ACTIVITIES OF THE UNSPIDER REGIONAL SUPPORT OFFICE IN NIGERIA

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National Space Research & Development Agency
(NASRDA), Airport Road, Abuja, Nigeria

12th Annual UN-SPIDER RSO Coordinating Meeting 14-16 November 2022

INTRODUCTION

UN-SPIDER RSO IN NIGERIA

- The RSO in Nigeria was established in 2008 and Hosted by NASRDA.

- Formal Cooperation Agreement was signed on the 4th of June 2009, between the United Nations Office for Outer Space Affairs and NASRDA.

2022 Activities

GLOFAS Programme

Virtual Kick-Off Meeting on Flood early warninG systems Using Impact-baseD forEcasts (Flood GUIDE) Thursday 23 September 2021

Countries	Institutions
Ghana	National Disaster Management Organization (NADMO)
Nigeria	National Emergency Management Agency (NEMA) National Space Research and Development Agency (NASRDA) National Hydrological Services Agency (NIHSA)
South Africa	National Disaster Management Centre (NDMC) South African National Space Agency (SANSA)
Guatemala	National Coordinating Agency for Disaster Reduction (CONRED) Climate Change Institute (ICC)
Peru	National Civil Defense Institute (INDECI) National Commission for Aerospace Research and Development (CONIDA)

Additional partners

GLOFAS	Global Flood Awareness System
AIRBUS	Airbus Defence and Space
ZFL	Centre for Remote Sensing of Land Surfaces of the University of Bonn

Follow-up Physical meeting was held on 2022 Floods: 18th September 2022 at NASRDA

NASRDA/UN-SPIDER/ZFL Interinstitutional Workshop on "The Use of Space-Based Information for Flood Response and Early Warning" 12th to 15th September 2022

Total Number Of Organizations: 30

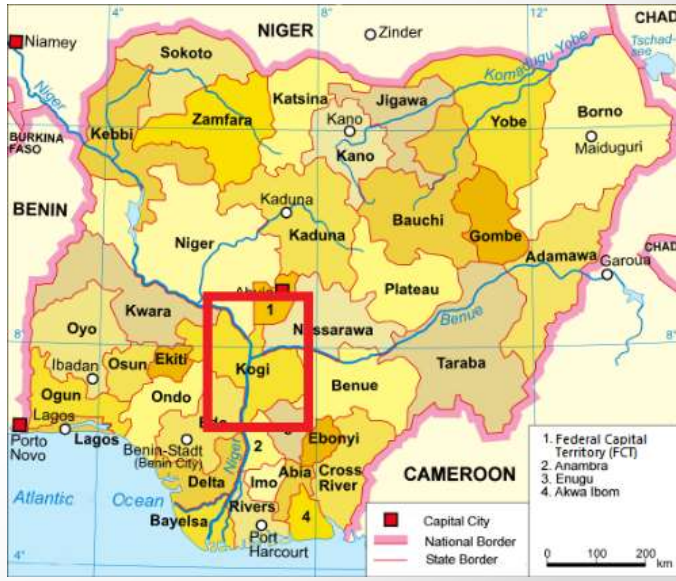
Total Number Of Participants: 104

Simulation Of Emergency Operation Centre for Transboundary River Flood

Group 1: Search, Rescue and Shelter Provision:
FMHADMSD, NEMA, NASRDA etc
Group 2: Logistics: Armed Forces
Group 3: Impacts: NOSDRA, Works, etc
Group 4: External Support: International Community, World Bank etc

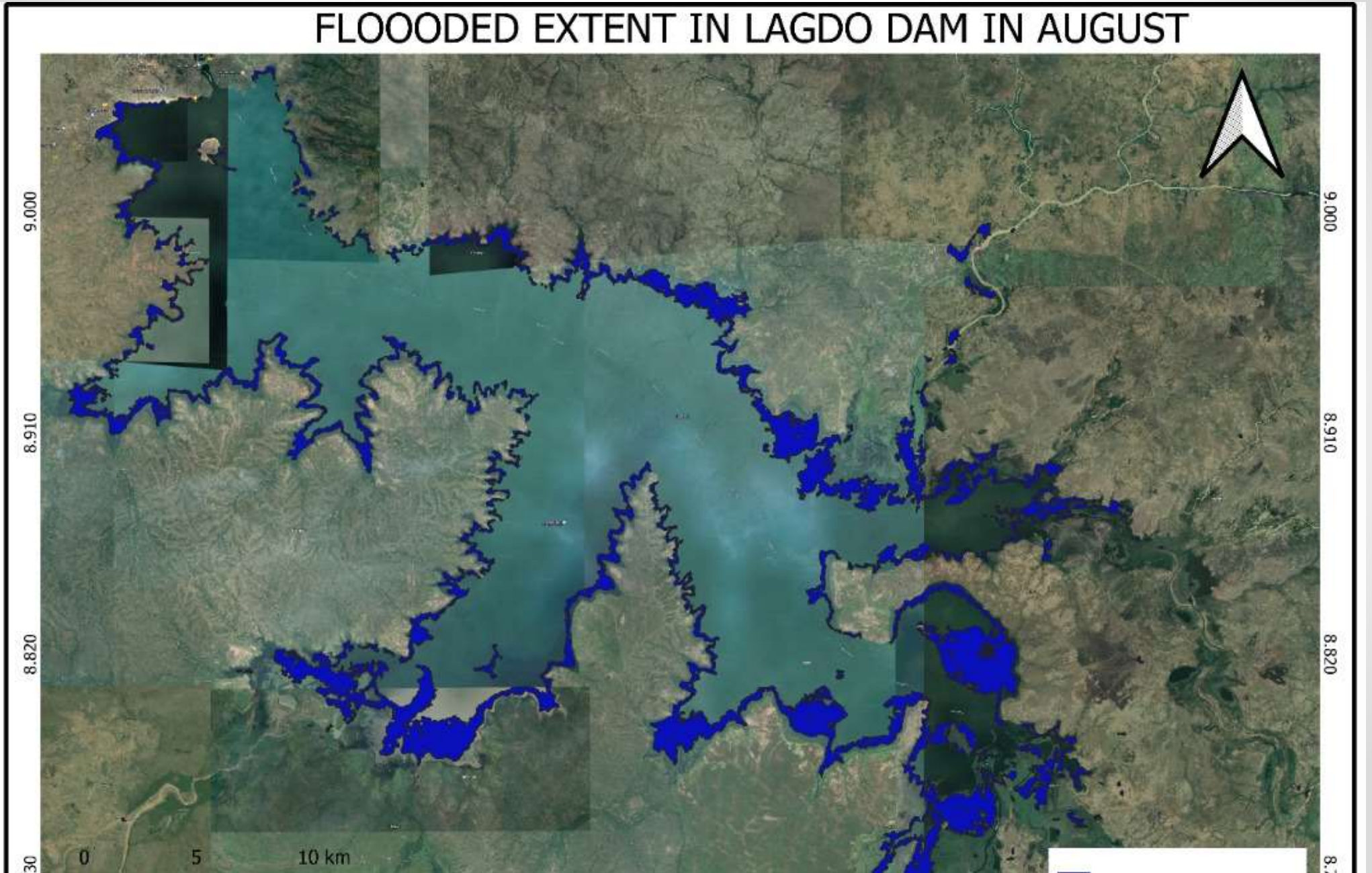
NASRDA/UN-SPIDER/ZFL Interinstitutional Workshop on "The Use of Space-Based Information for Flood Response and Early Warning" 12th to 15th September 2022

