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STAKEHOLDER LINKAGES FOR SUSTAINABLE LAND MANAGEMENT IN DANGILA WOREDA, AMHARA REGION, ETHIOPIA

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Abstract

This paper presents stakeholder types involved in sustainable land management (SLM), their interests and interactions in Dangila woreda (district), Amhara Region, as a case study site. Data were collected from April to June 2011 and in October 2012 from a questionnaire survey of 201 rural households and 19 agricultural experts, through observation, and from formal and informal discussions. Results indicate that landholder and landless farmers, women, development agents (DAs), and Rural Kebele Administration (RKA) offices were major stakeholders involved in SLM activities in the study areas. These stakeholders were found having different interests regarding SLM issues. The linkages of farmers with DAs and RKA offices were observed to be strong but farmers' participation in new technology selection was found to be low. Farmer interactions with Woreda, Zone and Region level experts were observed to be weak focused on top-down planning and upward reporting. Over 47% of experts interviewed in the woreda agriculture office were assigned to perform duties outside of their expertise profession and nearly 36% of them reported that their working environment was not very good and motivating. Greater than 94% of experts assessed indicated their incentives for work to be low. It is argued that enhancing farmer participation in SLM decisions and establishing good and motivating incentives and working environments could improve stakeholder interactions for SLM in the study areas.

Key words: *Stakeholders; farmer-expert linkages; resource management; Ethiopia*

Introduction

Natural resources are essential livelihood assets in countries of Sub-Saharan Africa (Roe *et al*., 2009). However, inappropriate practices cause severe soil erosion, soil fertility depletion, water shortage and food insecurity (FAO, 2008) in many countries of the region. Past land and water management interventions in the region were predominantly regulatory and top-down. The regulatory approaches confer limited focus to sustainable technology adoption and stakeholder participation (Altieri, 2002) and left many countries least served by sustainable land use and management. According to Reed (2008), environmental problems are dynamic, requiring up to date and apparent interventions using sound policies and diverse stakeholders. Present day sustainable land management (SLM) approaches are observed to divert their attention towards incorporating the needs and aspirations of the various stakeholders through increased stakeholder participation (Emtage *et al*., 2007).

There appears a shift towards stakeholder participatory approaches to enable local farmers involve in passing natural resources management decisions (Roe *et al*., 2009). According to FAO (2008), the use of farmer field schools have enabled farmers to improve their land and water management practices in many parts of Africa.

Farmers form key stakeholder partners in SLM practices, but are often neglected in planning and decision making processes (Grimble and Wellard, 1997). Farmers' participation in planning, selecting, deciding, appraising and adopting of SLM technologies provides the opportunity to exchange useful information among participants and could strengthen institutional transparency and equity. Reed (2008) as well as Lostarnau *et al*. (2011) noted that stakeholder participation is a key element in natural resource management and can improve decentralized democratic decision making processes and thus should be encouraged. The practice requires commitment of all concerned parties and empowering of disadvantaged

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members of communities through advice and trainings (Reed, 2008; Lostarnau *et al*., 2011).

According to Reed (2008), stakeholder involvement in SLM improves natural resource management decisions through incorporation of a wide-range of client information. Johnson *et al*. (2003) for instance reported that three participatory case studies (in Java, Malawi and Honduras) showed improvements in training, skill enhancement and interaction with researchers. Nevertheless, natural resource management decisions are complex involving diverse actors and varied interests. The significance of decisions reached through stakeholder involvement thus depends on procedures followed by the actors concerned. In general, it should be based on equity, empowerment, trainings and trust principles. It should also consider modern and indigenous technologies and the dynamics of social and biophysical systems (Reed, 2008).

Ethiopia is a land of high and diverse relief features in tropical Africa. The diverse natural resources have served as the agricultural base of the country for millennia and currently directly support millions of rural households. This rich biophysical resource of the country has been adversely affected by the increasing human and livestock populations, climatic variations and frequent droughts, inappropriate resource use practices and top-down resource conservation approaches. The result is a widespread degradation of the resource base. Less responsive policies have exacerbated resource degradation and poverty levels in the past decades (Zeleke *et al*., 2006). Since the 1970s, successive governments have tried to implement a wide variety of structural soil and water conservation (SWC) measures (Tegene, 1998) although their results have not brought about remarkable changes and most were abortive (Bewket, 2003; Amsalu, 2006). One of the reasons for their failure was the failure to incorporate the ideas and demands of the immediate land users or farmers (Bewket, 2003).

