



2021

ANNUAL REPORT

Geohazards Risk Mapping Initiative



Geohazards
Risk Mapping
Initiative

www.georiskmap.org

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WHO WE ARE

In line with the Sustainable Development Goals 11 (Sustainable Cities and Communities) and 13 (Climate Action), and aligning with one of the seven global targets for Sendai Framework for Disaster Risk Reduction; to substantially increase the availability and access to multi-hazard early warning system, and disaster risk information and assessment 2030. We are motivated to support these global objectives through the “Geohazards Risk Mapping Initiative.” The Initiative is achieving this by deploying volunteer youths, who are skilled at using Geographic Information Systems and satellite imagery analysis to create flood susceptibility and post-disaster maps in Nigeria, and other African countries. Progressively, we are contributing toward this course by developing flood risk geospatial solutions that speak to local solutions through proven global lenses. In doing this:

- We develop mobile applications for community engagement most especially to report flood events.
- Schedule mapathons as a community participation methodology for improving flood prediction analysis;
- Design high-quality static and web maps as outputs; and
- Make these flood early warning signals maps available to the general public, emergency institution and stakeholders.



Geohazards
Risk Mapping
Initiative

President's Speech

This report detailed how Geohazards Risk Mapping Initiative has sailed over the past 12 months to achieve her initially stated objective, and how we had contributed to improving flood early warning and response in Nigeria for the year 2021. Many of the deaths, loss of agricultural land, and livelihoods that occurred in the previous years as a result of flooding can be attributed to the lack of flood early warning information that detailed the location, population, and assets at risk. This is because current flood forecasting systems and data provided are too broad, and aren't integrated to serve the community/local scale. Looking back to earlier this year, I am struck by how we managed to pool the skilled and enthusiastic young GIS professionals in Nigeria who volunteered their time, technical expertise, and other resources to contribute to the creation of flood susceptibility maps at the local scale. The year 2021 for us has proven the role and capability of youths in contributing to the achievement of the Sendai Framework for Disaster Risk Reduction. Within 12 months, we designed a flood reporting tool, created 11 flood susceptibility static maps and 3 interactive web maps.



Taiwo OGUNWUMI

All of which are accessible to the local community and stakeholders. I am personally proud of the team. Special thanks to the Chief Operating Officer, Opeyemi Olatunde, who continually strives to facilitate major mapping exercises and monitor all other volunteering activities of the Initiative.

Chief Operations Officers Speech



Opeyemi OLATUNDE

Special thanks to the Geohazards Risk Mapping Initiative team for their tremendous efforts in achieving our goals for 2021. I implore everyone to remain focused on the objectives of greater inclusiveness and resilience. GRMI was founded with the aim of providing answers to disaster-related difficulties in our immediate environment, its a year and a few months, the visions are becoming realities. At GRMI, we will continue to examine scenarios caused by geohazards; flood-affected vulnerable populations, as well as offer innovative GIS-based solutions, to protect lives and property.

VOLUNTEERS' TESTIMONIES

Abdulhaffiz Umar – I sincerely want to appreciate GRMI for giving me this wonderful opportunity to emerge and grow within the geospatial environment. The volunteer experience opened numerous doors, connected me to wonderful people, and gave me a platform to use GIS to address environmental issues.



Opeyemi Kazeem-Jimoh – I volunteered for GRMI not only because I saw it as an opportunity to develop my skills in the field of remote sensing, and its application to disaster risk management but also to contribute my GIS skills to such a worthy cause of assisting underrepresented communities against disaster risk.

Wisdom akpabio – GRMI deserves my utmost appreciation, mostly due to the fact that it aided me in building worthy connections and becoming part of a common identity, which is filled with like minds committed to implementing the Sustainable Development Goals to the affairs of the common man.



“Volunteers do not necessarily have the time; they just have the heart.” ~Elizabeth Andrew

Oluwatobiloba Oyedero – I want to say a big thank you to Geohazards Risk Mapping Initiative for giving me the platform to develop my geospatial data analysis skills while volunteering for a cause that matters and is so dear to my heart. Shout out to the President, shout out to each and every team member that made this dream work!



Bamidele Temitope - Volunteering for Geohazard Risk Mapping Initiative has been a wonderful and fulfilling experience, it gave me a platform where my contributions to preventing natural disaster can directly influence the decisions of policy makers and the government in early warning preparedness and disaster risk management.

