

# **Validation of ADPLAC's Workshop in SNNPR**

## **Research- Extension- Farmers Linkage Report**

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**Hawassa**

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## **LISTS OF ACRONYMES**

ADPLAC	Agricultural Development Partners Linkage Advisory Council
AEZ	Agro Ecological Zone
AGP	Agricultural Growth Program
ATA	Agricultural Transformation Agency
ATVET	Agricultural Technical Vocational and Educational Training
AWM	Agricultural Water Management
AWP	Annual Work Plan
BoANRD	Bureau of Agriculture and Natural Resources Development
BoWR	Bureau of Water Resources
CD	Capacity Development
CoEWM	Centre of Excellence for Irrigation Water Management
BoCo-op	Bureau of Cooperative
DA	Development Agents
FREG	Farmers Research Extension Group
FTC	Farmers Training Center
GTP	Growth and Transformation Plan
HHMI	House Hold Micro Irrigation
IWM	Integrated Watershed Management
M&E	Monitoring and Evaluation
MF	Microfinance
MOU	Memorandum of Understanding
MI	Micro Irrigation
NGO	None Governmental Organizations

NPMU	National Project Management Unit
O&M	Operations and Management
OFWM	On-Farm Water Management
PADETS	Participatory Demonstration and Training Extension System
PADEP	Peasant Agricultural Development Extension program
PIDM	Participatory Irrigation Development and Management
PIT	Project Implementation Team
R&E	Research & Extension
RIAE	Regional Irrigation Agronomy Expert
REAC	Research-Extension Advisory Councils
REFAC	Research Extension Farmers Advisory Council
REFL	Research Extension Farmers Linkage
ELC	Research Extension Liaison Committee
IRTL	International Regional Team Leader
NRTL	National Regional Team Leader
RIXE	Regional Irrigation Extension Expert
SMIS	Small and Micro Irrigation Support Project
SMS	Subject matter specialist
SARI	Southern Agricultural Research Institute
SG	Sasakawa Global
SSI	Small Scale Irrigation
TC	Technical Committee
WoA	Woreda of Agriculture
WUA	Water users Association
WUG	Water users Group



**Photo illustration of the ADPLAC workshop while Ato Mitiku Bedru , the National Regional Team Leader inviting the honorable guest Ato Germame to open the workshop**

# **Report on Assessment of Research-Extension-Farmers Linkages in irrigation technology development and transfer continuum in SNNP Region**

## **Introduction**

The first concrete step to create functional linkages between the research and extension systems was taken in 1986, following the adoption of a new extension approach called the Peasant Agriculture Development Extension Program (PADEP) by the Ministry of Agriculture. Until this time, apart from occasional and irregular meetings between researchers and subject-matter specialists, there was no other evidence of routine linkage mechanisms between research and extension.

PADEP was designed to bring perceptible changes in peasant agriculture through concerted and coordinated efforts in the areas of agricultural research and extension. The strategy was prepared based on the critical evaluation of past extension strategies and underscored the importance of stratifying the country into relatively homogeneous zones, decentralizing the planning and execution of agricultural development activities, empowering and giving considerable attention to zones which were to be the centers of development efforts (Task Force on Agricultural Extension, 1994a). Accordingly, on the basis of resemblance in climatic conditions, cropping patterns, natural resource endowments and geographical proximity, the country was divided into eight agricultural development zones.

PADEP had different objectives for the different agricultural development zones. However, the principal ones were: increasing food production, at least, to the level of self-sufficiency; developing the production of cash crops for export, and raw materials for domestic industries; increasing rural sector employment opportunities; supporting and encouraging the development of rural cooperatives; preventing further soil depletion and introducing suitable farming system in erosion prone areas of the country.

As the poor research-extension linkage was considered to be a primordial factor affecting the efficiency of extension work, Research Extension Liaison Committees (RELCs) were formed in 1986 both at the national and zonal levels.

RELCs were responsible to appraise improved technologies recommended by zonal research centers before they were released to farmers and to design training programs for subject matter specialists and development agents on improved technologies to be disseminated to farmers. Moreover, the zonal RELCs were mandated to review and approve research proposals submitted by research centers. They were also planned to serve as a forum where the views of extension workers were taken into account in identifying research problems for the formulation of research topics. This was thought to help ensure that both researchers and development agents address the real problems that farmers faced (Agricultural Research Task Force, 1996; FDRE, 1999; Goshu, 1995).

Following the change in government in 1991, a locally-adapted Training & Visit (T&V)-like extension approach was adopted as a national extension system with major government financing until its replacement by the Participatory Demonstration and Training Extension System (PADETES) in 1995. The

major objectives of PADETES included increasing production and productivity of small-scale farmers through research-generated information and technologies; increasing the level of food self-sufficiency; increasing the supply of industrial and export crops; and ensuring the rehabilitation and conservation of the natural resource base of the country. The system gives special consideration to the package approach to agricultural development.

In the late 1990s, the issue of research-extension linkage resurfaced and the Federal Government developed in 1999 a strategy which was meant to strengthen the loose linkage between research and extension. The linkage strategy aims at bringing together all stakeholders in the entire process of technology generation, development, transfer, utilization and feedback under the umbrella of one institutional setup of Research-Extension Advisory Councils (REACs) at three levels: the federal, regional, and zonal (research center based) In the beginning, regional and zonal REACs undertook positive initiatives in establishing linkages, but gradually the mechanism became weak, mainly due to lack of sustained follow-up of linkage related activities, funding constraints and absence of viable secretariats for REACs at national, regional and zonal levels. As a result, REAC could not meet the expectations of farmers rather it was necessary for a new institutional set up for research and extension system to enhance rural development activities. Hence, a multi-stakeholder platform called Agricultural Development Partners Linkage Advisory Council (ADPLAC) emerged in 2008, with financial support of World Bank through its AGP-II Project in Ethiopia, and managed by the Federal Ministry of Agriculture and Rural Development.

ADPLAC as a prevailing platform is the institutional linkage mechanism operating from federal to woreda level for key stakeholders including farmers. It has a mandate to establish an effective research-extension-farmer linkage, accelerate the technology generation and transfer process, and enhance the rate of adoption of agricultural technologies to farmers.

Small and Micro Irrigation Support Project (SMIS) recognizes importance of research-extension farmer linkages as critical for successful technology development and its dissemination in irrigated agriculture, importantly for Small Scale Irrigation (SSI) and Micro Irrigation (MI) development. This has relevance to SMIS strategic intervention towards capacity support to research, extension and farmer linkages including support to relevant organizations those promoting improved irrigation technologies.

