Green Habitat Initiative

2025 Annual Impact Report

Building Climate Resilience and Inclusive Livelihoods

January - December 2025

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LIST OF ACRONYMS

agriFIMS	Farmer Information Management System
ADS	Agro-Weather Dissemination System
CSA	Climate-Smart Agriculture
CTCN	Climate Technology Centre and Network.
EMSAS	Empowering Communities with Sustainable Agricultural Systems
GHI	Green Habitat Initiative
LGA	Local Government Area
NDPR	Nigeria Data Protection Regulation
NiMet	Nigerian Meteorological Agency
RANETA	The Radio-Internet Climate Technology for Agricultural Resilience
UNEP-CTCN	United Nations Environment Program-Climate Technology Centre and Network
VRCC	Virtual Reality for Climate Change
WASH	Water, Sanitation and Hygiene
WFP	World Food Programme

1.0 EXECUTIVE NOTE FROM THE EXECUTIVE DIRECTOR

Dear Partners, Friends, and Champions of Sustainable Development,

2025 will be remembered as the year the Green Habitat Initiative (GHI) stepped fully and unapologetically into its identity as Nigeria's climate innovation leader. It was the year we proved, with evidence, technology, partnerships, and action, that bold ideas can transform communities, shift national conversations, and inspire a new generation of climate innovators.

In 2025, GHI completed two of Nigeria's most forward-looking climate resilience projects: RANETA and EMSAS. Through RANETA, delivered with UNEP–CTCN and the Nigerian Meteorological Agency (NiMet), farmers in Kebbi State transitioned from uncertainty to action, using tailored weather forecasts to guide daily agricultural decisions, transforming what was once aspirational into a national model for digital climate services. In the same vein, the EMSAS–Hydroponics Project proved that climate-smart agriculture can thrive even in conflict-affected regions, as GHI established one of Nigeria's most ambitious hydroponics training centres in Kubau LGA, Kaduna State; equipped community trainers; and introduced a water-efficient, conflict-resilient farming system that now serves as a blueprint for food production in contexts of land scarcity, erratic rainfall, and insecurity.

Our leadership in climate innovation was recognised nationally when GHI received the Climate Champion Award from the National Council on Agriculture, the highest policymaking body on agriculture in Nigeria. This honour reflects not only the work we do but also the trust we have built across institutions, states, and global partners who believe in our mission and our methods. This year also welcomed a new, strategic partner: the World Food Programme. Their confidence in GHI signals a new era of collaboration that strengthens our capacity to deliver scalable, technology-enabled, community-centered solutions. Together, we are advancing agricultural resilience, empowering farmers, and expanding the reach of innovations that matter.

In line with our mandate to shape human capital for Nigeria's climate transition, we launched a new Volunteer Program, complementing our NYSC program. These programs are preparing young Nigerians to become climate solutions leaders, equipped with skills in WASH, climate-smart agriculture, hydroponics, data systems, field implementation, and community mobilisation. Innovation is not only about tools; it is also about people.

In 2025, GHI strengthened its position as a thought leader in climate-smart development by representing Nigeria at key global and national platforms, advancing innovations such as virtual reality for WASH education, digital water system monitoring, and community-driven social innovation. As we look to 2026, we remain focused on scaling proven solutions, deepening climate intelligence, expanding technology-driven agriculture, and supporting states across Nigeria to build resilience through research, policy engagement, and strategic partnerships.

To our donors, UNEP-CTCN, the Adaptation Fund, the European Union, WFP, and others, thank you for believing in our capacity to innovate. To our government partners across local, state, and federal levels, thank you for your trust and collaboration. To the GHI team, thank you for your courage, creativity, and relentless optimism. And to our communities and young volunteers, thank you for reminding us why this work matters.

Together, we are proving that climate resilience is not just necessary; it is achievable, scalable, and transformative.

With gratitude and bold ambition,

Sadiq Abubakar Gulma, PMP

Executive Director

Green Habitat Initiative

1.1 2025 OVERVIEW

The year 2025 marked a significant turning point for the Green Habitat Initiative as we shifted from pilot-stage experimentation to the full-scale operationalization of climate-smart technologies across Northern Nigeria. Our efforts throughout the year were defined by a commitment to closing the "adaptation gap" for the most vulnerable populations, particularly smallholder farmers and women in conflict-sensitive regions.

The highlight of the first quarter of 2025 was the successful completion of the Empowering Communities with Sustainable Agricultural Systems (EMSAS-Hydroponics) technical assistance project in Kaduna. This initiative did more than just introduce soil-less farming; it established a permanent centre of excellence that continues to serve as a hub for training and research. By demonstrating that high-yield crops like lettuce and tomatoes can be grown using a fraction of the water required by traditional methods, we provided a tangible solution to the dual threats of water scarcity and land-use competition.

Simultaneously, the Radio-Internet Climate Technology for Agricultural Resilience (RANETA) technical assistance project reached its technical completion in August 2025. This project addressed a critical missing link in Nigeria's agricultural sector: the dissemination of timely, localized climate data to farmers in the country. By leveraging a hybrid radio-internet architecture, GHI successfully enabled rural farmers in Kebbi State to receive life-saving weather alerts developed by the Nigerian Meteorological Agency (NiMet) and planting advisories in their local languages. This achievement was not merely a technical success but a social one, as it empowered local communities to take ownership of their own climate-risk management strategies.

In a move toward immersive advocacy, we also launched the Virtual Reality for Climate Change (VRCC) initiative. This program is aimed at bringing the unfiltered reality of climate-impacted landscapes, from desertification in the North to urban flooding, directly to the headsets of

policymakers and stakeholders. By providing an immersive experience of the unfiltered reality of environmental degradation, the VRCC project will significantly shorten the distance between grassroots suffering and legislative/executive action. Beyond these flagship projects, 2025 was a year of institutional strengthening. GHI continued to serve as a bridge between high-level policy and grassroots action, working closely with the National Council on Climate Change (NCCC) to ensure our community-level data informs national adaptation narratives. Our growth this year, characterized by the addition of the World Food Programme (WFP) to our partner network, reflects a broadening recognition of GHI's role as a trusted implementer of complex, technology-driven climate solutions.

1.2 OUR GLOBAL FOOTPRINT

Green Habitat Initiative's influence in 2025 extended far beyond the borders of Nigeria, solidifying our reputation as a trusted implementing partner for the international community. Our strategy remains rooted in the belief that the most effective climate solutions are those that translate global technical standards into local successes. This year, GHI solidified its role as a vital implementation node within the global climate technology network, acting as a bridge between international technical expertise and the specific socioeconomic realities of Northern Nigeria.

Our standing within the international community was reinforced through our deep technical alliances with the UN Climate Technology Centre and Network (CTCN) and the United Nations Environment Programme (UNEP). As a primary implementer for these agencies, GHI has not only facilitated the transfer of climate-smart technologies but has also become a contributor to the global body of knowledge. Our project outcomes from the RANETA and EMSAS initiatives are now featured as evidence-based case studies on international platforms, providing a roadmap for other Sahelian nations grappling with similar environmental stressors.

The global reach of our work was further expanded in 2025 through a strategic new partnership with the World Food Programme (WFP), which allowed us to align our agricultural innovations with international humanitarian food security frameworks. Supported by continued funding from the European Union and the Adaptation Fund Climate Innovation Accelerator (AFCIA), GHI has maintained a rigorous standard of transparency and accountability that matches the expectations of the world's leading donors. By representing the Nigerian climate innovation voice at global summits and technical workshops, GHI is actively shifting the international narrative. We are moving the conversation away from viewing African communities solely through the lens of vulnerability toward a recognition of their role as originators of sustainable, tech-driven solutions that resonate on a global scale.

2.0 ABOUT GREEN HABITAT INITIATIVE

2.1. Mission

Empowering cities and communities to build climate-resilient and sustainable systems that address the impacts of climate change and improve access to water, sanitation, energy, food security, and overall well-being.

2.2. Vision

A future with global equitable access to water, sanitation, food, and energy and resolved climate challenges, where GHI serves as a lighthouse of transformative and sustainable environmental solutions.

2.3. Core Thematic Areas

Green Habitat Initiative is working in achieving the targets of the following SDGs:

Clean Water and Sanitation (SDG 6): Ensure availability and sustainable management of water and sanitation for all through the I-WASH project.

Affordable and Clean Energy (SDG 7): working towards ensuring universal access to reliable, sustainable, and modern energy sources to drive positive environmental and social impact.

Sustainable Cities and Communities (SDG 11): Through innovative projects and community engagement, we strive to build urban and rural environments that are socially inclusive, environmentally conscious, and economically vibrant, ensuring a sustainable future.

Climate Action (SDG13): We actively pursue initiatives that mitigate carbon emissions, promote sustainability, and foster resilience, contributing to a more sustainable and climate-resilient future for our planet.

2.4 Implementation Strategy

GHI leverages the TIPS approaches for the implementation of its activities.

- **T**echnology: Technology is an enabler and transformer. We utilize technology to make our work more efficient and accessible, and the output of the work reaches its full potential of changing lives.
- **I**nnovation: We challenge the status quo by risking to design and deploy socially innovative solutions that promise better results than the existing situation.
- **P**artnership: With partners, we leverage each other's knowledge and resources to do more.
- **S**ustainability: It matters only if it is sustainable for the community, economy, and environment.

2.5 Delivery Mechanisms

This framework represents GHI's integrated delivery mechanism, designed to move ideas from concept to impact and scale:

- **Research & Development** anchors GHI's work in evidence, context analysis, and community realities. It ensures that programs respond to real needs and are grounded in data, learning, and best practice.
- **Innovations Lab** converts insights into practical, climate-smart, and development solutions. Here, GHI designs, tests, and refines new approaches, technologies, and models suited to fragile and underserved contexts.
- **Implementing Partner** reflects GHI's role in delivering and embedding these solutions on the ground, working with communities, governments, and institutions to translate innovation into tangible outcomes.
- **Advocacy** leverages evidence from implementation to influence policy, mobilise resources, and drive adoption at scale, ensuring that successful models inform systems and decision-making beyond pilot sites.

Together, these elements form a continuous learning and impact cycle: evidence informs innovation, innovation strengthens implementation, implementation generates proof, and advocacy enables scale and sustainability across GHI's programs. Figure 1 describes the framework for GHI's delivery mechanisms.

