
RETHINKING EXTENSION STRATEGIES FOR ENHANCING FOOD SECURITY IN SIERRA LEONE

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Abstract: Sierra Leone's Agricultural extension system has undergone several transformations from the colonial period till now. Different extension approaches have been tried and found to be unsuccessful, ineffective and unaffordable. This paper examines the extension system in Sierra Leone from a historical perspective and elaborates on the various extension strategies and approaches that have been experimented with, while giving a critical assessment of the strategies and approaches. It suggests a new way of thinking about agricultural extension including alternative strategies, priority goals, relationship with research, policy legislation and financing, and programmes that support extension. It also throws light on the challenges and opportunities in the dispensation of a new extension strategy. For sound agricultural extension system for enhancing food security in Sierra Leone, the following recommendations are made: strong collaboration between research, extension and stakeholders, demand driven and market oriented messages, grass root participation for the development, delivery and evaluation of extension packages, strong institutional capacity building of extension staff, sound agricultural extension policy guidelines, proper coordination and maintenance of recommended extension-farmers ratio.

Keywords: Extension strategy, food security, extension approach.

Introduction: The failure of the various extension delivery approaches in Sierra Leone to effectively stimulate significant and sustainable agricultural growth has become a major concern to all stakeholders, including the donor community. The concerns have been fuelled lately by the desire of government and international donor organizations to fund demand driven research that will enhance efficiency and effectiveness of not only the sub-components of extension delivery but the entire system of technology generation, dissemination and use. With a rapidly expanding population, environmental degradation, economic failure and the declining budget, re-thinking the way agricultural technology is delivered to farmers is a necessity for Sierra Leone. This re-thinking brings to the fore front some issues that need consideration by all the stakeholders involved in the delivery of extension services as the nation endeavours to reduce poverty, and achieve food security and sustainable development.

The authors of this paper note with serious concern that, a major problem of organizing agricultural extension in a developing country like Sierra Leone is the absence of a legal and policy framework for providing services. What exist now as extension in many African countries as described by [8] are programmes from colonial masters, which have over the years been refurbished and tinkered with such programmes. They have no legal, policy or philosophical basis and are out of touch with cultural realities. A legal framework, preferably promulgated by an Act of Parliament, should create extension as an important activity in pursuance of national

development as well as address all the concerns that have hampered the effectiveness of the extension system over 50 years.

The paper is divided into six sections with the first and second sections providing the introduction and historical perspectives of extension in Sierra Leone. The third section elaborates on the various extension strategies and approaches that have been experimented with while section four gives a critical assessment of the strategies and approaches. The fifth section forges a new way of thinking about agricultural extension including alternative strategies, priority goals, relationship with research, policy legislation and financing, and programs that support extension. The sixth and seventh sections focus on the challenges and opportunities in the dispensation of a new extension strategy. The authors believe this paper will serve as an important turning point for extension in Sierra Leone by addressing the various elements of failed strategies and approaches that have contributed to the confusion currently existing in our extension system and bringing on board alternatives that will make the transfer of agricultural knowledge to farmers, particularly in the areas of service provision, programme development and funding more effective and productive.

History Of Extension In Sierra Leone: Extension delivery in Sierra Leone can be traced back from the pre-independence era when cash crops such as cocoa, coffee & piassava production were supported by the colonial masters to meet the industrial and consumption needs in Britain and elsewhere in Europe.

Agricultural extension delivery system was solely in

the hands of the Ministry of Agriculture since after independence. Non Governmental Organizations became actively involved when it was realized that the delivery service of the ministry was ineffective and could not adequately meet the demand of the farmers due to insufficient funds and the 11 year rebel war [9].

The earliest form of extension service in Sierra Leone was consistent with the colonial agricultural policy between 1891-1960. The main goal of this was to ensure adequate supply of tropical crops for the colonial masters-the British, who were specialized in the production of tropical crops and wanted to commence the propagation of these crops in Sierra Leone [9].

