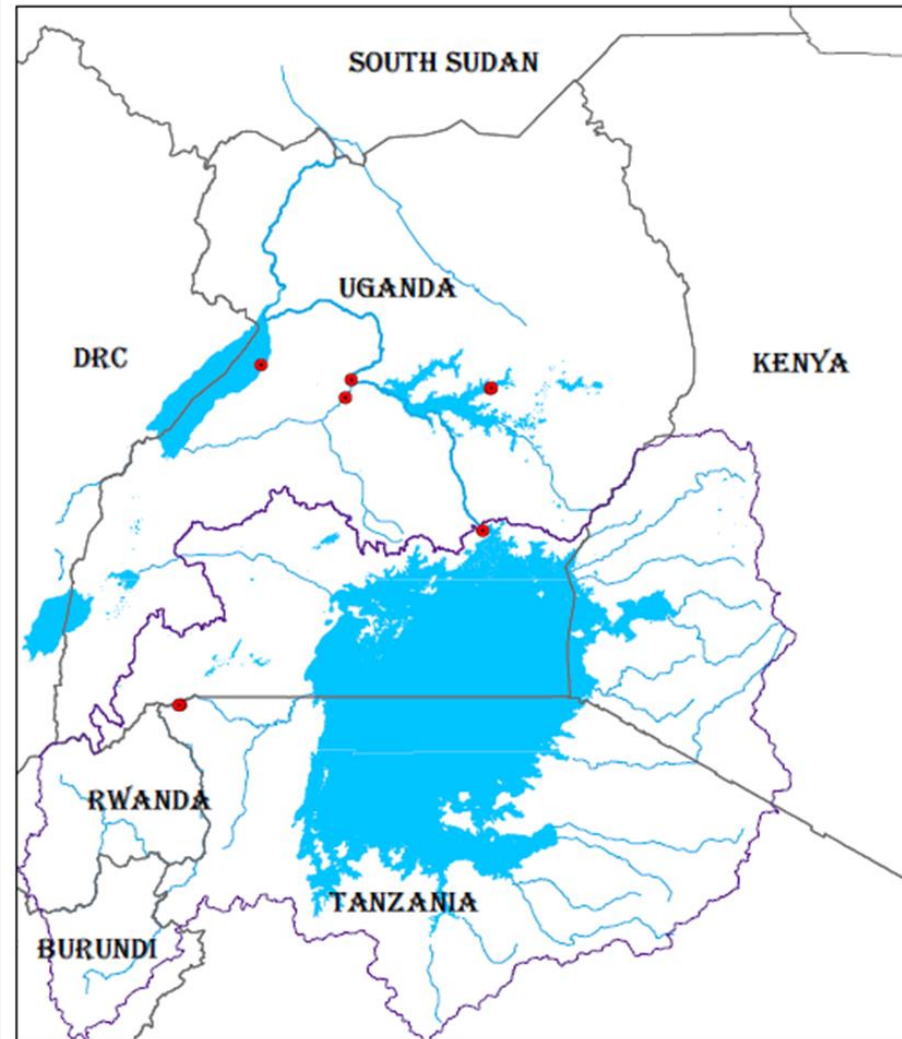**➡ GIS and Remote sensing using Google engine**

