



## Content

No.	Item	Page no.
1	Project description	2
2	The scope of the project	3
3	Project objectives	3
4	Expected outcomes	3
5	Implementation and Evaluation	4
	5.1 Implementation arrangement	4
	5.1.1 Training concerning the seed production practices and quality control	4
	5.1.2 Providing with the seed lab equipment	5
	5.1.3 Providing the office furniture and electronic device	5
	5.1.4 Setting up of the internet connection	5
	5.2 Project outcome	5
	5.2.1 Upgrading of the staff's capacity	5
	5.2.2 Upgrading the capacity of the seed labs	5
	5.3 Problem and challenges	6
	5.3.1 Fluctuated currency exchange rate	6
	5.3.2 Travel restriction due to Pandemic COVID 19	6
	5.4 Financial statement	6
	5.5 Evaluation of the project activities	8
	5.5.1. Conducting training on rice seed production and quality control	8
	5.5.2. Upgrading of the seed lab	8
	5.5.21 Providing the lab equipment	8
	5.5.2.2 Setting up of internet and providing office furniture and electronic device	8
6	Conclusion	9



7	Annexes	10–39
	List of the provided lab equipment	Annex (1)
	The list of the provided device and furniture to the labs	Annex (2)
	List of the provided equipment to the labs and setting up of internet and providing office furniture and electronic device in 2019 – 2020	Annex (3)
	Recorded photos of the rice seed production and quality control training conducted in Kayah, Shan, Mgway, Nay Pyi Taw)	Annex (4)
	Recorded photos of provided equipment to the labs	Annex (5)
	Recorded photos of seed lab activities using lab equipment provided by Mekong– Lancang special fund	Annex (6)
	Recorded photos of setting up of internet in Yangon, Mandalay, Nay Pyi Taw and Seed division (Head office)	Annex (7)





Table	Title	Page
Table 1	The list of the rice seed production and quality control training conducted in State and Region	4
Table 2	The planned budget and actual expenses	6
Table 3	Financial expense in each fiscal year	7
Table 4	The planned budget, actual expense and the surplus budget of the project activities	7



## Project Details

Lancang –Mekhong member country	- Republic of the Union of Myanmar
Project title	- Establishing Sustainable Seed Testing Network between researchers, academic and public, private sector within Lancang-Mekong Region, specifically Myanmar, China, Thailand and Vietnam
Proponent (ministerial level)	- Ministry of Agriculture, Livestock and Irrigation
Implementing agency	- Department of Agriculture, Seed Division
Approved budget	- 499,972USD
Commencement date	- 23 <sup>rd</sup> January 2019
Completion date	- 30 <sup>th</sup> September 2021



## 1. Project Description

Rice is staple food of Myanmar and it provides the calories and proteins for consumption. Although there is a huge rice cultivated area (7.2 Mton/ ha), the rate of production is only (3.92 Mton/ ha). Because, current cultivation practices such as the lower inputs, poor storage infrastructure, unsystematic seed distribution system and the higher seed rate (95kg/ha) make the insufficiency of pure seed leading to the less production and poor quality.

As Myanmar is agro-based country, using qualified seed is one of the possible ways to increase food production and sufficiency. In order to produce the qualified seed, the seed quality control plays the essential role. Therefore, the seed quality control is the most important task for the mission of seed division which is to produce the good quality seed and control their quality.

At present, Myanmar seed quality control system is as follows; Firstly, the seed inspector inspects the seed production fields whether it is conformity with designated standard such as to be free from weed plant, volunteer plant and the disease infected plant. If the field is qualified, the products are sampled by the district seed expert and send to the seed labs. When the seed samples are delivered, the seed package should be mentioned the variety name, seed class, seed lot number, the weight of the seed lot, farmers name, field location, sampling date, name of the experts who took the sample etc. After checking the submitted sample in the labs, only the qualified seed will be given the seed certificate. The qualified seed will be recorded in the lab every year. The certified seed shall be labelled with different colored card in which variety name; cultivated year/season, field location, seed moisture content, germination percentage, purity percent and the lot number will be stated. The breeder seed will be labelled with pink color card while the foundation seed, registered seed and certified seed will be labelled with green, blue and yellow card, respectively. Although this system can control the seed quality effectively, the number of seed laboratory and the seed inspectors are limited at present. In order to fulfill the higher demand for pure seed, it is necessary to expand



the seed labs, to build up the capacity of seed inspectors and upgrade the seed lab equipment in compliance with the international seed testing standard.