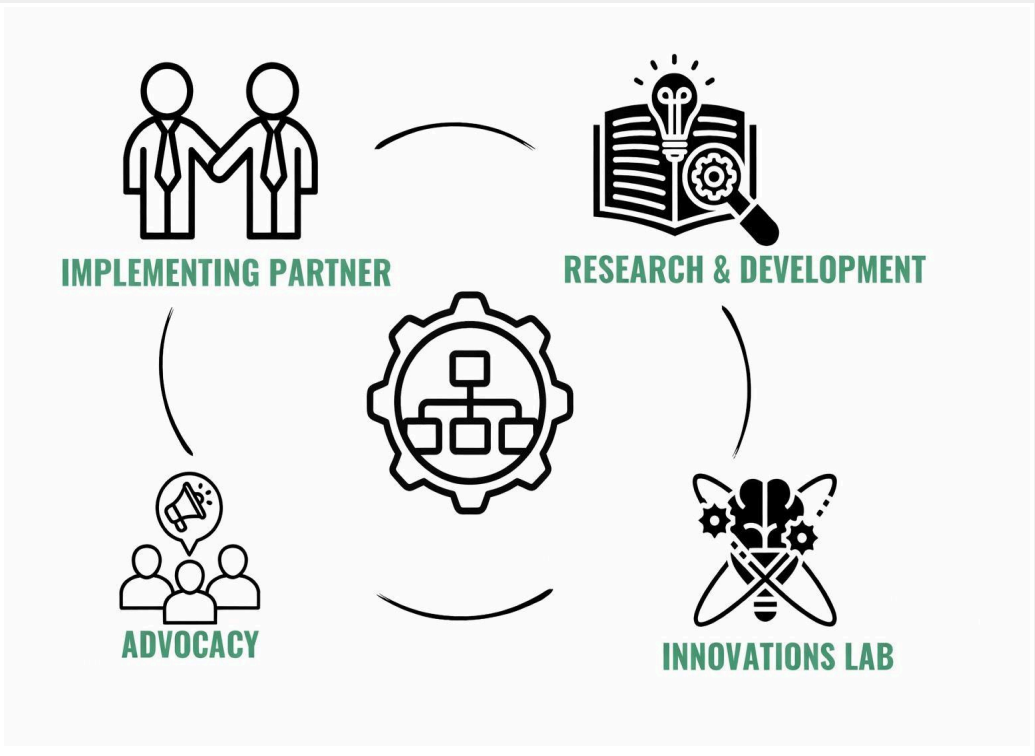

Figure 1: Delivery mechanisms framework

2.6 Theory of Change

If GHI implements strategic activities that combine policy advocacy, climate-smart agriculture training, sustainable WASH infrastructure development, digital and immersive learning tools, and technical support to governments and local actors, while fostering inclusive, multi-stakeholder collaboration.

Then communities and institutions will gain the knowledge, skills, data, and systems needed to adopt sustainable practices, design effective policies, and respond proactively to climate and environmental challenges.

If communities, farmers, and decision-makers are equipped with these capabilities and platforms.

Then they will reduce vulnerability, strengthen local resilience, and accelerate the transition toward healthier, more climate-resilient societies, marked by improved food and economic security, reduced sanitation-related health burdens, and inclusive participation of women, youth, and marginalized groups in shaping sustainable development.

Through this pathway, GHI catalyzes lasting, system-level change and demonstrates how technology-enabled, partnership-driven approaches can advance an equitable and sustainable future.

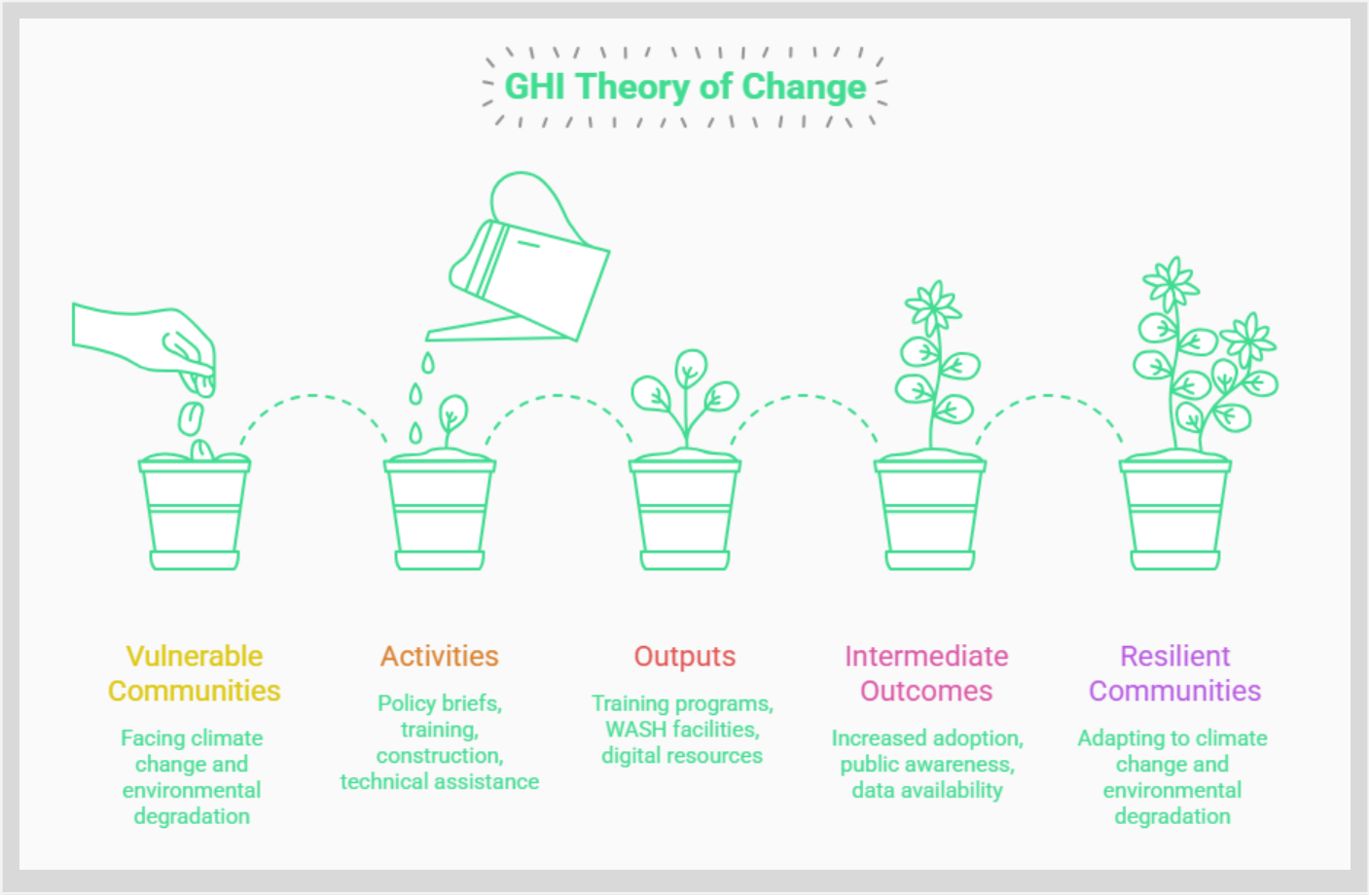

Figure 2: Illustration of GHI's theory of change

2.7 Governance Framework

GHI has a governance structure comprising the governing board, the advisory board, and the management board.

2.7.1. Governing Board

The Governing Board oversees the organisation's sustainability and accountability, overseen by the board chair.

Salma Muhammad
Board Chair

Engr. Sadiq Abubakar Gulma, PMP
Board Member/Executive Director/Co-founder

Abdulmumin Tanko
Board Member/Secretary/Co-founder

Dayo Olaide
Board Member

2.7.2. Advisory Board

The Advisory Board provides expert recommendations on GHI's core focus areas.

Maria Yetano Roche
Focus: SDG 7

Engr. Aliyu Aziz
Focus: SDGs 6 and 13

Natalie Norouzy
Focus: SDGs 11 and 13

2.7.3. Management/Operations Team

Engr. Sadiq Abubakar Gulma, PMP
Executive Director

Samira Nyong
Human Resources Manager

Mustapha M. Dewu
Head of Programs

Faruq Bala
Transport and Logistic Officer

Osaume Charity
Program Assistant

Omotola Logunleko
Program Officer

Bilqis Apole
Executive Assistant to the ED

Hajara Abubakar
Program Assistant

Nasir Umar
Stakeholder Engagement Expert

Samuella Adejo
Program Assistant

3.0 PROGRAMS

3.1 Radio-Internet Climate Technology for Agricultural Resilience (RANETA)

3.1.1 Project Overview

The Radio-Internet Climate Technology for Agricultural Resilience (RANETA) project was delivered by Green Habitat Initiative (GHI) as technical assistance to the Nigerian Meteorological Agency (NiMet) and the Kebbi State Ministry of Agriculture. The intervention addressed a critical gap for smallholder farmers: traditional environmental indicators had become unreliable due to climate change, while scientific weather forecasts rarely reached rural communities. RANETA bridged this gap by transforming NiMet's technical climate data into simple, localized, and actionable advisories delivered through accessible technologies that farmers already trusted, including community radio, SMS, interactive voice response (IVR), and USSD services. The project blended scientific forecasts with indigenous knowledge systems to build trust and effectiveness while establishing a sustainable Agro-Weather Dissemination System (ADS). Successfully completed in August 2025 with a multi-stakeholder close-out workshop involving NiMet, the Nigerian Hydrological Services Agency (NIHSA), the National Council on Climate Change (NCCC), the Federal Ministry of Environment, the Federal Ministry of Agriculture and Food Security, the World Food Programme (WFP), Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL), the Kebbi State Agricultural Development Agency (KADA), National Agricultural Extension Research and Liaison Services (NAERLS,) the Office of the Vice President, the Kebbi State Government, and farmer associations, amongst others. RANETA reached over 45,000 beneficiaries and positioned itself as a national model for climate-smart agriculture, with endorsements for replication and institutionalization. Table I captures key details of the RANETA project.

