



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

A research project submitted to Van Hall Larenstein University of Applied Sciences in partial fulfilment of the requirements for the Degree of Master in Management of Development specialization, Rural Development and Communication

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## **Dedication**

This research is dedicated to my father Gemechu Amesa and my late mother Chaltu Legesse for their unconditional love, support and guidance. Mom no words are sufficient enough to describe my love for you, this is dedicated to your loving memory.

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## **Abbreviations**

AKIS	Agricultural Knowledge and Information System
ARDPLAC	Agriculture and Rural Development Partners Linkage Advisory Council
ARC	Agricultural Research Center
CSA	Central Statistical Authority
DOARD	District office of Agriculture and Rural Development
NGO's	Non- Governmental Organisations
OARD	Office of Agriculture and Rural Development
REFLAC	Research Extension and Farmers Linkage Advisory council
RELC	Research Extension Linkage Council
VHL	Van Hall Larenstein

## Summary

Building effective linkage and partnership 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, with a major emphasis on providing linkage forums different committees/councils were organised since 1986 for better innovation and extension service. These councils have an objective to link actors in AKIS and to collaboratively solve agriculture and rural development problems in their respective areas. Since their establishment, the councils have passed different phases of changing names to be more inclusive by incorporating relevant organisations and individuals as actors in their linkage platforms. The current ones are called Agriculture and Rural Development Partners linkage advisory council (ARDPLAC). However, weak linkage between the actors involved in the ARDPLAC is one of the challenges in the study area. Recognising this fact, this study was set out to identify the factors hindering effective linkage for rural innovation between the actors involved in East Shoa zonal ARDPLAC, Ethiopia. Case study was applied as a research strategy with 12 key informant interviews as a main method of data collection. The collected data was analysed qualitatively and presented using tables, graphical representations and quotes. According to the findings the actors involved in the ARDPLAC are from different organisations working in agricultural research, extension, training, marketing, seed multiplication, community development and agricultural businesses. They are interested in the ARDPLAC for information sharing, research and development problem identification and to create linkage and partnership with other actors. The ARDPLAC also serves as a platform for sharing responsibilities in the process of innovation development for solving agriculture and rural development problems. The study identified that the ARDPLAC is highly dependent on project funds and lacks appropriate planning; monitoring and evaluation system. Poor organisational structure coupled with limited capacity of the facilitators to outsource different budget sources has also resulted in the ARDPLAC to experience lack of diversified linkage mechanisms. Moreover, the level of involvement of actors such as farmers, NGOs and private companies in the linkage mechanisms was found to be weak as a result of poor representation. The study also revealed that NGOs and private companies are not yet considered as important actors in the ARDPLAC and their roles in rural innovation are not yet fully acknowledged. Furthermore, the linear technology transfer model with clear task division and considering research organisations as mere source of innovation still persists in the study area. In the study personal factors such as negative attitude or perception towards the ARDPLAC 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 ARDPLAC was facilitated as an additional responsibility individual's initiation, interest and accountability were contested. In a conclusion the study found that in general policy, organisational, technical; meaning the limited approaches used to link the actors and the weak level of involvement of important actors and personal factors have contributed for the weak linkage between the actors involved in East Shoa ARDPLAC. Albeit, the ARDPLAC was mentioned to be effective in facilitating though limited in its influence, linkage mechanisms for the actors to link and share information. It was also mentioned to have contributed in supporting the actors involved in the linkage to direct their services according to the need and priorities of the end users. Generally, the research has identified important challenges which can provide an insight towards working for improvement. To this end, final recommendations such as having an appropriate organisational structure which ensures the institutionalisation of the ARDPAC have been given. It is also recommended to have appropriate planning, monitoring and evaluation system in place and getting necessary finance to sustain the activities of the linkage. Moreover, the research also suggests due attention to be given towards appropriate involvement of important actors in the existing AKIS such as NGOs, educational institutes and private sectors in the ARDPLAC as they are important information and knowledge sources which can greatly enhance innovation and agricultural extension service.

## **Chapter One: Introduction**

### **1.1. 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<sup>2</sup> (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). Low agricultural productivity coupled with recurrent draught and variable rainfall pattern, made the country to experience food deficit and depend on food aid for decades.

In Ethiopia, 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 (2008) many factors have contributed for this inefficiency in extension service among which poor linkage between research, extension and farmers is one.

According to Kassa (2008) despite the weak linkage between research-extension and farmers that is observable still today, efforts were made since 1986 to establish strong and functional linkages. One of the options applied was by organising committees /councils at a national level to link agricultural research and extension organisations. Accordingly, the first committee was organised in 1986 and named as Research Extension Liaison Committee (RELC). RELC was organised mainly at national level with major purposes of providing forum for stakeholders to share information and improve the adoption of agricultural technologies. It was also commissioned to undertake diagnostic studies on weaknesses of the national research and extension systems and to study factors affecting the adoption of potentially useful technologies (Kassa 2008). However, RELC had many weaknesses. It was mainly criticized in its no involvement of farmers and in its irregular, ad-hoc and non-institutionalised meetings (Demekech et.al, 2010; Kassa, 2008). Nevertheless, it worked until 2000 intermittently with the challenges related with structural changes that happened in the research and extension organisations as a result of the war that was going on in the country. Subsequently, after the war and decentralisation of government administrative structures two new institutional arrangements emerged one after the other following RELC.

The first linkage platform which followed RELC was called Research-Extension and Farmers Linkage Advisory Council (REFLAC). REFLAC worked from 2000 to 2008. According to Demekech et al., (2008) REFLAC had a better contribution in involving farmers and in its research problem identification than its preceded council. It also contributed in arranging demonstration of available agricultural technologies to farmers and extension workers through research site visits and discussions. However, it was dominated by research and the contribution of extension organisations and the involvement of farmers was limited (Demekech et al., 2008).

Later, from 2008 onwards, another institutional arrangement called Agriculture and Rural Development Partners Linkage Advisory Council (ARDPLAC) emerged. ARDPLAC has a

different perspective from its preceding councils in its involvement of different actors (Demekech et.al 2008). Its concepts and practices are also related with Agricultural Knowledge and Information System (AKIS) which links people and institutions to promote mutual learning and generate, share and utilize agriculture-related technology, knowledge and information. Apart from research, extension and farmers ARDPLAC included private companies, cooperatives, farmer unions, NGO's, seed enterprises. These institutions and individuals were included as partners in the linkage and are expected to involve in all the linkage platforms and contribute for better extension service and rural innovation.

Innovation is nowadays seen as a process of network building, social learning and negotiation. As stated by Leeuwis, (2004) the linear technology transfer model with clear task division between various actors; some actors supposed to specialise in the generation of innovations, others concentrating on the transfer, while the farmers' role is merely to apply innovations has been criticized. Moreover, the idea of research organisations as the only sources of innovations has been contested. It is recognised that innovation emerges from the complex interactions among multiple actors and is about fostering combined technical, social and institutional change (Klerkx et. al, 2012). Consequently, linkage and partnership are vital. To this end, facilitators such as ARDPLAC have an important contribution in facilitating linkage among different actors and in the process of developing demand driven innovations.

In the history of actors' linkage in agriculture in Ethiopia, the linkage advisory councils have been contributing in facilitating linkage platforms for better innovation and improving extension service. The councils have passed different phases of changing names and scope to be more inclusive by incorporating relevant actors in their linkage platforms. Currently, throughout the country, ARDPLAC's are the main bodies facilitating linkage among different actors working in agriculture and rural development. Policies have been settled by the government to organise the linkage councils in all zonal administrations. The councils are active in most zones specifically where agricultural research centres are located including East Shoa zone where this research study took place.

East Shoa zone is one of the 14 zones found in Oromia regional state, Ethiopia. The zone is characterised by semi-arid agro ecology with mixed crop-livestock farming system. As in many administrative zones in the country it has organised its zonal ARDPLAC since 2008 which facilitates the linkage between many organisations and individuals working in agriculture and rural development within the zone. However, the current circumstances in the country with no exception in East Shoa zone reveal that there is weak linkage between the actors (Gebremedhin et al., 2006; Demisse et al., 2008; Kassa, 2008 and Atalay, 2012). In addition, currently there is lack of information as to what are the possible factors hindering the effective linkage. Therefore, this research activity was proposed with an objective of identifying the factors hindering effective linkage between actors involved in East Shoa zonal ARDPLAC. The study used case study as a strategy with 12 key informant interviews with representatives from key stakeholders of ARDPLAC and review of document as a method of data collection. The findings were analysed qualitatively, presented in the result and discussion section using figures, tables and quotations.

## **1.2. Research Problem**

In Ethiopia weak linkage between actors working in agriculture and rural development is one of the challenges of extension services (Kassa 2008; Atalay, 2012). With a major emphasis of providing forum for actors to link, to share what they are doing, to discuss on farmers problems and to share responsibilities different linkage councils were organised since 1986. Since their establishment, the councils have passed different phases of changing names to be more inclusive ones by incorporating relevant organisations and individuals as actors in their linkage platforms. Currently, Zonal Agriculture and Rural Development Partners Linkage

Advisory Councils (ARDPLAC's) in different administrative zones of the country are the main bodies linking actors working in agriculture and rural development in their respective zones. The councils facilitate linkage using different linkage mechanisms. Since 2008, East Shoa Zonal ARDPLAC is also playing its role of linking actors working in agriculture and rural development within the 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 to find out the factors hindering effective linkage between the actors involved in East Shoa Zonal ARDPLAC.

### **1.3. Objective of the research**

The objective of the research was to identify the factors hindering effective linkage for rural innovation between the actors involved in East Shoa zonal ARDPLAC.

### **1.4. Main and sub research questions**

To achieve the aim of the research the main research question and the corresponding sub questions were formulated as:

- A. What are the factors hindering effective linkage between the actors involved in East Shoa zonal ARDPLAC for effective rural innovation?
  - I. What type of linkage mechanisms are used to link the actors?
  - II. To what extent is the involvement of actors in the linkage forums?
  - III. How do actors perceive the linkage?
  - IV. What organisational structures and rules and regulations are in place for facilitating the linkage between the actors?

