

Country Name	Project on Strengthening Technology Development, Verification, Transfer and Adoption through Farmer Research Groups (FRGs)
Federal Democratic Republic of Ethiopia	

I. Project Outline

Background	<p>In Ethiopia, according to the World Bank national accounts data, the agricultural sector accounted for 42.3% of the Gross Domestic Production (GDP) and 79% of the labor force was engaged in agriculture in 2004, at the time of ex-ante evaluation. On the other hand, for the period between 1992 and 2002, the annual growth rate of the agricultural sector limited to 2.8% in average which was lower than the ones of the industrial sector (6.1%) and the service sector (8.3%). As a result, the country had been faced crisis of food shortage for many years. In order to improve those situations, it was essential to increase agricultural productivity through introduction of improved technologies for small scale farmers who produced 97% of agricultural production in the country. Since late 1990's, the Ethiopian Institute of Agricultural Research (EIAR) introduced a Farmer Research Group (FRG) approach, which was a research approach to attempt development and improvement of agricultural technologies through collaboration of farmers, researchers and extension officers. However, the existing FRG activities had not attained their essential goal because the extension by demonstration in a top-down manner was not able to meet farmers' needs. In addition, the technologies utilized by the farmers remained at low level since the insufficient linkage among the researchers, the extension officers, the FRG farmers and the other farmers constrained efficient extension activities. Therefore, establishment of technology development system and enhancement of extension system for appropriate technologies with participation of farmers through improvement of the FRG system was urgent issue.</p>														
Objectives of the Project	<p>Through preparation of the FRG guideline and trainings for the Development Agents (DAs)*, the project aimed at establishment of the improved FRG approach in the East Shewa Zone, thereby contributing to improvement of production of the target commodities and livelihood of the target FRG members as well as adoption of the FRG approach in other research centers.</p> <ol style="list-style-type: none"> Overall Goal: 1) Livelihood of the target FRG members is improved. 2) Production of target commodities in the target area is increased. 3) FRG approach is adopted and utilized in other research centres. Project Purpose: FRG approach is established as one of the core methods of research and extension in the East Shewa Zone. <p>*DAs: Extension officers</p>														
Activities of the project	<ol style="list-style-type: none"> Project Sites: Research areas of Melkassa Agricultural Research Center (MARC) and Adami Tulu Agricultural Research Center (ATARC) in the East Shewa Zone and a part of Arsi Zone (Oromia Regional State) Main activities: 1) Preparation of the FRG guideline based on review of the improved FRG approach, 2) Delivery of trainings on appropriate technologies for the researchers and FRGs, 3) Preparation of training materials and extension materials, On the Job Trainings for Development Agents (DAs), and seminars and workshops for FRGs, 4) Compiling project experiences and lessons learned from the FRG approach., etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Ethiopian Side</td> </tr> <tr> <td>1) Experts: 20 persons</td> <td>1. Staff allocated: 13 persons</td> </tr> <tr> <td>2) Acceptance of trainees in Japan: 31 persons</td> <td>2. Land and Facilities: Office spaces</td> </tr> <tr> <td>3) Acceptance of trainees in the Third Country (Kenya and Thailand): 34 persons</td> <td>3. Equipment: Vehicles and office equipment</td> </tr> <tr> <td>4) Equipment: Vehicle, motorcycles, PC, digital cameras, etc.</td> <td></td> </tr> </table> 					Japanese Side	Ethiopian Side	1) Experts: 20 persons	1. Staff allocated: 13 persons	2) Acceptance of trainees in Japan: 31 persons	2. Land and Facilities: Office spaces	3) Acceptance of trainees in the Third Country (Kenya and Thailand): 34 persons	3. Equipment: Vehicles and office equipment	4) Equipment: Vehicle, motorcycles, PC, digital cameras, etc.	
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Ex-Ante Evaluation	2004	Project Period	July, 2004 – July, 2009	Project Cost	(Ex-ante) 470 million yen (Actual) 544 million yen										
Implementing Agency	Ethiopian Institute of Agricultural Research (EIAR), Melkasa Agricultural Research Center, Oromia Agricultural Research Center (OARI), Adami Tulu Agricultural Research Center														
Cooperation Agency in Japan	None														

