

Competitive Research Grant

Sub-Project Completion Report

on

Up Scaling of BRRI Released New Promising Rice Varieties Through Quality Seed Production at Farmers' Level

Project Duration

July 2017 to September 2018

Adaptive Research Division
Bangladesh Rice Research Institute



Submitted to
Project Implementation Unit-BARC, NATP-2
Bangladesh Agricultural Research Council
Farmgate, Dhaka-1215



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Citation

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Project Implementation Unit

National Agricultural Technology Program-Phase II Project (NATP-2)

Bangladesh Agricultural Research Council (BARC)

New Airport Road, Farmgate, Dhaka – 1215

Bangladesh

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National Agricultural Technology Program-Phase II Project (NATP-2)

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Acronyms

Sl. No.	Acronyms	Description
1	URSP	Up Scaling of BRRRI Released New Promising Rice Varieties Through Quality Seed Production at Farmers' Level
2	T. Aman	Transplanted Aman
3	BRRRI dhan70, 71 and 75	BRRRI dhan70, BRRRI dhan71 and BRRRI dhan75
4	BRRRI dhan76 and 77	BRRRI dhan76 and BRRRI dhan77
5	BRRRI dhan58, 60 and 63	BRRRI dhan58, BRRRI dhan60 and BRRRI dhan63

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Executive Summary

Rice production depends on many factors and among them quality of variety is the most important. BRRI has recently developed BRRI dhan70, 71 and 75 suitable for central region in T. Aman where cropping intensity is higher and BRRI dhan76 and 77 suitable for tidal submergence non-saline Barisal region in T. Aman. Farmers in Barisal region generally grow long duration (150-170 days) local varieties like Shadamota, Lalmota, Dudkalam etc using very tall seedling at the time of transplanting but yield was low (around 3-3.5 t/ha). BRRI dhan76 and 77 are able to replace those local varieties with yield advantage of around 1.5 t/ha, produce very tall seedlings similar to that of local varieties but growth duration is about 7-15 days shorter than the locals. For irrigated Boro season, BRRI developed some promising varieties like BRRI dhan58, 60 and 63. These promising Aman and Boro varieties need to reach the farmers' vicinity rapidly by up-scaling programs which will significantly increase the rice production. Accordingly the proposed project is designed to disseminate the varieties by enhancing the availability of quality seeds at farmers' level.

In T. Aman, 2017 and Boro, 2018 a total of 16 up scaling programs were undertaken. These programs were farmers participatory each comprising 0.8 hectare (6 bighas) of land. The locations were different upazilas of 6 districts, Mymensing, Comilla, Barisal, Jhalokathi, Kishoreganj and Netrokona. Seeds, fertilizers, pesticides, signboards, some casual labours for very specific works (rouging and sampling yield) were provided from the project. Farmers carried the other operational costs. A total of 40 plastic drums (Each capacity of 75-80 kg paddy) were distributed among innovative farmers of the up scaling program areas. Field days were conducted in each site at maturity for wide awareness and dissemination of the varieties by discussion, field visit and knowledge sharing.

In T. Aman 2017, a total of 16.1 tons paddy grains of BRRI dhan70, 71 and 75 were produced from 3.2 ha under 4 upazilas of 2 districts, Mymensingh (Bhaloka and Trisal) and Comilla (Chandina and Debiddar). About 7.4 tons grains of those varieties were retained as seeds by the farmers (Table 1). A total of 15.4 tons paddy grains of BRRI dhan76 and 77 were produced from 3.2 ha under 4 upazilas of Barisal and Jhalokathi districts. About 8.1 tons grains of those varieties were retained as seeds by the farmers (Table 2). Number of motivated farmers varied depending on the varietal performance. A total of about 1300 farmers gained awareness and knowledge about new T. Aman varieties through field day, field visit and knowledge sharing. Among them about 80% farmers preferred specially BRRI dhan75 in central region having highest average yield of 5.69 t/ha with attractive slender grain and BRRI dhan76 in Barisal region having highest average yield of 5.08 t/ha which was about 1.5 t/ha higher than local varieties.

