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ABSTRACT

This paper highlights the underperformance of African agriculture and examines some of the underlying causes with a view to identify opportunities for improvement with special emphasis on agricultural extension policy. A brief review of literature reveals a disturbing gap between concepts and practice. Many extension concepts have been developed and brought into the field in rapid succession with little or no impact at farmer level. The paper argues against endless debates of no practical value that take the energies away from seeking practical solutions to low agricultural development. The paper recommends that extension practitioners, through their professional organizations like the South African Society for Agricultural Extension and the African Forum for Agricultural Advisory Services, provide leadership in facilitating extension policy dialogue.

1. CONTEXT

Agriculture continues to be the dominant economic activity in Africa. It accounts for about 30% of Sub-Saharan Africa's (SSA) gross domestic product (GDP), 40% of exports, and approximately 60–80% of employment (Johanson & Saint, 2007). However, Sub-Saharan Africa cannot produce enough to meet its food needs and remains host to 16 of the 18 most undernourished countries (see Johanson & Saint, 2007).

According to the Inter Academy Council (IAC) (2004), Africa is a place where, because of famine, disease, and a growing population, almost 200 million people are undernourished and 33 million children go to sleep malnourished and hungry every night. Kim, Larsen & Theus, (2009) postulate that, although the potential for poverty reduction through the agricultural sector is greatest in SSA, the food crisis has also had the most damaging impact in the region – 21 of 36 countries experiencing a food security crisis are in SSA, according to the Food and Agriculture Organization (FAO) of the United Nations. Africa is home to most of the world's agriculture-based countries, a region where 70 percent of the people live in rural areas and 90 percent of the rural population depends on agriculture as their main source of income (United Nations Economic Commission for Africa 2007 - cited in Kim *et al* 2009).

In comparison with other regions, SSA's productivity levels for many food products are extremely low, and food production has not kept pace with the rapidly growing population. In fact, overall per capita agricultural yields declined from 1970 to 1980 and since then have stagnated (Adolph 2011).

According to the IAC (2004), Africa is a continent full of promise and potential – rich in natural and human resources. But, as Borlaug (1996) said, 'you can't eat potential'. But what are the reasons for Africa's failure to exploit its potential in agriculture?

2. CHALLENGES FACING THE AGRICULTURAL SECTOR IN SUB-SAHARAN AFRICA

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Citing Markwei, Ndlovu, Robinson, & Patwa Shah (2005), Adolph (2011) says the main challenges facing the agricultural sector in SSA, jointly leading to low productivity, include low use of inputs (especially fertilizer); low levels of exploitation of surface and groundwater; rapid depletion of the natural resource base; overall low levels of knowledge, understanding, and uptake of new agricultural technologies; high levels of risk and uncertainty – aggravated by climate change; lack of connection between farmers and the market; high dependency on external funding for agricultural knowledge, science and technology; and incompatibility of current education, training, and extension structures with innovative approaches to agricultural development. The Forum for Agricultural Research in Africa (FARA) (2006 p3) alludes to the same kinds of issues as hampering progress in the agricultural sector.

Improving smallholder farmers' access to agricultural services in SSA is a central challenge facing governments in the region. Structural adjustment and a commitment to market-based agricultural development have reduced the direct role of the state in providing services. In most countries publicly financed marketing boards have disappeared and access to unsecured and subsidized credit through government lending institutions is no longer available. Private systems are emerging but there remains a question mark about their ability to fill adequately the gap left by state withdrawal, especially in the short term (Stringfellow, Coulter, Lucey, McKone, & Hussain 1997).

3. PAN-AFRICA INITIATIVE FOR BOOSTING AGRICULTURAL PRODUCTION

The IAC (2004) argues that the nearly stagnant economies in parts of Africa are, to a large extent, a reflection of a stagnant agricultural sector. Higher agricultural productivity is thus a precondition for growth and development in most African countries, and increasing yields is a key to raising incomes and reducing poverty, especially in rural areas, either directly through enhanced smallholder incomes or indirectly through increased employment and wages.

