

THE USE OF SPACED BASED INFORMATION FOR FLOOD MANAGEMENT DURING 2020 FLOOD IN NIGERIA



BY

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13TH APRIL, 2021**

Presentation outline



- ▶ Introduction
- ▶ Previous Use Of Space Based Information In Flood Disaster Response.
- ▶ The Use Of Spaced Based Information For Flood Management During 2020 Floods
- ▶ Benefits of Space-based Technology for Disaster Risk Management in Nigeria.
- ▶ Challenges
- ▶ Recommendations.
- ▶ Conclusion.

Introduction

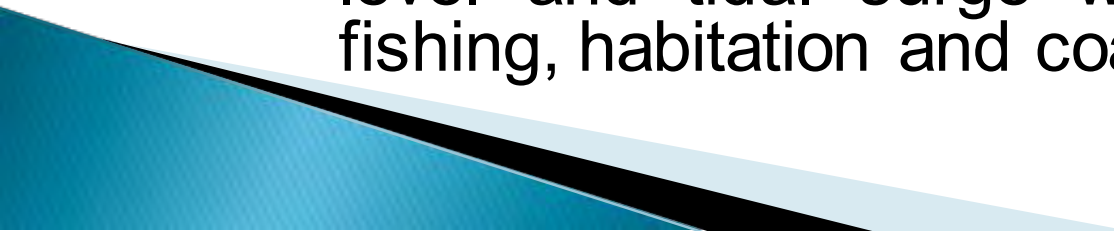


- ❑ Flood has been a perennial incident in Nigeria.
- ❑ Nigeria experiences Flash Floods, Urban Floods, Riverine Floods, Coastal Floods and Flood Associated with Dams.
- ❑ To prepare, mitigate and respond to these flood types, NEMA relies on Plans and Frameworks that have been developed over the years.
- ❑ In 2020 NEMA Flood Preparedness, Mitigation and Response activities started in January 2020.
- ❑ The Seasonal Rainfall Prediction (SRP) released by NiMet on 24th January, 2020 and the Annual Flood Outlook released by NIHSA on 28th May, 2020 were two predictions that guided NEMA's 2020 Flood Preparedness, Mitigation and Response activities.



