

Country Name	<b>Quality Seed Promotion Project for Smallholder Farmers (QSPP)</b>
Federal Democratic Republic of Ethiopia	

**I. Project Outline**

Background	<p>In Ethiopia, the agricultural sector has been crucial in the national economy and the national industry as it had accounted for 40% of GDP and 85% of the rural population has been engaged in the sector. Whereas the significance of the agriculture development was clearly described in the “Plan for Accelerated Sustained Development to End Poverty (PASDEP)” in 2006, most of the farmers still relied on traditional farming practices of low productivity that brought about unstable food production and supply. The root cause of this problem was deemed to be the limited use and unstable supply of good quality seeds. While the utilization rate of good quality seeds remained low, use of fertilizer and pesticides increased to further stifle total productivity. Moreover, most of the farmers used farm-saved informal seeds or grains as seed. As these seeds were low yield, germination, and purity, its consequence also had been a perpetual low productivity of agriculture. A seed system that is to provide quality seed to meet the demand of farmers was, therefore, essential to ensure the economic and social development. The government of Ethiopia thus aimed at promoting quality seed production by seed farmers themselves to suffice farmers’ demand. However, seed farmers did not have adequate production technique and they lacked knowledge of proper management of the seed system.</p>				
Objectives of the Project	<p>Through the establishment of quality seed production technology and sustainable seed system, the project aimed at increasing the use of quality seeds, and thereby contributing to the production of self-pollinating crops, such as teff and wheat in the target Woredas.</p> <ol style="list-style-type: none"> <li>Overall Goal: Production of mainly self-pollinating crops, teff, and wheat, is increased through the utilization of quality seed in the target Woredas.</li> <li>Project Purpose: Use of quality seeds is increased in the target Woredas.</li> </ol>				
Activities of the Project	<ol style="list-style-type: none"> <li>Project site: 3 regions, 5 Woredas [Oromia Region (Ada’a, Lume, Dendi), South Nations, Nationalities and People’s Region (Sodo), Amhara Region (Yilmanadensa)]</li> <li>Main activities: 1) Trials for verifications and adaptability and produce manuals on the seed production technology and simple agricultural machinery, 2) Training for the Seed Farmers School (SFS) and preparation of training materials, 3) Preparation of technical manual for seed quality control and establishment of a lab at Woreda level, 4) Training on seed inspection at Woreda level, 5) Collection and analysis of information about the current seed system, seed market, and distribution channel.</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Japanese Side</b>            1) Experts: 20 persons            2) Trainees received: 18 persons            3) Training in the third country: 2 persons (in Kenya)            4) Equipment: Vehicles, Motorbikes, PC and office equipment, Grain cleaner etc.         </td> <td style="width: 50%; vertical-align: top;"> <b>Ethiopian Side</b>            1) Staff allocated: 45 persons            2) Land and facilities: Provision of space for project offices at the Ministry of Agriculture and Regional Burea of Agriculture at Amhara and Oromia and DZARC (Debre Zeit Agricultural Research Center).            Land and space for building for seed inspection laboratory in Five Woreda Agricultural Offices (Ada’a, Dendi, Lume, Sodo and Yilmanadensa woredas)            Agricultural land for verification activities in DZARC.            3) Operation cost: Utility cost of project and running cost for office spaces.         </td> </tr> </table> </li> </ol>			<b>Japanese Side</b> 1) Experts: 20 persons 2) Trainees received: 18 persons 3) Training in the third country: 2 persons (in Kenya) 4) Equipment: Vehicles, Motorbikes, PC and office equipment, Grain cleaner etc.	<b>Ethiopian Side</b> 1) Staff allocated: 45 persons 2) Land and facilities: Provision of space for project offices at the Ministry of Agriculture and Regional Burea of Agriculture at Amhara and Oromia and DZARC (Debre Zeit Agricultural Research Center). Land and space for building for seed inspection laboratory in Five Woreda Agricultural Offices (Ada’a, Dendi, Lume, Sodo and Yilmanadensa woredas) Agricultural land for verification activities in DZARC. 3) Operation cost: Utility cost of project and running cost for office spaces.
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Project Period	February 2010 –August 2014 (Extension: March 2014 –August 2014)	Project Cost	(ex-ante) 360 million yen, (actual) 553 million yen		
Implementing Agency	Ministry of Agriculture and Natural Resource (MoANR: Formerly known as the Ministry of Agriculture and Rural Development (MoARD) and the Ministry of Agriculture (MoA) by federal ministerial restructuring during and after the project period.)				
Cooperation Agency in Japan	NTC International Co., Ltd. Japan Development Service, Co., Ltd.				

