Assessment Report:

IPMS – Farm Radio Participatory Agricultural Radio Series’ in Ethiopia

February, 2012

Evaluation report by:
Eyob Mihretab (Development Consultant)

Submitted To:
IPMS / ILRI

Submitted By:
Farm Radio International
Executive Summary

In 2011, the Improving Productivity and Marketing Success (IPMS) project of the International Livestock Research Institute (ILRI) asked Farm Radio International to coordinate the planning and delivery of a series of radio programs related to two of the commodity value chains involved in IPMS: apiculture in the Tigray Region, and fruit tree production in Sidama.

Farm Radio International accepted this invitation, and, after signing an agreement with ILRI-IPMS, proceeded with the development, implementation and evaluation of a new approach to agricultural radio: the Participatory Agricultural Radio Series – or PARS. The PARS was conceptualized as a weekly series of 6 episodes of 30-minute radio programs related to some aspect of the apiculture or fruit tree value chains. Planned with input from and the participation of intended beneficiaries, the PARS engages farmers as central players to design, develop and implement a series of radio programs around an agricultural practice they deem essential to their livelihoods and overall food security. It was anticipated that the PARS would be successful in raising the knowledge levels of communities reached by the programs, but that a 6-week series was probably inadequate to have a short-term measurable impact on the practices/behaviours of farmers. (FRI’s Participatory Radio Campaigns, which last for 4-7 months, DO have a measurable impact on farmers’ practices). The PARS strategy involved the following steps:

- Selecting and engaging partner radio stations (one per value chain)
- Providing training and capacity development to partner radio stations
- Conducting formative research in communities to be served by the PARS
- Designing the PARS with direct involvement of broadcasters and input from farmers
- Producing, broadcasting, and monitoring the 6 PARS episodes with each station
- Conducting an outcome evaluation after the conclusion of the last episode of each PARS

The outcome evaluation involved interviews with over 300 farmers for each PARS. Its aim was to provide quantitative and qualitative evidence of the effectiveness of the PARS with regards to changes in knowledge and attitudes related to the featured value chain. It included the following: a household survey covering 300 randomly selected household representatives in kebeles reached by the broadcasts; farm visits and field measurements; key informant interviews; and the collection of secondary data from other sources, such as regional agricultural extension services.

The results of this outcome evaluation for the PARS are presented in this report. The evaluation of the two PARS, taken together, provide interesting conclusions about the effectiveness of the PARS strategy. The OE included a 10-question knowledge quiz that tested the knowledge that farmers had acquired about the value chains. Combining the data from the OEs of the PARS, we see that:

- PARS were quite popular, with 50% of surveyed listeners reporting listening to at least 3 of the 6 episodes. In fact, 40% of surveyed listeners listened to at least 4 of the 6 episodes.

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Although men were more likely to be aware of and listen to PARS than women, 39% of female respondents were aware of and listened to some of the PARS, and 15% heard 3 or more episodes.

They added to the knowledge that was conveyed by the direct intervention of the IPMS program.

Farmers that did not receive the direct intervention of the IPMS but did hear the PARS also demonstrated more knowledge of the two value chains, indicating that PARS is a good strategy for extending knowledge of value chains far beyond the direct impact areas of IPMS.

As the graph below reveals, which combines responses from the two PARS, the more farmers listened to the PARS, the more knowledge they gained:

It is clear that radio provides effective complimentary support to programs such as IPMS that offer face-to-face interventions. Not only this, but it has significant impact on populations of farmers who do not receive this intervention, leading to a large scale-up potential.

The following sections contain more detailed analysis of the individual radio series’ in Tigray and Sidama regions of Ethiopia.
Assessment Report:

Participatory Agricultural Radio Series to scale out Modern apiculture in Tigray Region, Ethiopia

February, 2012

Submitted To:
Farm Radio International / IPMS

Submitted By:
Eyob Mihretab (Development Consultant)
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**Acronyms**

FRI: Farm Radio International

Da: Development Agent

DW: Dimtsi Woyane

FGD: Focus group discussion

IDI: In-depth interview

IPMS: Improving Productivity and Market Success

ILRI: International Livestock Research Institute

PARS: Participatory Agricultural Radio Series

PRC: Participatory Radio Campaign

PW: Pilot Woredas

SWOC: Strength, Weaknesses, Opportunities and Challenges
1. Background

The success of an agricultural extension program depends on sharing information, exchanging knowledge, and effective communication and interaction between researchers, agricultural extension agents and farmers. Yet these aspects of agricultural extension are often neglected, or fail to be effective in many developing countries.²

To enhance the success of extension programs and help smallholder farmers learn about and adapt to new farming practices that improve their productivity and food security, effective communication strategies and tools are needed.

Among the different communication tools available, radio can reach many farmers with relevant information. Participatory radio enables them to undertake decisions that lead to improved farm management, yields, nutrition and food security.

In order to promote and scale out the uptake of agricultural technologies that are field tested in Pilot Woredas (PWs) and enable smallholder farmers to adopt appropriate farming technologies, innovative input supply, and output marketing and financial services, Improving Productivity and Market Success Project (IPMS) of International Livestock Research Institute (ILRI) and Farm Radio International (hereafter FRI) signed a partnership agreement to implement a Participatory Agricultural Radio Series (PARS).

One component of the agreement refers to producing six weekly radio programs that highlight the IPMS work in the apiculture value chain in Atsbi Woreda. The program of IPMS sought to enhance honey production through the use of improved bee keeping management, and raise awareness and knowledge of small scale farmers in other Woredas of Tigray Regional States.

To put the communication project plan into action a package of complementary activities was carried out. Identifying radio stations, delivering in-station training for radio journalists and conducting formative research are some of the major activities undertaken.

After the preliminary findings of the formative research, agricultural program producers, editors, station managers and extension workers designed a six week Participatory Agricultural Radio Series.

During the design workshop the participants also discussed the key elements of the radio series that includes among others, the specific improvements chosen, contents and messages treated in the program and establishing links with extension workers. Ideal broadcast time for the radio series, potential feedback mechanisms from the target audience and use of digital recording machines in the field were also discussed in the design workshop.

The following is an independent evaluation of the impact of the PARS run on Dimtsi Woyane radio station with technical support of FRI.

2. **Objective of the Evaluation**

The major objective of the assessment is to evaluate the effectiveness of PARS and its potential contribution to the promotion and scaling out of improved beekeeping management along the value chain framework.

**Specific Objectives**

- Assess if PARS succeeded in scaling out awareness and knowledge of value chain based improved beekeeping management
- Assess the effectiveness of the program’s content, style, language and time of broadcasting from the audience perspective
- To verify whether the PARS has been effective in delivering the messages to the target groups
- Evaluate whether the topics raised in the PARS are closely related with the livelihood of the target audience.
- Assess if the radio program engaged the audience and served as a platform to air their voices
- Evaluate audience perception of the radio series compared to other agricultural radio programs
- Identify useful suggestion from the audience for the future implementation of the radio program and recommendations for a way forward.
3. Participatory Agriculture Radio Series: Program Development, Format and Content

Farm Radio International has developed two types of farm related radio-based activities. The first one is Participatory Radio Campaign, or PRC, which runs from 4-7 months. The second one is the abbreviated version known as Participatory Agriculture Radio Series (PARS). This runs for 6 weeks to help farmers learn about, evaluate, and introduce new agricultural practices. These programs can effectively scale-up agricultural initiatives and play a role in supporting a value chain approach to agricultural development.

With training and facilitation support from FRI, a six week radio series was aired to raise awareness and knowledge and help to scale out the uptake of apiculture value chain in Tigray Region.

In this section, important steps and activities taken to develop the Participatory Agriculture Radio Series will be discussed.

3.1 Program Development

3.1.1 Identification of Partner Radio Station

The Participatory Agriculture Radio Series started with the identification of the radio station. A broadcaster with a broad area of coverage, wide listenership base and willingness to work on agricultural related projects on partnership bases was selected. Dimtsi Woyane Tigray was chosen to air the radio series and a letter of intent was signed between Farm Radio and the radio station.

Based on the signed letter of intent, Dimtsi Woyane Tigray committed itself to collaborate with FRI on the development of a Participatory Agriculture Radio Series (PARS) to promote the scaling out of the apiculture value chain development experience of Atsbi Woreda, and enhance honey production and raise awareness and knowledge of small scale farmers in other Woredas of Tigray regional state.

To realize this objective, Dimtsi Woyane Radio Station contributed:

- Journalists and air time for the PARS
- Participation in capacity-building activities provided by FRI in order to produce a high quality PARS

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3 Agriculture Radio that Works. Participatory Radio Campaign: Farm Radio’s Unique and Proven Approach to helping small scale farmers learn about, evaluate and benefit from low cost sustainable and more productive farming practices.
• The production and broadcast of a weekly series of six 20-30 minute PARS episodes within the context of FRI’s quality standards
• By assessing and helping to assure the accuracy and completeness of the information being communicated to small-scale farmers through the radio programs
• Participation in monitoring and evaluating the outcomes of the radio programs on farmers’ awareness and knowledge
• Submission of all required reports to FRI on the radio programs aired as a result of the Project

FRI, after assessing the capacity of Dimtsi Woyane Tigray in terms of human resource and availability of farming-related radio programs, provided capacity building trainings to the staff involved in the PARS. The capacity of the radio station was also assessed in terms accessibility of computers, digital recording machines, broadcasting and editing soft-ware and connectivity to the internet. FRI provided the station with MP3 recording equipment (Sansas), mobile phone, SIM card and computer accessories.