Recognizing this reality, in 2002 African governments adopted a Comprehensive Africa Agriculture Development Program (CAADP) under the auspices of their New Partnership for African Development (NEPAD) (Kim *et al* 2009). The program states that larger investments in agricultural research, extension, and education systems are required to achieve the targeted increase in agricultural output of 6% a year by 2015. The governments agreed to increase public investment in agriculture by a minimum of 10 per cent of their national budgets. In March 2005, the Commission for Africa argued that greater attention should be paid to the economic growth agenda in Africa and recommended higher investments in human resource capacities linked to agriculture, science, and technology, and in tertiary education. Shortly thereafter, participants at a G-8 meeting affirmed this report and committed their governments to provide significant additional funding in support of the report's objectives. In 2006 NEPAD issued a Framework for African Agricultural Productivity (FAAP) as a guideline to member states for attaining the goal of 6% annual increases in agricultural production. The basic concept is to bring together the political, technical and financial resources to make the required changes and address Africa's challenges (FARA, 2006). Because of these developments, many of the political and financial elements necessary for a concerted effort to improve African agricultural productivity are being put into place.

This is being done through CAADP's strategic functions, regional and economic communities, national roundtables, and CAADP's four key pillars: (I) Extending the area under sustainable land management, (II) Improving rural infrastructure and trade-related capacities for market access, (III) Increasing food supply and reducing hunger, and (IV) Agricultural research, technology dissemination, and adoption. Pillar IV covers both agricultural research and advisory services, and is implemented by FARA – a technical arm of the African Union/NEPAD. By the end of January 2011, 24 countries in SSA had signed CAADP compact agreements (Tambi *et al.* 2011 cited by Adolph 2011). However, delegates at the 10th Anniversary Colloquium held in Addis Ababa on 28 March 2012 expressed concern that NEPAD had lost momentum since its founding fathers were no more in leadership positions.

Complementary to the NEPAD efforts has been the formation of the African Forum for Agricultural Advisory Services (AFAAS), a pan-African platform that promotes lesson learning through sharing of experiences and professional interaction. AFAAS, which was formed in 2003, has the mandate to implement the agricultural advisory services aspects of CAADP Pillar IV which is spearheaded by FARA.

In their declaration, delegates to the conference on 'Innovations in Agricultural Extension and Advisory Services', held in Nairobi in November 2011, called for more "...platforms at different levels for extension professionals and researchers and farmers to meet, exchange and improve their capacity to mobilize smallholders' knowledge, labour, land, water and genetic resources for global food security" (see <http://extensionconference2011.cta.int>).

4. COUNTRY LEVEL INITIATIVES FOR BOOSTING AGRICULTURAL PRODUCTION

Whether they have signed CAADP compact agreements or not, African governments do recognize the importance of agriculture and that a "hungry nation is an angry nation" (said Sheila Sisulu, World Food Programme Deputy Executive Director, while addressing the NEPAD Anniversary Colloquium and Congress on 28 March, 2012 in Addis Ababa) and they do take measures to mitigate the challenges to enhance production. The measures usually take the form of short-term strategies like input subsidies (mostly seed and fertilizer) for staple food crops. Some also have storage facilities for strategic reserves of the staple crops.

Again whether they use the term '*pluralistic*' or not, many national governments have long allowed the emergence of other advisory service providers, be it for profit (like seed and agro-chemical companies, out-grower and contract grower schemes for industrial commodities) or for non-profit like non-government organizations.

Despite the relentless criticisms they receive, public extension services have shown an amazing willingness to experiment with innovative ideas. Many of the extension approaches that have been introduced by external interveners in Africa have been used within the context of public extension services or at least with the blessing of the national governments.

5. AGRICULTURAL EXTENSION: A PUNCH BAG

Agricultural extension is a vehicle for modernizing agriculture in many sub-Saharan African countries. It is that discipline of agriculture charged with the responsibility of, as the late 1970 Nobel laureate, Norman Borlaug would say, 'taking it to the farmer'. It is therefore no

surprise that, when no perceptible improvement takes place at the farmer level, the blame lies squarely on the shoulders of extension. Criticisms abound of the failures and ineffectiveness of extension in sub-Saharan Africa. Literature is replete with reasons for extension failures ranging from inappropriate training, top-down approaches, to marginalization of women and the limited resource farmers (Christoplos, Sandison & Chipeta, 2012). In fact, when you go through literature, you hardly find anywhere where extension has done it right. If it happens that a country is able to produce in excess of its food needs, the explanation is found in some government initiative or the weather – and rarely in extension.

