Journal of Agricultural Extension
Vol.18 (1) June, 2014
ISSN 1119-944X

http://dx.doi.org/10.4314/jae.v18i1.12

Enhancing Training of Staff of the Agricultural Development Programme for Effective Agricultural Extension Service Delivery in Nigeria

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Abstract

This paper, identified the areas where staff of the Agricultural Development Programme (ADP) that carry out grassroots extension service delivery need to be trained and the field problems requiring research intervention. Secondary data from Annual Performance Survey (APS) report of NAERLS and NPAFS between 2010 and 2012 were used. The data were analyzed using descriptive statistics. Results showed that the most frequent key areas where trainings needed were long term course, short term refresher trainings, pre-season training, management training for administrative staff, specialized for subject matter specialist and data collection processing/analysis. The study further revealed that the development of livestock feed formula from local materials, heat-tolerant and disease resistant varieties of tomato and wheat were the most pressing problems requiring the researchers' attention. It is recommended that ADPs should be given periodic training by relevant organizations on the identified areas and researchers should focus their researches more on the identified problems requiring research intervention. Moreover, state governments should adequately sponsor trainings of ADPs in their various states. This will strengthen the ADPs skills and increase their productivities for an effective extension service delivery in Nigeria.

Key words: ADPs, capacity building, extension services.

Introduction

Generally, all organizations need to train their personnel from time to time in order to strengthen the staff's skills, increase productivity and achieve higher organizational performance (NAERLS and NPAFS, 2011), including Agricultural Development Projects (ADPs) in Nigeria. Irregular training of ADPs staff is one of challenges confronting

agricultural extension service delivery in Nigeria. Over the years, the main hindrance to training has been shortage of funds. As a result, most of the ADPs have not been able to sustain regular training that could help them to disseminate appropriate technologies need passing across to the farmers, especially with grassroots extension delivery. NAERLS and NPAFS (2011) observed that low capacity building and shortage of fund have been parts of problems facing ADPs in Nigeria. Allo (2001) pointed out that one of the main factors limiting the development of effective training programmes for agricultural professionals in developing countries is inadequacy of information on their training needs. More so, Ayansina (2011); Haruna and Abdullahi (2013) all established that provision of staff training and development programmes are inadequate and limited to a few staff of ADPs in Nigeria.

Additionally, Sanni *et al* (2009) maintained that education and knowledge status of most extension staff fell short of much desired goal of bringing about rural and agricultural development through qualitative and committed extensions service. Yet this grade of extension workers constitutes the contact point between the extension service and farmers in the rural areas. Knowledge is a product of field experience and consistent training over time. These have not been forth-coming as the inability of the extension outfit to actualize such important incentives has been hinged on various reasons which hovers on inadequate funds, misplaced priority, official mismanagement and general lack of commitment and sacrifice on the part of some extension agents. The predominance of poorly trained extension staff upon whom many categories of farmers depend has not been able to achieve a great deal of success in rural development where agriculture is the major occupation.

Moreover, ADPs liaise with the research institutes for improved technologies in order to effectively deliver extension services to the farmers. The problems that emanate from agriculture at grass roots level are identified and related to the scientists for plausible solutions. The scientists then work on them to provide solutions in forms of improved technologies. These technologies are disseminated to the farmers for implementation (Ogunsumi and Abegunde, 2011). However, most often, the researchers embark on researches that are not the farmers' immediate need which make the result of such researches remain unexploited. This paper, thus, identifies the areas where ADPs with grassroots extension service delivery need to be trained in order to strengthen their capacities and identify the field problems requiring research intervention for effective extension delivery in Nigeria. Consequently, this will create a robust capacity building programme for the ADPs staff in order to be able to deliver extension services effectively.

The Objectives of the paper were to:

i. identify the training need of ADPs in Nigeria;
ii. know the problem areas where farmers need research intervention.

Methodology

Secondary data obtained from annual reports of the National Agricultural Performance Survey (APS) conducted by the National Agricultural Extension and Research Liaison Services (NAERLS) in collaboration with the National Programme on Agriculture and Food Security (NPAFS) between 2010 and 2012 were used. Data were analyzed using frequency and percentage.

Results and Discussion

Trainings Need of ADPs

The result as shown in Table 1 indicated that all categories of ADPs staff need training in an area or the other. The most frequent area where the ADPs needed training in 2010 were Subject Matter Specialists (SMSs), fish farming technology, seed production and certification with 43% each.