With training and facilitation support from FRI, journalists working at Dimtsi Woyane radio station started early preparation to work closely with farmers and farmer organizations, agricultural extension, advisory services and researchers to carefully plan and deliver a six week radio series.

3.1.2 Formative Research

Before launching the PARS, FRI commissioned an external consultant to conduct formative research to gather data and document the current knowledge and practice of smallholder farmers with regard to improved methods of beekeeping. The formative research identified gaps and provided inputs that were used in the design of messages for the radio program.

The consultant carried out the fieldwork in Atsbi and Kilite Aw’allo Woredas of Tigray Regional State between August 8 and August 15, 2011. Four focus group discussions (FGDs), with 6 to 8 selected members were conducted. Participants of the FGDs were drawn from farming communities, and included men, women, youths, students, teachers, elders and opinion leaders. The result of the formative research was shared with all the partner organizations.

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4 Atsbi is an IPMS intervention area where as Kilite Aw’allo is control
3.1.3 In station Training

Between July 26 and August 12 2011, a three-week in-station training was given by FRI trainer for Dimtsi Woyane radio journalists who took part in the Participatory Agriculture Radio Series. The first step taken by the trainers was to evaluate the existing programs and identify the gaps. Some of the gaps identified in the station training include problem of story focus or messaging, challenges with presentation and rehearsing, lack of feedback and gender imbalance.

The trainer also facilitated the journalists through a SWOC exercise to explore the Strengths, Weaknesses, Opportunities and Challenges that exist in reporting agricultural related programs using radio.

Some of the strengths and opportunities the journalists pointed out include good team spirit, appropriateness of the program, good listening habits of farmers to radio, the ability of farmers to tell and express their stories and farmers trust what they hear on the radio.

Whereas, the weaknesses and challenges identified were lack of journalistic knowledge or training, lack of production materials (tape recorder, computer, etc), lack of research, and lack of incentive. In addition to these challenges, shortage of transportation and use of audience feedback for programmatic purposes are the other challenges mentioned.

The FRI trainer also trained journalists on the V.O.I.C.E standards of Farm Radio International (the importance of rehearsing and good voice for effective radio piece), basic interview techniques, radio script writing techniques and the importance of actuality or sound effect for radio production and listenership.

The in-station training also helped journalists to build their capacities in areas of sound editing and the use of different radio program formats (phone-in, vox-pop, story teller, discussion, interview and documentary) for agricultural programs. Field based training was also provided on the use of the Sansa MP3 player/recorder for journalists.

If the radio station already has an established weekly program serving farmers, and if that program is well-listened to by the target audience for this series, Farm Radio believes it is best to incorporate this series into the existing farmer program. The production team could produce a weekly ten- or fifteen-minute segment to incorporate into the regular thirty minute farmer program.
In addition, IPMS technical staff briefed journalists on the value chain approach and the situation of beekeeping in Atsbi. Based on the training and briefings the journalists produced sample programs.

3.1.4 Designing Workshop

The PARS design workshop was conducted on August 15-16, 2011 in Mekele, the capital of Tigray regional State. Design workshop participants were journalists and editors from the radio station who produce agriculture programs, the FRI trainer, and agriculture extension workers from selected Woredas.

A beekeeping expert from IPMS, the consultant who carried out the formative research, and a representative of FRI Ethiopia country office took part in the design workshop. A journalist who won the George Atkins award for her work with FRI Participatory Radio Campaign (PRC) in Uganda, also shared her experience with the journalists in the design workshop.

During the workshop there were open discussions on the content, style and format of the sample program, as a training exercise. Comments were also given to the producers on the sample program. The discussions and comments forwarded by participants were believed to help journalists to understand the issues and design the upcoming series of radio programs.

Also presented in the Designing Workshop were the preliminary findings of the formative research which helped in identifying gaps and designing messages to be used in the PARS. At the end of the design workshop, participants formulated a program plan for the six-week PARS: see below.
<table>
<thead>
<tr>
<th>Week</th>
<th>Program Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The benefits of credit, microfinance and modern beehives for improved honey production</td>
</tr>
<tr>
<td>2</td>
<td>Sources of bee forage and management</td>
</tr>
<tr>
<td>3</td>
<td>How and when to split the honey bee colony, and add more beehives when needed</td>
</tr>
<tr>
<td>4</td>
<td>Market chain and making use of other bee products</td>
</tr>
<tr>
<td>5</td>
<td>Year round improved beekeeping management</td>
</tr>
<tr>
<td>6</td>
<td>Feed Back on the PARS</td>
</tr>
</tbody>
</table>

4. **Methodology**

The evaluation employed a traditional social science research approach, using a comparative technique involving IPMS plus PARS Woreda, active PARS (no IPMS) and passive PARS (no IPMS) Woredas in Tigray regional state. Atsbi, which was an IPMS intervention area and where the PARS campaign was held, is used as IPMS plus PARS Woreda. In Kilite Aw’allo Woreda, there was no prior intervention by IPMS, but FRI and Dimtsi Woyane conducted a mobilization campaign to scale out apiculture - this served as an active PARS (no IPMS). Sae Se Tsaeda Emba Woreda was used as a passive PARS for this assessment, as neither an IPMS intervention nor a pre-PARS campaign was carried out by FRI and Dimtsi Woyane.

Data collection instruments included interviews, questionnaires, and focus group discussions. FRI prepared appropriate research tools and questions for focus group discussions and Key Informant Interviews (semi-structured questionnaires, guides, and checklists - see Annexes for the different tools).

The quantitative survey consisted of a household survey that interviewed 50 randomly sampled household members from each of the three selected Woredas. Using Mobenzi software, a total of 150 semi-structured questionnaires were returned. The data obtained was analyzed using the Scientific Package for Social Scientists (SPSS).

To back up the findings of quantitative data the consultant carried out document reviews, FGDs and in-depth informant interviews.
The documents that were reviewed include periodic reports, radio station log sheets, letter of intent and findings of the formative research.

Participants of the focus group discussions were composed of members of the general population living in the three Woredas. In each Woreda, two FGD sessions were conducted with 6-8 participants.

The in-depth interviews were conducted with a range of professionals involved in the production of the radio series. These included people such as journalists, station managers and agricultural extension workers.
5. Discussion and Findings

5.1 Socio Economic and Demographic Profile of Selected Sites

Atsbi Woreda (IPMS plus PARS)

Atsbi Wemberta Woreda is located about 65 km northeast of the capital of Tigray Regional State, Mekelle and it borders with Afar Regional State. In the Woreda, there are 16 peasant associations and two urban dwellers associations. The total geographical area of the Woreda is estimated to be 1223 km$^2$. According to the recent Woreda population reports, the total number household heads is estimated to be 21,398, with total population of size of 110,578 in 2003/04. Agro-ecologically, the Woreda is classified as Dega. Altitude in the area ranges from 918 to 3,069 m and 75% of the Woreda is in upper highlands (2600masl or above) and only 25% is found in midlands and lowlands.

The Woreda is classified into two farming systems. These are pulse/livestock system and apiculture/livestock farming system. Nine of the 16 peasant associations grow barley, wheat, pulses and include small ruminants in the farming system. They are found starting from the central southern parts of the Woreda to the north tip. There are seven associations that belong to apiculture/livestock farming system. This farming system is found starting from the middle of the Woreda to the southern end. A good part of the eastern section is known for honey production. A total of 6,729 beehives are found in Astbi out of which 2,000 honeybee colonies were hived using modern hives in 2004 (IPMS, 2005).

Kilite Aw’alo Woreda ("Active" PARS)

Kilite Aw’alo Woreda is located about 43 km north of the capital of Tigray Regional State, Mekelle. In the Woreda, there are 18 kebeles and 4 urban and semi urban towns. The total geographical area of the Woreda is about 105,758 hectares. Population report from Woreda bureau shows that the total number household heads is estimated to be 22,142, with total population of size of 114,001. Agro ecologically, the Woreda is classified as Woina Dega. Altitude in the area ranges from 1900 to 2460 meter above sea level.

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7 Ibid
The main farming activities in the Woreda include cereals, livestock and apiculture. Wheat, barley, teff and maize are produced in the Woreda. There are 15 honey producing cooperatives in the Woreda. Out of 22,142 Households, 5263 HHs own total of 14,300 modern bee hives in 2011.

**Saese Tsaeda Emba Woreda (Passive PARS)**

Saese Tsaeda Emba Woreda located in the northeastern part of the eastern zone of Tigray and has an area of about 94,000 ha. It shares a common boundary with Atsbi- Wenberta & Afar Region from the east, Hawzien from west, Ganta-Afeshum, Gulomekeda and Erob wereda from north and Kilite Awlaello (Wukro) from south. The total population of the Woreda is estimated about 153,000. Majority of the Woreda lies on the middle altitude land that is 96% Dega (highland), 2% dega or midland and 2% kolla or lowland. About 85% of the population depends on agriculture and the arable land area covered is 19365.75 hectare.

