

Curriculum Vitae: Francis Adarkwah(PhD)

Francis Adarkwah(PhD) is a trained Crop and Environmental scientist with over 23 years of experience in research, International development, ecosystem management and conservation. He exploits his excellent funding skills to drive development goals(SDGs) through integrated and multi-disciplinary approaches. His experiences cut across agricultural livelihood diversification and environmental health-related disciplines, including agriculture value chain and policy. Francis Adarkwah holds a PhD in Environmental Science, an Mphil in Crop Science as well as PhD course certificate in climate science. His experiences in research, and business development span from the National Board for Small Scales Enterprise (NBSSI) now Ghana Enterprises Agency as the business advisory head, CARE International, Opportunity International, International Centre for Enterprise and Sustainable Development (ICED), Transforming Rural Agriculture Through Organic Re-engineering under the Sustainable Landscapes Project including Vison World Network Among others. Over the past 2 decades, Francis Adarkwah has managed and provided technical direction in project implementation across interdisciplinary fields. As the head of the business advisory service of now Ghana Enterprises Agency, Francis Adarkwah provided technical and financial support through donor funding and networking with relevant stakeholders to support agric-based enterprise groups and SMEs across the Agona East and West of the Central region. As a co-project manager and a lead facilitator at CARE International under the Transboundary Natural Resources-based Enterprise Project, he led the implementation of the Forest and Farm Facility and the Restoration for Recovery and Resilience sub-programme project that aims to enhance the resilience and recovery of forest and farm communities, in coordination with key partners and stakeholders across the Western region of Ghana and part of Ivory Coast. He facilitated the formation of CREMA and facilitated the integration of the Agri-silviculture technique in community land management, which led to the promotion of a community-led approach to the conservation of “Krokosue” and Bia National Forest as well as a plan for community forest management. He empowered communities to access, manage their resources, and benefit from agriculture and natural resources while promoting biodiversity conservation and food security. He has been a pioneer and advocate of land-use management, community-based natural resource management and payment for ecosystem services models in Ghana. These are evident through his research publications and national print media such as Business Ghana, and Ghanaweb among others. He has also been a part of Non-Governmental Organisations' efforts to enforce Act 925 of the Land Use and Spatial Planning Act 2016, and influence the forest policy and legal reforms, especially in relation to the Voluntary Partnership Agreement and REDD+ initiatives. Francis Adarkwah (PhD) has a strong track record of working with diverse actors, such as traditional leaders, governments, and the private sector, to foster dialogue, collaboration, and innovation. Working as a research and project manager with the International Centre for Enterprise and Sustainable Development (ICED), Francis Adarkwah collaboratively engineered and implemented the AU project on the integrated approach to Post-Harvest Losses (PHL) in Africa with the University of Makerere, West Africa Centre for Crop Improvement of University of Ghana and stakeholders (Government & private). Francis Adarkwah has managed large-scale donor-funded projects of up to US\$ 2 million in size and cumulatively over \$ 3.4 million as he was the project architect and manager of the Jubilee’s partners' livelihood diversification project and co-design the ENI/VITOL alternative livelihood restoration project in the Ellembelle districts of the Western region. He is the architect and the implementer of the cassava value chain livelihood diversification support project of Jubilee partners (Tullow, Patro SA, Anardarko, GMPC and Cosmos:) for the oil and gas affected communities in the western region of Ghana. He has managed diverse teams of up to 23 staff and successfully managed relationships with donors and government officials. He has a strong research background and is a fellow of the Australian Aid beneficiary under the “Increasing Development Impact of Agricultural Research in Africa” with experiences from Ghana and East Africa. Francis Adarkwah (PhD)is currently a part-time lecturer at the University of Education, Winneba.