Zeleke *et al*. (2006) indicated that linkages and interactions between farmers and agricultural experts in Ethiopia are generally top-down. They added that the agricultural extension system is regulatory oriented and the promotion of SLM is characterized by the ambition of achieving "quick solutions rather than sustainability, quantity rather than quality, area coverage rather than impacts…. command and control system rather than participatory". Most of the SWC plans were prepared at the upper levels without involving farmers and then sent to the lower level offices for implementation. This has created the notion of implementation of 'quota' targets at the woreda level and conveyed onto DAs at the RKA level without taking into account suitability of the technologies to local circumstances, materials, technical capacity and interest of practicing farmers (Zeleke *et al*., 2006).

The objective of this paper is to identify the main stakeholders involved in SLM activities, their interests and interactions in Dangila woreda, northwest Ethiopia.

Materials and methods

The study area

The study was conducted in three Rural Kebele Administrations (RKAs, lower government levels in Ethiopia) named Badani, Dubi and Gayta in Dangila woreda (district), between $11^0$04'48''-$11^0$24'36"N and $36^0$34'48"-$37^0$00'37"E geographic coordinates (Figure 1).

The three RKAs cover 2,400 ha, 2,358 ha and 2,332 ha, respectively, and experience slight differences in altitude and local climatic conditions. Slope gradients extend from < 1 to 50% in Badani and Gayta and to 45% in Dubi. They form part of the northwestern highlands of Ethiopia with elevations varying from 1,800 m asl in the southern plains of Badani to over 2,300 m asl in the eastern hills of Gayta. The local relief of the study RKAs is broken by small streams and large gullies that often fill with rainwater during *kiremt* (the rainy season). The general climate is moist sub-tropical (*Weina-Dega*) characterized by moderate temperature and sufficient *kiremt* rainfall. Based on records at Dangila town ($11^0$16'00"N and $36^0$50'00"E), the mean annual temperature in the study RKAs is about 17^0C and the annual rainfall is 1578 mm. According to farmers' classification based on color, four soil types dominate the study RKAs. They include reddish soils (Nitosols group) locally named *forefor*, black soils (Vertisols group) locally called *mezega*, grey-brown soils (Luvisols group) locally known as *bunama* and

dark brown soils (Cambisols group) locally called *abolse*.

As projected from 2005 population data obtained from Amhara Livelihood Zone Report (2007), 13,784 people inhabit the three RKAs in 1993 households. Crop and livestock mixed subsistence farming is the basic source of livelihood to the people. Finger millet (*Eleusine coracana*) in Badani, maize (*Zea mays*) in Dubi and *tef* (*Eragrostis tef*) in Gayta are the leading crops in area coverage and quantity of output. Potato (*Solanum tuberosum*), oil seeds and pulses are among the crops grown in the RKAs. Vegetables and fruits are important crops cultivated using traditional irrigation around homesteads in Dubi and Gayta.