Juwon Ishola - The environment in which man lives is always changing, and man's actions and inactions create harm in some way. It is critical to research and provide evidence-backed solutions to these problems. As a volunteer with GRMI, I have been able to combine practical and theoretical approaches to flood risk mapping. Volunteering with the initiative has also aided my leadership abilities and provided me with the opportunity to network with people from different backgrounds.

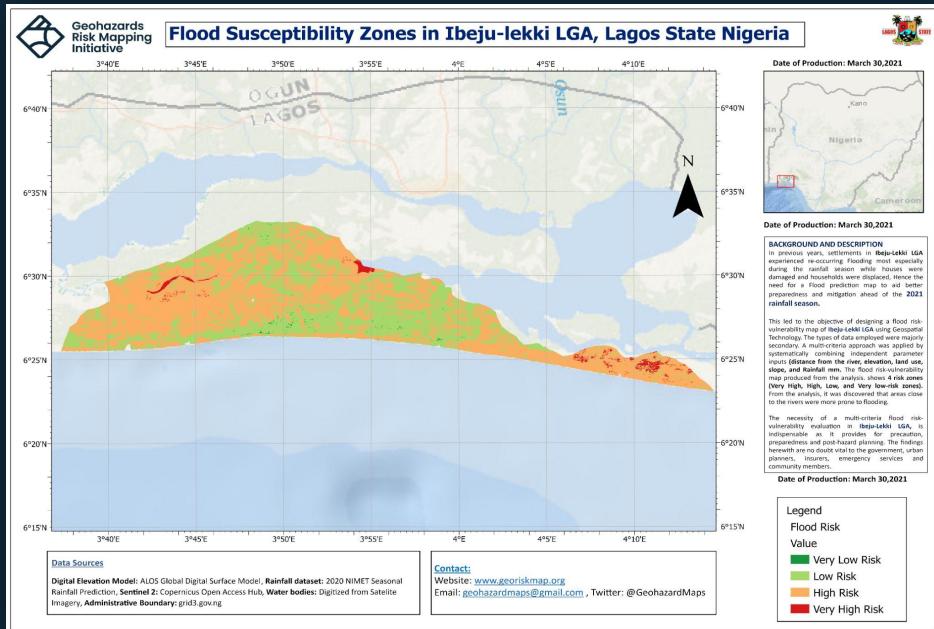


Kayode Adeniyi– It is one thing to know the possibilities of flooding in an area, it is another thing to see the reality. Most times, the realities are dreadful. Geohazard Risk Mapping Initiative focuses on providing solutions to ensure we do not see the realities of geohazards, especially floods, and even when we do, risks are reduced to the barest minimum. This is a big deal, really invaluable. I am delighted to be a part of this.

