

SECTION A : KEY INFORMATION

Total Cost of Project : \$500,000

Duration of Project : 3 years

Date of Submission : 14/01/2011

Location (country/region/zone) of Project : Nigeria, Cameroun and Sierra Leone

A1	Project Title
	Sustainable Integrated pond based aquaculture with rice and poultry production: Economic, social and environmental assessment.
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A2	Project Summary (Guideline of 100 words)
	<p>The project focuses on development of a viable and sustainable integrated aquaculture systems with agriculture production (rice and poultry) for rural poor farmers. The project three main components: i) development of suitable integrated fish-rice- poultry production technology through participatory research; ii) expansion of the integrated aquaculture production in a community based demonstration plot and iii) institutional strengthening and integrated capacity building of all stakeholders.</p> <p>The project is expected to cover three West African countries (Nigeria, Cameroon and Sierra Leone) during which technology of sustainable integrated fish-rice-poultry farming will be demonstrated and disseminated to about 300 farmers.</p>
A3	Project Location (Country/region/zone)
	Nigeria, Cameroun and Sierra Leone
A4	Starting and Finishing Dates
	2011 – 2014

PROJECT LOGICAL FRAMEWORK

Narrative summary/Description	Objectively Verifiable Indicators	Means of Verification	Assumptions
<p>General Objectives: Sustainable growth in productivity of integrated aquaculture and agricultural production system in WCA improved</p>	<ol style="list-style-type: none"> 1. Contribution of integrated aquaculture to agricultural GDP increase by 4% annually by project completion 2. Income level of the farmers improved through 20% increase in agricultural production 	<ul style="list-style-type: none"> -National statistics -District level development reports -Programme reports 	
<p>Specific Objectives Farming systems integrating aquaculture, rice and poultry in targeted project sites enhanced</p>	<ol style="list-style-type: none"> 1. Number of farmers involved in farming system integrating aquaculture and agriculture practices. 2. % increase in fish production arising from integration of poultry and rice. 3. % awareness level in integrated fish cum poultry and rice farming. 	<ul style="list-style-type: none"> -National agricultural report statistics - District/regional/state level development reports -Project report documents 	<ul style="list-style-type: none"> - Adequate political stability and commitment and support at all levels of government sustained -Adequate governance structure at community, local and national levels are in place to sustain the benefit of the project - The gains/benefits from the project lead to improvements in livelihoods of rural and urban households - Cooperation of National and international stakeholders and partners to promote project benefits is assured - Significant reduction in morbidity and mortality rate due to HIV/AIDS and other

			communicable diseases in the project areas
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Narrative summary/Description	Objectively Verifiable Indicators	Means of Verification	Assumptions
<p>Results</p> <p>A)Technology for sustainable integration of fish farming with rice cum poultry production developed and promoted</p>	<p>A1 Number of improved method of production of integrated aquaculture with rice and poultry production developed in the project areas by the end of the project.</p> <p>A2 Proportion of utilization of the waste generated from the production system reutilized in a value added commercial application through the innovation.</p> <p>A3 High quality seeds of fish, poultry and rice distributed to 80% of the fish farmers in the project area by 2013</p>	<ul style="list-style-type: none"> - Project Annual reports - Federal Ministry of agricultural statistics bureau reports in target Countries - Parliamentary reports - District/regional/state level development reports -Universities and agricultural research institutes annual and other internal reports 	<ul style="list-style-type: none"> - Adequate political stability and commitment and support at all levels of government sustained -Adequate infrastructure is available and maintained -Extension services are effective and in operation -Cooperation of National and international stakeholders and partners to promote project benefits is assured - Agriculture is regarded and accepted as positive opportunity by the private sector and youths.

	<p>the participating countries completed by 2013, out of which 45% are women, youth and vulnerable groups</p> <p>.</p>		
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Narrative summary	Budget / Input					Assumption
<p>Activities A1.1 Mapping and Identification of wetland areas suitable for integrated aquaculture in the three participating countries A1.2 Socioeconomic survey of wetland farming activities A1.3 Community coordination and selection of demonstration plots A1.4 Establishment of innovation platform and intervention method developed A1.5 Principles and methods of integrated aquaculture technology developed and demonstrated at the sites B1.1 Project implementation through participatory research with stakeholders B1.2 Water balance study</p>	<p>Inputs: communication equipment, equipment (laboratory and on farm research), logistical support, technical support, input supply, in-service training, mentoring, workshops and seminars, technical training awards.</p>					<p>- Adequate political stability and commitment and support at all levels of government sustained</p> <p>-Adequate infrastructure is available and maintained</p> <p>-Extension services are effective and in operation</p> <p>- funding for research, training and extension organizations is accessible, adequate and maintained at levels which facilitate operation</p> <p>-- Cooperation of National and international stakeholders and partners to promote project benefits is assured</p> <p>- Significant reduction in morbidity and mortality rate due to HIV/AIDS and other communicable diseases in the project areas</p>
	Description	2011	2012	2013	Total	
	Training	20,000	31,000	31,000	82,000	
	Equipment	-	60,000	-	60,000	
	Vehicles	75,000	-	-	75,000	
	Infrastructure (Ponds, farm structures etc)	38,000	40,000	20,000	98,000	
	Technical support	43,800	19,000	26,500	89,300	
	Operating costs	3,200	3,200	2,800	9,200	
	Project Monitoring and evaluation	14,000	14,000	13,000	41,000	
	Overheads (10%)	19,400	16,720	9,380	45,500	
	Totals	213,400	183,920	102,680	500,000	

<p>(seasonal hydrological study) B1.3 Nutrient flow pattern study B1.4 Economic analysis of the production system</p>		
<p>Narrative summary</p>	<p>Budget / Input</p>	<p>Assumptions</p>

<p>C1.1 Public awareness campaign</p> <p>C1.2 Training and equipment need assessment</p> <p>C1.3 Intervention strategy development and implementation</p> <p>C1.4 Production of posters, training manuals and extension guides in local dialects and English Language</p> <p>C1.5 Infrastructure assessments</p>	<p>As above</p>	<p>As above</p>
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SECTION B: PROJECT INTRODUCTION AND PURPOSE

B1 Project's *Specific Objective* (Guide length – 50 words)

The project overall objective aims at developing a viable and sustainable integrated aquaculture systems with agriculture production for rural farmers thus ensuring diversification of livelihoods in rural areas, improved nutritional status, increased income-generating capacity, as well as provision of additional off-season activities through enhanced land and water resources utilization.

B2 What problems or needs is the project aimed at?

The West African population is estimated to increase to 430 million by 2025, as a result of this high increase in population, pressures on economies, natural resources and the entire society cannot be underestimated. Over half of the region's population consumes fish and allied agricultural products (rice and poultry) on a daily basis. Due to the dwindling fish and other agricultural resources as result of the population increase, a large number of the people in this region live in absolute poverty in a meagre condition. To transform the socioeconomic condition of the people of the region and achieve the enormous potential for agricultural growth in the region through provision of means of earning and livelihood, integrated fish cum rice and poultry production is one of the best options. Also, with decrease in fish catch and reduction in the supply of other agricultural products (such as rice and poultry) across West Africa in contrast with growing populations and increasing demand for food, integrated aquaculture will play a key role in helping increase food production in an environmentally friendly manner in the region. Thus, the project is expected to address the problems of high pressure on capture fisheries and thereby tackling the demand–supply disequilibria. The current project is therefore envisaged to address the issues of poverty alleviation and food insecurity, poor environmental/social friendly ways of agricultural production and imminent food/stock depletion through the development of production technologies that will ensure sustainable commercial integrated aquaculture system with crop and livestock production.

B3 What is the evidence for the demand for the proposed work?

- Growing water scarcity and competing water demands are expected to reduce diversion of water for agriculture in the future. Generally efforts are needed to utilize the available limited water resources efficiently and effectively through multiple water uses such as integrated fish cum poultry and rice farming.
- In this region, there is huge demand for technology that will ensure increase production through integration of various production system like animal-cum-fish or rice-cum-fish culture for efficient utilization of available meagre resources and maximisation of production of diversified products from a minimum area
- Also the need to improve income status of the rural farmers in the project areas and reduction of poverty level, call for more efficient and cost effective ways of diversifying production.
- This project is also in line with the NEPAD and CORAF/WECARD priority area of development of sustainable system of integrated aquaculture with other agricultural production in order to meet the need of the poor and vulnerable households.
- Also the project design is the outcome of broad-based consultations (meetings and discussions, validation workshops, and popular consultations) with all the

stakeholders, who expressed their views and concerns throughout the project preparation as all the direct beneficiaries of the project in the three countries were actively involved in the project preparation.

B4 Will the project contribute to resolving those problems [in B2] and over what timescale

The project will help in training, production and distribution of improved seeds of fish, rice and poultry to the resource poor farmers who are in dire need of the resources so as to improve their livelihood. To this end, a total of 300 fish farmers will be trained on improved methods of integrated fish cum rice and poultry production over a period of 3 years in the selected demonstration sites covering 15 communities in Nigeria, Cameroun and Sierra Leone. The farmers will also be provided (at a competitive cost) necessary inputs for integrated fish cum poultry and rice production for the first year along with the complete package of practices.

It is expected that by the end of the project year, each participating fish farmer will have over 75% increase in their annual output and will be capable of producing fish, rice and poultry products annually that will ensure increase in their earning capacity to around \$500 annually.

Also the complete training packages provided to the farmers will help to improve the fish, rice and poultry productivity and this is expected to transform the production of the products of this integration towards commercial production and import substitution in the region.

B5 Who are the target group?

The target groups are established fish farmers in these countries who would be provided with extension training in integrated fish farming operation in order to reach greater number.

B6 Who will the beneficiaries be and are there any groups who will be disadvantaged by the application of the findings of the proposed work?

Participants at demonstration/pilot sites will be direct beneficiaries. Participating stakeholders of the project make up a cross section of farmers and others benefiting from livelihoods from integrated aquaculture with agriculture cum livestock production. The 300 direct beneficiaries would be composed of men and women fish farmers. The integrated fish farm cum livestock and crop farming will further reinforce the roles of these stakeholders, particularly women, by promoting and facilitating the establishment of stakeholder associations and encouraging active participation by representatives of these associations at the national level. The project will place special emphasis on improvements to the value chain with the accompanying sponsoring of improved technologies by the women involved in this chain.

Indirect beneficiaries include all who will ultimately benefit from the demonstrations promoted by the project. These will include many at the grass roots fish farmer level as others in the village will be learning about growing fish in ponds along with crop and livestock production. This larger group will in effect, contribute to the expansion of integrated aquaculture activities by becoming fish farmers themselves or as contributors to the value chain. The increased sale of fish and other agricultural products to consumers adds to the beneficiary list. Farmer producers will consume perhaps half of their production and sell the balance, with some given away. This will clearly increase availability of fish and other agricultural products in rural communities and improve the nutrition.

B7 How will the proposal contribute to sustained poverty reduction?

- The project will further improve the ability of most rural farmers to be self employed thus reducing high rate of unemployment in the project area
- The income levels of the project communities will increase significantly as a result of the project activities
- The food security will be assured through increase in production and nutrition level of the people in the project community.
- The women and vulnerable group in the community are adequately provided for in the project, this will ensure improvement in the income level of the women which invariably may lead to more investment in children education and household's health.

B8 What are the proposed promotion pathways for the uptake or up-scaling, of the project *Results* to the intended beneficiaries?

The envisaged promotional pathways for the uptake of the project outputs by the intended beneficiaries are:

- The intended beneficiaries are included in the project implementation phase that is project activities is to be implemented with the active participation of the fish farmers, farmer groups and organisations.
- The active collaboration of extension services of Government of Nigerian, Cameroun, Sierra Leone and NGO/CBO during project implementation will help wider dissemination and uptake of the project outputs.
- Publications of the project outputs in simple languages understandable to the ordinary farmers will also help to wider scale dissemination of the project outputs.
- Farmers' training incorporating both participating (in project implementation) and non participating farmers on integrated fish cum rice and poultry technologies will also help to wider scale dissemination of technologies.
- Farmers' exchange visit will also help wider scale dissemination as farmers will get first hand knowledge (by seeing) about the improved goat production technologies.
- Broadcasting in the media and video documentary making are also the other envisaged promotion pathway for uptake of the project outputs.

SECTION C: BACKGROUND TO WORK**C1 What work has previously been done or is currently being pursued towards the *Specific Objectives, Results and Activities* of the project [Guide length – 500 words]**

Hunger and malnutrition remain amongst the most devastating problems facing the people of West Africa region. One of the greatest challenges faced in this region is that of feeding its ever increasing population (CORAF/WECAD 2007). There is the need for development of a suitable agricultural system to meet the increasing demand for food, and also maximize the utilization of the available limited resources without much wastage.

Fish and allied agriculture products (poultry and rice) are the most reliable source of food for many in this region however millions of people who depend on these products are faced daily with the fear of food shortage (World fish center, 2003, FAO 2011). Aquaculture remains the only viable option of increase fish production in the region as a result of decreasing fish catch across West Africa.

Integrated aquaculture is only beginning in West Africa (Nigeria, Cameroun and Sierra

Leone) but little efforts are in place in these countries to ensure increasing public awareness for viable integration of agricultural activities due to poor level of agricultural extension services, though the benefits to rural farmers have been well documented (Miller *et.al.* 2006; Sanni and Jaunich 2006).

Integrated irrigation-aquaculture (IIA) has been identified as a way of increasing the efficiency of water use and producing much-needed animal protein for human consumption (FAO 2011, NEPAD (2003) and FAO Food Security programme and WARDA 2003). To effectively address this, some technologies for commercial and semi commercial production of fish and other agricultural product had been developed through some studies in Nigeria, Sierra Leone and Cameroun (Adewunmi *et. al.* 2011, FAO, 2011, Gabriel *et. al.* 2007; Miller 2006). These studies have addressed the issues of culture methods/procedures, integration mechanism, feeding practices, water and waste utilisation, water quality control/diseases cum parasites control and products utilisation (FAO 2009). These studies had shown that one way to increase the productivity of land and water resources effectively is to integrate irrigation and aquaculture (FAO 2011). However these findings need to be properly demonstrated, disseminated to and adopted by the farmer.

Integrated aquaculture has been regarded as one of the key programmes for poverty reduction in this region (NEPAD 2003), various governmental organisations in Nigeria, Cameroun and Sierra Leone have been using this as one of the main tools of boosting food security in these countries. The benefit of this initiative would have been better appreciated, if complete package of fish cum poultry and rice farming is provided to the farmers. The proposed project is thus aims to demonstrate the possibility and potential of a commercial integrated fish cum rice and poultry production involving the rural farmers in these areas through intervention of the recent technologies. This is expected to help to increase the productivity and sustainability of water, land and associated resources while improving farmers' income and well-being; and employment generation.

SECTION D: OUTPUTS AND ACTIVITIES

D1 What are the project's intended *Results*?

The following outputs are expected to be achieved at the end of the project and these include:

- 1) Technologies for sustainable integration of fish farming with rice cum poultry production developed and promoted
- 2) Expansion of Integrated Aquaculture production system in the community based on the pilot demonstrations establishment.
- 3) Institutional strengthened and Integrated capacity building

D2 What are the objectively verifiable indicators for the *Results*?

- 1 a) Appropriate production technology in relation to project areas need identified and relevant input provided and put into use by farmers in the project areas by 2013.
b) Nine demonstration plots established in the three participating countries are to be operated in a technically sustainable and profitable way with active involvement (training) of a minimum of 300 participating farmers who are members of farmers' groups and other stakeholders by 2013
c) Input distribution channels created and plans for expansion of the innovation developed fully operational by 2012
- 2 a) Improved methods of production of integrated aquaculture with rice and poultry production developed in nine selected locations in the project areas by project year 2.
b) High quality seeds of fish, poultry and rice distributed to 80% of the farmers in the project area by 2013.
c) 80% utilization of the waste generated from the production system reutilized in a value added commercial application through the innovation developed.
3. Three laboratories in relevant institutions in the participating countries equipped and capacity upgrade for production of high quality fish seed by 2012

D3 How will the *Results* indicators be measured?

Project Annual reports, minutes of the stakeholder meetings, published extension materials, production record of the farmers, demonstration sites, ministry of agricultural statistics bureau reports in target countries, district/regional/state level development reports, universities and agricultural research institutes annual and other internal reports.

D4 What are the expected environmental impacts ? [beneficial, harmful, neutral]

The environmental benefits associated with integration are numerous. Generally, more sustainable use of the natural resource base is achieved because system inputs are re-cycled between the different components in an efficient manner.

Also the outputs generated by one component for instance the manure from poultry, rice bran which would otherwise become wastes requiring disposal are become valuable resources such as fertilizer and feed. Productivity per unit area land and water is increased (e.g. by stocking fish in a pond that would otherwise be used only for irrigation). The interdependence of system components can act to discourage unsustainable practices a good example is the reduction in pesticide applications by the farmers due to its toxic effects on fish seed produced in rice field. However, the greater the degree of integration inherent in a system the less pressure it will place on ecosystem functioning field. This often dramatically increases the biodiversity of these systems

Any form of agriculture results in some degree of adverse environmental impact, the negative impacts in this situation include the risks of direct pathogen transfer to humans in fishponds fertilised with manures and also the implicit connections made between integrated poultry-fish systems and influenza pandemics. The problem of eutrophication of water leading to alga blooms is also of great concerned. Precautionary measures shall be taking in the utilisation of the natural resources for integrated aquaculture by ensuring that detailed environmental assessment is carried out and the report of the environmental assessment study is strictly adhered to.

D5 What are the expected social impacts ? [beneficial, harmful, neutral]

The bulk of the communities in the project area consist of low-income families who virtually depend on subsistence farming system. From this project 70% of the population in the project areas in these countries are expected to be the primary beneficiary. Through this project, it is proposed that income level of the rural farmers in these areas will improve and consequently poverty will be reduced directly through the resulting increase in income of both men and women.

The grouping of the farmers into associations in each of the demonstration sites will help to reduce the overall dependency on the government and provide a foundation on which the community can further improve self-government. This will enable ownership by the target communities from the beginning of the project and will sustain project activities after project implementation.

The major focus on the women and vulnerable in the project will help these groups especially women in these communities to benefit from self-empowerment and greater negotiating skills in the community thus ensuring equitable allocation and access to resources which will indirectly lead to increase production and income level.

D6 What are the expected economic impacts? [beneficial, harmful, neutral]

In achieving the specific objective of poverty alleviation, improve the livelihoods of the communities and enhance their quality of life, with the project in place, it is expected that the income level of the farmers in these areas will increase by 40% while the level of poverty in the project communities will reduce by 20% at the end of the project.

D7 Describe the project Activities

- 1. Technologies for sustainable integration of fish farming with rice cum poultry production developed and promoted.**
- 1.1 Mapping and identification of wetland areas:** Baseline survey of the possible wetland areas in each of the participating countries shall be conducted. Using GPS , the possible wetland areas with high potentials for integrated aquaculture shall be mapped. Further studies on soil composition, flooding regimes etc shall be done to determine the suitability of the areas for integrated fish farming, this shall be combined with secondary data obtained for relevant institutions in these areas. Through this activity, detailed information on the wetland areas suitable for integrated aquaculture shall be documented.
- 1.2 Socioeconomic survey:** Baseline information on the socioeconomic status of the farmers and people that are indirectly or directly involved in fish farming activities shall be documented and this will be used to assess the economic and social benefits of the project at the end of the project activities.
- 1.3 Community coordination and stakeholders workshop:** In selecting location, market potentiality will be taken into consideration. In selecting the district or project community, one stakeholder meeting will be organized in each of the participating countries during which all concerned stakeholder such as government officials, non - governmental sector, local government bodies, CBOs etc. shall be involved in developing working modalities of project to be used in identification and selection of the beneficiary farmers. At least a minimum of 300 fish farmers (100 per country) will be selected and trained by the end of the project. Also nine demonstration plots (three per country) will be established in the participating countries
- 1.4 Participatory research:** The already established technologies for sustainable integration of fish farming with rice cum poultry production are further studied for their suitability and viability in the each of the countries involved in this project. During which study on the water balance (seasonal hydrology study) and nutrient flow pattern shall be conducted in the selected research sites (preferably established research stations in each of the countries). Also the detailed economic analysis of each of these production systems will be documented. This study shall be participatory involving all the stakeholders especially extension officials, farmer groups representative and NGOs through which decision will be made on the technology to be disseminated and developed
- 1.5 Establishment of innovation platform and intervention:** Under this subcomponent, the developed technology for sustainable integrated fish farming cum poultry and rice production shall be established and demonstrated to the fish farmers in each of the nine demonstration plots. In each of these plots, farmers will be taught through practical demonstration the rudiment of integrated fish cum poultry and rice management such water quality management, health management, the real aspect of the integration, marketing of the produce, value added chain, bookkeeping/accounting practices etc. The demonstration plot will serves as possible contact point for the farmers for intervention in their personal farms.
- 1.6 Principles and methods of integrated aquaculture developed:** Three hundred farmers to be trained through participatory approach at the demonstration plots will be expected to adopt the innovation developed. Various methods and principles of integrated aquaculture disseminated through this project are expected to achieve 90% adoption level by the end of the project.

2. Market Access and Quality of Aquaculture products improved

2.1 Entrepreneurship/ business skill of farmers enhanced.

Farmers in each of the demonstration centres will be trained on entrepreneurship/ business management skills of various value chains on fish production. Also various value chains in integrated fish production shall be identified and demonstrated.

Various stake holders in fish supply chain organized.

2.2 Stakeholders in the fish supply chains organised

The relationship, cooperation and coordination among stakeholders in fish supply chains will be identified and developed. These stakeholders identified at the demonstration plots shall be organized into efficient value chain groups through project support.

2.3 End market opportunity from the farm output supported.

Various end market opportunities for the farm output will be evaluated and risk factors identified. The best opportunity will be demonstrated, established and disseminated.

2.4 New products and services identified and developed

Value added supply chain shall be shortened to improve efficiency and profitability through elimination of middle men in fish product supply chain. This will be done through creation of market service centre to be managed by farmer groups or their representatives. The project will provide technical support in the area of establishment of business management of such business enterprises.

