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Research article

The role of institutional actors and their interactions in the land use policy making process in Ethiopia

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ABSTRACT

This study investigates the role of the different institutional actors involved in the development and implementation of land use policies in the Ethiopian Rift Valley. The work is based on interviews with key informants from different administrative levels and these results are compared to the relevant policy documents. While the constitution prescribes a participatory policy development process, our results show that in reality policies are made at the highest level and implemented in a top-down approach from the higher to the lower administrative levels. Moreover, the institutional network mainly consists of institutions that are hierarchically linked, while horizontal and diagonal relations are less common and less important. Consistently, higher level institutions are mostly involved in the development of land use policies, while the roles of lower level institutions are predominantly in the implementation thereof. This lack of participation by lower level institutions, in addition to a lack of capacity and absence of clear institutional mandates, hampers the effectiveness of land use policies. Our results also provide suggestions to improve the development, communication, and eventually the acceptability of land use policies towards sustainable land management.

1. Introduction

Understanding the causes of land use-and land-cover change has moved from simplistic representations of two or three driving forces to more profound insights that involve situation-specific interactions among a large number of factors, explicitly including institutions at different scales (Lambin et al., 2003). Therefore, to understand land-use and land-cover changes, it is important to understand institutions and their effects on land use related decision making (Agrawal and Yadama, 1997; Ostrom et al., 1999). Institutions potentially affect land use changes through policies, decision making structures (e.g., decentralization), information systems, and their management of natural resources directly (Lambin et al., 2003). Consequently, inappropriate policy interventions or policy failure resulting from weak or no law enforcement could contribute to adverse land-use and land-cover change (Colchester, 1993; Geist and Lambin, 2002; Lambin et al., 2003). At the same time, the role of institutional actors has received limited attention in land system science, even though land governance has been identified as one of the main priority themes of land system science (Verburg et al., 2015). Most existing literature is either focused on specific policies, such as REDD (Mertz, 2009) and the European Common Agricultural Policy (Bartolini and Viaggi, 2013) or is strongly conceptual (Verburg et al., 2015). Hence there is a need to study the way different policies and institutions are interacting across multiple levels, to better understand how land use policies impact land use decisions and where failures occur in reaching the policy objectives. In this paper we aim to improve the understanding of land use related policy making processes, using a case study in the Central Rift Valley in Ethiopia.

Roughly 85% of the population of Ethiopia is directly dependent on agriculture for their livelihood, which is threatened by unsustainable land management practices (Meshesha et al., 2012a, 2012b). The country, particularly the Central Rift Valley, has been challenged by a growing population, cropland expansion to meet new demands, and increased competition for land. This has resulted in widespread land use change, in particular an increase in cropland area, including the cultivation of marginal areas. As a result, many areas are affected by land degradation and a reduction of the agricultural capacity of the land, severely affecting rural livelihoods (Ariti et al., 2015; Garedew et al., 2012; Josephson et al., 2014; Meshesha et al., 2012a). Moreover, this widespread land use change has led to drastic decline in natural grasslands, woodlands, and forests. Such land use changes are not unique to Ethiopia, but representative for many regions across the dry tropics (Geist and Lambin, 2004).

Land use policies have the potential to reduce the competition for land and support effective and sustainable land management practices (Habrel, 2015; Stadlinger et al., 2013). On the one hand Ethiopia has issued a number of policies that support the sustainable management of

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land and other natural resources for the last two decades. These include, for example, proclamation number 456/2005 for land, 542/2007 for forest, 197/2000 for water, 299/2002 for environment and the Rift Valley Lakes basin integrated resource development master plan. On the other hand, Ethiopia is one of a few countries in Africa that has not made significant changes in its land tenure system for the past four decades, while the current land tenure systems has been related to the unsustainable management of land and its consequences (Deininger et al., 2012; Meshesha et al., 2012b). A study conducted on sustainable land administration in Ethiopia indicated that while Ethiopia is taking some positive measures in the development of land use policies there are still gaps in the existing sustainable land management practices due to weak and inefficient organizational set-up (Belachew and Aytenfisu, 2010). Other studies conducted on land governance and policy making in Ethiopia also indicated that the current decentralization system have not brought the expected level of public participation (Deininger et al., 2012; Jebessa, 2016). Yet, information regarding the different factors that influence the effectiveness of land use policies and their connection to the institutional organization is lacking. Particularly, IFAD (2009) indicates that information is missing regarding the role of key actors and their networks, the relationships between actors, the kind and source of information used in policy making, and the roles played by different actors in these processes.

The objective of this study is to improve our understanding of the development of land use policies in Ethiopia, and assess the factors that hamper an effective implementation. To that effect we identified the key institutional actors involved in land use policy making, assessed the relationships between these institutional actors, and investigated their roles in the policy making process. In addition, we assess to what extent governmental institutions at different levels are aware of existing policies, and the sources they use to receive and send information to identify potential gaps in communication. Subsequently, we assess the perception of institutional actors regarding the effectiveness of land use policies and the factors that potentially constrain this effectiveness. Our results are based on a series of interviews with key informants from governmental institutions at various administrative levels. In the following sections we present the methods and results of our empirical analysis. In the discussion we analyze how the situation in Ethiopia relates to other situations documented in the literature, and provide potential implications of this situation, while we subsequently provide some suggestions for improved land use policy implementation in this area.

2. Materials and methods

2.1. Study area

Ethiopia is a Federal State with decentralized power, distributed over five administrative levels: national (federal), regional, zonal, wereda (districts), and kebele (sub-districts). Our study area is comprised of two weredas, which are located in the Central Rift Valley of Ethiopia: Adami Tulu Jido Kombolcha and Arsi Negele. The case study area is part of the Oromia Regional State (see Fig. 1), and the weredas are located in East Shoa and West Arsi Zones respectively. The two weredas are further divided into 88 kebeles. At each level, multiple different institutions exist that have a role in the management of land.

A few decades ago, woodland was the predominant land cover in the case study area, followed by grassland (Ariti et al., 2015). However, as food demand increased, in order to feed the growing population, large areas of woodland and forests have been converted into cropland. The increasing demand for land has resulted in the degradation of croplands and grazing lands throughout the Central Rift Valley, due to overgrazing and unsustainable land management (Garedew et al., 2012; Meshesha et al., 2012a).