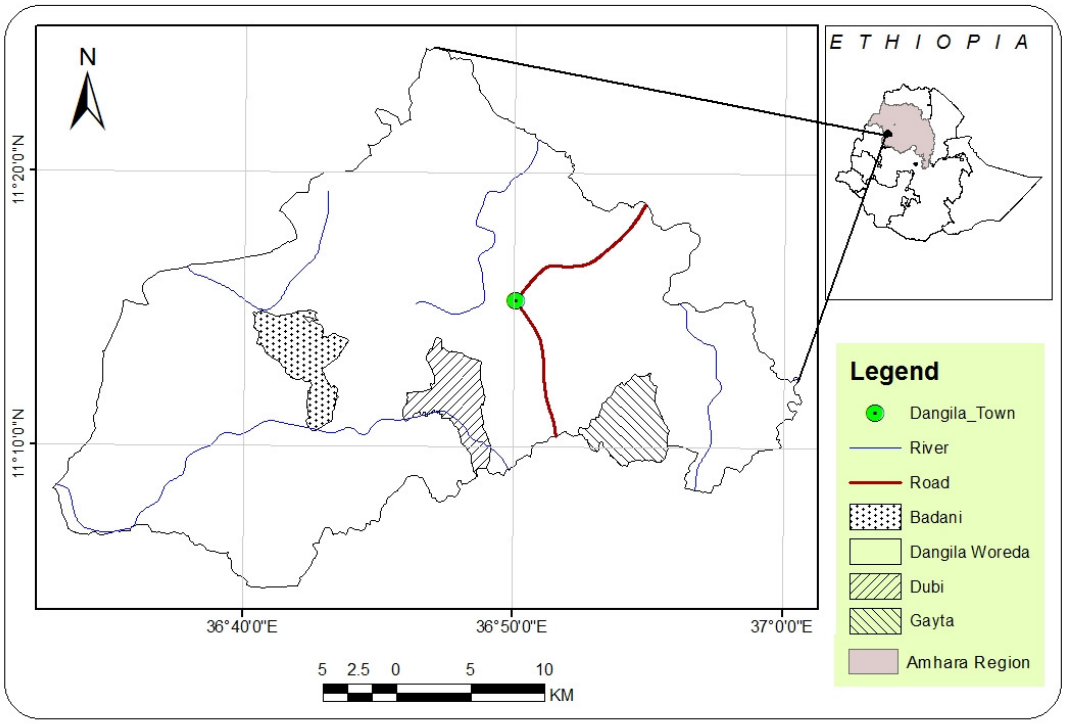

Figure 1 Location map of the study area

Methodology

Data collection

The background data used in this study was gathered from unpublished reports and archives available in the study RKA offices. The primary data were generated from April to June 2011 and in October 2012 using a structured household questionnaire, through observation and through formal and informal discussions with farmer key informants, agricultural experts, DAs and RKA officials. The study RKAs were purposively chosen with consideration of distance to the district town (Dangila) and proximity to road transport. After identification of the three RKAs, the list of rural households were taken from the RKA offices and stratified by sex and served as a sampling frame. From the stratified list, 201 households (Table 1) i.e., 170 males and 31 females (50 in Badani, 70 in Dubi and 81 in Gayta) were proportionally identified using the systematic random sample allocation technique. When difficulties were faced to meet the selected household head due to absenteeism or rejection to take part, he/she was replaced by a household listed next to him/her. Questions covering indigenous and introduced SLM technologies practiced by farmers and stakeholder linkages in SLM were filled through face-to-face interviews.

The questions were pre-tested and administered by three university graduates after being trained by the researcher. The smooth operation of the survey was strictly supervised by the researcher and one assistant. Most of the farmers were interviewed at their homesteads and a few of them were met on Sundays at their churches. The collected data were then

triangulated by formal and informal discussions with farmers, woreda agriculture experts, RKA leaders, and DAs. Additional data concerning farmer-expert interactions were also gathered from 19 agricultural experts working in the woreda agriculture office.

Data Analysis

The quantitative data obtained from the field survey were analyzed using descriptive statistics. The qualitative information gathered through observation and formal and informal discussions were used to verify and augment the quantitative survey information. The Statistical Package for Social Scientists (SPSS Version 15) and Microsoft Excel were used to manage and analyze the data.

Table 1 Background information on the study RKAs in Dangila woreda

Background information		Badani	Dubi	Gayta	Total
No of households*	M	450	560	694	1704
	F	31	138	120	289
No of sampled	M	47	55	68	170
households	F	3	15	13	31
% of samples from	M	10	10	10	10
total households	F	10	11	11	11
	Total	10	10	10	10

*Obtained from RKA offices

Results and Discussion

Major stakeholders and their interactions in the study areas

In general, implementation and decisions on SLM technologies involves the concerns and interests of a number of groups and actors such as farmers, agricultural experts, policy makers, administrators, politicians, religious leaders, civic organizations, youth and other groups (Grimble and Wellard, 1997; Reed, 2008; Lostarnau *et al*., 2011). In the case of the study areas, landholder farmers, women, land less farmers who depend on sharecropping and off-farm activities (such as daily labor, charcoal and wood selling), young people, DAs and local government offices were found to be the main stakeholders involved in SLM activities (Table 2). Woreda, Zone and Region level agricultural offices were also found to have concerns and linkages with farmers in SLM issues directly or indirectly. Some 85% of farmers surveyed reported that they had contacts with RKA officers and 76% with DAs (Table 3). But, only 18%, 6% and 4% of them reported that they had linkages with Woreda, Zone and Region level experts, respectively. This indicates that the link of farmers with RKAs and DAs is strong compared to interactions with Woreda, Zone and Region administration offices. It was found that the linkage of farmers decreases from Woreda to Region level offices. These are the results of distance and differences in power relations among the various stakeholder groups.