## **Chapter Two: Literature review and conceptual framework**

### **2.1. Historical overview of actors' linkage in agriculture in Ethiopia: *Research, extension and farmers linkage councils***

Agricultural extension service in Ethiopia formally begun half a century ago in the 1950's with the establishment of the then Imperial Ethiopian College of agriculture and mechanical arts now called Haramaya University (Kassa, 2008). Kassa (2008) reports the informal beginning of extension service dating back to 1931 with the establishment of the Ambo agricultural school, which is one of the oldest institutions offering general education with major emphasis on agriculture. The school did not do extension work in the sense of the term that is understandable today but it used to demonstrate the potential effects of improved varieties and agricultural practices to the surrounding farmers (Kassa, 2008).

Since the beginning of formally organised extension service in Ethiopia by ministry of agriculture in the 1950's different methods and approaches have been implemented. However, extension service is still inefficient and top down in its nature (Gebremedhin et al 2006, Kassa 2008). Many factors have contributed for this inefficiency in extension service including unclear extension approach, dwindling resources and frequent restructuring of the extension institutions. Studies by Gebremedhin et al (2006), Demisse et al (2008) and Kassa (2008) also state, as the ministry of agriculture's extension service was mainly concerned with the adoption of agricultural technologies, weak linkage between agricultural research, extension and farmers among the key and primordial factors which contributed for inefficiency of extension service in the country. As a result, organising linkage platform was

used as an option. Consequently, Research Extension Liaison Committees (RELCs) were formed in 1986 at the national level (Kassa 2008).

According to Kassa (2008) the main purpose of this liaison committee was to provide forum for the two stakeholders (research and extension) to share information and improve the adoption of agricultural technologies. RELC was chaired by Ministry of agriculture and its members consisted of the general manager of the Institute of Agricultural Research, directors of research centres, and heads of the technical units of the Ministry of Agriculture. RELC was also responsible to provide overall policy direction and capacity building. FDRE, (1999) as cited by Kassa (2008) reports that RELC was also commissioned to undertake diagnostic studies on weaknesses of the national research and extension systems as well as on factors affecting the adoption of potentially useful technologies developed by researchers in view of formulating new research and extension strategies. However, According to Kassa (2008) and Demekech et.al (2010) RELC had weaknesses including no farmers' involvement. It also marginalised issues of extension focusing only on research and adoption of technologies. Moreover, it has no proper evaluation and documentation of efforts. Generally, it was characterized as an ad-hoc and non-institutionalized nature of meetings (Kassa, 2008). Due to these and other challenges related with a regime change as result of war that was going on at that time in the country that resulted in institutional changes in the research and extension organisations, RELC had irregular linkage platforms with limited impact and had not lived long to be of practical use (Kassa 2008).

Following the ineffectiveness of RELC another institutional arrangement was formulated in 2000 with a new name called Research-Extension and Farmers Linkage Advisory Council (REFLAC) (Demekech et.al, 2010). According to Demekech et al (2010) REFLAC was different from its precede in its representation and involvement of farmers, in its contribution for research problem identification and in demonstration and display of available agricultural technologies to farmers and extension workers through research site visits and discussions. Nevertheless, REFLAC could not meet the expected results of improving the extension service. Moreover, as agriculture and rural development is not only about research-extension and farmers it required the involvement of different actors. Hence, according to Demekech et.al (2010) it was found to be necessary to make a new institutional set up for the research and extension system to be able to enhance rural development. As a result a new multi-actors linkage platform emerged. These actors linkage platform is called Agricultural Development Partners linkage advisory council (ARDPLAC).

ADPLAC is nowadays the main body linking actors working in agriculture and rural development in different administrative regions and zones of the country by facilitating different linkage platforms. Apart from research and extension organisation it included private companies, farmers unions and NGO's into the linkage platforms.

## **2.2. Theories in actors' linkage in rural innovation**

Building effective linkage and partnership among key actors in rural innovation has been an issue in agriculture and rural development (Salmon and Engel, 1997). In the past innovations were seen purely as discovery or invention and many believed that innovations for solving societal problems only come from science and research organisations (Smits 2002, Leeuwis and Van den Ban 2004). However, according to Leeuwis and Van den Ban (2004) and Smits (2002) innovations are not only about new inventions but also include social and institutional aspects.

Consequently, different ideas and theories about how to reach rural societies with innovations have involved considerably (Leeuwis and Van den Ban, 2004). With the dominant linear technology transfer model the mission of many agricultural extension

organisations in different parts of the world was to increase agricultural production and productivity through the transfer of relevant technology, knowledge and information and offering of technical and economic advice to farmers (Leeuwis and Van den Ban, 2004). They were mainly concerned with the adoption and diffusion of innovations. However, as Leeuwis and Van den Ban (2004) states that the tendency among extension organisations to promote indiscriminately badly adapted and predefined innovations which were developed with little understanding of farmers' problems were documented and criticized. Leeuwis and Van den Ban (2004) argue that there is no ready-made or predefined innovation customized to local or societal conditions and change 'never comes alone'. It often includes both technical and social-organisational elements. Moreover, for innovations to be relevant to local condition researchers, extension workers farmers and other stakeholders must play important roles in identifying research problems and adapting recommendations to local conditions (Abagamu 2000).

Hence, according to Abagamu (2000), effective communication links between actors in agriculture and rural development is vital. Such links enable new technologies and management practices to be suited to local ecological conditions and in the modification of technological recommendations and in initiating further research. Leeuwis and Van den Ban (2004) also state that focusing only on farmers and extension agents interface does not bringing out coherent innovations because many others actors (e.g. university staff from different disciplines, applied researchers, politicians, policy-makers, agroindustry, bureaucrats, etc.) play a role in bringing about such offerings. Consequently, innovations could only be expected to emerge when the multiple actors (including farmers), who could influence the bringing about of adequate knowledge and technology, co-operate to improve collective performance (Leeuwis and Van den Ban 2004).

With this line of thinking, the concept of Agricultural knowledge and Information system emerges. AKIS is a network of social interaction for innovation (Lemma 2007). It brings together a number of actors to generate share and utilize agricultural related technologies, knowledge and information. A widely used definition by World Bank and FAO defines AKIS as;

'An Agricultural Knowledge and Information System links people and institutions to promote mutual learning and generate, share and utilize agriculture-related technology, knowledge and information. The system integrates farmers, agricultural educators, researchers and extensionists to harness knowledge and information from various sources for better farming and improved livelihoods.' (FAO & World Bank, 2000)

According to Leeuwis and Van den Ban (2004) AKIS's main concept is a 'synergy' between the actors. It has a system approach to innovation. Leeuwis and Van den Ban (2004) use an example of a car in metaphorical way to explain it from general system thinking. The idea is that, system as a whole (e.g. a car) has properties that transcend those of the individual parts (e.g. engine, gearbox, wheels etc.), that is a car that we can drive and it provides service whereas the individual parts cannot. Similarly in AKIS it is not the individual actors alone that can solve agriculture and rural development problems but it is the linked set of different actors.

Despite the important ideas and function of AKIS, Rivera et.al (2005) and Lemma (2007) argue that there are contextual and environmental challenges in functioning AKIS. In the earlier concepts of AKIS and its models farmers are at the heart of knowledge triangle between only three main actors (education, research and extension) (FAO and World Bank 2002). The concept and its illustration does not point the involvement of other important actors, such as government, the private sector, civic society and other support system actors

(Rivera et.al 2005). In addition, it was focused on forward linkage between the three institutions of the system. Recognizing this, it was later that backward linkage, feedback mechanisms and support system actors were added to the AKIS model (Rivera et al 2005, Lemma 2007). Nevertheless, as a number of important actors are added in to the system it becomes more complex and the need for coordination becomes even greater. Figure 1 shows the current and comprehensive AKIS model and the challenges<sup>1</sup> influencing the system (policy, institutional commitment, communication systems, and resources) in the circle.

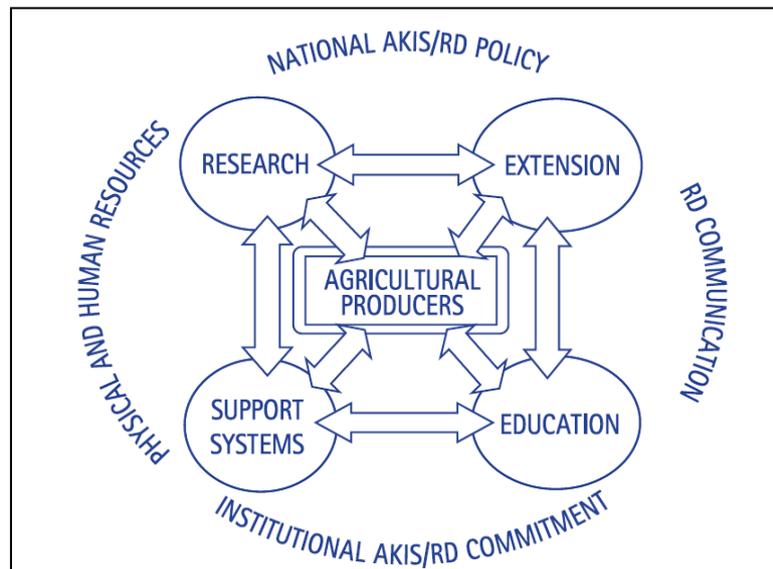


Figure 1: A comprehensive AKIS model; Source: Rivera et.al (2005)

AKIS being practiced in different parts of the world, As World Bank (2006) states that, the context of innovation has evolved into ideas of innovation system (IS) perspective since recently. According to World Bank (2006) an innovation system may be defined as;

“Comprising the organizations, enterprises, and individuals that together demand and supply knowledge and technology, and the rules and mechanisms by which these different agents interact. The innovation systems concept focuses not merely on the science suppliers but on the totality and interaction of actors involved in innovation. It extends beyond the creation of knowledge to encompass the factors affecting demand for and use of new and existing knowledge in novel and useful ways.”

As in AKIS in the innovation systems perspective, co-operation and effective alignment between several different types of actors is seen as key to successful innovation development and utilization (Leeuwis and Van den Ban, 2004; Klerkx and Leeuwis, 2009; Leeuwis and Aarts , 2011).