Satellites images were obtained from Sentinel 2A analyzed and processed using GIS. The flood Extent was overlapped with other layers to identify structures affected by the floods.
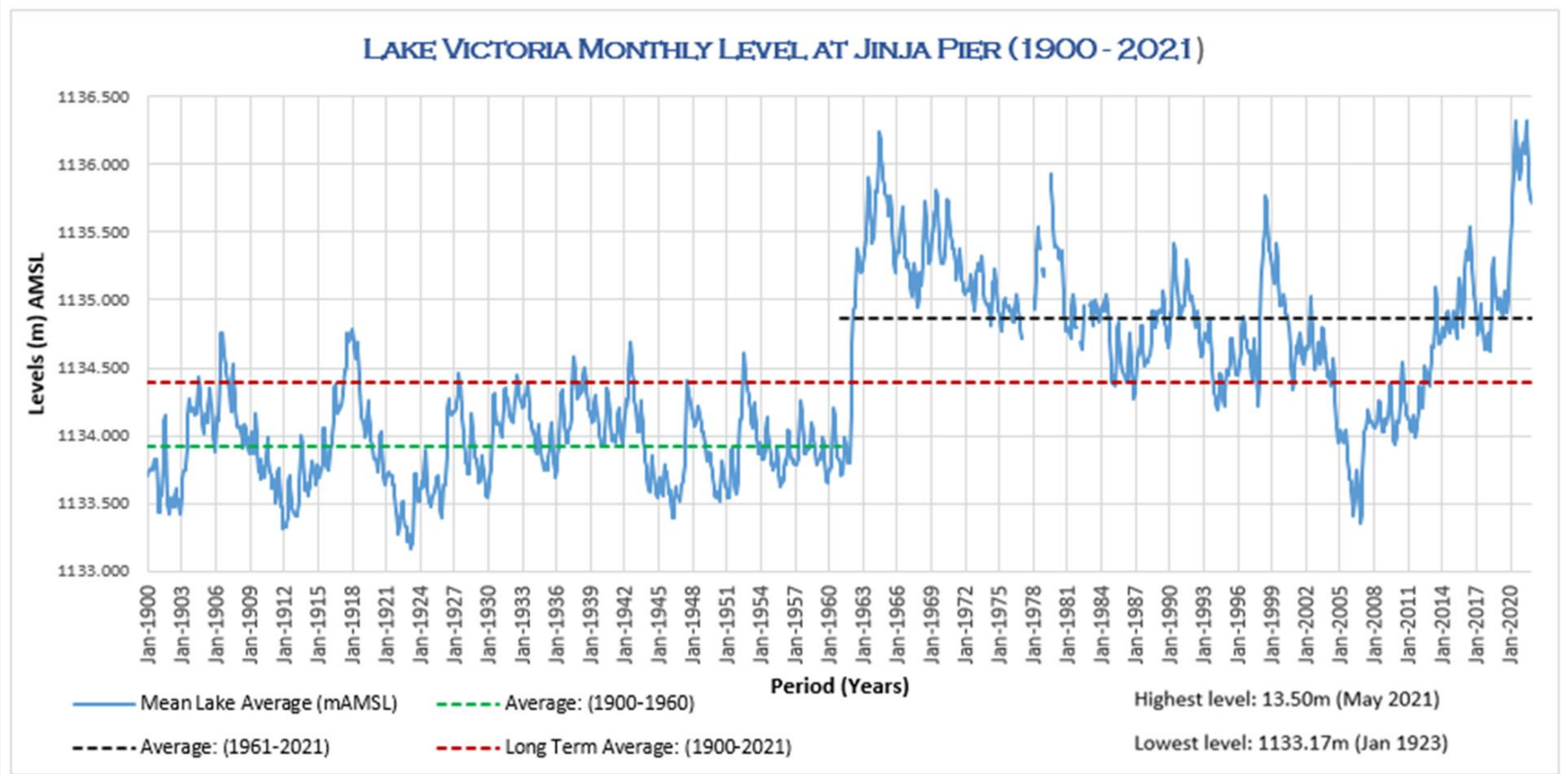
➡ Field survey