Therefore, this project has been carried out to upgrade the seed laboratory equipment, training the seed inspectors for seed production and quality control, and installed internet services in the seed labs to communicate between seed testing labs and head office by Lancang- Mekong Cooperation Special Fund on 2018-2019 to 2019-2020 (Second batch).

## **2. The scope of the project**

- (a) Training with seed production practices and quality control in Kayah, Shan, Magwe and Nay Pyi Taw Region
- (b) Providing and supporting with seed lab equipment and apparatus in Nay Pyi Taw, Yangon, Mandalay, Sagaing, Bago, Ayeyarwaddy, Magwe, Shan, Kayah and Kayin Region
- (c) Study tour to Vietnam and China
- (d) Meeting and workshop with international seed experts in Myanmar

## **3. Project objectives**

- (a) To create the seed inspection and quality control network within the region
- (b) To build the capacity of lab staff for quality testing
- (c) To enhance the investment of private sector on quality testing and control program.
- (d) To establish mutual relation and future collaboration for seed sector development in the region
- (e) To provide knowledge for seed quality testing system.

## **4. Expected outcomes**

- (a) To evaluate the current seed inspection system in compliance with the international seed standard
- (b) To upgrade and provide the seed lab equipment
- (c) To support the expanded seed lab in the State and Region where the seed lab apparatus are not been set up
- (d) To uplift the capacity of the seed inspectors
- (e) To strengthen the seed certification system



## 5. Implementation and Evaluation

### 5.1 Implementation arrangement

The implementing agency was Seed Division (SD) under Department of Agriculture (DOA). The implementing team was organized with the staff from the Seed Division office (Nay Pyi Taw), the in charge of the seed labs and the seed inspectors from the State and Region.

#### 5.1.1 Training concerning the seed production practices and quality control

The trainings concerning the rice seed production practices and quality control were performed in four State and Region such as Shan State, Kayah State, Magwe Region and Nay Pyi Taw Region. The training was intended for the sharing of the knowledge on systematic rice seed production, upgrading of the living standard of the rice farmers by using the good quality seed, sharing of the rice seed production technologies and plant protection technologies to the farmers, and uplifting the knowledge of the seed producers. The training carried out in State and Region is as follows–

**Table 1.** The list of the rice seed production and quality control training conducted in State and Region

No.	State/Region	No. of participants	No. of activities	Date
1	Kayah State	40	1	3 <sup>rd</sup> July 2019 to 5 <sup>th</sup> July 2019
2	Shan State	40	1	8 <sup>th</sup> July 2019 to 10 <sup>th</sup> July 2019
3	Magwe Region	40	1	14 <sup>th</sup> August 2019 to 16 <sup>th</sup> August 2019
4	Nay Pyi Taw Region	56	1	28 <sup>th</sup> August 2019 to 30 <sup>th</sup> August 2019
	<b>Total</b>	<b>176</b>		



### **5.1.2 Providing with the seed lab equipment**

In order to hasten the seed quality control process, the existing seed lab situated in Yangon, Mandalay, Nay Pyi Taw, and the newly expanded seed lab in Kayah, Kayin, Sagaing, Magwe, Bago, Shan and Ayeyarwady were provided with the seed lab equipment. The list of the provided equipment in State and Region is stated in [Annex 1](#).

### **5.1.3 Providing with the office furniture and electronic device**

Not only the seed quality inspection, but also the seed certification process should be quickened. Therefore, the electronic device such as computer, printer, projectors, copier, electronic inverters, and the office furniture such as office table, cupboard and seed collected box were provided. The list of the provided device and furniture are shown in [Annex 2](#).

### **5.1.4 Setting up of the internet connection**

In favor to hasten the seed inspection process and cooperation among the labs, internet connection was set up in existing seed lab such as Yangon, Mandalay and Nay Pyi Taw and provided the necessary device.