Simulation of the Emergency Operation Centre for Flood Management

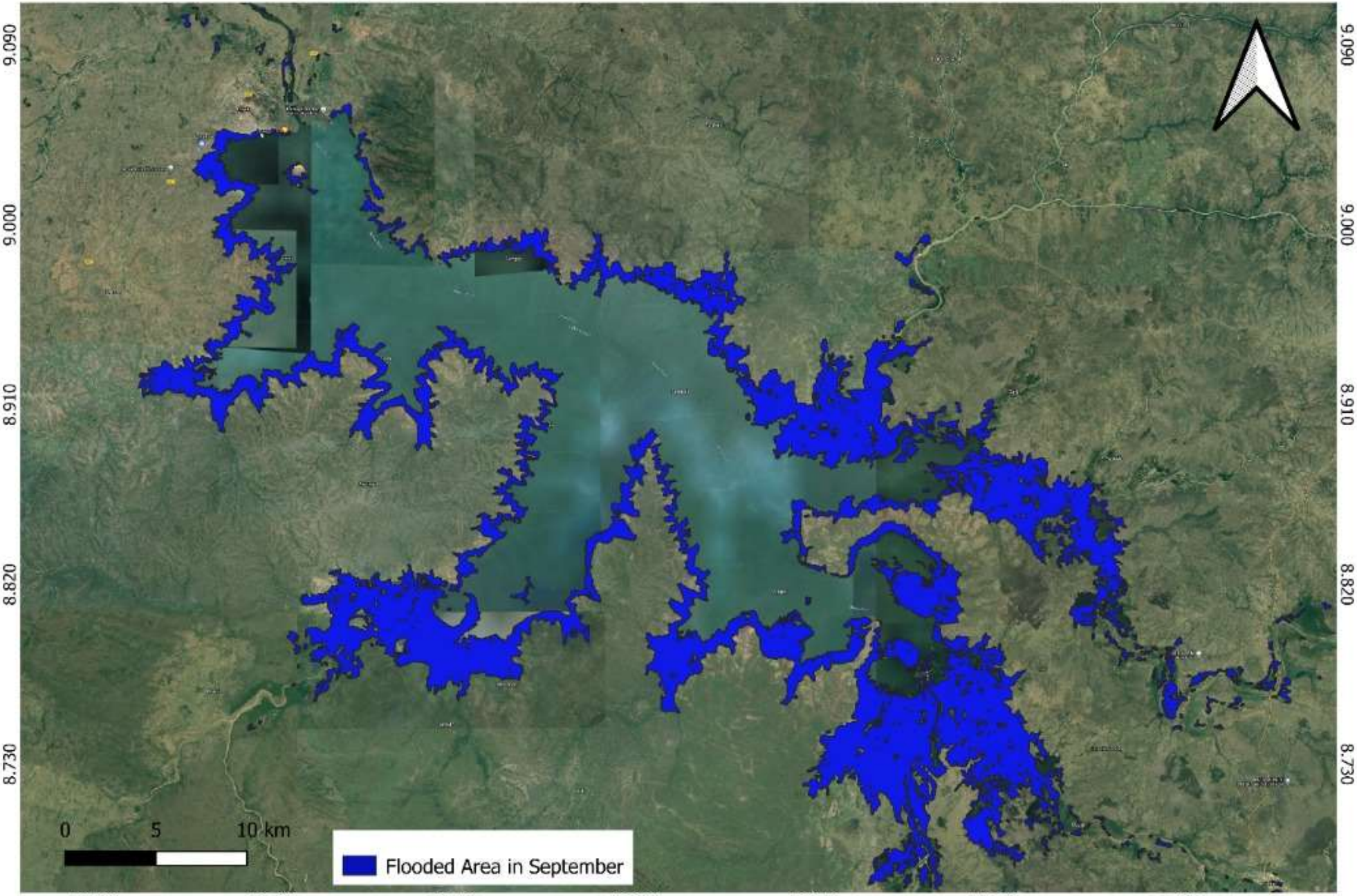


Mock Charter Activation was conducted

Lagbo Dam

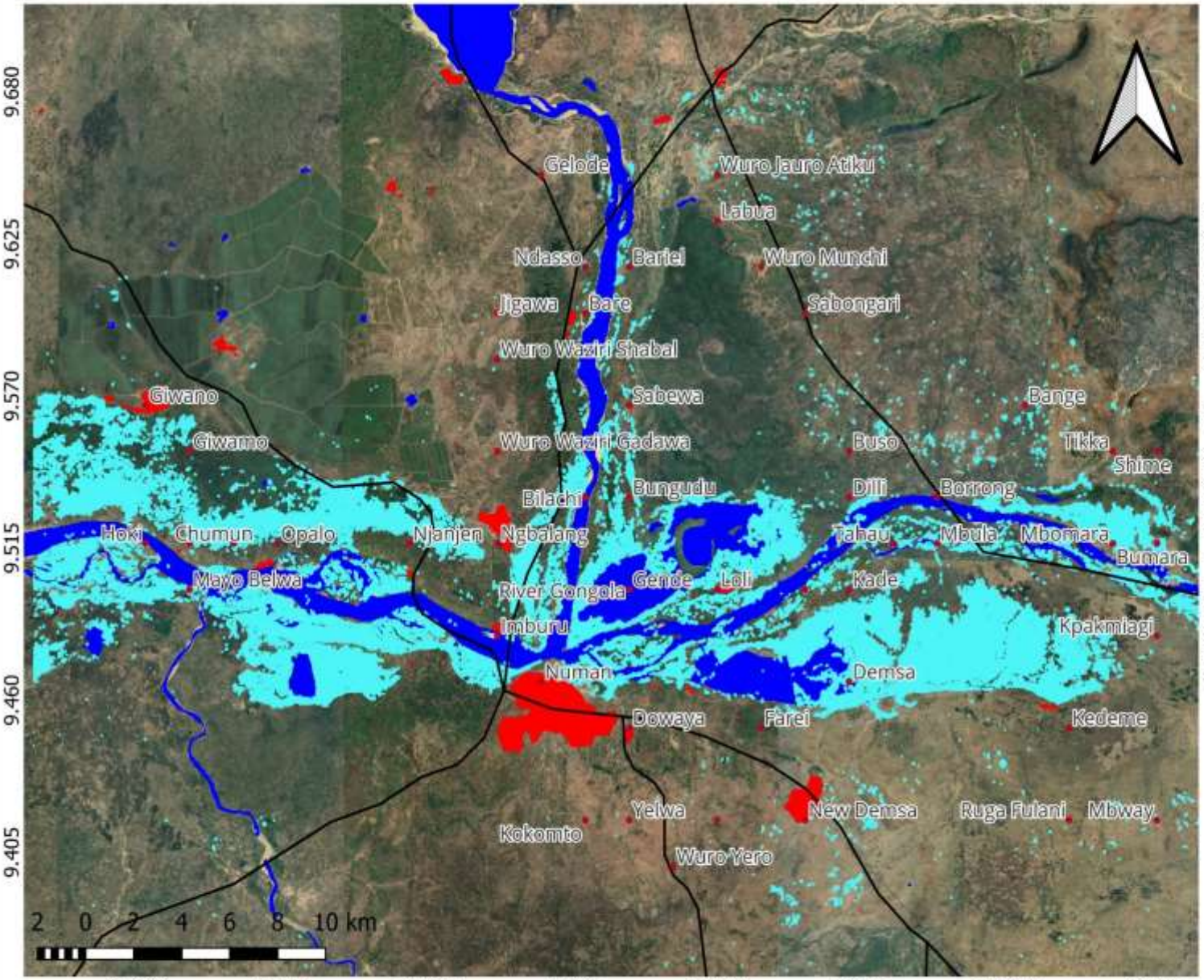

FLOOODED EXTENT IN LAGDO DAM IN AUGUST
9.000
8.910
8.820
0
5
10 km

FLOOODED EXTENT IN LAGDO DAM IN SEPTEMBER



Activation of the International Charter: Space and Major Disaster

FLOOD EXTENT BETWEEN IMBURU TO KABERE COMMUNITY



INTERPRETATION

Situation report of the flood extent from Imburu to Kabare community based on based on Senintel-1 imagery