2.2. Data acquisition and analysis

Based on a review of relevant legal documents, existing scientific and grey literature, and advice from experts from Addis Ababa University,

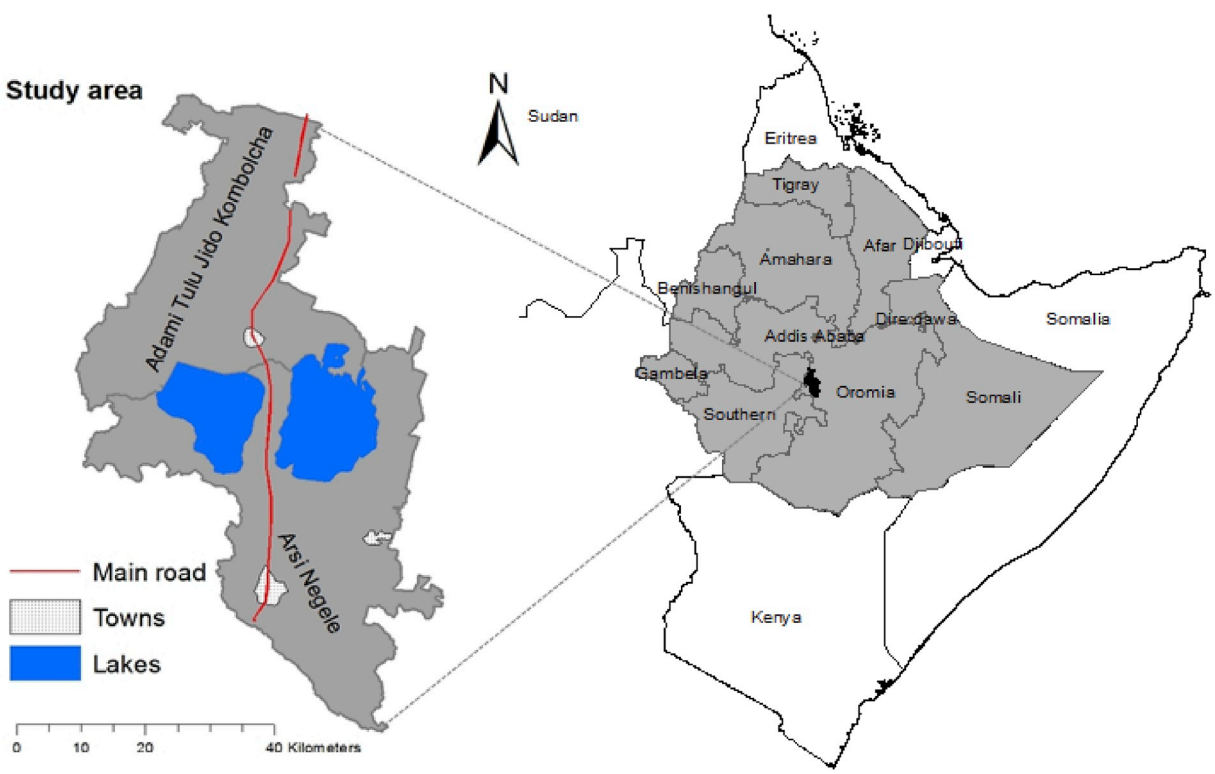

Fig. 1. Regional states of Ethiopia and the location of the case study area (*Full width*).

Civil Service College, the Ministry of Agriculture and Natural Resources (MoAGNR) and the Oromia Bureau of Rural Land and Environmental Protection (BoRLEP), we identified all institutions that are involved directly or indirectly in the development and implementation of land use policies at each of the five administrative levels. At the federal level, land use policy making is primarily the responsibility of MoAGNR, while other ministries and authority also have legislative power on related topics, including the Ministry of Water, Irrigation and Energy (MoWIE), Ministry of Environment, Forest and Climate Change (MoEFCC), the Ministry of Culture and Tourism (MoCT), the Ministry of Mines (MoM), Rift Valley Lakes Basin High Council (RVLBHC) and Rift Valley Lakes Basin Authority (RVLBA). For example, MoAGNR is responsible for initiating new land use policy ideas and amendment of existing ones while MoWIE is responsible for watershed land use plan and management. Furthermore, MoEFCC, MoCT, MoM and Ethiopian Agricultural Investment Land Administration Agency (EAILAA) are also responsible to promote sustainable social and economic development through the sound management and use of land and other natural resources while RVLBHC and RVLBA are responsible for the implementation of Rift Valley Lakes basin integrated resource development master plan. Abijata Shalla Lakes National Park (ASLNP) is also responsible for the management and protection of natural resources within the park.

At regional level, the responsibility for land use policy making primarily rests with BoRLEP, while other regional bureaus also have responsibility in land use related policy making, including the Bureau of Water, Mines and Energy (BoWME), Bureau of Culture and Tourism (BoCT), Bureau of Investment Commission (BoIC), Oromia Irrigation Development Authority (OIDA), and Oromia Forest and Wildlife Enterprise (OFWE). The Oromia Water Works Design and Supervision Enterprise (OWWDSE) is also currently developing a land use plan for the region in collaboration with BoRLEP while the Oromia Planning Institute is also responsible for the development of plans for the use of land.

Most of the institutions that exist at the regional level have offices at zonal and wereda level. For example, BoRLEP has similarly named branches in all zones and weredas within Oromia. At kebele level, the Land Administration Committee is responsible for handling all land-related issues. Each kebele is further subdivided into three kebele zones and each kebele zone, in turn, is divided into geres, each consisting of five farmers. However, there are no specific land use policy related institutions below kebele level.

From each of the ministries, authorities, agencies and regional bureaus identified above, we contacted one interviewee, as recommended by the top management upon a prior formal request. Institutions at the kebele level were contacted using a random sampling technique to select 19 kebeles out of the 88 kebeles in the study area (Table 1). The purposive sampling of key informants for our interviews was designed with the aim to get a complete coverage of all relevant institutions and thus strive for completeness.

Before contacting our key-informants directly for an interview, we contacted the top management of the respective institutions with a formal letter asking for permission to conduct the interview. After receiving permission, interviewees were informed about the purpose and content of the study and the confidentiality of their responses during and after the research. Interviewees had the option to opt out of the interview or in answering individual questions. Accordingly, all the interviews were conducted under the conditions of free and informed consent, between January to May 2016.

The semi-structured interviews consisted of a combination of closed and open questions. The closed questions were used for quantitative analysis. Inherent to the administrative structure the number of interviews at the different levels was limited, not allowing for statistical analysis. Open questions provided additional information for the interpretation of the results. The questions that were used in the interviews were first pre-tested and subsequently revised based on the feedback received during pre-testing. The questions were designed to provide insights in four important aspects of land use policy making in Ethiopia: 1)

Table 1
Overview of stakeholders interviewed for this study. Abbreviated institutional names are written in full in the main text.