II. Result of the Evaluation

<Constraints on Evaluation>

- Security issues: The anti-government protests mainly in the regional states of Amhara and Oromia where the project sites are located resulted in violent clashes between demonstrators and government security forces in November, 2015 and the protests have become more intense since July, 2016. Therefore, the field survey of this ex-post evaluation to collect data was limited to Adami Tulu Woreda, Adama Woreda and Dodota Woreda.
- Availability of data: Since the ex-post evaluation was conducted 7 year later from the project completion in 2009, some data could not be available.
- Turnover of some researchers at the research centers: Since some researchers who were involved in the project have already left the research centers, there was limited access to the ex-counterpart staffs or the researchers who had been involved in the project activities.

<Special perspectives considered in the ex-post evaluation >

- Verifiable Indicator for the Overall Goal
 - Some of the verifiable indicators for the Overall Goal are not clearly defined by the target values. For these indicators, achievement levels were verified by comparison between the baseline at the time of project completion and the performance at the time of ex-post evaluation.
 - In terms of the household income of the target farmers, it was verified by agricultural revenue of the target farmers in order to assess contribution of the project to the increase in the household income.

1 Relevance

<Consistency with the Development Policy of Ethiopia at the time of ex-ante evaluation and project completion>

The project was consistent with the Ethiopia's development policy of "Food Security Program (1996)", "Sustainable Development and Poverty Reduction Program (SDPRP) (2002/03-2004/05)" and "A Plan for Accelerated and Sustained Development to End Poverty (PASDEP), (2005/06-2009/10), which aimed at development of new technologies and improvement of extension service as measures to solve the problem of food shortage.

<Consistency with the Development Needs of Ethiopia at the time of ex-ante evaluation and project completion >

The project was consistent with the Ethiopia's development needs of applicable research activities for farmers and the improved FRG approach to meet the farmers' needs in order to increase agricultural production.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

The project was consistent with the Japan's ODA policy to support food, agriculture and rural development, as one of the 5 priority areas, confirmed by the policy dialogue between Ethiopia and Japan in June, 2003.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose was mostly achieved by the project completion. According to the project completion report, the number of FRG increased from 18 to 80 by the project completion. However, it was difficult to measure the number of "well-functioning FRGs" which defined by the project because self-evaluations by the FRGs were not available at the time of project completion. On the other hand, production volumes of the target commodities per household, such as teff¹, maize, haricot beans, onion, tomato and pepper, dramatically increased by far beyond of 15% from the baseline year of 2004 to the end year of 2009. Also, land productivity (production volume per ha) for each target commodity improved by more than 15% from 2004 to 2009 except onion and pepper. Although land productivities for onion and pepper dramatically increased from 2004 and 2007, they dropped in 2009 because of unfavorable weather conditions and erratic rainfalls.). There was another reason of shrinking of land size for small scale farmers because it was allocated to sugar cane plantation particularly in Adama and Dodota woredas. Due to the significant improvement of household production volumes and land productivities of the target commodities, it was confirmed that the number of farmers who were adopting new or improved technologies developed by the FRG activities increased to more than 5 times of the members of the target FRGs at the Achievement Workshop for the terminal evaluation.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been mostly continued since the project completion. Although the number of FRGs in the project sites decreased from 80 in 2009 to 16 in 2010, it increased to 17 in 2012 and 13 FRGs has been sustaining since 2014. The number of FRG members dramatically increased from 45 in 2010 to 195 in 2014 and remains the same number of members in 2016. All the existing FRGs in 2016 are well functioning in accordance with the judgment on performance of the group activities by researchers of the research centers and observation during ex-post evaluation. For example, the Dairy Group in West Arsi area and seed multiplication group in Melkasa area shows good examples of the group activities. These groups have continued their group activities such as, production by group, group saving, and group marketing. In addition, the most of members of the existing FRGs have continued to individually practice the technologies introduced by the project. Although production volumes of the target commodities by the FRG members in the project sites differed due to weather conditions, incidence of crop diseases and fluctuation of market prices, according to the farmers and the researchers surveyed by this ex-post evaluation, the new or improved technologies introduced by the project and other government extension supports after the project completion have continuously contributed to increases in the production volumes. Also, according to the DAs and researchers, land productivities of the target commodities have continuously improved because of better application of inputs and technologies such as improved seeds and fertilizer. Since the improvements of production volumes and productivities by the project have stimulated the farmers in the project sites, the number of farmers adopting the new or improved technologies introduced and extended by the project increased from 80 in 2009 to 160 in 2016.

