



# Advancing Gender Equality Through Space Technology and Climate Resilience

Empowering Women in Agriculture

By:

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# Outline

**Gender Roles and Vulnerability**

**Women in Agriculture (Smallholder farmers)**

**The Role of Space Technology**

**Data Empowerment**

**Satellite Communication for Education and Healthcare**

**Case Studies (Success Stories)**

**Recommendations for Advancing Gender Equality**

**Conclusion: Bridging Gender Gaps in Climate Resilience**

Source: Daily trust Nigeria



**Women in agriculture**

# Women! Agriculture! The Climate & Space Technology!

Source Business day Nigeria



**Women play multiple role**



**Technology the light of hope**



**Rural women undergo Physical Stress**



**Climate impact**

Source: Susty vibes



**Flood consumed her**

# Introduction



- ❑ In an era of space exploration and technological advancement, it is crucial to ensure that these developments benefit all of humanity, irrespective of gender.
- ❑ Climate change affects us all, but its impacts are not uniform. It poses a global threat to food security.
- ❑ Gender plays a significant role in determining how individuals experience these effects. Addressing these differences is critical for attaining gender equality and climate resilience.
- ❑ This presentation explores the intersection of space technology, gender equality, and climate change in the context of agriculture.



# The Challenges

- ❑ Women constitute a substantial portion of the agricultural workforce in Africa. Unfortunately, climate change, gender inequality, limited access to resources and technology significantly limits their productivity.
- ❑ Furthermore, gender disparities impact decision-making, income distribution and access to training opportunities.
- ❑ These challenges pose a threat to the implementation and accomplishment of the Sustainable Development Goals (SDG) 1, 2, 3, 4, 5, 13, 16 and 17



Source: African Liberty



Source: [www.waterraid.com](http://www.waterraid.com)



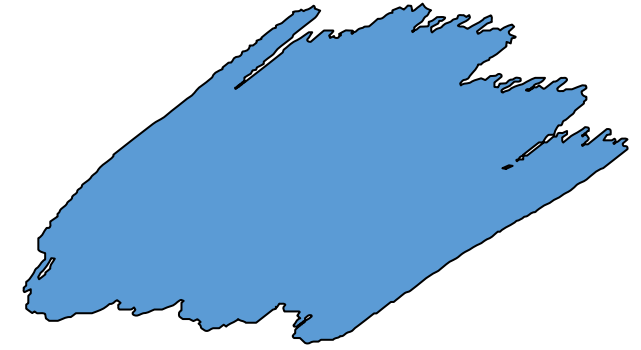
# Women In Nigerian Agriculture: Challenges And Opportunities

- ❑ In Nigeria, women constitute 75% of the farming population (**World Bank**).
- ❑ They make up 37% of the labor force but produce less than men despite accounting for roughly 70% of farm labor.

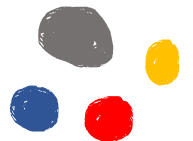
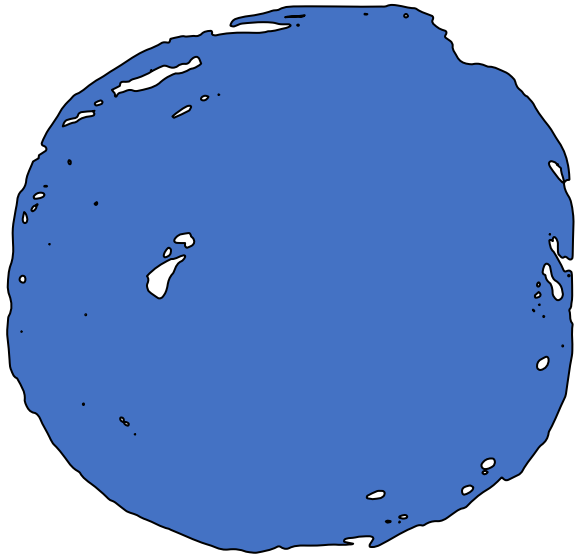


Nigeria Tribune

- ❑ A woman's role is significantly affected by socio-economic factors such as, culture, income, education, access to infrastructure and other traditional customs.
- ❑ Unfortunately, only 7% of Nigerian women own the land they farm on, limiting their access to credit for business growth due to a lack of collateral (**World Bank**).