Level	Institutions	Location of the interviews	Sample size	Sampling methods
Federal	MoAGNR, MoWIE, MoCT, MoM, MoEFCC, EAILAA, RVLBA, Abijata Shalla Lakes National Park (ASLNP)	6 in Addis Ababa 1 Hawassa and 1 in Arsi Negele	8	Purposive sampling
Regional	BoRLEP, BoWME, BoAGNR, BoIC, BoCT, OIDA, OFWE-HO, OFWE-AN, Planning institute	8 in Addis Ababa 1 in Arsi Negele Wereda	9	Purposive sampling
Zone	From both zones in the case study area: BoRLEP, BoWME, BoAGNR, BoIC, BoCT, OIDA	East Shoa Zone (6) and West Arsi Zone (6)	12	Purposive sampling
Wereda	From both Weredas in the case study area: BoRLEP, BoWME, BoAGNR, BoIC, BoCT, OIDA	Adami Tulu Jido Kombolcha (6) and Arsi Negele (6)	12	Purposive sampling
Kebele	19 Kebele Chairmen	Adami Tulu Jido Kombolch (10) and Arsi Negele Wereda (9)	19	Random sampling used to select out of 88 kebeles

Table 2
Potential role of government institutional actors.

Potential roles of institutions related to land use policies	References*
Land use policy making (LUPo)	a,b,c
Land administration (LAdm)	b,c
Legal framework (LF)	a,b,c
National programme design (NPD)	b
Regional programme design (RPD)	b
Establishment of conservation areas (ECA)	b
Capacity building (CB)	b,c
Enforcing land use plans/policies (PE)	b,c
Land use plan making (LUPl)	b,c
Implementation of land use plans (LUPIm)	b,c
Monitoring of land use plans implementation (M&E)	b,c
Translating strategies into action (TSA)	b

* References: a) Deininger et al. (2012); b) FAO, 2014; and c) Proclamation no 456/2005.

the relation between the different institutional actors, 2) the role of these institutional actors in the policy making process, 3) policy awareness, flows of information, and the means for communicating information between different institutional actors, and 4) the perception of the efficiency of land use policy making in the Central Rift Valley and the causes of any potential inefficiency. Land use policies in this study include both proclamations (laws) and regulations provided by governmental institutions (Birkland, 2005). All results were subsequently coded, summarized, and analyzed.

To each interviewee, we asked with which other institutions they had a working relation, the nature (direction) of this relation, and the strength of this relation. We categorize the nature of relations as horizontal, vertical, or diagonal. Horizontal relations indicate when two institutions both act at the same governmental level (i.e. the relation between one zonal institute and another zonal institute), vertical relations indicate relations between one institution at a certain level, and its direct counterpart at a higher or lower level (i.e. the relation between the regional BoRLEP, and its zonal BoRLEP offices), and diagonal relations indicate all relations across different institutional levels, where those do not involve strict subordinates (i.e. from the zonal BoRLEP, to a regional BoWME). The relationship among the different institutions are categorized as “weak” or “strong” based on the responses of the participants. If more than 50% of the interviewees indicated a weak relation, we label it as weak and vice versa. These relations were compared with the structure as indicated in the legal documents describing policy making in Ethiopia.

To identify the role of each institution, key-informants were asked to select from a list of possible roles. A number of potential roles of governmental institutes were derived from literature, as presented in Table 2. Subsequently, we asked interviewees to identify land use policies they recognize, from a list of ten major land use policies (Table S1). These ten policies were selected based on our literature review and advice from experts from Addis Ababa University and Civil Service College, who are currently working on environment, law, policy, and governance.

We also asked interviewees to indicate the sources (institutions), types of information and the media used to receive and disseminate to understand the flow of information and means of communication. In addition, interviewees were asked with an open ended question to express their opinion about the effectiveness of the land use policies provided in the list as well as the underlying factors associated with this effectiveness. In particular, we asked how information is exchanged between different institutions as well as between institutions and other stakeholders, in particular local land managers (i.e. farmers) using multiple different media. We assessed these media from the sending as well as the receiving side, and subsequently assessed the preferred media for communication for land use policies in order to assess the efficiency of communication.

3. Results

3.1. Relationship between the institutional actors

The governmental structure in Ethiopia is based on a combination of bottom-up and top-down relations. On the one hand, the federal constitution stipulates that adequate power be granted to the lowest units of government to enable people to participate directly in government affairs. On the other hand, institutions at the lower levels have the obligation to cooperate with the ministries in the implementation of land use policies as most proclamations (e.g. 456/2005, 299/2002, 541/2007, 542/2007) put such provisions. Fig. 2 schematically presents the relations between different policy institutes and the strength of these relations. One interviewee from the regional bureaus also said:

> “In addition to implementing federal policies, we have the mandate to develop regional policies within the framework of federal policies. The regional council, executive committee and bureaus at regional, zonal, wereda and kebele level, including geres, are involved in the process”

Constitutionally the House of people's Representatives (HPR) has the power to enact federal laws or policies for the utilization of land and other natural resources such as rivers and lakes crossing the boundaries of the national territorial jurisdiction or linking two or more states. The Council of Ministers (CoM) is responsible to initiate and organize the policy process before it is approved by HPR. At regional level, the Regional Council and the Executive Committee of the regional state are responsible for enacting regional policies and implementing both federal and regional policies respectively. Regional states have the power to make policies on matters that are under their jurisdiction, that have effect only within their regional state and under the framework of federal policies. For the development of these proclamations, ministries and governmental agencies are required to consult relevant actors at all administrative levels. However, in practice this principle is hardly implemented as key policies tend to be initiated and formed at the federal government, according to the interviewees. Most policies are presented to lower level institutions for confirmation rather than genuine consultation, and policies are seldom modified once presented. Nearly 87% of the interviewees believe that the policy formulation process is not participatory but directive and top-down. One interviewee at federal level has indicated:

> “Setting agenda for a policy is primarily the responsibility of the respective ministry. Once the agenda is accepted by the CoM, draft policies are prepared for discussion by stakeholders. Different stakeholders such as ministries, regional, zonal, wereda bureaus, and kebeles are involved in the policy process until it is approved by HPR”.

While the responsibilities for policy making are clear in theory, the practical implementation is not unambiguous, causing conflicts between various administrative levels. For example, article 52(20) of the federal constitution gives the power to administer land and other natural resources to the regional governments. However, the federal government is administering rural investment land through EAILAA, which is established by proclamation number 283/2013. Accordingly, some rural lands in the study area are transferred to EAILAA to be used for future agricultural investment. Here policies are developed as well as implemented by federal institutions, bypassing the legal provision that grant power to the lowest unit of government. As a consequence interviewee at all administrative levels indicated that there is an ambiguity regarding the assignment of responsibilities at each decision