The purpose of the field trip was to verify the new extent of Lake Kyoga following the increased flows from Lake Victoria and above normal rainfall experienced in Kyoga and Albert basin
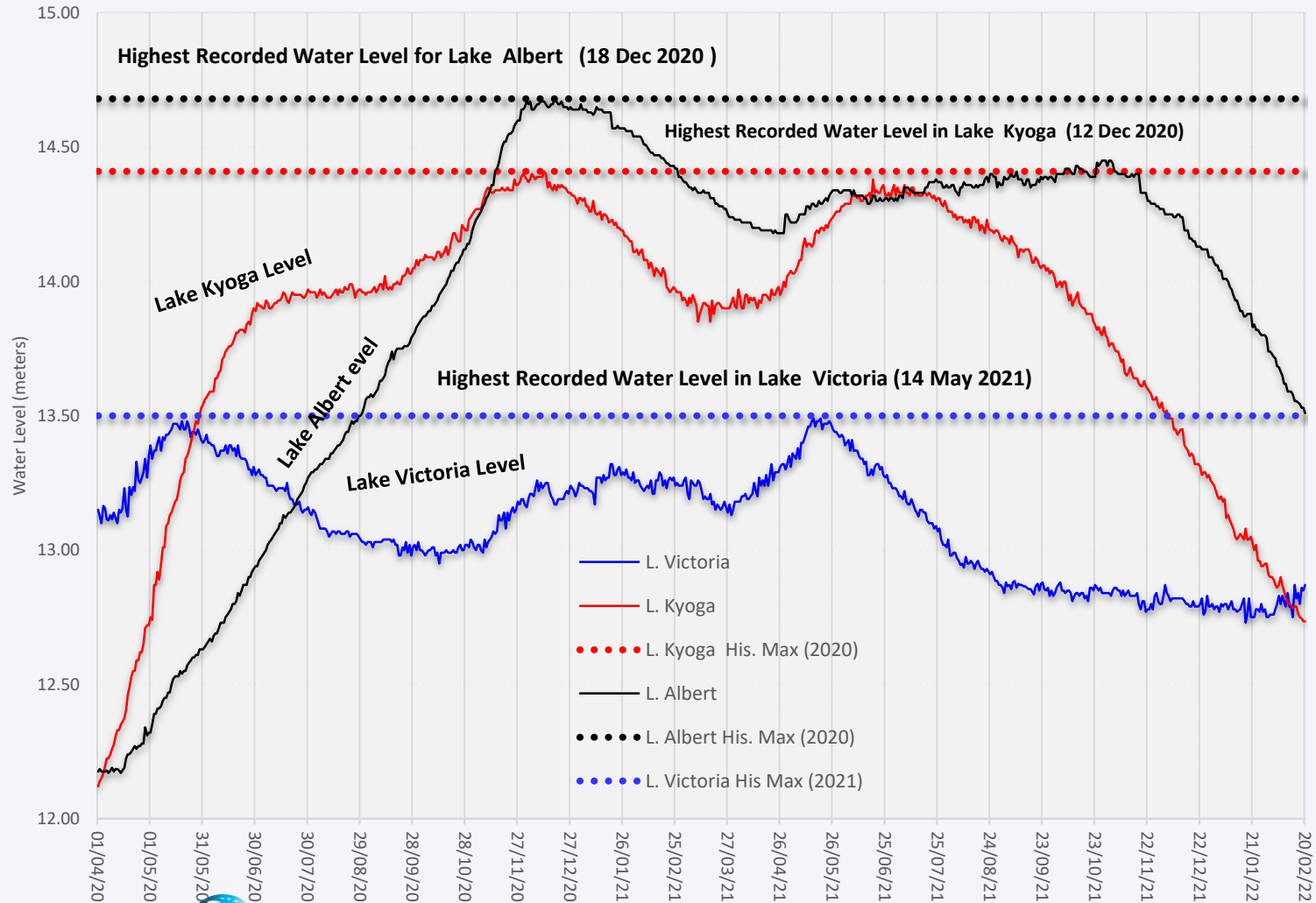
➡ Realtime observations.

Field observers were tasked to report on daily water levels of all major rivers and Lakes across the country.

Lake Victoria levels

LAKE VICTORIA MONTHLY LEVEL AT JINJA PIER (1900 - 2021)

Mean Lake Average (mAMSL) — Average: (1900-1960) — Average: (1961-2021) — Long Term Average: (1900-2021)

