Actors’ linkage for rural innovation: A case study on the factors hindering effective linkage between actors working in agriculture and rural development in East Shoa zone, Ethiopia

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Building effective linkage among key actors in Agricultural Knowledge and Information System (AKIS) has been an issue in agriculture and rural development. In Ethiopia in general and in the study area in particular, emphasising on providing linkage forums, different linkage councils were organised since 1986 for better innovation and extension service. These councils work to link actors in AKIS and to collaboratively solve agricultural problems in their respective areas. However, weak linkage still persists. Recognising this fact, this study was set out to identify the factors hindering effective linkage between the actors involved in one of these councils found in East Shoa zone, Ethiopia. According to the findings policy, organisational and technical factors operationalized for this study contributed for the weak linkage. The study also revealed limited number of linkage mechanisms and poor level of involvement of important actors as the major factors hindering the linkage. Furthermore, important actors such as NGOs are not yet fully considered as important actors and their roles in rural innovation are not yet fully acknowledged. Albeit, the linkage council was mentioned to be effective in facilitating though limited in its influence, linkage mechanisms for the actors to share information.

Key words: Linkage, Linkage mechanisms, Innovation, AKIS, ADPLAC

INTRODUCTION

Ethiopia, situated in the horn of Africa, is the second populous country in Africa. It has a population of 86 million people with a surface area of 1.2 million km$^2$ (CSA, July 2013). It is also a country with a diverse geographical setup, different agro-ecologies and farming systems. Agriculture is the mainstay of Ethiopian economy contributing up to 46% of GDP and employing 80% of the total population (Birhanu, 2012). The agricultural production system is characterised as subsistence and traditional dominated by small holder farming under rain fed conditions with low agricultural productivity (Birhanu, 2012). This Low agricultural productivity coupled with recurrent draught and variable rainfall pattern has made the country to experience food deficit and depend on food aid for decades.

The Agricultural research and agricultural extension services are mainly public funded. Both have started half a century ago and experienced widespread structural and institutional challenges and their effectiveness remains low. Agricultural extension service in Ethiopia begun in the 1950’s with the establishment of the then imperial Ethiopian college of agriculture and mechanical art, now known as Haramaya University (Kassa, 2008). Since then, different extension methods and approaches have been implemented. However, extension service is still inefficient...
and top down in its nature (Gebremedhin et al., 2006; Kassa, 2008). According to Gebremedhin et al., (2006) and Demisse et al (2011) many factors have contributed for this inefficiency in extension service among which poor linkage between research, extension and farmers is one. Understanding this weak linkage different approaches have been implemented with a major emphasis on providing linkage forums for these major actors in agriculture and rural development since 1986. One of the approaches consisted in organising different councils. The councils provided forums for the actors to link, to exchange about their activities, to discuss on farmers problems and to share different responsibilities for better agricultural technology development and dissemination. Since their establishment, the councils have passed different phases of changing names to be more inclusive ones by incorporating relevant actors in their linkage platforms such as NGO's and private companies. Currently these linkage councils are named as Agricultural Development Partners Linkage Advisory Councils (ADPLAC’s). These platforms mainly include researchers, extension and farmers in addition to private companies, cooperatives, farmer unions, NGO”s, seed enterprises.

The ADPLAC’s are currently organised in different administrative zones of the country. Among which East Shoa is one. Since 2008, East Shoa Zonal ADPLAC is also playing its role of linking actors working in agriculture and rural development within East Shoa zone. However, the linkage between the actors is weak and lacks functionality. In addition, there is lack of information as to what are the possible factors hindering effective linkage. Therefore, this weak linkage necessitated research as its main objective to find out the factors hindering effective linkage between the actors involved in East Shoa Zonal ADPLAC.  

**METHODOLOGY**

The study was conducted in East Shoa Zone, Oromia Regional state, Ethiopia. East Shoa is one of the 14 zones found in the region. The zone extends between 70 33’50”N - 9008’56”N and from 38024’10”E - 400 05’ 34”E. It is characterized by semi-arid agro-ecology with mixed crop livestock farming system.

The study used qualitative methods based on primary data and literature analysis. The research strategy followed was a case study. According to Verschuren & Doorewaard (2010) case studies allow to get full insight into one or several objects or processes that are combined in time and space. This type of strategy focuses more on depth than breadth and uses strategic samples. The case study was composed of two complementary steps: (a) the interview of 12 key informants representing actors involved in the zonal ADPLAC and (b) the review of zonal ADPLAC documents.

Key informant interview was the main method used because the represented organisations were located in different districts. The key informants were selected on a stratified sample of the total number of actors involved in the zonal ADPLAC accounting both for the total number of actors and for the individual representativeness. Random selection was applied for organisations such as district office of agriculture (extension organisations), research centres and farmers unions with the hypothesis of similarity in their activities and organisational objective/interest in the linkage. Then informants were purposively sampled within selected organisations taking into consideration their present and past involvement in the ADPLAC dynamics (Table 1).