**II. Result of the Evaluation**

< Special Perspectives Considered in the Ex-Post Evaluation >

- It was intended that the project was to strengthen both quality seed production and quality assurance of seed as parallel efforts to achieve the objective. However, verifiable indicators of the Project Purpose and the Overall Goal only depicted the amount of quality seed production. Therefore, the status of improvement in the localized seed inspection and the assurance system newly introduced by the project is to be verified in terms of sustainability.

**1 Relevance**

<Consistency with the Development Policy of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Ethiopian development policies of the “Plan for Accelerated Sustained Development to End Poverty

(PASDEP) 2005/6-2009/10”, the “Growth and Transformation Plan (GTP) 2010/11-2014/15” and the “Ethiopian Agricultural Sector Policy and Investment Framework, 2010-2020”. To maintaining agriculture as a major source of economic growth, one of the major targets in GTP for agriculture and rural development was drastic increase in the supply of improved seeds in five years.

<Consistency with the Development Needs of Ethiopia at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Ethiopian development needs of improving agricultural productivity by establishing quality seed production and sustainable seed system for stable food production. There was no change in the needs by the time of project completion.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan’s ODA policy toward Ethiopia, the “Country Assistance Program issued in 2008”. Agriculture, rural development, and water management were to be the top priority areas for assistance in the policy.

<Evaluation Result>

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

## 2 Effectiveness/Impact

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

The Project Purpose was achieved by the project completion. Approximately 127 tons of quality seed multiplied in a cropping season through the project approach in the 5 target Woredas (Indicator 1). Further, to ensure the quality of the produced seed, it was confirmed that there was a seed quality test training organized for more than 20 seed inspectors from all target Woredas. It was also confirmed that seed quality test training was given to selected Development Agents (DAs) and seed inspectors. The project collaboratively collected seed samples from 190 farmers and conducted the quality test in Woreda seed laboratories as well as in the Ethiopian Institutes of Agricultural Research (EIAR) laboratory. Consequently, the quality test results proved to be qualified for seed quality standard that was in the acceptable ranges for C2 class seeds<sup>1</sup>. Also, according to the QSPP Activity report, right after the time of the terminal evaluation, the project had undertaken market promotion activities including a training workshop for explaining the role of a market support activity and how to follow up and monitor the marketing process to DAs and experts at Woreda Agricultural and Rural Development Offices (WARDO). Those activities were deemed to have facilitated the quality seed production to be more responsive to the seed market. In effect, about 80% of quality seed multiplied in a cropping season was used or sold as seed (Indicator 2).

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

The project effects have been continued since the project completion. A total of 1,790 seed production farmers in the 5 target Woredas were surveyed for the ex-post evaluation. It was confirmed that 5 out of 7 technologies were commonly practiced by the farmers. Regarding the status of the training system, formerly set up to disseminate the aforementioned technologies to the farmers in the 5 target Woredas, the majority of the SFSs established by the project was replaced by the Seed Multiplication Associations (SMA) since 2015 in order to facilitate certified seed production and enhance market access. It was confirmed that they have continued providing training and disseminating the quality seed production technologies.