from 2022-09-04 to 2022-09-09 revealed that 15476 hectares of the channel was inundated, 6149 hectares of cropland, and 3798 people were exposed.

DATA SOURCES

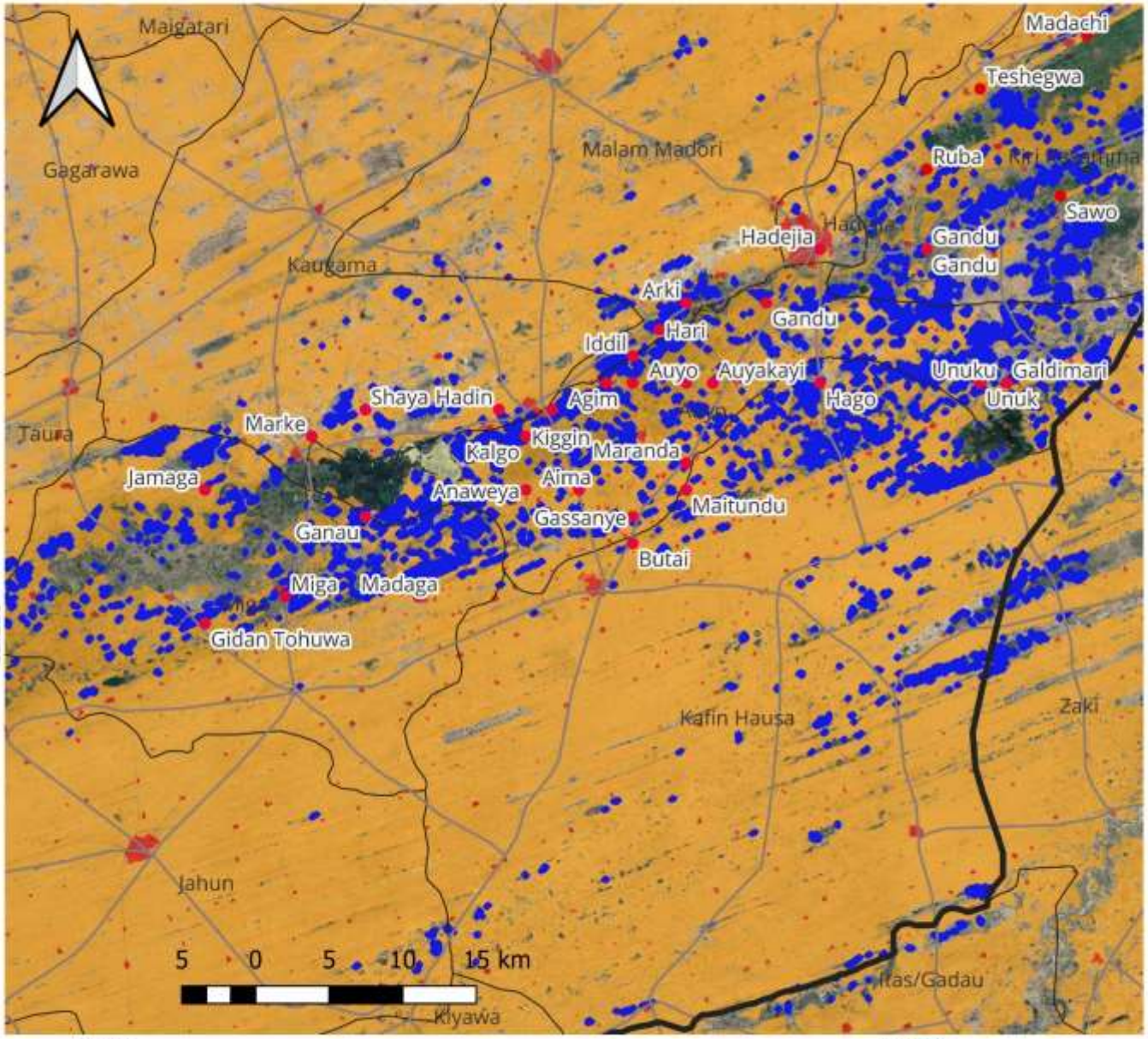
- Senintel-1 imagery (2022). Acquired on September 10, 2022 provided by Europe Space Agency.
- Google Script Engine producedUNSPIDER, 2019.
-MODIS Land Cover 2020 (500m)
- Population data (GHSL) provided by European Commission, Joint Research Centre (JRC): Columbia University, Centre for International Earth Science Information Network (CIESIN)