The key informant interview also asked about actors’ level of involvement in East Shoa zonal ADPLAC. This was asked

**Table 1. Number of Samples actors selected for key informant interviews**

<table>
<thead>
<tr>
<th>Actors</th>
<th>Role in the ADPLAC</th>
<th>Total Number of Actors involved in the ADPLAC</th>
<th>Number of Samples actors selected for key informant interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zonal office of agriculture</td>
<td>Extension organisation (Representative of the linkage council's executive, committee chairperson)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Agricultural research centers</td>
<td>Agricultural research (ADPLAC Executive committee members)</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Extension</td>
<td>District offices of Agriculture (ADPLAC members)</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Farmers Unions</td>
<td>Agricultural input suppliers (ADPLAC members)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>NGO’s</td>
<td>Developmental works (ADPLAC member)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Model farmers</td>
<td>Farmers representatives (ADPLAC Members)</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Private company</td>
<td>ADPLAC member</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Seed enterprise</td>
<td>Seed production and distributors(ADPLAC Members)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>27</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
was asked to get an understanding of how actors' participation in the ADPLAC takes place. The key informants were asked to rate the level of involvement of other actors based on their perception. While rating they were asked by the researcher to take into consideration the other actors level of representation and level of participation in the linkage mechanisms. These subjective criteria's were used by the researcher with an assumption that they can influence involvement of actors in the ADPLAC. The rating was done in such a way that high level of involvement was given for actors perceived to have high representation level and showing active participation in the ADPLAC. Weak and moderate levels of involvements in the ADPLAC were given for actors perceived to be showing weak and moderate level of representation and participation in the linkage mechanisms respectively. Just right level of involvement was rated by other actors for organisations perceived to have sufficient level of representation and participation in the linkage mechanisms.

**Conceptual framework**

The main concept of this research is linkage as defined by Havelok (1998) Agbamu (2000): a communication and working relationship established between two or more organisations pursuing commonly shared objectives in order to have regular contact and improved productivity. Agbamu (2000) and Kassa (2008) referring to Havelock (1986) also emphasise that linkage is a term used to indicate that two or more systems are connected by messages so as to form a greater system. The actors involved in East Shoa zonal ADPLAC include research organisations, extension organisations, NGOs, farmer’s organisations, seed multipliers and private companies. The farmer falls in between these actors as it is the end user of the activities of these organisations (Munyua et al. 2002). According to Munyua et al (2002) these actors can be examples of different systems linked together in information flow and feedback. These actors and the linkage facilitated by ADPLAC are also in line with who the actors are in AKIS [Agricultural Knowledge and Information System] concepts defined by World Bank (2006) and Hall (2007) which is a system that links people and institutions to promote mutual learning and to generate, share and utilize agriculture-related technology, knowledge and information (FAO and World Bank, 2000).

According to Hawkins (2009) two linkage mechanisms can be used in actors’ linkage. These two linkage mechanisms are structural linkage mechanisms and operational linkage mechanisms. Structural linkage mechanisms are linkage mechanisms which are formally and institutionally recognised such as supervision or authority, committee and liaison positions. Operational mechanisms are linkage mechanisms which can be informal or temporary. Examples of operational linkage mechanisms include meetings, training events, contracts, partnerships, publications, broadcasts and joint activities.

Linkage being intangible in its nature measuring it is often difficult (Kumar et al., 2001). However, according to Kumar et al., (2001) different attempts were made since 1980’s to develop parameters on which linkage strength could be assessed. These parameters focused on communication aspect which was operationalized as media or channel used by different actors to transfer or disseminate information. By understanding the media, it was tried to find out where problem of linkage is.
However, the parameters were single parameters and did not show other aspects beside communication (Kumar et al., 2001). In the process of understanding linkage and its effectiveness gaining insight into the technical or the methodological aspects of a linkage is important. The use of different linkage mechanisms to create interactions and frequent communications between actors contributes for effectiveness of actors’ linkage (Hawkins, 2009). Moreover, the involvement or participation of important actors is also essential. However, the effectiveness of linkages is more than the mechanisms itself and can be influenced by many other factors (Kumar 2002).

According to Kumar (2001), in relation to effective linkage among research, extension and farmers, effective linkage depends on three main factors. This factors are personal factors; referring to psychological factors of the concerned personals, organisational factors; meaning organisational goals/objective, procedures and thirdly external factors; referring to policies and strategies.

In his book, Hawkins (2009) also states that different factors can influence the effectiveness of linkages. These factors include inappropriate organisational structure, constraints on resources, and little or no monitoring and evaluation. These factors have additional aspects beside communication and portray organisational factors which are mentioned in Kumar (2001).