Nationality	Ghanaian Mobile +233549466517 Email: francisadarkwah34@gmail.com		
Education	<ul style="list-style-type: none">○ PhD, Environmental Science (Aug 2017 – Dec. 2021), University of Ghana○ MPhil Crop Science, (June 2006 - May 2009), University of Ghana.○ Certificate: PhD Course in climate science, AAURHUS University of Denmark & University of Ghana (2019).○ BSc. Agricultural Science (Sept 2000 – June 2004), University of Cape Coast.○ Certificate: Increasing Development Impact of Agricultural Research (IDIAR) (2018), University of Sydney & University of Nairobi.○ Certificate: Vulnerability and Climate Change Adaptation in Africa (2012), University of Ghana.		
Languages	English (fluent); Twi (fluent), Ga (fluent),		
Additional Trainings			
Certificate	Advocacy skills	BUSAC	2015
Certificate	Microsoft Windows	University of Cape Coast	2004
Certificate	Business Pitching skills	Engineers without Borders	2015

CONSULTANCY SERVICES

- July – Sept 2024(KOICA): Baseline study for the rehabilitation of Ashaiman, Dawhenya and Aveyime Irrigation schemes.
- Nov. 14th -19th 2023: NORAD- Sustainable Ocean Project
- Dec. 2022 – Feb 2023: COVID-19 livelihood recovery and resilient project on Organic fertilizer preparation training across the Northern region and Ahafo. **Client: PYXERA Global Under** Auspices of MasterCard Foundation
- August 10th – Dec 2022: Lead consultant: COVID-19 livelihood recovery and resilient project – **Client: PYXERA Global Under** Auspices of MasterCard Foundation.
- July 5th 2021 – July 21st 2021: Lead consultant: Environmental, economic and social impact assessment: **Client: Profarmway project** in Ghana, kokofu- Ashanti Bekwai.
- Sept – Nov 2017 – Lead consultant “ Feasibility studies on shea-butter waste for mushroom production for women group in Tamale and Uppet west region
- April 2018- Oct. 2020: lead consultant:: **TechnoServe Ghana** on Livelihood restoration project by **ENI oil and Gas-** Sanzule
- Jan -March 2017 – Lead consultant: “Feasibility study on possible utilisation of shea nut waste for mushroom production in the North” **Client: SNV Ghana**
- July- Sept. 2016 - Lead consultant: “Feasibility study for livelihood restoration programme for oil and gas affected community in Sanzule in the western region of Ghana” **ENI-Oil and Gas.**

PhD Research

The Impact of Land-Use and Land Cover Change on Provisioning and Cultural Ecosystem Services: The Case of Selected Communities Around the Amanzule wetland in the Western region of Ghana.

Mphil Research

The Effect of Planting Depth and Age of Transplant on Growth and Flowering of *Jatropha Curcas*

Research Publications

Adarkwah, F., Awuni, S., Hajek, M., Kübler, D., Mattah, M., Gordon, C., & Owusu, E. H. (2024). Modelling the drivers of land use and land cover change of the great Amanzule wetland ecosystem to inform the development policy of the southwestern oil-rich region of Ghana. *Heliyon*, 10(17).

Awuni, S., **Adarkwah, F.**, Ofori, B. D., Purwestri, R. C., Huertas Bernal, D. C., & Hajek, M., (2023). 'Managing the challenges of climate change mitigation and adaptation strategies in Ghana. *Heliyon*, 9(5). E15491.' <https://doi.org/10.1016/j.heliyon.2023.e15491>

Mattah, M. M., Mattah, P. A., Mensah, A. M., **Adarkwah, F.**, Mensah, J., & Addo, K. A. (2024). Community perceptions, knowledge, and coping mechanisms concerning perennial climate change-related disasters along the Volta estuary of Ghana, West Africa. *Scientific African*, 25, e02333.

Ankrah, D. A., Kwapong, A., N., Eghan, D., **Adarkwah, F.**, Boateng-Gyambiby, D. (2021). 'Agricultural Insurance Access and Acceptability: examining the case of smallholder farmers in Ghana. *Agric & food security* 10,19(2021).<https://doi.org/10.1186/s40066-021-00292-y>.

Awuni, S., **Adarkwah, F.**, & Akon-Yamga, G. (2020). "Evaluation of *Cyrtobagous salviniae* (Coleoptera: Curculionidae) in the biological control of *Salvinia molesta* (Salviniaceae) in Ghana" *Journal of Ghana Science Association*, Vol. 19, No. 1, (June 2020) ISSN: 2737-713X

Adarkwah, F., Annan, S. T., Deo-Donne, P. L. (2019). "Maximizing Ecosystem services from *Jatropha Curcas* *Applied Ecology and Environmental Sciences*, vol. 6, no. 4 (2019): 153-159. doi: 10.12691/aees-6-3-7,

Annan, S. T., **Adarkwah, F.**, Mattah, M. M., Awuni, S. (2019). "Assessment of Hazard Flash Points Predisposing Resident Communities to Disaster Risk in Adentan Municipality in Ghana: *Applied Ecology and Environmental Sciences*, vol. 6, no. 4 (2019): 153-159. doi: 10.12691/aees-6-4-8

Adarkwah, F., Annan, S.T., Anyamesem-Poku, A., & Santiago, P. K. (2018). "Real Estate Development and Land Grabbing in Ghana: A Review of Impact and Policy Responses." *Journal of Food Security*, vol. 6, no. 3 (2018): 119-126. doi: 10.12691/jfs-6-3-4.