# Gender Roles and Vulnerability



❑ **Gender Roles and Climate Vulnerability:** Gender roles shape climate vulnerability, with women often more affected due to their roles in food production and family responsibilities."



❑ **Political inclusion:** men comprise more than 94% of the Nigerian National Parliament. There are major disparities in policy development, access and resource usage and conservation, which increases vulnerability.



- ❑ Only 7 out of 109 senators, 22 out of the 360 House of Representatives members & 4 out of 36 deputy governors are women**
- ❑ "In Nigeria's space agency, women constitute less than 15% of the workforce, with only a small fraction engaged in the science division, which reflect a significant gender gap.**

- ❑ **Societal Expectations:** Societal expectations restrict women's decision-making power and mobility, hindering their ability to respond to climate-related challenges.
- ❑ **Intersection of Gender and Vulnerability:** Gender interacts with factors like socioeconomic status and location, intensifying vulnerability for specific individuals and communities.
- ❑ **Key Takeaway:** Recognizing the impact of gender roles and resource access on vulnerability is crucial for crafting policies that promote gender equality and climate resilience.

Source Consumer connect



She is struggling with the soil



The girl child should be in school



Most Rural women are farmers

# Women in Agriculture & climate impact

❑ **Women as Smallholder Farmers:** Women are key actors in food production, yet their contributions are often underestimated.



She tirelessly tends to her crops.



❑ **Climate Impact:** they are extremely affected by climate change due to their reliance on rain-fed agriculture, which is vulnerable to irregular rainfall and extreme weather.

# Women as Smallholder Farmers

❑ **Vulnerability:** Unpredictable weather patterns disrupt planting and harvesting, reducing agricultural productivity, and posing food security challenges, particularly for women managing household food supply.

❑ **Economic Implications:** Climate-induced crop failures also have economic consequences for women, who may depend on income from surplus crop sales.



Source: ICCDI AFRICA

Excessive rainfall flood her farm



# Can Space Technology support her ?



- When can she plant?
- What land is available for her farming
- What crop is suitable for her region?
- Will her crop survive until harvest?
- Will her child receive vaccinations at the appropriate ages?
- Will she be using water from clean well?
- Where is the nearest water source ?
- Does the telecom system have radio stations that reach her village?
- Which market will get her the best price for her product
- Will she be affected by flood or drought?

**These are the concerns and questions that data from space technology answers..**

# The Role of Space Technology in Gender equality

Source: Google



Space technology can address gender disparities by mitigating climate-induced inequalities in agriculture and food security, this is achieved thru:

**Data-Driven Solutions:** It offers precise data on climate, soil, and crop yields, empowering women farmers with valuable insights for decision-making.

❑ **Monitoring Inequalities:** Helps track agricultural and food security inequalities, aiding targeted interventions.

❑ **Climate Resilience:** Enhances climate resilience through early warning systems and modeling, reducing vulnerability for women and communities.

Source: sustyvibes



# Empowering Women with EO Data

Space technology's data empowers women in agriculture, improving their livelihoods and advancing gender equality.



❑ **Data from Space:** provides critical agricultural data through satellites equipped with advanced sensors.

❑ **Informed Decision-Making:** Access to this data empowers women in agriculture to optimize planting, irrigation, and harvesting decisions, reducing losses.



❑ **Enhancing Productivity:** Precise information on soil and weather leads to sustainable farming practices, increasing productivity and food security.

❑ **Resilience Building:** Data-driven insights enable women to adapt farming strategies, enhancing resilience to climate challenges.

# Satellite Communication for Education and Healthcare



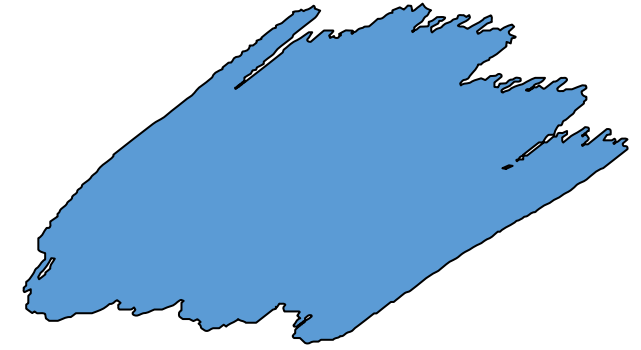
Satellite communication can overcome barriers, offering opportunities for skill development, knowledge sharing, and personal growth, particularly for underserved women and girls.