Highest level: 13.50m (May 2021)
Lowest level: 1133.17m (Jan 1923)
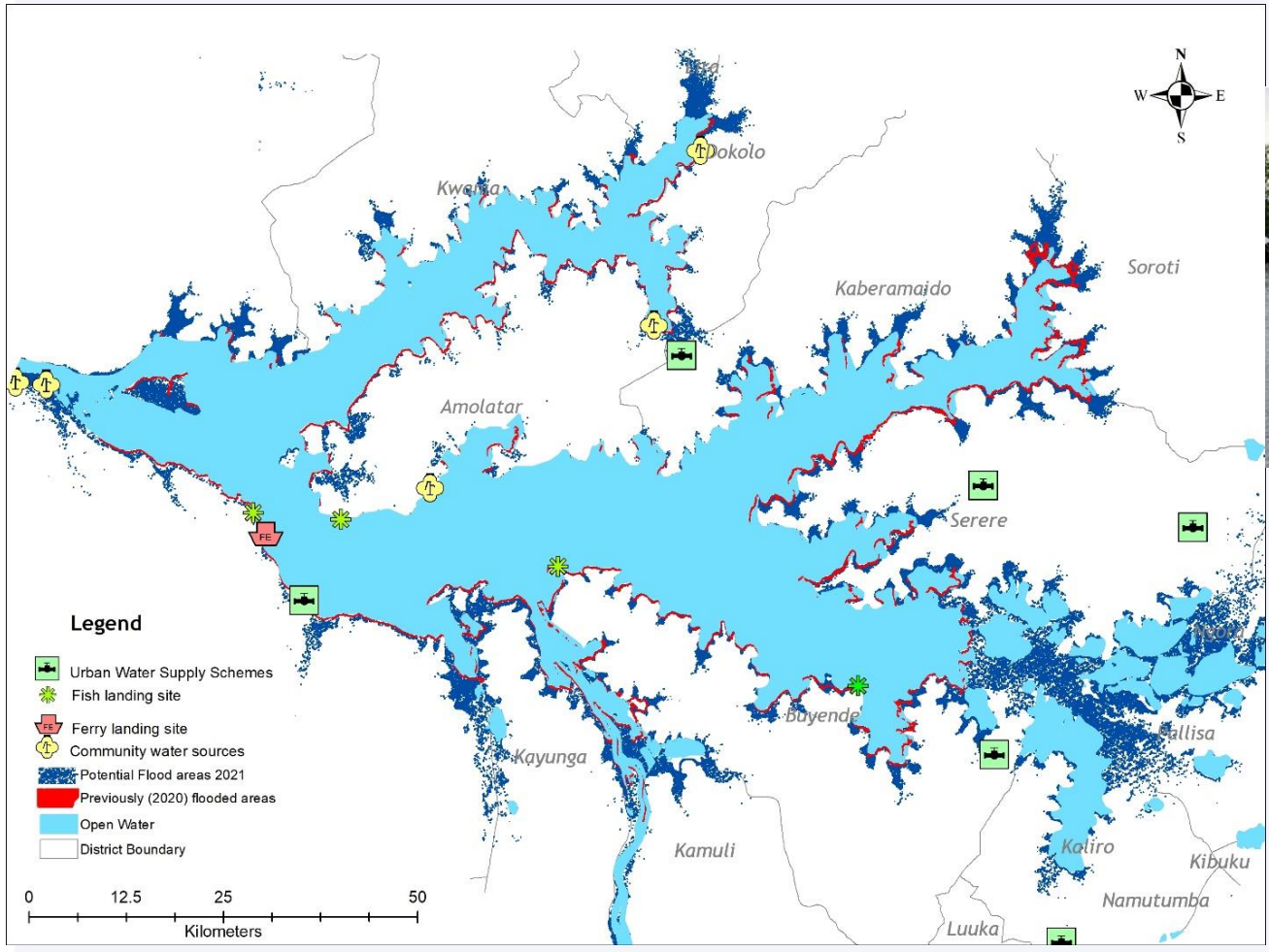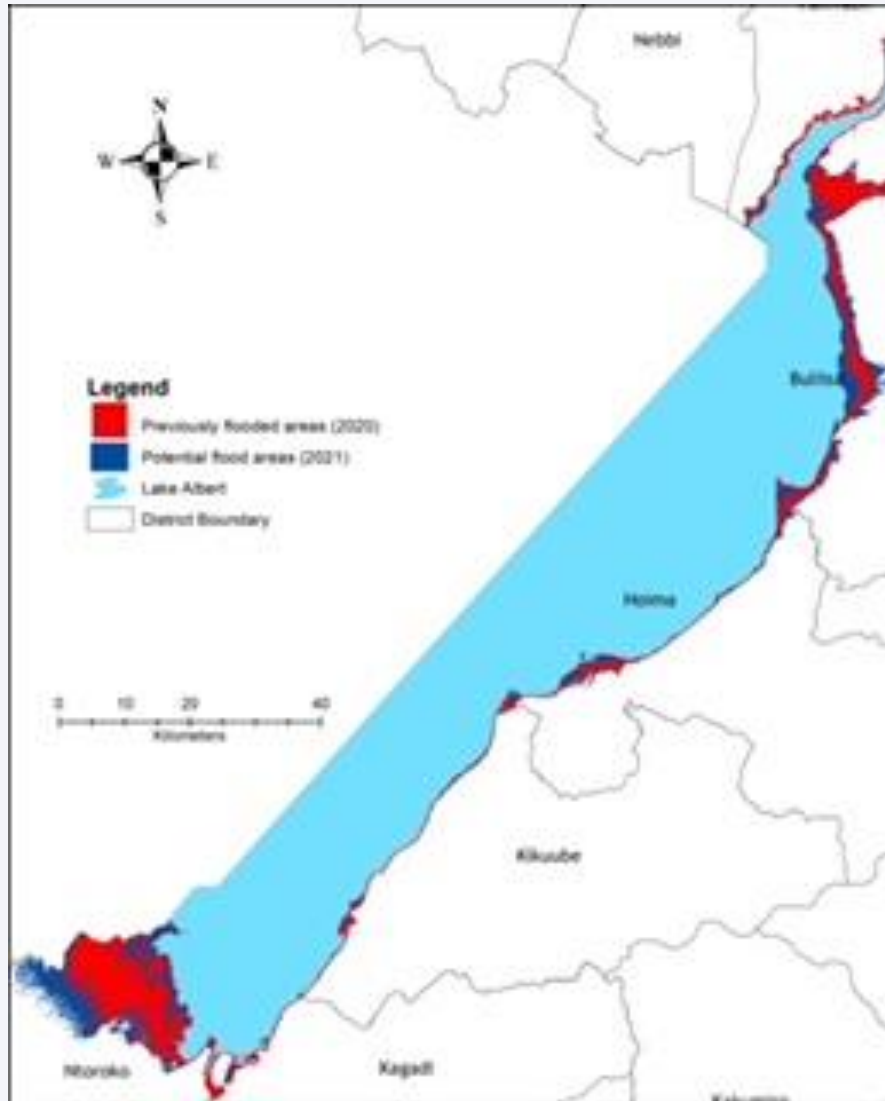
Lake Kyoga, Albert and Victoria levels from 2020-2022