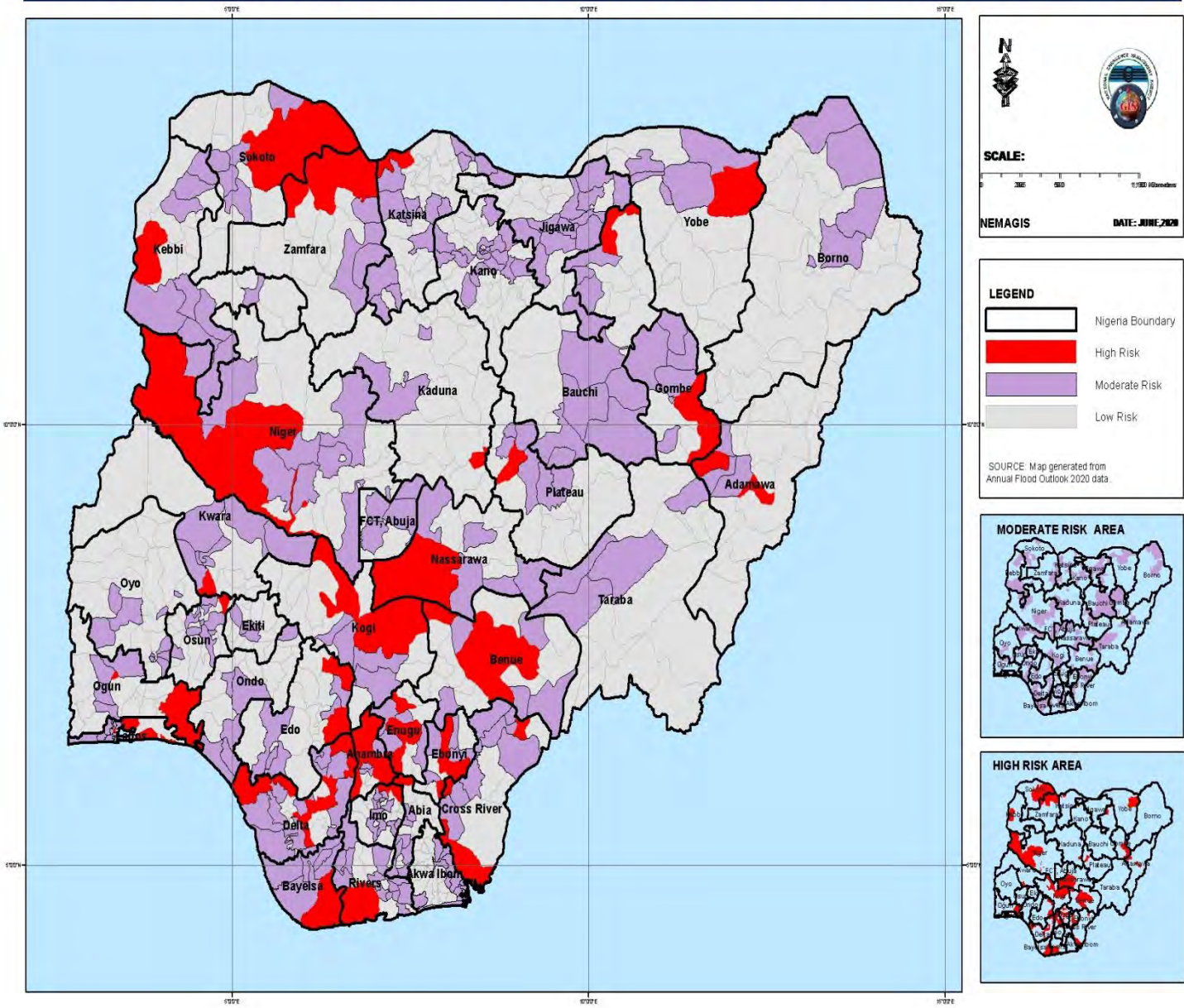
- ▶ Furthermore these sister agencies in Nigeria use space based information/data to carry out their forecast/prediction

2020 SEASONAL RAINFALL PREDICTION (SRP)/ ANNUAL FLOOD OUTLOOK (AFO).

- ❑ According to the 2020 SRP, the general outlook of Annual Rainfall amount in year 2020 was predicted to be normal to above normal in Nigeria.
 - ❑ The AFO indicated that 102 LGAs fall within the highly probable flood risk areas.
 - ❑ 275 LGAs of the Federation including the FCT fall within the **moderately probable** flood risk areas.
 - ❑ The remaining 397 LGAs fall within the **low probable** flood risks areas.
 - ❑ Some coastal States like Rivers, Cross River, Delta, Lagos, Ondo and Bayelsa were expected to experience coastal flooding due to rise in sea level and tidal surge which could impact on fishing, habitation and coastal transportation.
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MAP OF NIGERIA SHOWING HIGH, MODERATE AND LOW FLOOD RISK STATES/LGAs IN 2020.





ACTIVITIES CARRIED OUT BY NEMA BEFORE 2020 FLOOD

- ❑ Organized Expert Technical meeting to analyze NiMet's 2020 Seasonal Rainfall Prediction (SRP)/ Annual Flood Outlook released by NIHSA, to develop the disaster management implications.
- ❑ A Technical Committee comprising relevant stakeholders, extensively analysed the socio-economic and disaster management implications of these predictions with regards to climate sensitive sectors of the economy which include Water Resources, Agriculture/Food Security, Health, Infrastructure and Transport.



USE OF SPACE-BASED TECHNOLOGY IN NEMA

NEMA engages in the use of space-based technology for effective and efficient management of disaster operations in the country. We deplore geospatial tool for planning disaster before it strikes and in collaboration with relevant agencies (NASRDA, NiMeT, NIHSA, UN-SPIDER, etc), analyze predictions to warn and prepare vulnerable communities to minimize the effect of anticipated risk, guide response strategies and relief interventions properly.



NEMA COLLABORATE WITH INTERNATIONAL CHARTER SPACE AND MAJOR DISASTER.