3. Institutional strengthened and Integrated capacity building

3.1 Training and equipment need assessment: A three or four days intensive training will be organized for the participating fish farmers. Each farmer will be trained on different management techniques in integration of fish, rice and poultry farming such as pond construction and design, poultry shed design, rice field integration, key element of integration, nutrient cycle and utilization, feeding practices, disease control. The farmers will be trained again on quarterly basis incorporating new farmers on improved package of intensive integrated fish cum poultry and rice farming. At the end of the training programme, each of the fish farmers shall be supported with key inputs such as good quality fish and rice seed at a competitive price. Through the training cluster farms to be established in three fish farms in each of the three participating countries (3 per country) farmers will be provided with necessary extension and technical services from time to time.

3.2 Infrastructure assessment: Under this activity, the capacity of the institutions to produce high quality fish seeds will be further strengthened. To this end, three laboratories in relevant institutions (one per countries) in the participating countries shall be equipped and upgraded for production of high quality fish seeds.

3.3 Public awareness campaign and production of posters, training manuals: Three video documentaries will be produced (one per country) on integrated sustainable fish cum poultry and rice production during the project period. Also a national workshop will be conducted in each of the participating countries at the end of the project. The workshop will involve all the concerned stakeholders including the policy makers during which the outcome of the project will be highlighted. The outcome of the project will be published in final technical report and extension materials for farmers. These will be published in vernacular language, English and French.

3.4 Advanced Training for extension workers and scientists: Local capacity of the extension officers will be built through specialized training on integrated fish farming. It is expected that through this project, 90 extension agents (30 per country) will be trained and

D8 Attach milestones for the life of the project

Stakeholder workshop on the modalities for selections of sites and participating farmers will be carried out in the third quarter of the project year one

Research studies on the technology to be developed and disseminated; socio- economic survey and site mapping will be concluded in the first and second quarters of the project year one

By the end of the project year one, nine demonstration plots for sustainable integrated fish cum rice and poultry will be developed and established.

Training workshops for the participating farmers in each of the participating countries will commence in the third quarter of project year one.

Input distributions (at competitive prices) will commence at the fourth quarter of the project year.

Rehabilitation of research stations, training of staff and extension workers will starts at the third quarter of the project year one

Training materials and posters developed at the third and last quarters of the project year one

SECTION E: COLLABORATION AND PARTNERSHIPS

E1 Internal Collaboration and Partnerships

The project has established internal collaboration and partnerships with the following institutions and organizations:

A) Nigeria

- 1) University of Ibadan, Nigeria (Fish, rice and Poultry)
- 2) National Institute for Freshwater Fisheries Research Kainji, Nigeria (Training, Rice and water resources)
- 3) Institute for Agriculture Research and Training, Ibadan, Nigeria (Training and Poultry)
- 4) More Fish, More Meat, More Food (MF-MM-MF), Umuahia Nigeria (NGO)

B) Cameroun

- 1) University of Buea, Cameroun (Fish, rice and poultry)
- 2) Institute of Agricultural Research for Development, Ekona, Cameroun (Training, Rice and poultry)
- 3) Fouban Fish culture Research station, Cameroun (Training and Fish)
- 4) Cameroun Fish Farmer Union, Cameroun (NGO)

C) Sierra Leone

- 1) Njala University, Sierra Leone (Fish, Rice and Poultry)
- 2) Institute of Marine and Oceanography, Fourah Bay College, Freetown, Sierra Leone (Training and Fish)
- 3) Environmental Foundation for Africa, Sierra Leone (NGO)

All the collaborating partners are involved in the project design, preparation and planning.

The general project coordinating unit (PCU) will be established in the University of Ibadan, Nigeria. The PCU to be chaired by the project coordinator has the overall responsibility for programme implementation, budgeting, planning and reporting, and will ensure that programme activities are properly carried out. Within PCU is the project steering committee (PSC) which is comprised of the lead person from each of the key partners and collaborating organisations. The PSC will be meeting quarterly to plan, review and monitor the project activities

Most of the programme activities will be implemented at the national and local levels under the control of the participating institutions in each country. The projects that are trans-boundary in nature shall be implemented by the PCU. Respective research institutions will take a lead role in implementing and coordinating project activities in their respective areas of specialisation (fish, rice and poultry).

For supervision and extension, works monitoring, as well as research and development, the services of specialized technical institutions in these countries, notably research institutes and NGOs will be used. The intervention of local institutions, and specialized agencies and NGOs will be on the basis of agreements signed and draft of which will be submitted to CORAF/WECARD prior to project implementation.

E2 External Collaboration

The project will ensure that local institutions such as district/local authorities, state/provincial authorities, district assemblies and community based fish farmer groups will be mobilized, and supported through capacity building to play their respective roles in the implementation of the programme activities. To this end, the project will be collaborating with the following farmer groups/ organisations:

A) Nigeria

- 1) Catfish Association of Nigeria (CAFAN)
- 2) Fisheries Society of Nigeria (FISON)

B) Cameroun

- 1) Cameroun Fish Farmer Union
- 2) Southwest Cameroun Farmers Association

C) Sierra Leone

- 1) National Association of Farmers in Sierra Leone

Throughout the implementation process, special efforts will be made to involve local communities, and the capacity at different levels will be strengthened through training workshops so that they can facilitate the process of community participation and ownership, and lead the communities in undertaking wise use activities of the project resources.

The project implementation will be the key responsibility of the local community at large. The project's major responsibility will be the delivery of technical and advisory support in terms of technology identification, evaluation, and dissemination. To make up for variation in the implementation capacity at various levels, efforts will be made to strengthen these bodies through capacity building programme.

The project development committees in the provinces and districts will monitor the consistency of operations while the local project management committee (comprising mainly of the farmer groups with 40% female membership) will be entrusted with the management of project basic infrastructure and equipment

SECTION F: FINANCIAL INFORMATION

F1 Total financial support requested from CORAF/WECARD

	2011(\$)	2012(\$)	2013(\$)	Total (\$)
Component 1: Technologies for sustainable integration of fish farming with rice and poultry developed and promoted				
GIS Mapping of wetland	4,500	--	-	4,500
Wetland area survey	4,500	-	-	4,500
Establishment of Research plots	6,000	-	-	6,000
Socioeconomic survey	6,000	-	-	6,000
Community Coordination	9,000	-	-	9,000
Selection of farmers and demonstration plots	6,000	-	-	6,000
Establishment of research plots	6,000	-	-	6,000
Water balance	1,800	-	-	1,800
Nutrient flow pattern	1,500			1,500
Economic analysis	1,500	-	-	1500
Construction of Demonstration plots	40,000	20,000	-	60,000
Farmers trainings	18,000	9,000	9,000	36,000
Sub-total	104,800	29,000	9,000	142,800
Component 2: Market Access and quality of Aquaculture products improve				
Fish product supply chain groups coordination	-	1,500	-	1,500
Interactive meeting among the value chain groups	-	-	1,500	1,500
Demonstrations of different fish and fishery products processing, preservation and packages techniques (product quality improvement and assessment)	-	3,000	1,500	4,500
Identification of market access /opportunities and their requirements	-	-	1,500	1,500

Farmers' groups coordination	-	-	900	900
Creation of sales outlets	-	-	1,500	1,500
Sub-Total	-	4,500	6,900	11,400
Component 3: Institutional Strengthened and Integrated Capacity Building; Project coordination				
Workshops and international conferences	18,000	10,000	10,000	38,000
Capacity building of research scientists and technologists	-	15,000	15,000	30,000
Community capacity building in extension workers	-	6,000	6,000	12,000
Vehicles	120,000	-	-	120,000
Upgrading and equipping of 3 laboratories (1 laboratory per country)	-	30,000	-	30,000
Publication training manuals	-	6,000	-	6,000
Video documentaries	-	-	4,500	4,500
National workshops	-	-	12,000	12,000
Project coordination				
Travel and staff expenses	3,200	3,200	2,800	9,200
Operating expenses	14,000	13,000	12,000	39,000
Overhead and Contingency@ 10%	26,000	11,670	7,430	45,100
Sub-total	181,200	94,870	69,730	345,800
PROGRAMME TOTAL	286,000	128,370	85,630	500,000
F2 Other contributions				
<p>The participating Universities and Research Institutions will provide the office space in which the project coordinating units in each country will be located. They will be responsible for the furnishing, provision of some office equipment and utilities in these offices. Also staff for these organizations will engaged for monitoring and supervision, in which the salaries and emoluments shall be paid by the collaborating institutions. The project beneficiary communities will be responsible for provision of the land on which the project will be sited and labour for construction of some key infrastructures in the project areas.</p>				
F3 Application elsewhere				
No.				

References

Adewumi, A.A., Adewunmi I. K. And Olaleye V. F. (2011): Livestock waste – menace: Fish Wealth Solution. *African Journal of Environmental Science & Technology* 5 (3): 149 – 154.

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Gabriel, U. U, Akinrotimi, O.A., Bekibele D.O., Anyanwu, P.E. and Onunkwo D.N. (2007). Economic benefit and ecological efficiency of integrated fish farming in Nigeria. *Scientific Research Essay 2* (8): 302 – 308.

Miller, J. (2006). The potential for development of aquaculture and its integration with irrigation within the context of the FAO Special Programme for Food Security in the Sahel. In M. Halwart & A.A. van Dam, eds. *Integrated irrigation and aquaculture in West Africa: concepts, practices and potential*, pp. 61–74. Rome, FAO. 181 pp.

Miller, J., Atanda, T., Asala, G. & Chen, W.H. (2006). Integrated irrigation-aquaculture opportunities in Nigeria: the Special Programme for Food Security and rice-fish farming in Nigeria. In M. Halwart & A.A. van Dam, eds. *Integrated irrigation and aquaculture in West Africa: concepts, practices and potential*, pp. 117–124. Rome, FAO. 181pp.

NEPAD (2003) Comprehensible Africa Agriculture Development Programme (CAADP). New Partnership for Africa's Development (NEPAD). ISBN 0-620-30700-5, 102p

NSPFS. (2003). Mission Report/Fisheries, 21 September – 6 October 2003. Imo, Akwa Ibom, Cross River, Rivers, Bayelsa, Delta, Edo, Ondo and Kogi States. Fisheries Team. Lagos, Special Programme for Food Security, 19 pp.

Yaro, I. (2001). Feasibility of adopting integrated rice-cum-fish culture system to enhance the development of conventional aquaculture participation in Niger State. In A.A. Eyo & E.A. Ajao, eds. *Proceedings of the Fisheries Society of Nigeria (FISON)*, pp. 31–36.

Yaro, I. & Lamai, S.L. (2000). Determination of optimum stocking density of the fingerlings of the Nile tilapia, *Oreochromis niloticus*, in rice-cum-fish culture in Niger State, Nigeria. *Journal of Nigerian Association of Teachers of Technology* 3(2): 528–536.

WARDA (2003). Exploring rice – fish farming. WARDA Newsletter- *Essence of the Africa rice center*. October – December 2003 Number 4.

World Fish Centre (2003). Fish an issue for every one: A concept paper for fish for all Summit. p.10.

TEAM PROFILE (UNIVERSITY OF IBADAN, NIGERIA)

1. Dr. AJANI Emmanuel Kolawole (Project Coordinator), Department of Wildlife and Fisheries Management, University of Ibadan, Nigeria.

Academic and Professional Qualifications with dates

Ph.D Fisheries Management, 2001, University of Ibadan

M.Sc. Fisheries Management, 1992, University of Ibadan

B.Sc. Fisheries Management, 1990, University of Ibadan

Technical and Consultancy Experiences

- Consultant (Fisheries Expert): African Development Bank (AfDB), Tunis, Tunisia – Project Supervision Mission – Mozambique Artisanal Fisheries Development Project. 20 November – 21 December 2010.
- Consultant (Project Development Expert): African Development Bank (AfDB), Tunis, Tunisia- Project Preparation of Multinational- DRC and Uganda on Lakes Edward and Albert Integrated Fisheries and Water Resources Management and Development. 16 July to 16 August 2010.
- Consultant (Fisheries expert): African Development Bank (AfDB), Tunis- Project Supervision Mission, Uganda Fisheries Development Project, 14 – 23 March 2009.
- Consultant (Fisheries Expert): African Development Bank (AfDB), Tunis- Technical Completion Report of Lake Edward and Albert Fisheries Pilot Project, 24 March – 10 April 2009
- Consultant (Fisheries) - University Consultant Services, Ibadan - Capacity Building in Cage Culture. Workshop and training programme organized on behalf of **Federal Department of Fisheries, Nigeria**. December 2008 – January 2009.
- Consultant (Fisheries Specialist) – **African Development Bank**. Uganda Fisheries Development Project – Mid Term Review. 7 April – 5 May 2008
- Fisheries Consultant – University Consultancy Service, University of Ibadan, Nigeria. Assessment of Fisheries potentials of three man-made lakes (Sepeteri , Ede and Igabara – Oke dams) in South western, Nigeria. Report prepared for and presented to Federal Department of Fisheries, Abuja, Nigeria 2006 – September 2008.
- Fisheries Management Consultant – Geomatics (Nig.) Limited. Baseline studies of 60 LEEMP (**A World Bank Programme**) communities in Bayelsa state, Nigeria. Developed for Federal Department of Finance and World Bank under Poverty Alleviation Programme. 2006 – 2008.
- Fisheries Consultant - Lagos State Agricultural Development Programme Making technical presentation and offering advises on the management techniques in running of Fish farms in Lagos State, Nigeria. 20 06 till date.
- Fisheries Management Expert - Appraisal of Fisheries aspects of National Fadama Development Project (NFDPP2) (**A World Bank Project**) in the Southern Zones of Nigeria. Technical report prepared for Jawara Environmental Services Ltd. Lagos and presented Federal Ministry of Agriculture, Abuja . 2002
- Fisheries Consultant: Environmental Assessment Study of Imo State, Nigeria under Micro-Watershed and Environmental Management Programme (MEMP) (**A World Bank Project**). Technical report prepared for Geomatics (Nig.) Limited and presented to The Federal Ministry of Environment, Abuja. 2000 – 2001.
- Technical Consultant- Fishmongers (Nig) Limited, Lalupon, Oyo State, Nigeria Drawing feasibility report and offering technical support for running of 12 acres fish farm. 1999 – till date.

- Technical Consultant- Crown wealth Project, Iwo Road, Ibadan, Oyo State, Nigeria. Drawing feasibility report and offering technical support for running of 12 acres fish farm. 2002 – till date.
- Management Consultant - Nefraday (Nig.) Limited, Lasoju, Ilorin, Kwara State, Nigeria. Development of Technical and Management frameworks for the management of the 25 hectare fish farm at Nefraday (Nig.) Limited. 1993 – 1996

Summary of Work Experience:

- Senior Lecturer - Fisheries Development and Management, Department of Wildlife and Fisheries Management, University of Ibadan, Nigeria. (1996 – till Date)
- Fisheries Manager – Nefraday (Nig.) Ltd, Ilorin, Kwara State, Nigeria. (1993 – 1996)
- Fisheries Officer – Zartech (Nigeria) Ltd. Oluyole Industrial Estate, Ring Road, Ibadan, Oyo State, Nigeria (1993)

Summary of Publications

- Ayodele, I. A. and **Ajani, E. K.** (1999): Essentials of fish farming. Odua Publishing Co. Ibadan. 60pp
- **Ajani, E.K.**; Musa, B.O.; Akinwusi, F. and Akanmu, O.A. (2000): Production of *Clarias gariepinus* under two hatchery systems. *Journal of Tropical Forest* 16 (1) 167 – 172.
- Falaye, A.E. and **Ajani, E.K.** (2001): Relationship between proximate composition of eggs and stages of gonad development in silver catfish *Chrysichthys nigrodigitatus*. *Journal of West African Fisheries* 10 (1) 535 – 540
- **Ajani, E. K.** and Omitoyin, B.O. (2004): Effects of some anthropogenic activities on fish species diversity in Eleiyele Lake Ibadan, Nigeria. *African Journal of Livestock Extension* 3: 13 – 18
- Omitoyin, B.O.; **Ajani, E.K.** and Adebusoye, F. (2003): Bioaccumulation of Copper, Lead and Zinc in the Organs and Tissue of *Clarias gariepinus* (Burchell1822) in Eleiyele Lake Ibadan, Nigeria. *Journal of Environmental Extension Vol.4* p74-78.
- **Ajani, E. K.**; Nwanna, L.C. and Musa, B.O. (2004): Replacement of Fishmeal with maggotmeal in the diets of Nile tilapia, *Oreochromis niloticus*. *World Aquaculture* 35 (1): 52 – 54.
- Nwanna, L. C. and **Ajani, E. K.** (2005): Effects of diets containing water hyacinth (*Eichhornia crassipes*) on growth and blood parameters of African catfish *Clarias gariepinus* . *Journal of sustainable tropical Agricultural Research* 13: 7 – 10.
- Nwanna, L.C.; **Ajani, E.K.** and Bamidele, E. (2006): Determination of Optimum Dietary Phytase level for the growth and mineral deposition in African catfish *Clarias gariepinus*). *Aquaculture Science* 54(1): 75 – 82.
- **Ajani, E. K.** (2007): Effects of stocking density on the hematology, growth and feed utilization of Nile Tilapia reared in tanks. *Journal of Tropical Forest* Vol. 23 (1): 34 – 43.
- Omitoyin, B.O; Fagade, O.E; Ogunjobi, A.A; Ogbona, J; **Ajani, E.K.** and
- Oyelade, A.A. (2008): Preliminary Investigation on the conversion of Aquaculture Solid Waste into Single Cell Protein (SCP) from Re- circulatory slug for Fish Feed. *Nigerian Journal of Fisheries* 5(2): 107-122.
- **Ajani, E. K.** and Oyebola O.O. and Setufe S.B. (2010): Effect of crowding stress on growth performance and carcass quality of juvenile African catfish (*Clarias*

gariepinus) fed varying crude protein levels. *African Journal of Livestock Extension*
8: 67 - 71

2. Dr. OMITOYIN Bamidele Oluwarotimi

Academic and Professional Qualifications with dates

Ph.D. Fisheries Management, November 1995, University of Ibadan

M.Sc. Fisheries Management, January 1990, University of Ibadan

B.Sc. Fisheries Management, July 1987, University of Ibadan

Grant/Fellowship/Short Term Training

2009: Training on Water Quality Management, Fish Health and Disease Control organized by USAID Markets / Winrock International Nigeria Farmer to Farmer (FtF) at Fahoc Farm, Lagos, Nigeria. (5 Days)

2009: Training on New Hatchery Techniques to Improve African Mud Catfish organized by USAID Markets / Winrock International Nigeria Farmer to Farmer (FtF) at Azomor Farm, Ibadan, Nigeria.(5 Days)

2003: Advanced Aquaculture Management Seminar Vigo, Spain (14 Days)

2002: Aquaculture workshop Organised by FISON in collaboration with the Government of Israel, Nigeria (11 Days)

2002: National Workshop on Fish diseases control, FISON, Nigeria (7days)

2001: National Workshop on Environmental Impact Assessment (EIA), University of Ibadan Centre for Environmental Protection and Natural Resources and Federal Ministry of Environment, Abuja (7days).

Summary of Work Experience:

- Head, Department of Wildlife & Fisheries Management, University of Ibadan (August, 2010- Date)
- Senior Lecturer, Department of Wildlife & Fisheries Management, University of Ibadan (2003- 2009)
- Lecturer 1, Department of Wildlife & Fisheries Management, University of Ibadan (2000 - 2003)
- Lecturer 11, Department of Wildlife & Fisheries Management, University of Ibadan (1997- 2000)
- Fishery Manager, Zartech Agric. Ltd; Oluyole Industrial Estate, Ibadan (1993 – 1997)
- Technical Officer (Fish Feed), Tropical Aquaculture Ltd, Amuda Estate Iwo, Osun State (1990 – 1991)
- Vice –President (Training), Catfish Farmer’s Association of Nigeria (CAFAN) 2007-Date
- Resource Scientist to Federal Ministry of Environment in the Review of the Environmental Impact Assessment (EIA) of the Draft Report of Projects 2001-Date)
- National Professional Aquaculturist to the Aquaculture and Inland Fisheries Project of the National Special Programme for Food Security (NSPFS), Federal Ministry of Agriculture and Rural Development (FMARD)/ Food and Agriculture Organization of the United Nations (FAO). April - October 2004.
- Consultant to Fish Farmers and Environmental Conservationist Initiative Group (FECIG) Buea, Republic of Cameroon 1998 – 2003.