The main difference between AKIS and Innovation system perspective as stated by World bank (2006) and Hall (2007) is their views towards the purpose (World bank, 2006) or ‘what it is’ (Hall, 2007) and who the actors are. According to World Bank (2006) and Hall (2007) the purpose of AKIS is in strengthening communication capacity while the later works for strengthening capacity to innovate. In terms of who the actors are the former comprises national agricultural research, and universities, extension organisations, farmers and NGO’s

<sup>1</sup>These challenges mentioned on the circle of AKIS model are also reflected in the conceptual framework developed for this research.

and the later comprises all institutions and organisations which are involved in the creation, diffusion and adoption of innovations of all types of knowledge related to agricultural production and marketing.

### **2.3. Conceptual framework**

The main concept of this research is Linkage. The concept is defined by Havelok (1998) as cited by Abagamu (2000) as linkage is a communication and working relationship established between two or more organisations pursuing commonly shared objectives in order to have regular contact and improved productivity. Abagamu (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 ARDPLAC 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 (Munayu et. al. 2002). According to Munayu et al (2002) these actors can be an examples of different systems linked together in information flow and feedback. These actors are also in line with who the actors are in AKIS concepts defined by World Bank (2006) and Hall (2007). Moreover, their linkage which is facilitated by the ARDPLAC is also related to what is called AKIS, as defined above, 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 2001). However, according to Kumar (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 2001).

In the process of understanding linkage and its effectiveness getting an insight into the technical or the methodological aspects of a linkage is significant. 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 of AKIS a conceptual model is developed by the author to show the factors hindering effectiveness of actors' linkage in East Shoa Zonal ARDPLAC. 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 ARDPLAC can play an important role in facilitating the linkage between the actors involved in the AKIS, these aspects can point out the effectiveness of ARDPLAC as well. Furthermore, these aspects are illustrated and defined below the next figure on the definition of key concepts part.

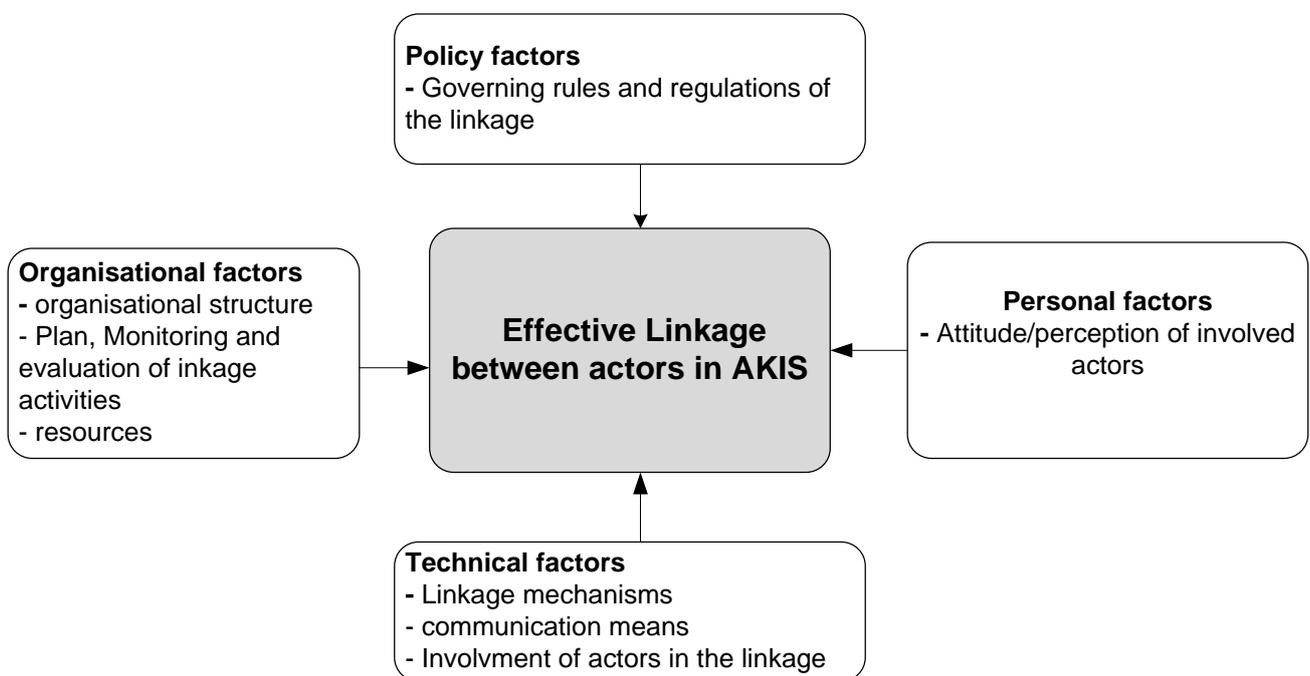


Figure 2: Conceptual Model for identifying factors hindering effective linkage between actors in AKIS; developed by the author based on Hawkins (2009) and Kumar (2001).

## 2.4. Definition of key concept

The following are the definitions of the key concepts to be used in the research.

*AKIS*: An Agricultural Knowledge and Information System links people and institutions to promote mutual learning and generate, share and utilize agriculture-related technology, knowledge and information. The system integrates farmers, agricultural educators, researchers and extensionists to harness knowledge and information from various sources for better farming and improved livelihoods.' (FAO & World Bank, 2000)

*Linkage*: is a communication and working relationship established between two or more organisations pursuing commonly shared objectives in order to have regular contact and improved productivity (Havelock (1998) as cited in Abagamu (2000) and Kassa (2008))

*Factors influencing effective linkage*: refers to the policy, organisational, technical and personal factors that hinder effective linkage between actors (Hawkins 2009, Kumar 2001). Each dimension used for this research are defined below

*Policy factors*: the policy issues, rules and regulations that are in place to facilitate the linkage between actors. (Kumar 2001)

*Organisational factors*: refers to the supporting organisational structures, how activities are planned, monitored and evaluated. It also refers the availability and allocation of resources. (Kumar 2001)

*Personal factors*: refers to the perception or attitude of the actors towards the linkage. It is also to refer to the interest of the actors in the linkage. (Kumar 2001)

*Technical factors*: refers to the technical aspects of the linkage, the approaches used to link the actors; the communication means, linkage mechanisms and the level of involvement/ participation of the actors in the linkage. (Hawkins, 2009)

*Communication means*: refers to the types of communication means (such as personal communication, document sharing, reporting, publications etc.) used to link actors and to share information (Hawkins, 2009; Atalay 2012)

*Structural linkage mechanisms*: are linkage mechanisms which are formal and institutionally recognised, e.g. direct supervision, authority, committees, liaison positions etc. (Hawkins, 2009)

*Operational linkage mechanisms*: are linkage mechanisms which may be informal or temporary; e.g. meetings, training events, contracts, partnerships, publications, broadcasts, joint activities, friendships, etc. (Hawkins, 2009)

## Chapter Three: Methodology

### 3.1. Study area

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  $7^{\circ} 33'50''N$  -  $9^{\circ}08'56''N$  and from  $38^{\circ}24'10''E$  -  $40^{\circ} 05' 34''E$ . It is characterized by semi-arid agro ecology with mixed crop livestock farming system. The total area of East Shoa zone is approximately 10,241  $Km^2$  and Adama town is served the capital town of the zone. Its altitude ranges from 878masl to 1697masl, with average annual rainfall of 600mm and annual min and max temperatures of  $15^{\circ}C$  and  $25^{\circ}C$  respectively. The zone is boarded to the North by Amhara national regional state, on the south east by Afar national regional state, to the south east by Arsi zone, on the west by South West Shewa zone and by West Arsi zone in the south. The zone is close to the capital city, Addis Ababa, which makes it close for accessing the local products to the central market and creates ideal condition for provision of the demanded commodities to the local communities. Currently, most areas of East Shoa zone devoted to industrial zone.

There are a number of government and nongovernmental organisations as well as private companies who are directly involved in agriculture and rural development. The zone has five research centers which makes it among zones in the country with high number of agricultural research centers.