### **Context of the validation workshop**

ADPLAC started its operation in 2008 at national level and in the same year it was adopted at regional level, however, various stakeholders reported that weak linkages among research, extension and farmers have been persistent in the regions with no remedial action for its improvement. Further, they stated that farmer's link with stakeholders such as input suppliers, irrigation equipment vendors, research, extension, cooperatives, credit agencies and market outlets has been weak and there has been no initiative for coordinating them. Recognizing these weaknesses, the federal Ministry of Agriculture conducted an Institutional Assessment and Stakeholder Analysis of Agricultural Advisory Services to determine the status of ADPLACs in the regions. The assessment report indicates that ADPLAC could not meet the expected results of the stakeholders in the regions due to existing constraints of linkage arrangement,

poor functional system, irregular stakeholders meeting, funding constraints and other activities of the councils.

As indicated in OUTPUT 1410, SMIS together with the regional agricultural research institute and extension core processes of BoANRD conducted an assessment to assess the status of ADPLAC in the intervention areas of the pilot zones and woredas in the region during September 2015. The assessment team was effective in collection of relevant data and other relevant information about existing linkage system as well as its importance towards contributing to the development of irrigated agriculture.

Throughout the assessment, the respondents including farmers, freely shared their understanding of the constraints to linkage mechanism. They articulated main concerns about current challenges in promoting improved irrigation technologies, particularly for SSI and MI development and discussed valuable solutions to strengthening ADPLAC for effective institutional linkages.

### **Objectives of the validation workshop**

The objectives of the workshop were to validate the findings of research-extension-farmer linkage assessment conducted by the joint technical team, and to come up with recommendations and way forward to take necessary actions in regards to strengthening the existing linkages to respond to the emerging needs of irrigated agriculture.

The validation workshop aimed at:

- Presenting the findings of the conducted research-extension farmer linkage assessment.
- Get feedback from the workshop participants regarding the accuracy of the information gathered by the assessment group
- Identify and prioritize the major problem areas and forward possible strategies to strengthen linkages particularly in relation to irrigated agriculture.
- Through discussion gather main issues to develop recommendations/way forward to take action for strengthening the Linkages for irrigated agriculture within the existing linkages.
- Prioritize the would be SMIS action areas to support research-extension-farmer linkages.

### **EXPECTED OUTPUTS**

- Validation of extension-research-farmers' assessment
- Documentation of proceedings of the validation workshop
- Preparation of action plan/ recommendations

So, based upon the above mentioned objective, the regional SMIS project has organized the one-day validation workshop at Yirgalem, Fura center on 20 Feb 2016. The Regional BoANRD Extension Core Process extension expert, SARIs', and SMIS Extension experts presented the findings of the assessment results and SMIS's intervention areas.

From the invited 31 participants only 21-participants (Zonal Extension core process owners, technical experts, researchers, members of regional ADPLAC) as well as Hawassa University including experts from Agricultural Transformation Agency (ATA), and private sector and farmers, attended the workshop.





**Photo illustration of the ADPLAC workshop during opening of the workshop by his excellency Ato Germame Garuma, Vice Head of BoANRD**

## **PROCEEDINGS OF THE VALIDATION WORKSHOP**

### **Opening Session**

Ato Mitiku Bedru, the Regional Team Leader of SMIS, welcomed all participants and provided the participants with a brief background of SMIS project and thereby invited Ato Germame Garuma, the Regional Vice head of BoANRD and Extension Core Process Owner to open the workshop.

Ato Germame welcoming all participants and provided the participants with a brief background about research-extension-farmer linkages in the region. He emphasized the concerted efforts of regional government on food security interventions, and reduction of poverty there has been through technology generation, and provision of viable extension services. He stated that weak linkage amongst institutional services providers has been limiting the dissemination of improved agricultural technologies to the farmers. He further stated that although the region has established ADPLAC but due to some reasons, the linkage mechanism has not been efficiently functioning, leaving problems to the farmers.

He appreciated SMIS for supporting the linkage assessment and the validation workshop, and ensured that ADPLAC will seriously consider the workshop recommendations for improving institutional linkages. He also noted that now the first Growth & Transformation plan is over and the region has started GTP-II

that aims at gearing the nation towards a climate resilient middle income country and special emphasis has been given to agriculture and rural development among others.

He also stressed that, all of governmental institutions are planning well, but the accomplishment is not as expected. Concerning irrigated activities, every year, the region is planning to construct a number of new irrigation schemes, but the accomplishment is very few and sometimes construction of a scheme may last 5-6 years.

Recognizing the workshop agenda for validation of linkage assessment results, Ato Germame acknowledged and appreciated SMIS's initiatives in supporting the assessment and workshop to explore mechanisms for strengthening institutional linkages in the region. He wished all participants a good discussion in the workshop.

Then after Ato Germame, Mr. Ravi, the International Regional Team Leader of SMIS Project of SNNPR gave precise speech on the objective of SMIS support strategy and efforts done till now concerning assessments done on the linkages

After Mr. Ravi's speech, Ato Mitiku Bedru, the Regional Team Leader of SMIS, by welcoming the participants explained the workshop methodology and requested audience to set ground rules.

#### **Workshop methodology and ground rules for the daily workshop**

- Switch our mobiles on "silent" state
- No side talks are permitted.
- Strict punctuality
- method of interaction has to be in participatory manner & active participation is needed
- three working groups in the name of research, extension and farmer groups will be formed to analyze the presentations and develop their recommendations

#### **Workshop presentations**

The following four presentations were presented in the workshop:

1. Overview of the current research – extension – farmer's linkage by Ato Daniel Damtew, BoANRD Extension Expert
2. Findings of current Research – Extension – Farmers' Linkage Assessment, by Ato Shiferaw Boke, Senior Researcher at SARI and PIT member of SMIS project
3. Irrigation Extension Strategy of SMIS Project for Capacity Development in Irrigated Agriculture, by Dr. Duresa Chibssa, SMIS, IXE
4. Gender Mainstreaming in Research Extension Farmers Linkage by Ato Teshome Beyene, SMIS, Gender and Social Development Expert.