In 2011, the needed trainings also covered different areas and vary considerably across the ADPs. The most needed training subject matter included: crop improvement and pests & diseases management, pre-season, post-season and other refresher trainings and use of Computer, Web and other ICTs in agriculture. Other areas were: agricultural extension and communication methods, agricultural projects planning and management, Fisheries culture, nutrition and breeding, human resource management and office administration, participatory training techniques, and survey methods and statistical analysis. Results further showed that in 2012, the most frequent key areas where trainings needed were long term course (16%), short term refresher trainings (32%), pre-season training (9%), management training for administrative staff (50%), specialized for subject matter specialist (49%) and data collection processing/analysis (4%).

Table 1: Prioritized training need of ADPs staff in Nigeria between 2010 and 2012

Year	Subject Matter	No of ADPs	%
2010*	• Specialized training for Subject Matter Specialists	16	43.2
	• Fish farming technology	16	43.2
	• Seed production and certification	16	43.2
	• Pre-season training	11	29.7
	• Extension communication skill	11	29.7
	• Popularization of artificial insemination	11	29.7
	• Data collection, processing and management	9	24.3
	• Proper maintenance of irrigation infrastructure	9	24.3
	• Management training for administrative staff	9	24.3
2011	• Pre-season, post-season & other refresher trainings	13	11.7
	• Use of Computer, Web and other ICTs in agriculture	13	11.7
	• Crop improvement and pests/diseases management	12	10.8
	• Agricultural projects planning and management	9	8.1
	• Survey methods and statistical analysis packages	8	7.2
	• Agricultural extension and communication methods	6	5.4
	• Participatory training techniques	6	5.4
	• Fisheries culture, nutrition and breeding	5	4.5
	• Human resource management and office administration	5	4.5
2012	• Full-Time Academic Courses (OND, HND, BSc, PGD, MSc, PhD)	18	15.51
	• Pre-season, MTRMs, Workshops & Refresher Courses	10	8.64
	• GPS application in extension	3	2.58
	• ICTs	3	2.58
	• Production & processing	2	1.73
	• Project monitoring and evaluation	2	1.73
	• Public administration	2	1.73
	• Radio & TV programming	2	1.73

*Multiple responses

Source: NAERLS and NPAFS (2010 – 2012)

Identified Problems that Needed Research Intervention between 2010 and 2012

Tables 2 – 7 showed field problems requiring research intervention between 2010 and 2012 in all the 6 geopolitical zones in Nigeria. Areas of research intervention were divided into agricultural engineering and irrigation, crop and forestry, livestock and fisheries. The problems differ from zone to zone. Development of feed formula from

local materials, especially for poultry and fish, were ranked the most pressing problems requiring the attention of researchers in all the zones. These were followed by need for innovative heat-tolerant and disease-resistant varieties of tomato in the North East and North West. The Southern states request, heat tolerant wheat and low temperature-tolerant maize and rice varieties for irrigation farming.

Problems of premature fruit and flower abortion, dieback and other diseases of cocoyam were identified in all the zones. Low productivity of most of the varieties of crops and livestock species in use by farmers remained a problem for research. Striga infestation, high cost of production and how to secure agricultural land, especially at peri-urban sites and improving farm gate prices are major concerns of farmers.

The other problems for research are related to multipurpose tree species, crops and livestock species are adaptable to climate change, especially drought and resistant to pests and diseases. More so, farmers want research to produce commercialized process of upgrading local crops for advanced saleable product development of new commercializable products from local crops.

Table 2: North East problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Development of indigenous combine harvester	Intercropping of multipurpose leguminous tree species with arable crop	Conduct of livestock survey	Formulate affordable fish feed for fish farmers
	Irrigation practice	Development of cowpea and groundnut varieties that are resistant to aphid	Development of effective drugs and vaccines for common diseases	Development of improved method of controlling hyacinth weeds
2011	Adaptable Irrigation Facilities	Effect of Striga and drought on crop performance	High mortality in poultry	Upgrading of Tilapia Production
	Water potentials for irrigation	Production of woodlots to meet world standards		Fish feed formulation from locally available raw materials
2012	Rain water harvesting using available local materials for agricultural purposes	Heat tolerant tomato, Wheat varieties	Genetic improvement of local breads Cattle and Sheep	Fresh feed formulation using locally available materials
	Research on drip irrigation to minimise water losses through evapotranspiration and leaching	High yielding maize varieties that do with less fertilizer and also resistant to striga	Pasture development for ruminant animal utilization	Lack of fingerlings on fish ponds
	Storage and preservation of fruit juice	Cowpea variety that is resistance to Striga	Improvement on local feed formulation for efficient poultry production	Hypophysation of latex sp gymnastic sp