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

The Overall Goal was achieved at the time of ex-post evaluation. Approximately 4,571 tons of quality seed has been multiplied in 2017/18 cropping season in total, which was substantially higher than the expected target amount of 200 tons (Indicator 1). It dovetailed with the increasing trend in the total number of member farmers affiliated with the SMAs explained above. With regard to Indicator 2, 88% of quality seed multiplied in a cropping season through the established seed multiplication cooperatives was used as a seed or sold in the market in 2017/18. Especially, the amount sold in the market in the recent year indicated the steady expansion of the seed market driven by the production increase.

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

There were several positive impacts observed in the survey for the ex-post evaluation. In terms of the change in marketing seed, it positively affected the income level of member farmers of Primary Seed Multiplication Cooperatives (PSMC), the former graduates of SFS as the member farmers were able to collect payment twice a year. The first payment would be made when they sell quality seed to the Cooperative Unions, which had an estimated 15 percent premium than that of the local market grain price. Subsequently, the Cooperative Unions are supposed to process and pack the seed, then they sell at a higher price as per the standard set by the Ethiopian Seed Enterprise. The Unions retain 30 percent of the profit and give the balance of 70 percent to the PSMCs. The member farmers would be able to get the second payment as a dividend at the end of the year. According to the information obtained from the Woreda office, the total income incurred by member farmers may be at least 30-35 percent higher than that of before the project.

In addition, several cases were reported that some cooperatives could construct a warehouse (Ada’a and Yilmanadensa) and buy trucks (Lume) as the service for members. In effect, the membership was autonomously broadened as more local farmers found rewarding to participate to the seed multiplication business through the arrangement above and the SFS graduated farmer has been recognized as a role model in local communities because of their exemplary success in seed multiplication business. In the meantime, rest assured that no negative impact was confirmed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is high.

### Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Use of quality seeds is increased in the target woredas	(Indicator 1) At least 40 tons of quality seed multiplied in a cropping season through the project approach is produced in the target woredas	Status of the Achievement: achieved (continued) (Project Completion) <ul style="list-style-type: none"> <li>About 127 tons of quality seed multiplied in the cropping season through the project approach in the target woredas. (see Table 3 below).</li> <li>About 702 graduated farmers from 25 SFSs have continued quality seed production</li> </ul> (Ex-post Evaluation)

<sup>1</sup> According to the ex-ante evaluation summary, the project originally intended to facilitate C2 class seed production to meet the demand. C2 is categorized as improved by farmers but considered informal seed.

- A significant number of trained farmers (N=1790) have been practicing 5 out of 7 technologies elaborated in “Teff and Wheat Seed Multiplication Practices” in 5 target Woredas in 2017/18.
- As of 2015/16, the majority of the SFSs established by the project was replaced by the SMA in order to facilitate certified seed production and enhance market access. DAs have continued their role as trainers in the SMA.

Table1: Number of seed production farmers in 5 target Woredas

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	150	180	413	892
Lume	214	324	400	492
Dendi	85	85	85	85
Sodo	157	157	157	225
Yilmanadensa	96	96	96	96
<b>Total</b>	<b>702</b>	<b>842</b>	<b>1,151</b>	<b>1,790</b>

Table 2: Number of SFS, SMA, and DAs (major training system components)

5 Target Woredas		2014/15	2015/16	2016/17	2017/18
Ada'a	SFS	5	--	--	--
	SMA	--	5	5	7
	DA	11	8	16	16
Lume	SFS	4	--	--	--
	SMA	--	5	7	7
	DA	9	14	18	18
Dendi	SFS	5	--	--	--
	SMA	--	3	1	1
	DA	11	10	7	14
Sodo	SFS	7	--	--	--
	SMA	--	2	2	2
	DA	10	5	4	4
Yilmanadensa	SFS	4	--	--	--
	SMA	--	3	3	3
	DA	10	10	10	10
<b>Total</b>	SFS	25	--	--	--
	SMA	--	18	18	18
	DA	51	47	55	60

(Indicator 2) At least 75% of quality seed multiplied in a cropping season through the project approach in the target woredas is used or sold as seed.