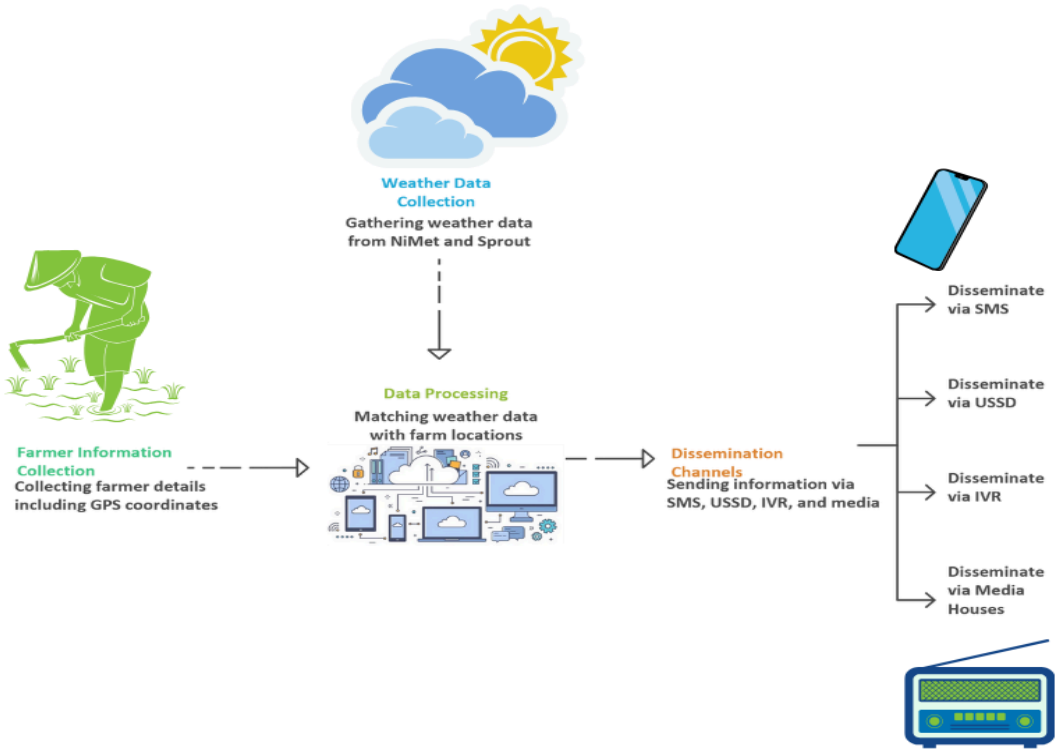

Figure 3: Illustration of the Agro-weather Dissemination System

3.1.2 Objectives

RANETA was designed to empower smallholder farmers with timely, reliable climate information to enhance decision-making and resilience in the face of unpredictable weather. The primary objective was to convert and disseminate NiMet's complex scientific forecasts into clear, farmer-friendly advisories tailored to local contexts and languages. By delivering these through multi-channel platforms such as SMS alerts, IVR voice messages, USSD on-demand updates, and community radio broadcasts, the project aimed to ensure broad access, particularly in remote areas with limited connectivity. The key focus was on integrating indigenous knowledge indicators to increase community trust and adoption rates. Ultimately, RANETA sought to build a robust, sustainable Agro-Weather Dissemination System that reduces crop losses, secures yields, and supports livelihood stability, while creating a scalable framework that could be replicated nationwide to advance climate resilience and food security for vulnerable farming communities.

Table 1: RANETA Project Overview

Project Title	The Radio-Internet Climate Technology for Agricultural Resilience: Harnessing the combined potential of Radio and Internet to enhance agricultural resilience against climate change disasters (RANETA)		
Duration	March 2024 - August 2025 (18 months)	**Location**	FCT and Argungu, Kebbi State, Nigeria
Donor/Funds	Adaptation Fund Climate Innovation Accelerator (AFCIA)		
Facilitator	UNEP - Climate Technology and Center Network (CTCN)		
Project Proponent	Nigerian Meteorological Agency (NiMet)		
Implementing Partner	Green Habitat Initiative (GHI)		
Objective	To translate and transmit NiMet's scientific climate forecasts into simple, localized, and actionable advisories delivered via radio, SMS, IVR, and USSD, integrating indigenous knowledge to strengthen farmer resilience and reduce climate-related crop losses.		
Direct Beneficiaries	100 farmers and 4 extension workers trained on sustainable agricultural practices.	**Indirect Beneficiaries**	Over 45,000 farmers and farmer household in Argungu LGA through knowledge diffusion, reduced loss, and improved crop yield
		Key Infrastructure Delivered	Design and development of the Agroweather Dissemination System (ADS).
Impact Statement	Reached an estimated 5,132 beneficiaries, reduced crop losses from flooding and mistimed planting, improved data-driven decision-making, and positioned RANETA as a nationally endorsed model for climate-smart agriculture.		

3.1.3 Implementation Approach

RANETA adopted a multi-faceted, technology-driven approach that prioritized accessibility, cultural relevance, and stakeholder collaboration to deliver climate information effectively to rural farmers. The project began by partnering closely with NiMet to access and simplify scientific data, converting seasonal climate predictions, rainfall forecasts, and daily/7-day updates into localized, easy-to-understand advisories in local languages. These were disseminated through a blend of low- and high-tech channels tailored to farmers' existing tools: SMS alerts for quick notifications, IVR voice messages for illiterate users, USSD for on-demand queries, and community radio broadcasts for wider group listening. To ensure uninterrupted access, 100 solar-powered radios were distributed to farmers, and 20 smartphones were provided to extension agents for real-time support. Indigenous knowledge was integrated by incorporating traditional indicators, like plant blooming or animal behavior, alongside scientific data to enhance credibility and adoption. Community engagement involved direct training for 100 lead farmers, who then shared information through cluster networks, reaching thousands indirectly. Institutional stakeholders, including government ministries and farmer associations, were involved from the outset. culminating in a high-level close-out workshop in August 2025 that validated results and secured commitments. This inclusive, hybrid model, combining digital innovation with community trust-building, ensured the Agro-Weather Dissemination System was both practical and scalable.

3.1.4 Key Achievements

RANETA delivered a robust set of outputs that established an effective bridge between scientific forecasting and on-the-ground farming practices. Key accomplishments include:

A. Development and deployment of the Agro-Weather Dissemination System (ADS), providing seasonal predictions, rainfall forecasts, and daily/7-day localized updates.

B. Multi-channel delivery mechanisms, including SMS, IVR in local languages, USSD services, and community radio broadcasts.

C. Distribution of 100 solar-powered radios to farmers and 20 smartphones to extension agents, ensuring reliable access even in off-grid areas.

D. Direct reach to 100 farmers and engagement with 23 institutional stakeholders, with over 5,000 indirect beneficiaries through networks and broadcasts.

E. Integration of indigenous indicators with NiMet data, boosting trust and relevance.

F. Successful pilot completion, endorsed at a multi-stakeholder close-out workshop where NiMet adopted RANETA as a national model and agreed to custodianship of the ADS.

These achievements transformed climate information access, with high-level validation from government representatives, including the Senior Special Assistant to the President on Climate Change.

3.1.5 Impact and Results

The RANETA pilot yielded clear improvements in farmer decision-making, resilience, and livelihoods, as evidenced by beneficiary feedback and stakeholder observations. Farmers reported significant reductions in crop losses from flooding and mistimed planting, shifting from reliance on prayer or outdated intuition to data-driven planning. Key impacts include:

A. Enhanced access of weather data for an estimated 5,132 total beneficiaries, enabling timely actions on planting, harvesting, and flood protection

B. Secured yields and reduced loan defaults, particularly in programs like the Rice Anchor Borrowers Scheme, by restoring confidence in farming.

C. Increased adoption due to blending scientific and indigenous knowledge, fostering trust as captured in farmer testimonials like “Before RANETA, we prayed. Now, we plan.”

D. Broader community benefits, such as improved food security and economic stability through better-informed risk management.

The project's success prompted government requests for statewide expansion in Kebbi and positioned it for further funding, demonstrating tangible shifts toward proactive, resilient agriculture in climate-vulnerable areas.

Figure 4: Photo of a farmer listening to his radio set in Argungu LGA, Kebbi State (August 2024)

Figure 5: Dignitaries during the Dissemination and Closure workshop of the RANETA project (26/08/2025)

3.1.6 Challenges and Lessons Learned

While RANETA achieved strong adoption and impact during its pilot phase, several challenges emerged that provided valuable insights for refinement and scaling. Limited mobile network coverage in remote areas occasionally disrupts SMS and USSD delivery, highlighting the critical role of community radio and solar-powered devices as reliable backups. Integrating indigenous knowledge with scientific data required careful facilitation to avoid conflicts in interpretation. particularly when traditional indicators diverged from forecasts. Initial skepticism among some farmers toward technology-based advisories necessitated sustained community engagement to build trust. Key lessons learned emphasized the importance of hybrid delivery channels, combining digital tools with low-tech options like radio, to ensure inclusivity for low-literacy and off-grid users. Blending indigenous and scientific knowledge proved essential for credibility,

with farmer involvement in advisory design accelerating acceptance. The project also underscored the value of early institutional buy-in, as demonstrated by the close-out workshop, which secured commitments for sustainability.

3.1.7 Sustainability

RANETA was structured with built-in mechanisms to ensure the Agro-Weather Dissemination System (ADS) endures and expands independently, transitioning seamlessly from pilot to institutional ownership. These elements create a self-reinforcing framework supported by government commitment and diversified funding pathways:

A. **Institutional Custodianship by NiMet:** NiMet formally endorsed RANETA as a national model and agreed to assume long-term custodianship of the ADS, ensuring ongoing access to scientific data and integration into official forecasting processes.
B. **Kebbi State Government Leadership:** The state government is committed to sustaining and extending the system statewide, leveraging local resources and extension networks for maintenance and dissemination.
C. **Funding Pathways for Expansion:** Secured interest in $50,000 from the World Food Programme (WFP) for replication in Sokoto and Katsina States, alongside recommendations for green bonds, public-private partnerships (PPPs) with insurance providers, and donor support.
D. **Integration of Additional Features:** Plans to incorporate early flood warnings from NIHSA, crop insurance triggers, and digital market linkages, enhancing the system's value and attracting sustained investment.
E. **Community and Network Embedment:** Established farmer clusters, lead farmers, and extension agents continue dissemination through trusted channels, with solar radios and smartphones providing durable tools for ongoing access.

F. **National Scale-Up Roadmap:** Stakeholder agreements outline replication across states and potential nationwide deployment, positioning RANETA within broader climate resilience frameworks.

This multi-layered approach, rooted in institutional anchoring, diversified financing, and community integration, ensures the system remains operational, relevant, and expandable long after the pilot.

3.1.8 Conclusion

The RANETA project has powerfully illustrated how targeted, accessible climate information can empower smallholder farmers to shift from reactive survival to proactive planning, reducing risks and restoring confidence in agriculture amid climate uncertainty. By bridging scientific forecasts with indigenous knowledge and delivering them through trusted, multi-channel platforms, it reached thousands in Kebbi State, minimized crop losses, and fostered resilient decision-making. The pilot's completion, marked by strong endorsements and commitments from NiMet, government partners, and stakeholders, has positioned RANETA as a scalable national model ready for expansion. Despite challenges like connectivity constraints, its inclusive approach and institutional handover have secured a lasting impact, particularly for vulnerable rural communities. RANETA exemplifies Green Habitat Initiative's commitment to providing innovative, technology-enabled solutions that enhance climate adaptation, food security, and sustainable livelihoods across Nigeria.