During Boro 2018, a total of 42.3 tons paddy grains of BRRI dhan58, 60 and 63 were produced from 48 bighas (6.4 ha) under 8 upazilas of Mymensing (Bhaluka and Trisal), Comilla (Homna and Muradnagar), Netrokona (Sadar and Purbadhala) and Kishoreganj (Pakundia and Katiadi) districts. About 17.20 tons grains of those varieties were retained as seeds by the farmers for next season cultivation (Table 3). A total of about 1285 farmers gained awareness and knowledge about new Boro varieties through field day, field visit and knowledge sharing. Among them about 55% farmers preferred specially BRRI dhan58 in central region having highest average yield of 7.19 t/ha with attractive medium slender grain.

A total of 90 farmers were trained in 3 batches in 2 upazilas (Valuka and Trisal) of Mymensingh and 1 upazila (Purbadhala) of Netrokona district. Farmers were updated with knowledge and skill on different modern rice varieties and techniques of rice production.

CRG Sub-Project Completion Report (PCR)

A. Sub-project Description

1. **Title of the CRG sub-project:** Up Scaling of BRRI Released New Promising Rice Varieties Through Quality Seed Production at Farmers' Level
2. **Implementing organization:** Bangladesh Rice Research Institute
3. **Name and full address with phone, cell and E-mail of PI/Co-PI (s):**

a) Principal Investigator

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4. **Sub-project budget (Tk):**
 - a. Total: 1800000.00 (Eighteen lakh)
 - b. Revised (if any): Not applicable
5. **Duration of the sub-project:**
 - a. Start date (based on LoA signed): 12 July 2017
 - b. End date: 30 September 2018

6. Justification of undertaking the sub-project:

Food security in Bangladesh mainly depends on rice production as rice is the staple food. Rice production depends on many factors and among them quality variety is the most important. BRRI has recently developed BRRI dhan70, 71 and 75 suitable for favorable T. Aman in central region. The main characteristics of BRRI dhan70 are long slender thin grain and scented, growth duration is around 130 days with an average yield of 5.0 t/ha. The main characteristics of BRRI dhan71 are medium slender bold grain, drought tolerant at reproductive phase, growth duration is around 115 days with an average yield of 5.5 t/ha. The main characteristics of BRRI dhan75 are long slender thin grain, lightly scented after cooking, growth duration is around 115 days with an average yield of 5.5 t/ha. The farmers in central region prefers slender grains and

short duration as the farmers have the scope to grow pulse, oilseeds or vegetables after harvesting of short duration T. Aman. On the other hand BIRRI developed BIRRI dhan76 and 77 suitable for tidal submergence non-saline Barisal region. The main characteristics of BIRRI dhan76 are large bold grain, tall plant type (average plant height is 140 cm), average growth duration is 163 days with an average yield of 5.0 t/ha. The main characteristics of BIRRI dhan77 are large bold grain, tall plant type (average plant height is 140 cm), average growth duration is 155 days with an average yield of 5.0 t/ha. Both the varieties produced very tall seedlings (around 60-75 cm) within 35-45 days of seedling age. Farmers in Barisal region generally grow long duration (150-170 days) local varieties like Shadamota, Lalmota, Dudkalam etc using very tall seedling at the time of transplanting but yield is low (around 3-3.5 t/ha). BIRRI dhan76 and 77 are able to replace those local varieties with yield advantage of around 1.5 t/ha, produce very tall seedlings similar to that of local varieties but growth duration is about 7-12 days earlier than the locals. For irrigated Boro season BIRRI recently developed promising varieties like BIRRI dhan58, 60 and 63. The main characteristics of BIRRI dhan58, 60 and 63 are medium slender bold grain, long slender and basmati type grains respectively with yield potentiality of 7.2-7.3 t/ha for BIRRI dhan58 and 60, and 6.5 t/ha for basmati type BIRRI dhan63. Growth durations are 150, 145 and 146 days respectively for like BIRRI dhan58, 60 and 63. The mega variety BIRRI dhan29 produced around 7.5 t/ha but with very long duration (160-165 days). Now farmers' demands are short duration variety with higher yield and slender grain. So the new varieties need to reach the farmers' vicinity rapidly. But the up-scaling of new varieties to the stakeholders are lengthy, slow and cumbersome. Many farmers in southern and central regions are still using the traditional varieties or old BIRRI varieties. The old varieties are now susceptible to many biotic and abiotic stresses. The newly released varieties can replace the local and old varieties which will significantly increase the rice production and contribute to sustainable food security of the country and as well as improve farmers' income and livelihood. Farmers need adequate training to update their knowledge, skill and decision-making capacity to adopt the new varieties with management practices. Although DAE is doing the dissemination activities as per their own strategies, however, BIRRI scientists can take more initiative and active role in rapid dissemination of new varieties with close collaboration of DAE. DAE will be involved in the field level activities (farmer selection for both up scaling and training programs). So, there is a wide scope to increase rice production by rapid introduction of the newly released BIRRI varieties to the southern and central regions of the country. Accordingly, the proposed project is designed to disseminate the newly developed rice varieties with improved management practices as well as to enhance the availability of quality seeds at farmers' level.