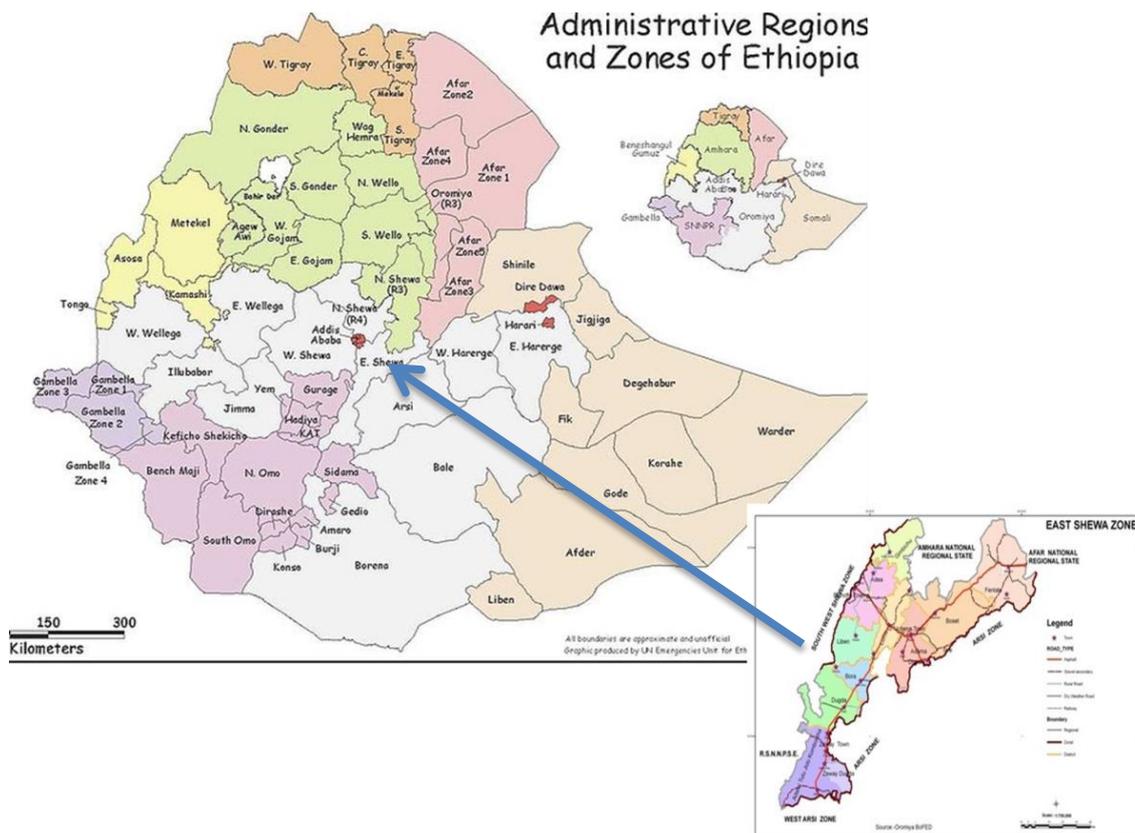


Figure 3: Map of the study area

Source: <http://en.wikipedia.org>

### 3.2. Research design and strategy

The main aim of this research was to identify the factors hindering effective linkage for rural innovation between the actors working in agriculture and rural development in East Shoa zone and who are involved in the Zonal ARDPLAC. The study followed qualitative methods and was based on empirical data and literature study. 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. It focuses more on depth than breadth and uses strategic samples. The study was mainly based on a total of 12 key informant interviews representing actors involved in the zonal ARDPLAC and review of zonal ARDPLAC documents. Key informant interview was the main method used because the represented organisations were located in different districts of the study area and it was not possible to bring them together to support the interviews with focus group discussions.

The sample key informants representing sample organisations were selected based on the total number of actors involved in the zonal ARDPLAC found with discussion with representative of the ARDPLAC and review of list of participants. The key informants interviewed were heads/representatives of the sample organisations who have an understanding about the actors' linkage in the zone and who have been involving in the linkage forums organised by the ARDPLAC. The sampling of organisations/actors took into consideration not only the number of actors but also the representation of each actor. Random selection was applied for organisations such as district office of agriculture (extension organisation), research centres and farmers unions with the expectation of similarity in their activities and organisational objective/interest in the linkage. The following table summarizes the number of actors selected.

Table 1: Sample size of respondents; as per the number gained from the representative of ARDPLAC executive committee

Actors	Total Number of Actors involved in the ARDPLAC	Number of Samples actors selected for key informant interviews
Zonal office of agriculture (representative of the linkage council's executive committee )	1	1
Agriculturall research centers	5	2
Extension (district office of agriculture)	10	3
Farmers Unions(farmers organisations)	4	2
NGO's	2	1
Model farmers	3 <sup>2</sup>	1
Private company	1	1
Seed enterprise	1	1
<b>Total</b>	<b>27</b>	<b>12</b>

<sup>2</sup> The study used the mentioned number for model farmers on table 1 from the list of participants in 2012 annual linkage meeting. The Representative of the ARDPLAC was also 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 representation/invitation in the linkage platforms is dependent on availability of funds. Nevertheless, the total number of organisations in the linkage is 24.

Consequently, the study tried to get insight about the main factors that are hindering the effectiveness of the linkage. For these purpose interviews guided with semi structured questions and checklist were prepared in advance.

Literatures were also reviewed to develop the conceptual framework in which the main concept, the dimension and the aspects used to achieve the research objective were defined. Figure 4 illustrates the steps involved in finalising this research. As shown in the figure 4 the study commenced from desk study about the general theories of actor's linkage and effectiveness of actors' linkages in the academics. The desk study also tried to review preliminary researches conducted in relation to the main ideas of the study. Subsequently, possible factors hindering effective actors' linkage for rural innovation were operationalized in the context of ARDPLAC in the study area to come up with the results and final recommendations. Moreover, literatures were also reviewed to support the findings of the research.

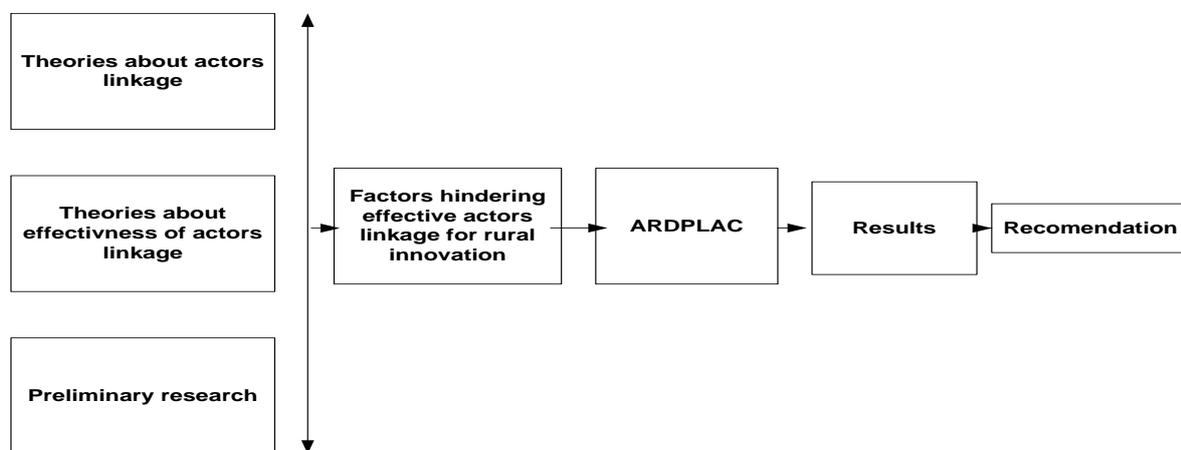


Figure 4: Schematic representation of the research

Source: Author 2013

### 3.3. Data collection

The data was collected from 12 key informants representing the linkage council, research centres, district office of agriculture, seed multiplication agency, farmers unions, individual farmers, NGO's and Private companies involved in East Shoa ARDPLAC. The key informants were head of organisations or representatives of their originations who have an understanding about the actors' linkage in the zone and who have been involving in the linkage forums organised by the ARDPLAC. They were contacted for interview using semi structured questions and checklist. Moreover, for triangulation of the information as secondary data sources documents and reports of the ARDPLAC were reviewed. The documents included rules and regulations of the linkage council, different reports and meeting minutes.

### 3.4. Data analysis

The collected data was analysed qualitatively and is presented using tables, graphic representations and quotes.

### **3.5. Self-epistemological critical awareness**

Given the researcher's certain degree of participation in a few linkage forums organised and facilitated by East Shoa zonal ARDPLAC representing his organisation a few of the key informants had an assumption that the researcher has a lot of information about some of the issues mentioned during the interview. As a result the interviewees tried to skip some of the important information such as the level of involvement of actors in the ARDPLAC, and the challenges the ARDPLAC in general. Understanding this, effort was made before conducting the interview to explain the purpose and the approach of the study. Nonetheless, knowing the researcher's participation in the linkage platforms in the past had also benefited the interviewees to open up to some of the important issues such as their perception towards other actors' involvement, the role of politics in the ARDPLAC and the challenges of the ARDPLAC is facing.

### **3.6. Limitations of the study**

The scope of the study is limited to East Shoa zone, Oromia regional state, Ethiopia. As the findings are for East Shoa Zonal ARDPLAC it may not represent the context of other Zonal ARDPLAC's available within the regional state in particular or the country in general. The analysis and result of the study are mainly based on key informant interviews of representatives of sample key actors involved in East Shoa zonal ARDPLAC and review of documents. This was used as a main strategy for data collection as the actors are located in different parts of the zone and it was not possible to conduct focus group discussions due to limited time, resources and busy schedules of the key informants.

## **Chapter Four: Result and Discussion**

This study was done with an objective of identifying factors hindering effective linkage for rural innovation between the actors involved in East Shoa zonal ARDPLAC. To achieve its objective and to answer the main research question key informants representing the ARDPLAC and the individual actors involved in the ARDPLAC were interviewed. Different documents of the ARDPLAC were also reviewed. This chapter presents the findings of the study and discusses the findings by supporting with literatures. As the findings are presented and discussed the researcher used "ARDPLAC" and "linkage council" interchangeably and both stand for the ARDPLAC in East Shoa zone. Hence, the reader is advised as both are the same in the context of this research.

### **4.1. Results**

#### **4.1.1. Role and Function of East Shoa Zonal ARDPLAC**

East shoa Zonal ARDPLAC is one of the zonal linkage councils found in the country. Though it had a different name, it is one of the oldest linkage councils which passed different adjustments since its establishment in 1986. There are a total of 24 member governmental, non-governmental, farmers and private organisations. There are also model farmers involved in the ARDPLAC. The currently updated rule and regulation documents of the linkage council show that the linkage council has been established with three main objectives. The objectives are:

To contribute to the overall agricultural and rural developments by creating and/or strengthening functional linkage between important governmental, non-governmental institutions/organisations and individuals working in agriculture and rural development within the zone

To make farmers beneficial from agricultural research and technology by steering agricultural research centres focus on farmer's problems and priorities.