All the presentations focused on the strength and weakness of regional ADPLACs in strengthening research-extension-farmer linkage mechanism, and provided participants with a set of technical considerations and status and needs, forming a basis for the discussion to arrive at consensus of

actionable plans for improvement of linkages in the region. The detailed of each presentation stated as follows;

### **Presentation 1: Overview of Current Research-Extension-Farmer Linkages in the Region (By Daniel Damtew)**

Ato Daniel Damtew, the first presenter on the workshop, was Chaired by Ato Gername. Ato Daniel, in his presentation on overview of the current history of research-extension-farmer linkage stated that agricultural extension work in the country began in 1934 with the establishment of Ambo Agricultural school. However, real agricultural extension system was first started in the early 1950s following the establishment of Imperial Ethiopian College of Agriculture and Mechanical Arts now Haramaya University. He stated that in 1963, outreach programs of agricultural extension service were placed within the Ministry of Agriculture and since then the country has implemented different types of extension approaches, recognizing the importance of research extension-farmer linkages for technology generation and adoption. The presenter stated that within the framework of PADEP, the government reorganized the linkage mechanism through establishment of RELC in 1986 to create effective collaboration between research and extension systems. However, RELC could not meet the expectations of the farmers due to the following reasons:

- Some of the newly created agricultural development regions had no research centres and lacked the capacity to steer the extension role through staff development;
- Local government officials' poor technical know-how and skills in monitoring and evaluating research and extension activities;
- Serious funding constraints to undertake linkage activities;
- Absence of decision making power of RELCs and clear working guidelines;
- Ad-hoc and non-institutionalized nature of meetings;
- lack of representation of farmers (even though it was clearly stated in the official documents that farmers must be represented in RELCs);
- Frequent changes in the organizational structure of the Ministry of Agriculture and the resulting repeated reshuffling of RELCs members and shortage of relevant technologies.

As a result, Research Extension Farmers Advisory Council (REFAC) emerged in 1999 with objectives to strengthening the loose linkages and bringing different stakeholders under umbrella of REFAC for technology generation, utilization and feedback. REFAC is not institutionally anchored yet and there is not a conducive ground that leaves room for sufficient interaction among farmers, development agencies and researchers. Rather, as in the past, coordination of linkage activities has been done on ad-hoc basis and there is lack of sustained follow-up of linkage related activities. Even though, efforts were made to bring different stakeholders through meetings so as to ensure effective research-extension-farmer linkage, these efforts were not successful in doing so mainly because meetings were not held on regular basis. Even worse, when meetings are convened once in a while they tend to focus on issues which are not on farmers' priority list.

Another serious limitation of the existing research-extension linkage is that even though they recognize, in their official documents the need to involve farmers in the technology development and dissemination process in order to make research, development and transfer of technologies more responsive to their needs.

The presenter mentioned that at a later stage, a multi-stakeholder platform, known as ADPLAC replaced REFAC in 2008 in view to establish an effective research-extension-farmer linkage up to woreda level and to include private sector in the council, accelerate the technology generation and transfer process, and enhance the rate of adoption of agricultural technologies. Currently, ADPLAC has been being confronted with multiple challenges in the region, affecting the linkage mechanism for which the region conducted an institutional assessment with support of SMIS to come up with concrete findings to take necessary action for its improvement.

The presenter stated that some of the current challenges of ADPLAC are: -

- ADPLAC meetings at all levels are not taking place on a regular basis.
- Accountability and coordination of the stakeholders is not so strong
- Limited platform development and management capacity at all level,
- Weak integration of research and extension on follow-up and evaluating performance of each stakeholders
- Lack of monitoring and evaluation of the system;
- Limited capacity of regional institutions including regional agricultural research to develop improved irrigated technology packages appropriate for SSI and MI schemes.
- Weak linkages amongst private sectors those involved in agricultural development
- Frequent restructuring of the institutions;

Ato Germame, the Chairperson, summarizing the presentation expressed that, the existing weakness and strength of the linkage has been reported at different forum. There is a general agreement on the progress ADPLACs. He gave an exemplary work of Sasakawa Global / SG /- 2000 program activities. He also stressed that in 1993 SG-2000 promoted enhancing technologies and access to input and credit, coupled with trainings on demonstration plots that was closely supervised by research and extension. Its goal was to increase food production and stimulate links between research and extension. The success of this project led MoA to adopt participatory Demonstration and Training Extension Service (PADETS) and from 2008 onwards the service was extended by introducing best practices of the model farmers to others within short period of time (Scaling-up of best practices).

However, during implementation of different extension approaches of SG-2000, poor performance occurred due to failure to involve farmers in research problem identification, problem prioritization and extension program planning; extension agents' undermining of traditional and experience-based knowledge system and the likes. Therefore, the regional government together with stakeholders to work very closely to fill out the gaps and capitalize the existing best practice.

**Presentation 2: Findings of Research-Extension-Farmer Linkage Assessment (By Ato Sheferaw Boke, Senior Researcher of SARI and TC member of the Regional SMIS project).**

His presentation focused on the following major topics as discussed below.

**The Study area**

The assessment study was conducted in the four zones, namely Sidama ( Malga ), Gedeo (Gedeb ), Dawuro (Esera ) woredas & Konta Special woreda SSI schemes. Discussion was made with woreda agricultural office heads/ delegates and at their offices, DAs at their respective sites and interviewed the beneficiaries at their schemes. Also discussions with Regional and Zonal BoAFNRD and SARI concerned extension experts was done at their offices.

**methodology of the Assessment**

Questionnaires with closed and open ended questions were prepared for researchers, extension staff and farmers for data collection. Using the questionnaires, primary responses were collected from researchers, extension staff and farmers. The team used secondary source of data collection from relevant books, proceedings minutes and official reports of research and extension agencies in the areas of research-extension-farmer linkage. In his presentation Ato Shiferaw explained the methodology of assessment, process of data collection through field questionnaires, target respondents including focus group discussion. He stated the team conducted a series of discussions, brief meetings and interviews with target respondents in the region followed by visit to irrigation schemes.