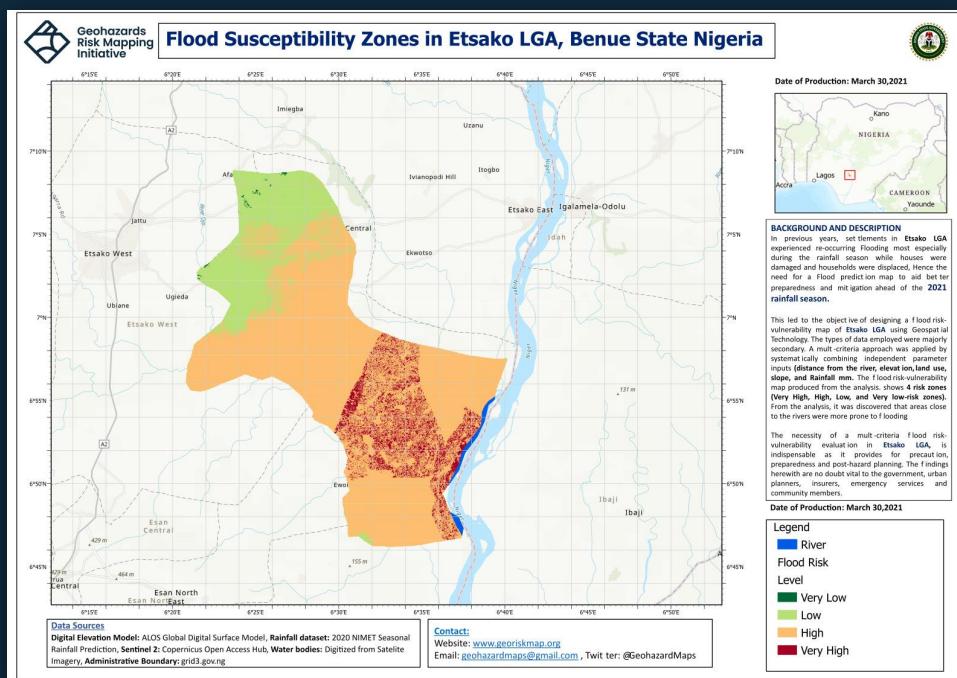
FLOOD SUSCEPTIBILITY MAPS

We have dedicated quality time, intellectual resources and personal funds to produce 11 high precision static maps and 4 digital interactive flood susceptibility maps indicating various settlement and the level of susceptibility to flood. The maps was shared with the National Emergency Management Agency (Headquarters in Abuja) and across our social media platform for public accessibility.

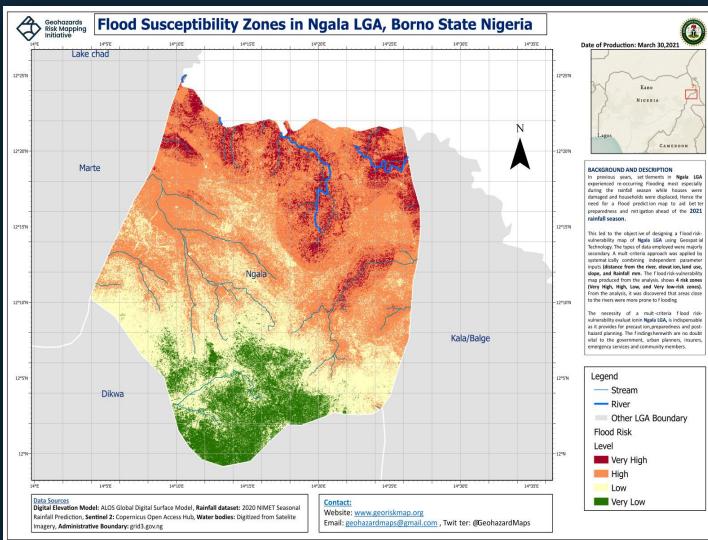
- Ibeju-Lekki Area in Lagos State Nigeria