Status of the Achievement: achieved (continued)  
(Project Completion)

- 83% of quality seed multiplied in a cropping season is used or sold as seed. (see Table 5 below)

(Ex-post Evaluation)

- 88% of quality seed multiplied in a cropping season is used or sold as seed. (see Table 5 below)

(Overall Goal)  
Production of mainly self-pollinating crops, teff, and wheat, is increased through the utilization of quality seed in the target woredas.

(Indicator 1) At least 200 tons of quality seed multiplied in a cropping season through the project approach is produced in the target woredas

(Ex-post Evaluation) achieved

Table 3: The amount of quality seed production (C1<sup>2</sup>) in 5 target Woredas (ton)

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	28	2,500	3,010	3,745
Lume	39	63	81	99
Dendi	15	36	54	54
Sodo	28	408	408	583
Yilmanadensa	17	80	86	90
<b>(A) Total Seed Production</b>	<b>127</b>	<b>3,087</b>	<b>3,639</b>	<b>4,571</b>

(Indicator 2) At least 75% of quality seed multiplied in a cropping season through the project approach in the target woredas is used or sold as seed.

(Ex-post Evaluation) achieved

Table 4: The amount of quality seed used and sold as seed in the target 5 Woredas (ton)

5 Target Woredas		2014/15	2015/16	2016/17	2017/18
Ada'a	Used as seed	4	220	255	268
	Sold in market	20	2,000	2,250	3,000
Lume	Used as seed	4	10	13	15
	Sold in market	30	44	57	69
Dendi	Used as seed	2	5	8	8

<sup>2</sup> Certified seed (C1) production in the five target Woreda has been undertaken by Seed Cooperative Unions through a contractual agreement with Regional Seed Enterprises (RSE). RSEs are using seed laboratories of their respective Region, neighboring regions or ESE laboratories for quality assurance and cleaning and labeling their seeds.

	Sold in market	10	25	38	38
Sodo	Used as seed	5	90	90	129
	Sold in market	16	275	275	408
Yilmanadensa	Used as seed	3	7	16	17
	Sold in market	11	64	60	63
<b>(B) Total Seed Used and Sold</b>		105	2,740	3,062	4,015

Table 5: Percentage of quality seed used or sold as seed in the total seed production in 5 target Woredas **((B)/(A) x100)** %

5 Target Woredas	2014/15	2015/16	2016/17	2017/18
Ada'a	86	89	83	87
Lume	87	86	86	85
Dendi	80	83	85	85
Sodo	75	89	89	92
Yilmanadensa	82	89	88	89
<b>Average (%)</b>	83	89	84	88

Source: Woreda Experts response during Ex-post Evaluation field Survey (June 2018)

### 3 Efficiency

The project cost and period exceeded the plan (ration against the plan: 138% and 113%, respectively). The outputs were produced as planned. Therefore, the efficiency of the project is fair.

### 4 Sustainability

#### <Policy Aspect>

In addition to validity in policy manifested in the second phase of GTP, "Growth and Transformation Plan II 2015-2020" and the "Ethiopian Agricultural Sector Policy and Investment Framework, 2010-2020" that have emphasized and detailed the promotion of seeds utilization and productivity of smallholder farmers, it has further reinforced through the implementations of "Seed System Development Strategy<sup>3</sup> (SSDS), 2013-2017" Cooperative-Based Seed Production<sup>4</sup> (CBSP), 2014-2016, 2016-2020", among others.