A number of studies note that stakeholder linkages and participations play important roles in SLM decisions. Kerr and Sanghi (1993) for instance indicate that SLM technologies should be identified planned and implemented through full participation of resource users and must be accepted by them. Participant households were asked to indicate their level of participation in terms of training and new technology selection. Table 4 indicates that around 20% of the farmers took trainings at different levels (RKA, Woreda, and Zone and Region levels). Training farmers and providing them with opportunities for experience-sharing with others improves their capacity for participation in planning, designing and implementation of SLM technologies (Johnson *et al*., 2003). Only 2% of the farmers reported that they had participated in new technology selection activities in 2010/2011. This indicates that farmer participation in technology identification and planning decisions is low in the study areas. Nearly 45% of the farmers reported that they did not know who selected the new SWC technologies for them. Some 26% indicated that the new technologies were selected by DAs; around 24% perceived that they were selected by woreda experts, and another 3% and 2.5%

reported that they were selected at Zonal and Regional offices.

Confusion on who selects SWC technologies used by farmers was also reflected by over 40% of the experts working in the woreda agriculture office (Table 5). For instance, over 21% of the experts reported that SWC technologies were selected by woreda level experts. Some 5.3% of them reported new technologies were selected by farmers; another 5.3% perceived that they were identified by DAs and another 5.3% report that they were selected by DAs and farmers jointly. About 5.3% of the experts also reported that new technologies were selected by agricultural research centers. This generally indicates that there was no clarity among the Woreda level experts on who selects new agricultural technologies applied by farmers. Consultations with team leaders in the woreda agriculture office confirm that new technologies were often selected and disseminated to lower levels from both Regional and Federal levels. Around 58% of the interviewed experts reported that it was selected by Region level experts (Table 5).

The response generally indicates that the majority of the farmers and woreda level experts did not clearly know where and by whom SWC technologies were selected and decided. Over 90% of the farmers (Table 4) and more than 40% of the experts (Table 5) did not know where SWC technologies were selected. This is an indication of weak institutional linkage and limited farmer participatory system. Zeleke *et al*. (2006) had reported farmer participation in land management technology selection was very weak. The current trend is also similar with the exception of improvements in some aspects such as trainings. Lack of clear understanding and knowhow on how, where and when SWC technologies are selected and decided may obscure accountability and transparency in SLM activities in the area. Zeleke *et al*. (2006) noted that most of the SWC plans were prepared at the upper levels without involving farmers and passed down to the lower offices for implementation. This was also observed to be the case in the study areas. Packages prepared from Regional levels were passed down to DAs and then to farmers by woreda level experts. Some 42% of the experts reported that the relationship between farmers and agricultural experts was top-down (Table 5). Nearly 58% of the experts on the other hand believed that the interaction between farmers and experts was two-way (from top to bottom and from bottom to top). The perception of the latter (58% experts) has probably emanated from plans prepared by DAs and submitted to higher offices for approval and from reports submitted to higher offices. The plans prepared by DAs were not however incorporated the full participation of practicing farmers and cannot be considered as participatory. The linkage between agricultural experts and farmers in the study areas was generally oriented with top-down planning and up-ward reporting.

Trainee farmers were not involved in deciding the time of training. For instance, in Oct. 2012 in Sini (upstream village in Dubi) some farmers were unable to attend the training because it was held during their peak harvest season. Similar incident occured in Giorgis (downstream village in Gayta) and also in Badani. Besides this, trainings for adoption of SWC technologies were usually organized in October, three months ahead of the commencement of implementation. This may cause difficulties during application because farmers may forget the information due to longer time gaps.

Stakeholder interests

The interest of local level stakeholders (Table 2) seems to be quite different. Landholder farmers (which account about 86% of the total households, Table 6) require every new technology be implemented with their know-how and consent. They like to know what is happening in their areas and what is going to happen in the future on their land. These groups are highly suspicious and eager to hear latest information. In this regard, Lostarnau *et al*. (2011) argues that stakeholder access to latest information about what is going-on in their areas should be considered during planning of participatory land and water management projects.