- Communities
- Interstate_Road

Features

- Band 1 (Palette)
- Waterbody
- Built-up
- LGA Boundary
- Flooded Areas

FLOOD EXTENT IN JIGAWA STATE



INTERPRETATION

Severe flooding struck in several LGA in Jigawa state after heavy rainfall. According to the analysis, as of August 1, 2022, the flood extent was estimated to be 18755 hectares. The result also revealed that 1613 hectares of cropland and 33784 person were exposed.

DATA SOURCES

* Senintel-1 imagery (2022). Acquired on May 31, 2022 provided by Europe Space Agency.
* Google Script Engine produced UNSPIDER, 2019. * MODIS Land Cover 2020 (500m)
*Population data (GHSL) provided by European Commission, Joint Research Centre (JRC): Columbia University, Centre for International Earth Science Information Network (CIESIN) 2015.

The affected communities are:MADAGA, HADEIJA TOWN, RUBA, SAWO, MADACHI, GANDU, MARKE, MIGA, MADAGA, GANAU, AGIM, SAWO, ARKI

- Affected Communities_
- Interstate_Road
- Flood Extent
- LGA Boundary
- State Boundary

Features

- Band 1 (Palette)
- Cropland
- Waterbody
- Built-up

SYNOPTIC VIEW OF THE FLOOD EXTENT IN LOKOJA AS OF 4-10-2022

Description

Flooded extent of Lokoja, Kogi state as of 4-10-2022. The Advanced Multi-Sensor Band Composite was applied on the Kompsat-3 satellite imagery to delineate the flood extent.

Data Sources

- Kompsat-3 imagery (4-10-2022)
- Administrative boundary, Communities and Roads shapefile obtained from OSGOF
- Background: Kompsat-3, ESRI

Projection: UTM 32N, Datum: WGS 84

Produced by the National Space Research and Development Agency

Disclaimer

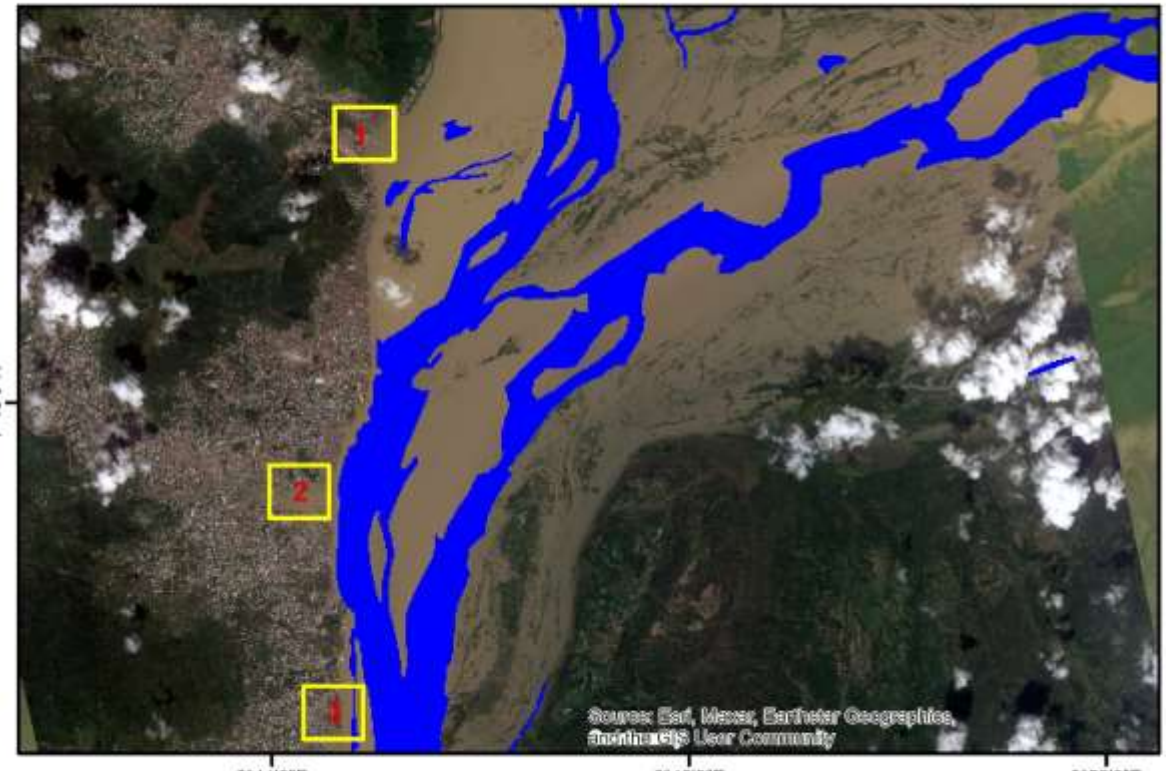
This product has been derived automatically without validation data. All geographic information has limitation due to the scale, resolution, date and interpretation of the original source materials. No liability concerning the content or the use thereof is assumed by the producer.