The inhabitants of the Woreda have agriculture as their economic mainstay and practice mixed farming. The main crops in the Woreda include barley, wheat, bean, peas, lentils, maize, sorghum, and flax. The dominant crop is barley which covers 81% of cropped land, followed by wheat with 14% of the total cropped land. The number of modern beehive is 6015.

**5.2 Profile of Respondents**

One hundred and fifty individuals took part in the evaluation of this Participatory Agriculture Radio Series. Out of the total study population 63% were male, with the rest female.

In terms of age distribution 24% of the respondents were under 20 years of age. Those in the age range between 20 - 40 made up the majority of respondents at 46%, while 30% were above the age of 40. To
know the socio economic status (SES) of respondents, asset ownership is used as a proxy. The majority of the respondents own ox, beekeeping activities and a radio set.

Out of the total study population 78% have access to a radio at home and 90% of them listen. Respondents were also asked how often they listen to the radio:
5.3 Awareness & Listenership to PARS:

As most farmers in the study areas own radio, there is a well developed culture of radio listenership. Dimtsi Woyane Radio Station is found to be the favorite radio station of the respondents. Out of the total 150 respondents in the three surveyed Woreda’s, an average of 88.7% of the respondents said that they listen to Dimtsi Woyane. This is mainly attributed to the attachment many farmers have with the radio station since the time of the struggle.

As Dimtsi Woyane is the most listened-to radio station in the region, and airs most of its programs using the vernaculular language of the residents, there was a presumption that farmers living in the area would have a good chance of listening to the Participatory Agricultural Radio Series (PARS). As the graph below shows, an average of 45.33% of the respondents in the three Woredas were aware the presence of the PARS radio program. However for understandable reasons the graph below shows that listenership was lower in the "Passive PARS" site (Tsede Amba), where neither mobilisation nor IPMS intervention took place.
Out of those who responded that they listened to the PARS; 44% said that they became aware of the program when tuning the radio on their own. There were others who became aware about the presence of the program through a friend or neighbor. Only 19% said that they became aware of the program from agriculture extension workers and Woreda agricultural officials. Though FRI launched the radio mobilization campaign principally through agricultural extension workers and Woreda officials, the study shows that there is a lot to be done in order to expand audience listenership for future PARS interventions. This becomes more evident when looking at the data on the listenership level of those who said they were aware of PARS. Out of those who were aware of program, the overwhelming majority of the respondents (98.53%) percent said that they listened at least one episode of the program. This indicates that once they heard that there was such a program, they made efforts to listen to it.
The majority of the respondents (58%) did not remember how many episodes they listened to. They did not even clearly know how many episodes there were in total. As people have busy lives and probably listen to different radio programs, it is understandable that they might not clearly remember these variables. Though it was a bit challenging for respondents to remember how many episodes they listen, they remember key messages conveyed in the specific PARS program they listened to. Notably the youth, who were exposed to the mobilisation campaign prior to its airing, followed a good number of the program series and remember the focus areas:
5.4 Timing of the radio Programs

The study result showed that the time slot when the radio series aired coincided with the timing that most farmers say that it is suitable for them to tune in the radio; which is usually early in the morning, before they go to their farm land, and early in the evening after they returned back from farming. The survey result showed that 64.71% of respondents said the airing timing of the program was suitable for them to listen to radio show.

The fact that each episode of the PARS was rerun three times in one day also increased the chance of the listenership. However some of the FGD participants who proposed that the program should be repeated on some other days had reservations on the timing of the program. They justify this by saying that farmers who could not listen on that particular day could have the chance to listen to the program on one or two other days of the week. Rerunning the program on weekends was also suggested by FGD participants.

Regarding the weakness of the radio program, some respondents felt that the program was too short, and should be given more air time than 20 minutes.

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8 The PARS was aired every Friday morning at 6 AM and rerun in the afternoon & in the evening.
5.5 Format and Presentation Style of the program

In all study sites many respondents had a hard time in explaining what they really felt about the format of the program and judging it as good or bad. This is partly due to the fact that many farmers are exposed to similar media formats that are commonly used in the media outlets that they watch or listen to. As compared to other questions that deal with the content and presentation style, the respondents found it a bit confusing to discuss about the program format.

Some participants said that since the radio program is presented by the ‘government’ for ‘their benefit’ they will accept in whatever format it is presented. ‘It is just good’ was the frequent and immediate response from FGD participants.

However some interviewed agriculture extension workers and Woreda agriculture officials were able to clearly differentiate and appreciate the format of the PARS Radio program from other agricultural radio programs presented on the station. One agriculture extension worker said the fact that the program was presented in a participatory way, with farmers taking part in the program rather than the journalists narrating about apiculture, made the program more appealing to the audience. Another one appreciated the fact that ordinary farmers were able to explain the techniques of modern bee hive management like professionals, which can motivate others. There were also farmers that said they appreciated hearing interesting stories told by successful farmers in the PARS. Some said they even remember what was said by those farmers.

Regarding the presentation style, many respondents replied that it was attractive. But still it was challenging for most farmers to differentiate and rank between the PARS and the other farm related radio programs broadcast on the station. This is partly as a result of lack of variety of radio programs/stations and thus lack of variety of radio presentation styles, or because the journalists that took part in the PARS also used to produce agricultural radio programs broadcast on the station. Since the voice of the producers of the program was already on air, some of the respondents remember the names of the journalists producing the radio series.
Respondents Evaluation of PARS

<table>
<thead>
<tr>
<th></th>
<th>Atsbi Woreda (IPMS Plus PARS)</th>
<th>Kilete Awlaello Woreda (Active PARS)</th>
<th>Tsede Amba Woreda (Passive PARS)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responses</td>
<td>Count</td>
<td>%</td>
<td>Count</td>
<td>%</td>
</tr>
<tr>
<td>Educational</td>
<td>20</td>
<td>71.43%</td>
<td>20</td>
<td>74.07%</td>
</tr>
<tr>
<td>Entertaining</td>
<td>4</td>
<td>14.29%</td>
<td>2</td>
<td>7.41%</td>
</tr>
<tr>
<td>Way of presentation</td>
<td>3</td>
<td>10.71%</td>
<td>3</td>
<td>11.11%</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
<td>10.71%</td>
<td>3</td>
<td>11.11%</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100.00%</td>
<td>27</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

5.6 Contents treated in PARS

Attempts were made to see what the audience feels about contents treated in PARS and what makes them unique from other similar agricultural related radio programs broadcast on Dimtsi Woyane and other media outlets.

Respondents said, unlike other agriculture radio programs that treat different agricultural issues regularly, PARS was a specialized radio show that give exclusive coverage for apiculture value chain week in week out. One of the Agriculture extension workers who followed the whole program compared the contents covered in PARS with that of other agriculture programs as follows:

Most of the media houses including Ethiopia Radio & Television Agency do not give detail coverage for agricultural related programs. These media houses give scanty coverage for specific honey related agricultural issue. I can say that, PARS has been able to give coverage for a variety of issues [related to apiculture], and farmers and experts took part for consecutive weeks on modern beehive management. The challenges and prospect were discussed that can possibly result in changing the knowledge and attitude of farmers to adopt new and improved varieties to scale up the product. This is helpful for our task of letting farmers keep on the business or motivate other to start. When they listened about the issue of improved beekeeping management for such a long time they said the radio is speaking what the extension workers are telling us to do and farmers throughout the region are adopting the new technique and reaping the benefits.

Various topics that make an integral part of the apiculture value chain approach were covered in the PARS. Respondents who are familiar with the program found the contents and the information covered
as relevant and educational. Out of those who claim they listen to the PARS radio show, 97% of the respondents strongly agree or agree that the program always gave information that was useful to them. Among the respondents that listened 77% of them strongly agree that the program always had voices of farmers that are like them. 96% of respondents that are aware and listen to the program said they trust the information received from PARS to be true and they clearly understood what was being said on the program.

Among the issues that received coverage, programs done on the benefits of credit and microfinance and adopting improved beekeeping, were found to be important. Splitting the honeybee colony and adding more beehives, market chain and making use of other bee products and bee hive management are contents of the program that are found to be important by the farmers and agriculture extension workers.

### Comparison of PARS with other Agriculture Radio Program

<table>
<thead>
<tr>
<th>Responses: PARS in comparison with other agriculture radio programs</th>
<th>Woreda Atsbi Woreda (IPMS plus PARS)</th>
<th>Kilete Awlaello Woreda (Active PARS)</th>
<th>Tsede Amba Woreda (Passive PARS)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
</tr>
<tr>
<td>Much better</td>
<td>6</td>
<td>12</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Somewhat better</td>
<td>9</td>
<td>11</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>About the same</td>
<td>13</td>
<td>3</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Don't know (didn't listen)</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>27</td>
<td>13</td>
<td>68</td>
</tr>
</tbody>
</table>

However, there is a difference of opinion among the FGD participants about the relevance of the contents covered in the program. Some of them said that it is to their benefit that the PARS raised various topics along the apiculture value chain. Others think that they wanted the PARS to give more focus in providing market related information rather than discussing other topics such as post harvest and sources of bee forage.
5.7 Attitude towards PARS

Probably one of the biggest achievements of the PARS radio program, as the study shows, is that it was inspirational and motivational for most farmers to influence their attitude and mentality. Many have recalled many episodes of the program they considered as inspirational.