The landless households (account 14% of the total households, Table 7) and the youth mainly depend on sharecropping and off-farm activities demand land allocation or redistribution to cultivate their own holdings. The majorities of the young farmers were first-cycle secondary school graduates and expect more employment and livelihood options from government. In

response to the increased land demand, RKAs were observed to allocate marginal grazing lands to newly emerging young farmers. Data obtained from RKAs offices indicate that some 42.8 ha grazing lands were allocated to 280 young farmers (Table 7) organized into groups.

Women stakeholders claim increased recognition, representation, bargaining power and equal status in decision making processes. They require special material and moral assistance in farming. Their representation in the RKA executive body was calculated to be about 29% and similar across the study RKAs (Table 7). But, it seems too small compared to their number in the total population indicating that they have limited vote in SLM decisions. They therefore demand equal representation in the RKA administrative unit.

Local governments often implement land and water management policies usually articulated and designed at regional or federal levels with no objections. They often focus on quantity than quality without recourse to suitability, effect and approval of implemented technologies by local beneficiaries (Table 2). This was also the case as reported by Zeleke *et al*. (2006). The local farmers often accept packages with no objections because they know that they cannot change what has been decided at higher levels. Similar constraints on farmer participation in resource management were reported in Chile (Lostarnau *et al*., 2011). DAs often need to perform packages and tasks provided from district offices within the given time limits. They were often constrained on how to compromise government and farmer demands (Table 2).

According to Grimble and Wellard (1997), conflicts of interest occur during land and water management project implementations between participant stakeholders. The conflicts could take place at both macro and micro levels and within participants in each level. The interest conflicts discussed in this paper are thus expected and prevail also in similar areas elsewhere. Grimble and Wellard (1997) argue that numerous approaches and methodologies should be designed to address the interest of the various stakeholders.

Diverse and complex factors constrain stakeholder interactions in the study areas. Unbalanced resource endowment and knowledge gaps between the different stakeholders and participants were observed creating difficulties on full participation of marginalized farmer groups, where opportunities were available in mass farmer meetings. For instance, elders, well endowed persons and people with relative urban life experience were to dominate farmer discussions. Poor, less endowed and illiterate participants hesitate to take the lead opportunities of presenting their ideas and often left with their needs and interests unheard and unaddressed.

In the area of the study and elsewhere in Ethiopia, there are habits of giving more chances to speak for elders and economically better-off farmers. Since they get more time to tell their ideas, elders and economically better-off persons often dominate the discussions and able to take the advantage of protecting their interests at the cost of the poor and the silent majorities. There is also disparity of power between RKA officials, government experts and local farmers in decisions. The lack of balance in power discourages poor farmers from highlighting their ideas. In such occasions, most prefer to jump being silent with the perception that they are not decision makers. They perceive that it is decided by the administrative personnel whatever they say in the meetings and feel that they will not make differences. Reed (2008) argues that power inequalities between stakeholders stand as significant hindrances of evocative participation and advices to hold-up two-way communication among participants of SLM practices. He argues that stakeholder participation should be accepted as a right at the start of implementing participatory SLM projects and should provide equal right to all stakeholders. Grimble and Wellard (1997) noted also that several SLM projects and interventions often fail to succeed because they give little attention to the needs and demands of beneficiary stakeholders.

Attempts were also made to evaluate the working atmosphere and stability of expert placement and allocation in the different sections of the district agriculture office because it directly and indirectly affects land and water management practices. In doing so, it was learned that expert reshufflings and placements were frequent from 2010-2012, although seems cooled after the second half of 2012. The frequent expert turnover has adversely affected the feeling of duty ownership within the agriculture staff and it was

a case reported in Zeleke *et al*. (2006). Terminations of commencing activities and records were observed in the different sections and were common to see new faces within the same department. Agricultural and land and water management experts were also assigned to perform other administrative duties beyond their expertise professions. Over 47% experts indicated that they were assigned from 1-6 times to perform other administrative duties in campaigns (such as tax and loan collection, fertilizer distribution, conflict resolution). Nearly 36% of the consulted experts reported that the general working atmosphere in their department was not encouraging whilst over 42% reported it was fair. Over 94% of the experts were of the opinion that their monthly salary was not fair compared to the complexity of duties assigned to the positions (Table 8). Similar institutional shortfalls were also reported by Zeleke *et al*. (2006) and Amede *et al*. (2007) to have been taking place in many areas of the country. Therefore, there is a need to establish stable institutional and stakeholder interaction system to enhance SLM practices and technologies.