Legend

Roads

N

SYNOPTIC VIEW OF THE FLOOD DAMAGE EXTENT IN LOKOJA AS OF 4-10-2022



Description

Flooded extent of Lokoja, Kogi State as of 04-10-2022. The Multi-Sensor Band Composite was applied on the Kompsat-3 satellite imagery to delineate and assess the flood damage extent. Analysis conducted indicated that about 130.46km² of land was flooded of which 33.23km² were cropland. According to Kogi State government, Three persons were killed and over 10,000 people have been displaced. About 8010 buildings were affected(either partially or completely submerged) and over 113.27km of roads were submerged.

Data Sources

- Kompsat-3 imagery (4-10-2022)
- Administrative Boundary and Communities shapefile obtained from OSGOF
- World Settlement Footprint (WSF) 2019 is a 10m resolution binary mask outlining the extent of human settlement globally derived from means of 2019 multi-temporal Sentinel-1 and Sentinel-2 imagery
- Building Footprints and Road shapefile obtained from OpenStreetMap
- Background:Kompsat-3, Esri

Projection: UTM 32N, Datum: WGS 84

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NATACO JUNCTION

ADANKOLO AREA

500 UNIT AREA

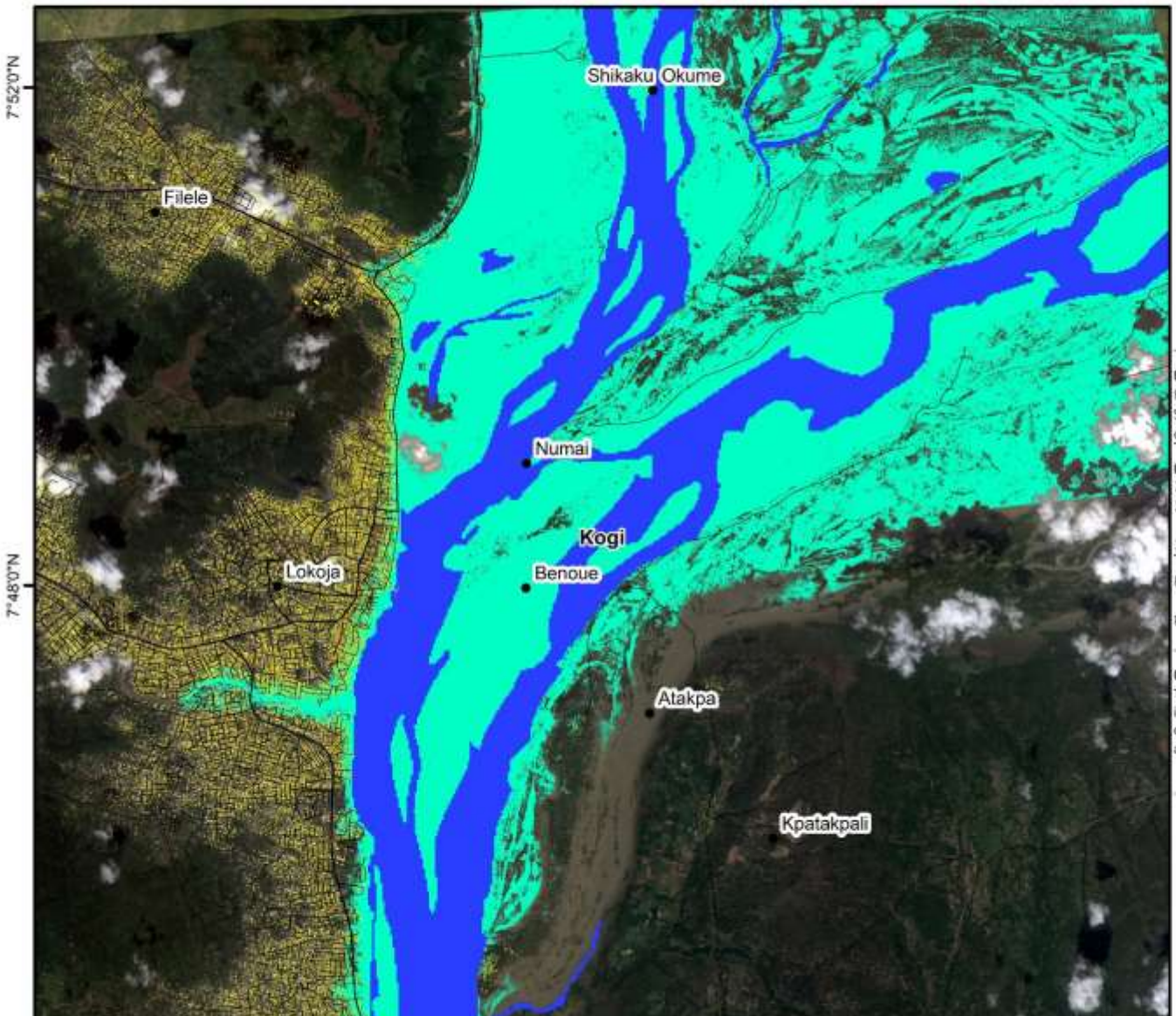
Legend

Waterbody

0 1 2 4 6 8 Km

N

SYNOPTIC VIEW OF THE FLOOD EXTENT IN LOKOJA AS OF 4-10-2022



Description

Flooded extent of Lokoja, Kogi state as of 4-10-2022. The Advanced Multi-Sensor Band Composite was applied on the Kompsat-3 satellite imagery to delineate the flood extent.