What is really disheartening is that, firstly, the blame comes from non-extension practitioners. In fact, it comes from development theorists who themselves have not done any extension work in the field. They make a living out of criticizing extension – to them, criticizing extension is an industry. In particular, there seems to be an obsession against public extension services.

Secondly, while all the blame is heaped on extension, the extension profession does not have anything to show for itself in terms of intelligible and evidence-based documentation of its successes that can convince the sceptics. Therefore, there is nothing in its defence. I see three main reasons for this.

Firstly, agricultural extension professionals lag behind their counterparts in research and training institutions with regard to conducting research, generating and documenting new knowledge. This is possibly because the conventional research methods taught at universities are not appropriate for field practitioners whose main preoccupation is improving livelihoods of farming communities (Mutimba & Khaila, 2011). The research and writing culture found in other disciplines is not obvious in extension. A colleague at the University of Cape Coast in Ghana once said “...we, extensionists, are like cockroaches which walk on bars of gold but do not benefit from it...”. There is so much knowledge and information that we generate every day in the course of our work – but we do not write. We do not harness it for purposes of sharing with others. We do not publish. The knowledge and experience we have is all in our heads.

Secondly, evaluating the impact of extension is not easy. It is complex, if not messy. Christoplos, Sandison, & Chipeta (2012) allude to the fact that “the complexity of evaluating extension can be daunting...” (p51). The main problem is that of attribution – linking cause and effect quantitatively (Davis 2008).

Thirdly, in many African countries, there are no platforms for agricultural extension which can account for what goes on in extension. In the absence of extension platforms, extensionists operate as individuals, each struggling the best way they know how to make a difference. There is no way of harnessing the experiences the individuals are going through for purposes of learning and sharing. Other agricultural disciplines have platforms with evidence-based data bases that are accessible. They can account for their activities. Hence they are taken seriously and their work looks more important than that of extension.

When we were thinking of forming AFAAS, Dr Silim Nahdy (pers. comm.), who was then Executive Director of the National Agricultural Advisory Services (NAADS) in Uganda, expressed his frustrations in a very interesting way. When he worked in research as an entomologist, he wrote papers on sexing bruchids and published them in journals and he presented the papers at international conferences – and he had access to a whole range of

sources of information. Now as an extensionist, despite the fact that he was now doing much more important work – improving poor people’s livelihoods – he had no opportunity to share his experiences with the wider world – and he had no opportunity to learn from others’ experiences. This was because extensionists do not write and they have no opportunities for meeting for purposes of sharing their experiences.

6. AGRICULTURAL EXTENSION: A MISUNDERSTOOD PHENOMENON

Agricultural extension is grossly misunderstood. The poor understanding reveals itself in: the way extension is defined; the training extension professionals receive; how extension services are structured; and, the extension approaches used.

Definition

The problem with extension starts with its definition. There have been so many definitions over the past few decades and they are still changing. There is confusion about what agricultural extension is and what it is supposed to achieve. I am not aware of any other agricultural discipline that is mired in so much confusion and so many definitions. No wonder why its impact cannot be evaluated. We do not have common agreement on what it is and what it is supposed to achieve and how. So how can we evaluate it?

Recently, I have been involved in a debate about extension evaluation with the Global Forum for Rural Advisory Services (GFRAS). They produced a draft guide which defined extension as “*consisting of all the different activities that provide the information (I would add ‘skills’) and services needed and demanded by farmers and other actors in rural settings (I thought this was ambiguous) to assist them in developing their own technical, organizational, and management skills and practices so as to improve their livelihoods and well-being*” (p3)

I thought this definition offered an excellent guide to what we should look for in assessing effectiveness of extension. We should be interested in finding out whether farmers have the knowledge and skills that they need to be successful in their farming business. We should also be interested in finding out whether farmers apply their knowledge and skills to their farming business (Mutimba & Khaila, 2011, offer simple guidelines in this regard). The knowledge and skills could be about a technology (including production, value addition and marketing – if the technology is a crop or livestock); they could be about credit facilities and how to complete loan application forms; they could be about how to form and run a farmers group; they could be about marketing options and markets demands and negotiations; the list goes on. GFRAS’ response was that these were ‘outcomes’ and not impact. I said ‘call it what you may – let’s measure something measurable so that we can have a sound basis for saying whether or not extension is playing its part effectively’. I argued that whatever extension does (or we expect or wish it to do) – whether it is technology transfer, training, educating, communicating, facilitating, brokering, adopting bottom-up participatory approaches, adopting gender-sensitive approaches, assisting farmers to form groups, linking farmers to markets – it is all aimed at achieving these outcomes of increased farmers’ knowledge and skills.