Deo-Donne, P., Annan, S. T., **Adarkwah, F.**, Pady, F., Frimpong, B., & Anyamesem-Poku, A. (2018). "Reaction of Cowpea Genotypes to Bacterial Blight (*Xanthomonas campestris* sp. *Vignicola*) Disease in Ghana." *World Journal of Agricultural Research*, vol. 6, no. 3 (2018): 105-112. doi: 10.12691/wjar-6-3-5.

Adjibolosoo, S. V. K., Annan, S. T., **Adarkwah, F.**, Frimpong, B., Ampofo, A. J., & Santaigo, P.K. (2018). "Assessment of Bacteriological Quality of Sources of Drinking Water in some Selected Communities in the Akuapem South District of the Eastern Region, Ghana." *Applied Ecology and Environmental Sciences*, vol. 6, no. 4 (2018): 153-159. doi: 10.12691/aees-6-4-6.

Twumasi, S., Abaka-Yawson, A., Annan, S. T., **Adarkwah, F.**, Sarpong, A., Santiago, P. K., (2019). Assessment of the Inquiry Teaching Method on Academic Achievements of Students in Biology Education at Mawuko Girls School. *Ho Ghana Article in American Journal of Educational Research*, 7(3), 219–223. <https://doi.org/10.12691/education-7-3-5>

SPECIALITY

SCOPE A.

- MEL
- Conservation including Community Resource Management Area concept
- Environmental landscape management
- Climate change adaptation & Wetland conservation and management
- Climate Science Initiatives

SCOPE A₁.

- Funding or Innovative Proposal Development (Percentage of flagged proposals =90%)
- Advocacy skills and Gender mainstreaming
- Environment Impact Assessment Assessment/Strategic Environmental assessment
- Research and Strategic Project Management skills
- Disaster Risk Reduction Specialist
- Training and Facilitation skills
- Fisheries Management
- Project Management Expert
- Agric Product Value Addition and Marketing linkage skills
- Agribusiness and Natural Resource-Based Livelihood Expert

PROFESSIONAL EXPERIENCES

Independent consultant: 2020-till date: USAID & EU environment and development driven portfolios

October 2023 – Till date

POSITION: Visiting Fellow /Adjunct lecturer

Institution: University of Education, Winneba

Courses:

- Environmental science
- Public Health & Environment
- Environmental Ecology
- Diversity of Living things

April 2022 – March 2023: ProFarm Gateway project

POSITION: Technical Lead

Duties

- Coordinate project land-use plan and MEL operations
 - Conduct training in innovative agricultural development technology for farmers and agribusiness
 - Liaise with developing partners for funding opportunities
 - Develop funding proposals targeted at specific work plans
 - Network with appropriate research institutions or partners for collaborative research proposals for specific workplan
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- Develop work pages for international volunteers to execute their assignments accordingly
- Manage field staff and other potential supporting volunteers

March 2019 – Sept 2021

Organisation: Vision World Network

Position: Natural Resources Livelihood & Funding Specialist

Duties:

- Develop proposals to raise funds and implement them accordingly.
- Carry out the scoping study and develop a community forest management plan
- Conduct learning and impact assessment or Monitoring and Evaluation (M&E).
- Build the capacity of stakeholders in climate-resilient approaches to enhance their activities
- Devise gender-based NRBE livelihood for women groups based on age
- Facilitate loan access for enterprise groups and promote VSLA schemes for women groups
- Support the development of climate-related policies to support MMDAs in their activities
- Conduct feasibility studies participatory with MMDAs to inform their DRR
- Build the capacity of FBOs and CBOs in value addition, marketing and the related enterprise of interest including Cocoa, Cashew and oil palm and facilitate input credit facilities package for them through a tripartite agreement
- Build the capacity of community members in conservation
- Advocate for favourable policy intervention to improve the business of smallholder farmers