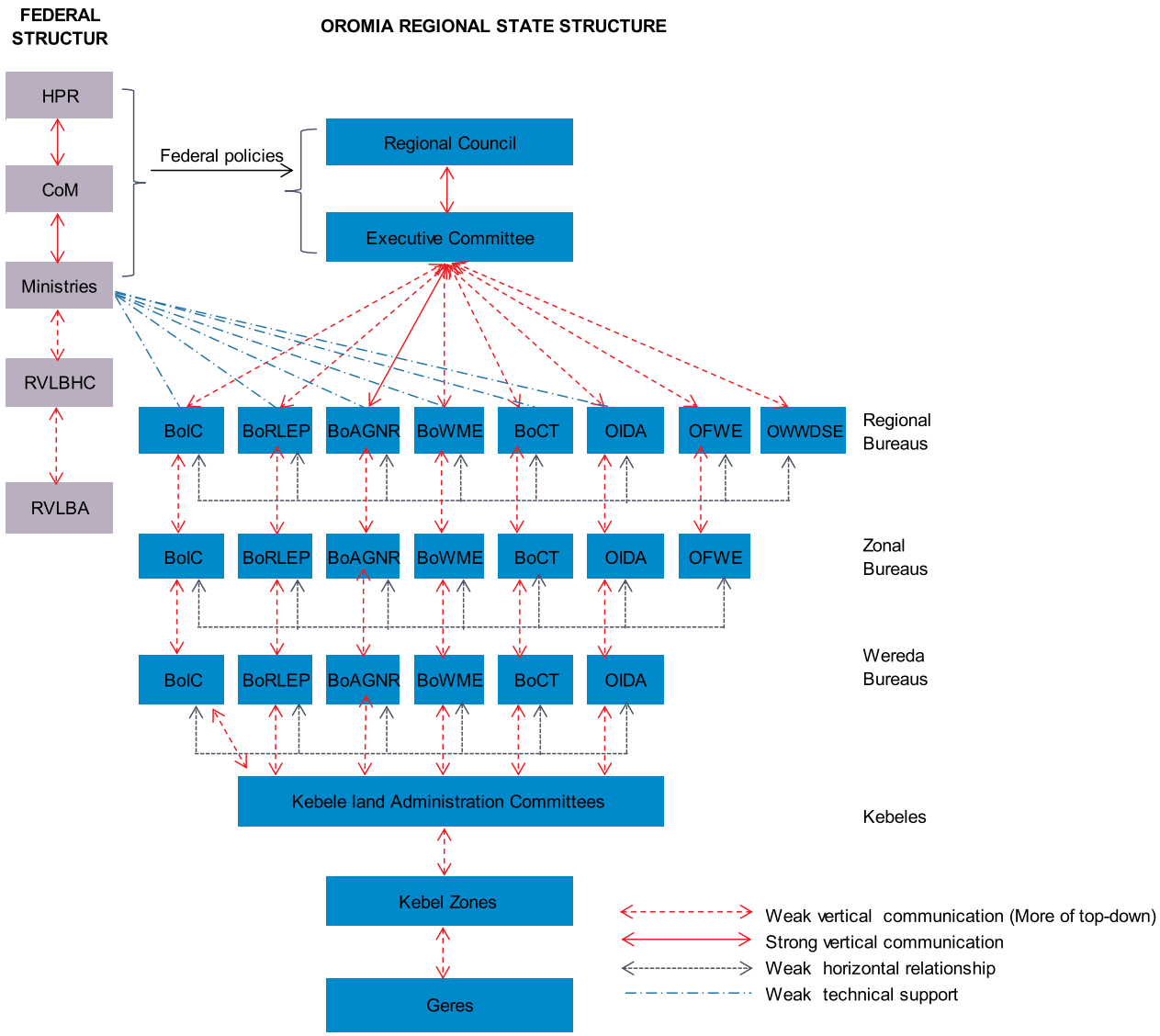

Fig. 2. Institutional set-ups and governance structure for land use policy making at all administrative levels. Abbreviations are explained in the main text.

making level, especially with respect to land administration and translation of strategies in to action.

In order to support the implementation of proclamations at the regional and lower administrative levels, the federal government issues regulations, which are guidelines for the implementation of proclamations. However, regulations are typically developed long after proclamations are issued, and this delay has caused uncertainty as well as confusion at regional and lower level institutions. As a consequence, 75% of the interviewees believe that the wide delegation of federal mandates to lower levels of government comes without detailed policy implementation guidelines. Similarly, 88% of the interviewees state that defined mandates of institutions are missing, while 75% indicate that appropriate implementing institutions themselves are missing at various administrative levels. For example, article 13 of the rural land administration and land use proclamation (number 456/2005) indicates that an equitable water use system shall be established between upper and lower watershed communities. However, while the total amount of available water is limited, OIDA as well as the wereda-level BoWME claim the water for their own purposes. As a consequence there is a conflict between the two institutions as well as upstream and downstream users, especially during periods of water scarcity and during the dry season. Legally, the relation between both institutes and their objective has not been clearly demarcated, and this absence of implementation guidelines gives rise to conflict over the water rights in the study area.

More than 83% of the interviewees also indicated that there is a role overlap among the different institutions working at different levels. For example, at federal level the MoWIE has commissioned the Rift Valley Lakes basin integrated resource development master plan to be used for 30 years starting from 2010. At the same time, the OWWDSE is developing another land use plan for the same area indicating a lack of coordination with the federal institutions which will likely yield a waste of resources and potential conflicts. It is not yet clear whether or not both plans contradict, but this is expected because there has not been any coordination about the existing master plan according to the information obtained from the RVLBA. There is an absence of clear mandate among institutional actors. For example, there is confusion on the role of MoWIE and RVLBHC regarding the accountability of RVLBA. The RVLBA has dual accountability, firstly, to the RVLBHC on matters that fall within the mandate of the latter, and secondly, to the MoWIE on matters falling under its jurisdiction (Article 10). However, there is no specific provision in the proclamation or other detailed guideline indicating on which

Table 3
Summary of potential policy roles of institutions at each administrative level.

Level	Sample size	Role in the land use policy and implementation process (%)											
		LUPo	LAdm	LF	NP	RP	ECA	CB	PE	LUPl	LUPIm	M&E	TSA
Federal	8	50	38	63	50	13	0	63	38	25	13	25	25
Regional	9	22	56	56	33	89	56	89	33	33	33	33	89
Zonal	12	17	58	17	8	67	42	92	25	17	0	8	75
Wereda	12	17	75	42	0	33	33	67	33	0	0	0	100
Kebele	19	11	100	16	0	26	95	53	0	0	0	0	89
Total	60	20	72	33	13	43	53	70	22	12	7	10	80

LUPo = Land use policy making, LAdm = Land Administration, LF = Legal Framework, NP = National Programme, RP = Regional Programme, ECA = Establishment of Conservation Areas, CB = Capacity Building, LUPL = Land Use Planning, LUPIm = Land Use Plan Implementation, M&E = Monitoring and Evaluation, PE = Policy enforcement, TSA = Translating Strategies into Action.

specific issues the authority is accountable to each institution, which in turn may open the way for conflicts of mandates. Consistently, 65% of the interviewees believe that policies are not integrated or harmonized and only 43% believe that there is lack of institutional consistency at all levels. Besides the direct hierarchical relations between ministries and their related bureaus at lower administrative levels, there are also diagonal relationships, i.e. relations between bureaus of different lines of hierarchy to which they do not belong officially. As a consequence, some bureaus might have a mixed loyalty. For example, the Oromia BoRLEP is technically accountable to both the MoAGNR and the MoEFCC, while it is also directly accountable to the Executive committee of the regional government. These diagonal relations, however, are generally very weak, according to our interviewees, and therefore not displayed in Fig. 2.