Summary of Recent Publications

- Nwanna, L.C; Adebayo, I.A. and **Omitoyin, B.O.** (2009): Phosphorus requirement of African catfish, *Clarias gariepinus* based on broken-line regression analysis methods. *ScienceAsia* 35: 227 -233
- Nwanna, L.C; Adebayo, I.A. and **Omitoyin, B.** (2009): Effect of graded levels of phosphorus on growth and mineral concentration in giant African catfish *Heterobranchus bidorsalis*. *African Journal of Biotechnology* Vol. 8 (16): 3047-3953
- **Omitoyin, B.O;** Fagade, O.E; Ogunjobi, A.A; Ogbona, J; Ajani, E.K. and Oyelade, A.A. (2008): Preliminary Investigation on the Conversion of Aquaculture Solid Waste into Single Cell Protein (SCP) from Re-circulatory slug for Fish Feed. *Nigerian Journal of Fisheries* 5(2):107-122
- **Omitoyin, B.O.** (2008): Aquaculture management of the African catfish in Nigeria In: I. Mohammed; U.B. Kyiogwom; W.A. Hassan; A.L. Ala; A. Singh and S.D. Dogondaji (eds.) *Proceedings of the 23rd Annual Conference of the Farm Management Association of Nigeria (FAMAN) held at Faculty of Agriculture, Usmanu Danfodiyo University Sokoto, Nigeria 14-17th December, 2009 pp 616 - 621.*
- **Omitoyin, B.O.** (2007): Introduction to Fish Farming in Nigeria. Ibadan University Press, University of Ibadan.105pp excluding cover page ISBN 978-121- 427-9
- **Omitoyin, B.O.** (2006): Haematological Changes in the blood of *Clarias gariepinus* (Burchell, 1882) juveniles fed Poultry litter. *Livestock Research for Rural Development* 18(11): 1-7
- **Omitoyin B.O** (2006): Fish Hatchery Management. An Invited Technical Paper Presented at a two days seminar organized by Oyo State Ministry of Agriculture, Natural Resources and Rural Development on Post-Retirement Sustainability: Prospect of Investment in Fisheries on 18-19 July, 2006 at the Fisheries Department Hall, Agodi Ibadan.
- **Omitoyin B.O** (2005): Problems and Prospects of Fish Feed Production in Nigeria. Invited Technical Paper Presented at the United States of America Agency for Informational Development (USAID) Aquaculture Alliance Business Meeting held on Tuesday, December 13, 2005 at the Conference Centre, University of Ibadan, Ibadan Nigeria.
- **Omitoyin, B.O;** Adesehinwa, A.O.K. and Edibite, L.I. (2005): Reproductive Performance and Serum Biochemistry of Female *Clarias gariepinus* Broodstock raised in Pond Effluent Water. *Tropical and Subtropical Agroecosystem* 5(3): 117-122
- **Omitoyin, B. O.** (2003): Growth performance and nutrient utilization of *Clarias gariepinus* fingerlings raised under different water quality conditions. *African Journal of livestock Extension* 2: 86– 90

- Olukunle, Oyin and **Omitoyin, B.O.** (2000): Aquaculture Promotion of Rural Technology for Poverty Alleviation. In: Jegede .O and Okebukola P (eds) *Gender and Science and Technology Association (GASAT) African Regional Conference Proceedings Abuja 29th October - 2nd November 2000*.pp403-406.
- **Omitoyin, B. O.** and Fatureti, E. O. (2000): Evaluation of Chicken Offal meal (COM) as protein source for African catfish *Clarias gariepinus* fingerlings raised in earthen pond. *Journal of West African Fisheries IX*: 488-495

3. Dr. FREGENE, Bernadette Tosan

Academic and Professional Qualifications with dates

B. Sc. Fisheries Management	University of Ibadan	1983
M. Sc. Fisheries Management	University of Ibadan	1996
M. B. A. Business Administration	University of Ilorin	1998
Ph. d. Fisheries Management	University of Ibadan	2002
PGD Statistics	University of Agriculture, Abeokuta	2006
Computer skills: Microsoft office, Microsoft Word, Excel, and PowerPoint	International Institute of Tropical Agriculture, Ibadan	2000
Data analysis using SAS (Statistical Analysis System)	International Institute of Tropical Agriculture, Ibadan	2001
Data analysis using Statistical Package for Social Sciences (SPSS)	African Regional Centre for Information Science, University of Ibadan	2005

Summary of Work Experience

- **Senior Lecturer**, Department of Wildlife and Fisheries Management, University of Ibadan (01, October 2006 to Date)
- **Lecturer I**, Department of Wildlife and Fisheries Management, University of Ibadan (01, October 2003 to 30, September 2006).
- **Lecturer II**, Department of Wildlife and Fisheries Management, University of Ibadan (01 October 2000 to 30, September 2003).
- **Assistant Lecturer**, Department of Wildlife and Fisheries Management, University of Ibadan (October 1997 to 30, September 2000).
- Senior Extension Specialist (Fisheries); On Sabbatical leave with Livestock and Fisheries Programme, National Agricultural Extension and Research Liaison Services (NAERLS), Ahmadu Bello University, P. M. B. 1067, Zaria, Nigeria (January 2009-December, 2009)
- Senior Fisheries Officer, Federal Department of Fisheries as Extension Officer (Agent) to the fish farmers in Kwara State. (January 1987 to August 1997)
- Fisheries Officer, Ijoma Fisheries Limited, Moniya, Ibadan and later with Hilary Sydenham Nigeria Limited (December 1984 to September 1986)
- Fisheries Extension Resource Person for the Training of Unemployed Youths as Fish Farmers, Baga, Borno State, 23-26th February, 2009

- Team Leader Value Chain Analysis Survey of Frozen Fish in Port-Harcourt, Enugu and Lokoja, 25th May-5th June, 2009
- Member, Oversight Team for 2009 Wet and Dry Season Agricultural Performance Assessments.
- Fisheries Extension Resource Person for a Three Day Orientation Workshop on Fish Farming for Kano State Agricultural and Rural Development Authority (KNARDA) Extension staff, in Kadawa Skill Development Centre, 28th-30th July, 2009
- Participated in the ‘Capacity Building of Extension Workers in Farm Business Management: The Training of Core Trainers Workshop’ Second Batch, NAERLS, ABU, Zaria; 30th July-9th August, 2009
- Nigeria-Sao Tome and Principe Joint Development Zone (JDZ) Non-Hydrocarbon Resources Project, “Fisheries Socio-Economics Studies” of Soa Tome and Principe, Cross River and Aquao Ibom States of Nigeria, September – November, 2008
- Tomato Value Chain Analysis Survey and Fish Value Chain Analysis, National Agricultural Extension and Research Liaison Services (NAERLS), Ahmadu Bello University, 2009
- Consultant to the Food Policy and Market Unit of International Institute of Tropical (IITA), Ibadan, April-June, 2005 for the data processing, analysis and report writing of the National Food Demand Study.
- Facilitator, United Nations Development Programme (UNDP) Niger Delta Human Development Index survey (Delta State), August-September, 2005
-
- Consultant to International Institute of Tropical Agriculture, IITA), Maiduguri, on Promoting Sustainable Agriculture in Borno State (PROSAB) for data processing, analysis and report writing on poverty, food security and food demand studies of rural farming households in Borno State, Nigeria, (October, 2005-March, 2006)
- Facilitator, Training of some Academic Staff of National Agricultural Extension and Research Liaison Services (NAERLS), Ahmadu Bello University on Resource on Data analysis using Statistical Package for Social Sciences (SPSS), 13-14 January, 2010

Summary of Publications

- Bolorunduro, P. I. and **Fregene, Tosan** (2000) Fisheries Technology Transfer in Nigeria: Institutional Structures, Problems and Determinants of Appropriate Technologies, *The Nigerian Journal of Agricultural Extension*, Vol. 12 (2): 69-83
- **Fregene, T.**, P. I. Bolorunduro and E. Ekpiwhre; (2001) Adoption of Aquaculture technologies of Delta State in Nigeria, *The Nigerian Journal of Agricultural Extension*, Vol. 13 (2): 81-91
- **Fregene Tosan** (2006) Role of women in Badagry and Bariga Fishing Communities of Lagos State, Nigeria, *Tropical Journal of Animal Science*, Vol. 9, (1):69-78
- Amaza Paul. S., Adedeji O. Adejobi and **Tosan Fregene** (2008) Measurement and Determinants of Food Insecurity In North-East Nigeria: Some Empirical Policy Guidelines, *Journal of Food, Agriculture & Environment*, Vol.6 (2): 132-136
- Amaza Paul. S., and **Tosan Fregene** (2008) Determinants of Food Demand among Rural Households in Borno State, Nigeria, *The Empirical Economics Letters*, 7(6): 607-613
- **Fregene Tosan** and Tejiri Digun-Aweto (2008) Use of Aquaculture Technologies in Osun State, Nigeria, *African Journal of Livestock Extension*, Vol. 6: 36-41

- **Fregene, B. T.** and Adesola, A. A. (2008) Analysis of Artisanal Fishermen's Attitude to Fish Farming in Ogun and Oyo States *Journal of Tropical Forest Resources*, Vol. 24, No. 1, p. 12-21
- **Fregene Tosan B.** and Bolorunduro P. I. (2009) Role of Women in Food Security and Seasonal Variation of Expenditure Pattern in Coastal Fishing Communities in Lagos State, *Journal of Agricultural Extension Society of Nigeria*, Vol. 13 (2) December, p. 21-33, AESON Publication
- **Fregene, B. T.** and Kolawole, O. A. (2009) Fish Smoking in Ibeju Lekki in Lagos State, *Tropical Journal of Animal Science*, December 2009, Vol. II, p. 32-39
- Okoruwa, Victor, **Tosan Fregene** and Samuel Awolumate (2009) Performance Differentials among Urban Aquaculture Systems in Ibadan Metropolis of Oyo State Nigeria: Partial Budgeting Analytical Approach, *Applied Tropical Agriculture*, Vol. 14, No. 2, p. 77-81

4. Dr. AKINWOLE Ayoola Olusegun

Academic and Professional Qualifications with dates

Ph.D. Fisheries Management 2005, University of Ibadan, Nigeria

M.Sc. Agricultural Engineering (Specialization in Soil and Water Conservation Engineering) (1999, University of Ibadan, Nigeria)

B.Sc. (Hons.) Agricultural Meteorology and Water Management, (1994, University of Agriculture, Abeokuta, Nigeria)

Grant and Award

University of Ibadan MacArthur Grant for overseas Training in Recirculating Aquaculture System in Louisiana State University, Baton Rouge, LA USA May – October 2010.

Summary of Work Experience

Assistant Lecturer, Department of Wildlife and Fisheries Management, University of Ibadan (01 August 2000 to 30, September 2003).

Lecturer II, Department of Wildlife and Fisheries Management, University of Ibadan (01 October 2003 to 30, September 2006).

Lecturer I, Department of Wildlife and Fisheries Management, University of Ibadan (01 October 2006 to 30, September 2009).

Summary of Publications

- **Akinwale, A.O.** and Faturoti, E.O.(2007). Biological Performance of African Catfish (*Clarias gariepinus*) cultured in Recirculating System in Ibadan. *Aquacultural Engineering* Vol 36 : 18- 23
- Ogedengbe, K., **Akinwale, A.O.**and Adeoye P.A.(2006). Development of a Low Cost Laboratory Jig for Soil Erosion Studies. *Nigerian Journal of Tropical Engineering* Vol.6:56-65
- Ogedengbe, K. and **Akinwale, A.O.**(2006). Effect of Septa Removal Methods on Performance of *Bambusa vulgaris* for Water Conveyance. *FUTA Journal of Engineering and Engineering Technology* Vol.5 (1):20-24
- **Akinwale, A.O.** (2005). Utilization of Lava Stones as Water Treatment Media for the Culture of African Catfish (*Clarias gariepinus*) in Recirculating System in Ibadan. *African Journal of Livestock Extension* Vol.4:24 -28
- **Akinwale, A.O.** (2005). Effect of Media Size and Depth on Performance of Sand Filter for Fish Farm Wastewater Treatment. *Ibadan Journal of Agricultural Research*.1:18-23

- **Akinwole, A. O.** and Agbeja, Y.E. (2003). Design and Operation of Sedimentation Basin for Aquaculture Wastewater. *Journal of Tropical Forest Resources*.19:153-158
- **Akinwole, A.O.** and Sangodoyin, A.Y. (2003). A Comparison of Three Methods of Estimating Onset and Cessation dates of Rainfall in Sub Sahara region: a case study of International Institute of Tropical Agriculture, Ibadan, Nigeria. *Journal of Tropical Forest Resources*. 19: 173-182
- **Akinwole, A.O.** (2002). Recirculating Aquaculture System: An Overview of Basic Components. *OBEACHE* .24(1):17 -23
- Ogedengbe, Kola, **Akinwole, A.O.** and Babatunde, A.O.(2003).Effluents Characteristics of Selected Industries in Western Nigeria and Implications for Re-Use in Agricultural Production. *Journal of Environmental Extension*.Vol.4: 79-82

5. Dr. ADEYEMO Gbemiga Oladimeji (Department of Animal Science, University of Ibadan)

Academic and Professional Qualifications with dates

PhD (Poultry Nutrition and Management), Ibadan.	December, 2005
Master of Science, (Animal Science), Ibadan.	October, 1995
Bachelor of Technology (2 nd Class Upper) Ani Prod.	July, 1992

Grant/ Fellowship

- MASHAV grant by the Foreign Affairs Centre for International Cooperation, State of Israel to the Hebrew University Of Jerusalem, Rehovot, Israel,2004
- MarcArthur Foundation scholarship to Purdue University, USA 2006

Summary of Work Experience:

Senior Lecturer, Department of Animal Science, University of Ibadan July, 1998 to date

Summary of Publications

- **Adeyemo, G.O.**, Omojola, A.B. and Folorunsho, A. (2000). Performance of Broiler Chicks fed Graded Levels of Maggot Meal. *Trop. Anim. Prod. Invest.*:131-136.
- Ologhobo A., Mosenthin R. and **Adeyemo G.** (2003). Unconventional Livestock: Classification and Potential Uses. *Trop. J. Anim. Sci. Vol. 6 No. 1:111-121.*
- Omojola A.B., Kassim O.R., Adewumi M.K., Ogunsola O.O., **Adeyemo G.O.** and Adesiyan A.B. (2004). Evaluations of the effects of the variation in ingredient composition on the eating qualities of suya. *African Journal of Livestock Extension* Vol. 3: 28-32
- **Adeyemo, G.O.**, Longe, O.G., Omojola, A.B., Anurudu, N.F. and Aderemi, F.A. (2004). Haematological and Biochemical Indices of Breeder Cocks fed Cottonseed cake-based Diets. *Trop. Anim. Prod. Invest.*: 7(1): 71-78
- **Adeyemo, G.O.**, Longe, O.G. and Adebisi, F.G. (2004). Performance of Broiler Chicks fed Cottonseed cake-based Diets. *Trop. Anim. Prod. Invest.*: 7(1): 79-88
- Ologhobo, A.D., Mosenthin, R. and **Adeyemo, G.O.** (2006). Optimizing the Utilization of Soybean and Beniseed (in Poultry feeds) through dietary supplementation with microbial phytase. *JORMAR* 3(1): 16-30.

- Aderemi, F.A., Lawal, T.E., Alabi, O.M., Ladokun, O.A. and **Adeyemo, G.O.** (2006). Effect of Enzyme Supplemented Cassava Root Sieviate on Egg Quality, Gut Morphology and Performance of Egg Type Chickens. *International Journal of Poultry Science* 5(6) 526-529
- **Adeyemo, G.O.**, Longe, O.G. and Adejumo, D.O. (2007). The Reproductive Performance of Breeder Cocks Fed Cottonseed cake-based Diets. *International Journal of Poultry Science* 6(2): 140-144
- **Adeyemo, G.O.** and Longe, O.G. (2007). Effects of graded levels of cottonseed cake on performance, haematological and carcass characteristics of broilers fed from day old to 8 weeks of age. *African Journal of Biotechnology* Vol. 6(8):1064-1071
- Adeyemo, G. O. and **O. G. Longe.** (2008) Effects of Cottonseed cake Based Diets on Performance and Egg Quality Characteristics of Layers. *Pakistan Journal of Nutrition* 7 (4) 597-607.
- **Adeyemo, G.O.** Ologhobo A.D. and Adebisi O.A. (2010) The Effect of Graded Levels of Dietary Methionine on the Haematology and Serum Biochemistry of Broilers *International Journal of Poultry Science* 9 (2): 158-161
- **Adeyemo, G.O.** (2010) Effects of Exposure Duration to Cottonseed Cake-Based Diets on Broiler Performance *International Journal of Poultry Science* 9 (2): 162-166

6. Dr. ADESEHINWA Akinyele Oluwatomisin Kingsley (Institute of Agricultural Research and Training, Moor Plantation, Ibadan, Nigeria)

Academic and Professional Qualifications with dates:

B.Sc. (Animal Science) University of Ibadan, 1990

M.Sc. (Agric. Biochemistry and Nutrition) University of Ibadan, 1992

Ph.D (Animal Science) University of Ibadan 1997

Agricultural Projects Monitoring and Evaluation Unit (Certificate in Computer Applications) 1997

Distinctions, Awards and Grants with dates:

Fellowships:

- World Poultry Science Association Fellowship to attend the XXII World Poultry Congress, Istanbul, Turkey, 8-13 June 2004
- National Chung-Hsing University, Taichung Fellowship Award for Two-week study visit to Taiwan, 30 October-14 November 2005

Research Grants:

- Bassir-Thomas Biomedical Foundation Research Grant for the study on the utilization of some agro-industrial by-products by weaner pigs at the Department of Animal Science, University of Ibadan, Nigeria, 1996
- Poultry Science Foundation Award, Hanover, Germany, 2004 OXFAM GB, U.K. Award to participate in ECOWAS-WAEMU Stakeholders Workshop on Harmonization of WTO's Sanitary and Phyto-sanitary (SPS) Certification System for ECOWAS States, La Palm Royal Beach Hotel, Accra, Ghana. 9-14 May, 2006.
- USAID-West Africa Trade Hub/Accra (WATH/A) Award to participate in Nigerian National Workshop on Improving Sanitary and Phyto-sanitary (SPS) Capacity to facilitate Agricultural Trade, ECOWAS Secretariat Conference Centre, Abuja Nigeria. 10-13 October, 2006.

- International Atomic Energy Agency Grant to present a paper at her Joint FAO/IAEA International Symposium on Sustainable Improvement of Animal Production and Health in Vienna, Austria. 8-11 June, 2009.

Summary of Work Experience:

- Principal Research Fellow: Institute of Agricultural Research and Training, Moor Plantation, Ibadan, 2007 to Date
- Senior Research Fellow: Institute of Agricultural Research and Training, Moor Plantation, Ibadan, 2005 to 2007
- Research Fellow I: Institute of Agricultural Research and Training, Moor Plantation, Ibadan, 2003 to 2005
- Team Leader: On-Farm Adaptive Research (OFAR) and Monthly Technology Review Meeting (MTRM) for Lagos State Agricultural Development Authority, 2004 to Date
- Assistant Extension Specialist: National Agricultural Extension and Research Liaison Services, Ahmadu Bello University, Zaria, 1993-1998
- Extension Specialist II: National Agricultural Extension and Research Liaison Services, Ahmadu Bello University, Zaria, 1998-2003
- Resource Person (Livestock): Monthly Technology Review Meetings (MTRM) of the eight (8) Agricultural Development Programmes (ADPs) in the South-west, 1993-2003

Publications

- **Adeshinwa, A.O.K** (1997): Utilization of maize offal in the diets of pigs enriched with two unconventional animal protein sources. Ph.D. Thesis, University of Ibadan, Ibadan, Nigeria. 203pp.
- **Adeshinwa, A.O.K.**, A.O. Ogunsanmi, M.A.S. Nssien and V.O. Taiwo (2000). Replacement of maize with Maize offal in diets of grower pigs: Effect on Serum metabolites and nutrient digestibilities. *Trop. Vet.* 18(1 & 2): 12-19.
- **Adeshinwa, A.O.K.** and B.K. Ogunmodede. (2002). Utilization of maize offal as a replacement for maize in diets of growing pigs. *Bull. Anim. Hlth. Prod. Afr.* 50(4): 236-242.
- Ajala M.K., **A.O.K. Adeshinwa** and G.S. Bawa (2006). Socio-Economic factors influencing swine management practices among women in Jama'a Local Government Area of Kaduna State, Nigeria. *Trop. & Subtrop. Agroecosyst.* 6: 43-48.
- **Adeshinwa, A. O. K.**, F. A. S. Dairo and B. S. Olagbegi (2008). Response of growing pigs to cassava peel based diets supplemented with Avizyme® 1300: growth, serum and hematological indices. *Bulgarian Journal of Agricultural Science* 14 (5): 491-499
- **Adeshinwa, A. O. K.**, O. O. Obi, B. A. Makanjuola, A. O. Adebayo and E. S. Durotoye (2010). Utilization of sun-dried on-farm generated poultry litter as a feed resource for growing-finishing pigs. *African Journal of Biotechnology* 9 (19): 2821-2825.

- Dairo F.A.S, **A.O.K. Adesehinwa**, T.A. Oluwasola and J.A. Oluyemi (2010). High and low dietary energy and protein levels for broiler chickens. *African Journal of Agricultural Research* 5(15): 2030-2038

7. Dr. OLOKOR, Julius Oghenekaro (National Institute for Freshwater Fisheries Research, New Bussa)

Academic and Professional Qualifications with dates:

Ph.D Federal University of Technology Minna, 2006

M.Sc University of Ibadan, Nigeria 1992

B.Sc Ambrose Ali University Ekpoma 1988

Summary of Work Experience:

- Assistant Director and Head of Fisheries Technology, National Institute for Freshwater Fisheries Research, New Bussa, Niger State
- Lecturer, Federal College of Freshwater Fisheries technology, New Bussa
- Practical field experiences in construction, design of fish ponds, re-circulatory systems, small dams, integrated culture systems, fish based technologies such as pelleting machines, feed and fish dryers, etc
- Survey of Bida rice cum fish fields for nematode infestation
- Fish processing and preservation using re-newable energy resources such as solar
- Practical field knowledge of using effluent discharge from intensive fish culture systems for fertilizing rice fields and vegetable gardens
- Use of low value tilapia (LVT) as fish meal substitute for cost effective cat fish feed production.
- Commercial production of cost effective fish feed
- Research planning, design, budgeting, implementation and evaluation
- Environmental Impact Assessment of fish culture on natural ecosystems
- Practical field experience in conservation, resource monitoring and community based co-management approaches for sustainable fisheries resource development.