3.2. Empowering Communities with Sustainable Agricultural Systems (EMSAS)

3.2.1 Project Overview

The Empowering Communities with Sustainable Agricultural Systems: Piloting a Solar-Powered Hydroponics System (EMSAS-Hydroponics) was a 12-month technical assistance project implemented by Green Habitat Initiative (GHI) in Anchau for the Kubau Local Government Area (LGA) of Kaduna State, Nigeria. Funded by the European Union through the Climate Technology Centre and Network (CTCN) under the EU's Multi-Annual Indicative Programme for Peace, Stability, and Conflict Prevention (2021-2027), the project addressed intertwined challenges of climate change, insecurity, and food insecurity in conflict-affected communities. By introducing solar-powered hydroponic farming as a climate-resilient alternative to traditional soil-based agriculture, EMSAS aimed to reduce dependency on erratic weather, minimize land-related conflicts, and enhance year-round vegetable production in a region plagued by water scarcity, soil degradation, and farmer-herder tensions. The initiative established a fully functional demonstration screenhouse and engaged local farmers, youth, women, and extension officers through training and community-led activities across four wards: Kubau, Zuntu, Dutsen Wai, and Anchau. Key details of the EMSAS-Hydroponics project are captured in table 2.

Figure 6: Exterior view of the hydroponics screenhouse (8×40 meters) - March 2025 (Photo credit: Miranda Rikki Tasker)

Table 2: EMSAS-Hydroponics Project Overview

Project Title	Empowering Communities with Sustainable Agricultural Systems: Piloting a Solar-Powered Hydroponics System (EMSAS-Hydroponics)		
Duration	May 2024 – April 2025 (12 months)	**Location**	Anchau, Kubau Local Government Area, Kaduna State, Nigeria (4 wards: Anchau, Dutsen Wai, Kubau, Zuntu)
Donor	European Union – Climate Technology Centre & Network (EU-CTCN)		
Facilitator	UNEP - Climate Technology and Center Network (CTCN)		
Project Proponent	Kubau Local Government Authority (LGA), Kaduna State.		
Implementing Partner	Green Habitat Initiative (GHI)		
Direct Beneficiaries	79 farmers (35% youth, 34.7% women) were trained on hydroponics farming and sensitized on conflict management. 10 beneficiaries (artisans and extension agents) were trained as trainers on hydroponics system construction and farming. 12 community cooperatives formed.	**Indirect Beneficiaries**	~15,000 people in Kubau LGA through knowledge diffusion, reduced conflict, and improved vegetable availability
		Key Infrastructure Delivered	One 8 × 40 m (320 m²) solar-powered hydroponic screenhouse (Equivalent production capacity of ~1,000 m² of traditional farmland)
Impact Statement	In just 12 months, EMSAS transformed a conflict-affected community in Kaduna State into Nigeria's first fully operational solar-powered hydroponics demonstration hub, proving that small-scale soilless farming can deliver food security, higher incomes, and peace-building benefits even in the toughest environments.		

3.2.2 Objectives

The primary objective of EMSAS-Hydroponics was to pilot a small-scale, solar-powered hydroponics system to demonstrate its feasibility as a sustainable agricultural solution in resource-constrained and conflict-prone areas. Specifically, the project sought to enhance agricultural resilience by enabling controlled, soilless crop cultivation that conserves water and operates independently of soil quality or seasonal rainfall. It aimed to improve food security and farmer livelihoods through higher yields and reduced crop failures, while building community capacity to adapt to climate variability. Additionally, by decreasing reliance on expansive arable land, the initiative worked to mitigate resource-based conflicts, such as grazing disputes and land tensions. Broader goals included fostering local ownership of the technology, equipping extension services with new skills, and laying the groundwork for scaling hydroponics as a transformative tool for economic empowerment and environmental sustainability in northwestern Nigeria.

3.2.3 Implementation Approach

EMSAS-Hydroponics employed a community-centered, participatory approach that combined technical innovation with grassroots engagement. The project began with baseline assessments and stakeholder consultations, followed by the design and construction of a solar-powered hydroponics screenhouse featuring Nutrient Film Technique (NFT) and trough systems, complete with A-shaped frames, PVC grow trays, seedling setups, underground water tanks, and plumbing powered by a solar borehole. Training formed the core of implementation: farmers, youth, women, and 35 extension officers participated in hands-on sessions, demonstrations, and farmer field days at the pilot site, shifting extension methods toward practical, field-based learning rather than traditional workshops. A mixed-methods endline assessment, involving surveys of 326 farmers, key informant interviews, and 12 focus group discussions, provided data for evaluation and refinement. Community cooperatives were

encouraged to support adoption, while partnerships with local authorities ensured security and alignment with regional needs. Throughout, the project emphasized inclusivity, targeting vulnerable groups and integrating conflict-sensitive practices to promote peaceful resource use.

3.2.4 Key Achievements

The EMSAS-Hydroponics project marked several significant milestones that established hydroponics as a practical innovation in Kubau LGA. Most notably, it successfully constructed and commissioned a solar-powered hydroponics screenhouse, serving as a permanent demonstration site. Key features of this facility include:

A. Nutrient Film Technique (NFT) systems with three A-shaped frames and 100-meter PVC grow trays for efficient nutrient delivery to leafy crops.

B. Trough systems supported by underground water tanks and solar-powered borehole irrigation, ensuring a reliable water supply in a water-scarce region.

C. Seedling trays on galvanized steel frames, enabling staggered production for multiple crop cycles.

This infrastructure supports around 550 plant stands and was officially handed over for local use in December 2024. Beyond physical deliverables, the project dramatically increased hydroponics awareness from just 13.29% at baseline to 53.68% among farmers, with 84.66% now expressing strong interest in adoption. Hundreds of beneficiaries, including youth and women, benefited from hands-on training and demonstrations, while extension officers adopted more effective field-based methods. The pilot also validated the economic potential, projecting annual revenues of ₦8.9 million per unit with a rapid payback period, paving the way for community cooperatives and sustained local management.

Figure 7: Beneficiaries during a practical session on hydroponics trough system training - March 2025 (Photo credit: Miranda Rikki Tasker)

Figure 8: A beneficiary using the DWC hydroponics technique to grow tomatoes in her home - March 2025 (Photo credit: Miranda Rikki Tasker)

3.2.5 Impact and Results

The project's effects were evident in improved livelihoods, resilience, and community dynamics, as captured through the endline assessment. Farmers showed greater economic dependence on agriculture, with key shifts including:

A. An increase in those deriving more than 50% of income from farming (from 48.25% to 55.52%).

B. Higher earners, with the proportion making over ₦500,000 annually rising from 32.87% to 40.49%.

Land use patterns evolved to favor smaller plots, with farmers on less than one hectare rising from 4.3% to 30.2%, demonstrating hydroponics' efficiency in constrained spaces. Climate awareness reached 90.49%, driving adoption of adaptations like:

A. Adjusted planting dates (practiced by 50.31%).

B. Water-saving irrigation and drought-resistant varieties.

Conflict incidents related to farming decreased from 29.37% to 26.07%, with reductions in grazing disputes and land tensions attributed to less reliance on open fields. Extension services were strengthened, with officers reporting 68.57% improved handling of challenges and a surge in practical engagement tools. Overall, these changes empowered over 300 surveyed farmers and highlighted hydroponics' benefits for year-round, resource-efficient production in vulnerable areas.

3.2.6 Challenges and Lessons Learned

While progress was substantial, certain obstacles persisted and offered critical insights. Primary barriers included:

A. Limited local technical experts to construct hydroponics systems. Technical experts had to be sought for in the cities.

B. Limited access to a trough system that had to be transported from the southern part of Nigeria.

Cultural attachment to traditional methods and risk aversion also slowed uptake, particularly among older farmers, while regional security required ongoing adaptations. Key lessons emphasized the value of practical, repeated exposure; field demonstrations and peer success stories proved far more persuasive than lectures. Integrating affordable financing options, like cooperatives or subsidies, from the start could accelerate adoption. Stronger private partnerships for inputs and early governance involvement enhanced security and buy-in. Ultimately, these experiences underscored that sustained, hands-on capacity building and localized solutions are vital for overcoming resistance in similar climate- and conflict-stressed contexts.

Figure 9: Cross-section of beneficiaries during a practical session on harvesting in the NFT hydroponics technique - March 2025 (Photo credit: Miranda Rikki Tasker)

3.2.7 Sustainability

To ensure the long-term viability of the EMSAS-Hydroponics initiative, the project incorporated several interconnected mechanisms designed to transition ownership to local stakeholders and maintain operational momentum. These elements collectively promote self-reliance, financial incentives, and institutional support:

A. **Handover to Kubau Local Government Authority Under a Tripartite Management Arrangement:** The solar-powered screenhouse and all associated infrastructure were formally transferred to Kubau Local Government Authority and Kaduna Agricultural Development Agency (KADA) under a tripartite management arrangement in which GHI, KADA, and Kubau LGA will play specific roles to ensure the sustainability of the constructed hydroponics system, which will continue to serve as a training centre for nearby communities. A PPP model was established, allowing co-management with credible private entities, cooperatives, or individuals through formal agreements that clearly define roles, maintenance responsibilities, and benefit-sharing. This structure enhances efficiency and accountability and reduces risks of mismanagement by leveraging both public oversight and private sector expertise.

B. **Beneficiary Access and Profit-Sharing Models:** Trained farmers, with priority given to youth and women who completed project training, gain access through structured leasing or cooperative systems. Profit-sharing agreements between the LGA and beneficiaries incentivize active participation and responsible management, ensuring revenues from produce sales are reinvested into system upkeep and community benefits.

C. **Local Maintenance and Technical Capacity:** A dedicated team of local artisans, trained during the project, handles repairs and routine servicing. Initial post-handover support includes remote technical assistance and periodic monitoring visits to address emerging issues, building confidence in independent operation.

D. **Input Supply Chain Development:** Partnerships were initiated with private suppliers to secure reliable, affordable access to essential inputs like nutrient solutions, seedlings, and solar components, preventing dependency on external aid and supporting consistent production.

E. **Center of Excellence for Ongoing Training:** The facility serves as a regional hub for demonstrations, workshops, and "train-the-trainer" sessions, enabling continuous knowledge transfer to new farmers and extension officers from Kubau and beyond, fostering a growing network of skilled practitioners.