- The International Charter is composed of space agencies and space system operators from around the world who work together to provide satellite imagery for disaster monitoring purposes.
- The Charter is a worldwide collaboration, through which satellite data are made available for the benefit of disaster management. By combining Earth observation assets from different space agencies, the Charter allows resources and expertise to be coordinated for rapid response to major disaster situations; thereby helping civil protection authorities and the international humanitarian community.
- This unique initiative is able to mobilise agencies around the world and benefit from their know-how and their satellites through a single access point that operates 24 hours a day, 7 days a week and **at no cost to the user.**

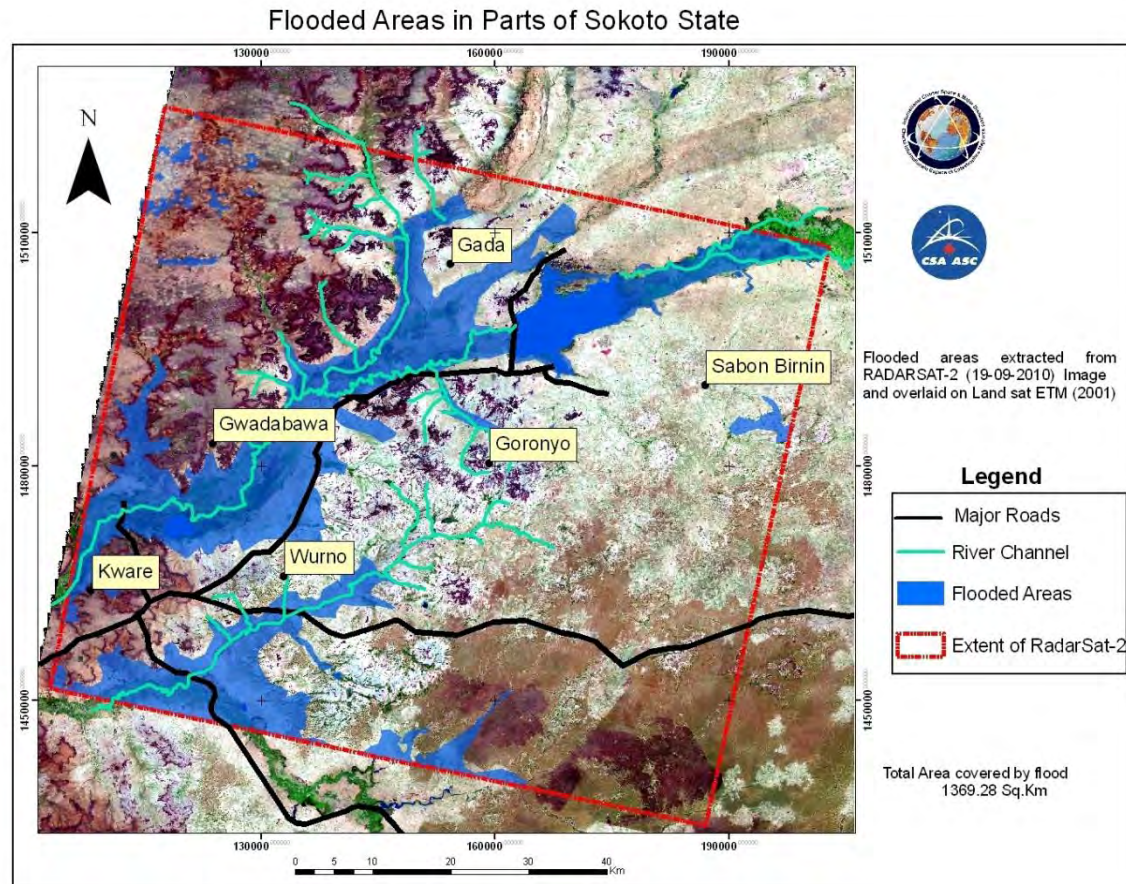


INTERNATIONAL CHARTER SPACE AND MAJOR DISASTER (UN-CHARTER) SUPPORTED NEMA IN RESPONSE TO MAJOR FLOOD DISASTERS.

NEMA has benefitted from the activation of UN-Charter during major disasters that occurred in the past.