Apart from changing definitions of extension, there is even debate on the use of the term ‘extension’ because it is believed to have top-down connotations. Hence others are now using ‘agricultural advisory services’ instead of ‘agricultural extension services’ (Davis 2008). Others are broadening the mandate for agricultural extension, and some universities are in the

forefront of this crusade. Haramaya University in Ethiopia changed their degree program from Agricultural Extension to Rural Development and Agricultural Extension. This was soon after they appointed a new Head of Extension who had just returned with a PhD from Pretoria University. Makerere University in Uganda changed their Bachelor of Agricultural Extension and Education (BAEE) program to Bachelor of Agricultural and Rural Innovation (BARI) – a change which was spearheaded by a colleague who had just returned with a PhD from Wageningen University. The consequence of this broad view to extension is to keep broadening the roles of the extensionist as well (see, for example, GFRAS 2012, Conner, Roberts & Harder 2013). This is going to make it even more difficult to evaluate extension as the goal posts keep changing.

Meanwhile, policy makers and practitioners look at us and say ‘enjoy yourselves with your arguments, we have work to do’ – and they continue doing extension the best way they know how. How can government understand what extension is when we, who believe we understand, don’t?

Training

Very few universities have agricultural extension programs. Many have one extension course given as an elective in the faculties of agriculture. Until recently, those who wanted post-graduate training in extension would go to either US or Europe (especially Wageningen and Reading). As a result, most of those that do extension work have no training in extension. The Ministry of Agriculture in Zimbabwe used to have a strong in-service training program on soft skills for its extension staff to bridge the gap.

Realizing this shortcoming, the Sasakawa Africa Fund for Extension Education (SAFE) and Winrock International have come up with a custom-made in-service B.Sc. degree program in agricultural extension for mid-career extension professionals (Knipscheer, Zinnah, & Mutimba 2002). The program is now running at 19 universities in nine African countries. The programs are run as partnerships between the ministries of agriculture, who take the program as part of their staff development strategy, and the universities.

Few countries have come up with bold human development initiatives like Ethiopia. Having realized the unfavourable extension worker to farmer ratio, Ethiopia embarked on a crash training program that saw the training of 72000 frontline extension workers at diploma level in less than ten years. This saw a dramatic increase by 30 times in the number of diploma holders and the number of farmers per extension worker decreased by 100 times (Mandefro 2009).

Structural trends

The setting for agricultural extension in Sub-Saharan Africa is changing due to increased democracy, liberalization, decentralization, privatization and urbanization (Heemskerk, Nederlof & Wennink (n.d.). In some cases like Rwanda, Tanzania and Uganda, extension is now accountable to district local government with the ministries of agriculture having very little influence on what goes on at district level. In Rwanda, because of the broad mandate for local government, extension workers are assigned other duties like monitoring road and house construction (Swanson, Mutimba, Remington, Adedze, & Hixson 2011). A similar system was used in Zimbabwe but was abandoned in mid-70s because of dissatisfaction from field extension staff mainly arising from the fact that they were being supervised at district

level by non-agricultural professionals. Naturally, this arrangement is not conducive to high moral because there is no clear path for career progression. In Ethiopia and Tanzania the Ministries of Agriculture still retain some influence over extension at district level through their regional offices.

Approaches

Africa provides a fertile ground for ‘extension experimentation’ especially by donors and development partners coming in with specially funded projects framed in different extension arrangements. Prominent examples are: the Integrated Rural Development Project approach in Kenya and Malawi in the 70s, the Training and Visit approach (Benor & Harrison, 1977) in several African countries in the 80’s, (both supported by the World Bank), the package demonstration approach supported by Sasakawa Global 2000 (SG2000) and the FAO-promoted experiential learning-based Farmer Field School approach (Pontius, Dilts. & Bartlett, 2000, Miagostovich Anderson. & Sukwong, 1999) currently being implemented in several African countries. While external support lasts, there are claims of success but there is no evidence of success beyond external support. The claims of success usually come from project-based evaluations done for purposes of justifying continued external funding for the projects.