3.2. Roles of institutional actors

Governmental institutions have a range of different roles in relation to land use policies. The most commonly performed roles of policy institutions at all levels combined are land administration (72% of all institutes interviewed), capacity building (70%), establishment of conservation area (53%), and the translation of strategies into action (80%). On the other hand the development of land use policies, land use planning, implementation of land use plans, and monitoring and evaluation are done by only few institutions (Table 3). The performed roles of institutions differ from one level to the other. For example, only few institutions, particularly at federal, regional and zonal level, are involved in the development and implementation of land use plans while none of the institutions at wereda and kebele level were involved in this activity. By contrast, the establishment of conservation areas, land administration, and translating strategies into action are mostly done by lower level institutions (Table 3). A more detailed overview of the roles performed by each institution is provided in Table S2. The division of tasks mostly follows the institutional hierarchy, with strategic tasks, such as the development of land use policies, being centered at the higher levels, and operational tasks being performed by lower institutions. This division suggests an absence of participation by lower administrative levels in the policy development process (See Table 3, LUPo). Consistently, the role of land administration increases as we go down from federal level to the kebele level (See Table 3, LAdm).

3.3. Policy awareness, information flow and communication among institutional actors

On average, interviewees recognized three out of the ten land use policies provided in Table S1 and only 15% of the interviewees could recognize more than four. Generally, actors at higher administrative levels were able to recognize more policies than actors at the lower administrative levels, and none of the actors at the kebele level could recognize more than one (Fig. 3). According to the information obtained from the interviewees, lack of awareness is mainly associated with lack of participation on policy matters and lack of communication among actors which, in turn, have affected the effectiveness of land use policies contributing to unsustainable land and other natural resources management in the study area.

Almost all interviewees indicated that they receive information for their decision making from higher level institutions, such as ministries (See Fig. 4). At the same time, respondents indicate that much less information is received from lower level, from other institutes at the same level, and through diagonal relations. The flow of information confirms our earlier finding that policies are, in practice, designed and implemented in a top-down fashion as most of the information originates at the top level and there is only little bottom-up initiative. This pattern of top-down communication was found at all administrative levels.

Generally, we find that the types of information that are sent and received coincide very well (see Table S3). For example, the most widely received and disseminated information is about higher level plans (97 and 92 percent respectively), lower level plans (88 and 85 percent respectively) and land tenure (80 percent in both directions). Considering that this information is received by most stakeholders, irrespective of their administrative level, indicates that this information is well distributed. On the other hand, information that is crucial for land use policies, such as land resources, current land use, current infrastructure, legislations, and environment impact assessment are both sent and received to a lower extent, mainly due to the loss of institutional memory. For example, the researcher received the following responses from 12%, 8% and 15% of interviewees respectively in their response to challenges:

> "…1) as I am new to this position I cannot exactly tell you what was happening before…2) when I came to this position I did not receive any working document from my predecessor …3) though it was Mr X who had participated on that particular policy consultation he has neither reported nor left any document when he left the institution …".

The researcher also observed that among 12 institutions that were listed to have participated in the Rift Valley Lakes basin integrated resource development master plan, only 3 have the institutional memory and the rest do not have any idea about the plan.

While there is little difference between the information that is disseminated and the information that is received, we do find large differences between the various administrative levels. Kebeles disseminate and receive information about a wide range of topics, followed by the federal level, while zonal institutions communicate about a smaller number of topics, on average (Fig. 5) indicating some disconnections in the overall hierarchy.

Almost all interviewees indicated that they do not receive all the information that they demand (Fig. S1 top). For example, 93% of the interviewees indicated that they are not regularly updated on land use policies, laws, and regulations. While there was some variation, a lack of information was identified for all different types of communication. Consistently, almost all interviewees also indicated that they do not

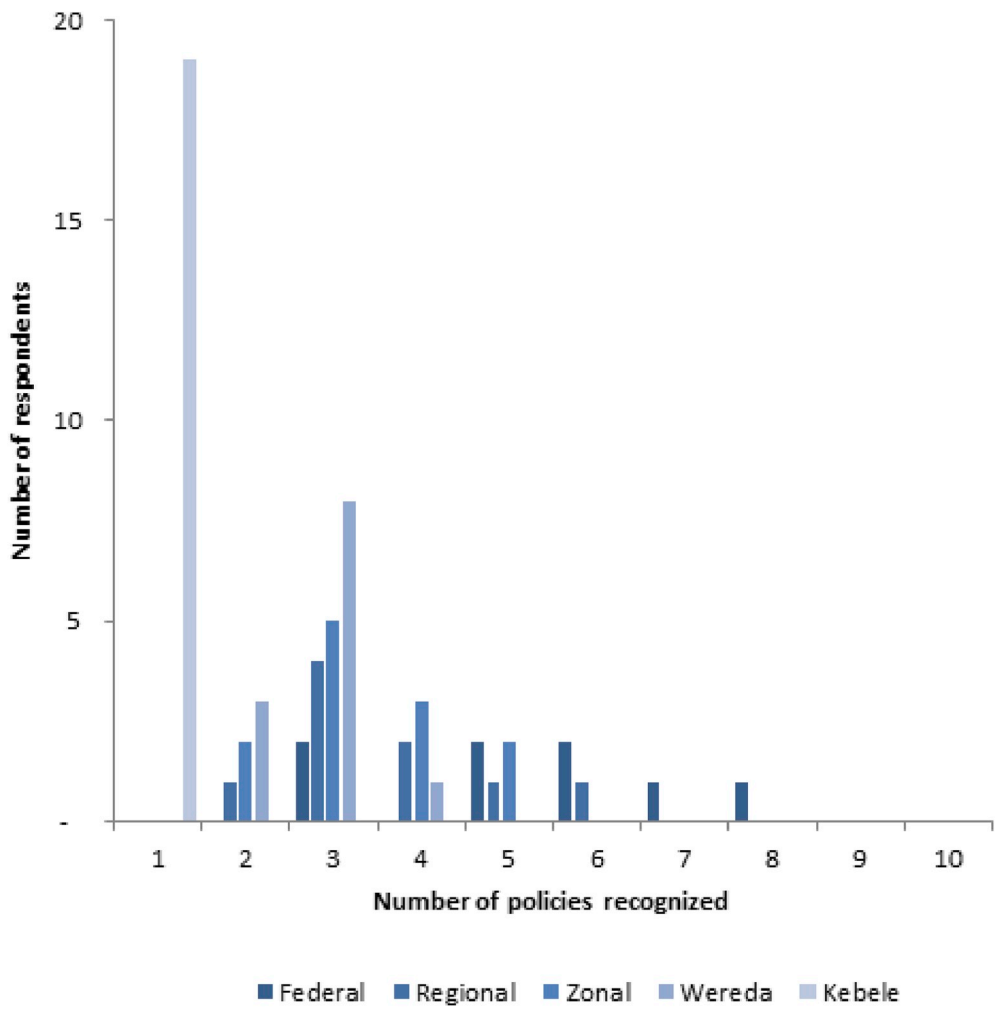

Fig. 3. Policy awareness of interviewees at different institutional levels. Interviewees were asked to indicate those policies which they are aware of from the list of 10 policies provided to them.