In 1898, a botanical garden was established in Freetown for the multiplication of coffee, cocoa, pineapple, rubber, and citrus planting materials. These planting materials were transferred to chiefdom nurseries and given to farmers. Consequently, an operational extension system was born. Since the planting materials were in high demand nation-wide, the Freetown botanical garden could not cope with such increases. This prompted the establishment of the Njala experimental station in 1910. The department of agriculture was established at Njala in 1911, in other to provide sufficient food for the people among several other activities [9].

During the colonial period, the department of agriculture at Njala was solely responsible for planning and managing extension activities. The principal agricultural officer supervised on-station demonstration plots and the extension programmes

in each of the three provincial regions-Northern, Southern and eastern. The senior agricultural officer was in charge of the station farms and extension activities at the district level [9].

After independence, increased emphasis was put on improving agricultural extension education for food crops and livestock. Outreach programmes were carried out by Njala University College, the Rice Research Station at Rokupr, the extension service of the ministry of agriculture as well as other agricultural development projects implemented by non- governmental agencies were all geared toward improving extension services to boost up crop and livestock production.

Major activities undertaken by the extension department were swamp rice production, seed selection and distribution, improved livestock management, propagation of cash crops, arresting deforestation, and encouragement of cooperative farming, linking education with agriculture and setting up effective extension systems. These activities indicate that, even at the earliest stages, extension did not operate in isolation. To ensure that farmers got the most appropriate planting materials, basic adaptive research, through seed selection was linked to extension.

Little premium was put on local food items such as rice, cassava, potatoes, maize, beans, yam etc; Much attention was not put on livestock; Support services and infrastructure were inadequate to enhance effective communications; Grass-root extension staff had very poor incentives; Supervision, control and monitoring were also weak.

Indicator	Numbers	Comment
Total National Farmer population	3,900,000	60% of National population
Total number of Public Extension workers	654	all categories
Public Extension worker/Farmer ratio	1: 5,963	

Source MAFFS (2014)

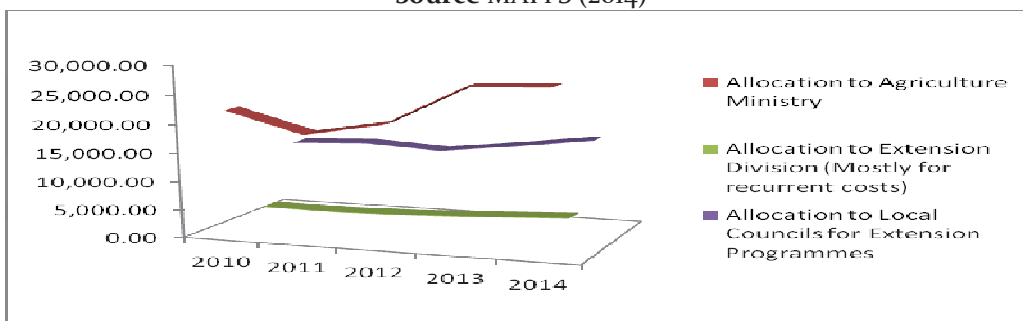


Figure 1: Funding Profile for Public Extension in Sierra Leone (Expenditure quoted in Million Leones) Source: MOFED (2014)

The MOFED allocates funds for Public Service Agricultural Extension in Sierra Leone every year. The funds are allocated as follows:

- MAFFS for financing all subsectors of agriculture in the country. MAFFS allocates to the Extension Division for financing recurrent expenditure for the extension division. Most of this allocation goes to paying for salaries and supplies.
- Local councils in fourteen districts for implementation of Agricultural Extension activities in the field. This normally covers aspects such as technology transfer and capacity building.

Figure one shows that the MOFED allocation to MAFFS has been increasing between 2010 and 2014; the allocation to the Extension Division rose but slightly during the same period. MOFED allocation to the Local Councils has almost been constant and falls well below that to the Extension Division. This situation has led to lack of adequate funds for field level agricultural extension activities in Sierra Leone. At independence in 1961, the need arose to revert the colonial situation by increasing the manpower needed to provide sustained services to the agricultural sector. Njala University was therefore established in 1964 for the training of teachers and agriculturists. As in the colonial era, the post independence era had experienced a number of problems such as inadequate extension personnel, mobility problems and very low salary for extension workers, uncoordinated extension effort and approaches carried out by different agencies or organizations; conflicting assignments (Extension and credit function) carried out by the same extension agent.