❑ **Education Opportunities:** facilitates remote learning, offering women and girls access to quality education and valuable skills.

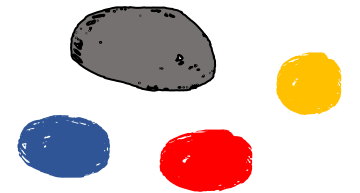
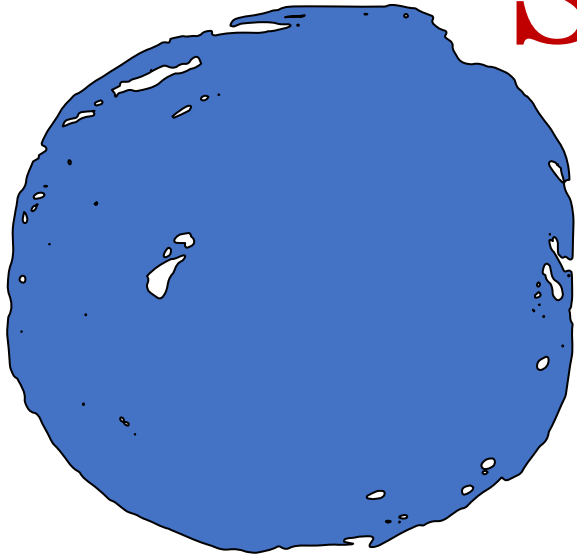
❑ **Healthcare Accessibility:** Telemedicine through satellite communication improves healthcare access for women in remote areas, enhancing their well-being.

❑ **Skills and Knowledge:** Enhanced education and healthcare lead to personal development, economic empowerment, and active participation in the workforce for women.





# CASE STUDIES & SUCCESS STORIES



# Limited women experts in smart agriculture smart

Out of the 243 farm workers who manage and operate more than 3,000 hectares of fully mechanized farming system, Jagila Jantiku stands as the lone female and scientist within the team.



**"I've chosen to be an informed smart farmer. I've pursued education, stayed updated on climate change and its solutions, I strongly advocate for gender equality believing that every woman deserves same opportunity"**

# Empowering Women Farmers In Wushishi Nigeria

I am using Earth observation and **space technology** to empower women in the Agriculture Value Chain in Niger State, Nigeria. I assists various women's groups in Wushishi Local Government Area, providing vital information on climate change, advanced production techniques, and sustainable food chain management.





**I conduct training sessions for farmers in groups, teaching them how to gather spatial data for monitoring the health of their crops.**

**My team and I  
Mapping crop  
types for  
monitoring and  
Creating  
awareness on  
space tech to  
women in  
Northern  
Nigeria**