Some farmers felt that the fact that improved beekeeping was given an extended broadcasting time made them feel that honey is becoming one of the agricultural products that the government wants them to give focus on and specialize.

Most respondents were motivated by success stories told by farmers presented in the program. Such stories which many farmers share have been motivational and even inspiring to keep beekeepers in the business. Some respondents also explained that they not only learn from the success stories, but also from the challenges they faced. And they were able to mention some episodes. One of the FGD respondents remembers a successful farmer who shared his experience on the PARS:

*The farmer whom I heard his story on the radio initially owned three honeybee colonies and then reached to seven within short period. But during dry seasons, he lost the honeybee colonies and only one colony remained for him. He was also expected to repay the loan for the empty hives. Instead of being desperate, he consulted the issue with local DAs and learnt how to care and feed the bees during such seasons. When the bees got well and started to hatch, he learned how to divide the colonies. Within three years he managed to own five hives and paid back the debt he took from Dedebit. He said whatever happens to the bee as long as the market value of the honey is not penniless he won’t quit it… Successful beekeepers presented on the PARS helped to motivate others like me to keep on even after failing.*

A story of woman who started to engage in beekeeping since her husband is allergic to honeybee stings also inspired listeners. The woman came to know that her neighbours started to get benefit after using modern bee hives and then she asked the agriculture extension worker how to get involved in improved beekeeping management and handle it with maximum care. She gives the honey to her husband to sell and bring the money back home. According to the respondent the story of the lady is inspiring for other women since it is unusual for women to take care of such tasks in the household.
Respondents who listened stories from successful farmers presented in the PARS blamed themselves and said that they need to do more to become model farmers.

Agriculture extension workers who listened to the program have seen it to be supportive of their work and the effort they make to assist farmers to adopt improved agricultural practices. One of the extension workers said that the government at regional and woreda level want them to promote and encourage farmers to take loan to buy improved beehive and honeybee colonies. But, prior to the PARS, they did not achieve their promotion objectives. The extension worker said that when they came to know that the PARS program was on air, they used it as means of motivating farmers to apply for loans and adopt improved beekeeping management. When asked if the PARS is meeting its objective the extension worker explained “it is hard to say that PARS radio show was the principal cause to farmers to decide to adopt modern bee hive management, but it will have its own contribution.”

Another extension worker also appreciated the fact that farmers shared their story on PARS. He said before adopting new and improved agricultural products or practices, farmers want to see whether farmers who adopted the improved beekeeping management benefit from it or not. The broadcasting of success stories will contribute to farmers developing a positive attitude towards improved beekeeping management. Apart from using demonstration sites, airing the achievements of model farmers from different Woredas or Kebeles through radio helps to mobilize others to do the same.

One of the agriculture extension workers in Saese Tsaeda Emba Woreda complained that there should be more promotion of the PARS prior to the broadcasting of the program on the radio so that farmers get ready to listen to it. Others said that there are other urgent issues to be aired on the radio in such a detailed way, rather than just honey. They said that for instance the price of fertilizer is critical for them as it touches almost all parts of their farming activity.

5.8 Knowledge gained through PARS listening

The main goal of this evaluation study is to find out what the audience has retained from the PARS radio show. Due to this, among the first issues raised was if they got some additional or new knowledge they gained from the program in addition to what they used to know before.

In the quantitative section, to know respondents’ general knowledge about improved beekeeping management, they were asked ten quiz questions (see Annex for the quizzes). The graph below shows
how the score on the knowledge quiz varied with the extent to which respondents were aware of and listened to the PARS episodes.

The above table reveals that average knowledge quiz scores were lowest among the 82 respondents that were not aware of the PARS at all – 5.63 out of 10. Those that listened to 2 or fewer episodes or said they could not remember how many they listened to had an average quiz score of 7.26 out of 10. When respondents remembered listening to 3 or 4 episodes, they scored an average of 8.3 out of 10. Those that listened to 5 or 6 had the best score on the knowledge quiz – 8.9 out of 10. In short, there is very strong evidence that exposure to PARS programs boosts farmers’ knowledge. Considering that 17% of respondents listened to 3 or more episodes of the PARS, a significant amount of knowledge gain took place across the three Woredas as a result of exposure to the programs.
When asked what new thing they got from the PARS that they consider as knowledge or information, FGD participants raised other issues. For instance one farmer said that he got information about the ways of preparing supplementary bee forage from sugar, barley flour, peas and beans flour from the PARS. The respondent said

...honeybees accumulate honey for their own consumption. However we harvest a significant portion without leaving them sufficient amount. Therefore, honeybees face starvation due to lack of feed. To overcome the problem preparing supplementary bee forage is required.

Respondents from the “active PARS” roup (Kilite Aw’alo Woreda) have emphasized that the PARS provided them with information about improved beekeeping management. Although they had prior knowledge on the importance of putting the hives in clean area and following their status daily, the detailed explanations given on the PARS enabled them to get comprehensive information on improved beekeeping management. It also gave information on how beekeepers should inspect honeybee colony hives.

Some FGD participants said that they gained new knowledge about the benefits of honey aside from using it as the main ingredient to make the alcoholic beverage called “tej”. They said that through PARS they gained knowledge about the medicinal value of honey. One of the FGD participants said that he knew honey is traditionally recommended to cure cold related illnesses, but from the PARS, he became aware that honey can be used as a treatment for a variety of illnesses and health problems. Another respondent added that honey can be used to aid the healing of burns and reduce scarring.

Another farmer remembered an episode from the PARS where an expert talked about how toxic it could be if honey is stored in a wet pot. He confessed that they used to wash the pot or container before putting the honey inside and they didn’t bother to dry the vessel. He said that he shared the information with his spouse and they won't commit the same mistake again.

The story told by successful farmers explaining the challenges they faced and the benefits they start to reap from adopting modern beehives, helped many audiences to gain new knowledge or remind them of information and knowledge that they used to know on apiculture.
5.9  Attitude towards Improved Beekeeping Management

To know respondents attitudes towards improved beekeeping, five questions were asked. (see Annex). Among the questions asked was whether a farmer can get a much better harvest when using improved beekeeping, and if they consider improved beekeeping to be expensive which can put a farmer in debt. They were asked if they intend to introduce improved beekeeping practices in the next six months as well.

Among those who were aware and listened the PARS series, 98.5% of respondents strongly agreed/agreed that farmers using improved beekeeping can get much better harvests and cleaner honey, that results in better prices in the market.

Respondents were asked if they have the opinion that improved beekeeping is too expensive and can put one in debt. 42.6% of the respondents disagreed with the statement whereas 26.5% agreed that improved beekeeping is expensive.

5.10  PARS and Agriculture Radio Journalists

After assessing the capacity of Dimtsi Woyane Tigray in terms of human resource and availability of farming related radio programs, FRI provided capacity building trainings to the staffs who worked on the PARS. The consultant asked agriculture radio journalists what they got out of the training.

The journalists appreciated the training provided to them in areas of script writing, considering the audience in mind, and the technical aspects of interviewing skills and meeting FRI’s “VOICE\(^9\) standards. The journalists also valued the technical training given to them regarding improved beekeeping management and value addition attached to it. They said the type of training given to them is unique compared to previous trainings, in that other trainings usually focus only on media production. The training provided by FRI combined both media production and improved beekeeping management that enabled them to know the subject and transfer to the target audience.

\(^9\) V – The programs value and reach out to listeners.
O – The programs provide the opportunity to speak and be heard on all matters. They encourage listeners to name their concerns, discuss them, and organize to act on them.
I – The programs provide listeners with the information they need, when they need it.
C – The programs are broadcast consistently and conveniently, on a reliable, regular basis.
E – The programs are entertaining.
The editors and journalists of the program also mentioned that they benefited from the discussion that they held with technical experts on improved beekeeping management in the design workshop. Such a pre-planning workshop with the purpose of designing the topics covered in the six week radio series was the first for Dimtsi Woyane Radio Station and for the journalists. The journalists said the inputs they received in the designing workshop were valuable and they incorporated the comments while producing the PARS.

During production, the journalists worked as a team with one of the editors coordinating the whole process. Prior to PARS radio series, the journalists said they used to work independently of one another and decide themselves on what to incorporate in agricultural radio programs. To produce the PARS radio show, they worked as a team that benefited from collective effort of the journalists and editors of the program. One of the journalists that took part in the production of the PARS shared his experience as follows:

The overall production was interesting and challenging in that we had to add real voices of farmers using vox pops than our own narration and expert’s explanation, which makes it demand more concentration and care during editing. But this has helped to come up with engaging stories and interesting radio production.

The consultant asked if there is something unique that they gained from the whole process and asked if they model their future programs along with the PARS. The journalists said they learned a lot from the training, design workshop and the production process in that they never have aired a tailored agricultural program focusing on one particular issue as a series. If they air issues related to irrigation on one week, next week the focus will change to fertilizers, or soil management. Their experience with the PARS radio program focused solely on the issues of improved beekeeping management. They start to believe that to deliver detail agricultural information and stories is a preferable strategy than giving little and scant information about a wide range of topics to the farmer on a radio show.

