COMMONWEALTH SCHOLARSHIPS

CSC Evaluation and Monitoring Programme

Strengthening Climate-Smart Planning and Community Resilience in Northern Ghana

Vincent Buobodaare Dari

Ghana has recorded sustained development progress over the past three decades, including reductions in poverty and expanded access to education and basic services. However, these gains remain uneven and increasingly vulnerable to climate-related shocks. The World Bank's Ghana Country Climate and Development Report warns that climate change could push at least one million additional people into poverty by 2050 if adaptation is not accelerated, with poor households potentially losing up to 40% of their income due to climate impacts. Flooding, drought, heat stress, and land degradation already impose substantial economic and social costs, particularly in climate-sensitive sectors such as agriculture and water resources.

Northern Ghana is among the most exposed regions of the country. Livelihoods depend heavily on rainfed agriculture, yet rainfall has become increasingly erratic, and temperatures are rising faster than historical averages. Less than 1% of Ghana's cultivated land is irrigated, leaving rural households highly sensitive to droughts and shortened rainy seasons.

These climate pressures intersect with longstanding spatial planning and governance constraints. Ghana's Land Use and Spatial Planning Act, 2016 (Act 925) established a decentralised planning framework intended to promote sustainable settlements and coordinated land management. Yet empirical studies highlight persistent implementation gaps, including shortages of trained technical staff, limited access to geospatial data, weak enforcement of planning regulations, and resource constraints at the district level. As a result, many communities experience uncoordinated land use, environmental degradation, and limited integration of climate risk into local development decisions.

It is within this landscape that Vincent Buobodaare Dari, a Ghanaian spatial planner from the Upper West Region, has built his post-scholarship impact. Equipped with technical and leadership skills, Vincent applied his expertise to community land-use mapping, climate-resilient planning, and livelihood programmes—bridging local realities with data-driven decision-making and inclusive participation.

His leadership in preparing Community Action Plans (CAPs) and Community Land Use Maps (CLUMs) transformed communities' priorities into living documents, enabling them to understand their priorities and plan their actions accordingly. By ensuring that community-defined priorities are formally incorporated into statutory plans, Vincent's work strengthens the credibility of planning, improves coordination between communities and district authorities, and increases the likelihood that climate-resilient interventions are sustained beyond individual projects. As a co-founder of the MAGVIN Research Institute, a non-profit that integrates research, GIS services, and community development, Vincent is committed to building a shared vision to nurture future urban planners and promote sustainable development for communities.

Vincent, co-founder of the MAGVIN Research Institute.

Vincent Buobodaare Dari is a Ghanaian spatial planner and Commonwealth Shared Scholar. He studied an MSc in Geospatial and Mapping Sciences at the University of Glasgow (2019–2020). Currently, Vincent serves as Acting Head of the Physical Planning Department at the Daffiama-Bussie-Issa District Assembly. He is also Co-Founder and Director of Research and Development at MAGVIN Research Institute, a non-profit organisation that integrates research, Geographical Information System (GIS) services, and community development.

Becoming a Spatial Planner and Civic Entrepreneur

Vincent's motivation to study physical planning and later specialise in geospatial science is rooted in his personal experience of hardship and uneven access to services. Growing up in a village with limited services fostered his determination to understand and ultimately improve the planning and resourcing of settlements.

That curiosity later guided his educational pursuits. He completed a BSc in Planning at the University for Development Studies, then pursued a Master's degree at the University of Glasgow as a Commonwealth Scholar to deepen his technical skills in geospatial analysis and mapping. At Glasgow, he encountered a learning environment that integrated modern geospatial tools with applied problem-solving.

> 'Throughout the programme, we were exposed to issues of land use planning, surveying, and the use of Geographic Information Systems tools such as ArcGIS Pro and AutoCAD, as well as the use of state-of-the-art survey equipment. With this exposure, I enhanced my skills in the use of GIS tools, which are relevant to my current job.'

The Scholarship's influence extended beyond technical proficiency. Vincent highlights that studying and collaborating within an international cohort reshaped his leadership style, teaching him teamwork, cultural sensitivity, and how to manage group dynamics to deliver results.

> 'Working in teams during my Master's programme at the University of Glasgow exposed me further to group dynamics and how to manage them, particularly being sensitive to cultural differences, given that I was the only one from Africa in the 2019/2020 Geospatial and Mapping Sciences programme.'

Equally significant was what he calls another 'exposure' effect: observing how institutions function in a different context, then returning home with renewed motivation and devotion to advocate for systems that serve citizens.

> 'I believe that having been a beneficiary of this generous Scholarship and with all the exposure I have received, I should be able to give back to my society and also to our communities.'