In addition, a number of projects used the FRG approach to disseminate test technologies with farmers. FRG is one of the approaches to work with farmers in EIAR.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

Three Overall Goals were set for the project.

[Overall Goal 1: improvement of livelihood of the target FRG members]

The Overall Goal 1 has been achieved. Availabilities of grains at the end of the year, such as maize and haricot bean, increased by more than 15% in many years from 2010 despite they decreased by 50% from the previous year in 2015. The household income from agriculture in the target FRG members increased by 1,200% during the period from 2010 to 2015. Also, the number of improved animals at the target FRG households increased by more than 15% after the project completion. In addition, the number of school children going to school in the project sites increased by 14.7% from 2012 to 2016.

[Overall Goal 2: Increase in production of target commodities in the target area]

The Overall Goal 2 has been partially achieved. While the production volumes of teff, haricot beans, tomato, and pepper in the target area considerably increased by more than 15% for the period between 2011 to 2015 in despite of slight fluctuation, the production volume of maize decreased year by year and the production volume onion changed year by year for the same period. In 2015, a drastic drought occurred in the last 10 years. Still it worth mentioning 50% production fall was occurred in FRG areas while the drought caused much more high devastation in similar agro-ecologies to that of the FRGs. Namely, the fact indicates such resilience in FRG areas (farmers) as

¹ Teff is a fine grain mainly produced in Ethiopia and a staple food for Ethiopian people.

compared to non-FRG areas rather than showing the only the failures of -50% yield. On the other hand, reduction of maize production could happen as more competitive crop substitution (beans and wheat) is being pushed and also climate change demanded early maturing crops in central rift valley.

[Overall Goal 3: Adoption and utilization of FRG approach in other research centers]

The Overall Goal 3 has been achieved. The number of research centers adopting the FRG approach improved by the project increased from 9 in 2009 to 29 in 2012 and it has been sustaining by the time of ex-post evaluation in 2016. The research centers have considered the FRG approach as appropriate and useful for their outreach programs since it has encouraged farmers active to participate in introduction of new technologies for their farming activities. Also, the number of well-functioning FRGs increased from 3 in 2010 to 18 in 2016 because of the continuous supports by the research centers, higher motivation of the FRGs by highly profitable activities for the farmers, and other projects supported by World Bank to enhance the FRG activities².

<Other Impacts at the time of Ex-post Evaluation>

No other positive impact and no negative impact was observed at the time of ex-post evaluation.

<Evaluation Result>

In light of the above, the project mostly achieved the Project Purpose and the project effects introduced by the project has been mostly continued, and achieved two of the three Overall Goals while one of the Overall Goal has been partially achieved. The improved FRG approach has been extended in the target area and has encouraged the farmers to practice the new and improved technologies which enable to improve their agricultural production and livelihoods. Therefore, the effectiveness/impact of the project is high.