## **5.2 Project outcome**

### **5.2.1 Upgrading of the staff's capacity**

The training conducted in the State and Region taught the theory of the seed production technologies, field inspection protocol, seed sampling and certification protocol, integrated pest management techniques, seed purification, packaging method and the seed law and regulation. In addition, the seed production and inspection protocol were practiced. The attendees understood the current seed production system and seed inspection practices. Therefore, some of the outstanding attendees could be able to assign in the newly expended seed lab.

### **5.2.2 Upgrading the capacity of the seed labs**

Because of the providing the seed inspection equipment and the office devices in the laboratories, the seed inspection and certification processes could be enhanced. In addition, the communication among the seed labs and





the head office were hastened. Therefore, the finding on the seed quality would be reported in time.

### 5.3 Problem and challenges

#### 5.3.1 Fluctuated currency exchange rate

Due to the instability in the currency exchange rate, it faced difficulties in performing project activities. When the project implemented, the exchange rate was decreased to 1504 MMK in comparing to the 1525 MMK when the project planned. Therefore, the actual expense was higher than the planned one.

#### 5.3.2 Travel restriction due to Pandemic COVID 19

Owing to the occurrence of COVID 19 pandemic, intercountry travel restriction was banned. Consequently, visiting of the seed inspectors to Vietnam and China, and the meeting and workshop with international seed experts in Myanmar were not able to held as planned.

### 5.4 Financial statement

The planned budget and actual expenses for the conducted activities are shown in Table 2, while the financial expense in each fiscal year in Table 3, and the planned budget and the actual expenses in Table 4 were shown.

**Table 2. The planned budget and actual expenses**

No.	Particulars	Planned budget (US\$)	Actual expense US\$	Accomplishment (%)
1	Rice seed production and quality control training	20,000	20,000	100%
2	Upgrading of the seed labs and set up of internet connection	41,2382	424,508	100%
	<b>Total</b>	<b>432,382</b>	<b>444,508</b>	

**Table 3. Financial expense in each fiscal year**

No.	Fiscal year	Planned budget US\$	Total expenses US\$	Accomplishment (%)
1	2018-2019	20,000	20,000	100%
2	2019-2020	412,382	424,508	100%
	<b>Total</b>	<b>432,382</b>	<b>444,508</b>	

Note: Although the planned budget for 2019-2020 fiscal year was 412,382US\$, the actual expense was 424,508US\$ and exceeded 12,126 due to the changes in exchange rate.

**Table 4. The planned budget, actual expense and the surplus budget of the project activities**

No.	Activities	Planned budget (US\$)	Actual expense (US\$)	Surplus budget (US\$)	Remark
1	Training on rice seed production and quality control	20,000	20,000		
2	Upgrading of the seed labs and set up of internet connection	412,382	424,508		(-)12,126
3	Visiting to Vietnam and China	67,590		55,464	
4	Meeting and workshop in Myanmar				
	<b>Total</b>	<b>499,972</b>	<b>444,508</b>	<b>55,464</b>	

Note: Despite the planned budget was 499,972US\$, the activities 3 and 4 could not perform due to travel restriction during COVID 19 pandemic, and so the surplus money 55,464 will be left in the budget.





## **5.5 Evaluation of the project activities**

### **5.5.1. Conducting training on rice seed production and quality control**

Rice seed production and quality control training was conducted in 4 State/Region and 176 trainees attended. From the training result, the outstanding staff could be appointed in the newly expended seed lab. Not only the seed production but also the quality control systems were widely understood. As a result, the quality seed was able to produce and could distribute to the farmers.

### **5.5.2 Upgrading of the seed lab**

#### **5.5.2.1 Providing the lab equipment**

After providing the lab equipment, seed inspection and certification processes could be checked quicker than before. Before providing the equipment, it averagely took 29 days for the seed inspection and certification processes in the labs in Ayeyarwaddy and Sagaing Region, Shwe Bo Township. After providing, however, it averagely took only 17 days and thus, the process hastened 11 days than before. Moreover, seed inspection could work more load than before. Because, government planned to implement COVID 19 Relief Plan project (CERP) and supported the rice seed producing farmers for the cultivation of 100,000ac in cash in 2019–2020 fiscal year. In such condition, seed labs could check not only the ordinary seed samples but also the additional seed sample released from CERP by using the provided equipment.