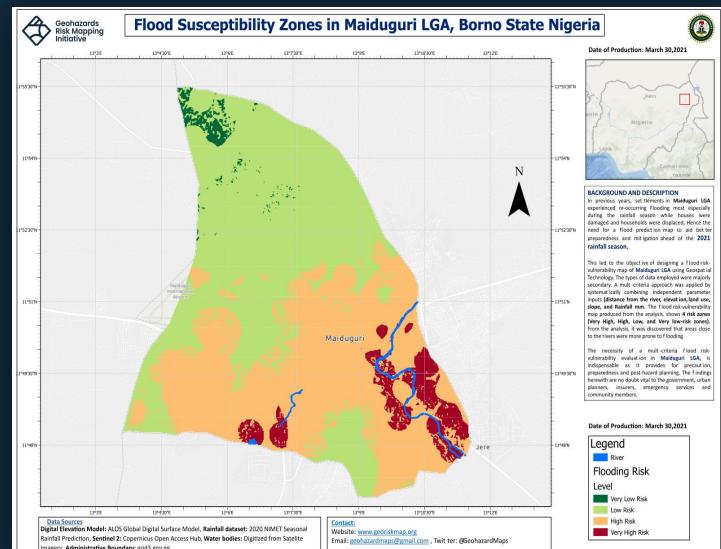
- Etsako Area in Benue State Nigeria



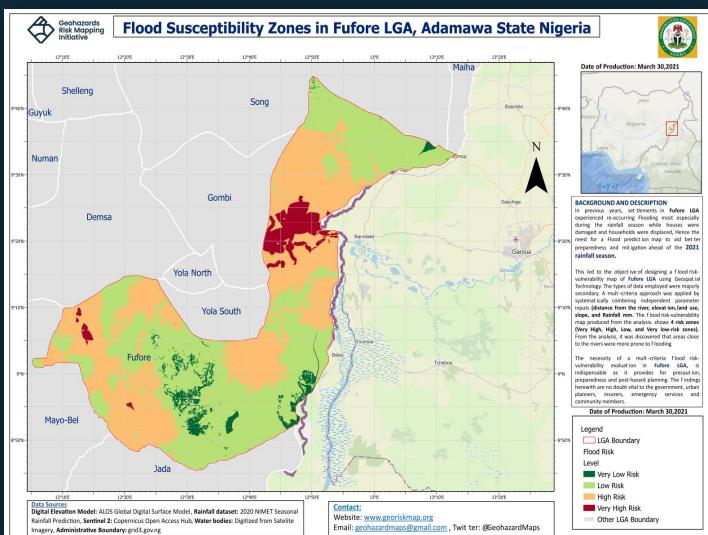
● Ngala Area in Borno State Nigeria



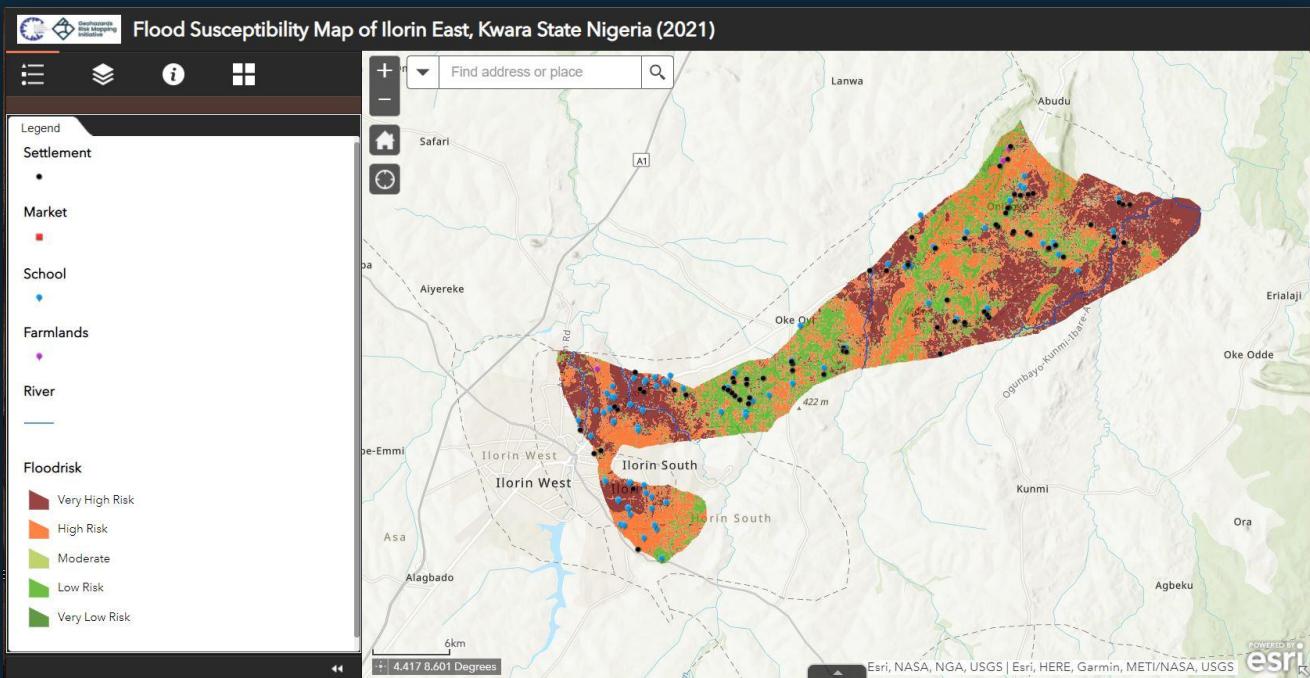
● Maiduguri Area in Borno State Nigeria



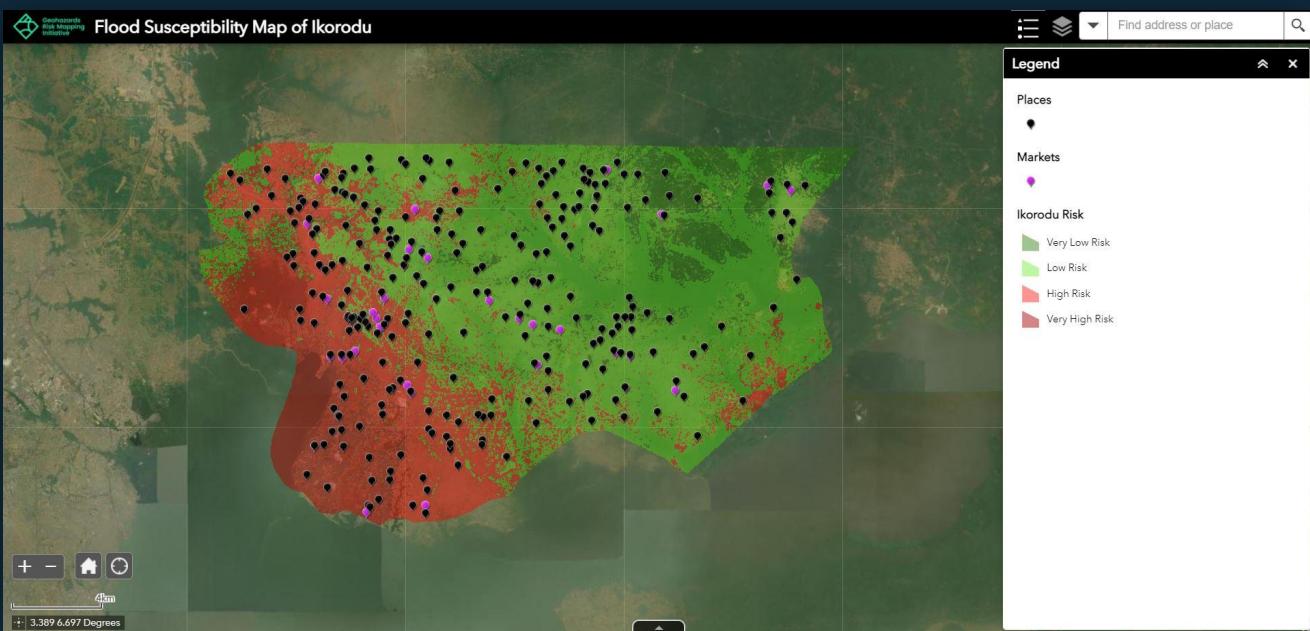
● Fufure Area in Adamawa State Nigeria



FLOOD SUSCEPTIBILITY INTERACTIVE MAPS



- Ilorin East, Kwara State Nigeria



- Ikorodu, Lagos State Nigeria

- Maiduguri Web Map

COMMUNITY MOBILISATION FOR PARTICIPATION TOWARDS DEVELOPMENT

REPORTING APP

Effective communication is critical for citizens to understand the different types of risk they face, discuss what can be done and take action to manage those risks. Community members can also be an important source of risk information for analysts and can provide innovative solutions for managing risk. In line with this, Geohazard Risk Mapping Initiative came up with a state-of-the-art flood risk reporting tool. We leverage Esri's ArcGIS technology for this solution. This was done with the aim to improve the initiative's hydrological and flood risk mapping and predictions across Nigeria.



MAPATHON: GRMI x UNIBONN x Missing Map

As an ongoing effort to provide quality dataset for better flood impact mapping, GRMI teamed up with the University of Bonn Missing Maps Group to hold her first mapathon to map flood vulnerable locations in Nigeria using OpenStreetMap (OSM) platform. Prior to the mapathon, GRMI GIS volunteers had already analysed several regions in Nigeria, identified high, medium, and low-risk flood zones. The think-tanks knew where and how are not enough, the mapathon was to highlight "to what extent?", i.e how many buildings will be affected. This event was hosted on the 15th of May 2021 and over 55 volunteers across 15 countries met virtually to map over 7,500 buildings in the Ikorodu area of Lagos State Nigeria.

This has birthed several other non-event Mapathons and open-ended mapping on HOTOSM from the Initiative. A number of mapping tasks are ongoing, while others have been completed on the HOTOSM platform because we believe open data mapping is critical for an effective Flood preparedness and to improve the response of the Humanitarian Relief Agencies, the Ministry of Humanitarian Affairs, Disaster Management and Social Development, and the National Emergency Management Agency (NEMA) to the flood-impacted communities.