Achievement of project purpose and overall goal

Aim	Indicators	Results																																																																																				
(Project Purpose) FRG approach is established as one of the core methods of research and extension in the East Shewa Zone.	(Indicator 1) The number of well-functioning FRG* increases up to 70% of FRGs.	<p><u>Status of the achievement: Partially achieved</u></p> <p>(Project Completion)</p> <ul style="list-style-type: none"> The number of FRGs' members increased from 18 to 80. But it was difficult to measure the number of well-functioning FRGs without self-evaluation by the FRGs at the time of terminal evaluation though the wide range of level of functioning FRGs was observed by the site visits conducted by the Terminal Evaluation Team. <p>(Ex-post evaluation) Continued.</p> <ul style="list-style-type: none"> The number of FRGs sustained 13 in 2016 though it decreased from 17 in 2012. The number of well-functioning FRGs reached to 100% since 2013. The level of well-functioning FRGs was assessed by the researchers in both Melkasa and Adami Tulu Agricultural Research Centers based on their observation of the group's activities and performance. <p>[No. of FRGs in the target area]</p> <table border="1"> <thead> <tr> <th></th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td>FRGs</td> <td>16</td> <td>16</td> <td>17</td> <td>12</td> <td>13</td> <td>13</td> <td>13</td> </tr> <tr> <td>FRG farmers</td> <td>45</td> <td>45</td> <td>165</td> <td>180</td> <td>195</td> <td>195</td> <td>195</td> </tr> <tr> <td>Well-functioning FRGs</td> <td>3</td> <td>3</td> <td>11</td> <td>12</td> <td>13</td> <td>13</td> <td>13</td> </tr> </tbody> </table>		2010	2011	2012	2013	2014	2015	2016	FRGs	16	16	17	12	13	13	13	FRG farmers	45	45	165	180	195	195	195	Well-functioning FRGs	3	3	11	12	13	13	13																																																				
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(Indicator 2) Production of target commodities is increased by 15% in the FRG farmers.		<p><u>Status of the achievement: Achieved</u></p> <p>(Project completion)</p> <ul style="list-style-type: none"> Productions of all the target commodities by the FRG farmers increased by more than 15%. <p>[Production of target commodities by FRG farmers] [Unit: qt/household]</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>2004 (baseline) (a)</th> <th>2007</th> <th>2009 (end line) (b)</th> <th>Change (%) (a)to(b)</th> </tr> </thead> <tbody> <tr> <td>Teff</td> <td>6.16</td> <td>13.9</td> <td>13</td> <td>111.0%</td> </tr> <tr> <td>Maize</td> <td>8.54</td> <td>40.9</td> <td>23</td> <td>169.3%</td> </tr> <tr> <td>Haricot beans</td> <td>5.61</td> <td>11.4</td> <td>12</td> <td>113.9%</td> </tr> <tr> <td>Onion</td> <td>31.45</td> <td>76.1</td> <td>79.8</td> <td>153.7%</td> </tr> <tr> <td>Tomato</td> <td>19.32</td> <td>64.9</td> <td>78</td> <td>303.7%</td> </tr> <tr> <td>Pepper</td> <td>10.48</td> <td>14.1</td> <td>16</td> <td>52.7%</td> </tr> </tbody> </table> <p>(Ex-post Evaluation) Continued</p> <p>[Production of target commodities by FRG farmers] [Unit: qt/household]</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>Teff</td> <td>13</td> <td>14</td> <td>14</td> <td>16</td> <td>16</td> <td>14</td> </tr> <tr> <td>Maize</td> <td>23</td> <td>25</td> <td>30</td> <td>33</td> <td>33</td> <td>35</td> </tr> <tr> <td>Haricot beans</td> <td>15</td> <td>14</td> <td>14</td> <td>15</td> <td>16</td> <td>16</td> </tr> <tr> <td>Onion</td> <td>83</td> <td>83</td> <td>79</td> <td>117</td> <td>125</td> <td>135</td> </tr> <tr> <td>Tomato</td> <td>80</td> <td>81</td> <td>104.2</td> <td>112</td> <td>78</td> <td>61</td> </tr> <tr> <td>Pepper</td> <td>17</td> <td>25</td> <td>22.01</td> <td>23.01</td> <td>23.3</td> <td>18</td> </tr> </tbody> </table>	Crop	2004 (baseline) (a)	2007	2009 (end line) (b)	Change (%) (a)to(b)	Teff	6.16	13.9	13	111.0%	Maize	8.54	40.9	23	169.3%	Haricot beans	5.61	11.4	12	113.9%	Onion	31.45	76.1	79.8	153.7%	Tomato	19.32	64.9	78	303.7%	Pepper	10.48	14.1	16	52.7%	Crop	2010	2011	2012	2013	2014	2015	Teff	13	14	14	16	16	14	Maize	23	25	30	33	33	35	Haricot beans	15	14	14	15	16	16	Onion	83	83	79	117	125	135	Tomato	80	81	104.2	112	78	61	Pepper	17	25	22.01	23.01	23.3	18
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² The projects supported by WB are the Pastoralist Community Development Project (PCDP) and the East African Agricultural Productivity Improvement Project.