7. **Sub-project goal:** Livelihood improvement of the farmers through introducing new promising rice varieties and quality seed production.
8. **Sub-project objective (s):**
 - a) To enhance rapid dissemination of BIRRI released new promising T. Aman and Boro rice varieties to the farmers of the specific suitable areas.

b) To strengthen quality seed production by up scaling program through improved management and facilitate storage and distribution of the seeds among farmers.

c) To train farmers for updating their knowledge and skill on modern rice production.

9. Implementing location (s):

Season	District	Upazila
T. Aman 2017	Comilla	Chandina and Debidder
	Mymensingh	Bhaloka and Trisal
	Barisal	Bakergonj and Babuganj
	Jhalokathi	Nalchiti and Rajapur
Boro 2017-2018	Comilla	Homna and Muradnagar
	Mymensingh	Bhaloka and Trisal
	Kishoreganj	Pakundia and Katiadi
	Netrokana	Sadar and Purbadhala

10. Methodology in brief:

In T. Aman, 2017 and Boro, 2018 a total of 16 up scaling programs were undertaken. These programs were farmers participatory each comprising 0.8 hectare (6 bighas) of land (total 96 bigha or 12.8 ha). The locations were different upazilas of 6 districts of Mymensing, Comilla, Barisal, Jhalokathi, Kishoreganj and Netrokana. In T. Aman, short duration varieties (BRR1 dhan70, 71 and 75) with quality grains were used in Mymensingh and Comilla, which would be accepted by the farmers in those locations, as the farmers have the scope to grow pulse, oilseeds or vegetables after harvesting of short duration T. Aman. Land area used for each of BRR1 dhan70, 71 and 75 was 2 bighas (66 decemal) in Mymensing and Comilla while land area used for each of BRR1 dhan76 and 77 was 3 bighas (100 decimal) in Barisal and Jhalokathi. BRR1 dhan76 and BRR1 dhan77 are capable of producing tall seedlings (around 70 cm tall at 35 days of seedling age) similar to local Shadamota, Dudkalam etc. with yield advantage of about 1.0 -1.5 t/ha and 10 to 15 days earlier than Shadamota. There is wide scope to disseminate these two T. Aman varieties in greater Barisal region. Seedling age used for BRR1 dhan70, 71 and 75 ranged 25-30 days depending on locations. Similarly Seedling age used for BRR1 dhan76 and 77 ranged 35-45 days depending on locations.

In Boro 2017-18, a total of 8 up scaling programs were undertaken, each comprising 0.8 hectare (6 bighas) of land covering 2 bighas (66 decemal) per variety in 8 upazilas of 4 districts, Comilla (Homna and Muradnagar), Mymensing (Baluka and Trisal), Kishoreganj (Pakundia and Katiadi), Netrokana (Sadar and Purbadhala). BRR1 dhan58, 60 and 63 having higher yield potential and attractive grains were used in each location. Seedling age used for BRR1 dhan58, 60 and 63 ranged 40-45 days depending on locations.