provide all the necessary information to other institutions (Fig. S1 bottom). For example, about 89% of the respondents indicated that the information they provide is often outdated, while 63% of the respondents believed they provided incomplete or incorrect information. The poor communication is illustrated by the provision of the Rift Valley Lake basin integrated resource development master plan to the relevant actors. This plan was approved in 2010, but the knowledge of the plan is very low at all administrative levels as the plan was not adequately communicated. As a consequence, only 8% of the interviewees were aware of even the existence of the authority that implements the plan 5 years after its establishment. Another illustration of this inconsistency is the information we obtained from MoCT, ASLNP, and MoWIE, regarding the size of Abijata Shalla Lakes National Park. These institutes indicated the size of the park to be 799, 887, and 1361 square kilometers, respectively.

Information is communicated between different institutions by means of a wide range of different media. Almost all actors indicated that the types of media used for sharing information have an impact on the efficiency and effectiveness of policies. The most commonly used media are letters, meetings/workshop, and telephones (Fig. 6). Moreover, the means for disseminating and receiving information largely coincide for the different types of media at different administrative levels. However, the types of media used vary from one level to the other. For example, magazines, flyers, posters, and social media are not used at the kebele level, which is the level where many policies are actually implemented. The media currently used to disseminate and receive information follow the preferences for receiving information remarkably well (Fig. S2). However, interviewees indicated that there is a desire to receive more information via digital media, especially e-mail, websites, and social media. These media would allow for a much quicker dissemination of information to large groups of stakeholders, which are not possible using letters, meetings/workshops, and telephone calls. It should be noted that institutions at the lower level are generally more restricted in their preferences: while federal institutions want to use all media, the use of letters, meetings, radio, and telephone calls is much preferred at the kebele and wereda level.

While some efforts are being made to digitize the land management system at some of the federal and regional offices, access to information by actors is challenged by lack of appropriate infrastructure to channel the information. 46.7% of the interviewees indicated that the effectiveness of the land use policy have been affected by the type of media used to collect and disseminate policy related information. They also believe that there has to be a unified land information system which ensures cooperation and coordination at all levels to bring sustainable land management.

3.4. Perception of land use policy effectiveness

Almost all institutional actors, irrespective of their administrative level, acknowledged that many land use policies are ineffective. Most stakeholders at federal and regional levels have also indicated that the effects of existing land use policies are not visible on the ground. Some of the major reasons for this perception of ineffectiveness relate to the ambiguity in the

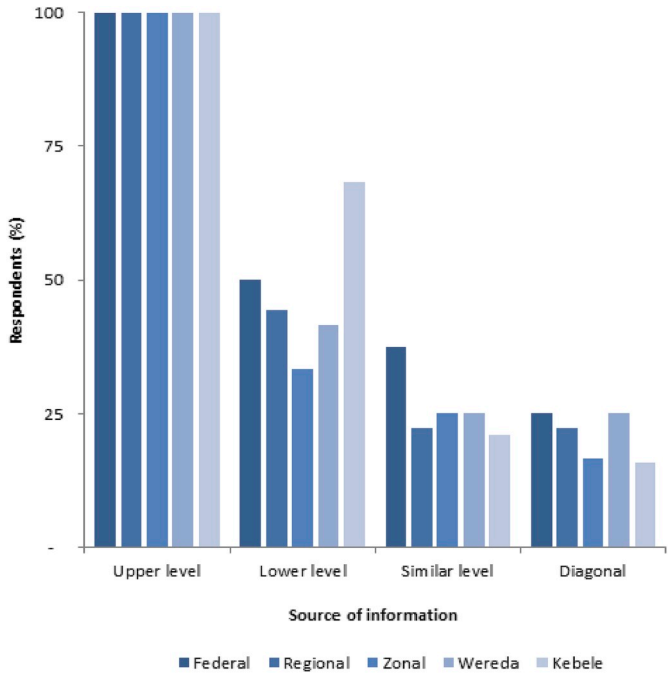

Fig. 4. Institutional levels from which information is received. A response to the question: "who are your information sources?" Upper, Lower, Similar, and Diagonal refer to the type of relations as identified in the institutional structure of Ethiopia (shown in Fig. 2).

institutional network, as identified above. In addition, interviewees indicated that a lack of capacity in terms of financial and human resources, a lack of ownership or commitment, a lack of communication due to the absence of a central database and appropriate media, and a lack of law enforcement all played an important role in this ineffectiveness (Table 4). While some differences exist between the various administrative levels, no clear pattern could be detected, and the factors hampering the effectiveness of land use policies were confirmed by interviewees at all levels. Absence of clearly defined roles, failure to communicate policies to actors, lack of capacity, poor policy enforcement, lack of coordination and networking among actors are some of the most widely recognized factors for the ineffectiveness of land use policies at almost all institutional levels. In addition, interviewees at federal level perceived a lack of appropriate institutions at lower administrative levels to be another major factor for the ineffectiveness of land use policies, which suggests a lack of communication or coordination between levels, as this problem was hardly mentioned by lower level institutions (Table 4). Hence, 95% of the interviewees showed a demand for improved or new land use policies to sustainably use existing land and other natural resources by accommodating the needs of the ever growing population in the Central Rift Valley.

4. Discussion

4.1. The role of institutions in the development and implementation of land use policies in the Central Rift Valley

The relationship between institutional actors from different levels in Ethiopia can be characterized as top-down and non-participatory. Other relationships, namely vertical, horizontal, and diagonal were generally weak and ambiguous due to a lack of detailed policy implementation guidelines resulting in role overlap. This situation is not unique for Ethiopia as similar observations have been made for other countries in Africa, Latin America, Asia and Australia (Deininger et al., 2012; AUC-ECA-AfDB, 2010; Potts et al., 2016). Consistently, poor communication lack of networking and lack of coordination were mentioned as factors contributing to the ineffective implementation of land use policies. Such factors, in turn, could be related to an inappropriate institutional architecture, which is characteristic for many developing countries (Crosby, 1996). This hampers effective implementation of policies, which, in turn, constrains selection of the right institutions for implementation on the ground.