Summary of Publications

- Olokori, J.O and Oluborode G.B (2010) The Impact of Atmospheric Parameters on fish drying in the Kainji Lake Solar Dryer. *Nigerian Journal of Fisheries Science and Technology*. Vol. 2: 45-50
- Olokori, J.O and F.S. Omojowo (2009). Adaptation and improvement of a simple Solar Tent Dryer to enhance fish drying. in: *Nature and Science* Vol. 7(10): 18-24
- Omojowo, F.S., Olokori, J.O and Ihuahi, J.A (2009). Microbial qualities of Potassium sorbate on treated smoked Tilapia (*Oreochromis niloticus*). *World Journal of Biological Research*. Vol. 2(1):1994-5108.
- Ihuahi J.A; Egila J.N: Omojowo, F.S:Olokori, J.O:Ngwu,E.O: Yisa,M: Oluborode,G.B and Solomon, A.T (2009) Acute Toxicity of Alkylbenzene Sulphonate detergent 'Zip' to Fingerlings of *Clarias anguilaris*. *Nigerian Journal of Fisheries Science and Technology* Vol. 1: 20-25
- Olokori, J.O. and O. Ngwu (2008) Comparism of fish quality Products Obtained from Solar-dried and Traditional sun-dried Fish. *Biological and Environmental Science Journal for the Tropics* Volume 5(4): 49-51
- Olokori, J.O., Adesina, G.O and Odumba I.A and (2006) Ecological and Cost Implication of Fuel wood used for fish smoking: a case of four Fishing Communities within Kainji Lake. *Nigerian Journal of Fisheries* Vol. 2 (3): 197

8. Dr. Stella Akomas Chinoye President, MORE FISH, MORE MEAT, MORE FOOD (MF-MM-MF), Umuahia Nigeria.

Academic and Professional Qualifications with dates

Ph.D Reproductive Physiology and Artificial Insemination 2008, Michael Okpara University of Agriculture Umudike

M.SC Veterinary Surgery 1996, University of Nigeria, Nsukka

DVM Veterinary Medicine 1990, University of Nigeria Nsukka

Summary of Work Experience

2008 – Date Senior Lecturer Michael Okpara University of Agriculture Umudike

2004 - 2008 Lecturer I Michael Okpara University of Agriculture Umudike

1997-2004 Lecturer II Michael Okpara University of Agriculture Umudike

1991-1997 Assistant Lecturer at University of Nigeria Nsukka

1990-1991 Veterinary Officer, Rivers State Veterinary Clinic, Port Harcourt (NYSC)

President, More Fish, More Meat, More Food Initiative (MF-MM-MF) An NGO that teaches and trains farmers, enhancing productivity and improving livelihoods among rural dwellers especially women and people living with HIV AIDS.(Registration no.00147B)

Vice Chairman, Scientific and Technical Committee, CORAF/West and Central African Research and Development 2006-2009

Consultant Veterinarian to Radio farmer: an educative programme to farmers on Radio Nigeria (1998-1999)

Publications

- Anigbogu, N. M., Assam, E.M, Ibe, S.N. and **Akomas, S.C.** (2009). Efficiency of Root Tuber Feed Conversion on Gross Energy for Productive Farm Animals. *Tropical J. Agric. Res. and Biotechnology*.1:14-21
- Onwurah, F.B. and **Akomas, S. C.** and Ukpong, G.(2007). Unconventional livestock feed adoption in Rivers State. *Journal of Research in Agriculture*.4(3)15-17
- Akomas, S. C., Oguike, M.A. and Amadi, L.(2006). Morphometric changes following pregnancy in large white sows. *Animal Production Research Advances*.2(2):189-193
- .Etuk I. F., Abasiokong, S.F., Ojewola, G.S. and **Akomas, S.C.**(2006). Carcass and organ characteristics of Muscovy Ducks reared under three management systems in South Eastern Nigeria. *Int. J. of Poultry Science*.5(6):534-537.
- Oguike, M.A., Igboeli, G; Ibe, S. N. Uzoukwu, M, **Akomas S. C.** and Ironkwe, M.O. (2005). Morphological characteristics and egg production of forced-moult layers under different moult induction techniques. *Africa Journal of Biotechnology* 4(9): 1001-1004
- Oguike M.A., Igboeli G., Ibe, S. N., Ironkwe, M.O., **Akomas S. C.** and Uzoukwu, M. (2005). Plasma Progesterone profile and ovarian activity of forced- moult layers. *African Journal of Biotechnology* 4(9) 1001-1004
- **Akomas, S.C.**, Ojewola, G.S , Abasiokong, S.F. and Igwe, I.R.(2004) Effect of dietary supplementation with ascorbic acid in coccidial infection on broiler chicken. *International Journal of Agriculture and Rural Development*. 5:14-18
- Ojewola, G.S., Oguike, M.A., **Akomas, S.C.**, Likita, T., Onyiro, O.M., and Wokocha, C.(2003). Comparison of the supplemental effects of Roxazyme-G. Enzyme in Palm Kernel meal and Brewers dried grain based diets fed to male turkey poults. *Nigerian Agric. J.* 34 (2004):116-124.

9. Dr. Okocha, Peter Iwunor (MORE FISH, MORE MEAT, MORE FOOD (MF-MM-MF))

Academic and Professional Qualifications with dates:

Ph. D (Plant Breeding and Seed Production) Patrice Lumumba's People's Friendship University, Moscow, Russia 1989

M. Sc. (Agronomy) Patrice Lumumba's People's Friendship University, Moscow, Russia 1986

Summary of Work Experience

- Nigerian Educational Research Council, Apapa, Lagos 1976
- National Provident Fund, Lagos 1978-1980
- National Cereals Research Institute (NCRI), Badeggi 1990-1994
- Acting Dean, College of Crop and Soil Sciences from July, 1997 – May, 1999 and from October 2008 to date.
- Acting Head of Department of Agronomy, from July, 1997 – October, 2000; and Oct. 2005 – August 31, 2006.
- UNDP Consultant on the Amoba Community Poverty Alleviation programme, rice production component, Arochukwu, Abia State, 1997 – 1998.
- Collaborative research activity with Rivers State Agricultural Development Programme (RSADP), 1997.
- Collaborative research activity with Ebonyi State Agricultural Development Programme (ESADP), 1997, 2000 – 2001.
- Collaborative research with Anambra State College of Agriculture, Igbariam, 2000.
- Collaborative research activity with National Cereals Research Institute, Uyo sub-station, 2000 – 2001.
- Extension of modern rice production technology to Bountiful Harvest farmers in Afikpo, Ebonyi State from 2000 to 2004.
- Collaboration with Agricultural Rejuvenation programme at Isuochi, Abia State, from 1996 – 2000.
- Extension of modern rice production technology to rice farmers at Isuochi, Abia State – 2003.
- more fish, more meat and more food. An NGO established to ensure adequate training, improved productivity and food security

Summary of Publications

- **Okocha, P.I.** and B.N. Singh (1995). Performance of some rice varieties and elite lines under on-station and on-farm research conditions, *Journal of Inno. In life Sciences*, 2: 77-80.
- **Okocha, P.I.**, J.A. Akinremi and C.D. Umoh (1997). Screening of some rice breeding lines for tolerance to iron toxicity. *Global Journal of Pure and Applied Sciences* 3(3): 323-328.
- **Okocha, P.I.** and B.N. Singh (1997). Evaluation of some promising rice breeding lines for tolerance to iron toxicity. *Global Journal of Pure and Applied Sciences*

4 (2): 117 - 120

- Okorie, P. E., Okocha, P. I. and Asawalam, D. O. 2001. Accelerated dissemination of improved Agricultural Technologies in Nigeria: Multiplication and Distribution of rice seed of recommended variety to Target areas. Report of activity commissioned by USAID/IITA. Technical Report
- **Okocha, P.I. (2003).** Screening for resistance to major diseases and pests of rice in the rainforest zone of south eastern Nigeria. *Journal of Applied Chemistry and Agricultural Research* 9: 51-58.
- **Okocha, P.I. (2000).** Selection of rice breeding lines for low-input management conditions. *Nigeria Journal of Agricultural Technology* 9: 11-20.
- **Okocha, P.I.** and A.C. Nwosu (2003). Prospects for breeding low-input rice (*Oryza sativa* L) varieties in south eastern Nigeria. *Journal of Agriculture and Food Sciences* 1(2): 75-87.
- **Okocha, P.I. and L.N. Chinatu (2004).** Screening rice (*Oryza sativa* L) for drought tolerance in the rainforest agro-ecological zone of Southeastern Nigeria. *Journal of Sustainable Tropical Agricultural Research* 11
- Okocha, P. I (2008) Screening for drought tolerance in rice (*Oryza sativa* L.) at both the vegetative and reproductive stages of growth. *Global Journal of Agricultural sciences* 7(2): 153 - 160

TEAM PROFILE - NJALA UNIVERSITY, SIERRA LEONE

1. **OLAPADE Olufemi Julius (Project Coordinator)** (Tel: +232 33127 364/+232 7874 8008; jolapy2k@yahoo.com)

Academic and Professional Qualifications with dates

PhD: Fisheries Management, University of Ibadan, Nigeria

MSc: Fisheries Management, University of Ibadan, Nigeria

PGDE: General Education, University of Ibadan, Nigeria

B. Agric. (Hons): Plant Science, Obafemi Awolowo University Ile-Ife, Nigeria

OND: General Agriculture, Institute of Agriculture Research and Training – OAU,

Nigeria

Technical and Consultancy Experiences

- Member, Steering Committee for the Implementation of Technical Capacity Building in Fishing and Sea Food Processing Technology Project in Sierra Leone (United Nations Industrial Development Organization (UNIDO) in Collaboration with Russian Federation and Government of Sierra Leone.
- Member, TCP Fisheries Legal Review Technical Committee (FLRTC) FAO/World Bank. Review and Updating of the Sierra Leone Fisheries Management and Development (Act 1994).
- Technical Cooperation (TC) Programme (International atomic Energy Agency – IAEA) – National Project Concept: “Reduction of Fish Discards, By- Catches and Agricultural By-Products to Fish Feed (FF) for Grassroots Aquaculture Development in Sierra Leone.”

Summary of Work Experience

- Lecturer 1/Acting Head of Department – Aquaculture and Fisheries Management Department School of Forestry and Horticulture, Njala University – Sierra Leone.
- Head of Department/Environmental Scientist/Laboratory analyst – Mega Canaan Farms Nigeria Limited, Bara – Kagoma, Kafancha – Kaduna State, Nigeria.
- Lecturer – Animal Science Department, Higher Institute of Agriculture and animal Husbandry (ISAE), Ruhengeri District – Rwanda, East Africa.
- Tutor/House Master – Crown Heights College, Ibadan – Oyo State, Nigeria.
- Director/Proprietor – Philadelphia International School, Lugbe – Abuja, Nigeria.

Summary of Publications

- Olapade, O.J. (2009). Effect of stocking density on water quality, survival and growth performance of the African catfish *Clarias gariepinus* (Burchell 1882) cultured in earthen ponds: *Nigerian Journal of Fisheries*. 6 (1&2) 1-8.

- Olapade, O. J & Omitoyin, B.Oluwarotimi (2010). Fish species composition in Lake Kivu, Rwanda – East Africa. *25th Annual FISON Conf. Proc. EKO 2010 held at ASCON Badagry, 25th – 29th October, 2010.*
- Olapade, O. J & Meinday A.k (2010). Assessment of the fish composition pattern of Njala-Mokonde community Residents, Moyanba district, Sierra Leone *25th Annual FISON Conf. Proc. EKO 2010 held at ASCON Badagry, 25th – 29th October 2010.*
- Omitoyin, B.O. and Olapade, O.J. (In Press): The growth response and profitability of the African catfish (*Clarias gariepinus* Burchell, 1882) cultured at different stocking density. *Journal of Agriculture and Environment*
- **Olapade, O.J** and Omitoyin, B.O (in press). Anthropogenic Pollution Impact on Physico - Chemical Characteristics Of Lake Kivu, Rwanda. Accepted by *AJFAND Journal*, Kenya.
- **Olapade, O.J** (in press). Trace metal pollution and physicochemical characteristics of Lake Kivu, Rwanda. Accepted by *World Journal of Fish and Marine Science (IDOSI)*. Asia.
- **Olapade, O.J** (in press). Utilization of Bonga (*Ethmalosa fimbriata* Bodwich) fish concentrate in bread baking in Njala – Mokonde community, Sierra Leone. Accepted by *Jour. Res. For., Wildlife and Env.* Markurdi, Nigeriaz
- Olapade, O.J. (in press) Anthropogenic pollution impact on microbial contamination of Lake Kivu, Rwanda (*West African Journal of Aquatic Ecology*).
- Mawundu, S and **Olapade, O.J. (in press)** Length – Weight Relationship and Condition Factor of *Ethmalosa fimbriata* Bodwich 1825 in the Western Area District ` (Freetown) Sierra Leone.
- Mawundu, S and **Olapade, O.J. (in press)** Exploitation Rate and Mortalities of *Ethmalosa fimbriata* Bodwich 1825 in the Western Area District (Freetown) Sierra Leone.
- **Olapade, O.J** and Kamara M. (**in progress**) “The biology of two Elasmobranches species – *Carcharinus amboeinsis* and *C. Limbatus* in the coastal waters of Sierra Leone”.
- **Olapade, O.J** and Bah, I. (**in progress**) “Abundance, Length – Weight Relationship and Condition Factor of two Elasmobranches species – *Carcharinus amboeinsis* and *C. Limbatus* in the coastal waters of Sierra Leone”.
- **Olapade, O.J** and Tarawalle S. (**in press**) “Length – Weight Relationship and Condition Factor of *Pseudotolithus senegalensis* at selected western area fishing district (Freetown) Sierra Leone”.
- **Olapade, O.J** and Kemokhai, M. (**in press**) “Mangrove ecosystem destruction – challenges on sustainable fisheries production (A case study of Magbafty community) Sierra Leone”.
- **Olapade, O.J** and Sesay D.F. (**in press**) “The role of women in the artisanal fisheries of selected coastal communities of Sierra Leone”.
- **Olapade, O.J** and Kargbo M. (**in press**) Proximate composition, growth performance and haematology of the African catfish (*Clarias spp.*) fed varying inclusion level of *Terminalia catapa* (African almond) diets.

- **Olapade, O.J** and Kpundeh M.D. (**in press**) Impact of human activities on the proposed marine protected areas (PMPAs) of Sierra Leone.
- **Olapade, O.J** and Lombi, G.A.G. (**in progress**) Proximate composition, growth performance and haematology of the African catfish (*Clarias spp.*) fed varying inclusion level of *Anisophylla laurina* (African monkey plum) diets.

2. **Dr. Aiah Randolph Lebbie** +231-6420926 aiahlebbie@gmail.com

Academic and Professional Qualifications with dates

Ph.D Forest Ecology and Management, 2001, University of Wisconsin – Madison, USA.

M.Sc. Conservation Biology and Sustainable Development 1995, Institute of Environmental Studies- University of Wisconsin – Madison, USA.

B.Sc. Biological Sciences and Education 1989, University of Sierra Leone – Njala University College

Technical and Consultancy Experiences

- Founder, center for biodiversity research; april 2010 – present
- Environmental consultant; united nations mission in liberia (unmil); November 2009 – February 2010
- Country Director, environmental foundation for africa (EFA), liberia; March 2005 – March 2010
- Principal Investigator, IUCN Typology Studies on landscapes and livelihoods strategy, liberia, 2008 – 2010
- Consultant, chainsaw logging in the natural forests of liberia, forestry development authority, liberia, 2009
- Local expert, environmental impact assessment of loma mountains as an offset for bumbuna hydroelectric dam project, world bank - piu, sierra Leone, 2008
- Consultant, environmental impact assessment for four usadf clients (monrovia fishing company, tecurd enterprises, chabural enterprises and venture construction), Liberia, 2007
- Lead consultant, sierra Leone wildlife protection and biodiversity conservation project, world bank, 2006
- Consultant, national capacity self assessment, department of environmental protection, ministry of lands, country planning and the environment, 2006
- Lecturer, university of sierra leone (njala university College - department of biological sciences), 2002 – 2005
- Forest ecologist and consultant, environmental impact assessment of Bumbuna Hydro-Electric dam project, nippon koei (uk) and bmt cordah (uk), 2004
- National consultant, sustainable biodiversity action project, undp-conservation society of sierra Leone, 2002
- Lead consultant, forestry division, ministry of agriculture and forestry, Sierra Leone, 2002 - 2003.
- Expert scientist, center for applied biodiversity science at conservation international, usa, 2002

- Ecoregion consultant, wwf-us, usa, 2002

Summary of Work Experience:

- Director, Environmental Foundation for Africa, 2006 to date.
- Lecturer, university of sierra leone (njala university College - department of biological sciences), 2002 - 2005
- Teaching assistant, department of zoology, university of wisconsin-madison, usa, 1996
- Research assistant, department of forest ecology & Management, university of wisconsin-madison, usa, 1995 – 1996
- Research and teaching assistant, department of biological sciences, njala university college, sierra Leone, 1989 - 1992
- Research assistant, tropical diseases research unit, department of biological sciences, njala university college, sierra leone, 1988 – 1989
- Mathematics teacher, christ the king college, bo, sierra leone, 1983.

Summary of Publications

- Lebbie, A. R. and M. S. Freudenberger. 1996. "Sacred Groves in Africa: Forest Patches in Transition". In Forest Patches in Tropical Landscapes, edited by J. Schelhas and R. Greenberg. Chapter 15, Pp.300-324. Island Press, Washington, DC.
- Lebbie, A. R. 2001. Distribution, Exploitation and Valuation of Non-timber Forest Products from a Forest Reserve in Sierra Leone. Ph.D. Dissertation. University of Wisconsin-Madison, USA. 240p (Published, UMI).
- Alps, R., M. I. Bakarr, A. Lebbie and K. I. Bangura. 2003. "Sierra Leone". In West African Chimpanzees: Status Survey and Conservation Action Plan, edited by R. Kormos, C. Boesch, M.I. Bakarr and T. N. Butynski. Chapter 10, Pp.77-87. IUCN/SSC Primate Specialist Group.
- Lebbie, A. R. and N. Burgess. 2004a. "Western Guinea Lowland Forest". In Terrestrial Ecoregions of Africa and Madagascar: A Conservation Assessment, edited by N. Burgess, J D'Amico Hales, E. Underwood, E. Dinerstein, D. Olson, I. Itoua, J. Schipper, T. Ricketts, and K. Newman. Chapter. Island Press, Washington. DC.
- Lebbie, A. R. and N. Burgess. 2004b. "Eastern Guinea Lowland Forest". In Terrestrial Ecoregions of Africa and Madagascar: A Conservation Assessment, edited by N. Burgess, J D'Amico Hales, E. Underwood, E. Dinerstein, D. Olson, I. Itoua, J. Schipper, T. Ricketts, and K. Newman. Chapter. Island Press, Washington. DC.
- Lebbie, A. R. and N. Burgess. 2004c. "Guinea Montane Forest". In Terrestrial Ecoregions of Africa and Madagascar: A Conservation Assessment, edited by N. Burgess, J D'Amico Hales, E. Underwood, E. Dinerstein, D. Olson, I. Itoua, J. Schipper, T. Ricketts, and K. Newman. Chapter. Island Press, Washington. DC.
- Lebbie, A. R. and R. P. Guries. 2008. "The Role of Sacred Groves in Biodiversity Conservation in Sierra Leone". In African Sacred Groves: Ecological Dynamics and Social Change, edited by M. J. Sheridan and C. Nyamweru. Chapter 3. Pp. 42-61. Ohio University Press.

- Gbakima, A. A. and A. R. Lebbie. 1992. The head louse in Sierra Leone: an epidemiological study among school children in the Njala area. West African Journal of Medicine 11(3):165-171.
- Lebbie, A. R. and R. P. Guries. 1995. Ethnobotanical value and the conservation of sacred groves of the Kpaa Mende of Sierra Leone. Economic Botany 49(3):297-308
- Freudenberger, M.S., J. Carney and A. R. Lebbie. 1997. Resiliency and change in common property regimes in West Africa: the case of the Tongo in Senegambia, Guinea and Sierra Leone. Society and Natural Resources 10:383-402
- Lebbie, A. R. and R. P. Guries. 2002a. "The palm wine trade in Freetown, Sierra Leone: production, income and social construction". Economic Botany 56(3):246-254.
- Ake-Assi, L., A. Lebbie and E. K. Konan. 2005. Le flore des Forêt Classée de la Haute Dodo et du Cavally, Côte d'Ivoire. RAP Bulletin of Biological Assessment 34:35-38; 125-148.

3. Dr. Ernest Tom Ndomahina (+076 613 980/033 855 244/030 361 322; Fax (232) 22-221215 ernest_ndomahina@yahoo.co.uk)

Academic and Professional Qualifications with dates

B.Sc. Zoology 1975, Fourah Bay College, University of Sierra Leone – Freetown

M.Sc. Marine Biology and Ecology 1978, University College of North Wales, Bangor, UK.

Ph.D Fisheries Sciences and Oceanography 1988, Christian Albrecht University in Kiel Germany.

Technical and Consultancy Experiences

- Environmental and Social Health impact Assessment (ESHIA) of Sierra fishing Company (SFC) coastal infrastructure Development 2011.
- Environmental and Social Impact Assessment (ESHIA) of Biopalm Star Oil Ltd for Establishment of oil palm plantation in Pujehun District 2011.
- Environmental Impact Assessment of Dredging Operations in Port Loko Creek (For CEMATS) (2010) London mining/GOSL 2010.
- Environmental Assessment Study for Freetown Urban Water Supply Project (Orogu Dam) GVWC Chinese Team/GOSL (2010)
- Environmental Assessment (EA) for the reproductive and Child Health programme-(RCHP-2) –GOSL/World Bank 2010.
- World Bank Consultant on Cash for Work programme under NaCSA and Decentralized Service delivery programme under Local Government Finance Department 2010.
- Consultant-Liberia Education for All- Fast Track Initiative (EFA-FTI) Catalytic Fund Project-World Bank. Consultant – Institutional Reform and Capacity Building Project (IRCBP)-IRCBP/LGFD/05/09/02 –for Local Government –GOSL 2009.

- Environmental Consultant to World Bank Supervision Mission on Power and Water Project in Sierra Leone 2009
- Consultant –Environmental and Social Management Framework (ESMF) for Urban Water Supply System in Freetown. Ministry of Energy and Power (MOEP) – World Bank/GVWC – GOSL 2008.
- Consultant –Environmental and Social Management Framework (ESMF) for Solid Waste Management in Freetown Ministry of Energy and Power (MOEP) – World Bank/GOSL Consultant – Resettlement Policy Framework (RPF) for Solid Waste Management in Freetown MOEP, GOSL/World Bank 2008.
- Consultant – Environmental and Social Impact Assessment (ESIA) of the Mineral Sector Technical Assistant Project (MTAP) of the Ministry of Mineral Resources (MMR)-GOSL/World Bank 2008.
- World Bank Consultant on Environmental Impact Assessment on four Landfill Dumpsites In the Makeni, Koidu New Sembehun, Kabala and Moyamba Townships and the Development of Waste Management plan for the Makeni, Koidu New Sembehun, Kabala and Moyamba District hospital. Ministry of Health and Sanitation (MOHS) GOSL 2007.
- World Bank consultant on Environmental Impact Assessment and Process Framework to Rural and Private Sector Development Project (RPSDP) of Ministry of Agriculture and Food Security (MAFS) 2007.
- UNICEF Consultant on Midterm Review and Evaluation of Programme on Water (SALWACO) and GOSL on Water and Sanitation in Sierra Leone 2005.
- Consultant on Environmental Assessment and Resettlement Policy Framework for rural water and Sanitation & Urban Solid Waste Management Component Design (Ongoing) Infrastructure Development Project: World Bank/IDA and SALWACO 2004.
- National Consultant on coastal and Marine Biodiversity for the Biodiversity Strategy Action Plan (BSAP) 2002.
- Member of the Steering Committee of the Biodiversity Strategy Action Plan (BSAP).UNDP/GEF 2002.