Data Sources

- Kompsat-3 imagery (4-10-2022)
- Administrative boundary, Communities and Roads shapefile obtained from OSGOF
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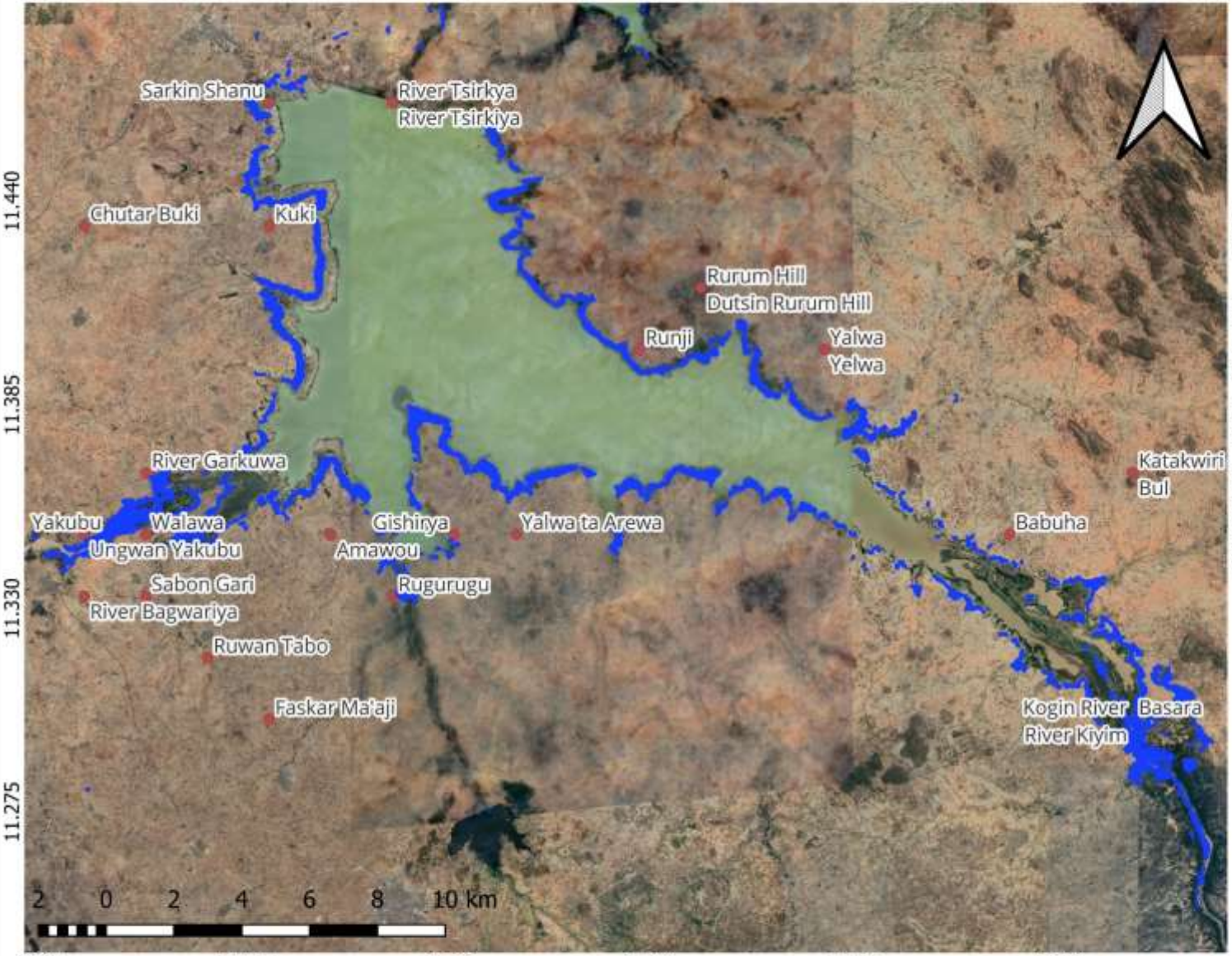
Legend

- Roads
- River
- Flooded Extent 04-10-2022

N

FLOOD EXTENT AROUND TIGA DAM, KANO STATE



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INTERPRETATION

Situation report of the flood extent around Tiga Dam as of September 11,2022

DATA SOURCES

- Senintel-1 imagery (2022). Acquired on September 12, 2022 provided by Europe Space Agency.
- Google Script Engine producedUNSPIDER, 2019.
-MODIS Land Cover 2020 (500m)
- Population data (GHSL) provided by European Commission, Joint Research Centre (JRC): Columbia University, Centre for International Earth Science Information Network (CIESIN)