To contribute for agricultural producers to get better prices by creating and strengthening market linkage

According to the rule and regulation document of the ARDPLAC the linkage is managed by 18 executive committee members representing the actors involved. It is chaired by the head of zonal administration and zonal office of agriculture plays a major role of facilitation. According to the key informant interview with representative of the ARDPLAC, the zonal office of agriculture has assigned individuals for this facilitation purpose. These individuals facilitate the activities of the linkage council as additional responsibility beside their major duty in their organisation

To achieve the above stated objectives the ARDPLAC coordinates different linkage mechanisms among which meetings are one of them. Beside annual meetings, the ARDPLAC also facilitates field days, knowledge sharing/training events, joint demonstrations and joint agricultural research trails between the actors. Annually, the zonal office of agriculture, which is the main facilitator of the ARDPLAC, identifies agriculture and rural development problems of the zone. The findings are then presented to all the actors involved in the ADRPLAC. Subsequently, these identified problems are then discussed among all actors where responsibilities are shared. According to the key informant interviews with one of the representatives of research organisations, even though the problems are not identified by involving multiple stakeholders and sometimes the same problems appear year after year, identifying problems and sharing among the actors has contributed in supporting the actors

involved in the linkage to direct their focus according to the need and priorities of the end users. It was also mentioned as it can save time, resource and repetition of the same activity by different organisations. To this end, maize varieties, horticultural crop varieties (e.g. onion and tomato seeds), and poultry breeds that were developed by the research centres involved in the ARDPLAC for farmers in East Shoa zone are examples. The review of annual report for the year 2012, of the ARDPLAC also shows that the problem of soil erosion, as a result of land degradation, in the zone was also one of the problems mentioned on the ARDPLAC meeting. This challenge has been an issue in the linkage forums which is now under rehabilitation by one of the private company involved in the ARDPLAC. The hybrid maize seeds that are multiplied on farmers' fields to support the seed demand that was continuously raised in the ARDPLAC linkage forums is also another example found from the review of documents. This activity is still on-going activity which is under implementation in collaboration with one farmers union, individual farmers and one of the research organisations involved in the ARDPLAC.

Besides sharing responsibilities based on the problem identified for the actors involved in the linkage the ARDPLAC has also contributed in helping the farmers in the study area to get agricultural inputs (e.g. seed and fertilizer) in time. According to the interview with representatives of farmers unions and individual farmers the marketing linkage facilitated between farmers and farmers union by the ARDPLAC also helps the farmers to get good prices for their products. Furthermore, the information shared in the ARDPLAC linkage forums specifically related with crop seeds, fertilizers and marketing of agricultural products between the farmer and the two main actors involved in input provision and marketing (farmers unions and seed multipliers) was perceived as positive contributing to improving the farming in the study area by key informants representing these actors.

#### **4.1.2. Actors involved in the linkage**

The study found out that the actors involved in East Shoa ARDPLAC are in total of 24, excluding the number of model farmers invited every year. The actors involved in the ARDPLAC 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 ARDPLAC. The key informant representing the ARDPLAC mentioned as educational institutes are not involved in the ARDPLAC because there are no colleges or universities providing education in agriculture in East Shoa zone. Specifically the actors involved in the ARDPLAC 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 ARDPLAC are all public organisations. Table 2 shows who the actors are and their operational areas.

Table 2: Actors involved in East Shoa ARDPLAC and their operational level

Operational level	Government organisations			Nongovernmental organisations	Farmers unions	Private agribusiness companies
	Research	Extension	Seed multiplication			
<b>National level</b>	Melkasa ARC Debrezeit ARC					Ethioflorensesus
<b>Regional level</b>	Ziway fishery resource research center Ziway soil research center		Oromia Seed enterprise			
<b>Zonal level</b>	Adami Tulu ARC	East Shoa zonal OARD		World Vision Adama Area Branch Meki Catholic relief and development organisation	Lume Adama farmers union Meki Batu fruit and vegetable grower cooperative union Bora Dembel farmers union Yerer farmers Union	
<b>District level</b>		Adama DOARD Lume DOARD Fentalle DOARD Boset DOARD Dugda DOARD Bora DOARD Adami Tulu Jido Kombolcha DOARD Adaá DOARD Gimbichu DOARD Liben chukala DOARD				

Source: own research, 2013

### 4.1.3. Interest/objective of the actors in the linkage

All the 12 key informants representing the actors involved in the ARDPLAC were interviewed to come up with their interests as to why they are involved in the linkage. Accordingly, Research organisations use the linkage as a platform to identify research problems and to focus their research direction on farmers and other actors' problems and priorities. As shown on table 3; farmers, farmer's cooperative unions, private companies and seed multipliers use the linkage mainly for information sharing while NGO's use it to identify development related problems in addition to sharing information and creating linkage and partnership with other actors. The following table summarizes the interest or objectives of each actor as to why they are involved in the linkage

Table 3: Interest of actors involved in East Shoa zonal ARDPLAC

<b>Type of organisation</b>	<b>Interest/objective in the ARDPLAC</b>
Research	to identify and prioritize research gaps according to farmers' needs, to create functional linkage with other stakeholders, to promote and increase the adoption rate of agricultural technologies, To share different agricultural information and to get feedbacks on our agricultural technologies
Extension	To share and get agriculture and rural development related information/knowledge from different stakeholders involved in the linkage
NGOs	Because ARDPLAC is a linkage platform where farmers and other actors raise development problems, we consider it as an important platform where we can get information about on what areas of development we should focus on, we also share information about the activities of our organisation with many stakeholders
Farmers' unions	For sharing information related with agricultural inputs especially crop seeds and to share experiences and information related with marketing of agricultural products, to hear success stories and challenges from other actors, to discuss development issues, to link with other organisations and to share responsibilities on farmers' problems. The platforms help us to understand what the farmer's problems are
Farmers	To share information/knowledge with different stakeholders, to share our experience of working with different organisations, to represent farmers and express our concern in relation to agricultural technology development and extension service
Seed multiplication agency	to share information with different partners, it is a platform where we get seed demand and also information about newly released varieties and plans of releasing varieties
Private company	to share information on the activities of our company and to learn from other actors involved in the linkage

Source: own research, 2013

#### **4.1.4. Factors hindering the linkage**

##### **4.1.4.1. Policy factors**

###### *Rules and regulation*

All the key informant interviews revealed that the policies and strategies of the government towards linkage were perceived as positive. Recognising the importance such linkage platforms, the government encourages organising the ARDPLACs in all administrative regions and zones. But the policies and strategies were not usually put in practice as expected. In all the interviews, it was mentioned that budget was the main constraint to facilitate the activities of the linkage. This is mentioned due to lack of budget that is allocated from the government specifically designated for facilitating the linkage activities.

Apart from the policies of the government in general, the ARDPLAC has its own rules and regulations document in which the actors involved in the linkage and the overall linkage activities are administered. The rule and regulation was originally formulated when the ARDPLAC was organised. The research reviewed the document and interviewed key informants for its inclusiveness of actors' role and responsibilities, actors' awareness, regular updating and its follow up by the actors. Accordingly, the current rule and regulation of the ARDPLAC has been revised and updated by the management of the linkage in 2013. According to the key informant interview representing the linkage council, since its first formulation, it has been updated and reviewed on a yearly basis by the management of the linkage council. The document is mentioned to be updated by the management of the ARDPLAC and presented for all actors for their review and approval. However, there were no documents found attesting the regular updating on a yearly basis by this study.

In terms of stating role and responsibilities the review of the document shows that the current rule and regulation states actors' role and responsibilities rather in general. There are no specific roles and responsibilities mentioned for each actors involved in the linkage either by grouping them in terms of their expected role or as an individual actor.

In terms of actors' awareness about the rule and regulations it was understood that all actors are aware of the existence of rules and regulations. However, half of the actors answered that they do not have a copy of it.

##### **4.1.4.2. Organisational factors**

###### *Organisational structure*

The key informant interviews and the document reviewed show that East Shoa ARDPLAC does not have its own organisational chart (organogram). There are no individuals who are assigned exclusively for facilitation of the activities of the ARDPLAC. The ARDPLAC is considered as a committee work and the facilitators from zonal office of agriculture work in the ARDPLAC as additional responsibility without payments or incentives. The individuals who are members of the executive committee are also employees of the organisations involved in the linkage. Most of them are extension workers doing the activities of the ARDPLAC representing their organisations. The rules and regulation of the linkage council states that, the ARDPLAC to be led by 18 executive committee members. This executive committee is chaired by the zonal administrator with 5 deputy chairpersons. The deputy chair persons are from four agricultural research centers found in the zone and the head of the zonal office of agriculture. The secretaries are extension and socio economics heads of four agricultural research centers found in the zone and head of the extension division of the

zonal office of agriculture. According to the rule and regulation document the rest members are from all other actors involved in the linkage. The rule and regulation also states that the executive committee to report to the general assembly. However, the study found out that the linkage being facilitated by individuals from different organisations as an additional responsibility as one of the challenges of the linkage. It was mentioned that additional responsibilities require commitment and the responsible individual's capacity of facilitation. One of the key informant interviews reports that;

*“The organisation of the linkage is weak, and doesn't support the effectiveness of the linkage. The individuals who facilitate/executive committees are from different organisations. These people have their own work in their organisations and they are busy with that work. This leads them not to put a lot of effort in this activity which led to the weakness of the linkage”*

Furthermore, the activities of the executive committee were mentioned to be highly dependent on the availability of the chair persons. As mentioned above both the chair person and deputy chairpersons are heads of the organisations involved in the linkage. Such individuals are politically elected for leadership and administration. They are mentioned by the key informants to be busy with different administrative issues. They are also in constant transfer from one place/organisation to other due to the nature of their jobs. Having such individuals in the executive committee might be important in giving the linkage influence and to decide on issues that require political/administrative decisions. However, politics was mentioned as directing the sphere of the linkage in the ADRPLAC. Moreover, according to the key informant interviews issues such as planning and conducting linkage forums wait for the chair persons and other heads of organisations availability and decision-making. This coupled with the linkage not having its own specifically assigned individuals contributed for the weakness of the linkage. Moreover, during review of documents, it was understood that the ARDPLAC have a problem of documentation. There is no operational documents/guideline, except the rule and regulation document. Yet, the rule and regulation do not indicate the general management of the linkage mechanisms and how the roles and responsibilities given to actors are monitored and evaluated. Moreover, the rule and regulation only state the overall role to be played by the executive committee in general; it doesn't state either the job description of each of the individuals involved in the executive committee or the individual actors.