By merging Hawkins (2009) and Kumar (2001) arguments and supporting with theories of actors linkage in Agricultural Knowledge and Information System a conceptual model is developed by the author to show the factors hindering effectiveness of actors’ linkage in East Shoa Zonal ADPLAC.

The core concept, linkage, is specified into four dimensions which can hinder its effectiveness. The dimensions are also further specified into aspects. The researcher believes that these dimensions and aspects can help in achieving the research objective. Moreover, with an assumption that the ADPLAC can play an important role in facilitating the linkage between the actors these aspects can point out the effectiveness of ADPLAC as well. Furthermore, these aspects are illustrated and defined below the next figure on the definition of key concepts part.

**RESULT AND DISCUSSION**

**Actors involved in East Shoa ADPLAC**

The study found out that the actors involved in East Shoa ADPLAC are in total of 24, excluding the number of model farmers invited every year. The Representative of the ARDPLAC was interviewed to get the total number of actors involved in the ARDPLAC for sample actors’ selection. According to the representatives of the ARDPLAC the number of model farmers involved in the linkage is not constant. It varies from to year to year, as their representationinvitation in the linkage platforms is dependent on availability of funds. Nevertheless, the total number of organisations involved in the linkage during the survey was 24.

The actors involved in the ADPLAC represent agricultural research organisations, extension organisations, farmer’s organisations, nongovernmental organisations, seed multiplication agencies and private companies. There are no agricultural education institutes who are involved in the ADPLAC. The key informant representing the ADPLAC mentioned as educational institutes are not involved in the ADPLAC because there are no colleges or universities providing education in agriculture in East Shoa zone. Specifically, the actors involved in the ADPLAC are 5 research centres, 1 Zonal office of agriculture and rural development, 10 district offices of agriculture and rural development, 4 farmers unions, 2 NGO’s, 1 private company and one seed enterprise. The operational areas of this actors range from district to national level. Extension and research organisations involved in the ADPLAC are all public organisations. Table 1 shows who the actors are and their operational areas.

**Linkage mechanisms and communication means**

The study found out that East Shoa ADPLAC is organised with a main purpose of creating functional linkage between governmental, non-governmental organisations, private organisations and individuals working in agriculture and rural development in East Shoa zone. Related with AKIS concepts mentioned on Rivera et.al (2005), the actors involved in the ARDPLAC are involved in agricultural research, extension, input provisions, trainings, marketing and development activities. Moreover, as AKIS is about harnessing knowledge and information from various sources for better farming and improved livelihoods (Rivera et.al 2005), the purpose of organising such linkage between these actors in the ADPLAC is to create a functional linkage between these actors to contribute to the overall agricultural and rural development in the study area. To this end, the ADPLAC facilitates different linkage mechanisms and communication means between these actors for better innovation and extension service. The following figures shows the linkage mechanisms applied by the ADPLAC.

The analysis of the linkage mechanisms shows that the linkage between the actors is dominated by meetings and field days/visits. Furthermore, there is little/no diversification of different linkage mechanisms. From the choices given meeting, field visit and training/knowledge sharing were ranked from one to three respectively. The ADPLAC also uses technical committees, a type of structural linkage mechanisms, ranked in fourth position. The technical committees organised by the ADPLAC are...
Table 2: Actors involved in East Shoa ADPLAC and their operational level

<table>
<thead>
<tr>
<th>Operational level</th>
<th>Government organisations</th>
<th>Nongovernmental organisations</th>
<th>Farmers unions</th>
<th>Private agribusiness companies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research</td>
<td>Extension</td>
<td>Seed multiplication</td>
<td></td>
</tr>
<tr>
<td>National level</td>
<td>Melkasa ARC</td>
<td>Debrezeit ARC</td>
<td></td>
<td>Ethioflorensesus</td>
</tr>
<tr>
<td>Regional level</td>
<td>Ziway fishery resource research center</td>
<td>Ziway soil research center</td>
<td>Oromia Seed enterprise</td>
<td></td>
</tr>
<tr>
<td>Zonal level</td>
<td>Adami Tulu ARC</td>
<td>East Shoa zonal OARD</td>
<td>World Vision Adama Area Branch</td>
<td>Lume Adama farmers union</td>
</tr>
<tr>
<td>District level</td>
<td>Adama DOARD</td>
<td>Lume DOARD</td>
<td>Fentalle DOARD</td>
<td>Boset DOARD</td>
</tr>
</tbody>
</table>

Source: Own research, 2013
not permanent but organised specially when there are important issues to be investigated (e.g. during disasters, disease outbreaks etc.). According to the key informant interviews, there are no major differences in participation on the dominant linkage mechanisms organised by the ADPLAC among NGOs and government organisations. All actors participate mainly in meetings and field days. However, research organisation show higher participation all linkage mechanisms.