F. **Alignment with State-Level Scaling Roadmap:** The pilot integrates into Kaduna State's broader hydroponics roadmap, positioning it as a model for replication in other LGAs and encouraging policy support, further investments, and institutional backing for sustained growth.

These measures create a robust, community-owned framework that generates income, builds local expertise, and aligns with larger agricultural strategies, ensuring the hydroponics system remains operational and impactful well into the future.

3.2.8 Conclusion

The EMSAS-Hydroponics project has successfully demonstrated the transformative potential of solar-powered hydroponic farming in addressing climate vulnerability, food insecurity, and resource conflicts in Kubau LGA. Through the establishment of functional infrastructure, significant gains in awareness and skills, and tangible improvements in incomes, adaptive practices, and community resilience, was achieved. While challenges such as costs and knowledge gaps persist, the project's emphasis on local ownership, practical training, and multi-stakeholder partnerships has delivered lasting value, particularly for youth, women, and smallholder farmers. As a scalable and replicable model, EMSAS advances GHI's mission of delivering innovative, climate-smart solutions that strengthen livelihoods and promote environmental stewardship in Nigeria's most vulnerable region.

3.3 VRCC

3.3.1 Project Overview

The Virtual Reality for Climate Change (VRCC) project is Green Habitat Initiative's bold and innovative use of immersive 360° virtual reality to make the lived reality of climate change in Nigeria emotionally undeniable. In 2025, GHI's team carried out intensive field filming in climate-vulnerable communities, primarily in Sokoto State and other parts of northern Nigeria, capturing powerful first-person testimonies and stark environmental footage of desertification, prolonged drought, erratic rainfall, and recurring floods. The resulting raw 360° material is currently in professional post-production, where it is being transformed into a high-impact 5–10 minute flagship VR experience, accompanied by a short teaser for social media and versions optimized for both VR headsets and standard online platforms. VRCC is designed first and foremost as a targeted advocacy tool: by virtually transporting policymakers into affected communities, it aims to generate deep empathy and accelerate political and budgetary action on climate adaptation and resilience. Table 3 captures key details of the VRCC project.

Figure 10: A stakeholder experiencing the virtual reality content of the draft VRCC story from Sokoto highlighting the effects of drought and desertification during the 2025 GHI open house and multimedia exhibition (5th July 2025)

Table 3: VRCC Project Overview

Project Title	Virtual Reality for Climate Change (VRCC)		
Duration	2025 – ongoing	**Location**	Abuja, FCT
Donor/Sponsor	Green Habitat Initiative		
Implementer	Green Habitat Initiative (GHI)		
Direct Beneficiaries	120 federal and state lawmakers and senior executives, selected secondary School and tertiary students	**Indirect Beneficiaries**	Climate-vulnerable communities (women, youth, farmers, and pastoralists); General public (500,000+ views)
		Key Infrastructure Delivered	5–10 minute flagship VR experience; 360° media library; VR Advocacy Kit (headsets + pre-loaded content)
Impact Statement	Converting climate awareness into political action and budgetary accountability by virtually transporting decision-makers into affected communities to generate deep empathy.		

3.3.2 Objectives

VRCC is built around three clear and interconnected objectives:

A. Document authentic climate impacts through immersive, high-resolution 360° footage and personal stories from flood- and drought-affected households, ensuring the voices of the most vulnerable are seen and heard by those with the power to act.

B. Create a compelling, emotionally resonant VR experience that dramatically raises awareness and shifts perspectives among key decision-makers and the wider public about the human cost of climate change in Nigeria.

C. Drive concrete policy and programmatic change by deploying the finished VR content in carefully targeted advocacy sessions with federal and state legislators, executive officials, ministries, and development partners, with the explicit goal of influencing legislation, budget lines, and priority resilience programs.

3.3.4 Implementation Approach

The project is being delivered in two tightly coordinated phases:

Phase 1: Field Capture (Completed 2025): GHI deployed specialist 360° camera teams to selected communities in northern Nigeria, recording extended interviews, daily life sequences, and environmental devastation in ultra-high resolution, resulting in a rich library of raw immersive footage.

Phase 2: Post-Production & Advocacy (Ongoing 2025–Early 2026): The raw material is currently being professionally edited, with voiceovers, subtitles, immersive sound design, and light interactive elements added to maximize emotional impact and accessibility. Final outputs will be fully compatible with mainstream VR headsets and YouTube/social media 360° players.

Phase 3: In the meantime, GHI's advocacy team has completed detailed audience mapping of relevant federal and state legislative committees (Climate Change, Environment, Renewable Energy, SDGs, Agriculture, etc.) and key MDAs. Closed-door VR screening sessions are already being scheduled in Abuja and selected state capitals immediately after content approval, followed by a broader public launch combining physical headset experiences with online distribution.

3.3.5 Key Achievements (as of December 2025)

- **A.** Completed intensive 360° field filming in multiple climate-vulnerable communities in Sokoto and surrounding northern states, capturing over 50 hours of raw immersive footage featuring personal testimonies from women, youth, farmers, and pastoralists directly affected by desertification and flooding.
- **B.** Produced a comprehensive library of high-resolution environmental sequences showing advancing dunes, dried water points, abandoned farmlands, and flood-damaged homes.
- **C.** Finalised detailed audience mapping covering 15 priority House and Senate committees, 10 federal MDAs (including the National Council on Climate Change and the Ministries of Environment, Agriculture, and Water Resources), and equivalent state-level bodies.
- **D.** Secured calendar slots for closed-door VR advocacy screenings with the House Committee on Climate Change, the Senate Committee on Ecology & Climate Change, and the Department of Climate Change in early 2026.
- **E.** Post-production is on schedule: a rough cut was delivered and reviewed, a refined version is expected before Christmas 2025, and final mastering and beta testing are set for January 2026.

3.3.6 Impact and Results (Emerging & Anticipated)

Even before public launch, VRCC is already generating strong anticipation and early influence:

A. Pilot screenings of raw/select edited clips with selected reviewers are enriching the process.

B. The project has positioned GHI as a pioneer in immersive climate advocacy in Nigeria, attracting interest.

Expected impact once fully deployed (Q1-Q4 2026):

A. Direct exposure of at least 120 federal and state lawmakers and senior executives to the VR experience

B. Targeted follow-up advocacy aiming to secure new or increased budget lines for community-level adaptation in the 2026 appropriation cycle.

C. Wider public reach through online 360° versions and social media teasers is expected to exceed 500,000 views within the first six months.

3.3.7 Challenges and Lessons Learned

Implementing immersive technologies in fragile and remote contexts requires flexibility and thoughtful design. Field deployment highlighted the need for stronger operational buffers, given the complexity of working in hard-to-reach and sometimes insecure locations. The technical intensity of VR production also underscored the importance of planning for heavier data and post-production demands, as well as designing experiences that prioritise user comfort and accessibility.

A key lesson emerged around engagement strategy: initiating advocacy and stakeholder conversations early, before content is fully finalised, builds anticipation, aligns decision-makers, and ensures momentum at launch. This approach shifts VR from being a finished product to becoming a catalyst for dialogue, ownership, and timely action.

3.3.8 Sustainability

VRCC has been deliberately designed for long-term reuse and impact beyond the initial campaign:

- **A.** A lightweight "VR Advocacy Kit" (headsets + pre-loaded content) is readily available for easy deployment to the targeted audience.
- **B.** The online 360° versions will remain freely accessible on YouTube and GHI platforms with open embedding rights for partners, schools, and CSOs.
- **C.** Content will be periodically refreshed with new community stories (2027–2028) using the same workflow, ensuring the experience stays current as climate impacts evolve.
- **D.** Partnerships already initiated with the National Council on Climate Change and NiMet will allow periodic integration of updated scientific overlays and forecasts.

3.3.9 Conclusion

The Virtual Reality for Climate Change (VRCC) project represents a bold leap in Nigerian climate advocacy: moving from reports and statistics to an unforgettable, empathy-driven encounter with the human face of the crisis. By placing policymakers and citizens directly into the homes and farmlands of climate-affected communities, VRCC is not just telling the story; it is making people feel it. With filming complete and post-production nearing final stages, 2026 will see the rollout of one of the most powerful advocacy tools GHI has ever deployed. When legislators remove their headsets with tears in their eyes and immediately ask, "What can we do?", the project will have achieved its ultimate purpose: converting awareness into action and inaction into accountability. VRCC is more than a film; it is a catalyst for the urgent, equitable climate response Nigeria's most vulnerable communities deserve.

3.4 Farmer Information Management System (agriFIMS)

3.4.1 Project Overview

In November 2025, Green Habitat Initiative (GHI) launched the deployment of the Farmer Information Management System (agriFIMS), a transformative digital initiative aimed at modernizing farmer data management for the State Ministries of Agriculture in Sokoto and Katsina. Funded by the World Food Programme (WFP), this fast-tracked four-month project (November 2025 – February 2026) addresses longstanding inefficiencies identified through a rigorous needs assessment: ministries relied on fragile Excel spreadsheets, manual paper-based processes, and error-prone data entry by extension agents, resulting in duplicates, data loss, isolation from partner systems, and non-compliance with the Nigeria Data Protection Regulation (NDPR). agriFIMS introduces a unified, mobile-enabled, cloud-based platform to streamline operations across both states, enabling real-time data capture, secure sharing, and advanced analytics. By replacing outdated tools with a robust system that includes geo-tagging, live dashboards, and integration with climate forecasts, the project seeks to enhance planning, reduce food insecurity, and support climate-smart agriculture in Northwest Nigeria, with full ownership transferring to the state ministries upon completion. Table 4 captures key details of the agriFIMS project.