July 2017 – February, 2019

Organisation: MANGROVE, Ghana

Position: Project Coordinator & Funding Specialist

Project: Climate Change and Agricultural Insurance in the Context of Livelihood

Duties and achievements:

- I liaised with relevant stakeholders and other NGOs to devise a mechanism to protect the forest and coastal ecosystems, particularly forest and wetlands and sensitized communities, to adopt pragmatic measures such as agri-silviculture approaches and explore other management strategies to sustain the fish population and forest provisioning ecosystem services.
 - I initiated climate-sensitive natural resources livelihood for project beneficiaries, which encouraged organic farming among vegetable farmers.
 - To Conduct learning and impact assessment (M&E) to inform project goal
 - It sensitized fishers and farmers in coastal & forest communities to adopt ecosystem-based approaches to fishing and farming, which has reduced chemical fishing to some extent and sustained fish population and biodiversity conservation in the six coastal districts of the western region.
 - Organized and supported smooth project delivery from inception to completion and managed vital workstreams.
 - Develop and implement business processes and procedures that are appropriate for project delivery, ensuring high quality.
 - Conducted and utilized research findings to initiate processes that informed the formation of wetland bylaws and policies that improved coastal livelihood in the western region of Ghana.
 - I researched certain parts of Accra to inform coastal and inland disaster risk plans.
 - Trained and provided smallholder farmers with economically valuable medicinal tree seedlings for planting in their farms, which eventually improved the micro-climate and improved the yield and income of farmers.
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- The project research team conducted a disaster risk assessment to inform proper resilient Agriculture-driven initiatives, creating awareness about best practices.
- I facilitated in-depth stakeholder analysis which led to the development of set protocols to train smallholder farmers in sustainable agribusiness enterprise and agriculture principles in the context of Climate change and its associated business challenges.
- I liaised and reported on donor requirements and satisfaction, leading to several project extensions.
- I provided strategic management and leadership to team members, leading to proper operational management of agribusinesses and a sustainable business environment.
- Provided technical leadership and effective operation to all programmes, resulting in successful project exit.
- Monitored the development and ensured the effective implementation of project action plans, which yielded a low-risk fund manager.

March 2014 – June 2017

Organisation: TRACTOR (Transforming Rural Agriculture Through organic Re-engineering)

Position: Programmes Director and Livelihood Specialist

Project: Coastal Sustainable Landscapes Project

- Provided strategic management direction at the partner level towards achieving improved livelihood for the Coastal Communities of the western region.
- Supported the field and management team of the Coastal Sustainable Landscape Project with strategic decisions to implement actions that enhanced wetland conservation.
- Conduct impact and learning assessment, analyse data and synthesise to inform project logframe and objectives
- Engineered and implemented Jubilees partner's alternative Livelihood Diversification Support(LDSP) for oil and gas-affected communities in the six coastal districts of the Western region of Ghana.
- Established community mangrove nurseries participatory with community members to replace the degraded mangroves with fishmongers.
- Work participatory with other NGOs such as Hen Mpoano to develop community wetland management bylaws to conserve the wetlands.
- Formed committees such as the conservation committee group, and NRBE (Natural Resource Based Enterprise) and led groups within the communities to spearhead the sustainable management of wetlands to sustain their ecosystem supply.
- Prepares strategic action plans and budgets to facilitate the implementation of cross-cutting activities

Crosscutting Independent Project Initiatives

- I facilitated PPP initiatives and safeguarded the implementation of action plans by parties.
 - I developed and implemented prosperous alternative livelihoods for oil and gas-affected communities across the six coastal districts of the Western region under the auspices of Jubilee partners.
 - I liaised and engaged MoFA, Ghana enterprise agency and other government agencies working along the value chain of Natural resources enterprise to improve the enterprises of project beneficiaries
 - I provided technical backstopping to enterprise groups and trained project beneficiaries on phytosanitary conditions. This enhanced the export of their products to the neighbouring Ivory Coast.
 - I facilitated the marketing of beneficiaries' products through a well-coordinated network and capacity building of beneficiaries.
 - I supported multi-stakeholder platforms with in-depth strategies and advice that cumulatively enhanced and promoted coastal and terrestrial ecosystem management efforts.
 - Put together the Jubilee partner's alternative livelihood project proposal
 - Coordinated the project's implementation on behalf of Jubilee partners(Tullow Oil, Kosmos Oil, Petro SA, Anadarko and GNPC) to its two-year exit.
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- Developed ENI/VITOL livelihood Restoration Project (LRP) for the oil and gas-affected community of Sanzule in the Ellenbelle district of the Western region.
- I facilitated the marketing of beneficiaries' products through MoUs with oil companies, mining and other companies working along the hydrocarbon value chain.