<p>is increased by 15% in the FRG farmers.</p>	<p>● In terms of 4 of the 6 target commodities, their productivity by the FRG farmers increased by more than 15%.</p> <p>[Productivity of target commodities by FRG farmers] [Unit: qt/ha]</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>2004 (baseline) (a)</th> <th>2007</th> <th>2009 (end line) (b)</th> <th>Change (%) (a)to(b)</th> </tr> </thead> <tbody> <tr> <td>Teff</td> <td>6.9</td> <td>9.2</td> <td>13</td> <td>88.4%</td> </tr> <tr> <td>Maize</td> <td>10.0</td> <td>21.0</td> <td>23</td> <td>130.0%</td> </tr> <tr> <td>Haricot beans</td> <td>7.8</td> <td>11.7</td> <td>12</td> <td>53.8%</td> </tr> <tr> <td>Onion</td> <td>90.05</td> <td>166.7</td> <td>79.8</td> <td>-11.3%</td> </tr> <tr> <td>Tomato</td> <td>63.91</td> <td>214.0</td> <td>78</td> <td>22.0%</td> </tr> <tr> <td>Pepper</td> <td>59.09</td> <td>174.2</td> <td>16</td> <td>-72.9%</td> </tr> </tbody> </table> <p>(Ex-post Evaluation) Achieved</p> <p>[Productivity of target commodities by FRG farmers] [Unit: qt/ha]</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>Teff</td> <td>13</td> <td>13.21</td> <td>14.13</td> <td>13.00</td> <td>18.49</td> <td>23.83</td> </tr> <tr> <td>Maize</td> <td>25</td> <td>31.09</td> <td>33.04</td> <td>33.00</td> <td>44.57</td> <td>35.37</td> </tr> <tr> <td>Haricot beans</td> <td>14</td> <td>14.55</td> <td>16.24</td> <td>20.02</td> <td>18.78</td> <td>21.87</td> </tr> <tr> <td>Onion</td> <td>115</td> <td>140</td> <td>135</td> <td>176</td> <td>176</td> <td>180</td> </tr> <tr> <td>Tomato</td> <td>85</td> <td>90</td> <td>100</td> <td>95</td> <td>115</td> <td>105</td> </tr> <tr> <td>Pepper</td> <td>23</td> <td>20</td> <td>20</td> <td>25</td> <td>30</td> <td>28</td> </tr> </tbody> </table>	Crop	2004 (baseline) (a)	2007	2009 (end line) (b)	Change (%) (a)to(b)	Teff	6.9	9.2	13	88.4%	Maize	10.0	21.0	23	130.0%	Haricot beans	7.8	11.7	12	53.8%	Onion	90.05	166.7	79.8	-11.3%	Tomato	63.91	214.0	78	22.0%	Pepper	59.09	174.2	16	-72.9%	Crop	2010	2011	2012	2013	2014	2015	Teff	13	13.21	14.13	13.00	18.49	23.83	Maize	25	31.09	33.04	33.00	44.57	35.37	Haricot beans	14	14.55	16.24	20.02	18.78	21.87	Onion	115	140	135	176	176	180	Tomato	85	90	100	95	115	105	Pepper	23	20	20	25	30	28	<p>(Indicator 4) The number of the farmers adopting new/improved technologies increase around the target FRG.</p> <p>Status of the achievement: <u>Achieved</u> (Project completion)</p> <ul style="list-style-type: none"> ● The result of the Achievement Workshop indicated that the number of farmers who were adopting new/improved technologies increased more than 5 times of the members of the target FRGs. ● 61% of the sample non-FRG farmers (N=129) indicated that they learnt one or more of the technologies. <p>(Ex-post Evaluation) Continued</p> <p>[No. of FRG farmers adopting the new/improved technologies through the FRG activities in the target area]</p> <table border="1"> <thead> <tr> <th></th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td></td> <td>80</td> <td>100</td> <td>110</td> <td>115</td> <td>115</td> <td>132</td> <td>150</td> <td>160</td> </tr> </tbody> </table>		2009	2010	2011	2012	2013	2014	2015	2016		80	100	110	115	115	132	150	160