#### <Institutional Aspect>

With regard to the promotion of the Farmer Based Seed Production & Marketing (FBSPM), there have not been any major changes in the institutional structure except for the replacement of the SFSs by the SMAs as above. Also, as stated in the policy aspect, the Agricultural Transformation Agency (ATA) with partner organizations has started the CBSP project to fill in gaps in seed supply through localized production and distribution after the project completion. The role and responsibilities of each actor have been confirmed remained the same. Further, it has been even more inclusive by the recently established the "National Seed Platform" by the initiative of the MoANR in December 2017. It was expected to reinforce the prior organizational structures as well as a public and private partnership. However, there has been a concern that frequent turnovers in the regulatory authorities at federal and regional levels may stifle nation-wide dissemination and delay the FBSPM.

#### [MoANR]-

The Agricultural Extension Directorate and the Input Supply and Market Directorate of the MoANR have been in charge of promoting FBSPM at the Federal level. It has been responsible for the development of laws, the authorization of necessary standards and procedures related to the seed system. 4 staff members have been assigned at the Input Supply and Market Directorate but having considered the volume of work with their expected role and responsibility, it is insufficient which is also worsening with frequent turnovers.

Furthermore, as for the regulatory framework, namely, "Quality Declared Seed (QDS)" to expedite procedures of the quality control, the MoA formally issued a National Directive in October 2014. In the scheme, it enabled community-based producers to declare the quality of their seed by fulfilling the minimal standard established by the regulatory authorities in their respective regions. However, according to the survey results, the approved national Directive Guideline for the QDS has been neither operationalized nor adjusted at the level of each regulatory authority to be practically permeated across Regions and Woredas.

#### [EIAR (DZARC<sup>5</sup>)]

It has remained to be a major source of national registered improved seed varieties and conducted multiplication of Early Generation Seeds (EGS) as there has been about 17 research center local branches under the EIAR (Technology Multiplication and Seed Research Directorate) and approximately 90% of EGS has been produced in these centers. With regard to the FBSPM, 3 research staff have been assigned but having considered insufficient because of frequent turnovers. According to the Director of Technology Multiplication and Seed Research Directorate, there was a serious shortage in supply of EGS and the EIAR was able to supply only 50% of demand amount. The EIAR has been facing a land shortage, lack of human resource and materials to multiply sufficient breeder and pre-basic seeds to meet the demand.

#### [BoANR(Oromia/SNNPR/Amhara)]

The Input and Supply Department have been in charge of registration of certified seed producer, emergency seed distribution, certification of Direct seed Marketing Agent and distribution of certified seed based on the demand at the regional level. 2 staff members in each of the 3 regions have been assigned but having considered the role and responsibility, it is deemed insufficient and worsened by frequent turnovers.

#### [WARD0] (Ada'a/Lume/Dendi/Sodo/Yilmanadensa)

<sup>3</sup> Under the stewardship of MoANR, SSDS has listed out the bottleneck of the seed sector and further it has identified the way-out and matching exit strategy..

<sup>4</sup> With development partners notably, the Bill and Melinda Gates Foundation, CBSP project is intended to fill in specific gaps in seed supply through localized production and distribution, It also addresses the weak institutional capacity of cooperatives to develop and manage robust business plans by modeling seed unions. In its work with cooperatives, the project trains smallholder farmers on modern seed production and post-harvest handling.

<sup>5</sup> EIAR is an umbrella institute for various research centers in the country and among others, QSPP was actively working with DZARC.

WARDO has been responsible for the assessment of the status of seed demand and supply, and distribution of allocated seed of the Cooperative Unions. It also has provided technical support and training for quality seed production and conducted field inspections in order to assess the optimum level of quality seed production. By contrast, there has been relatively sufficient number of experts (Ada's 12, Lume, 6, Dendi 5, Sodo 2, Yilmanadensa 7). Except for Sodo, the rest of 4 target WARDO responded it sufficient. Accordingly, the expected follow-up activities have been conducted for the promotion of FBSPM for seed producing farmers in their Woredas.