Extension Strategies And Approaches Since Independence: It is a general notion that public extension services in Sierra Leone have had little effect in terms of increasing agricultural productivity and farm incomes. The inadequate financial and logistics support of the extension service, coupled with poor salaries and lack of mobility for extension workers among other problems are often cited as justification for the dismal performance of the extension services. However, financing is hardly the only problem. Weak organization and coordination of extension services, inadequacy and irrelevance of extension messages, poor delivery mechanisms, inadequate skill mix of extension workers, and lack of effective communication among extension-research and farmers, all have posed problems in the past that must be examined in the new thrust to agricultural development.

Sierra Leones agricultural delivery system has undergone several experiences such as in the 70's &

80's when managed and funded by MAFFS, government research institutes, and parastatals (SLPMB, SLAPCO and NAPCO). Most recently NGO's intervention became paramount as there was an increasing need of extension service emanating from the ravages of the war. This arrangement to a greater extent complemented the hierarchical structure of the government extension delivery services which had broken down due to lack of support from the government during a decade of war which devastated the already dilapidated infrastructure.

For a total reflection of Sierra Leone's extension system, we will now focus on the various extension approaches since independence and how they impacted economic development in general and agricultural productivity in particular. Past extension approaches, include:

Establishment of model villages with residence extension workers: In this model, each village would set up demonstration plots and adaptive research and intensive training according to the need of the farmers. These messages focus on low-input packages at minimum delivery cost so as to achieve community participation, rural area development, lower mobility requirements, large scale demonstration sites, development of technology packages based on farmers' resources, better training of extension staff, built-in monitoring and evaluation system. All that is needed for an efficient extension system were present in this approach, however the scarce resources of MAFFS were spread thinly and nothing of substance was achieved.

Training and Visit System (T&V): This system was introduced by the "World Bank Agricultural Sector Support Project " in 1996. The approach was based on the assumption that the extension workers under the Ministry of Agriculture were not properly trained, lacked supervision as well as logistics and they did not contact the farmers on regular basis. Another assumption was that the subject matter specialists were not well trained and did not link with research. The approach was to change the situation so as to enable the farmers to increase their production. The modus operandi of this model was that researchers and subject matter specialists together develop and refine technology packages for regular delivery to trained frontline field staff. The extension-farmers ratio under this approach was between 1:500 and 1:800, which by T &V system was still poor as compared to other countries like Malawi.

The major problem with the approach was the government depended on external/donor funding for its implementation consequently, when the pilot phase was to be extended nation-wide, the major source of finance was discontinued and the

programme collapsed.

Unified agricultural extension system (UAES):

This was experimented by the Ministry of Agriculture, Forestry and Food Security and purely relied on government staff. It was implemented in Sierra Leone in 1994 on a pilot scale in two provinces with assistance from a World Bank financed project. The pilot face succeeded to some extent in unifying the numerous extension approaches. This system is said to have failed due to lack of staff to maintain regular contacts between the different layers of the service, as well as with farmers. Plans were also there for the extension of this concept to other parts of the country. This was to be funded by World Bank but it never materialized.

Farmers' association, cooperatives and other community-based groups:

Since extension approaches that are based on individual contact between extension workers and farmers are usually expensive and difficult to implement, an alternative approach was initiated, that involved contacting farmers' associations, cooperatives and other community-based groups. Since organization of farmers' groups is a social norm in most rural areas of Sierra Leone, such community-based groups, if given the necessary supported, could play a pivotal role in the development of the agricultural sector. They could be a potential vehicle for facilitating series of activities such as input supply, marketing, credit and savings, dissemination of extension information, community self-help and livelihood activities.

The weakness of this approach was that few farmer associations, cooperatives & CBO's in Sierra Leone can be relied on for executing extension activities since majority are illiterate or semi-illiterate. Farmers hardly find time to extend services beyond their association or CBO. The other constraint with the approach is the question of who pays for services provided by farmers.