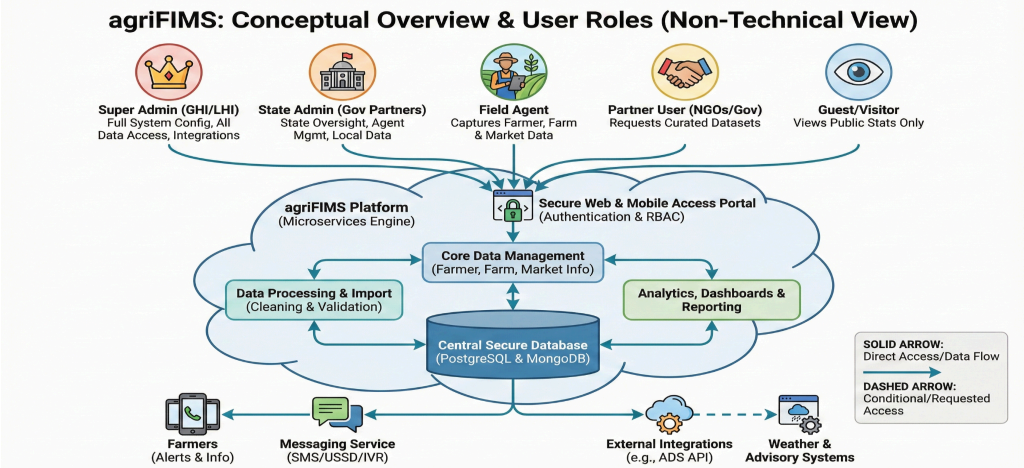

Figure 11: High-Level Architecture of the agriFIMS

Table 4: agriFIMS Project Overview

Project Title	Farmer Information Management System (agriFIMS) in Sokoto and Katsina States		
Duration	November 2025–February 2026 (Ongoing)	**Location**	Sokoto and Katsina State, Nigeria
Donor/Partner	World Food Program (WFP)		
Facilitator	Life Helpers Initiative (LHI)		
Implementing Partner	Green Habitat Initiative (GHI)		
Objective	To digitize farmer data management through a secure, NDPR-compliant, cloud-based platform enabling real-time data capture, analytics, and integration with climate early-warning systems.		
Direct Beneficiaries	20 ministry officials and 10 extension agents to be trained on agriFIMS operations and maintenance.	**Indirect Beneficiaries**	10,000-15,000 registered farmers; state agricultural institutions
		Key Infrastructure to be Delivered	Cloud-based agriFIMS platform; mobile apps.
Impact Statement	agriFIMS replaces fragmented paper and Excel systems with a modern digital platform, strengthening agricultural planning, food security, and climate resilience in Northwest Nigeria.		

3.4.2 Objectives

The agriFIMS project was designed to deliver a comprehensive digital overhaul that empowers state ministries with reliable, actionable farmer data while ensuring long-term institutional resilience. Its core objective is to establish a single, cloud-based platform serving both Sokoto and Katsina States, with mobile accessibility for field operations and NDPR-compliant security. The system targets the creation of at least 10,000 validated, de-duplicated, and geo-tagged farmer profiles, eliminating data fragmentation and inaccuracies across ministries. Building on the success of the RANETA project, agriFIMS is architected to integrate seamlessly with the AgroWeather Dissemination System (ADS), enabling farmer records to link directly with hyper-local weather forecasts, advisories, and early-warning alerts. This integration transforms static farmer registries into dynamic climate-intelligence systems, ensuring that farmers receive timely, location-specific information that supports day-to-day decision-making and climate resilience. The initiative also prioritises institutional capacity, with training for 100 ministry officials and 300 extension agents to independently operate, maintain, and expand the platform. Additional objectives include live operational dashboards, secure automated data exchange with partners such as WFP and LHI, and full regulatory compliance. Ultimately, agriFIMS provides real-time visibility for evidence-based agricultural planning, enables targeted interventions, and establishes a scalable, climate-aware digital foundation that strengthens food security and rural development across the region.

3.4.3 Implementation Approach

agriFIMS employs a rapid, collaborative, and user-centered implementation strategy to achieve swift digital transformation within the tight four-month timeline. The project commenced with a detailed needs assessment in October–November 2025, engaging ministry stakeholders to customize the system precisely to their workflows. GHI is currently developing the cloud-based platform with mobile applications tailored for offline-capable field data capture by extension

agents. The rollout features pilot registrations with real-time testing to refine features like automatic duplicate detection and geo-tagging. Partnerships with the state ministries ensured buy-in, while integration planning for climate data and partner exchanges progressed in parallel. This phased, hands-on approach, combining procurement, capacity building, and iterative testing, prioritizes immediate usability, data accuracy, and seamless adoption by frontline users in resource-constrained environments.

3.4.4 Moving Forward (December 2025 – February 2026)

With the foundational phase completed ahead of schedule, the remaining three months focus on scaling, integration, and institutionalization:

A. **Live Dashboard & Early-Warning Integration:** A live dashboard of farmer database will be realized, showing registered farmers and market analytics. The agriFIMS platform will also be linked with the agroweather dissemination at NiMet to allow registered farmers access to seasonal climate predictions as well as localized agro-related weather forecasts.
B. **Final User Support & Refresher Training:** Two rounds of on-site support visits and a help-desk hotline will ensure any emerging issues are resolved quickly.
C. **Official Handover Ceremonies:** Joint events in the Sokoto and Katsina capitals are scheduled for late February 2026, during which GHI will transfer system usage and long-term support documentation to the respective Ministries of Agriculture.

The project remains firmly on track and in several areas is running ahead for full completion and handover by 28 February 2026.

3.4.5 Conclusion

The agriFIMS deployment marks a turning point for agricultural governance in Sokoto and Katsina States. In just the first month, a decades-old paper-and-Excel system has been replaced by a modern, mobile-first, NDPR-compliant platform that is already delivering live maps, blocking duplicates, and restoring trust in official farmer data. By February 2026, two state ministries will possess a unified, cloud-based system managing validated profiles of thousands of smallholder farmers, integrated with climate early warnings and linked directly to national and international partners.

This ongoing initiative exemplifies Green Habitat Initiative's 2025 commitment to rapid, high-impact digital solutions that place accurate data, institutional strength, and farmer dignity at the centre of rural development. Once handed over, agriFIMS will continue to evolve under state ownership, serving as a scalable blueprint for digital transformation across Nigeria's agricultural sector and contributing directly to climate resilience, food security, and inclusive growth in the northwest for years to come.

4.0 BUILDING A CULTURE OF EXCELLENCE (IMPACT AND ACHIEVEMENTS)

4.1 GHI Webinars and Seminars

At Green Habitat Initiative (GHI), webinars and seminars, whether in-person or online, serve as vital tools to advance our mission across Nigeria. These activities play a key role in achieving impact through three strategic pillars: capacity building, knowledge mobilization, and stakeholder engagement.

4.1.1 Capacity Building and Resilience

These events strengthen local technical skills and foster self-sufficiency in implementing climate-smart initiatives.

A. **Training & Technology Transfer:** Seminars provide hands-on guidance for Extension Agents and Ministry Officials on tools like the agriFIMS platform, ensuring full adoption and technical competence. This reduces reliance on external support and builds sustainable operational capacity.
B. **Climate-Smart Agriculture (CSA) Guidance:** Webinars deliver real-time weather forecasts and best-practice CSA methodologies to farmers, enabling timely decisions that reduce risks and prevent crop losses.
C. **Localized Contextualization:** Integrating scientific models with local and indigenous knowledge ensures that solutions are culturally relevant, trusted, and practical for the communities we serve.

4.2.1 Knowledge Mobilization and Advocacy

GHI uses webinars and seminars to position itself as a thought leader and bridge between policy and practice in environmental management.

A. **Policy Advocacy:** Events provide a platform to share field data and measurable outcomes with sub-national and national officials, securing long-term institutional support for scaling initiatives.
B. **Public Awareness and Education:** Webinars raise awareness about pressing environmental challenges, such as heat resilience, air quality, and food security, mobilizing public understanding and support for green initiatives.
C. **Data Validation and Feedback Loops:** Sharing preliminary findings from projects like the Heat Resilience Network allows experts and academic partners to validate our methods, ensuring rigorous and evidence-based project design.

4.3.1 Partnership and Resource Mobilization

These events are crucial for strengthening relationships with national and international partners and ensuring sustainable growth.

A. **Demonstration of Impact:** Webinars and seminars allow GHI to clearly communicate the quantitative and qualitative results of projects to partners such as WFP and LHI, building confidence and securing continued support.
B. **Donor & Partner Engagement:** They act as touchpoints for transparent reporting on progress, challenges, and financial stewardship, facilitating multi-partner coordination across states.
C. **Strategic Growth and Replication:** Showcasing successful models, such as agriFIMS deployment, attracts new partners and funding opportunities, enabling replication and scale-up across additional regions.

Through these pillars, GHI's webinars and seminars are more than knowledge-sharing events, they are strategic instruments that strengthen organizational capacity, influence policy, and expand impact across Nigeria.

4.2 Internal Staff Monthly Learning

4.2.1 Overview

To ensure that Green Habitat Initiative (GHI) remains a dynamic, efficient, and future-ready organization, it is essential to invest in the growth and development of our internal teams. Recognizing that our staff are at the heart of every successful project and initiative, GHI established a structured monthly internal learning program. This initiative is designed to foster a culture of continuous learning, collaboration, and innovation across all departments.

The program aims to address key organizational needs by strengthening team cohesion, enhancing knowledge sharing, building internal capacity, preparing for evolving workforce trends, and improving operational efficiency. Through focused learning sessions, staff gain practical skills, exchange insights, and develop strategies that not only enhance individual performance but also strengthen the overall effectiveness of the organization.

By intentionally aligning these learning activities with GHI's strategic goals, the organization ensures that every team member is equipped to contribute meaningfully to achieving our mission, engaging stakeholders effectively, and responding to the challenges and opportunities of a rapidly evolving development landscape.

Objectives

A. Strengthen Team Cohesion: Encourage collaboration, cross-departmental learning, and collective problem-solving.

B. Enhance Knowledge Sharing: Equip staff with practical skills in budgeting, communications, and project management.

C. Develop Internal Capacity: Improve staff ability to design and present solutions effectively to funders, stakeholders, and communities.

D. Future Workforce Readiness: Prepare management and staff to integrate Gen Z perspectives into organizational culture and operations.

E. Operational Efficiency: Streamline workflows and decision-making processes through transparent communication and structured knowledge sharing.

4.2.2 Lessons Learned

A. Empowerment Through Participation: Staff gain confidence and ownership of organizational knowledge when they actively prepare and facilitate sessions.

B. Budgeting & Resource Optimization: Understanding budgeting principles enhances departmental efficiency, ensuring maximal impact from donor funding.

C. Effective Communication: Open, transparent communication fosters trust, smooth workflow, and organizational synergy.

D. Pitching Skills Matter: Clear, visually supported presentations improve external stakeholder engagement and organizational visibility.

E. Generational Awareness: Educating the team on Gen Z workforce dynamics positions GHI for long-term operational adaptability and future talent management.

4.2.3 Impact

A. Over 90% staff participation in all sessions across the year.

B. 100% of departments reported improved budgeting and resource management practices.

C. 30% reduction in project coordination delays due to improved internal communications.

D. Staff confidence increased in presenting solutions to funders and stakeholders.

E. Knowledge sharing strengthened a culture of collaboration and team spirit.

F. Management is better prepared to integrate Gen Z perspectives and enhance organizational adaptability. Workflows and decision-making processes became more transparent, agile, and inclusive.