[The Cooperative Promotion Office]

It has been responsible for strengthening the cooperatives and unions in an efficient manner. The Cooperative Unions under the Office should guide the primary cooperatives to channel the inputs (basic seed and agro-chemicals) on time. In addition, the Unions have been in charge of value-added activities such as logistics, sales, and marketing to serve member farmers who supply seed.

[SMA]

The SMAs have been established in the target Woredas since 2015, with the support of SFS graduated farmers by the project. Under the SMA, the SFS trained farmer was eligible to be a member of the newly established PSMC. Through this transition period toward formal seed production by Woredas after the project completion, it has enabled the member farmers to be engaged collectively in the stable supply of quality certified seed through a certain contractual agreement with the Cooperative Unions in their local communities. Furthermore, the trained DAs by the project in respective Woredas have continued their role as trainers in the SMA, as well as for any aspiring farmers who wish to join the PSMC.

<Technical Aspect>

Regarding seed production, out of the total number of the ex-counterpart staff (n=108) engaged in the project, nearly 67% (n=72) of them have been assigned at various positions and transferred to different levels at the time of the ex-post evaluation. However, there has been a mechanism such as a refresher training in place to maintain the necessary technical level. Also, at the Woreda level, experts, DAs, and farmers have had various training opportunities organized by the ATA, Bahir Dar University, and Regional Offices. This has helped respective DAs and experts/Inspectors to retain their technical skill and knowledge in order to promote quality seed production practices. With respect to marketing promotion, the ATA provides a training program for experts and DAs, farmers and PSMCs in three target Woredas (Ada's, Lume and Dendi).

As per the proper control of seed quality, only two laboratories (40%, n=2) (Ada'a and Sodo) have still continued conducting seed quality testing and duly provided the test result for the Cooperative Unions in their Woredas. Further, they have been able to submit the seed quality test result to the regional level laboratories to issue a quality seed certificate. A laboratory in Lume was partially functional; the Woreda officials perceived that there was no official mandate for the laboratory to conduct seed quality testing as it was not authorized to issue quality assurance certificate there. Thus, the lab has advised local cooperatives to inquire directly to a nearby accredited seed laboratory for certification instead. The rest of the two laboratories (Dendi and Yilmanadensa) were not functional mainly due to lack of trained lab technician and inspector.

<Financial Aspect>

The budget for quality the Seed Multiplication Activities has secured relatively sufficient amount of financial resources at the federal, regional and Woreda levels for quality seed production in the context of FBSPM. At the federal level, the budget increased from 43 mils Birr in 2015 to 80 mil Birr in 2017 and 67.5 mil Birr in 2018 which have been earmarked for the FBSPM. Donors have also provided 1.5 mils Birr in 2015, 10 mils Birr in 2016, 8 mils Birr in 2017, and 7 mils Birr in 2018 for the purpose. At the Regional level, Oromia and SNNPR and Amhara have been funded through Agricultural Growth Program Phase II (AGP-II)<sup>6</sup>; 15 mil Birr in 2015, 10 mil Birr in 2016, 8 mil Birr in 2017, 7 mils Birr in 2018. At the 5 target Woredas, as stated above, seed multiplication activities have been mainstreamed along with the extension of related services through seed multiplication cooperatives. In this respect, except Sodo other four target Woredas have secured a certain amount of budget for seed multiplication related activities.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

### 5 Summary of the Evaluation

The project achieved the Project Purpose and achieved the Overall Goal by the time of ex-post evaluation, as the remarkable amount of quality seed production has been realized and a substantial percentage of the production has been sold in the market despite the remained issues of quality assurance and inspection system. As for the sustainability, although the policy, technical and financial aspect has been reinforced for the seed sector in the context of FBSPM, the organizational aspect has some unsolved issue of insufficient manpower at national and regional levels as a result of frequent turnovers. As for efficiency, both the project cost and period exceeded the plan. Considering all of the above points, this project is evaluated to be satisfactory.