Transfer of Technology (TOT): This system sought to improve the entire farm and home with special focus on the farm families. In this approach, the extension system tried to make improvements in the cultivation and production of agronomic and horticultural crops and farm animals. Programmes such as farm management, home economics, and rural youth work and soil conservation are an integral component of this approach. The general assumption here was that agricultural technology has been designed and available for farmers use and if this information is communicated to farmers, farm practices will improve, yields will be at optimum and farmers income and living conditions will improve.

The TOT model seeks to obtain research results from scientists who in turn will transfer the information to the farmers. There was no information flow from the

farmers as a result, there was no feedback. There was no decentralization, as a result field staff was only accountable to their superiors and not farmers. The yield potential of the best endowed areas was often met, but there was a problem of environmental degradation. Most times farmers do not have the resources to apply the technology as a result, they don't adopt.

Commodity Specialized Approach: This approach focused on the promotion of mostly cash crops such as, cocoa, coffee, sugar cane, etc. It also focused on livestock, dairying, irrigation, mechanical cultivation. Monitoring and evaluation was easy since it was narrow. Furthermore, sufficient resources were available to cover technology transfer as well as technical assistant .s input supply and credit facilities. The interest of the farmers was not targeted and due importance was placed on highly valued agricultural crop or produce. The benefits were more external than internal and other extension needs of the people were not met since they focus on a specific crop. Highly industrialized countries stood to benefit from such approach.

Participatory Extension Approach (PEA): The participatory approach was based on the assumption that farmers have their own indigenous knowledge and practices about agricultural production, but that their productivity and standard of living could be increased by learning more of improved practices elsewhere. Proponent of this approach also believed that effective extension can only be achieved with the active participation of the farmers, researchers and all stakeholders. According to them, extension could be very effective with more focus on farmers' needs, group learning and group action. Groups are the major vehicles for the transfer and exchange of improved technologies and dissemination of information through various informal networks.

There could be confusion and competition which can be counterproductive especially when there is no proper coordination, management, reporting and accounting where local interest groups influence the management of the extension staff.

Project Approach: There is an assumption that the large government bureaucracy which exists in the Ministry of Agriculture Extension Service does not have a significant impact on either Agricultural production or rural people within a short time. This hinders the smooth implementation of extension programmes. A project approach, which concentrates on specified time period, is preferred in some cases because it involves the infusion of outside resources within a short period of time with much achievement. Operationally, the approach creates an enabling environment for easy monitoring of activities. However, it was difficult to sustain field

staff and agricultural Officers. There was jealousy among the staff because of salary.

A Critical Assessment Of Past Extension Strategies And Approaches: Generally, most of the Agricultural extension approaches only covered particular areas or regions. Their activities were non-existence in other parts of the country so farmers who were far away could not benefit from such interventions. Also, many of the Agricultural extension approaches such as the T & V were donor driven and they had no sustainability component and therefore came to an end immediately donor supports ceased.. For those extension approaches that covered wide areas, for instance “The establishment of model villages with extension workers”. Resources of MAFFS were spread thinly and nothing of substance was achieved. Logistical support was also a serious problem that hindered extension services.

The Unified Agricultural Extension System relied purely on MAFFS staff that was not enough to maintain regular contacts. Lack of transportation and trained staff to respond to technical problems raised by farmers were constraints that characterized this approach making it ineffective [1]. Extension approach based on individual contact between extension workers and farmers is said to be difficult to maintain, an alternative approach was brought “using farmers associations, cooperatives, and other community based groups” as vehicles for the dissemination of innovations and technologies. Were they properly oriented to maintain the quality of the extension messages, techniques and innovations?

The target of the general extension approach was to improve farm and farm families. It calls for the delivery of research results from scientists to farmers. The yield potential of the best areas was reached but there was environmental degradation. Agricultural extension approaches did not prevent environmental damage by ensuring the use of environmental protection messages in the delivery of extension packages. Commodity specialized approach focused on specific crops especially cash crops for export. They never focused on the need and priority of the farmers. Benefits were more external than internal and highly industrialized nations stood to benefit from such approaches. Extension approaches in general did not therefore target farmers as primary beneficiaries.