#### **5.5.2.2 Setting up of internet and providing office furniture and electronic device**

Owing to the support of office furniture, computer, printer, projector, copier, and set up of internet connection, communication among seed labs and seed head office were easier and quicker to share the seed testing result, the legally registered varieties, and searching for



some of the seed checking procedure in internet. Therefore, communication among seed lab and the head office were strengthened and the seed quality result could provide in real time.

## 6. Conclusion

Myanmar as the agro-based country, agriculture sector development is one of the possible ways for the prosperity of the nation. Pure seed should be afforded and acquired for the farmers. To ensure the seed quality, inspection protocol should be strictly followed. Concerning the export of rice from Myanmar, the product should be qualified in conformity with the international standard. All seed inspection check points such as field inspection, sampling, lab test, seed certification, and checking the fake and counterfeit seed should be implemented systematically to acquire the good quality seed.

Therefore, this project aimed to the systematic production of the seed, mass increase in qualified seed, and more thorough understanding of the seed production technique to the staff. Hence, theory and practical training to 176 staff were carried out. Furthermore, the updated lab equipment was provided to ensure the seed inspection and certification. In addition, internet connection was set up to strengthen the link among seed labs and head office, and upgrading the inspection technique in compliance with international standard. Therefore, seed inspection is easier and faster than before, and seed inspection system has been updated. It is believed that those benefits will lead to the development of seed sector in Myanmar, and the cooperation among Lancang – Mekhong region will be strengthened.



List of the provided lab equipment

No.	Lab equipment	Nay Pyi Taw	Yangon	Mandalay	Magwe	Sagaing	Bago	Ayeyar waddy	Kayin	Kayah	Shan	Quantity
												Total
1	Seed Germinator	1	1	1	1	1	1	1	1	1	1	10
2	Oven	1	1	1	1	1	1	1	1	1	1	10
3	Seed Grinder	1	1	1	1	1	1	1	1	1	1	10
4	Desiccator	2	2	2	2	2	2	2	2	2	2	20
5	Magnifier Lamp	2	2	2	2	2	2	2	2	2	2	20
6	Purity Boards	2	2	2	2	2	2	2	2	2	2	20
7	PH Meter	1	1	1	-	1	-	-	-	-	-	4
8	Water Purification System	1	1	1	-	1	-	-	-	-	-	4
9	Electronic Balance	1	1	1	1	1	1	1	1	1	1	10
10	Seed Satake	1	1	1	1	1	1	1	1	1	1	10
11	Seed Blower	1	1	1	1	1	1	1	1	1	1	10
12	Petridis (Glass)	100	100	100	100	100	100	100	100	100	100	1000
13	binocular microscope	1	1	1	1	1	1	1	1	1	1	10
14	Analytical Balance	4	2	2	2	2	1	1	2	2	2	20
15	Seed Sample Pan	36	15	15	15	15	5	5	15	15	15	151
16	Seed Divider	1	1	1	1	1	1	1	1	1	1	10



## Quantity

No.	Lab equipment	Nay Pyi Taw	Yangon	Mandalay	Magwe	Sagaing	Bago	Ayeyar waddy	Kayin	Kayah	Shan	Total
17	Moisture Meter (pm650)	4	2	2	1	1	1	1	1	1	1	15
18	Amylose Contact Machine	1	1	1	-	-	-	-	-	-	-	3
19	Venire Caliper	1	1	1	1	1	1	1	1	1	1	10
20	Sieves 1 set	4	2	2	2	2	1	1	2	2	2	20
21	Seed Counter	3	2	2	1	1	1	1	1	1	1	14
22	Filter Paper	200	100	100	100	100	50	50	100	100	100	1000
23	Germination Box	40	20	20	20	20	10	10	20	20	20	200
24	Germination Tray	20	20	20	20	20	20	20	20	20	20	200
25	Display Bottle	80	20	20	25	10	10	10	25	25	25	250
26	Small Airtight Container	60	10	10	20	20	10	10	20	20	20	200
27	Polystyrene Weighting Dish	1	1	1	1	1	1	1	1	1	1	10
28	Steel Tray	75	15	15	15	15	15	15	15	15	15	210
29	Seed Trier 1 set	6	1	1	1	1	1	1	1	1	1	15
30	Rice Polisher	1	1	1	-	-	-	-	-	-	-	3
31	Grain Shape Tester	1	-	1	1	1	-	-	1	1	1	7
32	Refrigerator	3	1	1	1	1	1	1	1	1	1	12