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<p>(Overall goal) 1) Livelihood of the target FRG members is improved.</p>	<p>(Indicator 1-1) Availability of grain at the end of the year is increased by 15% at the target farmers.</p> <p>(Indicator 1-2) The household income of the target farmers are increased by 15%.</p> <p>(Indicator 1-3) The number of improved animals at the target farmer household is increase by 15%.</p> <p>(Indicator 1-4) The number of children going to school is increased by 15% at the target farmers.</p>	<p>Status of achievement: <u>Partially achieved</u> (Ex-post Evaluation)</p> <p>[Availability of grain at the end of the year at the target farmer in average and annual changes]</p> <table border="1"> <thead> <tr> <th>Crop</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> </tr> </thead> <tbody> <tr> <td>Maize</td> <td>150</td> <td>200</td> <td>300</td> <td>300</td> <td>350</td> <td>800</td> <td>400</td> </tr> <tr> <td>(Annual Change: %)</td> <td></td> <td>33%</td> <td>50%</td> <td>0%</td> <td>16%</td> <td>128%</td> <td>-50%</td> </tr> <tr> <td>Haricot bean</td> <td>30</td> <td>50</td> <td>50</td> <td>50</td> <td>70</td> <td>100</td> <td>50</td> </tr> <tr> <td>(Annual Change: %)</td> <td></td> <td>66%</td> <td>0</td> <td>0</td> <td>40%</td> <td>42%</td> <td>-50%</td> </tr> </tbody> </table> <p>Status of achievement: <u>Achieved</u> (Ex-post Evaluation)</p> <p>[Household income from agriculture of the target farmers] [Unit: ET Birr]</p> <table border="1"> <thead> <tr> <th></th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>Change*</th> </tr> </thead> <tbody> <tr> <td></td> <td>n/a</td> <td>6,000</td> <td>12,000</td> <td>44,000</td> <td>50,000</td> <td>65,000</td> <td>72,000</td> <td>1,200%</td> </tr> </tbody> </table> <p>Source: 30 farmers interviewed by the survey of the ex-post evaluation. Note:* The baseline data is 2010 because of no data available in 2009.</p> <p>Status of achievement: <u>Achieved</u> (Ex-post Evaluation)</p> <p>[No. of improved animals at the target farmers in average]</p> <table border="1"> <thead> <tr> <th>Animal</th> <th>2009</th> <th>2010</th> <th>2011</th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>Change to 2015*</th> </tr> </thead> <tbody> <tr> <td>Cow</td> <td>1</td> <td>2</td> <td>4</td> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>300%</td> </tr> <tr> <td>Ox</td> <td>n/a</td> <td>n/a</td> <td>2</td> <td>2</td> <td>1</td> <td>3</td> <td>3</td> <td>50%</td> </tr> </tbody> </table> <p>Source: 30 farmers interviewed by the survey of the ex-post evaluation. Note: * The baseline year for comparison is 2009 for Cow and 2011 for Ox.</p> <p>Status of achievement: <u>Achieved.</u></p> <p>[No. of children going to school in the target area (Adami Tulu Woreda and Adama Woreda)]</p> <table border="1"> <thead> <tr> <th></th> <th>2012</th> <th>2013</th> <th>2014</th> <th>2015</th> <th>2016</th> <th>Change from 2012 to 2016</th> </tr> </thead> <tbody> <tr> <td></td> <td>34,751</td> <td>35,100</td> <td>37,014</td> <td>37,726</td> <td>39,863</td> <td>14.7%</td> </tr> </tbody> </table>	Crop	2009	2010	2011	2012	2013	2014	2015	Maize	150	200	300	300	350	800	400	(Annual Change: %)		33%	50%	0%	16%	128%	-50%	Haricot bean	30	50	50	50	70	100	50	(Annual Change: %)		66%	0	0	40%	42%	-50%		2009	2010	2011	2012	2013	2014	2015	Change*		n/a	6,000	12,000	44,000	50,000	65,000	72,000	1,200%	Animal	2009	2010	2011	2012	2013	2014	2015	Change to 2015*	Cow	1	2	4	7	6	5	4	300%	Ox	n/a	n/a	2	2	1	3	3	50%		2012	2013	2014	2015	2016	Change from 2012 to 2016		34,751	35,100	37,014	37,726	39,863	14.7%			
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Source : Project completion report, data provided by ATARTC and MARC, interviews with researchers, DAs and farmers in the target sites, FRG and non- FRG farmers, Agriculture Offices (Adama and Adami Tulu woreda), Livestock Office, Woreda Education Office, questionnaire surveys with MARC and ATARC