They also drew lessons about the importance of going through a pre-planning process in the pre-production phase. Though they used to have a plan, they were not as detailed as that of PARS and they want to carry on with the new experience.
6. Conclusion

Both the formative research and the assessment study carried out on the PARS gave evidence that most farmers in the study areas own radios and there is a well developed culture of radio listenership. Dimtsi Woyane is the favorite radio station listened to by nearly 90 percent of the respondents. However, the respondents who said they were aware of the presence of the PARS radio show were only 45% of the respondents in the three woredas.

The overwhelming majority of the respondents (98%) who were aware of presence of the program claimed to listen at least one episode of the program. Hence, it is possible to conclude that there is a great possibility that if farmers were made aware the presence of PARS, there would have been the chance to increase listenership of the program from the total study population. The study also showed that the time slot when the radio series aired is suitable for farmers to tune in the radio, though repeats on different days of the week would increase listenership further.

Having said that, it is good to mention, those respondents who became aware and exposed to the program found it a bit difficult to remember how many episodes there were in total. However they retained the key messages and information conveyed on the specific PARS program they listened to. The proper usage of pesticide, improved beekeeping management, proper handling of bees and market related topics are some of the messages that respondents pick from the program. The contents and the information covered on the PARS were also perceived to be relevant and educational by those who listened to the radio show. Key informants and respondents also identified PARS as a better program as compared to other agricultural related program which for the most part can be attributed to the participatory program design process.

However, there is a difference of opinion among the FGD participants on the contents that they identified as the relevant. Some of them said that it is good PARS raised various topics in the apiculture value chain. Others, especially from the IPMS plus PARS woreda, think they would have liked if the PARS gave more focus in providing market related information. The fact that the program covered stories of successful beekeepers that adopted improved beekeeping management is considered as one of the strengths of the program. There are indications that success stories told by farmers presented in the
program served as motivating factor to listeners to adopt the improved beekeeping management for new adopters and not to quit and lose hope for those who were already in the business.

Respondents also claim to receive new knowledge and information from PARS regarding ways of preparing supplementary bee forage from sugar, improved beekeeping management skill, splitting the honeybee colony and proper usage of pesticide. This is reinforced by the finding from the survey that the more episodes farmers listened to, the better they scored on the knowledge quiz. The attitude the farmers tend to have about improved beekeeping management is also found to positive. Respondents agreed that a farmer can get a much better harvest and cleaner honey that results in a better price in the market when using improved beekeeping.

Agriculture extension workers who listened to the program have seen the PARS to be supportive of their work and efforts towards farmers to adopting improved agricultural products. Some of them even used the PARS program to motivate farmers to take loans and adopt improved beekeeping management. The extension workers believe if PARS and other similar awareness raising campaigns continue on radio, they will have their own contribution for scaling out the improved beekeeping management.
7. **Recommendations**

- Though PARS was considered to have a potential for scaling out improved beekeeping management, its impact was constrained because of the lack of well organized and substantial pre-campaign mobilization activities. Hence, it will be advisable to consider such mobilization/promotion campaigns as a vital tool if FRI plans to launch such radio series in the future.

- One of the weaknesses of the program that was identified by respondents is that a six week PARS radio series is too short to support the adoption of new practices. To build on the knowledge gained and scale out the improved beekeeping management techniques it might be good to consider extending the partnership between IPMS, FRI and Dimtsi Woyane and extend time span of the series – perhaps moving toward a full 4-6 month participatory radio campaign.

- One of the biggest achievements of the PARS is that the stories of successful farmers were found to be inspirational and motivational for the audience and influence their attitudes and mentality. Hence, using similar sort of radio programming in the future will be helpful to motivate farmers.

- As the name indicates, the objective of Participatory Agriculture Radio Series is to create an interactive program that allowed the two-way flow of information, questions, answers between program producers and the farmers. Making radio programs informative and entertaining is not enough to stay long with possible target audience. To make the format of the radio program more interactive attempts should be done ways of engaging the audience. The radio program should be expected to be interactive as well and expected to encourage a dialogue between the producers and listeners. This can be possibly done by asking questions and giving T-Shirts, cups, fountain pens, sun-hats or stickers with the name of the station and partner organizations (FRI/IPMS) will motivate listeners to attend program regularly and participate in the weekly radio program.
Assessment Report:

Participatory Agricultural Radio Series to Scale out Value Chain of Modern Varieties of Fruits in Sidama Zone SNNPR Region, Ethiopia

February, 2012

Submitted To:
Farm Radio International / IPMS

Submitted By:
Eyob Mihretab (Development Consultant)
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Acronyms

FRI: Farm Radio International
DA: Development Agent
FGD: Focus Group discussion
IDI: In-depth Interview
IPMS: Improving Productivity and Market Success Project
ILRI: International Livestock Research Institute
PARS: Participatory Agricultural Radio Series
PRC: Participatory Radio Campaign
SCR: Sidama Community Radio
SNNPR: South Nations Nationalities & Peoples Region
SWOC: Strength, Weaknesses, Opportunities and Challenges
1. Background

In the developing world, one of the main reasons why the full potential of agricultural research is not realized is because communication between scientists, extension staff, and farmers is weak. The early efforts of agricultural extension systems have been criticized for using a top-down technical scientific information approach, which tended to ignore the diversity of both local agricultural problems and the farmers’ existing knowledge and skills. Extension services have also been criticized for failing to reach the majority of farmers in many developing countries and to communicate with them successfully.

It is only recently that agricultural extension systems shifted to a participatory approach. Extension agents and farmer’s innovations in communication have played a large part in efforts to make agricultural extension services participatory and replace the top-down, one way technology transfer approach.

To facilitate the sharing of information in agricultural extension services, engage farmers and disseminate information, different interpersonal and mass media communication channels such as extension agents, individuals, farmer-to-farmer contact, print media (newspapers, magazines, newsletters, leaflets, pamphlets, and posters) and electronic media (radio, television, film, slides and film strips) have been widely used.

Rural radio programs that use community based participatory communication approaches have comparative advantage because of their wide audience. This is because more than any other mass communication medium, radio speaks in vernacular language with the accent of local communities. Rural radio stations also broadcast predominantly to a rural audience, in local languages, on content that is related to local interests and needs, including agriculture-related topics. Rural radio offers a means through which information can be made accessible to farmers. It also provides a platform for

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12 ibid
dialogue and learning between stakeholders including scientists, extension workers, farmers, and other members of rural communities.

Recognizing these facts, Farm Radio International (hereafter FRI) developed and is using Participatory Radio Campaign (PRC) and Participatory Agricultural Radio Series (PARS) to scale out agricultural extension efforts and improved products.

In South Nations Nationalities & Peoples Region (SNNPR), the Improving Productivity and Market Success Project (IPMS) of the International Livestock Research Institute (ILRI) and Farm Radio International (FRI) signed a partnership agreement to implement a Participatory Agricultural Radio Series (PARS) to increase farmer knowledge and scale out the adoption of improved/grafted fruits of avocado and mango varieties.

The overall purpose of producing the PARS is to highlight IPMS work in the areas of value chain of improved fruit varieties of Avocado and Mango in Dale Woreda, and replicate the success to other Woredas of the Region.

This is an independent evaluation of the impact of a six week Participatory Agricultural Radio Series run on Sidama Community Radio station with the technical support of FRI.
2. **Objective of the Evaluation**

The major objective of the assessment is to evaluate the effectiveness of PARS and its potential contribution to the promotion of improved varieties of avocado and mango and determine its future direction.

**Specific Objectives**

- Assess if PARS succeeded in scaling out the cultivation of improved fruit varieties taking a value chain approach.
- Assess the effectiveness of the program’s content, style, language and time of broadcasting from the audience perspective.
- To verify whether the channel that FRI uses has been effective in delivering the messages to the target groups.
- Evaluate whether the topics raised in the Participatory Agriculture Radio Series are closely related with the livelihood of the target audience.
- Assess if the radio program engaged the audience and serve as a platform to view their voice.
- Evaluate audience perception of the radio series compared to other agricultural radio programs.
- Identify useful suggestion from the audience for the future implementation of the radio program and recommendations for a way forward.
3. Participatory Agriculture Radio Series: Program Development, Format and Content

FRI has developed two types of farm related radio-based activities. The first one is the Participatory Radio Campaign, or PRC, which runs from 4-7 months. The second one is Participatory Agriculture Radio Series (PARS). This is a shorter version which runs for 6 weeks. It aims to provide farmers information so they can learn about, evaluate, and introduce new agricultural practices. The Radio series, especially the longer one, have been shown to have an impact on adoption and scale-up of agricultural initiatives and play a very effective role in supporting a value chain approach to agricultural development.15

With training and facilitation support from FRI, a six-week, six-episode radio series was aired to raise awareness and knowledge and shift attitudes about improved varieties of avocado and mango in SNNPR Region.

In this section, important steps and activities taken to develop the Participatory Radio Agriculture Series will be discussed.

3.1 Program Development

3.1.1 Identification of Broadcaster

The Participatory Agricultural Radio Series started with the identification of the radio station. Sidama Community Radio (SCR), that broadcast programs in local language, was chosen and a letter of intent was signed between FRI and the radio station.

SCR committed itself to collaborate with FRI on the development of a Participatory Agriculture Radio Series (PARS) that helped listening farmers learn about and take steps toward cultivating improved varieties of avocado and mango in Dale Woreda in other Woredas of SNNPR.

With training and facilitation support from Farm Radio International, a six-week radio series was aired with the aim of increasing awareness and knowledge and positive attitudes about the value chain of Avocado and Mango in SNNPR Region.