- ❑ Flooding of River Rima after failure of **Goronyo Dam, Sokoto** State in 2010;
- ❑ Failure of **Eleyele Dam, Oyo** State in 2011;
- ❑ Flooding of the floodplain in **Adamawa along River Benue** in 2012;
- ❑ Flooding of Lokoja and its environs in 2012 and;
- ❑ Flooding of **Yenagoa in Bayelsa State and surrounding communities** in 2012.

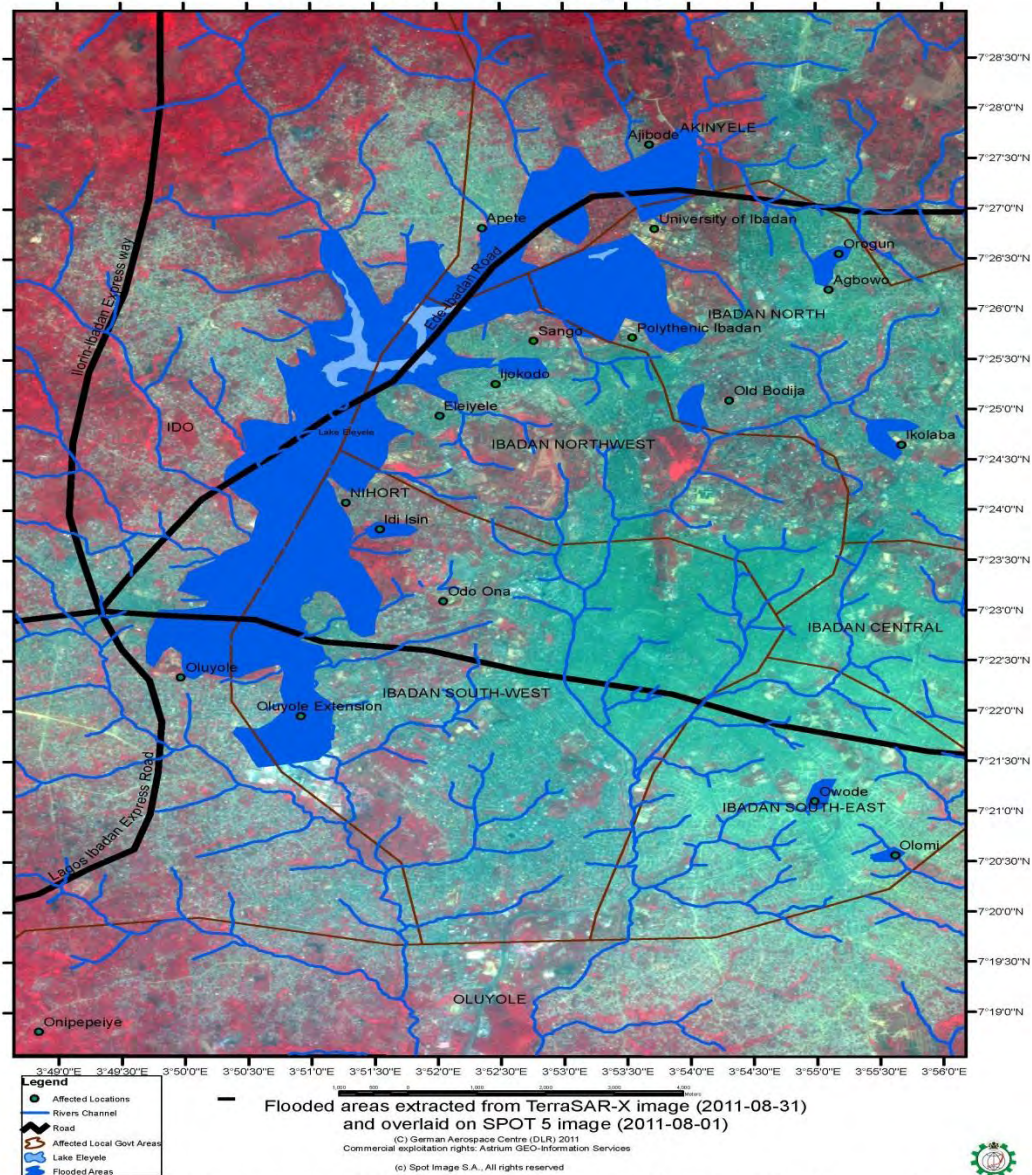
Previous Use Of Space Based Information In Flood Disaster Response and Management.