Farmers are generally reluctant to follow BRR1 recommended fertilizer management, proper weeding, proper rouging and absent minded at the time of threshing and drying to control mixture. In the up-scaling programs for both T. Aman and Boro seasons BRR1 recommended

fertilizer management practices were followed, weeding, rouging (at vegetative, flowering and maturity), threshing and drying were properly done to ensure quality seeds. These are the improved general management practices followed to ensure quality seeds and higher yields. Seeds, fertilizers, pesticides, signboards, some casual labours for very specific works (rouging and sampling yield) were provided from the project fund in each season. Farmers took the other operational costs (participatory approaches).

11. Results and discussion:

T. Aman, 2017

Farmers of Mymensingh and Comilla highly preferred BRRRI dhan71 and 75 for earliness, satisfactory yield and fine slender grains. Some farmers also liked BRRRI dhan70 for its long slender grains. Generally farmers/people of Mymensingh and Comilla prefers fine grain rice. Besides, farmers of project sites prefer short duration varieties for growing rabi crops after T. Aman harvest.

Farmers/people of Barisal and Jhalokathi generally preferred bold grains and accordingly they grow local varieties like Shadamota, Lalmota, Dudkalam etc having bold grains. As the BRRRI dhan76 and 77 are bold grain type, farmers gladly and highly preferred these varieties as they produced 1.0-1.5 t/ha higher yield than the local varieties. Besides, the growth duration of BRRRI dhan76 and 77 were found 10-15 days earlier than Shadamota, Lalmota. Especially BRRRI dhan76 produced more yield than BRRRI dhan77. As a result most farmers preferred BRRRI dhan76.

Farmers involved with the up scaling program agreed and committed to exchange or sell seeds of those varieties among surrounding farmers. It is expected that the varieties will be disseminated rapidly in those areas through using the produced seeds of new varieties.

During T. Aman 2017 a total of 16.1 tons paddy grains of BRRRI dhan70, 71 and 75 were produced from 24 bighas (3.2 ha) under 4 upazilas (Bhaloka, Trisal of Mymensingh and Chandina and Debiddar of Comilla district). About 7.4 tons grains of those varieties were retained as seeds by the farmers for next season cultivation (Table 1). A total of 15.4 tons paddy of BRRRI dhan76 and 77 were produced from 24 bighas (3.2 ha) under 4 upazilas of 2 districts, Barisal (Bakerganj and Babuganj) and Jhalokathi (Nolchiti and Rajapur). About 8.1 tons grains of those varieties were retained as seeds by the farmers for next season cultivation (Table 2). Number of motivated farmers varied depending on the varietal performance. A total of about 1300 farmers gained awareness and knowledge about new T. Aman varieties (BRRRI dhan70, 71, 75, 76 and 77) through field day, field visit and knowledge sharing. Among them about 80% farmers preferred 71 and 75 in T. Aman in central region and BRRRI dhan76 in Barisal region. During T. Aman, twenty plastic drums (each capacity of 75-80 kg paddy) were given to the innovative farmers involved with the programs in those areas for storing seeds of those varieties properly. Farmers involved with the up scaling programs agreed and committed to exchange or sell seeds of those varieties among surrounding farmers. It is expected that the varieties will be disseminated rapidly in those areas by using the produced seeds of new varieties.