Upon returning to Ghana in 2020, Vincent entered a dual pathway—public service and civic entrepreneurship. In the Daffiama Bussie Issa (DBI) District Assembly, Upper West Region, he served as the Acting Head of the Physical Planning Department, coordinating the Technical Sub-Committee and Spatial Planning Committee to manage land use and development locally. In parallel, he co-founded MAGVIN Research Institute to extend training, farmer services, and digital literacy to rural communities, formalising a vision he had articulated in his scholarship development impact statement.

Vincent, a Certified Planning Professional with the Ghana Institute of Planning.

For Vincent, the most significant change to himself resulting from his Scholarship is his ability to realise his early aspiration to create an organisation dedicated to sustainable community development.

'The most significant change for me has been my ability to establish an organisation that champions the needs and aspirations of communities and builds resilience.

At the time, I stated in my development impact statement that when I am granted the opportunity to study the Geospatial and Mapping Sciences programme, I will apply the knowledge and skills to provide research and consultancy services to spatial planning organisations and communities on completion.

Today, I am happy to share that through MAGVIN Research Institute, I am living that dream as I provide technical support on key development projects and support rural communities in agriculture, agribusiness and education.'

From Aspirations to Plans: Mapping Spatial Resilience and Community Priorities

In response to the risks posed by climate change to life and communities, people need to know what they have, what they want, and how land-use choices connect to future development options. When planning becomes tangible—when a community can point to mapped resources, documented needs, and agreed priorities—it strengthens the credibility of implementation.

Since 2022, Vincent has been working as a Physical Planning Officer under the Local Government Service of Ghana. He was assigned to the Daffiama Bussie Issa (DBI) District Assembly in the Upper West Region of Ghana and served as the Acting Head of the Physical Planning Department. In this role, Vincent provided technical support for the Resilience Against Climate Change (REACH) project, co-funded by the European Union and German Federal Ministry for Economic Corporation and Development, to promote climate-resilient practices and system planning.

Under REACH, Vincent led DBI's plan-preparation team to produce 15 Community Land Use Maps (CLUMs) and Community Action Plans (CAPs), fusing community priorities with geospatial evidence—collecting data on infrastructure, natural resources and sites for proposed interventions, and using GIS to produce maps that could be adopted within project timelines.

> 'The CAPs and the CLUMs serve as living documents for the communities, since the documents embody the needs and aspirations of the communities, which they can use to solicit support from private individuals and organisations, aside from the support available to them from the local assembly.'

He explains CAPs and CLUMs are intended to help communities understand their resources and priorities and then link those priorities to district planning cycles and funding mechanisms. The processes employed increased communities' awareness and enthusiasm for active participation, bringing them together for a common purpose—development.

Community Land Use Map validation and Community Action Planning.

For climate resilience to be sustained, community plans must not remain isolated projects; they must be embedded in the district's formal planning architecture and, where relevant, connected to regional stability dynamics. The CAP Inputs from REACH beneficiary communities were incorporated into the district's 2026–2029 Medium-Term Development Plan, aligning community priorities with the formal four-year planning cycle and national guidelines.

From Plans to Projects: Advancing Climate-Smart Development for Communities

Following completion of the CAPs and CLUMs, fifteen beneficiary communities in the district were supported by the German Agency for International Cooperation (GIZ), the REACH project's implementation partner. Eight of them received solar mechanised boreholes with overhead tanks, and it is estimated that completing eight water projects would enhance access to clean potable water for about 21% of the district's population, serving domestic needs and light industrial uses.

Vincent conducting technical assessment and monitoring visit of a solar mechanised borehole with overhead tank under construction.

Four communities received 10-hectare cashew and mango plantations, designed to deliver both climate benefits and future livelihood opportunities as trees mature into commercial assets. Two additional communities received climate-smart agricultural equipment and inputs, and another community benefited from dam rehabilitation, an irrigation pump and cold storage facility, thereby enabling dry-season farming and diversified income—particularly for youth and marginalised groups. These visible outputs strengthened trust in participatory planning and energised people to keep engaging in governance processes. Completing agroforestry, dam rehabilitation, and the supply of climate-smart farm inputs and equipment would enhance climate resilience for approximately 22% of the district's population.

> 'I wish you were part of the community sensitisation session where we went around to inform communities of the interventions that were coming their way, to see the excitement on their faces. The fact that all the engagement we have done, at least we have an output, we have an intervention from all that we did. They were very excited.'

Following the completion of the REACH project in the Daffiama Bussie Issa District, Vincent was contracted by GIZ to provide technical assistance to the Wa West District Assembly under the same project as well as the SKBOWA project. In this role, he employed a repeatable engagement model—community entry, mobilisation of groups through local leaders, and deliberate efforts to involve minority groups and persons with disabilities—across 14 communities under REACH and three communities under SKBOWA to prepare CAPs and CLUMs.