# 2020-2021 flood extend lake Kyoga

2020-2021 flood extend Lake Albert

Field Findings. Impact on Lake Kyoga

- More than 3000 people in Lwampanga Sub County in Nakasongola district.

- The affected people are from Kikoyiro, Kibuye, Munami, Zengebe, Kabashombwa,Kitalaganya, Kityoba and Kyebisire villages in Lwampanga sub county. The displaced people have taken refuge in churches, mosques, schools under trees and friends' homes located on higher grounds

- The water has also submerged the docking pier of MV Kyoga at Zengebe landing site, maternity ward at Lwampanga health center and Moni police post among others.

- More than 1000 people affected in Kalaki district and more than 200 acres of farmland destroyed.

- The destruction caused by the 2020-2021 flood on the economy is estimated at $62 billion in GDP(Climateknowledgeportal)

Legend: ■ Total popn in the HH displaced ■ Farmlands (Acres)
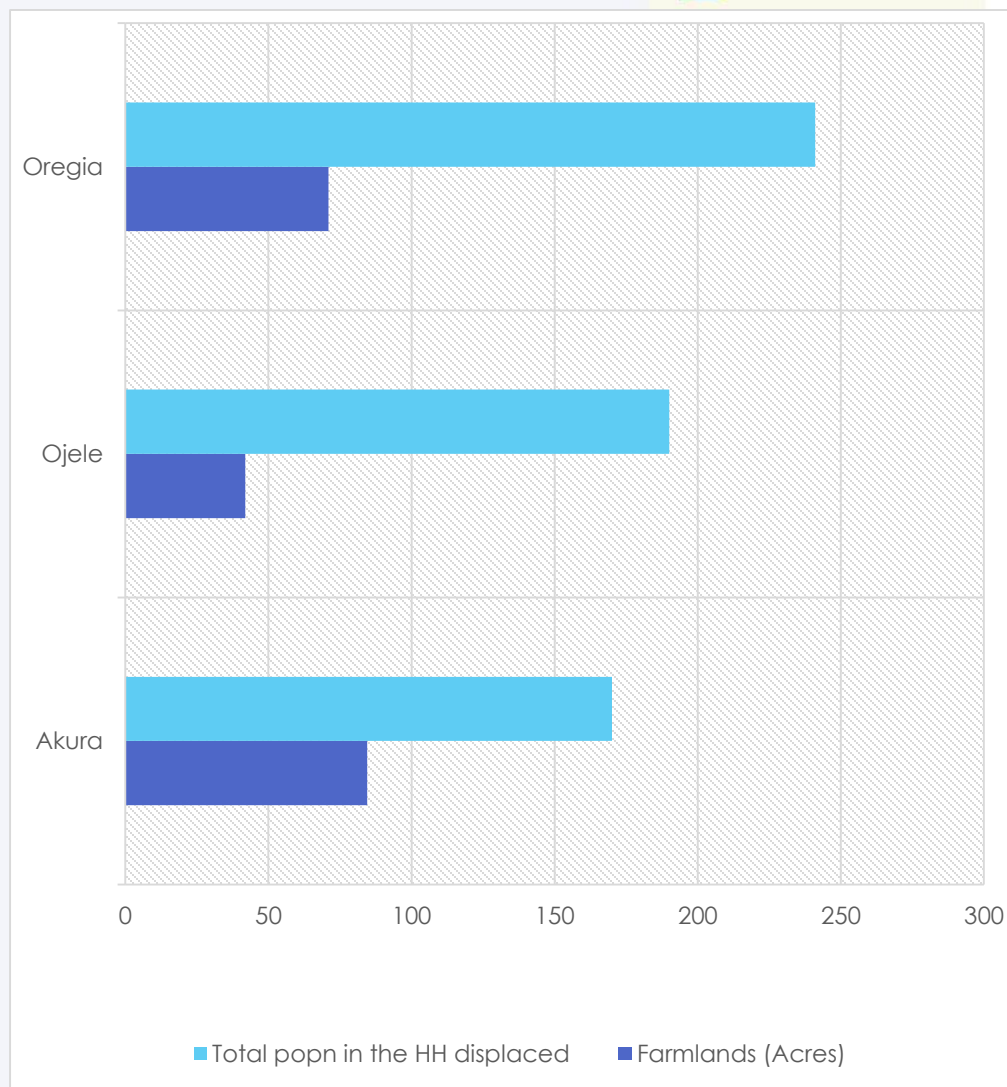
Impacts of floods