In terms of communication means, as shown in figure 3 above, the actors involved in the linkage identified reports as their main means of sharing information. Letters and document sharing were also among the communication means used. Informal ways of communication, such as, personal communication and phone calls also take part in sharing information. Email and scientific publication were among the least used communication means. Among the actors, there are no differences on the use of communication means. Albeit, the study found out that research organisations and NGOs use all the communication means mentioned on the figure below while the rest of the actors use mostly reports.

**Actor’s interest in the ADPLAC**

According to Munyua et al. (2002) organisations involved in East Shoa zonal ADPLAC can be considered as multiple actors with different interest linked/networked with information flow and feedback. To this end, the actors involved in the ADPLAC have different interests/objectives for participating in the linkage. Their interests are mainly for information/experience sharing, to identify research/development problems and priorities and for learning from success stories and challenges of each other. According to the findings of the study, for actors such as research organisations for example the problems identified and discussed in the ADPLAC linkage mechanisms helps them to focus their research and development directions towards the need of the end users. Moreover, the study revealed that on a yearly basis farmer and development problems are identified and responsibilities are shared among the actors involved in the ARPLAC. One example mentioned to explain this sharing of responsibilities was the hybrid maize seeds multiplication done in collaboration with farmers, farmers union and research center where the research center provides seeds, the union distributes the seeds and the farmers uses/multiply.

However, the study found out that, this sharing of responsibilities for innovation and solving the identified problems is done on the basis of the actual roles and function of each actor rather than innovating in partnership. The example mentioned shows the clear task division between the three actors. Nevertheless, as Leeuwis and Van den Ban (2004) state innovation is nowadays seen as a process of network building, social learning and negotiation. The linear technology transfer model with clear task division between various actors: some actors supposed to specialise in the generation of innovations and others concentrating on the transfer, while the role farmers is merely to apply innovations has been criticized. Moreover, the idea of research organisations as the only sources of innovations has been contested. According to Klerkx et al. (2012) innovations depend on coordinated action in a network of actors. Furthermore, Klerkx et al. (2012) states that, in multi stakeholder linkages actors including research should be dynamic and integral part of innovation rather than being considered as mere source of innovation. However, in the actors’ linkage in East Shoa, the study found out that there is a tendency
Table 3: Expected role of actors and Level of involvement of actors in the ADPLAC; as perceived by other actors