A New Dawn For Extension Strategy For Sierra Leone: There is little justification for seeking to rebuild the extension service around models that have been tried unsuccessfully, ineffective and unaffordable. The correctness of this statement justifies the trial of numerous approaches in the past and the need to continue searching until we discover and espouse better and more sustainable extension

strategies. The search for alternative extension strategies lends support from the findings of [9], which stated that the present extension system in Sierra Leone is essentially non-functional partly because it has been starved of resources and led on to the view that it was unlikely to be made functional even if such resources could be provided”. It was recognized that districts would probably have even more difficulties than central government in providing the necessary funding and organization, and that therefore a different and innovative approach was needed.

More Inclusive Strategy of Extension: The meanings and dimensions of a more inclusive strategy of extension indicate that more focus is put on rural communities and not on one particular sector. Mainstreaming all rural livelihoods into the extension system will first require a renaming of the system from agricultural extension to rural extension, which is more encompassing and inclusive. The name agricultural extension is akin to the colonial structure of its focus on cash crops and livestock production. Conversely, rural extension moves beyond the agricultural sector to include rural education, health, water and sanitation, rural infrastructure, social integration, conservation wildlife and environmental protection, rural artisans and rural governance.

This necessitates the renaming of agricultural extension to rural extension so that whenever it is mentioned, it straightaway lingers in our mind that we are dealing with all rural population and not farmers alone. The focus on rural communities is because majority of our farmers reside in the rural communities where poverty is more prevalent than urban areas [12]. [12] claims that the bulk (70%) of the world’s population still live in rural areas with extreme conditions of rural poverty.

Priority Goals for Rural Extension in Sierra Leone: According to the crop production guidelines for Sierra Leone, the major reasons for farmers using improved varieties and technologies aimed at increasing crop yields and reducing post harvest losses are: Farmers are unaware of the improved practices, lack of knowledge about how to make the best use of the technologies, farmers find the technologies unsuitable to their circumstances.

Priority goals for rural extension in Sierra Leone should focus on the following;

- Increasing agricultural productivity, income and livelihood of rural people through the provision of effective extension services including training and sensitization;
- Increasing the contact between extension staff and rural people and maintaining effective communication between extension, research and

farmers. According to [11], appropriate linkage and communication mechanisms between these actors are of paramount importance in the development of any sustainable agricultural system.

- Updating field extension workers, NGO's and other stakeholders on extension information relating to improved agricultural production and post-harvest technologies been generated by the research institutes.
- A well coordinated and supervised extension delivery system involving all stakeholders such as farmers, MAFFs agricultural staff, NGO's, the private sector and research to ensure quality delivery and to prevent duplication of efforts.
- There should be sound agricultural extension policy guidelines, directing all aspect of extension for quality control and best practices.

Research Innovation and Quality Practices: The purpose of research is to generate appropriate and profitable technologies for use by the farming communities. Sound research and quality practices commence at the research centre. Building a strong institutional capacity, providing sufficient funds and other logistics, having well equipped laboratories and other equipments for scientists to carry out quality research are prerequisite for a sound research and quality practice. The research system should seek the views of the farmers at all stages in the development of improved technologies and they should be involved in the setting of research priorities and in the development, testing, dissemination, monitoring and evaluation of improved technologies.

Appropriate linkages and effective communication mechanisms between these actors are of paramount importance in the development of any sustainable agricultural system. Few formal linkages, however, exist between these actors. Strong linkages need to be established with sources of technological innovations (national, regional and international research organizations and universities [11]). Researchers should ensure that they follow-up farmers in the adoption of various technologies generated to discuss the status and reason for adoption. This kind of follow-up and information gathering will provide technologies that will meet the needs of farmers.