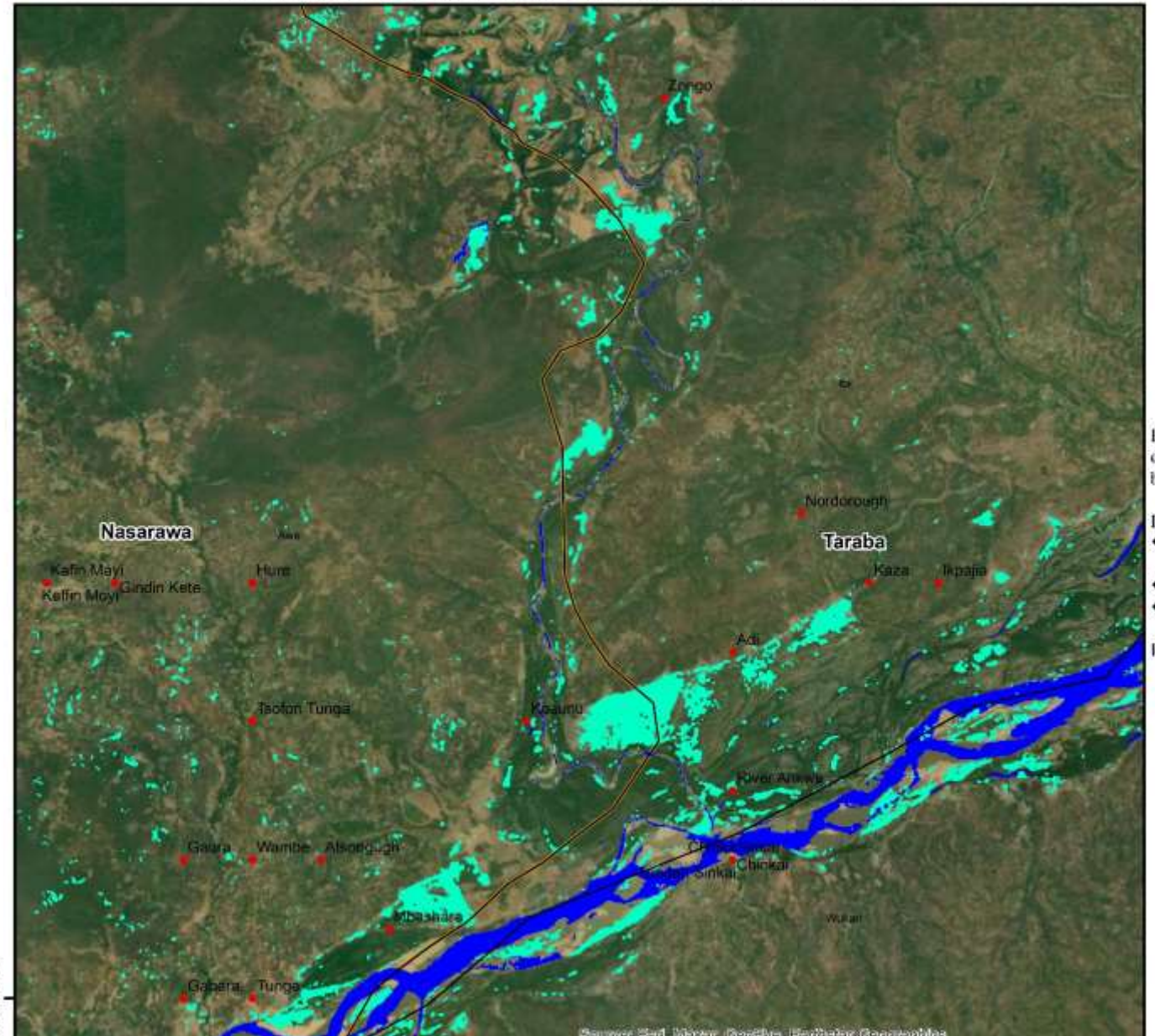
- Communities

Features

Band 1 (Palette)

Flooded Areas

INUNDATED AREA-NASARAWA AND TARABA



0 1.25 2.5 5 7.5 10
Km

Flood extent around Nasarawa and Taraba State. A change detection was performed on on two sentinel-1 radar scenes before and and during the event to detect flooded areas.

Data Sources
- Senintel-1 imagery (2022). Acquired from European Space Agency.
- Administrative boundary
- Background: Bing

Projection: UTM 32N, Datum: WGS 84

Legend

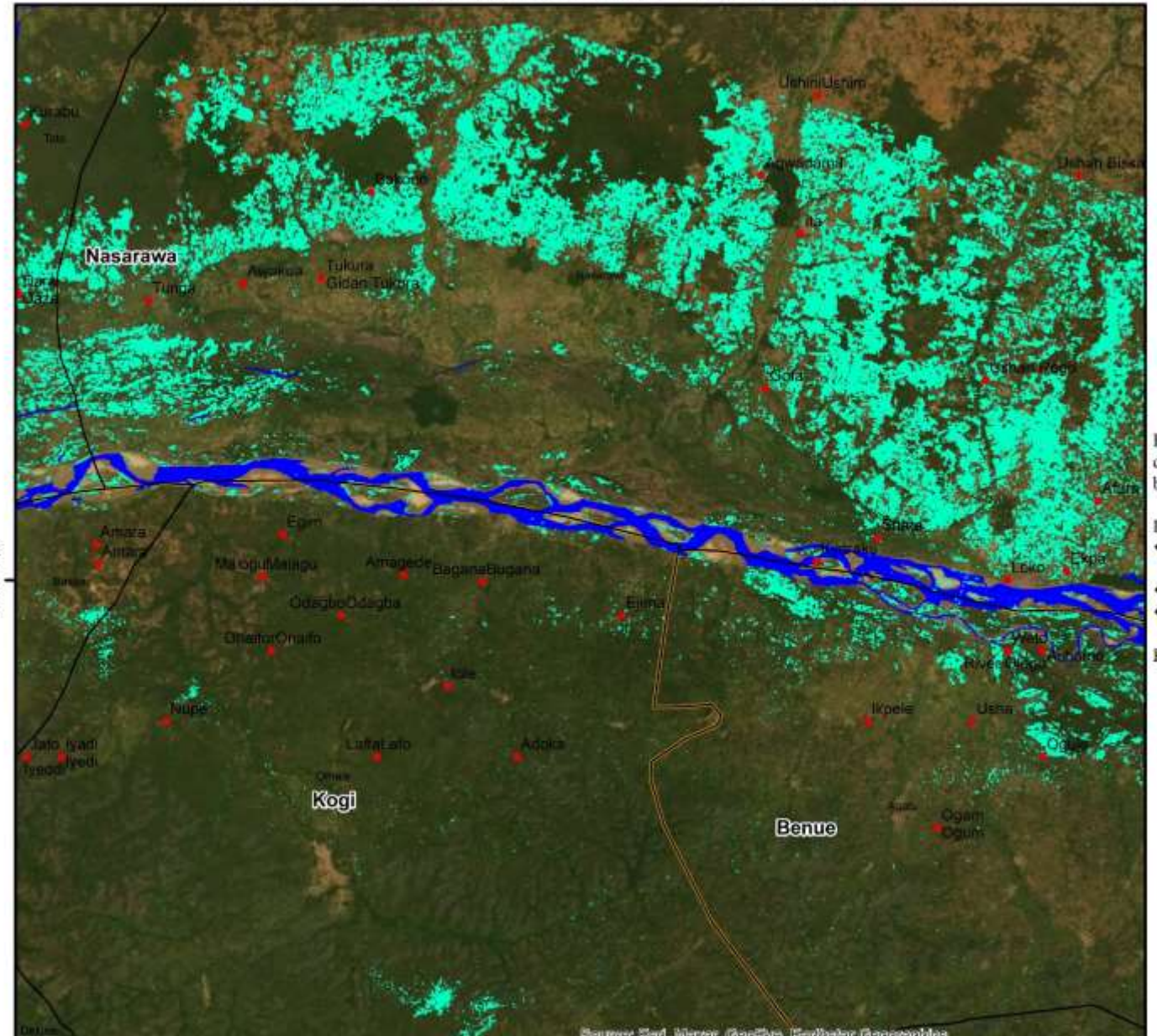
- Communities
- LGA Boundary
- State Boundary

Features

- Waterbody
- Flooded Areas

N

INUNDATED AREA- KOGI, BENUE AND NASARAWA



0 2.5 5 10 15 20 Km

Flood extent around Kogi, Benue and Nasarawa State. A change detection was performed on on two sentinel-1 radar scenes before and and during the event to detect flooded areas.