Jan. 2012 – February 2014

Organisation: International Centre for Enterprise and Sustainable Development(ICED)

Position: Research & Project Manager

Project: Natural Resource Enterprise Project

Achievements

- Led all training programmes on Integrated Approaches to Sustainable Farming(IASF) or Climate Smart Agriculture and coordinated all research activities, including partnerships, leading to 9 small-holder farmers receiving national awards at Aveyime.
- Developed AU proposal on an Integrated Post Harvest Management system in Africa.

Task leading to the achievement of duties

- I facilitated the input supply system and coordinated partnerships among dealers and farmers for sustainable income generation and food security measures. This resulted in a good relationship and network among farmers and stakeholders.
- Coordinate Research institutions and Universities(Makarere, WACCI etc) timely to achieve deliverables.
- I trained the beneficiaries on farm best agronomic practices of vegetable production and marketing approaches, leading to access to loans, and consequently, improving farmers' income.
- I trained beneficiaries on insect pest identification and remediation, leading to a reduction in inorganic chemical use.
- I developed a monitoring plan which tracks the activities of field facilitators and farmers. This allowed stakeholders and donors to monitor the success of the project at all levels.
- I provided support, and guidance and built the capacity of team leaders to help manage their teams. This led to the timely implementation of project activities and the achievement of project indicators.
- I facilitated a network between CBOs and district/municipal assembly, which led to solid marketing collaboration between enterprise groups, assembly and community members.
- I conducted a community needs assessment and recommended appropriate interventions accordingly.

July 2010-Dec. 2012

Organisation: Opportunity International Savings and Loans

Position: Agricultural specialist

Project: Mastercard Foundation Cocoa Livelihood Input credit project

A brief overview of the Project

Opportunity International is a financial institution with over 12 branches in Africa, particularly Malawi, Uganda, Tanzania and Ghana. OISL has been operating in the aforementioned countries for over 20 years. The Agriculture Department of the bank is usually under donor funding. It runs concurrently with other international NGOs such as TECHNOSERVE, CARE International, ACDI/VOCA, GIZ, and others to support farmers. The bank is the only financial outlet that provides support to smallholder farmers.

Task leading and accomplishments

- Train farmers to adopt climate-smart approach to farming to promote sustainability and quality food to encourage sustainable sales and repayment of loans.
- Conduct appraisal on crops (Oil palm, cocoa, Plantain, vegetables, livestock) and approved input credit support subject to standards and yield.
- I developed concept papers for funding in a wide range of agricultural commodities and reported timely to donors based on project indicators
- I was in charge of over 2,000- 5000 farmers and managed a portfolio value of over USD 2 million with an over 99% recovery record.
- I developed a partnership agreement or MOU with input dealers and farmers to ensure input and loan access to farmers. This promoted food production and increased the income of farmers while reducing poverty among vegetable and cassava farmers.
- I built the capacity of loan beneficiaries in best agronomic practices and business modules, which enhanced and promoted their agribusinesses.
- I collaborated with strategic partners such as MoFA and NGOs which resulted in 99% loan recovery.

February 2008- May 2010

Organisation: CARE International

Position: Project Facilitator

Project: Trans-Boundary Area Natural Resource-Based Enterprise (NRBE)

A brief overview of the Project

The NRBE was a 4-year USAID-funded project in the cocoa-growing areas of Bia and Juaboso, which started in 2006 and ended in 2010. The Project was initiated in response to Ghana's Wildlife Division and the Forestry Commission's call due to excessive exploitation of forest ecosystem services. Therefore, the project built the capacity of cocoa farming community members fringing the forest reserves in community-based natural resource management (CBNRM) or the CREMA model. The Project was implemented under four outcomes: 1) Increased Incomes from Natural Resource Products; 2) Improved Food and Nutritional Security; 3) Increased Farmer and Community Security/Access to Land and Natural Resources, and 4) Strengthened the capacity of stakeholders to ensure collaboration and support to sustain the Project.