Conclusions

The study results indicate that landholder and landless farmers, women, DAs, and RKA offices were major stakeholders involved in land and water management activities in the study areas. These stakeholders were found having different interests regarding SLM issues. The linkages of farmers with DAs and RKA offices were observed strong but farmer participation in new technology selection and planning was discovered limited. Farmer interactions with Woreda, Zone and Region level experts were observed weak, dominated by top-down planning and upward reporting. Over 47% of the experts in the district agriculture office were assigned to perform duties outside of their profession and nearly 36% of them reported the working atmosphere in their department was not good. Greater than 94% experts reported their monthly salary was not fair compared to duties assigned to the positions. It is argued that enhancing farmer participation in SLM decisions and establishing stable working atmosphere in the woreda agriculture staff can improve stakeholder interaction in SLM practices. It is thus suggested for concerned agencies to establish stable institutional and stakeholder interaction systems in order to enhance adoption of SLM technologies and practices in the study areas.

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Table 2 Key local stakeholders in SLM in the study areas

Stakeholder	Issue of interest
Farmers (with landholdings)	- require to know everything happening in their area and on their land, - wish not to see any future land redistribution, - demand less costly, less risky and effective technologies
Women	- aspire equal status in decision making power - need equal recognition as to men, - demand special assistance in farming activities
The landless and the youth	- aspire more livelihood options from government, - demand new land allocation or redistribution,
DAs	- desire to implement packages and meet targets given to them from higher levels, - constrained to compromise government and farmer interests,
Local government	- desire to implement national policies and packages, - focus on quantities rather than qualities -less willing and less ready to hearing weaker performance reports (expect more success with limited resources), - push on the landless and the young people to create their own jobs and livelihood options,

Table 3 Farmers' experiences of contacts with experts at the different levels (%)

Stakeholders	Yes	No
Contact with RKA officers	85	15
Contacts with DAs	76	24
Contacts with Woreda level experts	18	82
Contacts with Zone level experts	6	94
Contacts with Region level experts	4	96
Frequency of contact with DAs (average N^0 of days yr^{-1})	0.98	-

Table 4 Farmers' experiences about participation in trainings and selection of new SWC technologies

	Responses in % (N=201)	
Questions	Yes	No
Participation in training at different levels*	20	80
Participation in new technology selection decisions	2	98
Who selects new SWC technologies?		
DAs	25.9	
Woreda experts	23.9	
Zone level experts	3.0	
Region level experts	2.5	
Do not know	44.8	

*RKA, Woreda, Zone and Region levels

Table 5 Experts views on farmer-expert interactions and new SWC technology selection

Questions	Responses (N=19)	
	Frequency	Percent
Type of farmer expert relations:		
Top-down	8	42.1
Bottom-up	-	-
Top-down and bottom-up (two-way)	11	57.9
Who selects new SWC technologies used by farmers?		
Farmers themselves	1	5.3
DAs	1	5.3
Woreda experts	4	21.1
Region experts	11	57.9
Agricultural research centers	1	5.3
DAs and farmers jointly	1	5.3

Table 6 Landholder and landless households and size of grazing land allocated to landless households in the study RKAs

Land possession information	Badani (n=50)	Dubi (n=70)	Gayta (n=81)	Sum (n=201)
Landholder households (%)	82	89	85	86
Landless households (%)	18	11	15	14
N^0 of dependents age ≥18	28	33	38	99
Size of land allocated (ha)*	1.5	27.3	14	42.8
N^0 of landless farmers received land*	12	109	159	280

Source: *RKA offices of the study areas (June 2011)

Table 7 Proportion of women in the decision making organ in the study RKAs

Women in Decision-making	Badani	Dubi	Gayta	Total
N^0 of RKA executive members	7	7	7	21
N^0 of female members (%)	29	29	29	29

Table 8 Experts view on the working atmosphere of the district agriculture office

Questions	Responses	
	Frequency	Percent
Working atmosphere in your department		
Good	4	21.1
Fair	8	42.1
Not good	7	36.8
Fairness of salary compared to duties		
Sufficient	1	5.3
Not-sufficient	18	94.7
Assignment outside of expertise duties		
Yes	9	47.4
No	10	52.6

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