4.2.4 Conclusion

GHI's monthly internal learning sessions have proven to be a strategic investment in human capital, promoting a knowledgeable, empowered, and cohesive workforce. By systematically developing staff skills in budgeting, communication, pitching, and future workforce management, GHI has enhanced operational efficiency, internal cohesion, and readiness for sustainable growth, ensuring the organization continues to deliver maximum impact to the communities it serves.

4.4 Staff Mentorship Program

In 2025, GHI launched its Pathways to Growth Staff Mentorship Program as a strategic initiative aimed at strengthening professional development and facilitating effective knowledge transfer across the organisation. The program was designed to deliberately connect experienced staff with junior colleagues, creating structured opportunities for guidance, skills development, and the sharing of institutional expertise.

The initial phase of the program successfully established three mentor–mentee pairings, marking an important first step in cultivating a culture of continuous learning and support. Through these relationships, junior staff gained access to practical insights, career advice, and cross-functional perspectives that enhanced their confidence and professional competence, while mentors were able to refine their leadership and coaching skills.

Overall, the Pathways to Growth initiative reflects GHI's strong commitment to building internal capacity, nurturing future leaders, and promoting collaboration across departments. By investing in people and preserving institutional memory, the program contributes to long-term organisational resilience, improved staff engagement, and sustained performance.

4.6 Impact, Awards, and Achievements

Over the last 365 days, Green Habitat Initiative (GHI) sustained and expanded its leadership in climate innovation, community empowerment, and sustainable development across Nigeria.

Through strategic partnerships, technology-driven interventions, and community-centered programming, GHI delivered measurable outcomes that advanced environmental resilience, food security, and climate adaptation throughout the year.

4.6.1 Impact Highlights

A. Climate-Smart Agriculture & Resilience

- Successfully concluded the Empowering Communities with Sustainable Agricultural Systems (EMSAS-Hydroponics) project with a high-visibility end-of-project presentation under the theme Innovation for Climate-Resilient Agriculture, attracting government officials, experts, and partners to reflect on progress and plan scaling pathways.

- Trained three cohorts of beneficiaries in hydroponic farming in Kubau LGA, Kaduna State, equipping rural farmers with practical skills to enhance food production and climate resilience.

B. Climate Technology & Extension Services

- Implemented the RANETA Project (Radio-Internet Climate Technology for Agricultural Resilience), strengthening capacities of local extension officers, radio broadcasters, and community leaders to interpret and utilise climate data for improved agricultural decision-making.

C. Community Engagement & Capacity Building

- Convened multiple workshops and demonstrations enabling rural stakeholders to engage with climate-smart tools, fostering local ownership of adaptation strategies.

4.6.2 Awards & Recognition

A. Staff Excellence & Internal Recognition

- GHI staff received formal recognition, including medals for outstanding contributions for their dedication to the successful implementation of the EMSAS-Hydroponics initiative, underscoring internal excellence and teamwork across project delivery.

B. External Impact Award

- Green Habitat Initiative (GHI) was awarded a certificate in recognition of its contribution to agricultural development and food security in Kaduna State and Nigeria at large. Additionally, a plaque of recognition as the 2024/2025 Climate Champion of Kaduna State by the National Council on Agriculture and Food Security during the 47th National Council on Agriculture and Food Security, in recognition of the organization's outstanding contribution to agricultural development and food security in Kaduna State and Nigeria at large. The award specifically acknowledges GHI's leadership in promoting climate-smart agricultural practices that reduce greenhouse gas emissions while strengthening adaptation to climate change.

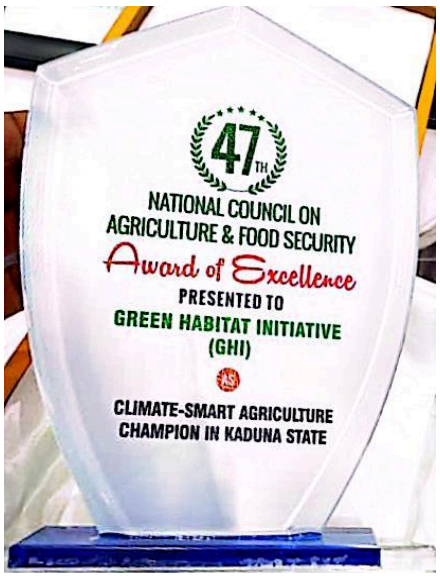

Figure 12: An "Award of Excellence" presented to GHI as the 2025 Climate-smart Agriculture Champion in Kaduna State in recognition of its work on the EMSAS-Hydroponics project. - November 2025

Figure 13: A "Certificate of Recognition" presented to GHI in recognition of its outstanding contribution to Agriculture and Food Security in Kaduna State and Nigeria during the 47th National Council on Agriculture and Food Security - November 2025

- GHI was also honored with an Impact Award from the Farm Eaze Global Initiative, highlighting the organisation's measurable contribution to sustainable community development and resilience building in rural Nigeria.

Figure 14: Dr. Habib Adamu Isa (middle) flanked by His Excellency, the Kaduna State Governor, Mal. Uba Sani (Left) receives a certificate of recognition on behalf of GHI from the Honorable Minister of Agriculture and Food Security, Senator Abubakar Kyari (right), during the 47th National Council on Agriculture and Food Security - November, 2025

C. Strategic Partnerships & Convenings

- Continued collaboration with key climate and agricultural partners, including the Nigerian Meteorological Agency (NiMet), Adaptation Fund Climate Innovation Accelerator (AFCIA), Climate Technology Centre & Network (CTCN), National Council on Climate Change (NCCC), World Food Programme (WFP), and Kaduna Agricultural Development Agency (KADA), to deliver capacity-building workshops and technical dissemination platforms.

D. Qualitative Gains & Institutional Positioning

- Hosted impactful field demonstrations and stakeholder engagements that enhanced GHI's visibility as a climate-smart innovation catalyst in Nigeria.
- Strengthened organisational reputation as a trusted partner for donor-funded programs and expert-led climate policy dialogues, reinforcing GHI's position across SDG-aligned interventions in water, sanitation, energy, cities, and climate action.

4.7 WACE Global Challenge - 2025

In 2025, GHI participated as a client organisation in the World Association for Cooperative & Work-Integrated Education (WACE) Global Challenge, a four-week global experiential learning program that connects organisations with multidisciplinary student teams from universities around the world. Through this initiative, GHI engaged with an international student team to address a real-world organisational challenge and generate actionable insights to support its mission and strategic growth.

The engagement commenced with a structured project briefing session involving GHI, the program organiser (Practera), and the student team. This session enabled GHI to present its organisational context, project brief, and desired outcomes, while allowing students to ask questions and align their understanding of the task. Over the four-week period, the students

conducted research and analysis, working collaboratively to develop a Sustainable Impact Report for GHI.

Key deliverables included a draft report in Week 2 and a final report in Week 4, with GHI providing timely feedback within 48 hours at each stage. This iterative process ensured that the students' work remained relevant, practical, and aligned with GHI's priorities. The final output presented a set of findings and recommendations tailored to GHI's operational and strategic context, offering fresh perspectives and evidence-based ideas for organisational improvement.

GHI's participation in the WACE Global Challenge reinforced its commitment to learning, innovation, and global collaboration. The initiative not only delivered valuable insights for the organisation but also contributed to building the capacity of emerging professionals, positioning GHI as an active contributor to global knowledge exchange and work-integrated learning.

5.0 STAKEHOLDER CONTRIBUTIONS

Our impact in 2025 was made possible through a multi-sectoral "co-creation" process involving stakeholders from the public, private, and academic sectors. This collective dedication ensured that our projects, particularly EMSAS and RANETA, were technologically sound, culturally appropriate, and nationally aligned.

5.1 Acknowledgements & Partner Statements

A. International & Technical Partners

- UN Climate Technology Centre and Network (CTCN) / UNEP: As our primary technical and funding partner, the CTCN provided the framework for the EMSAS-Hydroponics and RANETA initiatives. They emphasized that GHI's community-led, tech-enabled models are essential for Nigeria to meet its national climate adaptation goals.
- The European Union & Adaptation Fund: Critical funding provided through the EU and the Adaptation Fund Climate Innovation Accelerator (AFCIA) enabled the scaling of these innovations across Northern Nigeria.

B. National & State Government

- National Council on Climate Change (NCCC): Under the leadership of Mr. Chukwuemeka Okebugwu, the NCCC ensured our projects remained aligned with Nigeria's national climate priorities.
- Nigerian Meteorological Agency (NiMet): As the proponent for the RANETA project, NiMet provided the essential agrometeorological data required to deliver life-saving weather forecasts to rural farmers in Kebbi State.
- Kaduna State Agricultural Development Agency (KADA): KADA contributed over 720 working hours** from extension workers to support the EMSAS project. A KADA representative noted at the project close-out: "This project

proves that climate resilience doesn't have to be expensive or complicated. It just needs the right partnerships, the right technology, and the right hearts behind it".

- Kaduna State Planning and Budget Commission:** Supported the formalization of Memorandums of Understanding (MoUs) to ensure long-term local ownership and project sustainability.

5.2 Beneficiary Voices

Our stakeholders are more than just partners; they are the communities we serve. Their voices underscore the real-world impact of our work:

- Suwaiba Musa (Farmer, EMSAS Beneficiary): "With the coming of hydroponics farming, I no longer have to walk long distances to cultivate vegetables for my family, I can now do that within the small space of my home."
- Agera Teman Liti (Small-Scale Women Farmers Organisation of Nigeria - SWOFON): Highlighting the security benefits of hydroponics in conflict zones, Agera shared, "Before the hydroponics project, each time I cultivated, the crops were eaten by cattle, and I feared for my safety, so I stopped farming altogether. With the hydroponic system, I can now farm safely within my community. It has given me back my livelihood and my confidence".

6.0 LOOK AHEAD: STRATEGIC INITIATIVES AND GOALS

6.1 Strategic Priorities for 2026

The year 2025 marked a critical juncture for global environmental action, with World Water Week (24–28 August, Stockholm) and COP30 (10–21 November, Belém, Brazil) both placing unprecedented emphasis on the water-climate nexus. World Water Week, under the theme "Water for Climate Action," highlighted water's central role in mitigation, adaptation, and building resilience amid intertwined crises of climate change, environmental degradation, and biodiversity loss. Meanwhile, COP30 delivered landmark outcomes, including renewed multilateral commitment, a decision to triple global adaptation finance, enhanced support for developing countries, the establishment of a just transition mechanism with greater technical assistance and capacity-building, and the introduction of Belém Adaptation Indicators to guide effective climate finance flows.