Summary of Work Experience

- Research and Teaching Assistant, Institute of Marine Biology and Oceanography 1975 – 1978
- Lecturer, Institute of Marine Biology and Oceanography Fourah Bay College, Freetown 1978 – 1999
- Secretary of State Fisheries and Marine Resources (NPRC) Sierra Leone 1995 – 1996
- Senior Lecturer, Institute of Marine Biology and Oceanography Fourah Bay College – University of Sierra Leone 1999.
- Director, Institute of Marine Biology and Oceanography Fourah Bay College, University of Sierra Leone 1999 to date
- Dean, Faculty of Pure and Applied Sciences, FBC
- Chairman, Radiation Protection Board – Ministry of Energy and Power, 2004 – 2008.

- Lead Fisheries Research Supervisor – ADB- sponsored Artisanal Fisheries Development Programme AFDEP and Coordinator 2005 to date.
- Senior Research Scientist, Institutional Support for Fisheries Management Project (ISFMP) MFMR/IMBO, FBC, 2007 to date
- Lead partner and Coordinator Development Partnership in Higher Education (DeLPHE) – IMBO/FBC, 2007 to date
- Associate Professor, University of Sierra Leone, 2006.

Summary of Publications

- Ndomahina, E.T (2010) Environmental Assessment Update for Reproductive and Child Health Care Project (RCHP-2) GOSL/World Bank.
- Yillia, P.T., N Kreuzinger, J.M Mathooko and E.T Ndomahina (2009) Microbial risk assessment with OAEL approach at water abstraction points in rural Kenya. *Physics and Chemistry of Earth* 34(2009) 790-798
- Payne, A.I, RC Wakeford and E.T. Ndomahina (2009) Fish distribution and zonation along the Rokel/Seli River, Sierra Leone, West Africa. *Fresh water Fish*.
- Thorpe A, D. Whitmarsh, Ndomahina E.T, A. Baio, M. Kemokai and T. Lebbie (2009) Fisheries and Failing States: The case of Sierra Leone policy 33:393-400
- Ndomahina E.T. (2008) Environmental and social Management Framework (ESMF) for Urban Water Supply System in Freetown. Ministry of Energy and Power (MOEP) GVWC/World Bank.
- Ndomahina E.T. (2008) Resettlement policy framework (RPF) for Urban Water supply system in Freetown. Ministry of Energy and Power (MOEP) GVWC/World Bank.
- Ndomahina E.T. (2008) Environmental and social Impact Assessment of the Mineral Sector Technical Assistant Project (MTAP) of the Ministry of Mineral Resources (MMR). World Bank/Government of Sierra Leone (On going)
- Ndomahina, E.T. (2008) Environmental and social Management Framework for Solid waste Management in Freetown, Ministry of Energy and Power (MOEP). World Bank.
- Ndomahina, E.T. (2008) Resettlement policy framework (RPF) for solid waste management in Freetown Ministry of Energy and Power (MOEP). World Bank/GOSL 41pp.
- Ndomahina, E.T. (2007) Environmental Assessment of four land Fill/Dumpsites in the Makine, Koidu New sembuhun, Kabala and Moyamba Township and the Development of Waste management plan for Makeni, Koidu New sembuhun, Kabala and Moyamba District Hospitals. Sierra Leone Health sector Reconstruction and Development project (HSRDP) and Solid Waste Management Project (SWMP) Ministry of Health and Sanitation GOSL/World Bank p.97
- Dorm-Adzobu C, Ndomahina E.T and M. Gibril Sesay (2007) Environmental and Social Impact Assessment of Rural and Private Sector Development Project (RPSDP) for the Ministry of Agriculture and Food security, World Bank. Pp.120.

- Dorm-Adzobu C and Ndomahina E.T (2007) Resettlement policy Framework for Rural and private sector Development project (RPSDP) for the ministry of Agriculture and Food Security GOSL/World Bank pp.28.
- Dormsay-Adzobu C and Ndomahina E.T (2007) Process Framework for (PF) for Rural and Private sector Development project (RPSDP) for the ministry of Agriculture and Food security world/GOSL pp.16.
- Ndomahina E.T. and D.Jumpah (2006) Environmental Assessment for Wildlife protection and Biodiversity Conservation in Sierra Leone. World Bank/GOSL. Report prepared for NaCEF.pp96.
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- Ndomahina, E.T. and J.C Mamie (2006) Some Preliminary studies on the Reproductive Biology of the roughhead sea catfish *Arius latiscutatus* in the coastal waters of Sierra Leone. J.Pure & Appli.Sc.10:66-74
- M.B.D. Seisay & Ndomahina E.T. (2005) The Demersal traw fishery of Sierra Leone 1973-1993 Bull.Inst.mar.Biol.& Oceanogr.U.S.L. Vol. No.1-8
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- Ndomahina, E.T. (2005) “On the Growth and certain Population parameters of *Ilisha Africana* off the Freetown peninsula, Sierra Leone”. Bull.Inst.mar.Biol.& Oceanogr.U.S.L. Vol. 5 No.1:30-35
- Ndomahina, E.T& J.C. Mamie (2004). Some studies on the Food and Feeding Habits of the roughhead catfish *Arius latiscutatus* in the coastal waters of Sierra Leone. (J.Pure & Appli.Sc.) Vol. 9: 55-62
- Ndomahina,E.T. (2004) Environmental and social Management Framework for water and sanitation: World Bank and GOSL. Report prepared for SALWACO pp.59.
- Ndomahina,E.T. (2004) Resettlement policy framework (RPF) for small Urban and rural water supply and sanitation. World Bank GOSL. Report prepared for SALWACO pp. 30
- Ndomahina,E.T. (2004) Review of the water and Sanitation sector: PRSP Document prepared for PASCO for GOSL. ADB, GOSL,pp.123
- Ndomahina,E.T. (2003) Convention on Biological Diversity. The Republic of sierra Leone National report 165pp. U.N.D.P.
- Ndomahina,E.T. (2003) International Maritime organization (IMO) Mission Report. The Republic of Sierra Leone Port Reception facility.pp.29. IMO/SLMA

- Ndomahina, E.T. and Associates (2002) Review of the STV/Lyon Report on the Rehabilitation of jetties. National transport and Investment plan (2003-2007) (SLRA/World Bank) 39p.
- Ndomahina, E.T. (2002) Assessment of the Status of the Coastal and Marine: Consultancy for the Sierra Leone Maritime Administration 100p.
- Johnson, R.G., R.G. Johnson and E.T Ndomahina (2002) Environmental and Social Analysis Assessment of proposed projects under the National Commission for Social Action (NacSA) World Bank/NacSA 68p.
- Ndomahina, E.T. (2002) Environmental Problems Associated with Maritime and Coastal Mode of transportation .Proceedings of the Consultative Workshop on the Formulation of the Transport sector policy. World Bank/GOSL pp34.
- Ndomahina, E.T. (1998) A Strategy for the sustainable Development of Marine Fisheries Resources of Sierra Leone After the Junta Rule (Unpublished Document for National Policy Advisory Committee).
- Ndomahina, E.T. (1998) Otolith Increment deposition and the growth of the Laboratory –reared turbot *Scophthamus mamimus* (Linnaeus) larva J.Pure.Appli.Sc.Vol.6:71-78
- Ndomahina, E.T. and I.W.O. Findlay (1998) Hygiene and sanitary Regulations of the Fisheries of Sierra Leone (G.O.S.L.) 29p.

4. Mrs. Memuna Kadie Sawie (Nee Manyeh) +232 76228569/033100444

memunakm@yahoo.com/cadeesawi@gmail.com

Academic and Professional Qualifications with dates

B.Sc. Home Economics Education 2002, Njala University College, Njala Sierra Leone.

M.Sc. Nutrition and Dietetics 2004, Njala University College, Njala Sierra Leone.

M.Sc. Food Safety and Control 2007, London South Bank University, 2007.

Certificate, Hazard Analysis and Critical Control Points (HACCP) 2007, Royal Institute of Public Health, United Kindom.

Certificate, Stable Isotopes Techniques and FTIR 2005, MRC Human Nutrition Research, Elsie – Widdoson Laboratory, Cambridge University, Cambridge, UK.

Training, Food Fortification and Food safety 2011, Dakar – Senegal.

Technical and Consultancy Experiences

- Baseline Survey for Supplementary foods at PHUs in Sierra Leone – PLAN and WFP Sierra Leone 2011.
- Nutritional guidelines for people living with HIV/AIDS. World Food Programme, HIV Focal Point, Nutrition Division 2010.
- Researcher/Facilitator Agriculture and Nutrition Situation Analysis Survey, 2010.
- Partnership for Regional Food Developers Initiative – A capacity building support strategy for poverty reduction in West Africa and the establishment of a Food and Organic Agriculture Network 2009.

Summary of Work Experience:

- Lecturer II, Institute of Home Sciences, Njala University, Njala Campus – 2002 – 2010
- Lecturer I, Institute of Home Sciences, Njala University, Njala Campus – 2011 to date
- Research Fellow (SLARI) 2009 to date.

Summary of Publications

L. Sanni, A.A. Adebawale, M.A. Idowu, **M.K. Sawi**, N.R. Kamara, I.O. Olayiwola, Egunleti, A. Dipeolu, I.O.O, Aiyelaagbe and S. Fomba (2009).

- West African Food from Root and Tuber Crops – A brief Review.
- Curriculum in Nutrition and Diatetics for Tertiary Education.
- Curriculum in Organic Agriculture for Tertiary Education.

AAU/MRCI/08/F07/P33 Project. ISBN 978 – 978 – 49396 -8-3. 82pp.

5. Saffa M. Kallon +23276-745559/23277-467390/23233-135550;
saffakallon2007@yahoo.com

Academic and Professional Qualifications with dates

BSc. Agriculture General, Njala University College

Certificate in Management of Agriculture Project, Agricultural and Rural Management -

Training Institute Kwara State, Nigeria 1990.

Certificate in Writing and Production of Agricultural Extension Materials, Sasakawa Training Institute University of Cape Coast, Ghana October 1995

Certificate in Project Investment Evaluation Central Education and Training Centre for Agriculture Staff Beijing China – 2004

Technical and Consultancy Experiences

- Assigned to Port Loko Agricultural Development Project (**PLADP**) and Farmers Association Support Project (**FASP**) as Training Officer in charge of organizing training programmes for farmers and staff in collaboration with other unit heads.
- Acted as Principal Agricultural Officer, North Western Region and Co-Manager, Port Loko Agricultural Development Project (**PLADP**)
- Assigned to Rice Research Station in- charge of out station field trials on rice production.
- Supervise Rice mechanical cultivation in Bonthe District (Matru Jong).
- Conduction of crop assessment for Sierra Rutile Limited.
- Attended the Africa Rice Congress in Mali 2010.
- Participated in the monitoring Tour of Gambia, Mali, Nigeria and Ghana to monitor the activities of other Multinational NERICA Rice Dissemination Project.

Summary of Work Experience

- Agricultural Officer - **1982 – 1989**

- Senior Agricultural Officer, Ministry of Agriculture, Forestry and Food Security **1989 - 1999.**
- Principal Agricultural Officer, Ministry of Agriculture, Forestry and Food Security **2001 – 2002**
- District Director of Agriculture **2002 - 2008.**
- Project Coordinator, Multinational NERICA Rice Dissemination Project (Sierra Leone) **2008 – 2**

6. **DR. KANU Saidu** (+232 3334 9876; saidukanu@yahoo.com)

Academic and Professional Qualifications with dates

B.Sc. Agriculture General: Njala University College, University of Sierra Leone.

M.V.Sc. Animal Infectious Diseases (Veterinary Immunology): Guangxi Agricultural University, P.R. China.

PhD. Veterinary Parasitology (Veterinary Protozoology): South China Agricultural University, P.R. China.

Technical and Consultancy Experiences

- Member, National Association of Farmers in Sierra Leone.
- Member, Sierra Leone Veterinary Association.
- Member, Agricultural Enterprises Development Association (AEDA).
- Member, Partners in education, Research and Development (PERD).
- Participated and coordinated livestock research restocking projects for Njala University (Funded partly by FAO)
- Coordinated urban agriculture project in Freetown, Sierra Leone (Funded by Resources Center for Urban agriculture and Food. Resources RUAF).

Summary of Work Experience

- Senior Lecturer and Head of the Department of animal Science, Njala University - Sierra Leone.
- Bank Clerk, Barclays Bank of Sierra Leone Ltd (Bookkeeper, Cashier and Advance Clerk).

Summary of Publications

- **G.Q. Li, S. Kanu, S.M. Xiao, F.Y. Xiang (2005). Response of chickens vaccinated with a live attenuated multi-valent ionophore-tolerant *Eimeria* vaccine. *Veterinary Parasitology* 129: 179-186.**
- **Li, G.Q, S. Kanu, F.Y. Xiang, S.M. Xiao, L. Zhang, H.W. Chen & H.J. Ye (2004). Isolation and Selection of Ionophore-tolerant *Eimeria* Precocious lines: *E. tenella*, *E. maxima* and *E. acervulina*. *Veterinary Parasitology*.**
- **Li, G.Q, S. Kanu, Hu, Y.L, & Zhu, X.Q (2003). PCR Amplification and sequencing of ITS1 rDNA of *Culicoides arakawae*. *Veterinary Parasitology*. 112: 101-108.**
- **Li, G.Q, Xiaozhu, H.E & Saidu Kanu (2001). Proceedings of the 3rd Seminar on Food – Borne Parasitic Zoonoses: Food – and Water-Borne. Parasitic Zoonoses in the 21st Century. Jitra Waikagul, John .H. Cross-and Suvanee Supavej (eds).**

South Asian Journal of Tropical Medicine and Public Health. Vol. 32 Supplement 2.

- **Li, G.Q, Hu, Y.L, S. Kanu (2002). Abstract – PCR amplification and sequencing of ITS1 rDNA of *Culicoides arakawae*. The 10th International Congress of Parasitology, Vancouver, Canada.**

7. Sheku K. Moiforay +23278506995 danielmoiforay@gmail.com

Academic and Professional Qualifications with dates

Ph.D Ruminant Nutrition (in progress), Njala University, Njala Campus – Sierra Leone.

Master of Veterinary Science 1994, Guangxi Agricultural University, Guangxi Peoples` Republic of China

B.Sc. Agricultural Education (1985) Njala University, Njala Campus – Sierra Leone.

IAEA Training Course in Tropical Animal Production, Proximate analysis and in

vitro

Digestibility Studies of Forage feeds. Institute of Tropical Animal Nutrition and Aquaculture,

University of Hohenheim, Stuttgart, Germany 2003.

International Workshop on the IAEA Technical Cooperation Project Design and Formulation, Vienna, Austria 2001.

IAEA Training course in Animal Infectious Diseases Diagnosis, Institute of Zoonotic diagnosis and

Veterinary Medicine, Berlin, Germany 1996.

Technical and Consultancy Experiences

- Consultancy to World Vision International Sierra Leone on Chicken Restocking Project in the Southern Province of Sierra Leone – January to December, 1999.
- Project Coordinator: Improvement of Productivity of Ndama Cattle in Sierra Leone; A Technical Cooperation Project of the International Atomic Energy Agency and Njala University, Department of Animal Science/Ministry of Agriculture 2003 - 2010.
- Njala University College, Post War Animal Restocking of Njala University farm by the World Bank.

Summary of Work Experience

- Lecturer, Animal Science Department Njala University College, 2001 to date.
- Assistant Lecturer, Animal Science Department Njala University College, 1997-1999
- Chief Laboratory Technician in the Department of Animal Science, Njala University, 1994-1997.
- Research assistant, Department of Experimental Farm Management, Institute of Agricultural Research, Njala 1988-1991
- Agricultural Science Teacher, Harford Secondary School for Girls, Moyamba and University Secondary School Njala respectively 1985-1988.

Summary of Publications

- Moiforay, S.K. 1996. Prospects for Dairy Farming in Sierra Leone; Paper presented during the 24th International Conference on Dairy Farming in Rural Development, International Agricultural Training Centre, Wageningen, Holland.
- Moiforay, S.K.; Nyandebo, P.J.; Sesay, A.R.; and Saccoh, H. 2004; Productive and Reproductive Parameters of Ndama Cattle under Traditional Nomadic Feeding Management System in Sierra Leone, 2004; Technical Report to the IAEA/FAO Div. International Atomic Energy Agency, Vienna, Austria
- Moiforay, S.K. 1996. Passive Transfer of Maternal Antibodies in Calves, Report of Project during IAEA Training Course at the Institute of Zoonotic diagnosis and Vet. Medicine, Berlin, Germany
- Moiforay, S.K. 1991. Determining the Maternal Antibody response to Infectious Bursal Disease Virus for Optimal Time of Vaccination against IBDV in Layer Chicks, M.Vet. Sc. Thesis. Journal of Guangxi University Veterinary Science, China.

8. [Professor Andrew Augustine Baimba +232 076494161; baimbamagbay@yahoo.com](mailto:baimbamagbay@yahoo.com)

Academic and Professional Qualifications with dates

Ph.D 1991, University of Waikato, New Zealand.

B.Ed (Hons) 1987, Massey University, New Zealand

PGD Exploration Geophysics 1982, International Centre for Earth Sciences – Delft, the Netherlands

M.Sc. Applied Geophysics 1978, Ahmadu Bello University Zaria, Nigeria

B.Sc. Ed Physics and Mathematics 1974, Njala University College, University of Sierra Leone.

Technical and Consultancy Experiences

- Consultants for Plan International Sierra Leone to conduct geophysical exploration training for Plan workers engaged in water well construction.
- Consultant to National Electoral Commission (NEC = SL/United Nation Development Programme) to develop a curriculum in Electoral Administration and Civil Education.
- Consultant to Sierra Leone Water Company for ground water exploration at Peri – Urban water supply.
- Received USD 13000.00 from the University of Papua New Guinea Research Committee to conduct groundwater studies in the Central Province of Papua New Guinea.
- Secured USD 5000.00 research grant from the International Centre for Theoretical Physics in Italy, to conduct groundwater exploration studies in Sierra Leone.
- Secured USD 18000.00 grant from UNESCO to organize the South Pacific Regional Conference on Pre – Tertiary Physics Education.
- Secured USD 15000.00 grant from UNESCO to design, develop and try physics teaching modules for high school science teachers in Papua New Guinea.

Summary of Work Experience

- Deputy Vice Chancellor, Njala University September 2011 to date.
- Dean, School of Technology, Njala University August 2009 – July 2011.

- Head, Department of Science, Agriculture and Health – University of Garoka 1999 – 2001.
- Deputy Dean, Students Affairs, Faculty of Science University of Papua, New Guinea 1994 – 1996.
- Acting Head, Department of Physics, Njala university College, University of Sierra Leone 1984

Summary of Publications

- Kumpoh, N.H and Baimba, A.A 2006. Technical students view on and conceptual understanding of mechanics: A case study of Brunei. *Journ. of Appl. Res. Edu.* :10. 163 - 173
- Baimba, A.A., Agyeman, K and Brown, P 2005. Enhancing teachers' proficiency for better teaching and learning of physics at secondary level. *Jour. of Appl. Res. Educ.:* 9. 46 – 56.
- Baimba, A.A 2004. Relevance versus societal expectations: The science teachers' dilemma. *Collaborative Agenda for Research in Education Review* 2004, 27 – 37.
- Baimba, A.A 1993. The scientific knowledge/cultural interface: The implications of science education in non – Western Countries. *Jour. Sc. Teachers` Ass. Nig.*, Vol. 28: 13 – 19.
- Baimba, A.A., Katterns, R. and Kirkwood, V 1993. Innovation in science curriculum: A Sierra Leone case study. *International Journal of Science Education*, Vol. 15(2) 213 - 219.
- Baimba, A.A 1993. Physics teaching in non western societies: A measurement module for junior secondary schools. *Science and Mathematics Education Papers – 1993* (pp. 172 – 193). Longman Paul Ltd, Auckland, New Zealand.
- Baimba, A. A. (1992). Physics teachers' action research experience with a teaching module on "Force". *Research in Science Education*. Vol. 22, 30 – 37.
- Baimba, A.A. (1991). Science Education in non- western societies: The challenges of the 1990s. *Papua New Guinea Journal of Education*. Vol. 27 (2). 25 – 30.
- Okwueze, E. E., Umego, M. N., Baimba, A. A, Ntaji, F. A. & Ajakaiye, D. E. (1988). Application of Geophysical methods to groundwater exploration in northern Nigeria, *Stugologia*, E. J. Leiden, Vol. 4(2), 103 – 115.
- Baimba, A. A. (2006). The constructivist approach to teaching pre- service physics teacher trainees. *Studies in science, Mathematics and Technical Education*, (pp. 73 – 79). University Brunei Darussalam, Brunei Darussalam. [IS BN99917- 1- 199-6]
- Brown, D. P. & Baimba, A. A. (2004). Pre and post reflections on teaching practice of science teacher trainees. In I. P. A. Cheong, H.S. Dhindsa, I. J. Kyeleve, & O. Chukwu, (Eds.) *Globalization Trend in Science, Mathematics. and Technical Education*, 270- 279. Universiti Brunei Darussalam, Brunei Darussalam. [ISBN: 99917-1-043-4]
- Baimba, A. A. & Agyeman, K. (1997). The role of university physics departments in improving the state of physics education at pre- tertiary level: A Papua New Guinea

case. In A.Z. Tajuddin, I. A. Jantan, K.M.Salleh, &Z.A. Wahab (Eds.). University physics Education for the 21st Century (pp.33-40). AsPEN, Malaysia. [ISBN: 983-99667-5-8]

- Baimba, A. A. & Brown, D.P. (2003). Physics teacher trainees' alternative conceptions and understanding of selected concepts in mechanics and electricity. In: H.S.Dhindsa, S.B Lee, and P.Achleitner, & M.A. (Ken) Clements, (Eds.). Studies in science, Mathematics and Technical Education, (pp. 21-28).Universiti Brunei Darussalam. Brunei Darussalam. [ISBN: 99917-1-109-0]
- Agyeman, K. Baimba, A., Drake, W. & Yeboah- Amankwah, D. (1994). Papua New Guinea country report on University physics education. In A.Z. Tajuddin, I.A. Jalal, J. Jantan, K.M. Salleh,&Z.A.Wahab(Eds.).University physics Education for the 21st century (pp. 398- 407). AsPEN, Malaysia. [ISBN: 983-99667-5-8]
- Baimba, A.A., Agyeman, K., Lawrence, S. A. &Yeboah - Amankwah, D. (1994). The state of physics Education in high Schools in Papua New Guinea. In: proceedings of the south Pacific Regional Conference on Pre-Tertiary Physics Education (pp. 103-106). University of Papua New Guinea, Port Moresby.
- Baimba, A.A. (1992). Science and Cultureand: Implications of the teaching and learning of science in non-western societies. Science and Mathematics Education Papers -1992 (pp. 22-30). Longman Paul Ltd, Auckland, New Zealand [ISBN: 0-908851-15-4]

9. Dr. IDOWU, Olusegun Mark Obafemi +234 8035030175
omoidowu2000@yahoo.com/omoidowu2000@gmail.com (Animal consultant for the project)

Academic and Professional Qualifications with dates

Ph.D Animal Nutrition (Monogastric) 2004, University of Agriculture Abeokuta, Nigeria.