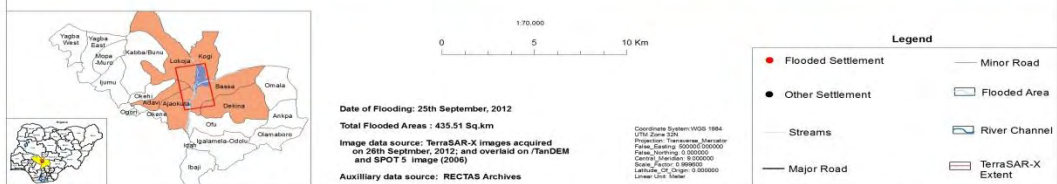


Map products for charter call 324 was processed by RECTAS with assistance from International Charter for Space and Major Disasters

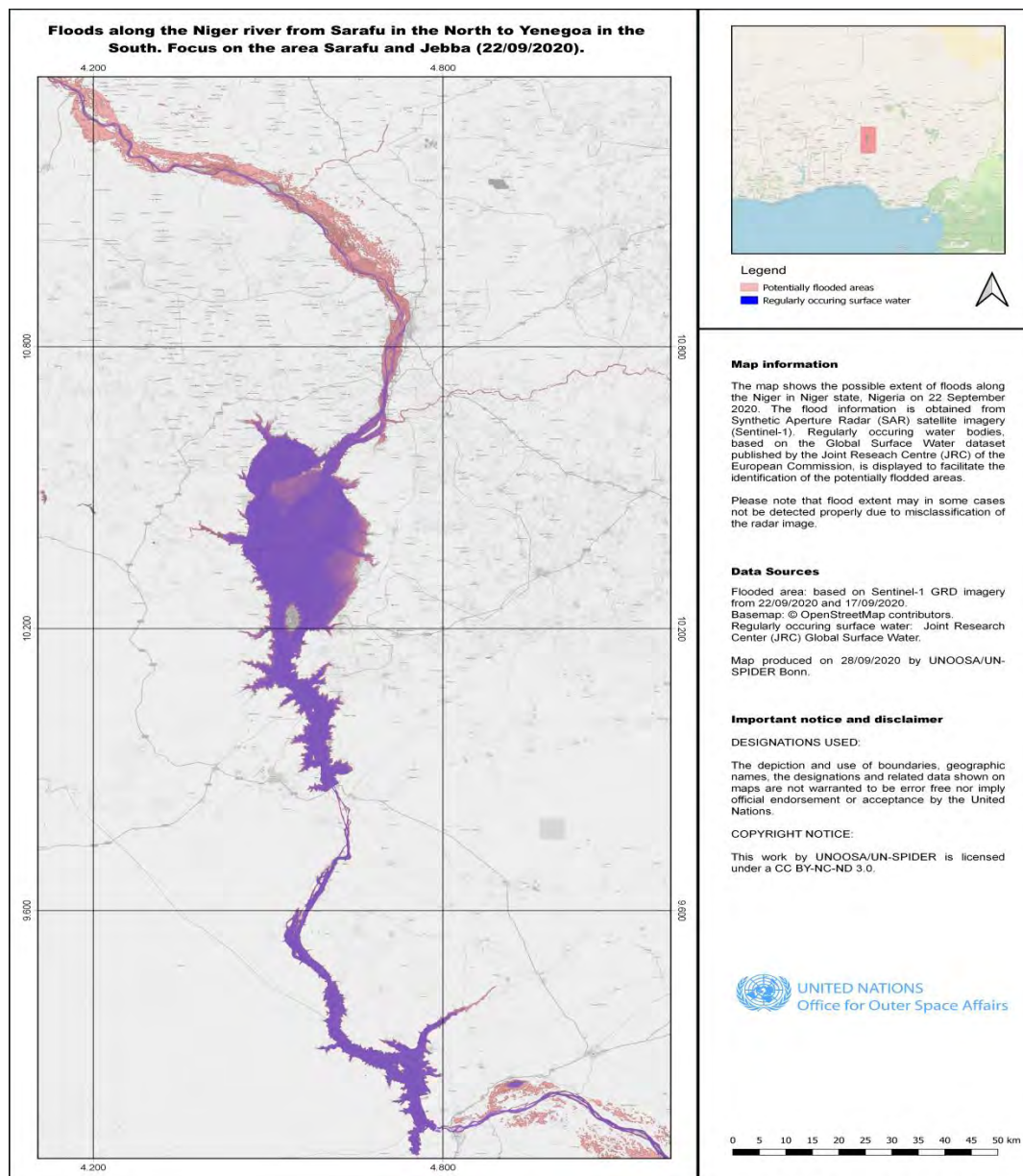
September, 2010

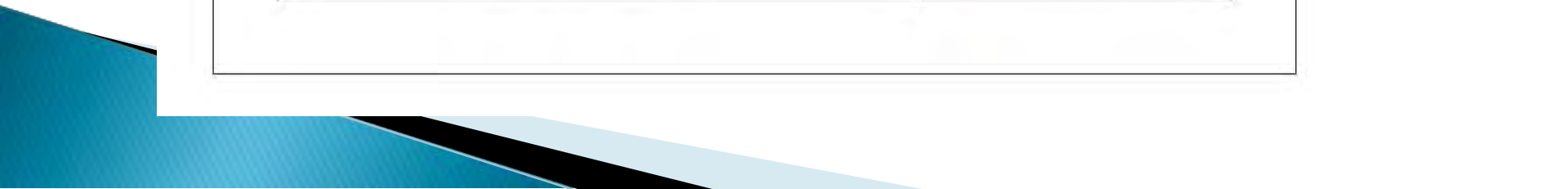
Flooded Areas in Ibadan City, Oyo State





SPACE BASE INFORMATION FOR FLOOD MANAGEMENT, 2020 FLOODS.






AERIAL SURVEILLANCE OF FLOODED AREAS IN KEBBI STATE IN COLLABORATION WITH NIGERIAN AIR FORCE & SOME STAKEHOLDERS.






BENEFITS OF SPACE-BASED TECHNOLOGY FOR DISASTER RISK MANAGEMENT IN NIGERIA

- ❑ Visualize spatial information (**maps**)
 - ❑ To analyze spatial information or ask questions about the maps and data.
 - ❑ Through these activities, one could gain a better understanding of the dimensions of disaster management and response by being able to:
 - know where things are
 - estimate impact
 - see patterns
 - find relationships
 - monitor changes
 - Allocate resources
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BENEFITS OF SPACE-BASED TECHNOLOGY FOR DISASTER RISK MANAGEMENT IN NIGERIA (cont...)

- ❑ Greater efficiency in retrieving information and speedier access to information for emergency situations.
 - ❑ Analysis and Modeling: the ability to build scenarios' and explore a wider range of "what-if" alternatives.
 - ❑ Platform for contingency planning.
 - ❑ A decision support system for prediction and monitoring of crisis situation.
 - ❑ Improved quality of reports.
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Challenges



- ❑ There is unnecessary bureaucracy involved in inter-agency sharing of data.
- ❑ There are sometimes inaccuracies and lack of data integrity.
- ❑ Inadequate capacity building on the use of space based technology.
- ❑ Low internet band width for downloading satellite image.
- ❑ Variation in data format always pose a serious challenge during integration.



Recommendations

- ❑ National Geospatial Data Infrastructure(NGDI) should be strengthened and made functional in line with current data exchange format.
- ❑ The data on the NGDI portal should be made accessible to all stakeholders and MDAs involved in disaster management with a user need requirement interface.
- ❑ Provision of good internet facility
- ❑ There should be regular awareness on the use and availability of spatial data by various agencies.
- ❑ There should be data sharing among MDAs.
- ❑ Capacity building and regular training on the latest geospatial technological development are required.

conclusion



The use of space-based technology for disaster management will not only help to organize data and information flow, but also in making informed decisions because if correct and timely information flows smoothly then the right response will be made, which will save more lives and properties.



Thanks for your kind Attention please