**Generic Problems for Functional Linkage Among Actors**

Extension service systems generic problems in general and in SSI & MI in particular could be economic, socio-cultural, Technical Know-how, Physical and political and summarized as:

- Lack of defined strategic plan and guidelines
- Lack of commitment and poor participation and co-operation
- Reluctance of farmers to adopt new technology packages
- Inadequate M&E system & performance evaluation mechanism
- Engagement of staff in variety of activities/work load
- Lack of accountability and clear mandate
- Annual meetings were not conducted as per the plan scheduled
- A poorly linked research and extension (R&E) system, where the research team conducting on-farm demonstration does not collaborate directly with extension's subject-matter specialists (SMS)
- Limited effort of the regional agricultural research to develop improved irrigated technology packages appropriate for SSI and MI schemes.
- Weak research-extension-farmer linkages to carry-out applied on-farm research to generate improved irrigated technological packages,
- Weak inter linkage within the research departments during conducting research trials on their research stations and on farm demonstrations at farmer's field on SSI/MI activities,
- A poorly linked Research and Development Agent while planning, identifying and conducting on-farm demonstration research activities on farmers' field,
- Limited interaction of researcher with farmers in the process of identifying demand driven problems, setting research priorities, or in carrying out the trials,

- Even though attempts were made by regional BoANRD to improve functional linkages with service providers and markets, there is still no systematic approach to improve market linkages.

### **Strategies Proposed to Improve the Linkage**

on consideration of SMIS strategy of capacity support to re-establishing linkages through the following proposed activities in irrigated agriculture

- Support strengthening committee members at all level by conducting capacity development training on:-
  - Platform development and management,
  - Monitoring and evaluation of accomplished duties as per the guideline
  - Establishment of effective linkage mechanism among stakeholders
  - Strengthen institutional and human capacity
- Support establishment of technical implementation team led by extension linkage expert as a special working group for strengthening and ensuring effectiveness of the linkage in general and for compiling and feedback to the committee after each meeting in particular,
- Support and train research and extension experts on extension approach, methods, and on effectiveness of the linkage,
- Support establishment of systemic approach to improve functional linkages with service provides and markets linkages.
- Support involvement of small farmers in selection of research and extension priorities, in research planning and implementation through established Farmer Research Groups on SSI/MI activities
- Support strengthening the linkages between researchers, extension and farmers on the process of conducting demand driven research and on farm demonstrations on SSI/MI,
- Support the capacity of regional agricultural research institutions to carry-out applied on-farm research to generate improved irrigated technological packages,
- Support participation of gender expert in the organized SMS staff at all level in order to enable conduct extension services that are responsive to environment, gender and nutritional issues on SSI/MI areas
- Develop linkage mapping to strengthen linkages between research, extension services and farmers



**Photo illustration of the ADPLAC workshop presentation of gaps identified during assessment**

**Presentation 3: Irrigation Extension Strategy of SMIS for Capacity Development in Irrigated Agriculture (By Dr. Dr. Duresa Chibsa SMIS RIXE).**

Dr. Duresa Chibsa presented SMIS's strategy for capacity development in irrigated agriculture. In his presentation, he stressed that the concept of irrigation extension system for development of irrigated agriculture, advises for water user farmers in all aspects of irrigation water development and management, including the formation of water users' associations and persuading them in getting information, knowledge and skill development to enhance adoption of improved irrigation technologies. He also mentioned that the system also needs to provide facilitation of linkages with other institutional support services (input supply, output marketing and credit) that can lead to a more efficient and better performance of irrigated crop production. The presenter described the priority themes of irrigation extension and participatory irrigation extension approaches for sustainable development of irrigation schemes.

The presenter also stated that based on the set gaps identified during situation analysis and capacity needs assessment of regional irrigation extension system, conducted in the regions during March & August, the assessment indicated four strategic capacity interventions in irrigation extension to help build the capacity of regional irrigation extension system for promoting irrigated agriculture, particularly for SSI and MI development.

He concluded his presentation by emphasizing research-extension-farmer linkage as an integral part of agricultural development, and more importantly for development of irrigated agriculture with the SSI and MI schemes in the region which SMIS project is to support.



**Photo illustration of the ADPLAC workshop presentation and discussion**

#### **Presentation 4: Gender Mainstreaming in Research-Extension-Farmer Linkage**

Presenter Ato Teshome Beyene stated that SMIS project's gender and nutrition strategy entails mainstreaming gender and nutrition in all project activities in relation to SSI and MI capacity development interventions. He also added that the project implementation has been harmonized with current GoE initiatives in gender equality, national development plans (the 2015-2020 GTP II), irrigation-sector policies, Canadian and Dutch donor gender mandates and respectful of Ethiopian culture and traditions.

Teshome highlighted that the contribution of women is not recognized though they have immense contributions in agriculture. They lack getting benefits equal to men from the interventions and have little or no access to productive resources, training, extension and credit services. They are also bypassed from getting appropriate extension services and there are few trained women experts, particularly at higher level. Their participation to serve women farmers in problem identification, priority setting and planning is poor.

The presenter concluded his presentation stressing that, most of the technologies are not designed in the way to solve women farmers' problems & number of Women researchers is very limited, so, SMIS has been working with regional BoANRD, Bureau of Women & Youth, and other relevant institutions and NGOs to improve the situation.

#### **Group Discussions**

To facilitate the tasks and develop strategies/recommendations for ADPLAC to support research extension-farmer linkage mechanism, the workshop facilitator formed three working groups. The groups formation was made based on specialization (Research, Extension and Farmer groups. The workshop was an open forum for active discussion and summing up group recommendations and validation of findings of linkage assessment with a way forward. The workshop facilitator gave direction for the group



discussants based on which the groups were able to concentrate on. The following were the discussion points that the discussants and their respective groups were supposed to concentrate on.

<b>Groups</b>	<b>Discussion questions/points</b>
<b>Research Group</b>	1 Review the findings/results of the linkage assessment
	2 Identify areas of group consensus with the information provided by the presenters
	3 Develop recommendations on how research can efficiently develop technology innovation in irrigated agriculture within the existing ADPLAC while considering SMIS's strategy of capacity support for strengthening the research-extension-farmer linkage
<b>Extension Group</b>	1. Review the findings/results of the linkage assessment
	2 Identify areas of group consensus with the information provided by the presenters
	3. Develop recommendations on how extension service can promote irrigation technologies within the existing ADPLAC while considering SMIS's strategy of capacity support to research-extension-farmer linkage
<b>Farmer Group</b>	1 Review the findings/results of the linkage assessment
	2 Identify areas of group consensus with the information provided by the presenters
	Develop recommendations on how farmers can participate in the ADPLAC for adoption of improved irrigation technologies while considering SMIS's strategy of capacity support to research-extension-farmer linkage

### **Synthesis of the Group Sessions**

Ato Germame Garuma, Deputy Bureau head of BoANRD and the Chairperson facilitated the group discussion, with technical assistance provided by Dr. Duresa Chibsa the Regional Irrigation Extension Expert (RIXE) and Ato Aweke Nigatu, the Regional Irrigation Agronomist (RIAE). Each group acknowledged the discussion question related to the findings of linkage assessment to develop recommendations on how to strengthen the ADPLAC considering SMIS capacity development strategy in irrigated agriculture.