<table>
<thead>
<tr>
<th>Actors</th>
<th>Research</th>
<th>Extension</th>
<th>Farmers</th>
<th>Farmers Unions</th>
<th>Private agribusiness companies</th>
<th>NGO’s</th>
<th>Seed Multiplication Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research</strong></td>
<td>Extension service, to be active participants in the process of agricultural technology development, to constantly give feedback to research on technologies developed so far, to contribute in the adoption of agricultural technologies, technology promotion and researchable problem identification (**)</td>
<td>To actively participate in research and development priority setting, to contribute in the process of problem identification, to actively work with research and other stakeholders (**)</td>
<td>Agricultural technology multiplication, agricultural input supply and providing marketing services (**)</td>
<td>Technology demonstration and popularization, logistic support, participate in funding of agricultural research if possible and also to fund linkage platforms (**)</td>
<td>To do extension services, possibly participate in joint research trials, capacity development, training and funding linkage platforms (**)</td>
<td>To multiply seed in desired quality and quantity (***)</td>
<td></td>
</tr>
<tr>
<td><strong>Extension</strong></td>
<td>Develop and promote new agricultural technologies that are locally suitable and practically useful (****)</td>
<td>To be active participants in the linkage platforms, express their problems and issues that needs to be solved by the actors involved (**)</td>
<td>To supply agricultural inputs with required quality and quantity, to link farmers with market (***))</td>
<td>To participate in linkage forums and to participate in environmental conservation activities (**)</td>
<td>To provide extension and other services where government offices are lacking, fund training programmes and other projects (**)</td>
<td>To multiply quality seed and distribute to farmers (****)</td>
<td></td>
</tr>
<tr>
<td><strong>Farmers</strong></td>
<td>Develop new disease and drought resistant crop varieties (****)</td>
<td>Agricultural information, training (***))</td>
<td>Supply of agricultural inputs (***))</td>
<td>Agricultural input provision (***))</td>
<td>Training, input provision (***))</td>
<td>Quality seed supply (***))</td>
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<td>Table 3: Cont.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Farmers Unions</strong></td>
<td>to constantly develop quality seeds, provide information on agricultural technologies and trainings (****)</td>
<td>Extension service, facilitation in the process of distributing fertilizers and seeds, strengthening farmers cooperatives and supporting our experts at field (*** )</td>
<td>To share their experiences with other farmers, to share their problems and concerns in the linkage platforms (****)</td>
<td>To be active participants in the linkage platforms and take part in the distribution of agricultural inputs(*** )</td>
<td>To engage in extension activities, to collaborate with other stakeholders in research and development, capacity development, trainings (**)</td>
<td>To multiply seeds in required quality and quantity (****)</td>
<td></td>
</tr>
<tr>
<td><strong>Private agro business company</strong></td>
<td>Conducting research on agricultural issues, continuous development of new crop varieties, animal breeds and making the outputs to be used by farmers (****)</td>
<td>Advisory service, technology transfer, training, facilitating linkage platforms (****)</td>
<td>To share their concerns on the problems they are facing for the stakeholders involved in to focus on (**)</td>
<td>Distributing agricultural inputs (**)</td>
<td>Capacity development, extension service, and to collaborate with different organisations involved in the linkage (**)</td>
<td>To multiply seeds in required quality and quantity (****)</td>
<td></td>
</tr>
<tr>
<td><strong>NGO’s</strong></td>
<td>Agricultural technology development, provision of information on agricultural technologies, trainings (****)</td>
<td>Agricultural information, organising farmers (****)</td>
<td>Raising research and development problems (**)</td>
<td>distributing agricultural inputs to farmers (**)</td>
<td>To involve in research and development activities (**)</td>
<td>Multiply basic seeds in required quality(*** )</td>
<td></td>
</tr>
<tr>
<td><strong>Seed Multiplication agency</strong></td>
<td>To conduct agricultural research on farmers problems, continuous crop variety development (**** )</td>
<td>Extension service, to provide information about the seed demand, effective transfer of technology package to farmers (****)</td>
<td>To be active participants in variety evaluation, to raise researchable and other development problems(*** )</td>
<td>Input provision with, to provide marketing services for farmers produce (**)</td>
<td>To participate in seed multiplication (**)</td>
<td>Funding training programmes for farmers, funding linkage platforms (**)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author, 2013
Level of involvement: - (*****): high, (****): just right, (***): Moderate, (**): Weak, (*) No involvement
to consider research organisations as mere source of innovation by all the actors. Furthermore, contrary to Leeuwis and Van den Ban (2004)’s argument contesting the clear task division between actors, the analysis of actors role in the ADPLAC and the discussions with the key informants also found out that the actors involved in East Shoa zonal ADPLAC have shown clear task division and delineation of responsibilities for involving in the linkage and for sharing responsibilities (see table 3). Whereby, the task of conducting agricultural research is given for only research organisations and transferring the outputs were given to organisations involved in extension and communication and the role farmers is adopting and possibly contributing for problem identification and giving feedback

**Actors level of involvement in the ADPLAC; as perceived by others**

In this study a question was asked about actors’ level of involvement in East Shoa zonal ADPLAC. As shown on table 3, the findings of the level of involvement shows that, compared to other actors, research organisation were rated by all most all other actors as showing high level involvement in the ADPLAC. They were rated as showing moderate and just right level of involvement by seed multiplication agencies and NGOs respectively. Extension organisations on the other side were rated as having weak and high level of involvement by research organisations and by seed multiplication agencies respectively. Farmers and farmer’s unions’ rated extension organisations as showing moderate level of involvement while private agribusiness company rated extension organisations as having high level involvement. NGOs rated extension organisations as showing just right level of involvement. Farmers, farmers unions, NGOs and private companies were rated as mostly having weak level of involvement by most of the actors. Seed multiplication agencies were rated as having moderate level of involvement by farmers and NGOs, whereas the rest of the actors rated seed multiplication agencies as having high level of involvement in the ADPLAC.

Table 3 also shows the role expected from each actor involved in the linkage. The expectations from research organisation are mainly to conduct agricultural research. Most actors expect research organisations to constantly develop locally suitable and practically useful agricultural technologies based on farmers’ problems and priorities. Extension organisations are expected to provide extension service, information, trainings and facilitate linkages whereas, farmers are expected to be active participants in the ADPLAC and to express their concerns and priorities to steer research and development directions. Seed multiplication agencies and farmers’ cooperative unions on the other side are expected to play a role in the distribution of agricultural inputs such as seeds. NGOs and private companies are expected to play a role in extension service, capacity development and funding of trainings and ADPLAC activities.

According to the findings there are no major mismatches between expected roles from the actors and the actual function of the actors involved in the ADPLAC. However, as it can be seen on the table 3, there are differences in the expectations from private agribusiness companies by other actors. The actors involved in the ADPLAC expect private companies to be involved in a range of activities including research and development, in demonstration and popularization of agricultural technologies, in funding of agricultural research and ADPLAC platforms, in agricultural input provision, in environmental conservation activities and in seed multiplication. These activate are diverse by their own. Moreover, according to the key informant representing the private company they are diverging from what the private company does which is in horticultural production and marketing.