Data Sources
- Senintel-1 imagery (2022). Acquired from European Space Agency.
- Administrative boundary
- Background: Bing

Projection: UTM 32N, Datum: WGS 84

Legend

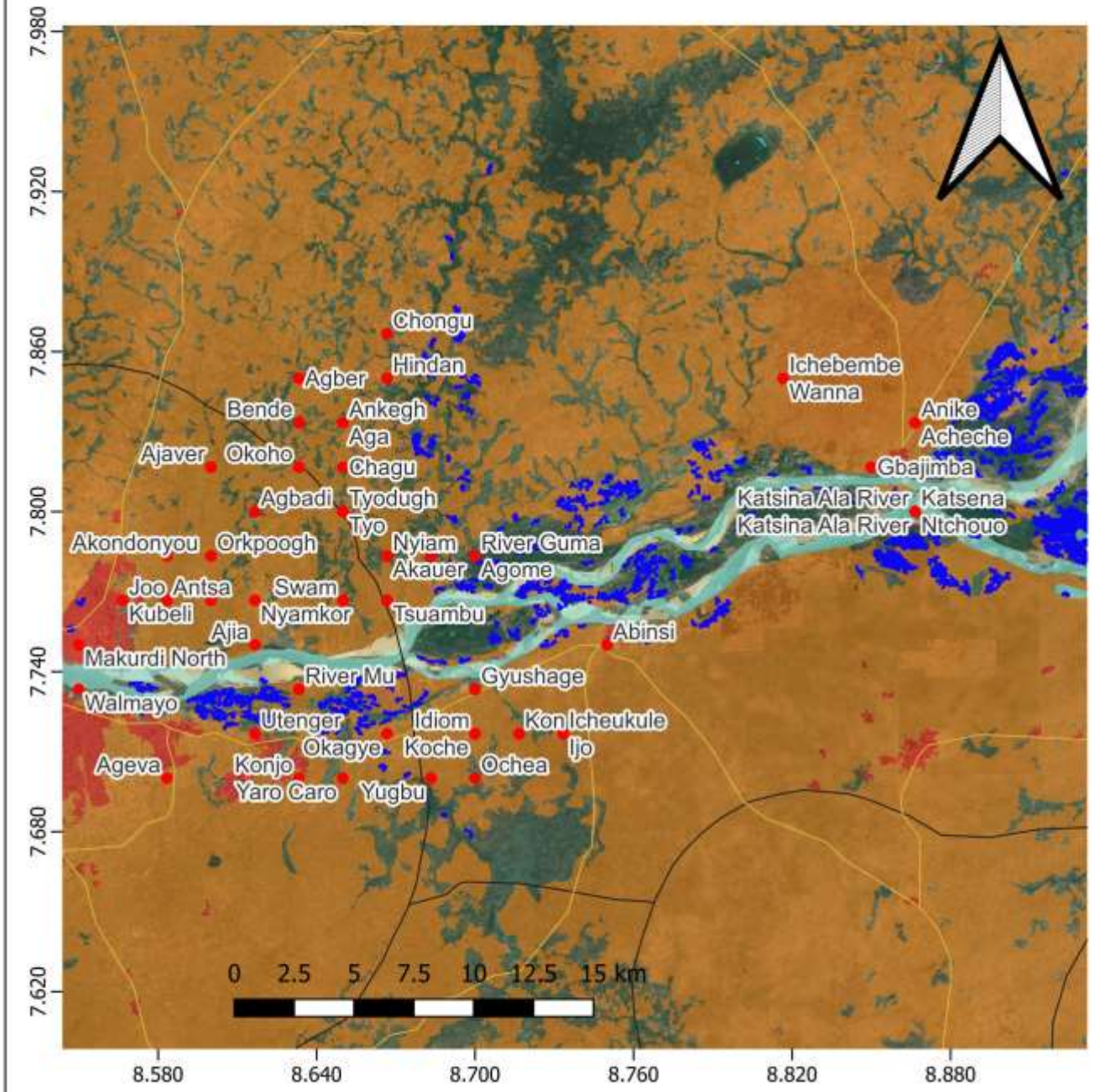
- Communities
- LGA Boundary
- State Boundary

Features

- Waterbody
- Flooded Areas

N

FLOOD EXTENT IN BENUE STATE



INTERPRETATION

Analysis as of September07,2022, the flood exent is estimated to be 8222 hectares. The result also revealed that between September 01 and September 07,2022, 2095 heactares of cropland and 6373 people exposed to flooding.

DATA SOURCE

. Sentinel-1 imagery (2022), acquired on August 07,2022 provided by Europe Space Agency.
. Google Script Engine produced UNSPIDER,2019.
. MODIS land cover 2020 (500m)
. Population data (GHSL) provided by European commision, Joint Research Centre (JRC): Columbia University, Centre for International Earth Science Information Network (CIESIN) 2015.

The Affected Communities

Chongu,Opin Beke, Atim, Hindan, Bende, Ajaver, Agbadi, Okoho, Tyodugh Tyo, Kwabo Kyoon, Ude, Makurdi North.

- Affected_flood_communities
- Interstate_Road
- STATE BOUNDARY
- LOCAL GOVERNMENT
- Settlement
- flooded_BENUE

FEATURES

Band 1 (Palette)

- CROPLAND
- WATERBODY
- BUILT-UP

UN-SPIDER

Proposed 2023 Activities

- Review of the Use of Space Based products for 2022 Floods with the National Emergency Management Agency.
- Project Manager Training for International Charter: Space and Major Disasters.
- Glofas project for flood early warning.
- Development of Flood Vulnerability products for the Country.

Thank You

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