## Annex - 2

## The list of the provided device and furniture to the labs

No.	Particulars	Nay Pyi Taw	Yangon	Mandalay	Magwe	Sagaing	Bago	Ayeeyarwady	Kayin	Kayah	Shan	Total
1	Portable Projector	11	1	1	1	1	1	1	1	1	1	20
2	Voltage Inverter	2	1	1	-	-	-	-	-	-	-	4
3	Desktop Computer	1	1	1	1	1	1	1	1	1	1	10
4	Printer	1	1	1	1	1	1	1	1	1	1	10
5	Copier	1	1	1	-	-	-	-	-	-	-	3
6	Table	10	2	2	2	2	2	2	2	2	2	28
7	Collect seed box	28	6	6	6	6	6	6	6	6	6	82
8	Cabinet	3	1	1	1	1	1	1	1	1	1	12



## Annex 3

List of the provided equipment to the labs and setting up of internet and providing office furniture and electronic device in 2019 – 2020

No.	Item	Quantity	USD	Exchange rate
1	Copier	3	4357	1USD= 1436 (19.2.2020)
2	Color Printer	10	3000	
3	Inverter	4	1100	
4	Collect seed box	82	6124	
5	Cabinet	12	2400	
6	Table	28	1009	
7	Desktop Computer (i7)	10	20,000	1USD= 1339 (12.8.2020)
8	Projector (Portable)	20		
9	Office stationery			
10	Seed lab equipment	31	354,000	1 USD-1328 (25.8.2020)
11	Refrigerator	12	32,500	1USD= 1308 (2.9.2020)
12	internet (Nay Pyi Taw)	1		
13	internet (Yangon)	1		
14	internet (Mandalay)	1		
15	internet (seed division, Head office)	1		
16	Bank charges	6 times	18	
	Total		424,508	



# Documentary Photos







## Annex 4

Recorded photo on rice seed quality control training carried out on 3<sup>rd</sup> to 5<sup>th</sup> July 2019 in Kayah State provided by the Lanchang-Mekhong special fund







### Visiting to Ngwe Taung seed farm







Recorded photo in seed quality control training conducted on 8<sup>th</sup> to 10<sup>th</sup> July 2019 in Shan State provided by Lancang-Mekong special fund







Practical training on raising seedling in Shwe Nyaung integrated farm and visiting to seed inspection lab in Taung Gyi, capital city of Shan State







Recorded photo on rice seed production training carried out on 14<sup>th</sup> to 16<sup>th</sup> August 2019 in Magwe Region provided by Lancang-mekhong special fund







## Visiting Pwint Phyu seed farm and seed inspection lab in Magwe Region







Recorded photo on Rice seed quality control training carried out from 28<sup>th</sup> to 30<sup>th</sup> August , 2019 in  
Nay Pyi Taw provided by lancang-Mekhong special fund