#### *Resource*

The study found out that the activities of the linkage council being dependent on project funding. So far, it is operational with funds from projects called Rural Capacity Building and Agricultural Growth Programme funded by the World Bank. These projects are government projects which are not specifically designed for the purpose of facilitating such linkages. But they support such linkage forums as part of achieving their project goals. It was mentioned, during the key informant interview with representative of the executive committee that the budget released from these projects is highly dependent on availability of funds. The trend was also mentioned as decreasing from time to time. According to the rule and regulation of the ARDPLAC, general assembly meeting should be conducted twice a year. But, the budget released is a one-time budget enough only for conducting annual linkage meeting once. The time of release is also mentioned as not also in line with the schedule of the ARDPLAC. As a result, it created a challenge in the planning of ARDPLAC activities specifically in determining which time of the year to conduct the linkage platforms. The rule and regulation states that specially linkage meeting to be conducted before January. This is done as most of the actors involved in the ARDPLAC are government organisations; they prepare their annual plans after January before the new Ethiopian budget year starts. Conducting linkage meetings in the ARDPLAC before January helps them to plan their activities by integrating the

responsibilities they shared from the issues mentioned in ARDPLAC meeting. One of the Key informants quoted this issue of budget in general as;

*“I think the problem related with the budget shortage is, the activities of the ARDPLAC are not yet considered as routine and day to day activities of the office of agriculture (organisation which is mainly responsible for the management of the council). It is stated in the rules and regulations that the executive committee should prepare a budget plan and submit to the regional government but the executive committee doesn't prepare its budget request to the government like other departments. The budget is transferred from the regional office of agriculture from project findings depending on the availability. There are also shortcomings related to outsourcing of other funding sources. Here personal commitment and accountability is important”*

Apart from budget it was mentioned during the key informant interview as there also human resource challenges. High staff turnover in the zonal office of agriculture was the possible cause mentioned for this challenge by the key informant representing the executive committee of the ARDPLAC. In the organisational structure section it was mentioned that the linkage activities are facilitated as additional responsibility by individuals from the zonal office of agriculture. Despite the process of facilitation requiring facilitation skills and capacity, according to the interviewee, currently there are two individuals working in the zonal office of agriculture who are also responsible for facilitating linkage activities. However, these individuals are new to the position and to the process of facilitation. According to the key informant they have limited capacity related with their experience. Moreover, as they are working the activities of the ARDPLAC as additional responsibility without incentives they have shown little initiation which has an impact on the facilitation and to outsource budget either from the actors involved or other sources.

#### *Plan monitoring and evaluation*

The researcher tried to find out how linkage activities are planned and how they are monitored and evaluated. Accordingly, the planning of linkage activities is done annually by the executive committee of the linkage council. The shared responsibilities are reviewed annually during meetings in the presence of all actors. However, lack of appropriate planning and monitoring and evaluation system was one of the problems mentioned by the key informants. This is revealed specifically on budget problem that the linkage is facing and on lack of control on shared responsibilities. Except annual reviews where actors present the status of the responsibilities they shared; there are no other mechanisms so far to triangulate whether the shared responsibilities are achieved or not. According to the key informant representing the executive committee, the executions of the shared responsibilities also depend on the actors' individual responsibility and accountability without any control over the shared responsibilities by the executive committee. Moreover, there are no monitoring and evaluation guidelines/indicators in place to monitor and evaluate the activities of either the ARDPLAC or the shared responsibilities by each actor.

#### 4.1.4.3. Technical factors

As defined in the definition of key concepts section (section 2.4), technical factors in this research are related with the methodological aspects used to link the actors involved in East Shoa ARDPLAC. It relates to how the linkage takes place, what linkage mechanisms, the communication means are used and the participation of the actors in the ARDPLAC. To this end, the following sections present the findings;

##### *Linkage mechanisms*

East Shoa zonal ARDPLAC uses different structural and operational linkage mechanisms to link the actors involved in the linkage. The key informants were given a choice of linkage mechanisms in which their organisation participates more often. 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 linkage council also uses technical committees, a type of structural linkage mechanisms, ranked in fourth position. The technical committees organised by the linkage council are 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 ARDPLAC among NGOs and government organisations. All actors participate mainly in meetings and field days. However, research organisation show higher participation all linkage mechanisms. Figure 5 shows the linkage mechanisms used by the linkage council to link the actors involved.

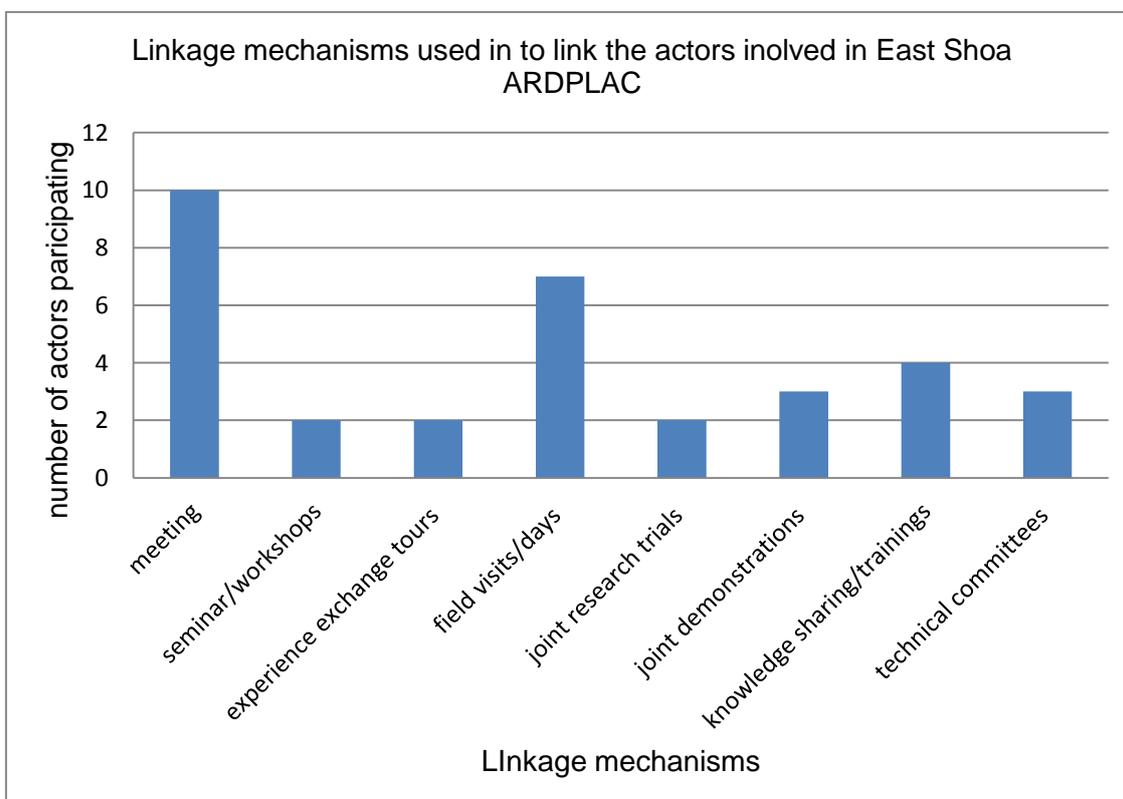
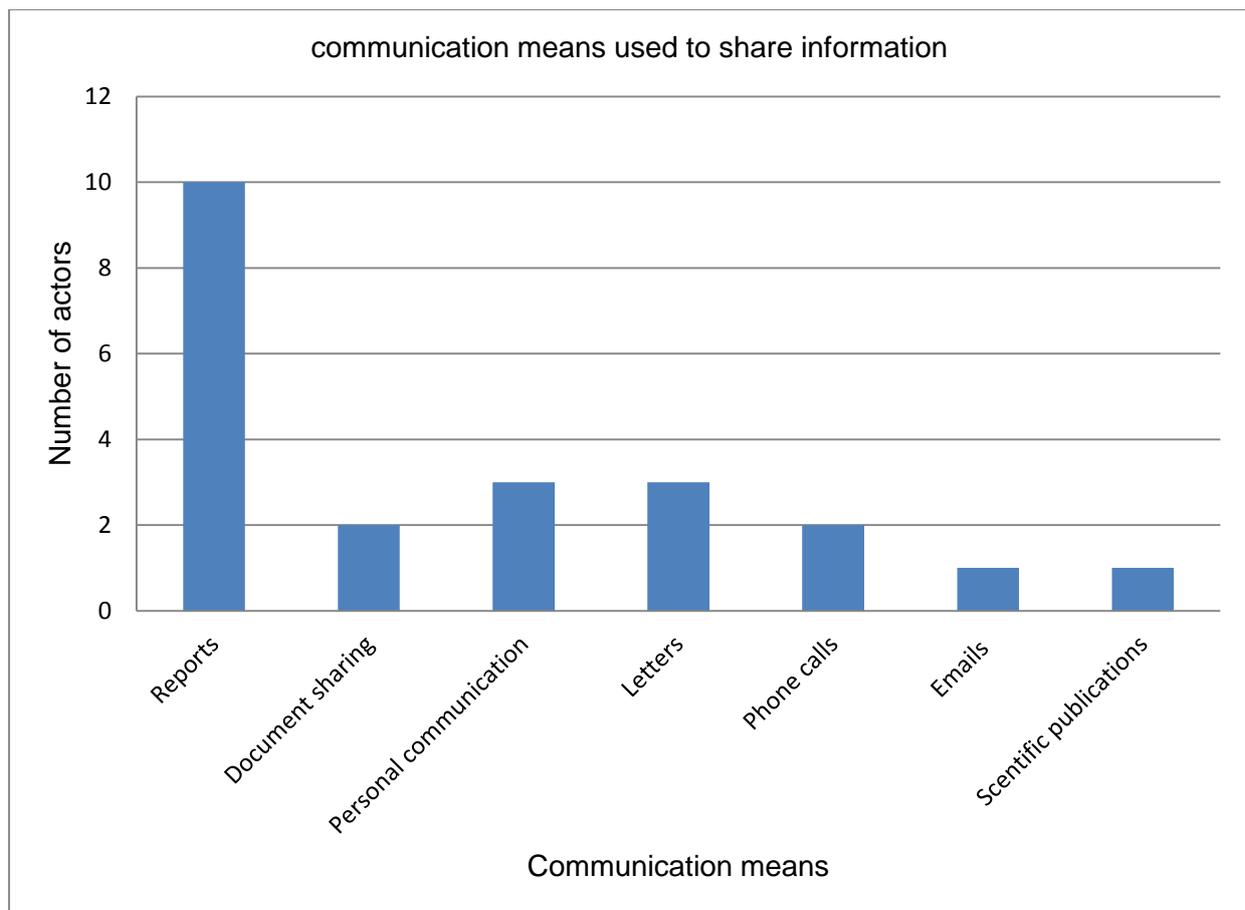


Figure 5: Linkage mechanisms used in to link the actors involved in East Shoa ARDPLAC

Source: own research, 2013

### Communication means

The actors involved in the ARDPLAC were asked to identify which communication means they used to communicate and share information between each other. As shown in figure 6, 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.