The following were the major problems identified in the study analysis with proposed solutions:



### **Working Group: EXTENSION**

#### **Challenges:**

1. Irregularity of knowledge and skill at grass root level due to lack of practical demonstration
2. Lack of demand driven technologies and limited distribution

#### Limited participation of women in SSI

3. Gender related issues not boldly identified in relation to SSI.
4. Lack of training and demonstration activities for farmers
5. Lack of irrigation extension strategy guidelines and manuals
6. Limited scope of assessment on small scale and Micro irrigation
7. Weak market linkage and insufficient input supply
8. No integration & Cooperation between SARI and other stakeholders at all level

#### **Proposed solutions:**

1. Prepare practical training at all level, especially practical demonstration for DAs and Farmers

2. Provide irrigation technology packages through print and electronic form
3. Conduct participatory need assessment, follow up and evaluation
4. Strengthen existing schemes, Focus on homestead irrigation activities
5. Provide simple irrigation technologies. Facilitate credit for farmers
6. Provide training for professionals on Irrigation water & soil management and irrigation agronomy
7. Strategically work on improving the integration & Cooperation between SARI and other stakeholders at all level
8. Give attention for gender mainstreaming
9. Provide training and support strategies of demand driven research and on-farm demonstrations
10. Prepare training manuals and guidelines
11. Availability of inputs should be consistent in the region through private sectors



Photo illustration of the ADPLAC workshop during Farmers/private sector's group discussion

**Working Group: FARMER/ Private sector**

**Challenges:**

1. Poor budget allocation for strengthening the linkage
2. Poor Commitment of Stakeholders
3. Physical capacity gap (Laboratory, land, etc)
4. Weak system of agricultural inputs supplies and distribution
5. limited access to markets, inputs and credits
6. Lack of farmers and other relevant stakeholder's participation in on-farm trials and demonstrations, and promotional campaigns
7. Human resource capacity gap

**Proposed solutions:**

1. Allocation of adequate budget for effective implementation of the linkage
2. Discussion with stakeholders, defined roles and responsibilities, accountability
3. Strengthen the systems for input supply and distribution
4. Provide physical capacity building
5. Support the process of human resource capacity building
6. Enhance active participation of representative farmers/private sector in ADPLAC (being member)
7. Involve farmers/private sectors in all stages, i.e. planning, implementation and M&E stages
  - Establish forum for joint planning
  - Awareness creation on planning, implementing and gender mainstreaming, etc
8. Provide and disseminate new SSI technologies
9. Conduct demonstration and field days on SSI
10. Support the construction and maintenance of irrigation schemes



**Photo illustration of the ADPLAC workshop during Research group discussion**

### **Working Group: RESEARCH**

#### **Challenges:**

1. Shortage of on-farm irrigation research sites
2. Lack of responsibility and accountability in the linkage components
3. Linkage gaps among different stakeholders as ADPLAC has limited capacity to bring them to build consensus of benefit-sharing and knowledge transfer
4. Rudimentary irrigation research
5. Weak integration of research and extension activities at farmer's level
6. Lack of irrigation extension strategy guidelines and manuals
7. Limited scaling up of irrigation technology packages
8. Lack of training and demonstration activities for farmers
9. Planning problems of extension activities

#### **Possible solutions**

1. Research and extension organizations should undertake joint problem identification, planning, implementation and monitoring and evaluation of research and extension activities.
2. Make use of innovation system approach by establishing innovation platforms, based on value chain approach for different agricultural commodities

3. Transfer the available irrigation technology packages, already developed by research, to farmers with shared responsibility and accountability by signing MoU between research and extension organizations
4. ADPLAC to make use of FTCs as centers of linkage following FREG approaches. BoANRD has to grant demonstration area within the FTC & Research has to conduct research demonstrations both
5. by signing MoU. In this connection, SARI has to commence conducting demonstrative researches related agricultural water management at all the pilot SSI schemes and MI woredas without any prerequisite as soon as possible.
6. SMIS to provide capacity support to ADPLAC including training of experts, extension agents and farmer.
7. SMIS has to take responsibility to prepare the manuals and guidelines.
8. Strengthen ADPLAC and make it practically functional at all levels with involvement of relevant stakeholders
9. Provide training and support using practical sessions on FTC demonstration sites
10. Planning of linkage activities must be demand driven

#### **OUTCOME OF THE VALIDATION WORKSHOP**

The linkage assessment, presentations and discussions held in the three working groups show that the validation workshop of the region concluded with a series of consolidated recommendations for the regions to undertake actions for strengthening the research-extension-farmer linkages taking into consideration of SMIS's capacity development strategy in irrigated agriculture.

Following presentations by three groups on assessment analysis with specific recommendations to research and extension and farmer linkages, the Chairperson of validation session Ato Germame Garuma, opened the floor for discussion. Subsequently, a consensus was built upon on validating the results of the linkage assessments, agreeing the areas of information presented by four presenters.

Summarizing all opportunities and the challenges of Research- Extension- Farmer Linkage and in order to achieve the desired goal, ADPLAC should have to:

- Conduct capacity development training on platform development and management, monitoring and evaluation, partnership development for ADPLAC members
- ADPLAC should ensure joint problem identification, planning, implementation and monitoring and evaluation of both research and extension activities with shared responsibility and accountability
- ADPLAC has to promote field trials & demonstrations on FTCs using FREG approach.
- Use participatory extension approach and communication methods to stimulate local action for implementation of joint extension-research field programs;
- Research institute should have to develop irrigation agronomic recommendations by doing research activities at different Agro ecological zone.
- Create enabling environment for accessing to agricultural support services and inputs

- Involve male and female farmers/private sectors in planning, implementation and M & E stages, establish forum for joint planning, awareness creation, implementing and gender mainstreaming etc;
- ADPLAC members have to get capacity by training about their role and responsibilities to enrich their level of understanding, knowledge and accountability
- Involve private sectors in the activities related to research-extension-farmer linkages
- Enhance and support strategies of demand driven research and on-farm demonstrations
- Facilitate linkages between and among partner institutions, NGOs, decision makers, including private sectors
- Irrigation agronomy and extension calls due attention. Water measurement, crop water requirement, crop calendar, promotion of irrigation and water harvesting technologies, scaling up of best experience associated with irrigation activities are of the most essential areas that require attention.
- Bridge smallholder farmer's involvement gaps on research issues identification, research planning, implementation, M&E and extension priorities. This serves to address the need and priorities of smallholder farmer's requisite
- Improve data management and interaction with other institutions (e.g. research institutes, A-TVET, agricultural mechanization research institutes, public and private input providers etc).
- Use different extension structures to reach wider community members (especially FHHs& youths). For example, Farmer Research Groups, Water users Association on SSI/MI activities
- Awareness creation/orientation of council members on role and responsibilities. This would help to enrich accountability.