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15 Agriculture Radio that Works. Participatory Radio Campaign: Farm Radio’s Unique and Proven Approach to helping small scale farmers learn about, evaluate and benefit from low cost sustainable and more productive farming practices.
To realize the objective of scaling out the improved varieties of Avocado and Mango value chain the Sidama community radio station contributed:

- Journalists and air time for the PARS
- The participation in capacity building activities provided by FRI in order to produce a high quality PARS
- The production and broadcast weekly series of six 20-30 minute PARS episodes within the existing farmer program
- Assessing and helping to ensure the accuracy and completeness of the information being communicated to small-scale farmers through the radio programs
- Participating in monitoring and evaluating the outcomes of the radio programs on farmers’ awareness and knowledge
- Submitting required reports to FRI on the radio programs aired as a result of the project

FRI, after assessing the capacity of the broadcaster in terms of human resource and availability of farming-related radio programs, provided capacity building trainings to the staff that were involved in the PARS.

The capacity of the community radio station was also assessed in terms accessibility of computers, digital recording machines, broadcasting and editing soft-ware and connectivity to the internet. The station was provided with MP3 recording equipment (Sansas), mobile phone, SIM card and computer accessories.

With training and facilitation support from FRI, journalists working at Sidama community radio station prepared themselves to work closely with farmers and farmer organizations, agricultural extension and advisory services and researchers to carefully plan and deliver the six week PARS.

3.1.2 Formative Research

Before launching the PARS, FRI commissioned an external consultant to conduct formative research to gather data and document the current knowledge and practice of small holder farmers with regard to improved varieties of avocado and mango. The formative research identified gaps and provided inputs that were used in the design of messages for the radio program.
The consultant carried out the fieldwork in Dale and Aleta Wendo Woredas of SNNPR Regional State between August 20 - August 27, 2011. A total of 4 FGDs with 6 to 8 selected members were conducted. Participants of the FGDs were drawn from farming communities, and included men, women, youths, students, teachers, elders and opinion leaders. The result of the formative research was shared with all the partner organizations.

### 3.1.3 In station Training

Starting from July 26 to August 12 2011, three weeks of in-station training was given by FRI trainer for the SCR journalists involved in the Participatory Agriculture Radio Series. The first step taken by the trainers was to evaluate the existing programmes and identify the gaps. Some of the gaps identified in the station training include usage of scrambled or confusing stories, problem of editing, logistics and transportation-related problems to reach farmers. The format the producers use to produce agricultural radio programs was found to be undefined as well.

The trainer also facilitated the journalists in completing a SWOC exercise to explore the Strength, Weaknesses, Opportunities and Challenges that exist in reporting agricultural related programs in SCR.

Based on the gaps observed, the FRI trainer trained journalists on setting story line-ups, usage of creative radio presentations and the manner of conducting interviews.

The FRI trainer also trained journalists on the importance of giving program focus, maintaining VOICE standards, the usage of actuality (wild sound) and sound clips, basic sound editing and on making agricultural radio programs gender sensitive.

The in-station training also helped journalists to build their capacities in areas of sound editing and the use of different radio program formats (phone-in, vox–pop, story teller, discussion, interview and documentary) for agricultural programs. Field based training was also provided on the use of the Sansa clip MP3 player/recorder for journalists. Based on the training and briefings the journalists produced sample programs.

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1. Dale is an IPMS intervention area where as Aleta Wendo was not an IPMS intervention area.
3.1.4 PARS-Design Workshop

The PARS design workshop was conducted from August 18-19 2011 in Sidama. Design workshop participants were journalists and editors from the radio station who are producing agriculture programme, the FRI trainer, and agriculture extension workers from each woreda.

Also participating in the workshop were the consultant that carried out the formative research, the FRI Ethiopia country representative and trainer, woreda and kebele officials, and a representative from IPMS. A journalist, who had won the George Atkins award for her work with FRI Participatory Radio Campaign (PRC) in Uganda, Grace Amito, also shared her experience to the journalists in the design workshop.

During the workshop there were open discussions on the content, style and format of the sample program that was produced earlier as one of training exercises. Comments were also given to the producers on the sample program. The discussions and comments forwarded by participants were believed to help journalists to understand the issue and design the upcoming series of radio programmes.

Also presented in the Designing Workshop are preliminary findings of the formative research that helped in identifying gaps and designing messages for the participatory agriculture radio series. At the end of the design workshop, participants formulated program planning for the six-week PARS radio series.

To do the PARS, the FRI Ethiopia office provided Sidama community radio station with four recording devices, two desktop PCs, and a mobile phone with the SIM card.

<table>
<thead>
<tr>
<th>Week</th>
<th>Program Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General information on the benefits of avocado and mango; the improved variety</td>
</tr>
<tr>
<td>2</td>
<td>Nutritious benefits of avocado and mango; the improved variety</td>
</tr>
<tr>
<td>3</td>
<td>Grafting process and its benefits</td>
</tr>
<tr>
<td>4</td>
<td>Management of avocado and mango seedlings and trees</td>
</tr>
<tr>
<td>5</td>
<td>Market chain</td>
</tr>
<tr>
<td>6</td>
<td>Feedback from the field</td>
</tr>
</tbody>
</table>
4. Methodology

The following study is based on an assessment of qualitative and quantitative data gathered in three Woredas each of which had a different connection to the project. One of the Woredas – Dale Woreda - was both an IPMS intervention area and was reached by the PARS campaign. The second Woreda - Aleta Wondo Woreda - had no prior intervention by IPMS, but FRI and Sidama Community Radio actively engaged community members in developing and producing the PARS on improved varieties of Avocado and Mango. We call this an “Active PARS” (no IPMS) Woreda. The third Woreda - Aleta Chuko - had no prior intervention by IPMS and could listen to the PARS programs if they happened to find them, but there was no direct contact between project or radio station staff community members. We call this a “Passive PARS” Woreda. Gathering data from these three types of Woreda’s allows us to see whether PARS alone can extend the benefits of IPMS to areas in which it is not involved in “on-the-ground” intervention, and whether “simply listening” can also bring benefits, even if the radio station is not directly engaged with listening communities.

Data collection instruments included interviews, questionnaires, and focus group discussions. FRI prepared appropriate research tools and questions for focus group discussion (semi-structured questionnaires, guides, checklists and questions for FGD and Key Informant Interviews) for the evaluation of the PARs (See Annexes fro the different tools).

The quantitative survey consisted of a household survey that interviewed 51 randomly sampled household members from the “IPMS plus PARS” woreda (Dale), another 50 in the Passive PARS Aleta Chuko woreda, and 50 respondents from the “Active PARS” Aleta Wondo Woreda. Using Mobenzi software, a total of 152 semi structured questioners were filled. The data obtained from the questionnaire was analyzed using the Scientific Package for Social Scientists (SPSS 15).

To back up the findings of quantitative data the consultant carried out document reviews, Focus Group Discussions and In-depth Informant Interviews. The documents that were reviewed include periodic reports, radio station log sheets, letter of intent signed between FRI and SCR, and findings of the formative research. Participants of the focus group discussion were composed of members of the general population living in the three Woredas. In each Woreda, 2 FGD sessions were conducted with 6-8 participants.
The in-depth interviews (IDIs) were conducted with a range of professionals involved in the production of the radio series. These included people such as journalists, station managers and Agricultural Extension Workers.

5. Discussion and Findings

5.1 Socio Economic and Demographic Profile of Selected Sites

Dale

Dale is one of the 77 Woredas in the Southern Nations, Nationalities and Peoples' Regional State and covers a total area of 28440 ha, at about 320 km south of the capital Addis Ababa. The Woreda is subdivided into 36 Peasant Associations. According to the census conducted in 2007, the population of the Woreda is estimated to be 244,692 of which women account for 49.7% and men account 50.3% of the population. Three main farming systems are found in Dale Woreda. They are garden coffee, enset, and livestock. Other crops such as haricot beans, yam, cereal and fruits like banana, avocado and mango also grow in the area.

Aleta Wendo

Aleta Wendo is one of the Woredas in the Sidama Zone, Southern Nations, Nationalities and Peoples Region of the country. Based on figures published by the Central Statistical Agency in 2005, the Woreda had an estimated total population of 388,788, of whom 189,610 are men and 199,178 are women. With an estimated area of 567.03 square kilometers, Aleta Wendo has an estimated population density of 685.7 people per square kilometer.

A survey done in the Woreda showed that 72% of the landmass is arable or cultivable, 12.9% pasture, 7% forest, and the remaining 8% is unusable. Important cash crops include corn, wheat, barley, horse beans, haricot beans, chat, local varieties of cabbage.

Aleta Chuko

Among the Woredas in the Sidama Zone, Aleta Chuko is one of the Woredas found in the Sidama Maize Belt livelihood zones with a population of 185,721. The Sidama Maize Belt covers the lowest areas of Sidama Administrative Zone, including parts of Hawassa, Dale, Aleta Wondo, Dara, Bensa and Aroresa.