Policy Legislation and Financing of Extension: The policy component of an agricultural technology system can enable or limit extension in ways beyond the reach of extension managers. The main areas that influence are price alert to farmers and government decisions that control public organizations involved in agricultural development [13]. It has been found that countries that have enacted extension policy through legislative action seem to have well-organized, financially stable extension systems that

have sustained effectiveness and a cumulative impact [2]. On the basis of this, [2] recommended that "agricultural extension policy should be formally enacted through legislative mechanism to have a sustainable policy foundation, specific mandate, and clear guidance for developing and implementing programmes. The importance of Extension Policy has long been recognized by the FAO'S global Consultation. [2] recommended that agricultural extension policy should be developed and periodically reviewed by governments with a thorough identification of goals of agricultural extension, the responsible agencies and personnel, beneficiaries, the key areas to be dealt with, and relevant principles for policy implementation.

The problem of establishing and maintaining an effective agricultural extension service in Sierra Leone is partly due to the absence of a realistic policy framework. Further there is no clear statement on extension roles, the beneficiaries to be served and how to finance extension programmes. This situation is confounded with the regular changes in the structure of organization and thematic areas, change of the extension workers, increase in number of organizations carrying out extension programmes, and the absence of proper coordination among organizations that are involved in extension activities [1], Success in the Agricultural sector will only be achieved through the efforts of a number of stakeholders including farmers, civil society organizations, NGOs, government and the private sector. For these to work together effectively, there is need for a clear policy framework that identifies the various roles of these stakeholders, and in particular the role of the government. There is dare need to formulate policies that will increase access to credit, land, skills training and other services on a more gender inclusive and equity basis. With such a policy in place, the wastage of limited resources that will otherwise boost agricultural productivity is prevented.

The issue of financing Public Extension (Public investment in extension, Foreign Bilateral/Multilateral investment, Private Sector investment, Civil Society support) has been and still continues to be the most difficult policy issue in the world [3]. As public support continues to dwindle, coverage as well as the quality of extension services also declines. Most farmers in Sierra Leone, for instance, are poor and rely on subsistence farming. As a result, most could not pay for extension services. Public support should be strengthened or other sources of support are to be searched from donors that are interested in Agricultural extension. Other Strategic Initiatives that Complement Extension in Sierra Leone include

1. Millennium Development Goals (MDGs) with all eight goals relevant to Sierra Leone but with emphasis on:
 - MDG 1: Eradicate extreme poverty and hunger.
 - MDG 3: Promote gender equality and empower women.
 - MDG 7: Ensure environmental sustainability.
2. Agenda for Prosperity which promises for:
 - An inclusive and green middle income country status by 2035
 - Economic diversification for robust and consistent economic growth
 - Job creation for the youth and gender mainstreaming
 - Wealth creation and increase in the income of the citizens
 - Poverty reduction and eradication of hunger
 - Eight pillars for intervention to achieve the above goals
3. Comprehensive Africa Agriculture Development Program (CAADP) which has set the following targets:
 - Declaration to invest 10% of national budget to Agriculture and need to attain 6% agricultural production growth rate by 2015.
 - Development of CAADP compact and investment plan that would be Sierra Leone owned and led.
 - Promote 4 strategic trusts: economic growth, job creation, wealth creation and regional integration.
4. Smallholder Commercialization Programme (SCP) which is designed to improve Sierra Leone's Food Security by:
 - Focusing on smallholder's productivity especially for staple crops rice and cassava.
 - Improving delivery of agricultural services to smallholders across value chains to improve profitability.
 - Enhancing yields, reduce post-harvest losses, support value addition & food utilization
 - Reducing exposure and resilience to risks (safety nets) i.e. shock from disasters such as drought and locust.
 - Reduce transaction costs (infrastructure) to improve competitiveness and increase access to markets.
5. SLARI's Strategic Plan to promote:
 - Economic development through agriculture development and meeting the MDG for reducing poverty and eradicating hunger;
 - Improved and sustainable broad-based agricultural growth;
 - Improved productivity, commercialization and competitiveness through the promotion of innovation agricultural technologies and stakeholder empowerment., and
 - Strengthening partnerships with local institution.
 - Adoption of the Agricultural Product Value Chain approach to research for development based on the IAR4D principles.
 - Adopt an integrated and holistic approach embracing all key stake holders.
 - Promote value-addition and market access.
6. There is presently a favourable environment with a stable political system and a government that is pro-development with the agenda of change that has placed high priority on agriculture.