### Recommendations (the way forward):

The participants realized the workshop as a first step that requires actions to provide capacity support to ADPLAC platforms by which the platforms will be able to coordinate research-extension farmer linkage activities in a befitting manner at all levels that will foster on promoting improved irrigation technologies among SSI and MI farmers. The participants recognized that through institutional linkages, effective ADPLAC platforms would help resolve critical irrigation problems and deliver development results. There was consensus among the participants, the workshop was a starting point for initiating the process of strengthening the linkage, however, the participants recognized that SMIS's strategy of capacity support to linkage will have a greater impact on improvement of irrigated agriculture in the regions. Following is the recommendations of validation workshop, summarized in seven key points:

1. There is a need to support the linkage mechanism at all level by conducting a capacity development training on leadership and management of institutional platforms, including orientation on roles and responsibilities.
2. Improvement of ADPLAC guidelines and production of an operational manual will help guide council members for effective management of linkage mechanism. In this respect, region may need to organize an orientation workshop for council members to gain a better understanding about procedures of linkage mechanism.
3. Planning of linkage activities should be demand-driven to support SSI and MI schemes, and emphasis be given on joint efforts of problem identification, implementation, monitoring and evaluation of research and extension activities.
4. It is feasible for regional research institutes to contribute to the improvement of DA's performance in conducting demonstrations and trainings at FTC settings. SMIS will facilitate ADPLAC to bring these two actors to reach a consensus of undertaking joint irrigation demonstrations and training for farmers in FTCs, particularly in irrigated agriculture and improved agronomic practices. In this respect, the FTCs can also be used as a center of linkage since FTCs are considered as a major focus for fostering agricultural development activities.
5. SMIS to organize a round table discussion meeting between BoANRD and regional research institutes to develop a modus-operandi of disseminating the already available irrigation technology packages among farmers with shared responsibility and accountability by signing a MO between BoANRD and SARI.
6. It is important for ADPLAC to provide advisory services on undertaking of coordination research of evolving technologies including quarantine test plots, and at the same time, coordinate other professionals and multi-stakeholder platforms for their participatory efforts to supporting the food security interventions.
7. SMIS to provide capacity development support to ADPLAC platforms, taking the recommendations of this workshop into consideration, and discuss this with the federal Ministry of Agriculture (responsible for ADPLAC portfolio) for necessary action.

**SMIS PROJECT, Road Map for implementation of SSI and MI REFL Platform forum/council**



**February/ 2016**

<b>Activities</b>	<b>Implementing Partners</b>	<b>Date of implementing</b>	<b>Remarks</b>
Preparation of Guideline for the establishment of SSI and MI platform forum/council participating all stakeholders in irrigated agriculture	BoANRD, SARI and SMIS	March 15- April 15	
Approval of the Guideline of SSI and MI platform forum/council by the regional ADPLAC	SMIS	April 30	
Establishment of SSI and MI platform /council at regional, zonal and woredas level	BoANRD, SARI and SMIS	June 5-15	
The regional BoANRD and SARI should undertake joint assessment of problem identification, planning, implementation and monitoring and evaluation of research and extension activities	BoANRD, SARI and SMIS	July, 2016	
Preparation of action plan for research, extension and other stakeholders activities	BoANRD, SARI and SMIS	August,2016	
Approval the action plan by the regional ADPLAC	SMIS	August,2016	
Reviewing and Improvement of ADPLAC guidelines and production of an operational manual that will help guide council members for effective management of linkage mechanism.	BoANRD, SARI and SMIS	April-June 5	
Based on the need of regional stakeholder organize an orientation workshop for council members to gain a better understanding about procedures of linkage mechanism	BoANRD, SARI and SMIS	August, 2016	
Organize training on awareness creation of ADPLAC member on the roles, responsibilities and Accountability	BoANRD, SARI and SMIS	Sep, 2016	
Jointly need assessment of the current technology and type of demonstration and trail need at SSI and MI woredas	BoANRD, SARI and SMIS	Sep,2016	
Planning of linkage activities should be demand-driven to support SSI and MI schemes, and emphasis be given on joint efforts of problem identification, implementation, monitoring and evaluation of research and extension activities	BoANRD, SARI and SMIS	Sep,2016	
SMIS will facilitate ADPLAC to bring research and extension and farmers to reach on consensus of undertaking joint irrigation demonstrations and training for farmers in FTCs, particularly in irrigated agriculture and improved agronomic practices	BoANRD, SARI and SMIS	Sep, 2016	
Facilitate and support research to conducted and make use of FTCs as centers of linkage following FREG approaches	BoANRD, SARI and SMIS	October,2016	

Provide training and support for researcher and extension subject matter specialist using practical sessions on FTC demonstration sites	BoANRD, SARI and SMIS	Oct,2016	
SMIS to organize a round table discussion meeting between BoAs and regional research institutes to develop a modus operandi of disseminating the already available irrigation technology packages among farmers with shared responsibility and accountability by signing MoU between BoANRD and SARI.	BoANRD, SARI and SMIS	Dec,2016	
Establish market and services provider linkage system for input supply and distribution at SSI and MI woreda level	BoANRD, SARI, SMIS and private sectors	Dec,2016	
Develop appropriate programme to strengthen practical knowledge and skills of researcher, extension experts at all level and DAs	BoANRD, SARI and SMIS	Dec, 2016	
Capacity building need assessment of research, extension subject matter specialist and other stakeholder for SSI and MI areas	BoANRD, SARI and SMIS	Dec,2016	
Facilitate and support ADPLAC to provide advisory services on undertaking of coordination research of evolving technologies including quarantine test plots, and at the same time, coordinate other professionals and multi-stakeholder platforms for their participatory efforts to supporting the food security interventions	BoANRD, SARI and SMIS	Sep- January, 2016	
support the linkage mechanism at all level by conducting a capacity development training on leadership and management of institutional platforms, including orientation on roles and responsibilities.	BoANRD, SARI and SMIS	Oct-January, 20	