- The worst affected districts are Kaberamaido, Kalaki severely affected and Dokolo.

- Water born diseases.

- Detoriating water quality

✓ Landing sites
✓ Farmlands
✓ Roads
✓ Services delivery
✓ Water sources

Impact on Lake Albert

- Over 500,000 people affected, more than 5 sub counties in Kagadi district.

- Bullisa Landing site, Masindi port, Ntoroko landing site and Butiaba Landing sites.

Butiaba Health Centre III still flooded and unusable (Photo taken in January 2022)

Lessons learnt

- Defined roles of various institution in flood management.

- Departmental capacity to forecast floods.

- Lake of regional cooperation and data sharing.

- Funding.

- Technical and technological capacity.

- Response after the flood.

- Effect of covid-19

- Enforcement of existing laws.

- Much emphasis on Lake Victoria.

- Economic status of the surrounding communities.

Conclusion and Recommendations

- Urgent need for flood forecasting unit to be operationalized.

- proper and timely channel of communication for early warning be established.

- Flood victims should be compensated.

- Establishing more monitoring stations and flood management strategies for timely response.

- The impacts of floods on Lake Kyoga and Albert are so devastating and require a holistic approach. Flood control measures downstream of the Nile should be implemented.
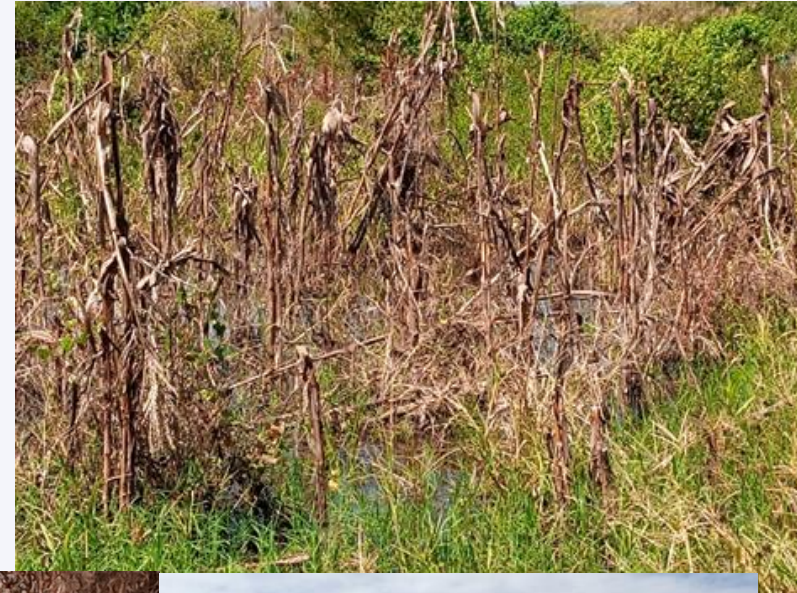
NILE BASIN INITIATIVE
INITIATIVE DU BASSIN DU NIL

THANK
YOU!