Source: Author, 2013

Figure 6: communication means used to share information between the actors involved in East Shoa zonal ARDPLAC

*Level of involvement of actors and their expected role in the ARDPLAC; as perceived by other actors*

In this study a question was asked about actors' level of involvement in East Shoa zonal ARDPLAC. This was asked to get an understanding of how actors' participation in the ARDPLAC 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 ARDPLAC. 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 ARDPLAC. Weak and moderate levels of involvements in the ARDPLAC 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.

Accordingly, as shown on table 4, 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 ARDPLAC. 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 organizations 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 ARDPLAC.

Table 4 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 linkage platforms 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 linkage 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 ARDPLAC. However, as it can be seen on the table 4, there are differences in the expectations from private agribusiness companies by other actors. The actors involved in the ARDPLAC 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 linkage platforms, in agricultural input provision, in environmental conservation activities and in seed multiplication. These activates 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.

Table 4: Expected role of actors and Level of involvement of actors in the ARDPLAC; as perceived by other actors

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

Source: Author, 2013

Level of involvement: - (\*\*\*\*\*) : high, (\*\*\*\*): just right, (\*\*\*) : Moderate, (\*\*): Weak, (\*) No involvement

In the matrix above (table 4) actors have rated each other's level of involvement according to their perception. Nevertheless, the study also tried to understand how the executive committee perceives the level of involvement of actors involved in the ARDPLAC. For this purpose, key informant representing the executive committee of the ARDPLAC was interviewed. The key informant was asked to rate the level of actors involvement in the ARDPLAC taking into consideration the level of representation and level of participation of the actors in the linkage mechanisms. 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 linkage mechanisms. Weak and moderate levels of representations were given for actors having weak and moderate levels of representation and participation in the linkage mechanisms respectively. 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 ARDPLAC. 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, representing the executive committee the document showing the list of participants in 2012 in the linkage meeting 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 ARDPLAC 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 ARDPLAC 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 linkage council 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 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 farmers unions interviewed for this research, one of the farmers union responded as it is satisfied while the other is not mentioning 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"*

#### **4.1.4.4. Personal factors**

##### *Attitude/perception*

The study tried to find out about the attitude of involved personnel's towards the linkage and their perception towards other actor's involvement and participation in the linkage. Accordingly, no negative attitude or perception towards the linkage or other actors was found. Linkage and working relationships in general were perceived to be positive and important contributing to better innovation and extension service. However, lack of individuals' accountability, interest and commitment in the process of facilitating the linkage and outsourcing budget was mentioned. Moreover, individual's capacity to facilitate multi stakeholder linkage platforms such as ARDPLAC was contested by the key informant of the executive committee. Moreover, considering the activities of the linkage as an additional responsibility by executive committee members and representative individual of actors involved in the linkage contributed for the weakness of the linkage. Likewise, decisions and planning of linkage activities were mentioned to be waiting for availability of the chairperson of the linkage council who is mentioned to be busy due to the nature of his job. Though involving such individuals in the ARDPLAC is considered to be important in deciding important issues that need political/administrative decision making, waiting for their availability for important the activities of the ARDPLC were found to be hindering the effectiveness of the ARDPLAC.

## 4.2. Analysis and Discussion

This study was done with an objective to identify factors hindering effective linkage for rural innovation between the actors involved in East Shoa ADRPLAC. The following section analyses the findings and discusses with supportive literatures.

The study found out that East shoa ARDPLAC 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), though there are no educational institutes involved in the ARDPLAC, the actors involved in the ARDLAC 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 ARDPLAC 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 ARDPLAC facilitates different linkage mechanisms and communication means between these actors for better innovation and extension service.

According to Munayu et al. (2002) organisations involved in East Shoa zonal ARDPLAC can also be considered as multiple actors with different interest linked/networked with information flow and feedback. To this end, the actors involved in the ADRPLAC 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 ARDPLAC linkage mechanisms helps them to focus their research and development directions towards the need of the end users (e.g. hybrid maize, onion and tomato varieties and natural conservation activities implemented as a result of the ARDPLAC).

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. However, 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 hybrid maize seeds mentioned (see section 4.1.1.) as an example is 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. This example 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 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 ARDPLAC and the discussions with the key informants found out that the actors involved in East Shoa zonal ARDPLAC have shown

clear task division and delineation of responsibilities for involving in the linkage and for sharing responsibilities. 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.

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. 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 ARDPLAC. Besides, the ARDPLAC 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 linkage council 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 ARDPLAC 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.

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 ARDPLAC 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 ARDPLAC for research problem identification and to reach farmers with agricultural technologies. The historical review of the actors linkage discussed in the literature review part also mentioned that agricultural research and extension organisations were the main actors who were dominating as they were the main initiators of the linkage platforms. 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 ARDPLAC 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 ARDPLAC 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 (see figure 5) meetings were rated as one of the main linkage mechanisms used by the linkage council. However, the meetings and the presentations are technical (E.g. with 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 ARDPLAC. Even if it is mentioned on the rule and regulation of the ARDPLAC 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 ARDPLAC. Furthermore, beside considering their 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 ARDPLAC. This finding is supported with study by (Munayu 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 Munayu 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 (Munayu et. al 2002).

Beside the weak involvement of important actors in East Shoa ARDPLAC, the linkage mechanisms facilitated by the linkage council were also found to be dominated by meeting and field days. These linkage mechanisms are operational linkage mechanisms mentioned by Hawkins (2009). Hawkins (2009) defines these linkages mechanisms as they may be informal and temporary differentiating from structural linkage mechanisms which are formal and institutionally recognised. The communication means used by the actors involved in the ARDPLAC 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 (Demekech 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 (Demekech et al, 2010). As the ARDPLAC 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.

The study also 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 ARDPLAC 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.

In terms of organisational factors, unclear/poor organisational structure of the linkage council was also among the factors hindering the linkage between the actors involved in the ARDPLAC. The key informants responded as the linkage council 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 linkage council. 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 ARDPLAC. According to Peterson (2001) and Leeuwis and Van den ban (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 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.

## **Chapter Five: Conclusion and Recommendation**

### **5.1. Conclusion**

The study was set out to identify the factors hindering effective linkage for rural innovation between the actors involved in East Shoa Zonal ARDPLAC. 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 ARDPLAC, such as the rule and regulation of the ARDPLAC, 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 linkage council was found to be the only guide of the ARDPLAC. However, this rule and regulation lacks specificity in stating roles and responsibilities of either each actor involved in the ARDPLAC 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 is lead to lack of control on shared responsibility. In terms of organisational factors, the ARDPLAC is facilitated by an executive committee without any clearly stated job description and clear organisational structure. The facilitation of ARDPLAC is done as an additional responsibility. This has impacted the linkage negatively as it is highly dependent on the assigned individuals 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 ARDPLAC. The activities of the ARDPLAC 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 ARDPLAC 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 ARDPLAC.

The study has pointed important challenges which can provide an insight towards working for improvement. Despite the shortcomings that lead to the weakness of actors linkage in East Shoa zone, the ARDPLAC 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 ARDPLAC 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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## 5.2. Recommendation

Based on the findings and discussions of the study the following recommendations are given for improving the linkage between the actors involved in East Shoa zonal ARDPLAC for better innovation and improving extension service.

- Considering the availability and number of NGOs and private investors working in agriculture and rural development within the zone and recognising the importance of involving such actors in linkages platforms, for innovation and improving extension service, their representation and participation in the linkage platforms should be considered at high importance. To this end, attention should be given by the facilitators of the linkage in identifying and effectively involving these actors in the ARDPLAC. It is also recommended to identify educational institutes which are important sources of knowledge and information in AKIS to be involved in the ARDPLAC. Their involvement can enhance innovation and agricultural extension information needs.
- One of the activities of the zonal office of agriculture who is one of the main actors in the ARDPLAC is identifying farmers' problems and sharing responsibilities to the concerned stakeholders in the linkage platforms on a yearly basis. But the problems are not identified by involving multiple stakeholders. This show there is no proper facilitation of participation of multiple actors in problem identification and analysis. In addition with the lack of monitoring and evaluation system on shared responsibility that the ARDPLAC had at the moment making sure the actors involved in the linkage to focus their research and development direction according to the needs and priorities of the end users can be challenging. This should be something to be taught with frequent information sharing, proper problem identification and analysis, proper documentation and continuous monitoring and evaluation of the status of the shared responsibilities. Moreover, what is more important is not only to share responsibilities to each actor involved in the ARDPLAC but also to create a mechanism where different actors come together and work on a certain research or development activity in partnership by securing funding's, leading the ARDPLAC to what is called innovation platform and contribute more to the innovation demand.
- Poor organisational structure and lack of human resource and were among the factors hindering effective linkage among the actors involved in the ARDPLAC. Considering the linkage activities as a committee work with additional responsibility requires individual's commitment and accountability. Thus, it is also recommended attention to be given for the linkage council to have its own clear organisational structure with clear mission and vision where individuals are assigned specifically for the activity of its facilitation, having its own budget. Moreover, having such organisational structure and individuals with specifically defined roles and responsibilities who facilitate the linkage helps in outsourcing different budget sources, in designing effective control system, in planning different linkage mechanisms, in having appropriate monitoring and evaluation system and proper documentation of activities.
- The linkage mechanisms facilitated by the ARDPLAC were found to be dominated by meetings where individuals who are heads of organisations come together one time in a year and discuss farmer's problems. However, Linkages are more than that and it should involve individuals who are working on the ground level with farmers and should be functional with established working relations. Yet, it is equally important to invite office heads and people who are involved in decision making. Because issues

discussed in such linkage platforms sometimes also require political decision making. However, as there are also issues which are technical and to be put into practice on the ground the facilitators of the linkage should think of inviting a number of field level experts and/or diversify different linkage mechanisms where field level experts, researchers, farmers and other actors come together.