(<https://precisegis.com.ng/humanitarian-mapping-exercise-for-improvement-in-hiv-aids-gender-based-violence-gb-v-projects-in-nigeria/>)

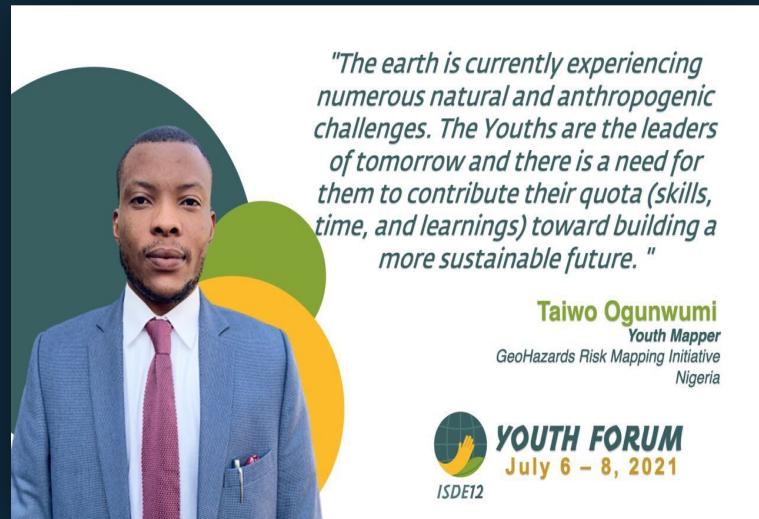
More information using this: <https://grmi.hashnode.dev/mapathon>.

PROJECTING OUR VOICE

Our activities have not been in isolation, we join others in the development space, rub minds with initiatives, organizations and agencies working towards sustainable development all over the world. Over the past 12 months, we have participated in a number of events.

PRESENTATION AT ISDE12 YOUTH FORUM

The ISDE12 Youth Forum aims at bringing the best of both real and digital worlds together. The Forum engages youths to design and leverage Digital Earth models to improve livelihoods around the planet. The Initiative participated in the 2021 ISDE12 Youth Forum programme. The President, Taiwo Ogunwumi, and two other volunteers: Opeyemi Kazeem-Jimoh and Iniobong Benson were guest speakers during this event. The speaking engagement was centred around Mapping, Volunteerism, and Diversity. This was done alongside the Africa Youth Advisory Board on Disaster Risk Reduction.



More information available:

<https://ideaslab-zgis.hub.arcgis.com/pages/isde12yfupdate>

Community Contributors



AYAB DRR
AFRICA YOUTH ADVISORY BOARD
ON DISASTER RISK REDUCTION



GeoHazards
Risk Mapping
Initiative



ISDE12
YOUTH FORUM
JULY 6-8, 2021



Inspiring Girls Expedition



GeoCitizen
CLIMATE ACTION



VU
VRIJE
UNIVERSITEIT
AMSTERDAM



COVID-19
Impressions



PLUS green
CAMPUS



Scientists for Future



GEO
INDIGENOUS ALLIANCE



COPERNICUS MASTER
IN DIGITAL EARTH



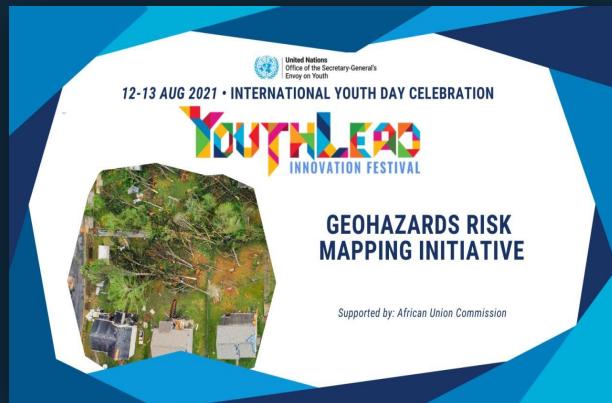
NJNU
NANJING NORMAL UNIVERSITY

INTERNATIONAL YOUTH DAY

Far from being mere beneficiaries of the 2030 Agenda, young people have been active architects in its development and continue to be engaged in the frameworks and processes that support its implementation.