M.Agric. Monogastric Nutrition 1999, University of Agriculture Abeokuta, Nigeria.

B.Agric. Animal Nutrition 1994, University of Agriculture Abeokuta, Nigeria.

Technical and Consultancy Experiences

- Chairman , Local organizing Committee of 1st Annual Poultry Seminar of World's Poultry Science Association (Nigeria Branch) . Held at Farm Gate Hotel , Ota, Ogun State Nigeria. On the 14th of August 2002.
- Convener- Publicity & Protocol Sub Committee of 7th Annual Conference of Animal Science Association of Nigeria. Held At Univ. of Agriculture, Abeokuta, Nigeria. On the 16- 19th Sept. 2002.
- President, Bible Faith International Christian Centre, Obantoko, Abeokuta: 2002 – to date
- Preacher / Clergy, St. Michael Anglican Church, Obantoko Abeokuta: 2004 to date.
- Joint Admission and Matriculation Examination (JAMB)– Centre Supervisor 2006- to date

- Member Post JAMB screen exercise – UNAAB 2006/2007 and 2007/2008, 2008/2009
- Resource person – Training the trainers on organic farming Organized by AMREC June 2010.
- Returning Officer – 2011 General Election in Ogun State (Sagamu II Constituency)

Summary of Work Experience

- Ag. HOD, Animal Nutrition department, UNAAB, (2011- to date)
- Chairman, University Time Table and Examination Committee (TIMTEC) 2009- to date.
- Departmental Rep., College Board of Studies 2006 - to 2011
- Department of Animal Nutrition Postgraduate Coordinator 2005 to 2010
- Programme Coordinator, Foundation Science Programme, Centre for Human Resources Develop. CENHURD -UNAAB 2006- 2007

Research Interest /Commissioned Projects

- Monogastric Nutrition with emphasis on using non-conventional ingredients as alternative feed ingredients for poultry and rabbits.
- Mineral Nutrition of Poultry
- Reduction in cholesterol contents of poultry products through Hypo-cholesterolemic feedstuffs and feed additives
- Organic poultry nutrition

Summary of Publications

- **Idowu, O.M.O.**, Eruvbetine Daisy, Oduguwa, O.O., Bamgbose, A.M. and Abiola, S.S. (2003) . Response of finishing broiler chickens fed three energy/protein combinations at fixed E:P ratio. *Nigerian Journal of Animal Production* 30(3) 185-191, Published by The Nigerian Society For Animal Production. Nigeria. Available online at <http://www.ajol.info/index.php/njap>
- **Idowu, O.M.O.**, Daisy Eruvbetine, Oguntona, E.B. and Biobaku, W. O. (2004). Effects of unpeeled cassava root meal based diets on egg quality characteristics of Black Harco hens. *Nigerian Poultry Science Journal* 2 & 3: 8 – 16. Published by The World's Poultry Science Association –Nigeria Branch (WPSA-NB) Nigeria.
- **Idowu, O.M.O.** and Eruvbetine Daisy (2005). Performance, digestibility and carcass yield of broiler chickens fed diets containing two fishmeals. *Nigerian Journal of Animal Production* 32 (2) 204-214. Published by The Nigerian Society For Animal Production, Nigeria. Available online at <http://www.ajol.info/index.php/njap>
- **Idowu, O.M.O.** , Oduwefo, A. and Eruvbetine Daisy (2005). Performance and hypo-cholesterolemic response of laying hens fed cassava root sievate – based diets. *Nigerian Journal of Animal Production* 32 (2) 215- -223, Published by The Nigerian Society For Animal Production, Nigeria. Available online at <http://www.ajol.info/index.php/njap>

- **Idowu, O.M.O.**, Adeniyi, O. A., Jobi, P.A., Iposu, S. O. and Biobaku, W. O. (2006). Effect of partial replacement of wheat offal in rabbit weaner diets with oil palm leaf on performance, nutrient digestibility and carcass characteristics. *ASSET Series A, 6 (1) 133 – 142* , Published by the University of Agriculture, Abeokuta, Nigeria. Available at <http://www.unaab.edu.ng/asset>
- **Idowu, O.M.O.**, Laniyan, T.F., Kuye, O.A., Oladele-Ojo, V.O. and Eruvbetine, D. (2006): Effect of copper salts on cholesterol, residues in liver, egg and excreta of laying hens. *Archivos de Zootecnia* , Vol 55 No.212 pp 327-338, Published by Instituto De Zootecnia, Facultad De Veterinaria, **Spain** Available online at <http://www.uco.es/organiza/servicios/publica/az/az.htm>
- **Idowu, O.M.O.** , Idowu, O.A., Oso, A.O., Fafiolu, A.O., Sule, R., Sorongbe, A. and Eruvbetine, D. (2006) Performance and egg quality of laying hens fed cassava root wastes. *Nigerian Poultry Science Journal 4: 48 – 55*. Published by The World’s Poultry Science Association –Nigeria Branch (WPSA-NB) Nigeria.
- **Idowu, O.M.O.**, Eruvbetine, D., Oguntona, E.B. and Biobaku, W. O. (2007) : Response of laying hens to long term feeding of unpeeled cassava-based diets. *Ghanaian Journal of Animal Science. Vol. 2 & 3 : 53 –62* Published by The Ghana Society of Animal Production, GSAP , **Ghana**.
- **Idowu, O.M.O.**, Sogunle, O.M., Idowu, O.A., Jegede,A.V., Alabi, E. E., Adenugba, A.O. and Bambgose, A.M. (2007) Performance and Carcass characteristics of weaner rabbits fed diets containing cassava root peel and cassava root sievate. *Tropical Journal of Animal Science 9 (1) 81-87* Published by Animal Science Association of Nigeria, Nigeria. Available online at <http://www.ajol.info/index.php/tjas>
- S. O. Peters, **Idowu, O.M.O.**, Agaviezor, B. O., Egbede, R. O. and Fafiolu, A.O.(2010). Genotype and Sex Effect on Gastrointestinal Nutrient Content, Microflora and Carcass Traits in Nigerian Native Chickens. *International Journal of Poultry Science 9 (8): 731-737* Published by Asian Network for Scientific Information, **Pakistan**, Available online at <http://www.pjbs.org/ijps/board.htm>
- O.M. Sogunle, L.T. Egbeyale, **Idowu, O.M.O.**, Bamidele, O.M., Sodeke, S.A1., Sonaike, G.O. and Fanimu, A.O. (2010). Dietary influence on body temperature, performance, blood parameters and carcass characteristics of broiler chickens. *Agriculture and Biology Journal of North America 1 (5) 778-784* Published by ScienceHuß LLC, Milford, Connecticut, 06460 , **United States of America**. Available online at <http://scihub.org/ABJNA/index.html>
- O.R. Ajuwon and **Idowu, O.M.O.** (2010) Vitamin C Attenuates Copper-Induced Oxidative Damage in Broiler Chickens. *African Journal of Biotechnology Vol. 9(44) 7525-7530*, Published by Academic Journals, Nairobi, **Kenya**. Available online at <http://www.academicjournals.org/AJB>
- O.R. Ajuwon, **Idowu, O.M.O.**, Afolabi, S.A., Kehinde, B.O., Oguntola, O.O. and Olatunbosun, K.O. (2011). The effects of dietary copper supplementation on oxidative and antioxidant system in broiler chickens. *Archivos de Zootecnia 60(230)275-282*, Published by Instituto De Zootecnia, Facultad De Veterinaria, **Spain**. Available

online at

<http://www.uco.es/organiza/servicios/publica/az/az.htm>

- **Idowu, O.M.O.** , R.O. Ajuwon, Oso, A.O. and Akinloye, O.A. (2011). Effects of zinc supplementation on laying performance, serum chemistry and Zn residue in tibia bone, liver, excreta and egg shell of laying hens. *International Journal of Poultry Science* 10 (3): 225-230, Published by Asian Network for Scientific Information, **Pakistan**, Available online at <http://www.pjbs.org/ijps/board.htm>
- **Idowu, O.M.O.**, Eruvbetine Daisy, O.A., Oso, Jegede, A. V. and Fafiolu, A.O.(2010) Plasma and liver cholesterol status of laying hens fed unpeeled cassava root meal based diets. *Nigerian Poultry Science Journal* 7: 66-74, Published by The World's Poultry Science Association –Nigeria Branch (WPSA-NB) Nigeria.
- Fafiolu, A.O., Jegede, A. V., Oso, A.O., R.A. Sobayo and **Idowu, O.M.O.** (2010) Utilization of enzyme supplemented wheat offal – rice bran based diets on performance characteristics and serum biochemistry by meat-chicken. *Nigerian Journal of Animal Production* 37(2)199-206, Published by The Nigerian Society For Animal Production. Nigeria. Available online at Available online at <http://www.ajol.info/index.php/njap>
- **Idowu, O.M.O.** (2011) The Effect of Graded Levels of Magnesium Sulphate (MgSO₄) in Practical Broiler Starter Diets in the Humid Tropics. *Nigerian Journal of Animal Production* 38 (2) 115-120, Published by The Nigerian Society For Animal Production. Nigeria. Available online at Available online at <http://www.ajol.info/index.php/njap>
- **Idowu, O.M.O.** , O.R. Ajuwon A. O, Fafiolu , O.A. Oso and Akinloye, O.A. (2011). Modulation of Cholesterol and Copper Residue levels in Muscles and Blood Serum of Finishing Broiler Chickens fed Copper and Ascorbic acid supplements *Pakistan Journal of Nutrition* 10 (8) : 781- 785 Published by Asian Network for Scientific Information, **Pakistan**, Available online at <http://www.pjbs.org/pjnonline/back.htm>
- Egbeyale, L. T., **Idowu, O.M.O.**, Sogunle, O. M., Amole, T. A. Ogundipe, B. O. and Adeleye, O. O. (2012) Weight for Weight Replacement of Wheat Offal with Cassava Root Sievate in Growing Rabbit Diet. *Nigerian Journal of Animal Production* 39(1)XXX. Published by The Nigerian Society For Animal Production. Nigeria. (Letter of Acceptance dated 25th March, 2011)
- Fasae O.A. , **Idowu, O.M.O.**, Moronkola A.I and Ijaduola, O.A (2012) Availability of cassava residues for goat production in cassava based farming system. *Nigerian Journal of Animal Production* 39(1) XXX. Published by The Nigerian Society For Animal Production. Nigeria. (Letter of Acceptance dated 15th April, 2011)
- **Idowu, O.M.O.**, A.O.Oso, Sogunle, O.M. and Fanimu, A.O. 2011. Growth response, apparent nutrient digestibility and blood parameters of weaner rabbits fed diets containing bamboo leaf meal. *Agriculture and Biology Journal of North America* Published by ScienceHuß LLC, Milford, Connecticut, 06460 , **United States of America**. (Letter of Acceptance dated **Sun, Apr 17, 2011 at 6:56 PM**)

- O.O. Oduguwa, Fafiolu, A.O., **Idowu, O.M.O.** and O.S. Adisa (2006). Response of laying hens to diets containing cashew nut reject meal. Proceedings of Annual Spring Meeting of WPSA UK Branch held 28 – 29 March 2006, York University. UK. Published in British Poultry Abstracts, an official publication of British Poultry Science Limited. *British Poultry Abstracts*. 2 (1) 44 –45. **(United Kingdom)**
<http://www.tandfonline.com/loi/cbpa20>
- Fafiolu, A.O., A.V. Jegede, Oso, A.O., **Idowu, O.M.O.**, S.T. Jacobs and M. Baungartner (2007). Effect of dietart carnine supplementation on performance and nutrient metabolisability of starting broiler chickens in diets containing cashew nut reject meal. Proceedings of Annual Spring Meeting of WPSA UK Branch held 3 –4 April 2007, Royal Clifton Hotel and Theatre and Floral Hall Complex, Southport, Lancashire. Published in British Poultry Abstracts, an official publication of British Poultry Science Limited *British Poultry Abstracts*. 3(1) : 37-38 **(United Kingdom)**
<http://www.tandfonline.com/loi/cbpa20>
- **Idowu, O.M.O.**, Fafiolu, A.O., Oduguwa, O.O.and D. Eruvbetine.(2007) Inorganic and bioplex copper residues in liver, egg and excreta of chickens. Proceedings of Annual Spring Meeting of WPSA UK Branch held 3 –4 April 2007, Royal Clifton Hotel and Theatre and Floral Hall Complex, Southport, Lancashire. Published in British Poultry Abstracts, an official publication of British Poultry Science Limited *British Poultry Abstracts*. 3(1) : 38-39 **(United Kingdom)**
<http://www.tandfonline.com/loi/cbpa20>
- Oso, A.O., A.M. Bamgbose, Fafiolu, A.O., **Idowu, O.M.O.**, Sobayo, R.A. and Dada, W.O.(2007) Response of chicks to diets containing tiger nut (*Cyperus rotundus*, Linn.) meal. Proceedings of Annual Spring Meeting of WPSA UK Branch held 3 –4 April 2007, Royal Clifton Hotel and Theatre and Floral Hall Complex, Southport, Lancashire. Published in British Poultry Abstracts, an official publication of British Poultry Science Limited *British Poultry Abstracts*. 3(1) : 43-44 **(United Kingdom)** <http://www.tandfonline.com/loi/cbpa20>
- Fafiolu, A.O., O.O. Oduguwa, Bamgbose, A.M. Fanimu, A.O., Jegede, A.V. and **Idowu, O.M.O.** (2009). Enzyme (Rovabio®) in diets containing undecorticated sunflower seed meal for broiler starters. Proceedings of Annual Spring Meeting of WPSA UK Branch held 31st March - 1st April 2009, at The Floral Hall Complex, Southport. Published in British Poultry Abstracts, an official publication of British Poultry Science Limited *British Poultry Abstracts*. 5(1) : 4-5. **(United Kingdom)**
<http://www.tandfonline.com/loi/cbpa20>
- F.O. Oke, O.O. Oduguwa, Fafiolu, A.O., A.V. Jegede, **Idowu, O.M.O.** and Südekum, K-H (2010) Effect of yeast and enzyme supplementation on energy metabolisability by broiler chickens fed diets containing malted sorghum sprouts and wheat bran. Proceedings of Annual Spring Meeting of World's Poultry Science Association (UK Branch) Held 13-14th April 2010 at The Canada Room , Queen's University, Belfast, UK Pg 40 **(United Kingdom)**
<http://www.tandfonline.com/loi/cbpa20>

- Fafiolu, A.O., O.O. Oduguwa, A.V. Jegede, **Idowu, O.M.O.**, Oso, A.O. and R.A. Sobayo (2010). Improvement in the use of undecorticated sunflower seed meal diets with multi-enzyme mixture by growing pullets. Proceedings of Annual Spring Meeting of World's Poultry Science Association (UK Branch) Held 13-14th April 2010 at The Canada Room , Queen's University, Belfast, UK Pg 42. **(BRITAIN)**
- **Idowu, O.M.O.**, Fafiolu, A.O., Oso, A.O. and Oduguwa, O.O.(2010). Effects of high salt supplementation on Zn residue in tibia bone, liver excreta and egg shell of laying hens. Proceedings of Annual Meeting of World's Poultry Science Association (UK Branch) Held 13-14th April 2010 at The Canada Room , Queen's University, Belfast, UK Pg 45. **(BRITAIN)**
- C.C.N. Ezennabike, O.O. Oduguwa, Jegede, A. V., Fafiolu, A.O., **Idowu, O.M.O.** and Südekum, K-H (2010) Energy metabolisability by broiler chickens fed enzyme supplemented diets. Proceedings of Annual Meeting of World's Poultry Science Association (UK Branch) Held 13-14th April 2010 at The Canada Room, Queen's University, Belfast, UK Pg 49 **(BRITAIN)**
- **Idowu, O.M.O. (2010)** Effects of Zinc supplementation on laying performance of hens. Proceedings of 5th International Seminar On Tropical Animal Production **(ISTAP)** 19 – 22 October 2010, Faculty of Animal Science, Universitas Gadjah Mada, Pg 395- 397 **(INDONESIA)**
- C.P. Njoku, A.B.J. Aina, O.M. Sogunle and **Idowu, O.M.O.** (2010). Evaluation of feed quantity offered and feed frequency on the performance of growing pigs. Proceedings of the 1st Nigerian International Pig Summit (Mitigating challenges in pig production and marketing), held at institute of Agricultural Research & Training, Moor Plantation, Ibadan. Pg. 86 – 92.
- O.O. Oni, **Idowu, O.M.O.**, Oso, A.O., Oni, A.O., Omoare, A.M, Akinusi, F.A.O. and Ogbonna, C.C. (2011). Carcass characteristics and energy utilization of weaner rabbits fed diets containing dried citrus pulp. Proceedings of Annual Conference of Nigeria Society for Animal Production (NSAP). Held at Merit House/Raw materials Research and Development Council, Abuja. Pg 348 – 350.

10. **MELVIN Sidikie George** (+232 7882 6163; melg682004@yahoo.co.uk)

Academic and Professional Qualifications with dates

B.Sc. Agriculture General: Njala University College, Njala – Sierra Leone.

MSc. Crop Cultivation and Farming Systems: Agronomy Department, College of Agriculture and Biotechnology – Zhejiang University, China.

PhD. Crop Cultivation and Farming Systems: Agronomy Department, College of Agriculture and Biotechnology – Zhejiang University, China.

Technical and Consultancy Experiences

- Crop Production Consultant - Youri Enterprises (An enterprise between the people of China and Sierra Leone).
- Compilation of Crop Production Guidelines for Sierra Leone for IAR`s mandate crops that include: Cassava, Sweet potato, Yam, Maize, Soybean, Cowpea and Groundnut.

Summary of Work Experience

- Lecturer: Crop Science Department – School of Agriculture, Njala University.
- Principal research Fellow, Sierra Leone Agricultural Research Institute (SLARI)

Summary of Publications

- Goerge Melvin S., Lu Guoquan, Zhou Weijun (2002). **Genotypic variation for potassium uptake and utilization efficiency in sweetpotato (I. Batatas).** *Field Crops Research* 77: 7-15.
- George, M.S., Lu G.Q (2004). **Effects of potassium on sweet potato.** *Journal of Zhejiang University* 11 (5): 70-75.

11. **HABIB Yayah Saccoh** (+232 78441010/7661 1681; habibsaccoh2006@yahoo.com)

Academic and Professional Qualifications with dates

B.Sc. Agric General: University of Kaffel, Germany

MSc. Animal Production: University of Kaffel, Germany

Summary of Work Experience:

- Lecturer, Department of Animal Science Njala University, Sierra Leone.
- Bruise`s Pig and Poultry Farm, Germany.
- Feed Ration Supervisor for Pig and Poultry; Marketing of Poultry Products.
- Supervision of 102 sets of oxen in the Mabole Valley in the Bombali District. Sierra Leone Work Oxen Project.
- Master farmer of the Fabaina farmers association.
- Member, Sierra pig and poultry farmers association.
- Advisor, Mambolo Piggery in the Kanbia District.

12. **BRIMA Koroma** (+232 7867 6597; koromabm1@yahoo.com)

Academic and Professional Qualifications with dates

B.Sc. (Hons): Environment and Development (USL)

M.Sc., Development Studies (USL)

M.Sc. (Distinction), Environment, Management and Sustainable Development (UK)

Summary of Work Experience

- Lecturer 1, School of Environment – Njala University, Njala – Sierra Leone.
- Environmental Impact Assessment: Educational Renewal (school and Well Constructions).
- Strategic Environmental Assessment for Mano River Forest Ecosystem Conservation (Sierra Leone, Guinea, Liberia and Cote D`voire).

13. **KPUNDEH Didlyn Mathew** (+232 3392 5500; mathdidlyndeh@yahoo.com)

Academic and Professional Qualifications with dates

B.Sc. (Hons); Fisheries and Wildlife Conservation – Njala University, Sierra Leone.

M.Sc.: Aquaculture and Fisheries Management, Njala University – Sierra Leone.

Technical and Consultancy Experiences

- National Fisheries Resources Survey sponsored by EU and implemented by ISFM – Project Sierra Leone/MFMR – Sierra Leone.
- Artisanal Fisheries Frame Survey sponsored by EU and implemented by ISFM – Project Sierra Leone/MFMR – Sierra Leone.
- Member, Conservation Society – Sierra Leone (CSSL).

Summary of Work Experience:

- Lecturer, Aquaculture and Fisheries Management, Njala University- Sierra Leone.

14. **SESAY Santigie** (+232 3354 9915/7858 5556; santigienancy@yahoo.com)

Academic and Professional Qualifications with dates

Certificate - Building and Civil engineering: Milton Margai College of Education and Technology, Sierra Leone.