**Annex: 1 Workshop participants' suggestion** on consideration of SMIS strategy of capacity support to re-establishing linkages through the following proposed activities in irrigated agriculture

Function	SMIS capacity support strategy/action	Responsibility
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<b>Planning and review</b>	<p>SMIS facilitate BoANRDs for organizing an irrigation planning workshop at regional levels, in which</p> <ul style="list-style-type: none"> <li>▪ SMIS experts undertake joint review of irrigation plans</li> <li>▪ Support preparation of joint irrigation extension plan</li> <li>▪ Plan is endorsed by ADPLAC</li> <li>▪ SMIS support preparation of joint irrigation training plan, and assist on implementation of training</li> <li>▪ SMIS experts perform as master trainers to the training</li> </ul>	<p>SMIS and BoANRD (Extension Core Process)</p>
<b>Program formulation and priority setting</b>	<p>Program priority setting builds on the foundation created by situational analysis. It serves as a basis for making decisions on program priorities in irrigated agriculture</p> <ul style="list-style-type: none"> <li>▪ SMIS supports developing a template on situational analysis and priority setting techniques</li> <li>▪ SMIS guide BoANRD by examining the information through a series of filters to help determine program priorities</li> <li>▪ SMIS provides job-embedded training</li> </ul>	<p>SMIS and BoANRD (Extension Core Process)</p>
<b>Collaborative professional learning activities</b>	<p>SMIS will provide professional collaborative learning activities to regions by which they will gain knowledge and skills necessary to positively impact learning for skill transfer</p> <ul style="list-style-type: none"> <li>▪ Staff can examine their work and improve practice</li> <li>▪ SMIS will follow five strategies for collaborative professional activities, this include book studies, looking at expert's work, learning walks, lesson studies, and developing consistent expectations</li> <li>▪ SMIS evaluate the learning gains of clients</li> </ul>	<p>ADPLAC and BoA</p>
<b>Exchange of resources to enhance capacity</b>	<p>SMIS will facilitate extensive discussions with its partners for exchange of resources, which include</p> <ul style="list-style-type: none"> <li>▪ Study trips (local and international)</li> <li>▪ Accelerated skills development and capacity training</li> <li>▪ Encourage Public-Private-Partnerships</li> <li>▪ Strengthen local/community associations</li> </ul>	<p>BoANRD (Extension Core Process)</p>

<b>Dissemination of knowledge and information</b>	<p>SMIS to support BoANRDs and Partners on dissemination of knowledge and information related to irrigated agriculture in the form of:</p> <ul style="list-style-type: none"> <li>▪ Written material information instruments such as articles, booklets, fact sheets, resource guides, newsletters, editorials, press releases and news coverage, pocket cards, posters, research bulletins, science summary reports, etc.</li> <li>▪ Electronic material such as DVDs/ CD-ROMs, email alerts</li> <li>▪ Knowledge material available on the Internet, online registries of research evidence, real-time reminders, tailored messages sent by email, web conferences, and websites</li> <li>▪ Interpersonal means of communication such as arts- based performances (i.e., theater), a community of practice networks, forums, knowledge brokers, partnerships with stakeholders, and</li> </ul>	SMIS, SARI and BoANRD
<b>Function</b>	<b>SMIS capacity support strategy/action</b>	<b>Responsibility</b>
	seminars/workshops	
<b>Co-ordination of professional activities</b>	<p>SMIS will support regions and zones to develop coordination strategies for supporting the local professional organization including farmers' organization</p> <ul style="list-style-type: none"> <li>▪ Identify existing professional organizations (farmers' organizations, CBOs, agricultural associations, etc)</li> <li>▪ Support regional experts to form new professional organizations</li> <li>▪ Support development of organization's TOR and constitution</li> <li>▪ Support capacity training to professional organizations</li> </ul>	SMIS and BoANRD

**Annex: 2. Invited workshop participants,**

- Bureau Head; Regional Bureau of Farming &NR Development
- Regional Bureau Head of Farming &NR Development; Crop Development Extension Core Process Owner
- South Agriculture Research Institute Director
- Crop director from South Agriculture Research Institute
- Extension and Socio-economic expert from Regional Agriculture Research Institute
- PIT member from Regional Agriculture Research Institute /Ato Shiferaw Boke/
- Linkage expert of Regional BoFNR Development, crop extension core process /Ato Gosaye Tiba/

- PIT member extension expert from BoFNRD, Crop Development Extension Core Process / Ato Nadew Feleke /
- PIT member Agronomy expert from BoFNRD, Crop Development Extension Core Process /Ato Tessema Ginore /
- NRM TC member from BoFNRD /Ato Seifu /
- Agricultural Input Core Processes Owner; BoFNRD
- Extension communication expert, BoFNRD Crop Development Extension Core process Ato Daniel Damtew/
- Rural Women Extension Development Expert; Crop Development Extension Core Process / W/ro Frehiwet Tefera/
- Crop Protection Extension expert; Crop Development Extension Core Process /Ato Sisay /
- Gender Mainstream Support Process; BoFNRD / W/ro Belainesh Gelaye/
- Sidama zone Farming &NR Department; crop development extension core process owner
- Extension Expert from Sidama zone Farming &NR Department
- Agronomy Expert from Sidama zone Farming &NR Department
- SMIS IRTL
- SMIS NRTL
- SMIS, Irrigation extension expert
- SMIS Irrigation Agronomy expert
- SMIS M&EE
- LIVES representative
- AGP coordinator
- University representative
- ATA representative
- 2 private representatives /
- 2 farmers

**Total .....** 31

### Annex: 3. .Lists of participants

S.#	Name of Participant	Gender	From Federal Region/Woreda /Zone Bureau	Position	e-mail Address	mobile
1	Germame Garuma	M	Hawassa	Deputy Bureau Head	<a href="mailto:ggermane05@yahoo.com">ggermane05@yahoo.com</a>	0937733372
2	Tadesse Gobaro	M	Bona	Farmer	-	0916527312
3	Shumye Shunde	M	Bona	Input Supplier	-	0916437281