## Visiting to the rice seed production field and seed bank under the Department of Agricultural Research







### Visiting to the seed quality inspection lab (Nay Pyi Taw)







## Annex 5

### Lab equipment provided by Lancang-Mekong special fund



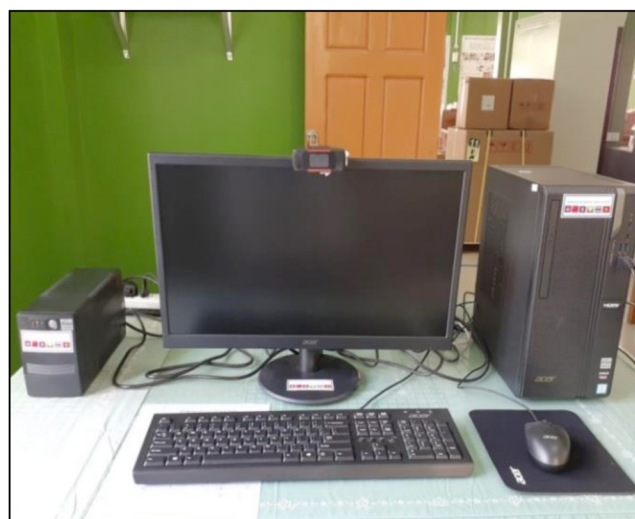
Refrigerator



Cabinet



Colour Printer



Computer



Oven and desiccator



Seed husker



Projector



Stereoscopic binocular Microscope



pH meter



Moisture meter





Seed divider



Seed sample pan



Water purification



Seed husker



Seed polisher



Electrical and analytical balance



Seed germinator



Seed blower



Seed grinder



Copier



Vernier clipper, grain shape tester, seed



Steel trays, small airtight container





Display bottle and germination box



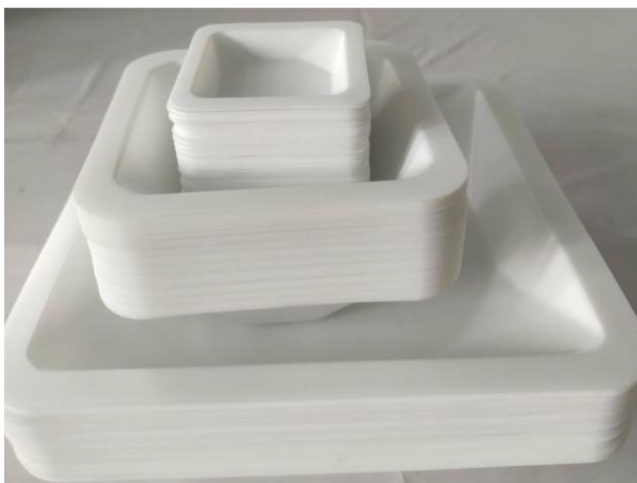
Big and small petridish



Seed counter



Sieves set



Polystyrene weighting dish



Germination tray



Table



Purity board and magnifier lamp



Inverter



Collect Seed box





Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Nay Pyi Taw seed laboratory)







Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Yangon seed laboratory)



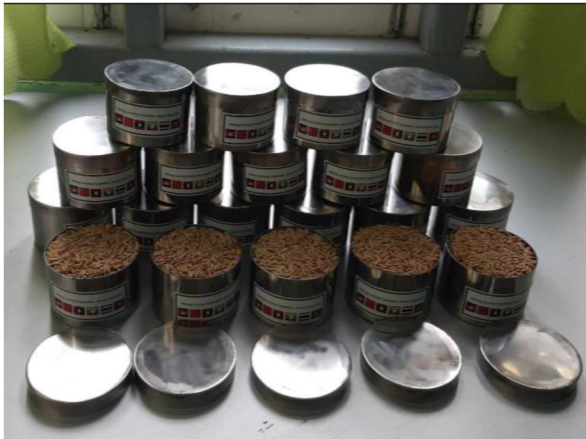


Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Mandalay seed laboratory)





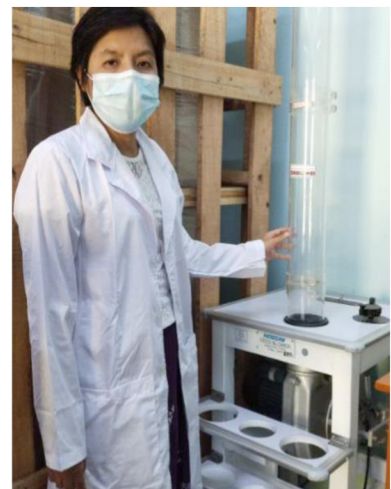
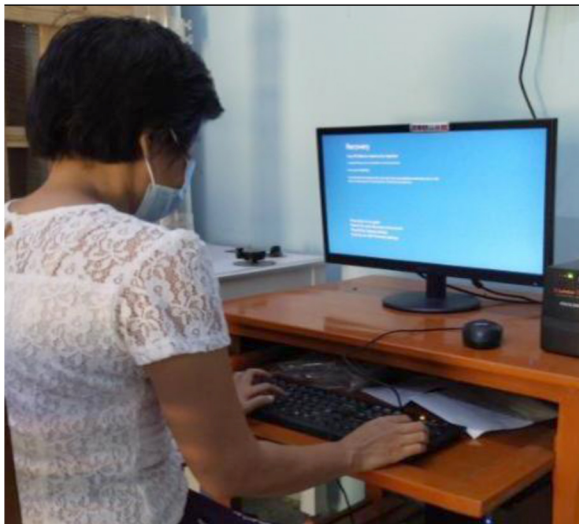
Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Kayah seed laboratory)







Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Sagaing seed laboratory)







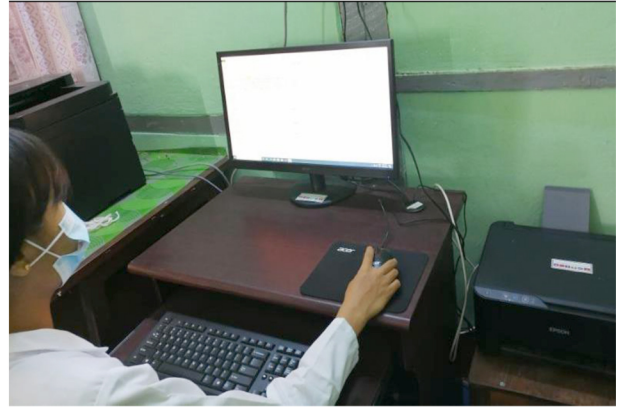
Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Bago seed laboratory)







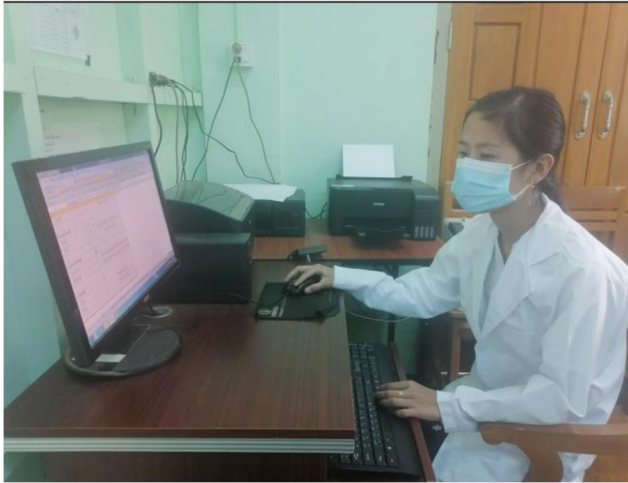
Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Magwe seed laboratory)







Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Shan seed laboratory)







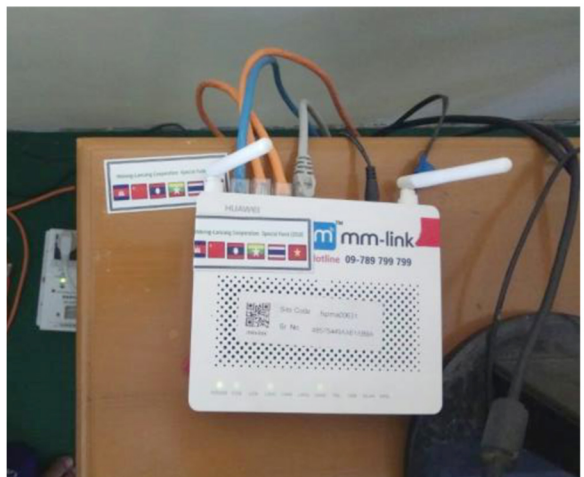
Recorded photos of seed lab activities using lab equipment providing by  
Mekong- Lancang special fund  
(Ayeyarwaddy seed laboratory)





## Annex 7

Recorded photos of setting up of internet in Yangon, Mandalay,  
Nay Pyi Taw and Seed division (Head office)







Department of Agriculture  
Seed Division

Lancang-Mekong Cooperation  
Special Fund



## PROJECT COMPLETION REPORT

Establishing Sustainable Seed Testing Network between researchers, academic and public, private sector within Lancang-Mekong Region, specifically Myanmar, China, Thailand and Vietnam (Second Batch)

October, 2021