In addition, the approaches that have shown promise for success were at project level. The biggest challenge, as Joaque (2012) points out, is how to “achieve extension services for all our farmers, which is a high level public good”. It would appear that chances of sustained success are higher when the approach is streamlined into the public extension service and government commits itself to it. For example, the Government of Ethiopia has adopted the SG2000 technology package demonstration approach, which it has coined Participatory Demonstration and Training Extension System (PADETES), and is up-scaling it throughout the country (Teshome, 2011).

Many countries have pluralistic models that involve many different extension providers but few countries like Malawi make deliberate effort to tap into the potential synergies between these providers. It should, however be pointed out that the concept of pluralism, while new, is actually based on what has been in existence for decades already. Non-government organizations have provided complementary advisory services to public extension for decades. The private sector has participated in advisory services in the process of expanding markets for their products (e.g., seed, fertilizer, pesticides and farm equipments) and in promoting the production of raw materials for their business (brewing industry, oil processing, confectionary, tobacco, sugar) thereby providing markets for a range of commodities. Most of them work through public extension services to take advantage of field extension staff’s presence in the field. Even within government, there are different players apart from departments of agricultural extension. Many countries have different ministries and/or departments dealing with cooperative promotion; community development; youth development; home economics/nutrition – all complementary to agricultural extension.

Usually, changes are made in extension systems and approaches and extensionists are expected to implement the changes without full understanding of what it is that was wrong with the previous system that the new system is meant to address. The changes are not preceded by thorough evaluation of the existing approaches, which means, they are not evidence-based.

No wonder therefore that we do not have many sustained success examples with these approaches. The lack of sustainable success examples is giving rise to questions whether advocates of these approaches are simply trying to develop approaches and methods; empower farmers; or, improve production. Each of these objectives would have a different set of implications. In fact, some of the arguments in favour of ‘new’ approaches’ are so illogical that one wonders whether the advocates for change are sincere or simply want to be seen to be changing. While condemning public extension services for their inability to meet farmers’ changing needs, many of the ‘new’ approaches put the same public extension services back in the centre. For example, the different forms of farmer-to-farmer extension models depend on public extension service for the training of contact or volunteer farmers who will train others (see Kiptot, Lukuyu, Franzel, & Place 2011, for example). You wonder how the ‘new’ approach is going to meet farmers’ ‘changing needs’. In reality, the value of the farmer-to-farmer models are in multiplying (scaling up) public extension effort rather than in meeting farmers’ ‘changing needs’.

We need to avoid labouring and romanticizing these concepts and focus on seeking for practical ways of enabling farmers to prosper in agriculture. Concepts like *‘respecting farmers and farmers’ knowledge’*, *‘farmer empowerment’*, *‘accountability’*, *‘supply- and demand-driven’*, *‘full farmer participation’*, *‘farmer ownership’*, *‘farmer first’*, *‘client-oriented and farmer-led extension’* will not, in themselves, bring food to the table. Their power to transform rural people’s lives tends to be exaggerated at times. We can debate these forever without ever seeing whether we have achieved these on the ground or not. It will be difficult to arrive at a point where we can say ‘extension is doing it right’ based on these concepts as the goals can keep changing depending on who is elaborating the concepts. Discussions of the concepts can be quite academic.

Currently there is lobbying from major multilateral and bilateral donors for privatizing national extension services. They say the public agricultural extension systems have failed or, at best, are unsuitable when it comes to delivering of services to farmers. Several countries like Mali, Mozambique, Tanzania and Uganda are experimenting with various forms of outsourcing advisory services (Heemskerk *et al*, n.d.). I believe South Africa has also been toying with the idea of fee for service but has not yet been implemented. There is no evidence of success yet in the countries where it has been tried (Davis 2008). Uganda has come up with private service advisory system which is even more top-down and prescriptive than the public extension system that it is supposed to replace. Farmer groups select priority enterprises that they require advisory services on and requests for funds from the National Agricultural Advisory Services (NAADS - a government implementing agency for the new system) to hire advisory service providers on short term contracts. The process of group formation (including structure, committee composition, the number of enterprises to be selected, the criteria for selecting them and the advisory administrative units to be covered (sub-county) are all determined by NAADS (Obaa, Mutimba & Semana, 2005). Evaluations of NAADS have shown both negative and positive results but, the system has not made an impact on yield – in fact, production statistics have shown a decline – and only 10% of the farmers receive extension (Rwamigisa & Birner 2011). The two authors also found that the process of group formation was so disempowering that farmer groups formed in the process saw themselves as belonging to NAADS – rather than NAADS as belonging to them.