These events reinforced the urgency of integrated approaches that Green Habitat Initiatives has long championed through habitat restoration, sustainable water management, and community-led climate resilience projects. Looking ahead to 2026, Green Habitat Initiatives is strategically positioned to build on this global momentum, aligning our work with emerging priorities in adaptation finance, just transitions, and water-centric climate solutions. Our strategic priorities for the year will focus on:

A. **Scaling Water-Climate Resilience Projects:** Expanding ecosystem-based adaptation initiatives in vulnerable regions, leveraging insights from COP30's adaptation finance commitments to secure new funding streams, and demonstrating measurable impacts through indicators aligned with the Belém framework.

B. **Strengthening Partnerships for Just Transitions:** Deepening collaborations with indigenous communities, local stakeholders, and international networks to ensure

equitable, inclusive implementation of climate actions, drawing on the social dimension emphasized at both World Water Week and COP30.

C. **Advancing Knowledge and Advocacy:** Actively contributing to post-COP30 dialogues and preparatory processes for future global forums, positioning Green Habitat Initiatives as a key voice in bridging water security, biodiversity conservation, and climate justice.

By capitalizing on the political and financial openings created in 2025, Green Habitat Initiatives enters 2026 with a clear mandate to accelerate transformative change, ensuring that habitat protection and water stewardship remain at the forefront of the global sustainability agenda.

6.2 Emerging Partnerships

The outcomes of World Water Week 2025 and COP30 have opened significant opportunities to expand and deepen strategic partnerships across local, regional, and international levels. In 2026, Green Habitat Initiatives will focus on building collaborative relationships that align with our core thematic priorities: ecosystem-based adaptation, sustainable water management, habitat restoration, community-led climate resilience, and integrated water-climate solutions to advance project implementation, advocacy, research, and policy influence.

Our partnership approach for 2026 will emphasize:

A. **Local and Community-Level Collaboration**: Strengthening alliances with grassroots organizations, indigenous peoples' groups, and community-based NGOs to co-design and implement restoration and water security initiatives that are inclusive, culturally grounded, and locally owned.

B. **Regional Institutions and Platforms**: Building partnerships with regional bodies and transboundary ecosystem networks to scale nature-based solutions, contribute to

regional adaptation and water governance frameworks, and facilitate knowledge exchange across borders.

C. **International Non-Governmental Organizations and Networks**: Developing collaborations with global NGOs and coalitions focused on conservation, water, and climate resilience to support joint project development, shared learning, and coordinated advocacy on the water-climate nexus.

D. **Intergovernmental and Multilateral Organizations**: Enhancing engagement with UN agencies, conventions, and multilateral funds to contribute to policy processes, technical working groups, and the implementation of global climate and biodiversity commitments, particularly those advanced at COP30.

E. **Research and Academic Institutions**: Forging partnerships with universities, research centers, and knowledge networks to generate evidence on the effectiveness of ecosystem-based approaches, support rigorous research, and inform national and international policy.

F. **Private Sector and Finance Partners**: Exploring strategic alliances with impact investors, development finance institutions, and private-sector actors to unlock blended finance models and scale high-impact water-climate resilience projects.

By pursuing these multi-level partnerships, Green Habitat Initiatives will increase our capacity to deliver transformative on-the-ground results, influence policy at all scales, produce credible research, and amplify our advocacy for the integration of water, climate, and biodiversity priorities in global agendas. This strategic partnership approach will be central to accelerating our mission and achieving measurable impact in 2026 and beyond.

6.3 Focus Areas for Growth

Building on the momentum of 2025, Green Habitat Initiatives will strategically prioritize growth in key thematic and operational areas in 2026. These focus areas are designed to scale our impact, respond to emerging global priorities, and position us as a leading voice in integrated water-climate-biodiversity solutions.

Our primary focus areas for growth in 2026 include:

A. **Scaling Ecosystem-Based Adaptation (EbA) and Nature-Based Solutions**: Expanding the implementation of restoration projects that simultaneously enhance water security, climate resilience, and biodiversity conservation. Emphasis will be placed on large-scale, landscape-level interventions in vulnerable ecosystems such as wetlands, river basins, coastal zones, and drylands.

B. **Integration of Water-Climate-Biodiversity Approaches**: Deepening our work at the nexus of these three domains to deliver projects that address interconnected crises holistically. This includes developing and piloting integrated models that demonstrate measurable co-benefits across water access, carbon sequestration, and ecosystem health.

C. **Community-Led and Just Transition Models**: Strengthening the design and implementation of projects that place local communities, Indigenous peoples, and marginalized groups at the center of decision-making, ensuring equitable benefits, respect for traditional knowledge, and inclusive governance structures.

D. **Measurement, Monitoring, and Reporting**: Investing in robust systems for tracking and documenting the impact of our interventions, with particular attention to aligning

with emerging global frameworks such as the Belém Adaptation Indicators. This will enable us to provide credible evidence for policy influence and attract new funding.

E. **Advocacy and Policy Engagement**: Increasing our presence in international, regional, and national policy processes to champion the role of water-centric, nature-based solutions in national adaptation plans, biodiversity strategies, and climate finance mechanisms.

F. **Capacity Building and Knowledge Sharing**: Developing training programs, peer-learning platforms, and knowledge products to build the capacity of partners, communities, and practitioners in ecosystem-based approaches and integrated water-climate solutions.

G. **Diversification of Funding and Financial Sustainability**: Expanding our funding base through a mix of multilateral, bilateral, philanthropic, and blended finance sources, while exploring innovative financing models that reward ecosystem services and long-term resilience outcomes.

These focus areas will guide our programmatic and operational growth in 2026, ensuring that Green Habitat Initiative remains responsive to global developments while continuing to deliver transformative, locally rooted impact.

6.4 Call to Action

The world faces urgent, interconnected challenges: climate change, water insecurity, and rapid biodiversity loss. Effective solutions exist, rooted in healthy ecosystems, sustainable water management, and the leadership of local communities.

Green Habitat Initiatives is committed to scaling these solutions and delivering measurable, lasting impact.

We invite partners, funders, policymakers, and communities to work with us:

- **A.** If you are an organization, local, regional, or international, focused on conservation, water, energy access, or climate resilience, we are ready to collaborate on project design, implementation, and shared learning.
- **B.** If you are a donor, impact investor, or development finance institution seeking high-impact opportunities in nature-based adaptation and community-led resilience, we offer proven approaches and transparent, results-oriented systems.
- **C.** If you are shaping national or regional policies on climate adaptation, biodiversity, or water governance, we bring practical field experience and evidence to support stronger, more inclusive frameworks.
- **D.** If you are a community or group living in a vulnerable ecosystem, we invite you to partner with us to restore and protect your landscapes, secure water resources, and build resilience together.

Healthy ecosystems are the foundation of human well-being, economic stability, and a livable climate. Green Habitat Initiatives is dedicated to making that foundation stronger. We welcome your partnership. Together, we can turn ambition into action and create a more resilient future for all.

7.0 PHOTO STORIES

7.1. Pictures from the EMSAS-Hydroponics project

Figure 15: Exterior view of the hydroponics screenhouse (8×40 meters) - March 2024 (Photo credit: Miranda Rikki Tasker)

Plate 1 (Figures 16 & 17): Interior view of the hydroponics screenhouse showing the NFT and trough hydroponics systems before planting of crops, March 2025 (Photo credit: Miranda Rikki Tasker)

Plate 2 (Figures 18 & 19) : Trained Beneficiaries of the EMSAS-Hydroponics project after harvesting lettuce from the NFT system - March 2025 (Photo Credit: Miranda Rikki Tasker)

Plate 3 (Figures 20 & 21): Practical sessions during the training of beneficiaries - March 2025 (Photo Credit: Miranda Rikki Tasker)

Plate 4 (Figures 22 - 25): Pictures during the demonstration workshop of the hydroponics system for project stakeholders - April 2025 (Photo Credit: Miranda Rikki Tasker)

7.2. Pictures from the RANETA project

Figure 26: The DG/CEO of NiMet-Prof. Charles Anosike (Left) in a handshake with the Executive Director of GHI and the Project Director of the RANETA TA-Engr. Sadiq Abubakar Gulma (Right) after an MoU signing for the RANETA TA between NiMet and GHI. (September 2024)

Figure 27: Group photo with the RANETA project team, NiMet officials, and stakeholders from kebbi State after an on-site stakeholder engagement in kebbi State (July 2025)

Figure 28: A facilitator (in white) discussing with female beneficiary farmers during the practical field session of the sustainable agricultural practices training (November 2024)

Figure 29: Participants during the demonstration workshop of the Agroweather Dissemination System in Kebbi State (July 2025)

Figure 30: Mal. Faruk Illo - Director of projects and Climate Change, kebbi State Ministry of Agriculture and Rural Development (Right), presents a solar rechargeable radio set and a smart mobile phone to a beneficiary, lead farmer under the RANETA TA. (August 2025)

Figure 31: Mrs Glory Onyegbule (Right, representing the Director General of NiMet) while presenting a smart mobile phone and a radio set to a beneficiary of the RANETA TA. (26/08/2025)

Figure 32: Left to Right - Engr. Sadiq Abubakar Gulma (RANETA Project Director), Mrs. Glory Onyegbule (Director of Directorate of applied Meteorological Services at NiMet representing the DG/CEO of NiMet), mal Faruk Garba Illo (Director of projects and Climate Change at Kebbi State Ministry of Agriculture representing Kebbi State government), Mrs. Iyabo Mustapha Lawal (Assistant Director on Lands and Climate Change at the Federal Ministry of Agriculture and Food Security), Mr. Chukwuemeka Okebugwu (Focal point of National Designated Entity (NDE) representing the country focal point of Adaptation Fund), Mrs. Zainab yunusa (Senior Special Assistant to the President of Nigeria on NEC and Climate Change), Mr. Jabo Stephen (Deputy Director NIHSA representing the DG) at the dissemination workshop (26/08/25)

Figure 33: Group of farmers listening to a radio program after a busy day at their farm - September 2024

Figure 34: A farmer talking on his phone while working on his farm

7.3 Pictures from GHI's 9th Anniversary and Open House Project Photo Exhibition

Figure 35: The Executive Director with staff and guests during the cake-cutting ceremony to commemorate GHI's 9th Anniversary celebration.

Figure 36: A guest experiencing the virtual reality content of the VRCC story during the open house project photo exhibition.

Plate 5 (Figures 37 & 38): GHI staff conducting guided tours and engaging with guests to provide insights into the various project milestones.

8.0 DONORS AND PARTNERS

We are proud to work with an incredible array of partners at the global, national, and local levels without whom our impact would not have been possible. Our community has significantly increased over the years, and we will continue to expand our partnerships in the coming years.

9.0 CONTACT INFORMATION

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