3 Efficiency

Although the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 115%) due to the additional activities including workshops and seminars in the last part of the project as preparation for the next phase of the project (the FRG project phase 2). Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The FRG approach and activities improved by the project has been endorsed by the Agricultural Growth Program (2015/16-2019) including establishment of the Farmer Research Extension Group for generation, adaptation and dissemination technologies among farmers based on the experiences of the project. Also, the government uses the FRG approach in the Pastoralist Community Development Project. Although there is no specific policy for extension of the FRG approach itself, the approach has been mainstreamed in the government programs supporting farmers.

<Institutional Aspect>

There has been no change in organizational structures at the central level (the Ministry of Agriculture and Natural Resource: MoANR³ and EIAR) and the research center level (MARC, OARI and ATARC). For dissemination of the FRG approach improved by the project, MARC and ATARC have the sufficient number of researchers trained (12 for MARC and 4 for ATARC) while MoANR and OARI do not (0 for MoANR and 2 for OARI) due to the frequent turnover of researchers. At the village level, the sufficient numbers of DAs have been deployed and engaged in the FRG activities: 741 DAs for East Shwa Zone and 996 for Arsi Zone. Although the network among the FRGs and other stakeholders supporting them has not continued in an organized manner as it was during the project period, communications between the FRGs and NGOs and universities have been continued on an ad hoc basis when they need. Implementation of projects such as the Rural Capacity Building Project (RCBP), PCDP), and the Agricultural Growth Project (AGP) has contributed to continuation of the network established by the project.