4	Berhanu Solomon	M	Hawassa	Dep. Coord.	-	0916822765
5	Burka Bulasho	M	Hawassa	Agronomist	<a href="mailto:bulasho@yahoo.com">bulasho@yahoo.com</a>	0911064680
6	Girma Dangura	M	Hawassa	Expert	-	0910703372
7	Hiyesus Hagos	M	Hawassa	Driver	-	0910159854
8	Desalegn Bogale	M	Hawassa	Driver	-	0916045927
9	Manaye makuria	M	Shebedino		-	0916822945
10	Shiferaw Boke	M	Hawassa	Res. Coordinator.	-	0911810047
11	Belaynesh Gelaye	F	Hawassa	Gender Mainstreaming. Coordinator.	-	0911708391
12	Tariku Kia	M	Wondo Genet	Farmer	-	0911802464
13	Mulugeta Fetene	M	Hawassa	Pro. Manager	<a href="mailto:mulugeta.fetene@ata.gov.et">mulugeta.fetene@ata.gov.et</a>	0916823356
14	Mulugeta Habte	M	Hawassa	Researcher	<a href="mailto:mulerhab2006@yahoo.com">mulerhab2006@yahoo.com</a>	0911084924
15	Getahun Yakob	M	Hawassa	Researcher	<a href="mailto:getahunyakob@gmail.com">getahunyakob@gmail.com</a>	0911734028
16	Mohammed Maru	M	Hawassa University	Lecturer	<a href="mailto:amir_mohammed60@yahoo.com">amir_mohammed60@yahoo.com</a>	0910080075

#### Annex: 4 Group work discussions

##### Working group - Extension

Questions	Recommended activity	Responsible Institute/ body
Lack of awareness	<ul style="list-style-type: none"> <li>- Prepare practical training at all level</li> <li>- Prepare practical demonstration for DAs Farmers</li> <li>- Provide irrigation technology packages through print and electronic media</li> </ul>	BoANRD, SMIS ,AGP, SARI, WoA., DAs BoANRD, SMIS ,AGP, SARI, WoA, DAs SMIS, WoA,
Develop demand driven technologies	-.Participatory need assessment up to evaluation	BoANRD, SARI, Hawassa University, SMIS

Increasing participation of women in SSI	<ul style="list-style-type: none"> <li>- Strengthen existing schemes</li> <li>- Provide simple irrigation technologies</li> <li>- Focus on homestead irrigation activities</li> <li>- Facilitate credit facilities</li> </ul>	BoANRD, AGP, SMIS SARI, AGP, SMIS BoANRD, SARI, SMIS, AGP Bank, MFs, Cooperatives
Role of SMIS in Capacity Building	Provide training for professionals on Irrigated water & soil management Irrigation agronomy	SMIS
Why is ADPLAC not functioning?	No integration & Cooperation between SARI and other stakeholders at all level	BoAFNRD, SARI.& other stakeholders
Gender related issues not boldly identified in relation to SSI.	Mainstream gender	All Stakeholders
Limit the scope of assessment to small scale and Micro irrigation		BoAFNRD, SARI, SMIS
Market access were not indicated	Clearly indicate the routes	BoANRD, Coop.,

### **Working group Extension Cont'd - Review of the linkage assessment -**

<b>Questions</b>	<b>Recommended activity</b>	<b>Responsible Institute/ body</b>
Skill gap both farmers and experts	<ul style="list-style-type: none"> <li>- Low awareness creation on SSI technologies</li> <li>- Prepare practical demonstration for DAs, Farmers</li> </ul>	BoANRD, SMIS ,AGP, SARI, WoA, DAs BoANRD, SMIS ,AGP, SARI, WoA, DAs SMIS, WoA,

	- Provide irrigation technology packages through print and electronic media	
Low attention on SSI by both farmers and experts	Absence/ low monitoring & evaluation by experts Absence/ low feedback from the experts	BoANRD, SARI, Hawassa University, SMIS
Problems related to seeds	- availability - Source - Quality	BoANRD, AGP, SMIS SARI, AGP, SMIS BoANRD, SARI, SMIS, AGP
Market linkages	Find market linkages	BoANRD. Coop. Bank, MFs, Cooperatives

### Working group - Private sector/ Farmer - Challenge VS Possible solution

Challenges	Possible solutions
Poor Budget allocation	Allocation of adequate budget for effective implementation of the linkage
Commitment of Stakeholder	Awareness creation Defined roles and responsibilities Accountability
Weak system of agricultural inputs supply and distribution	Establish system for input supply and distribution
Physical capacity gap (Laboratory, land, etc)	Physical capacity building
Human resource capacity gap	Human resource capacity building

### Recommendation and responsibilities

Questions	Recommended Activity	Support Capacity building	Responsible body/Institution



How farmers /private sector can participate?	<ul style="list-style-type: none"> <li>• Representative farmers/private sectors should participate actively in ADPLAC (being as a member)</li> <li>• Involve farmers/private sectors from planning, implementation and M &amp; E stages</li> </ul>	<ul style="list-style-type: none"> <li>• Establish forum for joint planning</li> <li>• Awareness creation on planning, implementing and gender mainstreaming etc</li> </ul>	BoANRD and SMIS
How irrigation facilities could be capacitated	<ul style="list-style-type: none"> <li>• Provision and dissemination of new SSI technologies</li> <li>• Conducting of demonstration and field days on SSI</li> <li>• Construction and maintenance of irrigation schemes</li> </ul>		BoANRD, Research Institution, SMIS and other development partners

### Working group - Research

Challenges	Possible solutions
Shortage of on-farm irrigation research sites	Research and extension organizations should undertake joint problem identification, planning, implementation and monitoring and evaluation of research and extension activities.
Lack of responsibility and accountability in the linkage components	Make use of innovation system approach by establishing innovation platforms, based on value chain approach for different agricultural commodities
Linkage gaps among different stakeholders as ADPLAC has limited capacity to bring them to build consensus of benefit-sharing and knowledge transfer	Transfer the available irrigation technology packages, already developed by research, to farmers with shared responsibility and accountability by signing MoU between research and extension organizations
Radical irrigation research activities	ADPLAC to make use of FTCs as centers of linkage following FREG approaches. BoANRD has to grant

	demonstration area within the FTC & Research has to conduct research demonstrations both by signing MoU.
Weak integration of research and extension activities at farmer's level	SMIS to provide capacity support to ADPLAC including training of experts, extension agents and farmer
Lack of irrigation extension strategy guidelines and manuals	SMIS has to take responsibility to prepare the manuals and guidelines
Limited scaling up of irrigation technology packages	Strengthen ADPLAC and make it practically functional at all levels with involvement of relevant stakeholders
Lack of training and demonstration activities for farmers	Provide training and support using practical sessions on FTC demonstration sites
Planning problems of extension activities	Planning of linkage activities must be demand driven