Diploma – Building and Civil Engineering: Milton Margai College of Education and Technology, Sierra Leone.

B.Eng (Hons) Civil option: Fourah Bay College, Sierra Leone.

Summary of Work Experience:

- National Fisheries Resources Survey sponsored by EU and implemented by ISFM – Project Sierra Leone/MFMR – Sierra Leone.
- Artisanal Fisheries Frame Survey sponsored by EU and implemented by ISFM – Project Sierra Leone/MFMR – Sierra Leone.
- Member, Conservation Society – Sierra Leone (CSSL).
- Assistant Estate Officer, Njala University – Sierra Leone.
- Site Engineer, T.S Company, Sierra Leone.
- Site Engineer, NRA, Sierra Leone.
- Site Engineer, Pepel – Sierra Leone.
- Project Manager, Yugo Construction Company, Sierra Leone.
- Site Supervisor, D.J. Engineering – Sierra Leone.

PROJECT EVALUATION

The project impact on the beneficiaries is to be evaluated by “INNOVATION FOR POVERTY ACTION” 10 SIR SAMUEL LEWIS ROAD – FREETOWN, SIERRA LEONE (www.poverty-action.org).

TEAM PROFILE (BEAU UNIVERSITY, CAMEROON)

- 1. Dr. Pius Mbu OBEN (Tel: +237 77 77 893, Email: mbuobenp@yahoo.co.uk; Fax: +237 332 22 72).**

Academic and Professional Qualifications with dates

Ph.D. Fisheries and Hydrobiology, University of Ibadan, Nigeria.

M.Sc. Fisheries and Hydrobiology, University of Ibadan, Nigeria.

B.Sc. Zoology, University of Ibadan Nigeria.

Summary of Work Experience

- Associate Professor of Fisheries and Hydrobiology-Marine Sciences Department of Geology and Environmental Science/Department of Plant and Animal Sciences, Faculty of Science, University of Buea, Cameroon.
- Member of the Consultative Committee of University Institutions (Le Comité Consultatif des Institution Universitaires (CCIU), Yaoundé): For of Academic Staff of Public Institutions of Higher Education in Cameroon.
- Member of the University of Buea Think-Tank Committee on Fundamental Science: This local committee reflected on research and technology in fundamental Sciences.
- Visiting Senior Lecturer in Fisheries and Hydrobiology (Department of Animal and Environmental Biology), University of Benin, Nigeria. (University of Benin, P.M.B. 1154, Benin City, Nigeria).
- Member of Commission VI, Section 4, Sub section 1 (Aquatic Science i.e. Science Halieutiques), Joint Recruitment and Promotions Board (CCIU), Yaounde, Cameroon (Minister of Higher Education: c/o Tel; +237 77534821)
- Visiting Lecturer in Limnology and Ichthyology, University of Dschang, Cameroon. NO. 877/99/UDS/FS/D (University of Dschang, P.O. Box 63, Buea, SWP. Cameroon).
- Senior Lecturer (Tenured at this level) in Environmental Science University of Buea, Cameroon. Course Master for Environmental Health in the Faculty of Science, University, Cameroon.
- Visiting Lecturer in Limnology and Ichthyology, University of Dschang, Cameroon. No. 877/99/UDS/FS/D.
- Assistant Lecturer in Environmental Science, University of Buea, Cameroon.
- Contract Research on Environmental Pollution Study, sponsored by Texaco overseas Petroleum Company, LTD, Nigeria (1993 - 1994).
- Offer of a Research Grant by the African Technology Policy Studies Network (ATPs): Research Programme on Water and Environment (2005-2006). ATPS focuses on “Baseline studies on Household Demand for Portable Water Supply in Africa: Economics, Ethics, Social Psychology and Institutions.”
- Plankton survey in the Cameroon Large Marine Ecosystem (LME) of the Gulf of Guinea (GoG): Sponsored by the United Nations Industrial Development Organization (UNIDO), Vienna, Austria, through the Ministry of Environment and Forestry, Yaoundé, Cameroon. Sponsored by

UNIDO/UNDP/NOAA/FAO/UICN/OIC of UNESCO and GEF (1997-1999)
(Contract research: 3 publications in book chapters).

- African Network of Scientific and Technical Institutions (ANSTI)/United Nations Education, Scientific and Cultural Organization, with the support of the Dutch Ministry of Foreign Affairs (August 2003) to undertake research in marine sciences. In the Department of Animal and Environmental Biology, Faculty of Science, University of Benin, Nigeria (1 publication).

Summary of Publications

- Oben, B.O., Oben, P.M. and Dieudonne, A. (2007). Spatial analysis of Socio-economic/environmental interactions of water quality conditions along the Atlantic Coast of Cameroon. GIS for the Coastal Zone. Wollongong Papers on Maritime Policy. Woodroff, C.D., Bruce, E.M., Puotinen, M. and Furness, R. (Eds). 16: 279-290.
- Alemagi, A., OBEN, P.M. and Ertel, J. (2006). Implementing Environmental Management Systems in Industries along the Atlantic Coast of Cameroon: Drivers, Benefits and Barriers. *Corporate Social Responsibility and Environmental Management*. 13, 221-232.
- OBEN, P.M. & B.O. (2002): Food and feeding inter-relationship: A preliminary indicator to the formulation of the feed of some tilapiine fishes: *Tropical Journal of Animal Science*. 5 (1) 35-41.
- OBEN, P.M., & OBEN B.O (2001). A review to the constraints to the development of the fisheries sector in Cameroon. In: *Environment issues, Problems and prospects*. LAMBI, C. M. (ed.). Unique Printers, Cameroon, pp. 67-84.
- Oben, B.O., Oben, P.M., Nkeng, G.E., Ugwumba, A.O. Okorie, T.G., Uponi., J.I and G. Horst (2008). Metal Distribution and Bioaccumulation in Water and Fish of an African Lake. *Tropical Freshwater Biology*.
- Oben, B.O., Oben, P.M., Ugwumba, A. O and Okorie, T.G. (2008). Occurrence and Deleterious Effects of Algal Blooms Associated Some Pollutants In Three Man-Made Lakes. *Tropical Freshwater Biology*.
- Bienfang, P., Oben, B., Defelice, S., Moeller, P., Oben, P., Huncik, K., Toonen, R., Daly-Engel, T. and Bowen, B. (2008). Ciguatera: Detection of Neurotoxins in Carnivorous Reef Fish from Cameroon Coast, West Africa. *African Journal of Marine Science* 2008, 30(3): 533 –540.
- Akoachere, T K; Pius M Oben; Mbivnjo, B.S; Ndip, L.M; Gerald, N. and Ndip, R.N. (2008). Bacterial indicators of pollution of the Douala lagoon, Cameroon: Public
- Oben, P.M., Oben, B.O. and Fonge B. (2006). High incidence of cyanobacterial blooms along the coast of the Cameroon Gulf of Guinea and their effects on human health and amenities. *Tropical Freshwater Biology*, 15 (2006) 33-42
- Oben, P.M. and Oben, B.O. (2006). Influence of nutrient concentrations on the seasonal abundance and distribution of Cyanophyceae in the coastal region of Mount Cameroon. *African Journal of Marine Science* 28 (1): 25-31.

- Alemagi, D., OBEN, P.M. and Ertel, J. (2006). Mitigating Industrial Pollution Along the coast of Cameroon: An overview of Government Effort. *The Environmentalist*. 26 (1): 41-50.
- Alemagi, D., OBEN, P.M. and Ertel, J. (2005). A survey of Environmental Management System Initiatives in Industries along the Atlantic Coast of Cameroon. *Corporate Environmental Strategy: International Journal for Sustainable Business*. 12 (5& 6) 1-10
- OBEN, P.M. and Oben, B.O. (2003/2004): Preliminary study of the domestication of broodstock of an ornamental aquarium fish, *Synodontis obesus* (TELEOSTEI: MOCHOKIDAE) in concrete tanks in Buea, Cameroon. *Tropical Freshwater Biology*. 12/13: 137-153.
- OBEN, P.M. and Oben, B.O. (2003). Age and growth studies of *Mormyrops deliciosus* (Mormyridae). In the Lekki Lagoon, Nigeria. *The Zoologist*. 2 (2): 55-67
- Oben, B.O. & OBEN P.M. (2003). Brood stock domestication of Africa Arrowana in concrete tanks in Cameroon. *Global Aquaculture Advocate*. 6(5): 32-33.
- OBEN, P.M. & B.O. (2002): Food and feeding inter-relationship: A preliminary indicator to the formulation of the feed of some tilapiine fishes: *Tropical Journal of Animal Science*. 5 (1) 35-41.

2. Dr. POUOMOGNE Victor; Email: pouomognev@yahoo.fr +237 77 59 00 26 Fax: C/o PTT Foumban, +237 33 48 30 10

Academic and Professional Qualifications with dates

1998: ICRA Certificate (International Center for Research in Agriculture, ICRA, Montpellier) - Development oriented Research in Agriculture.

1994: Doctorate - National Advanced School of Agriculture (ENSA) & University of Rennes, France.

1990: DEA - (Aquaculture Biology) Université ET Rennes I.

1987: IFF Wuxi certificate - Integrated Fish Farming Training Center, Wuxi, China (my participation funded by IDRC Canada).

1983: Engineer of Waters, Forests and Wildlife - National Advanced School of Agriculture (ENSA), Yaoundé, Cameroon.

Technical and Consultancy Experiences

2008-2011: SARNISSA (Sustainable Aquaculture Research Network in Sub Saharan Africa) (Funded by European Union).

2008-2009: Development plan of aquaculture in Cameroon- Resource person funded by ADB via FAO

2006-2009: REPARAC (Strengthening of Partnerships for Agricultural Research in Cameroon) - Project leader aquaculture sub-component (French Cooperation).

2004-2009: Evaluation of the Sustainability of Aquaculture Systems (EVAD)- Agence Nationale de la Recherche (France).

2004-2008: Geographical Information System (GIS) for identifying high potential aquaculture zones in Africa and Asia - Leading partner in Cameroon (subsistence aquaculture in SSA (GTZ via WorldFishCenter).

2000-2005: Integrated Agriculture-Aquaculture (IAA) in the forest benchmarks of Cameroon (DFID via WorldFishCenter).

2005-2008: Valorisation of agro-industrial by-products in small scale fish farming - Project leader (African Development Bank).

2007-2009: Construction of the Kumba integrated fish station - Monitoring expert (African Development Bank).

2004, 2006, 2008, 2010: Impact assessments prior construction of dams - Consultant on fisheries component (Government of Cameroon).

1994-1997: Development of Fish farming in Yemessoa settlement - Project leader (French embassy in Cameroon).

Summary of Work Experience

- 1997-2011: Leading position at national/ regional level for the implementation of partnership /action research projects, with constant interactions with current major international partners and donors
- 1986-1997: Head of the Fouban Fishculture Research Station
- 17 June 1997 : Promoted Senior Research Officer
- 12 December 1988 : Promoted Research officer
- 6 March 1985 : Recruited Research Assistant (IRZ Limbe, then IRZ Fouban) to create a new fish culture research station
- 9 November 1983:Posted to the Centre for Forestry Research, IRA Yaoundé, just after graduating as Forestry Engineer from ENSA Yaounde
- 1994 till date, lecturer / associate professor in the following institutions:
 - URBO / Faculty of Sciences (Research Unit for the Biology of Organisms, University of Namur, Belgium).
 - Faculty of Agronomy and Agricultural Sciences (FASA, University of Dschang, Cameroon),
 - Institute of Fishery Sciences of Yabassi (Douala university, Cameroon)
 - INSAB of Franceville (National Advanced Institute for Agriculture and Biotechnology, Gabon)
 - University of Mountains at Bangangté, Western Cameroon
 - CNFZV of Fouban (vocational Fisheries school, belonging to MINEPIA Cameroon)

Summary of Publications

- Pouomogne V. and Pemsil DE., 2008. Recommendation domains for pond water aquaculture. Country study: Development and status of Freshwater aquaculture in

Cameroon. WorldFish Center Studies and Review N° 1871. The WorldFishCenter. Penang. Malaysia. 60 pages

- Pouomogne V., Nana J.-P., Pouomogne J.-B., 1998. Principes de Pisciculture appliqués en milieu tropical africain. Comment produire du poisson à coût modéré (des exemples du Cameroun). CEPID / Coopération Française, Yaoundé. Edité par *Presses Universitaires d'Afrique (PUA)*, Yaoundé. 236 pages.
- Pouomogne V., 1994. Alimentation du tilapia *Oreochromis niloticus* en étang : Evaluation du potentiel d'utilisation de quelques sous-produits de l'industrie agro-alimentaire et modalités d'apport des aliments. Thèse de Doctorat d'Halieutique, ENSA de Rennes, France. Editée par *CIRAD-EMVT*, Maisons-Alfort. 138 p.

Book Chapters

- Pouomogne V., 2008. Review on the use of wild caught Clarias catfish as seed in aquaculture: Case of Santchou agrofischers in Western Cameroon. Pp 93-108. In A. Lovatelli, P.F. Holthus (eds). Capture Base Aquaculture. Global overview. FAO Fisheries Technical Paper N° 508. Rome FAO.
- Pouomogne, V. 2007. Analysis of feeds and fertilizers for sustainable aquaculture development in Cameroon. pp. 381--399 In M.R. Hasan ed. Study and analysis of feeds and fertilizers for sustainable aquaculture development. FAO Fisheries Technical Paper No. 497, FAO Rome.

Articles

- Pouomogne V., Brummett R.E. and Gatchouko M., 2010. Impacts of Aquaculture Development Projects in western Cameroon. *Journal of applied Aquaculture* 22, 93-108.
- Pouomogne V., Ombredane D. and Lazard J., 2009. Evaluation of practical diets with three levels of proteins and lipids for juvenile *Hemichromis fasciatus* Peters (Teleostei, Cichlidae). *Cameroon Journal of Agricultural Sciences* 2 (1), 10-15.
- Monentcham SE et al, Influence of dietary protein levels on growth performance and body composition of African bonytongue fingerlings, *Heterotis niloticus* (Cuvier, 1829). *Aquaculture Nutrition*, 2008, in press.
- Pouomogne V., Yossa R., Brummett R.E., & Gokowsky J., 2008. Utilisation de *Tithonia diversifolia* et *Chromolaena odorata* comme fertilisants en étang de pisciculture du tilapia (*Oreochromis niloticus*). *Cameroon Journal of Agricultural Sciences* 1 (2), 10-15.
- Muir JF, N. Gitonga, I. Omar, V. Pouomogne and Radwan, 2005. Hidden harvest: Unlocking the potential of aquaculture in Africa. Technical review paper- Aquaculture. Nepad Fish for All summit 22-25 August 2005, Abuja, Nigeria. 56 pages...
- Pouomogne V., Brummett R.E. & Coche A.G., 2004. Aquaculture extension in sub-Saharan Africa. **FAO Fisheries circular N° 1002. FAO Rome.** 55 p.
- Brummett R.E., D. Jamu, J. Jere and V. Pouomogne, 2004. A farmer-participatory approach to aquaculture technology development and dissemination. **Uganda Journal of Agricultural Sciences** 9, 530-536.

Other reports (last 5 years, incrementing chronological order):

- Pouomogne V., 2006. Compte-rendu de mission à Penang, Malaisie du 28 janvier au 23 février 2006 : Participation à l'atelier de formation sur le GIS (IDRISI & ArcView softwares). 45 pages.
- Magnet C. et Pouomogne V., 2006. Etude d'impact sur l'environnement halieutique, Barrage Nachtigal. SOGREAH-Tecsult. 60 pages.
- Pouomogne V., 2006. Compte-rendu de mission à Namur, Belgique du 14 au 29 avril 2006. Professeur invité "Chaires du Sud" au DES Aquaculture à Tihange. 25 pages.
- Pouomogne V. et Mikolasek O., 2006. Construction des Innovations en Partenariat (CIP) : cas de la pisciculture dans les Exploitations Familiales Agricoles des Hautes Terres de l'Ouest et de la Plaine des Mbos. Projet de recherche soumis au Reparac. 8 pages + annexes
- Pouomogne V., 2006. Compte-rendu de mission à Penang, Malaisie du 4 au 13 août 2006 : Participation à l'atelier d'évaluation à mi-parcours du projet GIS sur la détermination des zones à haut potentiel aquacole en Afrique et en Asie. 8 pages.
- Nguenga D. & Pouomogne V., 2006. Etat actuel de la recherche aquacole et halieutique au Cameroun. Atelier de rapprochement Minepia-Minresi pour le développement du secteur halieutique au Cameroun. Palais des Congrès, 5-6 août 2006. 10 pages.
- Pouomogne V., Mikolasek O., Tomedi M., Dulcire M. and Chia E., 2006. Co-building of socio-technical and organisational innovations in fish farming systems in Cameroon. Paper draft submitted to "Innovation Africa", symposium, 22-27 November, Uganda, kampala. 15 p.
- Pouomogne V., 2007. Développement des systèmes aquacoles par l'amélioration durable de la disponibilité des alevins et la valorisation des sous-produits agricoles au sens large. Projet de recherche initié. Atelier 22-24 janvier à Mbalmayo. DS IRAD. 10 p.
- Pouomogne V., 2007. Rapport de mission en France et en Belgique du 16 au 30 mars 2007. Professeur invité "Chaires du Sud" au DES Aquaculture à Tihange. 18 pages + annexes.
- Pouomogne V. et Mikolasek O., 2007. Projet PRP-REPARAC N° 1 « Construction des Innovations en Partenariat (CIP) ». Rapport technique et financier Semestre janvier –juillet 2007. 12 pages
- Pouomogne V. et R. Sandjoh, 2007. Compte-rendu de mission à Zomba et Lilongwé au Malawi, du 21 au 28 juillet 2007 : Participation à l'atelier de formation et de consultation sur le GIS, projet RD. 3 pages.
- Pouomogne V., 2007. Compte-rendu de mission à Hanoi au Vietnam, du 6 au 13 octobre 2007 : Participation à l'atelier technique FAO sur le CBA. 3 pages.
- Pouomogne V. et Mikolasek O., 2007. Projet PRP-REPARAC N° 1 « Construction des Innovations en Partenariat (CIP) ». Rapport technique et financier Semestre Juillet – décembre 2007. 13 pages.
- Pouomogne V. & Mikolasek O., 2008. Construction des Innovations en Partenariat (CIP) : cas de la pisciculture dans les Exploitations Familiales Agricoles des Hautes Terres de l'Ouest et de la Plaine des Mbos. Rapport technique et financier phase 1. 40 pages + annexes. Janvier.

- Pouomogne V., Mikolasek O. & Lazard J., 2008. Aquaculture extensive, une pratique à l'interface entre élevage et prélèvement à partir du milieu naturel. Soumis à Cahiers d'études et de recherches francophones / Agricultures. Février. 28 p
- Mikolasek O., Chia E., Pouomogne et al, 2008. Nouvelle approche du développement de la petite pisciculture marchande en Afrique : exemple d'une démarche de Recherche Action en Partenariat au Cameroun. Soumis à Cahiers d'études et de recherches francophones / Agricultures.
- Chia E., Barlet B., Tomedi E.M., Pouomogne V., Mikolasek O., 2008. Co-construction of a local fish culture system : Case study in Western Cameroon. Proceeding ISFA workshop. In press
- Pouomogne V., 2008. Etude environnementale du barrage de Song Mbengue: Etat initial des lieux en relation avec la Pêche. Rapport d'Etude (Manuscrit version 1). 60 pages.
- Mikolasek & Pouomogne V., 2008. Construction des Innovations en Partenariat (CIP) : cas de la pisciculture dans les Exploitations Familiales Agricoles des Hautes Terres de l'Ouest et de la Plaine des Mbos. Rapport technique et financier semestre 1 phase 2. 22 pages + annexes. octobre.
- Pouomogne V., 2008. Rapport de mission en Egypte (symposium ISTA8) du 10 au 18 octobre. 13 pages.
- Pouomogne V. 2009. Compte rendu de la mission de reconnaissance rive droite Sanaga du 4 février 2009 (Phase 2 : Analyse des Impacts Environnementaux volet "Pêche", Projet de construction du barrage de Song Mbengué). 11 pages.
- Pouomogne V. 2009. Research priorities in Centre and Western Africa. Sarnissa stakeholders workshop, Yaoundé 26-27 February. Ppt presentation. 25 slides.
- Monentcham SE et al, Egg and whole body amino acid profile of African bonytongue (*Heterotis niloticus*) with an estimation of their dietary indispensable amino acids requirements. Submitted to Fish Physiology and Biochemistry, 2009.
- Monentcham SE et al, Growth, feed utilization and body composition of African bonytongue, *Heterotis niloticus* fingerlings fed diets containing various protein and lipid level. Submitted to Aquaculture Research, 2009.
- Monentcham SE et al, Partial substitution of fish meal with soybean and cottonseed oilcakes meals in diets for African bonytongue, *Heterotis niloticus* (Cuvier, 1829) fingerlings: effects on growth, feed efficiency and body composition. Submitted to Aquaculture Research, 2009.
- Pouomogne V., 2009. Compte-rendu de mission en France (atelier final EVAD) et en Belgique (jury de thèse Monentcham, conférence stagiaires CUD), du 20 novembre au 5 décembre 2008, et du 4 au 30 mars 2009. 8 pages + annexes.
- Pouomogne V. 2009. Etude environnementale du barrage de Song Mbengué. Analyse des impacts et mesures compensatoires pour la Pêche. Rapport d'étude. 50 pages.
- Pouomogne V., 2009. Rapport de mission en Afrique de l'Ouest du 27 juillet au 28 août 2009, projet Sarnissa. 36 pages.
- Pouomogne V., 2009. Rapport de mission en Afrique de l'Est du 29 novembre au 11 décembre 2009, NEPAD-BecaNet et projet Sarnissa. 13 pages.