- The communication means used to share information are also dominated by annual reports. This way of communication might also be a reason that farmers do lack involvement due to the fact related with literacy levels. Thus, due attention should also be given to innovate with communication means like mobile phones to share information between farmers. Using mobiles phones to share for example marketing information between farmers and other actors in product value chains can be one way of achieving one of the purposes of the ARDPLAC related with sharing marketing information.
- The study found out that lack of appropriate planning and monitoring and evaluation system also as one of the factors hindering the linkage. Recognising this it is recommended that the linkage to have its own mechanisms where linkage activities are appropriately planned and shared responsibilities are appropriately monitored and evaluated on regular basis.
- One of the biggest problems of the linkage was found to be budget challenge. The activities of the linkage were found to be highly dependent on project funds. It seems if there is no project there are no linkage platforms. Though, individual organisations who are members can work with other stakeholders depending on their activities with their own initiation, yet the linkage council is important in bringing together all the actors into one platform for solving agricultural and rural development problems and to share those problems between all the actors. In addition, creating functional linkage and partnership saves time, resources and repetition of the same activity by different organisations. Nevertheless, the current situations of the linkage reveal that the linkage is informal and non-institutionalised which let it to face budget challenge from the government. To this end, formalising the linkage may help in getting government fund. However, due attention should also be given in securing budget either from the actors involved in the linkage or other sources. Moreover, it is recommended for the facilitators of the linkage to look into an option of writing different funding proposals and submitting to different funding sources for sustaining the activities of the linkage.
- Governing rule and regulation of the linkage council should be revised and updated regularly adapting into the context it operates. By making the actors involved in the ARDPLAC aware about the activities of the linkage and what roles and responsibilities they should play. Attention should be given by all actors on what it meant by being member in the linkage council and what roles and responsibilities expected from them.

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## Annexes

### Annex 1: Semi structured Interview questions for the management of the Linkage council

*Developed to guide the researcher during interview, not to be filled by the interviewee.*

Date \_\_\_\_\_

1. Name (optional)
2. What is your position in the ARDPLAC?
3. What is the mission of the linkage council?
4. Who are the actors involved in the linkage and what role do you expect from them?

Name of the actor	Expected role by the linkage council

### Linkage mechanisms

5. What are the linkage mechanisms the linkage council is applying to link the actors and How often are the linkage mechanisms are applied?

No	Linkage mechanism	How often	Rank (in terms of frequent use)
1	Evaluation Meetings		
2	Seminars/workshops		
3	Experience exchange tours		
4	Field visits(days)		
5	Joint problem identification		
6	Joint planning		
7	Joint research trials		
8	Joint demonstrations		
9	Information exchange		
10	Resource sharing		
11	Knowledge sharing/ trainings		
12	Technical committees		

6. In what ways do you share information with actors and rank in terms of frequent use ?

No	Communication means	How often
1	Document sharing	
2	Reports	
3	publications	
4	Personal communication	
5	Letters	
6	Phone calls	
7	Electronic mails	

### Involvement of actors

7. How do you rate the participation level of actors in the linkage platforms(as grouped in the table)

No	actors	Involvement ( <i>Weak . ,Moderate ,Active</i> )
1	Research	
2	Extension	
3	Farmers	
4	Unions	
5	Private agribusiness companies	
6	NGO's	
7	Seed multipliers	

8. Based on the participation level mentioned above what do you think are the reasons for actors whose participation is **weak** in the linkage platforms?
9. Based on the participation level mentioned above what do you think are the reasons for actors whose participation is **Moderate** in the linkage platforms?
10. Based on the participation level mentioned above what do you think are the reasons for actors whose participation is **active** in the linkage platforms?

### Organisational structure

11. Who manages the activities of the linkage council?
- 1) Board / executive committee
  - 2) Hired personnel's
  - 3) Other (please specify)
12. If board/ executive committee how are the members of the council are selected?
- A) Through Vote
  - B) Assigned by the government
  - C) Others (please specify)
13. What roles does the management of the council have?
14. Does the linkage council have its own organisational structure? Yes/NO
15. If yes what is the organisational structure of the linkage council? Can you help me draw it?
16. Do you think the structure allow the council to achieve its missions? Yes/No, explain
17. If the structure doesn't allow what changes do you think are required?

### Plan monitoring and evaluation

18. Who are involved in planning of linkage activities?
- A) All the actors
  - B) The management
  - C) Others (please mention)
19. For how long do you plan the linkage activities?
20. What monitoring and evaluation indicators are there for planned activities?
21. Who conducts monitoring and evaluation of linkage activities?
- A) The management of the linkage
  - B) The actors involved
  - C) Technical committee
  - D) Regional and federal level linkage councils
  - E) External evaluators
22. Who conducts monitoring and evaluation of responsibilities given for actors?
- A) The management of the linkage
  - B) The actors involved
  - C) Technical committee
  - D) Regional and federal level linkage councils

E) External evaluators

**Resources**

23. How many people are there working in facilitating the linkage activities?
24. What do you think about the experience of individuals responsible in facilitating linkage activities?
25. What are your funding sources?
  - a. Government
  - b. Actors involved
  - c. Donor organisations
  - d. Other (specify
26. How much was your annual budget in the last year?
27. Do you get enough budgets for linkage activities? Yes/ no
28. What is the trend of the budget in the previous years? a) increasing b) decreasing c) no change
29. Looking into the budget trend what do you think are the reasons?
30. What other resources do you have to facilitate the linkage activities?
31. What resource challenges are there hindering the activities of the linkage council in general

**Policy; Rules and regulations**

32. How do you see the policies/strategies from the government in supporting the linkage activities?
33. Are there supportive rules and regulations by the linkage council in facilitating the linkage between the actors? Yes/ no
34. If yes, When did this rule and regulation was approved?
35. Were all the actors involved during the approval? Yes/ No
36. If not all who were the main actors involved during approval?
37. What were the actors' roles during approval?
38. Do you update your rules and regulations regularly? Yes/ No
39. If Yes whose responsibility is it to update the rules and regulations?
  - a) The management of the council and then informs the actors
  - b) The management of the council in consultation with the actors
  - c) By organising technical committee
40. Are the roles and responsibilities of each actor stated in the rules and regulations? Yes/ No
41. Who monitors if the rules and regulations are kept by all actors?
  - a. The management of the council
  - b. Technical committee
  - c. External body
  - d. Other(specify
42. Are there challenges you faced in relation to the policies of the government or specifically in rules and regulations of the council? Yes/ No. list if yes
43. If Yes for q. 13. What do you think should be done to solve the challenges

**Attitude/ perception**

44. How you do personally became involved in this actor's linkage?
45. How do you perceive the linkage activities? Do you think it is necessary? Please explain?
46. What challenges do you faced so far in your involvement in the management of the linkage council?

## Annex 2. Interview questions for the actors involved

*Developed to guide the researcher during interview, not to be filled by the interviewee.*

1. Name of interviewee \_\_\_\_\_
2. Position in your organisation \_\_\_\_\_
3. Name of the actor(organisation represented)\_\_\_\_\_
4. Which level is your mandate/working area? A) district b. zonal c. regional d. national
  
5. Why is your organisation involved in East Shoa ARDPLAC ?

### Lineage mechanisms

1. In which of the following linkage mechanism your organisation is involved in with other actors in the linkage(put X in the corresponding column )

No	Linkage mechanism	
1	Meetings	
2	Seminars/workshops	
3	Experience exchange tours	
4	Field visits(days)	
5	Joint problem identification	
6	Joint planning	
7	Joint research trials	
8	Joint demonstrations	
9	Resource sharing	
10	Knowledge sharing/ trainings	
11	Technical committees	

2. In what ways do you share information with actors and rank in terms of frequent use (put X in the corresponding column ) ?

No	Communication means	
1	Document sharing	
2	Reports	
3	publications	
4	Personal communication	
5	Letters	
6	Phone calls	
7	Electronic mails	

### Involvement in the linkage

3. What roles do you play in the linkage?
4. What roles as an organisation do you expect from the other actors involved in the linkage (as grouped in the table)?

No	Actors name	Expected role
1	Research	
2	Extension	
3	Farmers	
4	Unions	
5	Private agribusiness companies	
6	NGO's	
7	Seed multipliers	

5. What responsibilities do you have as an organisation by involving in the linkage?
6. Is your organisation satisfied with its representation in the linkage? Yes/ No, and why? explain
7. What factors limit your participation in the linkage activities? Please explain?
8. How do you see other actors representation/involvement in the linkage and possible reason (as grouped)

No	Actor	Representation level (No representation, weak, moderate, Just right, highly represented)	Possible reasons
1	Research		
2	Extension		
3	Farmers		
4	Unions		
5	Private companies		
6	NGO's		
7	Seed multipliers		

### **Rules and regulations**

9. Do you have the copy of the rules and regulations of the linkage council Yes/ no
10. What do you think about the policies of the government and the rules and regulations of the council in supporting the linkage?

### **Organisational structure**

11. What do you think about the organisational structure of the linkage council in supporting the linkage between the actors?

### **Attitude/ perception**

12. How do you personally become involved in this actor's linkage?
12. How do you perceive the linkage activities? Do you think it is necessary? Please explain?
14. What challenges do you faced so far in your involvement in the management of the linkage council
15. In what ways do you think the linkage between the actors could be strengthened?

### **Annex 3: Check list**

*The checklist is for reviewing documents and triangulation of information. The documents expected to be reviewed depending on their availability were the rules and regulations of the linkage council, reports, meeting minutes*

- 1. Organisational structure of the linkage council*
- 2. Trend of actors involvement in the linkage mechanisms*
- 3. Availability of guiding rules and regulations and its support in facilitating the linkage*
- 4. How roles and responsibilities given to actors are monitored and evaluated*
- 5. Resource availability and utilization*