The role of governmental institutions changes with the level of institutions. While higher level institutions are mostly involved in the development of policies, lower level institutions are primarily involved in their implementation. This result is consistent with the top-down relations found in the institutional network, and confirms the lack of participation in the development of land use policies in Ethiopia. Studies conducted in most African countries indicated that similar trends of stakeholders' low level of involvement in the development of land policy (AUC-ECA-AfDB, 2010).

We found a low awareness of existing land use policies, which was primarily related to a lack of information, due to lack of communication and coordination. We also found that there is no central database and appropriate infrastructure for receiving, processing, and disseminating policy related information. Adequate and efficient communication among institutional actors is essential for the development and implementation of efficient land use policies (Aynekulu et al., 2006; Guston et al., 1997). Lack of information on the available land, its carrying capacity, and insight in resource management options could aggravate resource conflicts (Jansen et al., 2007). In particular, Ethiopia would benefit from a unified information system, to support cooperation and coordination amongst all administrative levels for sustainable land management (Brodnig and Mayer-Schönberger, 2000). This could include an appropriate infrastructure and established approach for the acquisition, processing and dissemination of policy related information (Belachew and Aytenfisu, 2010). It is also crucial to consider whether the demand for and the supply of information among institutional actors are adequately addressed to support informed and substantive decisions (Guston et al., 1997). Stakeholders also indicated a perceived ineffectiveness of existing land use policies, due to ambiguity in institutional network, lack of communication among stakeholders, and lack of capacity. Similar findings are observed in most African countries indicating that the effectiveness of land use policies to have been affected by lack of capacity, poor communication systems and poor networking (AUC-ECA-AfDB, 2010).

4.2. Implications for improved development and implementation of land use policies in Ethiopia

The government of Ethiopia has been issuing various policies for sustainable management of land and other natural resources for the past four decades. However, many areas within the country and within the Central Rift Valley in particular, are still suffering from land degradation and land-use and land-cover change (Garedew et al., 2009; Meshesha et al., 2012a, 2012b) and unsustainable land management practices. This could be due to lack of participation by lower administrative levels on policy matters that affect the study area (Deininger et al., 2012; Jebessa, 2016). Increased competition for land is, for a large part, the result of increased population pressure, which directly affects land use through agricultural changes (Josephson et al., 2014; Muyanga and Jayne, 2014), as well as indirectly through urban expansion, as has been observed in Ethiopia as well as in the rest of the world (Abo-El-Wafa et al., 2017; van Vliet et al., 2017). Moreover, a lack of institutional coordination, capacity, policy harmonization, and other factors also contribute to poor governance of land (Ariti et al., 2015; Dietz et al., 2003; Garedew et al., 2009; Potts et al., 2016; Stadlinger et al., 2013). These challenges are not unique only to Ethiopia but also common to other African countries (AUC-ECA-AfDB,

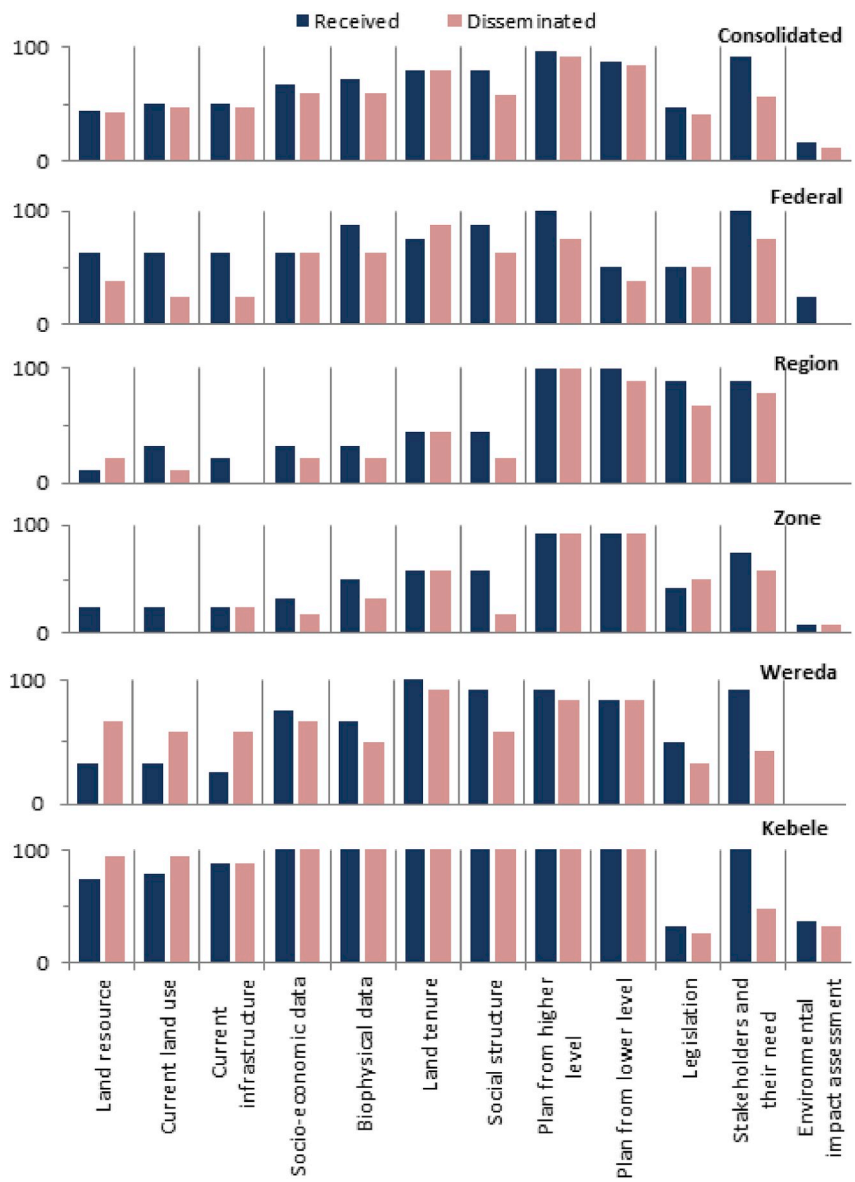

Fig. 5. Summary of interviewees' response to the question "what information do you receive and disseminate in the land use policy making and implementation process" by interviewees at different institutional levels.

2010; Deininger et al., 2014; Orchard and Stringer, 2016).

Unsustainable land management practices are common in many countries in Sub-Saharan Africa. While unsustainable land management has been reported in developed countries, such as in Europe and the United States (Toth, 2012; Gibbs and Salmon, 2015), the situation in sub-Saharan Africa is further aggravated by the vulnerability to land degradation and climate change impacts (AUC-ECA-AfDB, 2010). Moreover, these countries are characterized by an increasing competition for land due to increasing population as well as influx of foreign investors in the region (Jayne et al., 2014). As many countries in sub-Saharan Africa are characterized by a weak institutional network, improved policy making procedures, including inclusive processes and more integrated approaches, could be a first step towards improvement (Cordingley et al., 2015). The combination of these factors creates a double-edged sword as the areas that are most vulnerable are also those where the implementation of land use policies is least efficient. Yet, at the same time, this offers ample opportunities for improvement towards sustainable land management.