**women farmers in North Central Nigeria**

# SUCCESS STORY





**Promoting awareness about the integration of women in agriculture within the realm of space science**

# SUCCESS STORIES

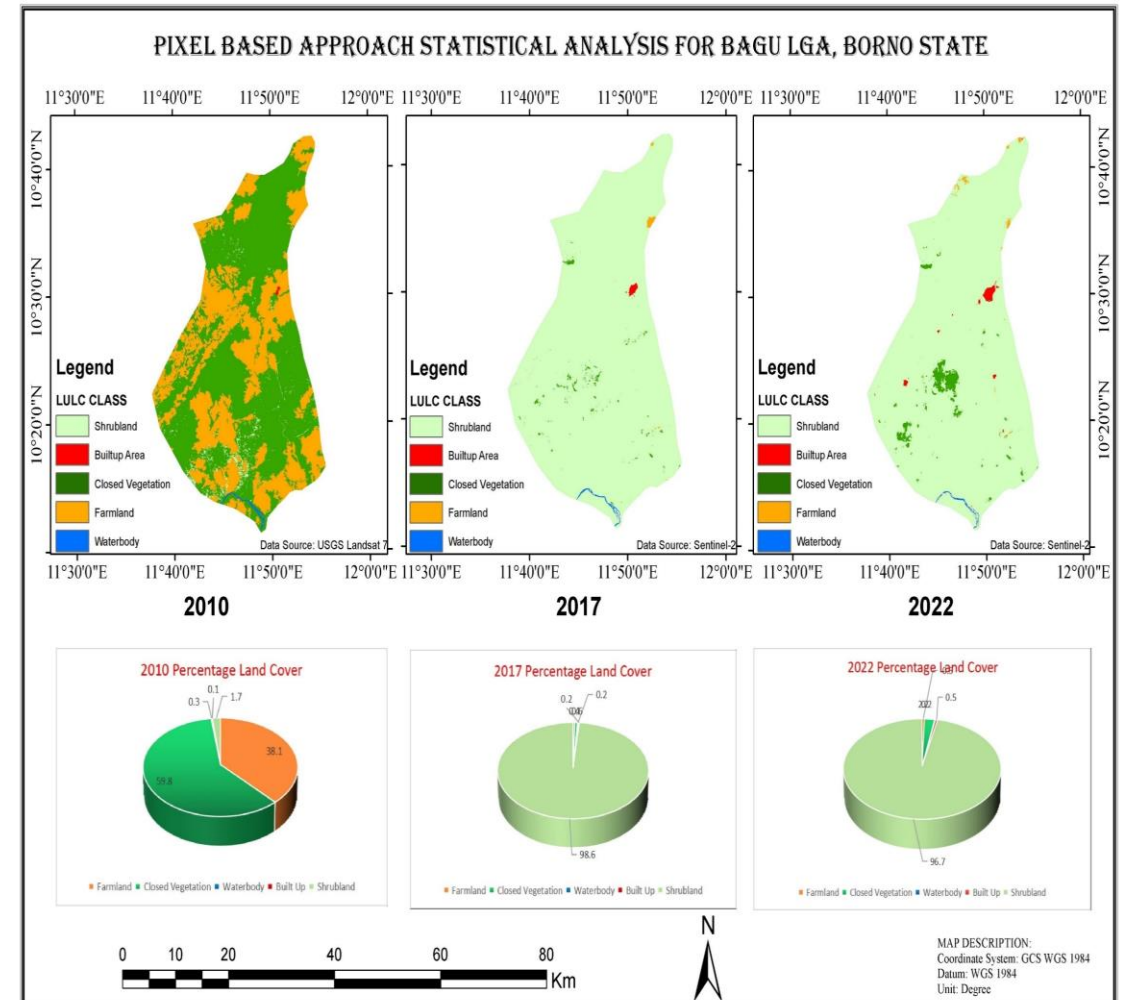




# Research on the impact of conflict on agriculture & food security with focus on women

**Research aims** to create a geodatabase of conflict-affected women in Northern Nigeria using EO data and proposed a user-friendly web map application for monitoring agricultural production in conflict-prone areas, focusing on women engaged in agriculture.

**Significance:** The project empowers women in conflict-affected agriculture by offering geospatial data and insights to policy makers for targeted support initiatives.



# Enhanced Educational Opportunities for Women in Addressing Deforestation and Its Impact on Arable Farmland Through Space Technology.