Source: NAERLS and NPAFS (2010 – 2012)

Table 3: North West problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Elimination of odour in soymilk and flour	Research on wild fruit for economic development	Genetic improvement for improved milk quality and quantity	Formulate affordable fish feed for fish farmers
	Fabrication of low cost processing equipment	Development of cowpea and groundnut varieties that are resistant to aphid	Development of effective drugs and vaccines for common diseases	Development of improved method of controlling hyacinth weeds
2011	Adaptable Irrigation Facilities	Intensify Research on Moringa Olifera	High cost of feeds	Formulation of floating fish feeds locally.
	Water potentials for irrigation	Identification and control of insects causing powdery webs in irrigated vegetables	Use of indigenous technologies in the treatment of dermaphilonsim (Kirchi) in cattle.	Species combination for profit maximization
2012	Simple and modern technology	Heat tolerant tomato variety	Development improved breed and upgrade of the local breeds	Feed formulation to reduce cost of production and maximize profit
	Underground water monitoring for effective utilization of underground water resources	High yielding variety of maize, rice, sorghum and millet,	Animal feeds and feeding methods	Improve hatchery technology and sourcing of good stock, improve technology on fish farm management
		Improved agronomic practices and the Cereals and legumes diseases and pest control	Feed formulation and Nutrition	Diseases control in fish stock management
		Problems of nematodes insect attack and pest, diseases and drought tolerant variety	Tracing and demarcation of grazing facilities for a more reward livestock production system and effective diseases control	Improve fish species and medication

Source: NAERLS and NPAFS (2010 – 2012)

Table 4: North Central problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Elimination of odour in soymilk and flour	Research on wild fruit for economic development	Genetic improvement for improved milk quality and quantity	Formulate affordable fish feed for fish farmers
	Fabrication of low cost processing equipment	Development of cowpea and groundnut varieties that are resistant to aphid	Development of effective drugs and vaccines for common diseases	Development of improved method of controlling hyacinth weeds
2011	Processing of shear nut into oils and butter	Control of fruit-fly in mango.	High cost of feeds	Addressing low yield of fish in aquaculture
	Water potentials for irrigation	Identification and control of insects causing powdery webs in irrigated vegetables	Use of indigenous technologies in the treatment of dermaphilonsim (Kirchi) in cattle.	How to make local fish feed that floats
2012	Fabrication of simple farm tools	Improved production and storage of crops especially tubers	Development of local drugs and vaccine for poultry	Economic analysis and evaluation of local pellet feeds and foreign floating feeds on Claris sp.
	Efficient irrigation and water management for increasing crop production	Pest control on cowpea at the peak of rains	Hatching of eggs (chicken) using kerosene incubator	Composition of fish production in an earthen concrete and plastic ponds
	Distribution of 54 units of irrigation pumps to dry season farmers	Stem borer control in maize and rice	Use of indigenous technology for the treatment dermatophilosin (kirchi) in cattle as compare to the use of orthodox medicine	Fish species combination for profit maximization
	Improved juice making technique	Problem of premature dropping of fruits such as citrus, pawpaw and mango	Tracing and demarcation of grazing facilities for a more reward livestock production system and effective diseases control	Improve fish species and medication

Source: NAERLS and NPAFS (2010 – 2012)

Table 5: South West problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Elimination of odour in soymilk and flour	Drought resistant crops varieties	Genetic improvement for improved milk quality and quantity	Generation of fishery data
	Fabrication of low cost processing equipment	Development of cowpea and groundnut varieties that are resistant to aphid	Development of effective drugs and vaccines for common diseases	Development of improved method of controlling hyacinth weeds
2011	Poor harvest storage	Effective control of diseases in tomato(bacterial wilt)	High cost of feeds	Hatchery management.
	Water potentials for irrigation	Control of Bacterial Blight in Tomatoes	Livestock census	High cost of feeds in fish farming
2012	Mechanical processing of locust bean	Processing equipment	Prevention of catarrh in small ruminants	Fresh water culture fish species
		Expansion of cassava based cuisine	Effective control of infection and diseases	Locally made floating feed
	Improved processing techniques of tomato into paste	Improved juice making technique	Alternative and cheap energy ingredient in animal and fish feeds	Alternative to fish meal as protein source
	Procurement of irrigation pumps at low price	Determination of planting time for optimum yield of plantain and banana	Conversion of waste into protein and energy	Diagnosis of fish diseases
	Training on the use of small scale irrigation technique and equipment	Processing equipment	Prevention of catarrh in small ruminants	Fresh water culture fish species