Building a Shared Vision Through MAGVIN Research Institute

Alongside his government role, Vincent has invested in a longer-term vehicle for impact: MAGVIN Research Institute, a non-profit organisation registered in 2022 and co-founded with a partner, designed to combine research, GIS capacity and community development. Publicly, MAGVIN describes its mission as delivering corporate research, GIS and mapping services, and training programmes that empower communities and organisations by strengthening their evidence and analytical skills. When asked why he founded such an organisation, Vincent revealed his early aspiration, articulated in his application for Commonwealth Scholarships, and his deep belief in the institution's capacity to nurture a shared vision for sustainable development outcomes.

> 'I believe that a shared vision never dies. Thus, whereas an individual vision dies with the person, a shared vision lives on even in the absence of the vision bearer. That is what I impart to my team at MAGVIN Research Institute.'

Building coordinated and resilient settlements that endure requires skilled professionals who can apply and advocate for spatial resilience across communities and organisations. At MAGVIN, Vincent and his team are committed to raising awareness at the community level to promote holistic and balanced development. They provide Geographic Information Systems (GIS) training for emerging urban planners seeking to develop practical skills in contemporary spatial planning tools and techniques. These trained professionals are expected to champion spatial planning approaches, an area that has historically received insufficient priority in government decision-making.

In addition to training future spatial planners and champions, MAGVIN's community-facing work has focused heavily on rural livelihoods, particularly among women farmers. Through the institute, Vincent and his team have trained more than 1,200 farmers (approximately 85% women) across multiple farmer groups in sustainable farming practices, reaching 45 communities. They provided training sessions for farmers, business incubations, and guidance on climate-smart agricultural practices.

Training Women groups in sustainable farming practices.

For example, they addressed safety and dignity in women's livelihoods by training women to collect shea nuts using shea rollers, thereby reducing bending and associated risks, such as snake bites, during early-morning collection. This intervention responds directly to local conditions in northern Ghana, where shea processing is a major economic activity for women.

Demonstrating the use of Shea Roller during a women group training.

The training content has been practical and climate-aware, including awareness of drought-resistant crop varieties, access to organic neem-based pesticides, and connections to services and input suppliers in nearby towns such as Wa. In one example, Vincent and his team helped women's groups collect and sell neem seeds—turning a locally available resource that often goes to waste into a small income opportunity linked to a processing plant. They facilitated the creation of alternative livelihood buffers and strengthened market linkages.

Beyond livelihoods, the institute has run school outreach, including sensitisation of 400 pupils on reproductive health and harmful practices such as early and forced marriage. They also delivered training on research and the responsible use of AI tools to students and staff at the St. Joseph Nursing and Midwifery Training College in Jirapa, Upper West Region.

Training students of St. Joseph Nursing and Midwifery Training College in academic research and responsible use of AI tools.

A further strand of MAGVIN's work is digital inclusion. Vincent describes advocacy and local action to bridge the rural–urban digital divide, noting that rural students may be expected to sit the same exams as urban peers despite far less exposure to computers. They implement computer literacy programmes, particularly for students in disadvantaged communities.

Despite their achievements, Vincent acknowledges that funding constraints limit the scale of the impact. But MAGVIN addresses these constraints through collaborations and partnerships in resource-constrained settings. They build relationships with more established organisations and learn their experiences.

Reflecting on the most significant change in his community (and beyond) resulting from his Commonwealth Scholarship, Vincent is proud of his organisation's capacity-building impact on the community.

'The most significant change in my community has been the training my team and I at MAGVIN Research Institute offered to over 1,200 farmers, reaching 45 farming communities, which empowered 85% women in agriculture and agribusiness. Apart from the training on sustainable farming practices and access to farm inputs, the farmers were connected to aggregation companies where they sold their farm produce at competitive prices.'

Looking Ahead: Embracing Learning and Growth

Moving from a motivated student of planning to a practitioner who combines government leadership with civic entrepreneurship, Vincent continues to grow professionally. Since completing the MSc in 2020, he has continued to deepen his academic foundation, including an MPhil in Development Management. He teaches part-time as a Graduate Assistant Lecturer at the University of Business and Integrated Development Studies (formerly the University for Development Studies, Wa Campus), supporting teaching and research in project planning, GIS, and governance.

His personal goal is to pursue doctoral studies and expand MAGVIN into a multidisciplinary institute with greater research capacity and broader service delivery reach. In this vision, Vincent describes practical innovations aimed at extending access to services in rural areas: a dedicated GIS training unit to train planning professionals, Mobile Farmer Service Access Vans carrying farmer inputs, equipment and training to communities, and a Mobile ICT Laboratory to deliver digital literacy training and reduce the rural–urban skills gap.

More about Vincent Buobodaare Dari:

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