Source: flysafe magazine

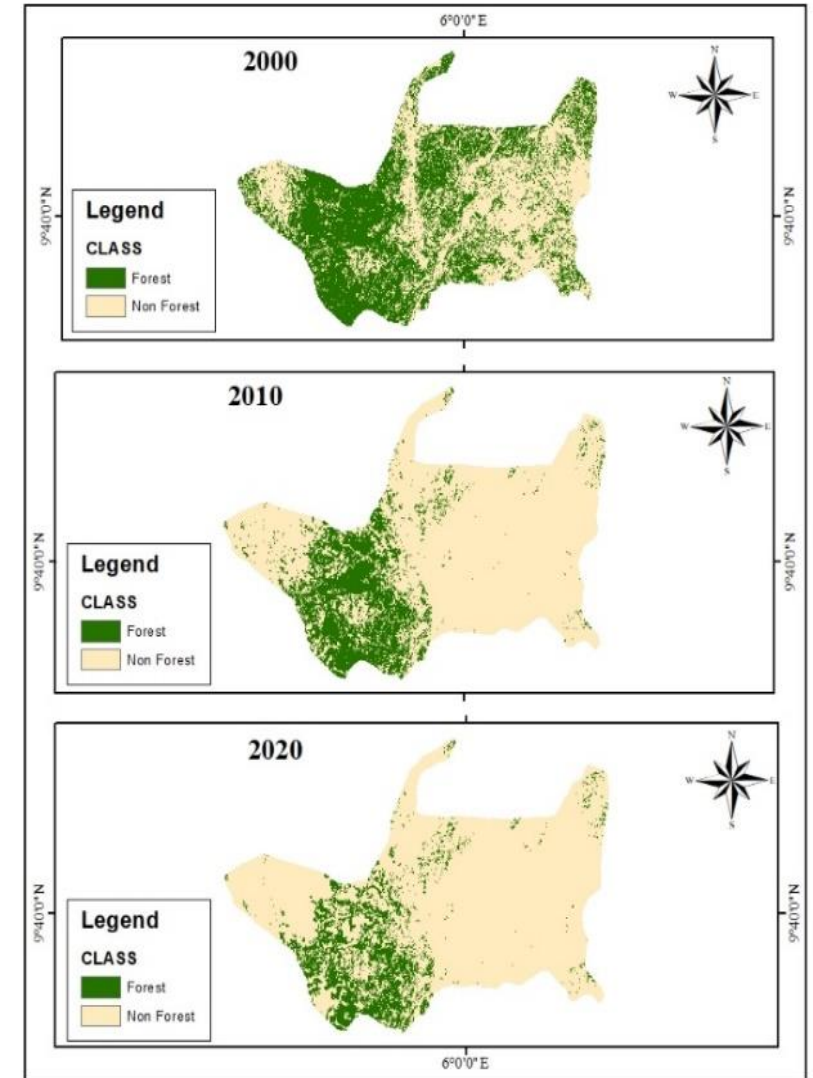


[News Agency of Nigeria](#)

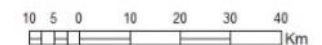


STATISTICAL ANALYSIS OF FOREST COVER CHANGE				
<b>2000 WUSHISHI AREA CALCULATION</b>				
	AREA (Hectares)	PERCENTAGE		
FOREST	229258.3	73%		
NON FOREST	85049.28	27%	<b>2000-2010</b>	
			<b>Class</b>	<b>Percentage</b>
<b>2010 WUSHISHI AREA CALCULATION</b>			Forest	-61% <b>Reduction</b>
	AREA (Hectares)	PERCENTAGE	Non Forest	61% <b>Increase</b>
FOREST	36667.38	12%		
NON FOREST	277640.20000000000	88%	<b>2010-2020</b>	
			<b>Class</b>	<b>Percentage</b>
<b>2020 WUSHISHI AREA CALCULATION</b>			Forest	-3% <b>Reduction</b>
	AREA (Hectares)	PERCENTAGE	Non Forest	3% <b>Increase</b>
FOREST	29297	9%		
NON FOREST	285010.58	91%		