Our results indicated that institutions have a low capacity in enforcing land use policies as well as little participation in the policy development process. In developing countries, state actors or agencies find it difficult to enforce policies, laws, and regulations effectively due to financial, technical, and human resource constraints (Thapa and Rasul, 2006). Successful policy development and implementation requires active participation of the public, which again requires reliable information, political acceptance, commitment of institutional actors, and active monitoring of policy implementation (Ariti et al., 2018; Reed, 2008; Reinikainen et al., 2016).

In this context it is promising that while most stakeholders indicated the inefficiency of existing land use policies, they also showed an interest for improved or new land use policies. Based on our analysis we find that existing land use policies in Ethiopia are fragmented over multiple different ministries and agencies, which hampers coordination and consistency. Consistently, the roles and mandates of the different institutions at each administrative level are not clearly demarcated. Moreover, we find that, although the constitution grants decision

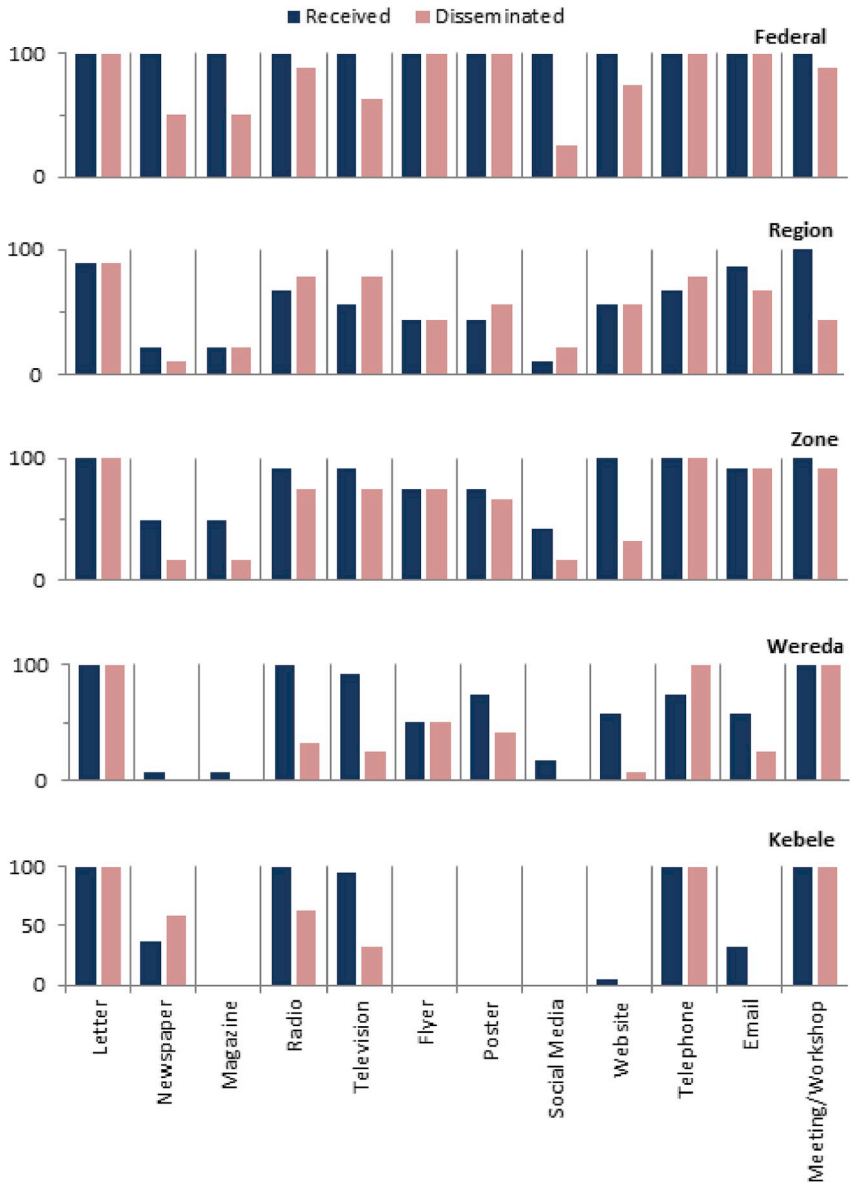

Fig. 6. Summary of interviewees' response to the question "which media do you use to receive and disseminate land related information?"

Table 4
Perceived reasons for policy ineffectiveness (Participants were asked to specify major reasons behind policy ineffectiveness).

Reasons for ineffectiveness of LUP/policies	Respondents (%)				
	Federal [n = 8]	Regional [n = 9]	Zonal [n = 12]	Wereda [n = 12]	Kebele [n = 19]
The land use policies are not being enforced as planned	100	78	83	92	89
The effects of the policy/plan are not visible to institutions	50	56	25	25	16
The costs of the plan are not as predicted	63	56	33	33	5
The assumptions of the policies/plans are not correct	25	44	42	0	21
The goals of the policies/plans are not valid	0	0	33	0	0
Institutions at different levels are not effectively linked	88	89	100	100	95
The roles of institutions are not clearly defined	100	89	100	100	95
The plan/policy is not communicated to actors	100	67	67	83	95
Lack of capacity of institutions	100	67	75	92	89
Lack of commitment/ownership by actors	100	56	100	83	32
Lack of coordination among actors	100	89	100	100	79
Lack of appropriate institutions	88	11	8	0	21

making power to the lowest possible level, most land use policies are actually made at the federal and regional levels with little or no participation by local governments in the process. Such inconsistencies may have an impact on the current and future livelihoods of the society and sometimes cause lack of ownership as well as strong opposition from local governments in their implementation. Hence, a further decentralization of decision making would improve the policy making process, but requires building the capacity of local governments in

skilled manpower, technology and financial resources. Besides increasing the capacity of local actors to implement such policies, an increased incorporation of bottom-up influence would help in the acceptability of policies, and decrease the potential of civil unrest as has been experienced in Ethiopia in 2016.

Also other countries in sub-Saharan Africa are characterized by policy development processes similar to what we observed in Ethiopia. Those development processes have typically little or no participation of relevant actors at lower level (Cordingley et al., 2015; Jayne et al., 2014). Therefore, we expect that our suggestions to improve the policy development process by making it more inclusive, as well as the suggestions to improve communication and coordination between institutions at different governmental levels, could also benefit these countries. Such improvements could greatly increase the acceptability and thus ownership of policies, especially in countries that are suffering from lack of appropriate organizational architecture, scarcity of skilled manpower and financial resource to effectively implement policies (Crosby, 1996).

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Appendix A. Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jenvman.2019.02.059.

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