Furthermore, the study also tried to understand how the executive committee perceives the level of involvement of actors involved in the ADPLAC. For this purpose, key informant representing the executive committee of the ADPLAC was interviewed. The key informant was asked to rate the level of actors involvement in the ADPLAC taking into consideration the representation and participation level of actors in the ADPLAC. These criteria’s were based on the researcher’s assumption that they can influence actors’ involvement. On the basis of these criteria’s, active level of involvement was rated for actors having high representation level and showing active participation in the ADPLAC. Weak and moderate levels of representations were given for actors having weak and moderate levels of representation and participation in the ADPLAC. Accordingly, the key informant rated the involvement of research and extension organisation as active and Farmers unions, NGOs and private agribusiness companies as actors showing weak involvement in the ADPLAC. Here representation levels play a role. Farmers are also among the actors where weak level of involvement reflected. In line with the argument of the key informant, the document showing the list of participants in 2012 in the linkage meeting also shows that out of 110 individuals who participated in the meeting there were only 3 farmers who participated. The problem of weak participation by NGOs and private companies is also related with their representation. Even if it is mentioned on the rule and regulation of the ADPLAC these organisations are considered to be members, their membership is not considered yet as permanent. So far, invitations are also made to different NGOs and private companies year by year for sharing information and their experiences rather than for their permanent participation. In addition to their poor representation especially private companies are considered as their interest is only profit making rather than contributing for societal benefit. The key informant representing the executive committee of the ADPLAC quoting this issue as;
“The activities of the linkage are not for profit making. Some of the responsibilities shared for stakeholders are for societal benefit without gaining any profit. Nevertheless, there are companies which are socially responsible and work on projects for societal benefits. However they don’t participate permanently in the activities of the ADPLAC where you can give them assignments and expect result from it. They participate merely in gaining information on what is being done by the actors involved”

Furthermore, in the study the key informants representing the actors were also asked if their organisation is satisfied with its representation in the linkage. Accordingly, research and extension organisations responded as they are satisfied. However, one of the key informants from extension organisations mentioned as the linkage platforms are dominated by higher officials and as the participation of field level experts is limited. From the two farmer’s unions interviewed for this research, one of the farmers union responded as it is satisfied while the other is not mentioned as their involvement is limited only to be present in the annual meetings and present their activities. Likewise, the key informants from NGOs and Private companies responded as their representation in the ADRPLAC is not satisfactory. The key informant from private company quoted as;

‘NO, I don’t say we are satisfied with representation in the linkage platforms. As far as the information I have the organisations involved in the linkage are mostly government organisations, a few NGO’s and farmers unions. We were involved just to share information. We are not permanent members. So probably next year they will invite another company’

**Factors hindering East Shoa ADPLAC**

In the study, all the four (policy, organisational, technical and personal) dimensions based on Kumar (2001) and Hawkins (2009) arguments and their respective aspects were operationalized for analysis.

**Policy factors**

In terms of policy factors, the findings of the study revealed that the direction from the government in general was perceived as positive and not hindering the ADPLAC. Besides, the ADRPLAC also have its own rule and regulation where the overall activities of the linkage are administered. However, having a rule and regulation by itself is no input unless actors are aware of it and each actor’s role and responsibilities are stated on it. So far, the key informant interviews and the review of the rule and regulation of the ADPLAC reveal that there is a lack of awareness and concern either about the existence of rule and regulation or the specificity of roles and responsibilities expected from each actor in the linkage. In addition, half of the actors have mentioned as they don’t have a copy of the current rule and regulation. This lack of awareness or not having a copy shows as there is little concern given either by the management of the ADPLAC or the actors involved about the importance of having the rule and regulation. To this end, Peterson et al. (2001) states that any lack of awareness, consensus, commitment and lack of agreement on linkage, its procedures, its planning or any lack of commitment to sustained implementation of activities by actors involved in such initiatives may undermine efforts to coordinate linkage activities leading to weakness.