### III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- (1) For respective Regional Bureaus (Amhara and Oromia) including Woreda Agriculture Offices, it is recommended to revitalize the functions of laboratories constructed by the project. It requires to properly outline the organizational structure in order to be allocated budget for recruiting necessary personnel for the quality test services. Besides, the seed laboratories constructed by the project has to establish a formal institutional linkage with the regional level seed laboratories, so as to ensure the regular follow-up mechanism and

<sup>6</sup> AGP is a multi-donor financing project that also involves a wide range of stakeholders in the overall implementation process. These includes, among others; the Canadian International Development Agency (CIDA), the United Nations Development Program (UNDP), the Embassy of the Kingdom of the Netherlands (EKN), the Spanish Agency for International Development (AECID), the United States Agency for International Development (USAID), the Global Agricultural and Food Support Program (GAFSP), ATA, and the World Bank (IDA/WB).

necessary technical support in order to provide quality test services in a sustainable manner at Woreda level.

- (2) To enhance the sustainability of the project, all the seed related regulatory authorities at the regional and woreda level (e.g, Regional Input Regulatory Agencies/Regional seed certification authorities, Woreda Agriculture offices) should promote the approved QDS Directive. Whereas QDS means seed produced by organized and/or registered smallholder farmers based on simple principles, despite that, so far there is no officially registered seed producers, farmers/cooperatives, SMA in the QDS scheme in the target Woredas. Thus, the regulatory authorities should encourage SMA to apply for the QDS scheme for the win-win result, as less cumbersome and resource consuming, but more scalable on the ground that it may well effectively complement the existing system of conventional quality control.

#### Lessons Learned for JICA:

- (1) Farmers trained by the project have shifted from being an individual seed producer under SFS scheme to a formal entity by grouping themselves as primary cooperatives (i.e. SMA) and started producing certified seeds (C1), which positively contributed to increase their income and improve their livelihood as well as an increase in seed production. While the project had clearly identified the existing capacity limitation among farmers and extension workers as to how best to improve quality seed production technologies and practices, it did actively encourage farmers and DAs to be involved in a planning process. Thus, the actual capacity gaps as well as needs of farmers were taken into consideration in the project components and a number of training sessions had been organized through SFS approach. Through this practical and participatory approach, the farmers and DAs could build up their own skill and knowledge in producing quality seed, which eventually kept them motivated to engage in current seed business under the SMA. Nonetheless, if it had ever been entitled with a formal status as the SMA and connected to cooperative unions in the first place, farmers could have easily received a supply of EGS from national/regional seed enterprises and quickly produced certified seeds (C1) that have higher market value than informal seeds (C2). The project failed to include the crucial segment of the existing formal seed system as the result shows that farmers ultimately wished to become C1 seed producers on a sustainable basis. It can be summarized as follows;
  - Since the SFS approach is effective to improve seed production technique among farmers, it should be institutionalized to be a part of regular extension program. Let national and regional seed enterprises focus only on producing basic seeds, and farmers' seed multiplication associations produce certified seeds (C1) as out-growers of seed enterprises.
  - QSPP project should have considered strengthening not only the informal seed system but also transition as to how it requires to upgrade or connect farmers to formal seed system.
- (2) Except for Ada's and Sodo (and Lume until 2017) where woreda-level laboratories are functional, seed quality control is currently conducted by regional bureau rather than the woreda-level laboratories, and its result is authorized by national/regional seed enterprises as a part of formal seed system. This is not fully consistent with the project's scenario that originally intended to promote inspection of informal seed (C2 level) at woreda level in parallel to the QDS system. There has been no clear definition of the role and level of authority delegated to woreda-level laboratories. The project should have built a firm consensus with C/P organizations about the role of woreda-level inspection laboratories, as well as demarcation of responsibility between the laboratories and regional bureaus/seed enterprises, during the project implementation period.



Functional laboratory in Ada'a Woreda



Seed cleaning machine supported by QSPP in Yilmana Densa Woreda