We have not seen the end of these so-called innovative approaches. More recently we have seen the pluralistic agricultural knowledge and information systems, (AKIS), being superseded by the Agricultural Innovation Systems (AIS). There is no discernible difference

in terms of how they apply in practice although they are articulated differently. AKIS emphasized greater client participation and financing, technology adoption and adaptation, and knowledge exchange mechanisms. AIS emphasizes effective research-extension-farmer linkages and also takes into consideration wider systemic factors that enable effective collaboration among relevant stakeholders and (purportedly) ensuring a knowledge and demand driven response to research needs. As with AKIS, the impact of AIS is yet to be ascertained (Kachale & Mapila 2011).

7. DO WE NEED EXTENSION POLICIES?

Before we call for our national governments to have extension policies, we, extension professionals, need to agree on what extension is and on our realistic expectations of it. This will have implications on how it should be structured, how it should be funded, how it should be staffed, what knowledge and skills will be required, how these will be provided and what other elements need to be present for extension to have impact. Above all, this will have implications on how extension effectiveness will be assessed.

Extension platforms like SASAE and AFAAS can facilitate a consensus building process that may include commissioned studies on extension and dialogue with policy makers. Such studies would provide data and information that would inform policy formulation and policy changes. How many changes have we seen in our extension systems? On what bases where these changes made? In Africa, many of the changes are driven by external partners based on what they think will work for us. On our part, we have no choice but to accept what they think precisely because we have no evidence-based arguments on what works and what does not work.

Joaque (2012) asks the question... ‘Can improvements in extension and advisory services really contribute to poverty reduction, food security and improved livelihoods?’ Terblanché (2008) asks exactly the same question given the shortage and rising food prices and the challenges with the land reform projects in South Africa. We need data that proves that, yes, extension can play a pivotal role in bringing about improvements in these issues and the conditions (e.g. policies, financing, markets) under which it can deliver effectively.

In his study of 27 countries, Idowu (2011) found that only three countries had legislated forms of extension policy while the rest, including South Africa, had what he calls ‘provisional extension policies’. Systematic studies could reveal the pros and cons of both arrangements and suggest actions to be taken.

Currently, the Government of South Africa is seized with land reform issues and is experimenting with new forms of land settlements and new arrangements for advisory services provision. The agricultural sector will need to position itself for self-learning if prosperity objectives of the land reform program are to be achieved. Several studies have been conducted (Mmbengwa, Gundidza, Groenewald, & Van Schalkwyk, 2009, Van Niekerk, Stroebel, Van Royen, Whitfield, & Swanepoel, 2009, Jordaan & Grobblers, 2011, Terblanché, 2008, Terblanché 2011) that provide useful insights into the challenges in the land reform program. SASAE can play a pivotal role in collecting and documenting evidence-based success and fail factors that will inform policy making and policy adjustment processes.

SASAE and AFAAS can also act as a soundboard for the operationalisation of policies and approaches. Many times policies that are articulated at head quarters do not filter to the field level. They are not translated into action on the ground because of lack of understanding by the frontline implementers. SASAE and AFAAS can provide an environment for open debates that enable the practitioners to internalize the concepts and policies, while translating these policies into a language that can be understood by rural communities.

8. CONCLUSIONS

African agriculture is underperforming. Efforts to seek practical solutions for the underperformance are being hampered by an obsession against public extension services. There is a pre-occupation with the development of extension concepts and approaches that undermine the role of public extension services but which, in themselves, do not have much practical value. The concepts and approaches actually antagonize the creation of effective policies. Instead of endless debates on concepts we should be seeking practical ways of reaching the broadest range of farmers with information and skills that they need for successful farming. Instead of undermining public extension services, we should be seeking ways of enhancing their performance if we are to achieve sustainable agricultural development. It is recommended that, extension practitioners, through their professional associations like SASAE and AFAAS, take the lead in facilitating extension policy dialogue.

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