**Technical factors**

Peterson et al. (2001) further state that the linkages domain is a large arena and is exceedingly complex, with many actors and stakeholders potentially involved in planning and implementation at different levels. Hence, the effective participation, involvement and communication links between the actors in all linkage activities is essential. Yet, the findings of the study reveal that the participation of actor’s in East Shoa ADPLAC either in the executive committee or on the linkage platforms is found to be dominated by research and extension organisations. These could be associated with research and extension organisation historically developed interest in the ADPLAC for research problem identification. The history of the actor’s linkage in the country also shows that agricultural research and extension organisations were the main actors who were dominating as they were the main initiators of the ADPLAC (Kassa, 2008). The involvement, representation and participation of Farmer’s organisations, NGOs and private companies were also mentioned to be weak. Farmers are also among the actors where weak level of involvement is reflected. Weak participation of these important actors in the ADPLAC was found to be related more with their representation level. For example, according, to the document showing the list of participants in 2012 in the linkage meeting, out of 110 individuals who participated in the meeting there were only 3 farmers who participated. Though, the small number of farmers invited could be associated with the budget challenge that the ADPLAC have, there are also other reasons such as limited linkage platforms and communications means that fit with farmers’ literacy level, and little room to express their concerns. Moreover, as mentioned above in the linkage mechanisms sections (figure 2) meetings were rated as one of the main linkage mechanisms used by the ADPLAC. However, the meetings and the presentations are technical (E.g. with jargon research words.); with different language than local language of farmers and farmers are passive recipients of the message. The same reason of representation is also the reason for weak participation of NGOs and Private companies’ participation. The key informants from these actors have also mentioned as they are not satisfied with their representation.
in the ADPLAC. Even if it is mentioned on the rule and regulation of the ADPLAC that these organisations should be considered as members of the linkage, there is a tendency to overlook their participation. Hence, their membership is not considered as permanent. So far, invitations are also made to a few different NGO’s and private agribusiness companies year by year for sharing information and their experiences rather than for their permanent participation. Moreover, according to the statistics found from zonal office of agriculture there are more than 18 NGOs working in agriculture and rural development in the zone including INGOs. However it is only 2 NGOs who participate in the actors’ linkage in the ADPLAC.

Furthermore, beside considering NGO’s and private companies membership as non-permanent and not regularly inviting them when conducting linkage platforms, there is the weak recognition or concern given to the importance of involving such actors in the ADPLAC. This finding is supported with study by (Munyua et al. 2002) on linkages for better extension service in developing countries stating that farmers, private organizations, and non-governmental organizations have not been fully acknowledged as potential information sources. According to Munyua et al., (2002) though, these institutions are rich in knowledge and information any existing relationships with these institutions have been informal and indirect. Nonetheless, they provide dynamism in information generation that can greatly enhance innovation and agricultural extension information needs and subsequently improve services provided to farmers (Munyua et al. 2002).

Beside the weak involvement of important actors in East Shoa ADPLAC, the linkage mechanisms facilitated by the ADPLAC were also found to be dominated by meeting and field days. These linkage mechanisms are operational linkage mechanisms mentioned by Hawkins (2009). These linkages mechanisms are informal and temporary differing from structural linkage mechanisms which are formal and institutionally recognised. The communication means used by the actors involved in the ADPLAC are also dominated by annual reports. Yet, personal communication and phone calls also take part in sharing information which could be associated with strong social ties that exists in the zone in particular and in the country in general (Demeketch et al. 2010). These findings are in line with the findings of Atalay (2012) in study on researchers, extension and farmers’ participation in linkage mechanisms for finger millet technology development conducted in Amahara region, Ethiopia. Furthermore, in a related study in multi stakeholder linkage platforms in Amhara region, Ethiopia, meetings were also found to be dominating (Demeketch et al. 2010). As the ADPLAC was found to be dependent on project funding this lack of diversified linkage mechanisms could be as a result lack of financial resources, lack of proper planning and limited capacity of facilitators to outsource different budget sources either from the actors involved in the linkage or others.

**Organisational factors**

In terms of organisational factors, the study found out that lack of proper planning monitoring and evaluation are among the factors hindering actors’ linkage for rural innovation in East Shoa zone. According to the findings, there are no monitoring and evaluation guidelines/indicators in place to monitor and evaluate the activities of either the ADPLAC or the shared responsibilities by each actor. The executions of the shared responsibilities depend on the actors’ individual responsibility and accountability without any control over the shared responsibilities by the executive committee. The linkage being facilitated as an additional responsibility without clearly defined roles and responsibilities was mentioned as a possible reason for the lack of appropriate planning, monitoring and evaluation system. It can also be related with lack of accountability and commitment of the concerned individuals or actors. To this end, Peterson et al. (2001) and FAO/GTZ (2004) states that lack of commitment, lack of coordinated planning, poor communication between linkage partners and absence of follow-through planning or implementation are considered causes for many linkage problems between major institutional actors in AKIS. Moreover, according to Nederlof et al., (2011) commitment is one of key elements for success in innovation platforms.