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Woreda, and most of Boricha woreda. Although described by many as lowland, it technically falls into the borderline area between the kolla and woina dega agro-ecological zones, with altitudes in the range of 1400 – 1700 meters above sea level. Average annual rainfall is in the range of 700- 1200mm per year and falls during two rainy seasons, the belg and kremt rains.\footnote{SNNPR Livelihood Zone Reports Chuko Woreda: Sidama Administrative Zone}

Other food crops such as enset, haricot beans, sweet potatoes, wheat, barley and teff can be planted, during each rainy season.

5.2 Profile of Respondents

Out of the total 152 study population, just over 57% were male, with the rest female.

The age distribution of the respondents showed that 31.6 % are below the age of 20. While those between 20-40 years of age make 46%. Whereas the rest (22.4 %) were above the age of 40.

Asset ownership is used as a composite indicator to know the socio economic status of respondents in the three Woredas. The majority of respondents own coffee, avocado and mango trees.
Out of the total study population 74% have access to a radio at home and 88% listen to it. A significant number of respondents also said they listen to the radio daily.

5.3 **Awareness & Listenership to the PARS:**

According to the survey results, most respondents own a radio and/or listen to the radio. FGD respondents claim that it is customary for farmers to take a radio set to their farm area and listen in backyard. SCR station, which broadcasts its programs in the local Sidama language, has high listenership among the farmers who find it a bit challenging to communicate and speak in Amharic—they find it easier to listen to Sidama Radio. Women, adult farmers and a minority youths belong to this category. As our previous formative study shows, most youth prefer to listen to radio stations that air their programs in Amharic.
As the graph below shows, an average of 61.2% of listeners were aware of the PARS programs that were aired through SCR. Out of those who are aware; 42% said that they discovered it themselves, while 45% became aware through a friend or neighbor. Only 13% said that they listened to the program through a call from agriculture extension workers. From the graph below the level of awareness of PARS program became higher in Dale – the “IPMS plus PARS” woreda - mainly because the involvement of IPMS in the Woreda. The active engagement of the woreda in the PARS also significantly increased the awareness level of the program, with 70% of respondents aware in the “Active PARS” woreda of Aleta Wondo, and only 41% aware in the “Passive PARS” woreda of Aleta Chuko. This reveals the value of activity engaging community members in planning PARS and featuring local voices in PARS programming.

Out of those who became aware of the PARS, 78.5% percent of the respondents said that they listened to the program. However the majority of respondents (38.4%) did not remember how many episodes out of the 6 series they listened to.
Though it was a bit challenging for respondents to remember how many programs they listened to, almost all of them remember the message conveyed on the specific PARS program they heard. Benefits of avocado and mango Seedlings, market demands and inspirational stories broadcasted on PARS were mentioned by respondents.

5.4 Timing of Radio Program

The time slots when the radio program was broadcast on the station determine their reach and listenership. The PARS radio program was aired at 8am in the morning and rerun in the afternoon at 2 pm. Respondents were asked if the transmission time of the programs is convenient for them to hear the program. Among the respondents who are familiar with the program, 68.5% said the time period the PARS radio program was put on air is convenient for them to hear and appropriate for the farmers to listen. The majority of them also said that the program always came on at the regular scheduled time that makes it much easier for them to tune in.
5.5 Format and Presentation Style of the program

The PARS shows that were aired on Sidama Community Radio used a variety of formats that included magazines, vox pops as well as mini drama to make the program attractive and unique as compared to other agricultural radio programs. Respondents have generally appreciated the overall format of the program. They especially appreciated the inclusion of model farmers in the PARS series through vox pops. A key informant interviewed from the Woreda agriculture bureau also appreciated the fact that “copy farmers” have been interviewed in the radio program. Copy farmers are farmers who try to follow the footsteps of model farmers without much support of extension workers. Since extension workers cannot cover all farmers, the copy farmers are considered as the best agents for scaling up of newly improved seeds and agricultural technologies. Due to this and other related factors PARS is rated as a better program than other agricultural related radio programs:

<table>
<thead>
<tr>
<th><strong>Comparison of PARS with other Agriculture Radio Program</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Woreda</strong></td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>Dale Woreda</td>
</tr>
<tr>
<td>Count %</td>
</tr>
<tr>
<td>Much better</td>
</tr>
<tr>
<td>Somewhat better</td>
</tr>
<tr>
<td>About the same</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

The results from the attitude study show that many respondents considered the program to be educational and at the same time entertaining.
Respondents Evaluation of PARS

<table>
<thead>
<tr>
<th>Responses</th>
<th>Dale Woreda</th>
<th>Aleta Wendo Woreda</th>
<th>Aleta Chuko Woreda</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>%</td>
<td>Count</td>
<td>%</td>
</tr>
<tr>
<td>Educational</td>
<td>11</td>
<td>35.48%</td>
<td>9</td>
<td>36.00%</td>
</tr>
<tr>
<td>Entertaining</td>
<td>8</td>
<td>25.81%</td>
<td>8</td>
<td>32.00%</td>
</tr>
<tr>
<td>Way of presentation</td>
<td>9</td>
<td>29.03%</td>
<td>5</td>
<td>20.00%</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
<td>9.68%</td>
<td>3</td>
<td>12.00%</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.00%</td>
<td>25</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

5.6 Contents Treated in PARS

Responses regarding the usefulness of the contents in the programs have been largely positive. Respondents found the programs that focus on the benefits of improved varieties of avocado and mango, the grafting process and management of Avocado and Mango seeds and market chain as useful.

However there was a clear difference between the IPMS plus PARS Woreda, and the active PARS and passive PARS Woreda respondents regarding the topics that they perceive to be important and should be given more attention in the PARS.

FGD participants of Dale Woreda (IPMS plus PARS) emphasized that though market chain has been covered in the program, the topic should have given much more focus on marketing of improved varieties of avocado and mango. This echoes the finding in Tigray, where IPMS plus PARS woreda respondents also expressed a desire for more marketing information. Respondents of the Aleta Wondo and Aleta Chuko woredas, where IPMS was not directly implemented, reiterated that the focus of the program should be introducing the improved varieties of the fruits and techniques of grafting. This can be explained because IPMS had already done work around making cuttings available and supporting cultivation in IPMS plus PARS woreda, while it was newer to the non-IPMS communities. One of the FGD participants in Aleta Chuko said all of the education and awareness creation provided by the new program was meaningless unless the improved varieties of plant cuttings are disseminated.

5.7 Attitude towards PARS
Respondents who were aware of and listened to the program were asked about their general feeling about the PARS. Out of those who claim they listen to the PARS radio show, many held positive attitudes. Almost all the respondents strongly agree that the program always gave information that was useful to them. Among the respondents that listened, 92 % of them strongly agree that the program always had voices of farmers that are like them. 82% of them also strongly agreed that the program always presents voices of experts on it.

Most respondents claim that the stories of farmers are inspirational and motivational. There were some farmers presented in the radio program who said that they learnt about the benefits of planting improved variety from the model farmers. Others even confessed that they have been impressed by how some farmers learnt how to graft seedlings from their peer farmers without any technical help from agriculture extension worker. Such stories, according to respondents, have been motivational and inspirational.

Respondents were also asked whether they trust the information they received from the agricultural radio series. All of respondents that are aware and listen to the program said that they trust the information received from PARS to be true and they clearly understood what was being said on the program.

5.8 Knowledge about Improved Varieties of Avocado and Mango

To know respondents general knowledge about improved varieties of avocado and mango, respondents were asked ten questions (See Annex). The questions asked include whether there is only one variety of avocado and mango or not, whether Improved varieties of Avocado and Mango trees are taller than traditional varieties or not.

Other knowledge questions included whether improved mangos and avocados have more fibers than traditional fruit, and whether it is possible to sell the scions or branches of improved mangos and avocados in the market. The ideal spacing of improved Avocado and Mango trees, and the time span that improved varieties of mango and avocado take to bear fruit were also asked.

In the “IPMS plus PARS” woreda, one respondent scored the highest grade, getting the correct answer for all the 10 questions. In the active PARS (no IPMS) woreda, the highest score is 9 while in the passive
PARS woreda it is 8. The lowest grade for the IPMS plus PARS and the Active PARS group is 3 whereas for the control woreda the lowest grade is 2.

As it is clearly seen on the graph below there is significant difference between the three sites as to the level of knowledge they have on improved varieties of Avocado and Mango. It is clearly shown in the graph that the mean value of respondents who knew about the basics of the improved varieties is lower in the woreda’s without direct IPMSi ntervention. This is due to the fact that the first woreda has been exposed to IPMS interventions the newly improved varieties while there is no prior intervention in the second and third woredas. The graph below shows the mean value of answers given to the quizzes in the three Woredas.

The survey also revealed that there is a strong relationship between the amount of awareness and listening – whichever type of woreda the respondent lives in – and the level of knowledge revealed by the quiz. The more of the episodes that the respondents listened to, the better their average quiz score:
In the FGD sessions, the consultant asked the participants if there is any new knowledge they gained from the PARS. Although respondents from the IPMS plus PARS woreda had prior knowledge about improved varieties of Avocado and Mango, they said that listening to the voices of successful farmers in the program help them to get useful knowledge and information.