LANDUSE/LANDCOVER CHANGES IN WUSHISHI LGA, NIGER STATE, NIGERIA

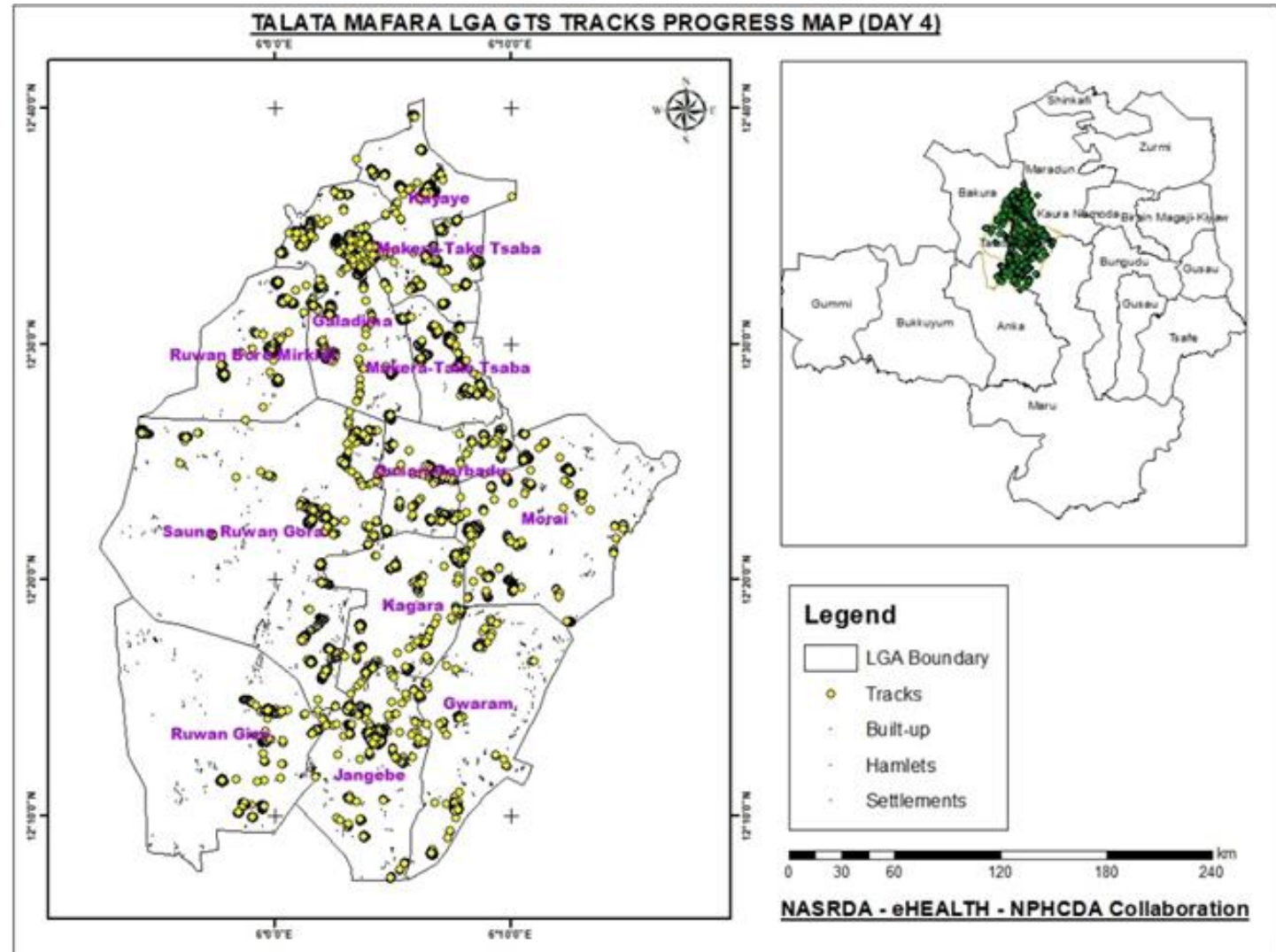


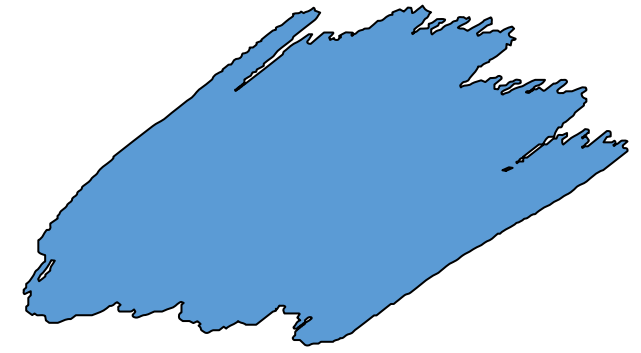
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Unit: Degree