Unclear/poor organisational structure of the ADPLAC was also among the factors hindering the linkage between the actors involved in the ADPLAC. The key informants responded as the ADPLAC is a committee work facilitated by the zonal office of agriculture by assigning two individuals as additional responsibility. These two individuals facilitate the linkage with the support from executive committee members from different organisations involved in the linkage without clear job descriptions. There are no clearly defined mission statements and operational guidelines found except the rule and regulation of the ADPLAC. In addition, the tasks or duties for positions of the facilitators are not defined. The absence of clearly defined mission, strategies and organisational guidelines coupled with limited facilitators’ capacity, commitment and accountability were found to be influencing the linkage. This shows the informal and non-institutionalized nature of the ADPLAC. According to Peterson (2001) and Leeuwis (2004) a formal mission statement, clarifying the objectives of existence and the core strategies for pursuing them, having a description of the various tasks and sub-tasks to be performed and a description of different areas of responsibility and authority are helpful for effective linkage. Moreover, in a related study some degree of formalisation by signing memorandum of understanding was helpful in sustaining it.
innovation platforms in developing countries in Africa (Nederlof et al., 2011). Yet, the actors’ linkage in East Shoa was found to be lacking in this dimension except the rule and regulation of the council which is not getting concern leading to its weakness.

**CONCLUSION**

The study was set out to identify the factors hindering effective linkage for rural innovation between the actors involved in East Shoa Zonal ADPLAC. Conceptual framework was developed by reviewing theories and effectiveness of actors’ linkage. Case study was applied as a research strategy with 12 in-depth key informant interviews as a method of data collection. Different literature about the historical evolution of actors’ linkage in Ethiopia and different documents of the ADPLAC, such as the rule and regulation of the ADPLAC, meeting minutes, annual reports, and financial settlement reports were also reviewed to support the findings and for discussion. The collected data was analysed qualitatively and presented using tables, graphical representations and quotes. According to the findings the actors involved in the linkage are different government and non-governmental and private organisations involved in agricultural research, extension service, training, marketing service, seed multiplication, community development and agribusiness. They are interested in the linkage for information sharing, research and development problem identification and to create linkage and partnership with other actors. According to the findings the linkage serves them as platform for sharing responsibilities on solving agriculture and rural development problems.

In terms of policy factors, the study found out that the rule and regulation of the ADPLAC was found to be the only guide of the ADPLAC. However, this rule and regulation lacks specificity in stating roles and responsibilities of either each actor involved in the ADPLAC or the execution/facilitation of the linkage mechanisms with clear job description of the facilitators. Moreover, there is limited awareness and concern given either by the management or the actors involved about the importance of rules and regulation and updating these regularly. As a result, it has led to lack of control on shared responsibility. In terms of organisational factors, the ADPLAC is facilitated by an executive committee without any clearly stated job description and clear organisational structure. The facilitation of ADPLAC is done as an additional responsibility. This has impacted the linkage negatively as it is highly dependent on the assigned individual’s accountability, commitment and capacity of facilitation. Additionally, the individuals playing a leading role in the executive committee were found to be in constant transfer due to the nature of their position in their own respective organisations which has hindered the linkage. Furthermore, the lack of an appropriate organisational structure also resulted in the linkage to experience absence of appropriate documentation. The study also found out that absence of financial resources and regular planning, monitoring and evaluation system as the bottlenecks for the effectiveness of the linkage between the actors involved in East Shoa ADPLAC. The activities of the ADPLAC are highly dependent on the availability of financial resources and the absence of appropriate planning coupled with limited capacity of the facilitators to outsource different budget sources resulted in the linkage to experience lack of diversified linkage mechanisms. Hence, the linkage is dominated by routine annual meetings and field days. Moreover, the meetings were also found to be dominated by higher officials and office heads rather than field level experts who are directly involved in the practical and technical works. Moreover, the level of involvement of actors such as farmers, NGOs and private companies in the linkage mechanisms was found to be weak. The study also revealed that NGOs and private companies are not yet considered as important actors in the linkage and their roles for rural innovation are not fully acknowledged. Furthermore, the linear technology transfer with clear task division considering research organisations as mere source of innovation still persists in the study area. In the study personal factors of negative attitude or perception towards the linkage or other actors was not found. Linkage and working relationships in general were perceived to be positive and important contributing for better innovation and extension service. However, as the linkage was facilitated as additional responsibility individual’s initiation, interest and accountability were contested. Finally, based on the findings it can be concluded that the ADPLAC is not yet institutionalised/formalised and policy, organisational, technical and personal factors have contributed for the weak linkage between the actors involved in East Shoa ADPLAC.

The study has pointed out important challenges for improvement. Despite the shortcomings that lead to the weakness of actors linkage in East Shoa zone, the ADPLAC has been effective in facilitating, though limited in influence, a platform for the actors to link and share information. It contributed in supporting the actors involved in the ADPLAC to direct their focus according to the need and priorities of the end users through problem identification and information sharing. Activities related with crop seeds, poultry breeds development and multiplication and natural resource conservation activities that were implemented or under implementation by the actors involved in the ARDPAC were as a result of the linkage. This is something to continue and possibly could be developed into research or development based innovation platforms where innovations come out as a result of the partnership and cooperation between the actors in the existing AKIS.
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