Source: NAERLS and NPAFS (2010 – 2012)

Table 6: South South problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Fabrication of low cost processing equipment.	Fruit abortion in fruit trees	Development of effective drugs and vaccines for common livestock diseases.	Hatchery management
	Preservation techniques of some foodstuffs	Tuber mouth control in cocoyam	Genetic improvement technologies in small ruminants/poultry	
2011		Storing of cassava stems during floods Use of local materials for mushroom production	High mortality in poultry	Upgrading of Tilapia Production Fish feed formulation from locally available raw materials statistical collection and survey
2012	General cost reduction in irrigation engineering	Development of improved and adaptable variety of cocoyam	Feed formulation for livestock	Cost effective feed formulation for fisheries
	Modern technology in post harvest management	Incidence of millipede attack on cassava	By-product of food industry used for production of carbohydrate component of livestock feeds e.g. yam and cassava peel etc.	Possibility of breeding and stocking on brackish water Shrimps production techniques in local ponds
	Storage of farm produce	Cocoyam (colocasiaspp) bacterial blight diseases	The use of cotton seed to produce animal feeds	Lack of alternative fish to catfish
	Modern technology in post harvest management	Bettle attack on yam tuber	Crossing the sokoto red with WAD	Control of fish diseases
	Storage and preservation of fruit juice	Improve quality honey bee keeping	Improvement in small ruminant breeding	Fish feeds from local sources, perinwinkle production in fresh water, local techniques for tilapia sexing
		Post harvest produce management	Improvement in local chicken breeding	
		Use of local materials for mushroom production	In-breeding in small ruminants	
		Control of pest and diseases especially for tomato		local techniques for tilapia sexing

Source: NAERLS and NPAFS (2010 – 2012)

Table 7: South East problems that need research intervention between 2010 and 2012

Year	Agric Engineering and Irrigation	Crop and Forestry	Livestock	Fisheries
2010	Fabrication of low cost processing equipment.	Fruit abortion in fruit trees	Development of effective drugs and vaccines for common livestock diseases.	Hatchery management
	Preservation techniques of some foodstuffs	Tuber mouth control in cocoyam	Genetic improvement technologies in small ruminants/poultry	
2011		Screening of Cocoyam varieties Use of local materials for mushroom production	High mortality in poultry	Upgrading of Tilapia Production Fish feed formulation from locally available raw materials statistical collection and survey
2012	Using local material to build irrigation channel and pump to cut cost of installation	Leaf curl and shedding in pepper	Using cheaper material for poultry feed formulation	Production floating feed using locally agricultural raw materials.
	Massive erosion problem and control	Rice African Gullmage	Poultry, Alternative to compounded feed to reduce cost	Floating fish feed production (Dryer)
	Locally adopted fabricated tillage machines	Yam processing and storage	High cost of feed and the need for alternative uses/substitutes	Equipment for fish processing

Source: NAERLS and NPAFS (2010 – 2012)

Conclusion and Recommendations

It is inferred from this study that ADPs in Nigeria need training in various areas like SMSs, fish farming technology, seed production and certification, data collection and management, training courses etc. All categories of ADPs staff need training in one area or the other.

The study further revealed that the development of livestock feed formula from local materials, heat-tolerant and disease resistant varieties of tomato and wheat were the most pressing problems requiring the researches' intervention. It is recommended that ADPs should be given periodic training by relevant organizations on the identified areas and researchers should focus their researches more on the identified problems requiring research intervention. Moreover, state governments should adequately sponsor trainings of ADPs in their various states. This will strengthen the ADPs skills and increase their productivities for an effective extension service delivery in Nigeria. Lastly, it is recommended as suggested by NAERLS and NPFRA (2011) that all ADPs in Nigeria should embark on continuous advocacy for increased funding from states, establishment of collaborative and partnership linkages programmes which specifically favour training activities and diversifying their sources of income through direct revenue generation activities.

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