- Pouomogne V. 2009. Rôle des subventions dans le développement aquacole: étude de cas. Forum national sur l'aquaculture au Cameroun. Présentation Ppt. 29 décembre 2009.
- Pouomogne V., 2010. SARNISSA/IRAD project year 2. Sarnissa partners and stakeholders workshop, Bunda Lilongwé, Malawi, 7-12 February 2010. Ppt presentation. 25 slides.
- Pouomogne V., 2010. Rapport de mission en Afrique de l'Est du 6 au 17 février 2010, projet Sarnissa et Fishnet-Africa. 13 pages.
- Pouomogne V., 2010. Rapport de mission au Kenya du 26 au 29 mars : Fishnet et AWG. 8 pages.
- Pouomogne V., 2010. Rapport de mission d'enseignement à l'INSAB de Franceville du 3 au 19 avril, au Gabon. 9 pages.
- Pouomogne V., 2010. Compte-rendu de mission au Brésil du 9 au 19 juin : coopération tripartite France-Cameroun-Brézil pour un projet d'appui au développement de l'aquaculture au Cameroun. 25 pages.
- Pouomogne V., 2010. Compte-rendu de mission en Ouganda, Jinja, 24-29 juin, réseau ANAF. 10 pages.

3. Dr. Benedicta Oshuware OBEN (Tel: +237 7588 67 25 or +237 7777 78 93 Email: obenben2001@yahoo.co.uk,

Fax: +237 332 22 72)

Academic and Professional Qualifications with dates

PhD. Hydrobiology and Fisheries, University of Ibadan, Nigeria (January, 2000)

MSc. Hydrobiology and Fisheries, University of Ibadan, Nigeria (September, 1992)

BSc. Archaeology/Zoology, University of Ibadan (September, 1990)

Summary of Work Experience:

- Head of Division in Students' Affairs Department, University of Buea, Cameroon, (Administrative position)
- Promotion to the rank of Senior Lecturer, Faculty of Science
- Appointment as Assistant Lecturer in Faculty of Science
- Recruited as Senior Instructor in the Department of Life Sciences
- Pan-African Environmental Mutagens Society (PAEMS)
- Fulbright Alumni Association
- Member, International Society for the Study of Harmful Algae (ISSHA)
- Member, Pan-American Marine Biotechnology Association (PAMBA)
- Member, Pan-African African Fish and Fisheries Association (PAFFA)
- World-Fish Centre, Cameroon
- International Institute of Tropical Agriculture (IITA) Association of Research Fellows and Scholars, Ibadan, Nigeria.
- Member, Ocean Data and Information Network for Africa (ODINAFRICA- Project II)
- Cameroon Fish Farmers' Union (CAMFFU, Buea).

Summary of Publications

- Akoachere, J.T.K., Bughe, R.N., **Oben, B.O.**, Ndip, L.M. and Ndip, R.N. (2009): Phenotypic Characterization of Human Pathogenic Bacteria in Fish from the Coastal Waters of South West Cameroon: Public Health Implications. *Reviews on Environmental Health* Volume **24**, No. 2 (2009): 147-156.
- Bienfang, P., **Oben, B.**, DeFelice, S., Moeller, P., Huncik, K., Oben, P., Toonen, R., Daly-Engel, T. and Bowen, B. (2008) Ciguatera: Detection of Neurotoxins in Carnivorous Reef Fish from Cameroon Coast, West Africa. *African Journal of Marine Science* 2008, **30** (3): 533-540.
- **Oben, B.O.**, Oben, P.M., Ugwumba, A.O. and Okorie, T.G. (2008): Occurrence and deleterious effects of algal blooms associated with some pollutants in three man-made lakes. *Tropical Freshwater Biology* (**17**) (1) (2008): 53-72
- **Oben, B.O.**, Oben, P.M., Nkeng, G.E., Ugwumba, A.O., Okorie, T.G., Uponi J.I. and Grimme, H. (2008): Metal distribution and bioaccumulation in water and fish of an African lake. *Tropical Freshwater Biology* (**17**) (1) (2008): 85-89
- Tendonge, B.N., Ndamukong, K.J.N., Fomena, A. and **Oben, B.** (2008): Ectoparasitoid and myxosporean infections in some freshwater fish of Fako Division, South West Province of Cameroon. *Bulletin of Animal Health and Production in Africa* **56** (3): 231- 238.
- Oben, P.M. & **Oben, B.O.** (2003). Age and growth studies of *Mormyrops deliciosus* (Mormyridae). In the Lekki Lagoon, Nigeria. *The Zoologist*. **2** (2): 55-67
- Oben, P.M, Ugwumba, O.A. & **Oben, B.O.** (2000). Aspects of the reproductive biology of the Mormyrid, *Hyperopisus bebe* (Lacepede) in the Lekki Lagoon, Nigeria. *Nigerian Journal of Science*. **34** (4): 305-316.

4. Dr. ANYIZI Bertha Nkemnyi (E-mail: b_anyi@yahoo.co.uk)

Academic and Professional Qualifications with dates

PhD in Animal Production, University of Buea (2009 to date)

Master in Veterinary Public Health (MVPH), University of Ibadan, Nigeria

Doctor of Veterinary Medicine, University of Ibadan, Nigeria

Summary of Work Experience:

- Treasurer – National Association of Private Veterinary Doctors in Cameroon (2010)
- Member, World Poultry of Science Association – Cameroon branch
- Member, National Veterinary Council of Cameroon
- Member, South West Poultry Farmer’s Association
- Treasurer, South West Pig Farmers Association.

5. Mr. EWANE Divine (Tel: + (237) 777 618 54 E-mail: dewane08@yahoo.com)

Academic and Professional Qualifications with dates

Bachelor of Agriculture (Hons) 2nd Upper, University of Nigeria, Nsukka (UNN)
1988 – 1993

MSc. Animal Science, University of Nigeria, Nsukka (UNN) 1993 – 1996

On Going PhD in Animal Production, University of Buea-2009 to date

Summary of Work Experience

- Inventor of the Z-Frame: A Field instrument used for precise measurement of slope elevation. In Agroforestry, it is applied in delimiting contours and does not bore the farmer with arithmetical calculations. In Fish farming it gives a rapid and more practical impression of gradient.
- Coordinated a study on the Geography of the Muanenguba Mountain Forests Area.
- Coordinated a research project on the Biodiversity (fauna, and Flora) Survey of the Muanenguba Mountain Forests Area.
- Coordinated a research project on socio-economic survey of the Muanenguba Mountain Forest Area.
- Coordinated a research project titled; Field Testing and Training in a methodology for socio-economic valuation of Non-Timber Forest Products in the Southwest and Northwest Provinces in Cameroon.
- Conducted a Study of the Mix of Cassava Peels and Blood (CABLO) as Feed Ingredients for Monogastric Animals.
- Member, Nigerian Society for Animal Production (M.NSAP)
- Member, African Forest Action Network (AFAN)
- Member, Sustainable Forest Use Working group.

Summary of Publications

- Benjamin S.E, **Divine Ewane**, T. Mahop, Z. Nzoh-Ngandembou, N. Ndam, M. Etone, R.Avery, E.Wirsiy, Etone, E. Okah, “Harvest Prunus, No kill’ am” . . Limbe, LBZG, CERUT, UWB, ICRAF, DFID.
- Martin Etone, **Divine Ewane**, Zachee Nzoh-Ngandembou, R.Avery, E.Wirsiy, Benjamin, S.N.Ndam, B.Ewusi and T. Mahop. 2001: “Growing Prunus Africana in Cameroon” Limbe, LBZG CERUT UWB ICRAF DFID
- Tonye, Mahop, N.Ndam, B.Ewusi, J.Acworth, S.Benjamin, S.EricW, R.Arrey, Zachee Nzoh-Ngandembou, **Divine Ewane**, M.Etone 2001. “Sharing the Benefits and Responsibilities for Pygeum: Policy Briefing notes on Pygeum”. Limbe, LBZG, CERUT UWB, ICRAF, DFID.
- **Divine Ewane**, Zachee Nzoh-Ngandembou, Okah Ebwekoh Monyah, 2002: “Conceptualisation and Framework for a Participatory biodiversity Conservation and Livelihood Strategy for the Muanenguba Area”. Concept paper presented at a workshop titled “Reflections on the Participatory Biodiversity Conservation and Community Livelihood Strategy (PBCLS) for the Muanenguba Mountain Forest Area. Holden in Bangem between January 31st and February 2nd 2002.
- **Divine Ewane** (2002) An over view of the CERUT initiative on the new NGO law in Limbe 4 – 5 August 2000”, Concept paper presented at The National Workshop on the NGO Law Holden in Yaounde 15th – 16th January 2002.
- **Divine Ewane** 2002 “Fighting Poverty and the Bush meat Crises in Cameroon”. “The Current State of the CERUT “Cutting Grass” (Thryonomys swindezianus) Domestication Programme”. Working paper Presented to the CTS of DABAC, Holden in Libreville Gabon 5th - 8th August 2002.

- Mark van Dorp, Rudo Niemeijer and **Divine Ewane** 2000. The Wealth of Forests in Cameroon: Results of Field Testing a Methodology for the Socio-economic Valuation of NTFPs in Southwest and Northwest Cameroon: Proc. Non Timber Forest Products in Central Africa: A Research Result Workshop for the CARPE. Limbe: CARPE, USDA, BSP.
- Zachee Nzoh-Ngandembou and **Divine Ewane** 1998: “Strengthening Institutional Capacities of Local Communities to Derive Benefits from the Exploitation of their Forest Resources: The case of CERUT and the Bajoh Community in Cameroon”. A working paper prepared for the International workshop on Sustainable Management of African Forests Today Libreville Gabon 12 – 16th October 1998.
- **Divine Ewane** 1996. A study of the Mix of Cassava Peels and Blood (CABLO) as Feed Ingredient, for Monogastric Animals. A thesis submitted in partial fulfilment of requirements for the Award of MSc. in Animal Nutrition and Biochemistry; Nsukka, UNN.
- **Divine Ewane** 1993 “Biological and Economic Evaluation of Early Weaned Pigs, Feed Unconventional Diets at Two levels of Vitamine/Miniral Premix”. A project report, submitted in partial fulfilment of requirement for the award of Bachelor of Agriculture. Nsukka. UNN

6. Ms. Elizabeth Tabi BICHE (E. Mail: tabielizo63@yahoo.com. Tel: (237) 75874280)

Academic and Professional Qualifications with dates

Ph.D student (Fisheries), University of Buea, Cameroon (2007 to present)

Master of Science (M.Sc) in Applied Hydrobiology and Fisheries, University of Jos, Nigeria (1991-1994)

Bachelor of Science (B.Sc) in Zoology (Best Graduating student, 1999), Ahmadou Bello University, Zaria, Nigeria

Summary of Work Experience

- Researcher in marine Pollution and Fisheries IRAD (Institute of Agricultural Research for Development) Batoke Limbe specialized research station)
- Part time instructor, department of Plant and Animal Science, University of Buea.
- Part time Teacher of Biology, first and second cycles, Salvation Bilingual High School Molyko-Buea
- Part time Teacher of Biology, first and second cycles, Our Lady of Mount Camel College, Muea, Buea.
- Biology Teachers, Lux Mundi Bilingual Nursery, Primary and Secondary School, Kumba
- Auxiliary Nurse in Apex Nursing and Care Services, Manchester, England.

7. Mr. Abbey TAKOR

Academic and Professional Qualifications with dates

M.Sc. Agronomy and Wildlife Conservation

Summary of Work Experience

- Auxiliary Nurse in Apex Nursing and Care Services, Manchester, England.
- Executive Director of ASWA-RUDEP
- Tree crop nursery program (subsidize improved planting materials of cocoa pods and coffee cuttings from CCSP Kumba and Pamol Lobe by Government with funds from ADB (ABB, MINAGRI, SOWEDA*))
- Sub contracting of PNVRA activities for Mbonge and Upper Bayang sectors (World Bank and the Government of Cameroon).
- Cocoa input supply project for Manyu Division, CP Ltd, US based organization
- Micro projects to alleviate poverty through maize, Soya bean and cassava Manyu, National Employment Fund (NEF).
- Carryout Baseline Survey of cooperative leading to the formation of development plan in South West Region (USDA, IITA, GOC).
- Capacity building of cooperatives in leadership skills, conflict management (French Cooperative, GOC).
- Cooperative reinforcement programmed (farmer field school) – USDA, IITA.
- Micro Projects on Poultry, Yam, tomato, sweet-potato, maize – NEF.
- Baseline survey of South West Region (Rumpi, ADB, SOWEDA, GOC).
- 18 village Development plans elaborated (Rumpi, ADB, GOC).

8. Ms. Bughe Rhoda NSEN (Tel: (237) 77 24 57 32, Email: rihoda@yahoo.com).

Academic and Professional Qualifications with dates

Doctorate in Fisheries pending, University of Buea – Cameroon.

M.Sc. Microbiology, University of Buea – Cameroon.

Major: B.Sc. Microbiology

Minor: B.Sc. Medical Laboratory Technology, University of Buea – Cameroon.

Summary of Work Experience:

- Female Scientists Grantee 2001 from the Minister of Higher Education.
- Laboratory Technician, Buea District Hospital.
- Research student, University of Buea
- Teacher, Institute of Applied Medical Science, Buea and Health for All Foundation College of Applied Medical Sciences, Buea.
- Laboratory Scientist, LABO LUMEN CHRISTI: Clinical and Analytical Laboratory, Yaoundé.
- Academic director / teaching, International school of Nursing and technico-sanitary personnel, Douala. University of Buea
- Research student: Working on shrimps pathogens, University of Buea.

9. Mukete Emmanuel Munongo mukete_munongo@yahoo.co.uk, (237) 77 59 07 24

Academic and Professional Qualifications with dates

2005: Pan African Institute for Development West Africa (PAID-WA) Cameroon
(End of course certificate in Project Design & Proposal Writing).

1997-1998: M.Sc. Degree in Crop Protection and Environmental Biology
(Toxicology) - University of Ibadan, Ibadan. Oyo State –Nigeria.

1992-1996: B.Sc.(Hons) Degree, Biological Sciences (Biology) - University of
Calabar, Calabar Cross River State-Nigeria.

1988-1990: GCE-A' Level Certificate - G.H.S Limbe.

1982-1987: GCE- O' Levels Certificate - P.S.S. Kumba.

Summary of Work Experience

- May 2008 till date: Ministry for Public Service and Administrative Reforms (MINFOPRA) - MINFOF, SOUTH WEST REGION.
- May 2007 to May 2008: Ministry for Public Service and Administrative Reforms (MINFOPRA) - Agronomic Engineer, MINFOF South West Province.
- October, 2006 to May 2007: Ministry of Forestry and Wildlife (MINFOF) - Cadre d'Appui au PDFOF.
- June, 2005 to October 2006: Ministry of Forestry & Wildlife (MINFOF) - Cadre d'Appui au Secretariat Particulier (CABINET DU MINITRE)-Yaounde.
- July 2004 to June, 2005: Ministry of Environment and Forestry (MINEF) - Agent d'Appui au- MINEF-Baffoussam.
- March 2001 till date: Cameroon Environmental Protection Agency (CAM-EPA) NGO- National Coordinator, CAM-EPA.
- July, 2000 to May 2004: Cameroon Development Corporation (CDC) - Management Staff Mondoni Palms estate.
- November, 1999 to July, 2000: Cameroon Development Corporation (CDC) - Supervisory Staff Bota Palms Estate
- September, 1999 to November, 1999: Cameroon Development Corporation (CDC) - Directorate of Agriculture Head Office- Bota.

Summary of Publications

- Terrestrial plants of economic importance a survey of the university of calabar complex field course (january, 1996)
- Effects of cigarette smoking on human beings a seminar (january, 1996)
- Hydrobiology (aquatic animals) a survey of the great kwa river field course (june, 1996)
- Effects of insecticidal dressing on cowpea (*vigna unguiculata*). Dissertation (december, 1996)
- Deforestation is a worldwide phenomenon its causes and consequences in nigeria a research paper (april, 1997)
- Fluctuations in crop growth rate as a function of water supply a research paper (june, 1997)

- Pest, pestilence and pesticides a seminar paper (march, 1998)
- Cranide elimination and environmental pollution during cassava processing m.sc. Thesis (may, 1998)
- The goal is satisfaction (unpublished).

Dr. Kingsley A. ETCHU etchukingsely@yahoo.com; (+237) 77 70 80 69/ 99 15 73

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Academic and Professional Qualifications with dates

2001-2004: **Ph.D** Animal Science (Animal Nutrition & Physiology), University of Ibadan, Nigeria.

1998-1999: **M.Sc** Animal Science (Agric. Biochem. & Nutrition), University of Ibadan, Nigeria.

1994-1997: **B.Sc.** (Hons.) Biochemistry, University of Buea, Cameroon.

22 - 29 Aug. 2010: (ADB)/ South West Development Authority (SOWEDA) - Development & Application of Impact Assessment tools.

23 - 27 Nov, 2009: IRAD Nkolbisson Yaounde - Notions in computing, Application of General Linear Model & Designing in Agronomic Experimentation.

1 – 4 April, 2007: African Development Bank / IRAD Yaounde - Working in a Multi-disciplinary research team & Experimentation in a rural environment.

13 - 16 Feb. 2006: African Development Bank & Government of Cameroon organized SOWEDA - Farming Systems Research Methodology.

10 - 17 Oct. 2006: African Development Bank / IRAD Yaounde / IRAD Yaounde - How to write and publish Scientific articles.

Technical and Consultancy Experiences

- December 2007 to August 2008: Programme for the Sustainable Management of Natural Resources in the South West Province of Cameroon Co-financed by KfW (German Development Cooperation - Conduct a Village-based training programme in 4 villages (Opambe/ Awuri, Assam & Takpe) of Cluster A 04. Altogether 80 farmers were trained.
- October 9th 2007 to November 9th, 2008: Heifer Project International – Humid Rainforest Program - Training of Heifer Assisted farming groups on Improved Snail Husbandry Techniques. Altogether 179 farmers were trained, empowered and established on Snail and other livestock Production.
- 2004/2005 Session and 2005/2006 Session: PAN African Institute for Development- West Africa-PAID-WA - Read, Evaluate and Grade Case Study Reports (Desertations).

- April 2005 – May 2006: PAN African Institute for Development- West Africa-PAID-WA - Farm Manager – Manage and Guide the Activities of the PAID-WA Poultry Farm as well as Provide Advisory Services
- Sept.2005 to Feb. 2009: Muyuka Agro-Industrial Farm – MAIF LTD - Improve feed formulas, Feed Production and Quality, assist the farm Veterinarian on the Nutritional aspects of the Farm.

Summary of Work Experience

- 2002 till date: Head of Animal Production department, IRAD Ekona - Institute of Agricultural Research for Development –**IRAD**
- 2005 – 2011: Maître de Recherché (Senior Research Officer) - Rumpi Area participatory Development project (ADB sponsored).
- 2005 – Date: Maître de Recherché (Senior Research Officer) - Part – Time Lecturer University of Buea - Cameroon.
- 2009 – 2011: Maître de Recherché (Senior Research Officer) International council of Science – Regional Office for Africa ICSU-ROA.

Summary of Publications

PAPERS PRODUCED AS TECHNICAL GUIDE TO FARMERS

- ETCHU K.A., MAFENI J. M., and ABONGWA A. N. (2008) Snail Production *in* Extension Bulletin No.1. This bulletin handles the following issues: Type of Snails, Nutrition, Site Selection, Routine management practices *Feb. 2008*
- ETCHU K.A., MAFENI J. M., and ABONGWA A. N. (2008) Snail Production *in* Extension Bulletin No.2. This bulletin handles the following issues: Snail husbandry systems, Source of good foundation stock and quality as well as the Use of artificial incubator for production. *Feb. 2008*
- ETCHU K.A., MAFENI J. M., and ABONGWA A. N. (2008): Training Manual for Grass Cutter Production (*Thryonomys swinderianus*) *March, 2008*.

PUBLICATION

- **Etchu K.A. (1999)**. Pre-pubertal performance as Determined by Strain and dietary Regime of the egg-type domestic Fowl. **M.Sc. Thesis**. Department of animal science. University of Ibadan, Nigeria.

- **Etchu K.A.** and Egbunike G.N. (2001). Assessment for the Sugar/Starch Content of processed Sweet Potato for Poultry Nutrition Proc. 6th Annual Conf. Anim. Sci. Assoc. Nigeria. PP 72-73 17th-19th Sept. 2001 Maiduguri
- **Etchu K.A.** and Egbunike G. N. (2002). Effect of Processed Sweet Potato on the Performance of Broilers Birds in the Humid Tropics during the early rainy season. Trop. Anim. Prod. Invest. 5(1): 67-78 52002).
- **Etchu K.A.** and Egbunike G.N. (2003). Hematological and Biochemical changes in Broilers Fed Processed Sweet Potato-based Diets in the Humid Tropics during the rainy season. Trop. Anim. Prod. Invest. 6 (1): 45-54 (2003).
- **Etchu K.A.** (2004). Seasonal and Processing Effects of Sweet Potato (*Ipomoea batatas*-Poir) - based Diets on broiler Performance and Breeder Cock Reproductive Potential. **Ph.D. Thesis.** Department of animal Science. University of Ibadan, Nigeria.
- **Etchu K.A.** and Egbunike G.N. (2005). **Title:** Evaluation of the Fertility Broiler Breeder Cocks fed with sweet potato-base diets in the Humid Tropical Environment. *Book of abstract of the* first annual conference of IRAD on Revue Scientifique 2005, Congress Hall Yaound, 25-28th July, 2005.
- **Etchu K.A.** and Egbunike G.N. (2005). Economy and efficiency of Utilizing Sweet Potato diets for Broiler production in the early rainy season of the Humid Tropics.
- **Etchu K.A.** and Egbunike G.N. (2007). Processing, Microbiology and Biochemical Changes in the Starch and Sugar Content of Sweet Potato for Poultry Nutrition. African Journal of Root and Tuber Crops. **Vol.6 No.1 (2007)**
- **Etchu K.A.** and Mafeni M. J. (2008). Comparative Performance of three Edible Snail Species under an Intensive Cage Housing System in Cameroon. Bulletin of Animal Health and Production in Africa **Vol. 56 No. 4** (Dec. 2008)
- A. A. Ngenwi¹, J. M. Mafeni¹, **K. A. Etchu¹** and F. T. Oben. Characteristics of snail farmers and constraints to increased production in West and Central Africa. African Journal of Environmental Science and Technology Vol. 4(5), pp. 274-278, May 2010. Available online at <http://www.academicjournals.org/AJEST>