Some farmer-respondents remembered stories of model farmers who got new varieties of avocado and mango, and started to reap the benefit from selling the fruits, scions and grafted seedlings. Such responses could be a good evidence for the impact PARS had in transmitting the basic information regarding the benefits of new varieties to members of community who had no information about
improved varieties before airing the radio show on Sidama Community Radio. Regarding this one of the FGD respondents said:

*I normally visit Dale to sell wood and I knew that there is this seedling of avocado. But I did not notice what advantage it has compared to the traditional variety and its market value. But I heard the program on the radio through the call of an extension worker; I listened to the program and was really impressed how advantageous the product is. And now I plan not only to buy and plant the seedling in my back yard, but also I plan to sell some of the seedlings here in my woreda.*

Similar comments were repeatedly made by FGD participants, many of whom were impressed by how farmers are able to make money from the improved variety of avocado and mango. But the discussions also unearthed a number of complaints and criticisms. Respondents from both non-IPMS Woredas complained that they are unable to get the promoted varieties through their respective woreda agriculture bureaus. Some even asked if there are other mechanisms that they could get the seedlings in their Woredas. The case of one woman in Aleta Chuko, who has the culture of listening to the radio, explains:

*I usually open Sidama Radio, as I cannot speak and listen Amharic, and I have listened to the program about the improved varieties. After we listened to the program, my husband complains that our woreda does not deliver such varieties, and there is no use of listening to such programs except being offended for not getting*

FGD participants said that hearing the benefits of improved varieties on the radio alone does not add value; they insisted the new varieties need to be made available in their Woredas. Though, the improved varieties of avocado and mango are not currently available for farmers, from the FGD participants the consultant tried to observe that PARS succeeded in creating demand to improved varieties of these fruits on those who listened the program.

### 5.9 Attitude towards Improved Varieties of Avocado & Mango

Similarly to know respondent’s attitude towards improved varieties of Avocado & Mango, five questions were asked. Respondents asked if they agree with statements such as “farmers can get much better harvest when planting the improved Avocado/Mango tree”; “women can be engaged in planting the improved Avocado and Mango trees” and “improved varieties of fruits have higher market value than
Among those who claim to listen to the PARS, many held positive attitude towards improved varieties of fruits. The majority, 92%, said that it is possible for them to do grafting if they get the appropriate training. Over 28% of respondents also said they intend to produce more of the improved mango and avocado fruits in the next 6 months.

The consultant came across FGD participants in the active PARS (no IPMS) woreda who became interested in planting improved varieties of Avocado/Mango after listening the radio show which can be an evidence for the potential impact of the PARS radio to scale up the intervention.

### 5.10 PARS and Agriculture Radio Journalists

Before the PARS was aired on Sidama Community Radio, FRI assessed the capacity of the broadcaster in terms of human resources and provided tailor made trainings that enabled journalists to run a radio program that promotes improved varieties of avocado and mango seedlings. The journalists found the training provided by FRI to be valuable. It acquainted them to new techniques that are necessary to carry out media production. They said that the training enabled them to follow VOICE standards. It also enabled them to know about the use of Adobe Audition software that helps to digitally edit the audio material they recorded in the field.

FRI provided Sidama Community Radio station with recording equipments (Sansas), mobile phone, SIM card and computer accessories. Previously, the journalists used old technologies such as Real Tape recorder and Studer for recording and broadcasting purposes.

The journalists said the provision of digital accessories as well as the necessary training on how to use them made the whole process of radio production a lot easier. And it saves time and energy. They also confirmed the quality of the recorded sound has improved dramatically. Since then, they record and digitally edit the audio material they brought from the field.

Some of the new skills that the journalists retained from the training and continue to apply include using creative presentation styles and letting the farmers and their stories set the program focus. Making use of vox pops and sound effects are also some the techniques that the journalists started to apply. A female journalist who took part in the PARS shares her experience like this:
What I retained from the FRI training is very important for my later career as journalist. The steps that a journalist should follow to keep a radio program accurate, relevant, and at the same time interesting is an area where I gained a lot of knowledge. Although we all journalists believe we know radio production, it is a bit challenging to manage those during actual production. After the training and design workshop, I have been able to get not only the theoretical aspects of it but also did it practically in the field and tried to meet the standards as much as possible. This is an experience that I will take as a benchmark to do other radio productions.

Like that of the respondents, the journalists believe prioritizing farmers’ experiences and stories regarding improved varieties in the radio show added value for the PARS, and they will maintain that experience for the future. One journalist who used to make farm-related radio programs in SCR explained the power of using real stories in the program as follows:

*Before I took the training, when I produced farm related radio programs, I had a feeling that it is enough to include the stories of only one or two farmers. I tried also to incorporate explanation of an expert. I used to fill the rest of the air time narrating about the issue. I felt that during interviews many farmers do not have the skill to articulate and explain their cause. But after the FRI training and actual production, I realized that it is the farmers who own the agenda and it is their story experience and their success that really makes an impact on the audience than the other way round. To make such radio program it demands detailed planning, preparation and you need to invest extra energy and time than the usual agriculture radio programs that we used to produce. But the effort that you put to make the program pays back as the audience takes the knowledge/information that gives you the satisfaction.*

The other new thing that they learned from the PARS was that they focused on a single agriculture issue and carry it for six weeks. They said this is a new experience both for the journalists and for the radio station which they draw a good lesson from. Because of the extended air time they managed to treat issues related to the benefits, the challenges, grafting of seedlings and market related information about modern varieties of avocado and mango.

The journalists shared some of the challenges they encountered when doing the PARS. The first challenge was since the program was run during rainy seasons it was physically demanding for them to include as many farmers as possible and come up with a quality program. Since some places were off the road where motorcycles cannot access, they were required to walk for more than an hour in the
muddy soil. Another journalist also found out that since some of the farmers were a bit frightened when interviewed and it became challenging for him to make them at ease to explain their stories.

At the end they said that they already put all the recorded and broadcasted audio materials, in their audio bank for future use and to help them compare their coming radio shows with the PARS program.

6. Conclusion

The study results showed that most respondents own a radio and/or listen to the radio. Sidama Community Radio (SCR) station, in which the six episodes of the Participatory Agriculture Radio Series were broadcast in the local Sidama language, has high listenership among the farmers. The study also indicated that on average 61.2% of the respondents in the three woredas were aware of the presence of the PARS radio program that was aired through SCR.

The majority of the respondents (79%) who were aware of presence of the program claimed to listen at least one episode of the program. Those respondents who became aware and exposed to the program remember the key message of the specific PARS program they listened to. Information on the benefits of improved varieties of Avocado and Mango, nutritious advantage of these fruits; the grafting process and market related information covered on the PARS were considered to be educational by those who listened.

Respondents appreciated the inclusion of model and copy farmers in the PARS through vox pops and interviews. The programs were considered to be educational and at the same time entertaining. Due to this, key informants and respondents identified PARS as a better program when compared to other agriculture-related programs.

Responses received about the usefulness of the contents in the programs have been largely positive. Respondents found the programs that focus on the benefits of improved varieties of Avocado and Mango, the grafting process and management of Avocado and Mango varieties and market chain as useful.

However there was a clear difference between the IPMS plus PARS woreda and the active PARS (no IPMS) Woredas on the topics that they perceive to be important and should be given more attention on the PARS. The IPMS plus PARS emphasized the need to give more focus for market chain of improved varieties of Avocado and Mango. While the interest of the active PARS (no IPMS) and passive PARS (no
IPMS) Woredas is introducing the improved varieties of the fruits and techniques of grafting. Among those who claim to listen to the PARS radio show, many held positive attitude towards improved varieties of fruits. The majority of them that account to be 92% said that it is possible for them to do grafting if they get the appropriate training.

However, the improved varieties of avocado and mango are not currently available for all farmers. From the FGD participants, the consultant tried to observe that PARS succeeded in creating demand to improved varieties of these fruits on those who are exposed with the program. If provided with the new varieties of fruits there were respondents who said they intend to plant improved mango and avocado fruits in the coming few months. This shows that PARS alone can stimulate interest and demand outside of IPMS intervention areas, and thereby scale-out the impact of these interventions. It is essential that the demand that will be stimulated by the PARS can be met – input availability must be assured in all communities that can listen to PARS.

7. **Recommendations**

- PARS succeeded in creating demand for improved varieties of these fruits on those who are exposed with the program. If provided with the new varieties of fruits there were respondents that said they intend to produce improved varieties of avocado and mango fruits in the coming few months. Farmers said all of the education and awareness creation provided by the new program was meaningless unless the improved varieties are introduced. Hence, if the agro-ecological zones of are found to be suitable, it might be possible to scale up the improved varieties of the fruits to the target and control woredas.

- The inclusion of model and copy farmers in the PARS series through vox pops and interviews was considered as strength of the program. Hence, using similar sort of radio programming in the future will be helpful to motivate farmers.

- One of the features of PARS is the usage of audience participation and feedback. For future radio programming the consultant emphasized the importance of using audience feedback by the journalists of the broadcaster. To make the programs interactive, asking questions and rewarding participants with T-Shirts, Cups, Fountain pens, Sun-Hats and stickers with the logo of the organization is also proposed. Rewards motivate listeners to attend weekly programs regularly.
- To increase awareness and listenership of the program it will be advisable if FRI, Sidama Community Radio and Agriculture extension workers carried out well organized and substantial campaign promotion activities. The evaluation reveled that the more farmers listen, the more knowledge they gain, emphasizing the importance of taking steps to boost listening. Hence, it will be advisable to consider such mobilization strategies as vital tool if FRI plans to launch such radio series in the future.