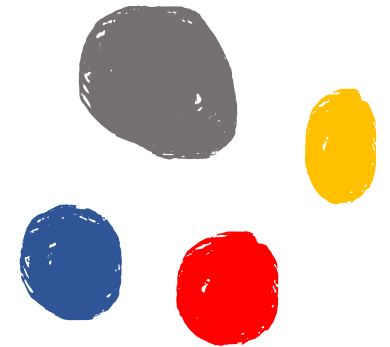
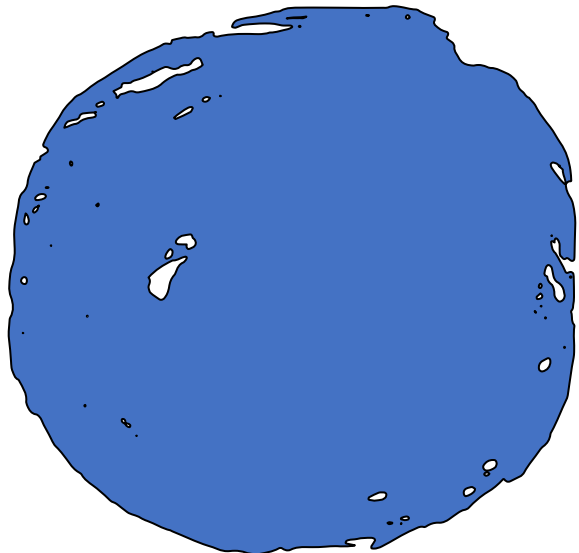
# Harnessing Space Technology for Vaccination and Empowering Women in Rural Communities

I effectively coordinated the daily tracking and monitoring of field vaccination teams using geo-coverage maps, charts, and GTS dashboard data in Northern Nigeria. This allowed stakeholders to assess progress, identify areas for improvement, and locate any missed or partially covered regions. A significant **lesson learned** was that the use of space technology greatly improved women's access to polio vaccines for their children.





# **Recommendations For Stakeholders Advancing Gender Equality For Gender Equality And Climate Resilience Along The Agric Value Chain.**



**❑Policy Initiatives:** Advocate for gender-responsive policies prioritizing women's access to resources and technology in climate adaptation and agriculture programs.

**❑Capacity Building:** Invest in training women in agriculture, particularly in space technology, data interpretation, and technology utilization.

**❑Technological Access:** Ensure accessible and user-friendly space technology tools and data for women in remote areas.

**❑Research and Innovation:** Support research on the intersection of gender, agriculture, and space technology, fostering innovative solutions.

**❑Partnerships:** Promote collaborations between governments, space agencies, NGOs, and communities to implement gender-inclusive climate resilience projects.

**□Monitoring and Evaluation:** Establish mechanisms to assess progress in gender equality and climate resilience initiatives regularly.

**□Education and Awareness:** Raise awareness about the benefits of space technology in agriculture and climate resilience, emphasizing gender equality.

**□Scaling Success:** Identify and expand successful gender equality and climate resilience projects, sharing best practices.

**□Resource Allocation:** Allocate resources and funding to empower women in agriculture through space technology, emphasizing gender mainstreaming.

**□Key Takeaway:** These recommendations offer a roadmap to leverage space technology for advancing gender equality and climate resilience in the Agricultural Value Chain.

# Bridging Gender Gaps in Climate Resilience



- ❑ Gender disparities in climate change impact exist, notably in the Agricultural Value Chain.
- ❑ Gender roles and resource access shape vulnerability.
- ❑ Women as smallholder farmers are extremely affected by climate change.
- ❑ Space technology empowers through data and satellite communication.
- ❑ Real-world cases demonstrate space technology's positive impact.
- ❑ Recommendations guide gender equality and climate resilience.

## **The Way Forward:**

Space tech bridges gender gaps, empowering women in climate resilience.

## **Call to Action:**

- ❑ Embrace space tech's opportunities for a more equitable and resilient future.

**Let's work together for gender equality and climate resilience with space technology.**

“A Woman's closeness to nature, her profound understanding, and essential connection breathe life into the natural world. Her unique bond and experiences in nurturing this relationship make her pivotal in preserving our environment. It's time to empower women to take the lead”.

***Thank you for your  
your attention***

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