Challenges In The Dispensation Of A New Extension Strategy: As reported by [4], "extension planners throughout the world face challenges of being innovative in programme development activities and responsive to the changing needs of the farmers and rural communities. Having had a critical reflection of Sierra Leone's extension system, it is obvious that the weakness far outweigh the strengths. Farmers pose a tremendous challenge for the dispensation of a new and effective extension strategy that will respond to the national as well as the global demands of the 21st century. Some of the obvious challenges of Sierra Leone's extension system are:

 1. Scarce resources (both human and financial resources) to manage and maintain field staff; Logistical support
 2. Properly trained staff (Subject matter specialists and extension workers) so that they could adequately respond to the technical issues raised by the farmers;
 3. Proper supervision of both extension staff and farmers;
 4. Adequate Extension-farmers contact;
 5. Maintaining regular contact with farmers and encouraging feedback from farmers;
 6. Decentralization of both human and financial resources;
 7. Credit facilities to enable farmers to apply new technologies and methods that may seem expensive;
 8. Extension approaches to focus on the interest and need of the farmers and benefit to be more internal than external;
 9. Strengthening of linkages between research and farmers to ensure that farmers are constantly updated with new ideas and technologies as well as taking farmers' problems to research institutes for advice, and possible solutions;
 10. Encouragement of active participation, and collaboration, between farmers and research;
 11. There should be proper coordination, and management of extension services.

Opportunities: Despite the numerous challenges faced by the extension system, there are

opportunities for extension to transform the Agricultural Sector from subsistence to a commercial and profitable Business Enterprise in Sierra Leone including but not limited to the following:

- a) The country has huge mineral deposits e.g. diamond, gold, rutile, bauxite and iron ore gives us bargaining power with the world that require them. The resources from these minerals could be used to bring about a desired transformation in the agricultural sector.
- b) Up to 85% cultivable land is uncultivated. There is need to support Government efforts to liberalize the Land Tenure system to encourage commercial agriculture.
- c) Growing season in most part of the Country exceed 260 days a year and annual rainfall average 3000mm. This natural given situation is an opportunity for double or triple cropping per season which will increase both production and productivity.
- d) Irrigation potential of the nine major and three minor rivers is largely untapped. Exploiting this potential opens the way to increasing crop production and fisheries through aqua-culture.
- e) Until March 2014 before the Ebola epidemic, Sierra Leone was experiencing accelerated economic growth with an average of 7% over the last five years. This should be sustained to attract investment.

Conclusion: There is little justification for seeking to rebuild the extension service around models that have been tried unsuccessfully, ineffective and unaffordable. It is better to test and apply different

approaches. Public funding for extension should be increased or other sources of funding should be sought to ensure smooth flow of funds for extension services. As extension and research are inseparable, an effective extension does not exist without a sound research system which ensures that there is a reservoir of information, innovations, new farming methods or skills to be taken to the farmers.

For sound agricultural extension system for enhancing food security in Sierra Leone, the following recommendations are made:

There should be strong collaboration between research, extension and stakeholders that are involved in extension service delivery. Extension messages should be demand driven and Extension packages should contain farmers felt needs. There is need to encourage grass root participation especially one initiated by farmers for the development, delivery and evaluation of extension packages. There should be strong institutional capacity building of extension staff with current and up-to-date ideas, skills and techniques to help them discharged their duties to the fullest. There should be sound agricultural extension policy guidelines, directing all aspect of extension for quality control and best practices. There should also be a proper coordination between different extension players to avoid duplication of efforts. Feedback should be encouraged from farmers and programme beneficiaries so that extension messages can be constantly tuned to the need of the target beneficiaries. We recommend that the recommended extension-farmers ratio be maintained so as to improve the quality of extension messages.

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