Task and achievements

- Trained cocoa farmers fringing forest reserves in the Western North of Ghana in a specific climate-smart agricultural model and explored other agriculture product value chains, This enhanced marketing and improved farmers' income, limiting their interferences with the forest reserve.
 - Facilitated the establishment of natural resource livelihood outlets in the project communities fringing key forest reverse.
 - Facilitated the formation of CREMA and facilitated the integration of the Agri-silviculture technique in community land management, which led to the promotion of a community-led approach to the conservation of "Krokosue" and Bia National Forest as well as a plan for community forest management.
 - Built the capacity of communities to sustainably utilise terrestrial ecosystem resources, manage the resources, and benefit from agriculture and natural resources while promoting biodiversity conservation and food security
 - Collaborated with institutions to offer support both technical and financial to project beneficiaries to enhance and promote their farming business
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- Collaborate and worked with key and relevant stakeholders to help protect forest reserves by enhancing the sustainable supply of its ecosystem services to communities fringing it while helping to mitigate climate change impact.
- built the capacity of farmers in natural resource enterprise as a climate change adaptative strategy that sustained the management of forest reserve areas in the western North of Ghana.
- Through a participatory action, I facilitated the negotiation of an input credit scheme for project beneficiaries to improve and promote their farming business.
- I facilitated the partnership between farmers and financial institutions to enhance their loan access. This action provided some 24 farmers with the opportunity to own their irrigation pumps and other climate change adaptative inputs.
- Through advocacy actions, built the capacity of the community members in advocacy skills to promulgate and enforce the land-use and spatial Planning Act 925.

Crosscutting co-management duties

- led the implementation of the Forest and Farm Facility and the Restoration for Recovery and Resilience sub-programme project that enhanced the resilience and recovery of forest and farm communities to climate change impact.

January. 2007 – May 2010

Organisation: IntENT Ghana (EU funded)

Position: Freeland Agribusiness Advisor

A brief overview of the Project

The intent was a three-year European Union-sponsored project implemented to address the challenges in SMEs, particularly the Ghanaian-owned youth businesses within and outside the country. The initiative was geared towards inculcating business development interest in the youth to reduce rural-urban migration, including overseas travelling for non-existing jobs while encouraging those in the diaspora to return home. The objective was in line with the Ghana youth employment programme. The Project recruited consultants to develop flagship proposals/ plans for interested youth for free and facilitated loan access as start-up support into the agribusiness of choice.

Tasks /activities on the Project

- I developed 20 business proposals in various agribusiness of choice by the youth and provided strategic direction towards its implementation
- I equally developed business proposals for farmers in innovative technologies of producing inputs for aqua-cultures, food processing or post-harvest technology initiatives.
- I also liaised with strategic investors and oriented them on potential investment avenues and how they can be supported strategically to access raw materials.
- I provided technical training support to potential youth in agribusiness development
- I provided agribusiness strategic advice through consultation and feasible business plans to interested youth who want to enter agriculture and related businesses.

September 2005 – October 2007

Organisation: National Board For Small Scale Industries (NBSSI)-Ghana

Position: Head of Business Advisory Centre

Duties

- Develop flagship proposals to central government and donors to fund the capacity needs of all enterprise groups including SMEs
- Liaised farmer group with appropriate financial institutions and input dealers for input credit support
- Coordinate the work of SMEs and organise appropriate technical training on their behalf to upgrade their skills.
- Liaise with appropriate stakeholders to help SMEs with good product packaging training to promote sales and aid marketing.
- Build the capacity of enterprise groups or SMEs in Advocate skills to advocate for a good business environment.
- Acted as a private desk officer in charge of the community-based rural development project.
- Acted as a desk officer for a social investment fund for urban poverty alleviation

Achievements

- Farmers or enterprise groups in Agon East and West are empowered in advocacy skills and able to advocate on behalf of members.
- Trained 15 entrepreneurs in business growth strategies and currently working independently without any financial support from banks.

August .2004 – July .2005: Nation service

Duty: Integrated Science Teacher

REFERENCES

Prof. Daniel Adu Ankrah
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