<Technical Aspect>

As for researchers of EIAR, MARC, OARI and ATARC, they have sustained necessary skills and knowledge about the improved FRG approach to be engaged in the FRG related activities including delivery of trainings for other research centers, universities and NGOs, provision of technical supports for farmers and introduction of new technologies for farmers. On the other hand, the DAs in the target area have not sustained the skills and knowledge on the FRG activities improved by the project since several DAs trained by the project have

³ MoANR was transformed from the Ministry of Agriculture and Rural Development (MOARD) in October, 2015

changed their positions and there is no system for technical transfer from the trained DAs to the newly assigned ones. For the newly assigned DAs, the research centers provide chances of technical transfer about the improved FRG activities. For the FRG members in the target area, they have maintained their skills on the agricultural activities including practice of the new and improved technologies through the FRG activities. Also, some of them became resource persons or leaders to share their experiences or to deliver training or technical support for other farmers. In addition, the non-FRG farmers with the technologies transferred by the FRG members have sustained their skills through continuous observation on changes of the FRG members and the FRG activities.

<Financial Aspect>

Although no data on specific budget for the FRG activities has been available, the total budget of MoANR increased from 5.4 billion ETBs in 2009 to 9.6 billion ETBs in 2016. Also, the budget of EIAR increased from 160.9 million ETBs in 2010 to 491.7 million ETBs in 2016. In addition, at the research center level, the budget for MARC, OARI, and ATARC have increased for the same period. In particular, the increase in the budget of OARI was noteworthy: 10.9 million ETBs in 2010 to 78.8 million ETBs in 2016. Those increases in the budgets have helped to maintain the FRG activities. It is expected that the increasing budget for the research centers will help to support the FRG activities since the FRG activities have been mainstreamed in the research activities.

<Evaluation Result>

In light of the above, problems have been observed in terms of the institutional and technical aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose and mostly achieved the three Overall Goals for better FRG approach contributing to improvement of agricultural production and livelihoods of farmers. The FRG approach and activities improved by the project have been mainstreamed in the government programs for agricultural extension services. As for sustainability, the numbers of researchers at MoARD and OARI to be engaged in the FRG related activities have not been sufficient and DAs in the target areas have not sustained necessary skills and knowledge on the improved FRG activities due to the lack of the technical transfer among DAs. As for efficiency, the project cost exceeded the plan due to the additional activities for preparation of the next phase of the project.

In the light of above, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency: The linkage between FRG type of research activities and government extension service should be strengthened. For that, the two institutions should take the following actions:

- 1) The Extension Wing at MoANR should strengthen its collaboration with research centers by: disseminating the research outputs (techniques introduced by FRG approach) to other farmers, by using the FRG approach as one of extension method for dissemination of technologies, by utilizing extensions materials produced by the FRG project, establishing FRG focal point within the extension team.
- 2) Research Centers should strengthen their collaboration with Extension Wing at MoANR through: Joint planning, implementation and evaluation of the FRG related research activities, providing technical support on FRG approach for experts and farmers, sharing results of FRG related research outputs with extension team at MoANR, compiling and sharing the best practices and lessons learnt in FRG approach to extension.
- 3) Since FRG is a group extension approach and the government of Ethiopia is also promoting group or cluster approach, technology generation and problem identification per se need to focus on this approach beyond strengthening the linkage with MOANR. The approach is being sustained in practice and this shows there is a policy to use it as an approach.

Lessons learned for JICA:

The research activities of the project were relevant for the community activities to improve their income. The community appreciated the project because it had introduced some techniques which helped them to improve their income. The project involved farmers on planning process and farmers interest was considered for the designing of activities. As a result, the project brought about the sustainable FRG activities introduced by the project as well as the mainstreaming of the FRG approach in the government extension service. Therefore, involvement of farmers as the target beneficiaries in the project planning and designing process, including selection of research topics and identification of techniques for improving their income, should be a key for introduction and mainstreaming of effective and sustainable agricultural research and extension activities.



The house of the target FRG farmer before the project
in Anano Shisho Village, Adami Tulu Woreda



The house of the target FRG farmer after the project
in Anano Shisho Village, Adami Tulu Woreda