On August 12-13, 2021, the office of the United Nations Youth Envoy hosted the First ever Youth-Led Innovation Festival. The #YouthLead Innovation Festival was created to celebrate innovative youth-led solutions for the achievement of the SDGs and recovery from the COVID-19 pandemic.

On the global scene, the President of the Initiative addressed the United Nations Youth at the 2021 International Youth Day celebration. There, he itemised how the initiative has been using geospatial intelligence methods to create susceptibility and emergency mapping of actual or expected natural, biological, and technological hazards being experienced in Nigeria and other African countries as a result of Climate Change.



UN DRR DAY

From making cities resilient, reducing disaster risk and engaging communities, the International Day for Disaster Risk Reduction is an opportunity to acknowledge the progress being made toward reducing disaster risk and losses in lives, livelihoods and health. The 2021 edition focuses on “International cooperation for developing countries to reduce their disaster risk and disaster losses.” The sixth of the Sendai Seven targets.

“Only together can we make true progress towards a safer and more resilient planet.”

Mami Mizutori,

Special Representative of the Secretary-General for Disaster Risk Reduction and Head of UNDRR

To mark the 2021 edition of the International Day for Disaster Risk Reduction, between October 11th and 13th, the National Institute of Disaster Management, India hosted the Youth Leadership and Action for Disaster Resilience. Geohazard Risk Mapping Initiative was represented by the President, Taiwo Ogunwumi, where he shared his experience in youth leadership, disaster risk reduction activism, activities of geohazard risk mapping initiative milestones and future prospects



**Three Days Online Training Programme on
Youth leadership & Action
for Disaster Resilience**

Date: 11-13 October 2021
Time: 11:00 Am - 12:30 pm

International Day for Disaster Risk Reduction
#DRRDay #OnlyTogether

PATRONS	CONVENOR
Maj. Gen Manoj Kumar Bisht, Executive Director, National Institute of Disaster Management	Dr. Sushma Guleria, Assistant Professor, National Institute of Disaster Management
Mr. Amit Kumar Dhar, Executive Director, RAWs India	Nitish Barole, Youth for Resilience
Mr. Mukunda Sahu, Director, Bolangir Bikash Parishad, Odisha	

SPEAKERS

Kevin Blanchard, Director, DRRI Dynamics	Taiwo Ogunwumi, Founder, Geohazard Risk Mapping Initiative	Bhupendra Mishra, Founder, The Resilient Foundation	Aradhna Moktan, Young Professional, National Institute of Disaster Management	Ar. Bhola Saha, Founding Member, Confederation of Risk Reduction Professionals	Gaurav Sharma, CEO, Thankyou
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Organized by:
National Institute of Disaster Management
Ministry of Home Affairs, Government of India

In collaboration with:
Youth for Resilience
Bolangir Bikash Parishad, Odisha & RAWs India

Registration link:
<https://training.nidm.gov.in>

Day 1: <https://youtu.be/-o2Gy5qxoQw>
Day 2: <https://youtu.be/6MqUEcg2JlI>
Day 3: <https://youtu.be/SLYG0juNxYU>

YouTube Website: www.nidm.gov.in

Stay Protected from Corona • Wear your Mask Properly • Follow Proper Hand Hygiene • Maintain Social Distancing • Get Vaccinated

The event was hosted in India on the occasion of the International Disaster Risk Reduction Day. The event was attended by over 165 participants across the world.

<https://www.youtube.com/watch?v=SLYG0juNxYU>



2021 GIS Day

The GIS day is usually held from the 17th to 19th November of every year, an event where GIS professionals and organizations can highlight their work and projects which use Geospatial technology and dataset.

The initiative joined the global geospatial community to host a virtual GIS day themed "**Harnessing Geospatial Technology for Disaster Risk Reduction and Management**", we invited excellent international and national experts whose organisations or personally use GIS to predict and manage environmental hazards.

Read more:

[GIS DAY- "Geospatial Technology for Disaster Risk Reduction" \(arcgis.com\)](https://arcgis.com)

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Compiled and edited by: Taiwo Ogunwumi and Kayode Adeniyi.



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