Table 1. Grain yield, Growth duration, total production, retained seeds, knowledge sharing and motivated farmers for BRRi dhan70, 71 and 75 during T. Aman 2017 under URSP, NATP2

District	Upazila	Grain yield (t ha ⁻¹)	Growth duration (day)	Total production (kg)	Seeds retained (kg)	Knowledge sharing farmers(no.)	Motivated farmers (no.)
BRRi dhan70							
Comilla	Chandina	4.52	132	1202	500	175	70
	Debidder	4.37	128	1149	400	115	45
Mymensingh	Bhaloka	4.91	129	1309	750	225	85
	Trisal	4.68	127	1229	600	150	65
Mean/Sub total		4.62	129	4890	2250	665	265
BRRi dhan71							
Comilla	Chandina	5.14	118	1363	700	175	100
	Debidder	4.72	116	1256	350	115	60
Mymensingh	Bhaloka	5.25	118	1389	750	225	130
	Trisal	5.05	115	1336	700	150	125
Mean/Sub total		5.04	117	5344	2500	665	415
BRRi dhan75							
Comilla	Chandina	5.84	117	1550	750	175	135
	Debidder	5.11	115	1363	300	115	80
Mymensingh	Bhaloka	5.43	114	1443	800	225	160
	Trisal	5.69	113	1496	750	150	120
Mean/Sub total		5.52	115	5852	2600	665	495
Grand Total				16086	7350	665	-

Table 2. Grain yield, Growth duration, total production, retained seeds, knowledge sharing and motivated farmers for BRRi dhan76 and 77 during T. Aman 2017 under URSP, NATP2

District	Upazila	Grain yield (t ha ⁻¹)	Growth duration (day)	Total production (kg)	Seeds retained (kg)	Knowledge sharing farmers(no.)	Motivated farmers (no.)
BRRi dhan76							
Barisal	Bakerganj	5.35	160	2146	2000	185	185
	Babuganj	5.83	162	2348	2100	175	175
Jhalokathi	Nolchiti	4.79	158	1903	1500	130	95
	Rajapur	4.54	160	1822	1500	145	115
Mean/Sub total		5.08	160	8219	7100	635	570
BRRi dhan77							

Barisal	Bakerganj	4.72	152	1903	200	185	60
	Babuganj	4.55	154	1822	300	175	30
Jhalokathi	Nolchiti	4.27	151	1700	200	130	55
	Rajapur	4.30	153	1741	250	145	50
Mean/Sub total		4.46	153	7166	950	635	195
Grand Total				15385	8050	635	-

Pictorial views of programs conducted during T. Aman, 2017, URSP (NATP2)



Demonstration plot at Chandina, Comilla



Farmers Rally at Chandina, Comilla



Harvesting rice at Bhaluka, Mymensingh



Demonstration Plot at Bakerganj, Barisal



Demonstration Plot at Bakerganj, Barisal



Demonstration plot at Babuganj, Barisal



Field Day at Babuganj, Barisal



Farmers Rally at Bakerganj, Barisal



Farmers Rally at Bakerganj, Barisal



Distribution of Plastic drums at Bakerganj

Boro, 2018

Farmers of Comilla, Mymensingh, Kishoreganj and Netrakona preferred BRRRI dhan58 and 60 for better yield, slender grains and shorter growth duration than the mega variety BRRRI dhan29. Generally the mega variety BRRRI dhan29 produce average yield of 7.5 t/ha but the average growth duration of BRRRI dhan29 is 160 days. On the other hand, the average growth duration of the used varieties, BRRRI dhan58 and 60 were found respectively 151 and 145 days (9-15 days earlier than BRRRI dhan29) having yield of 7.19 and 6.86 t/ha respectively which are close to that of BRRRI dhan29 (Table 3). Besides, the growth duration of another mega variety, BRRRI dhan28 is 140 days having yield potential of 6.0 t/ha. The growth duration of BRRRI dhan60 was 145 days which is only 5 days longer compared to BRRRI dhan28 but yield was about 0.8 t/ha higher than BRRRI dhan28. So the farmers growing BRRRI dhan28 can easily grow BRRRI dhan60. Recently BRRRI dhan28 was found to be severely susceptible to blast disease but BRRRI dhan60 was tolerant to blast disease and grain size is slender. Farmers can easily grow BRRRI dhan60 instead of BRRRI dhan28. Regarding BRRRI dhan63, although the grain size was very long slender but yield was relatively low (average yield was 5.65 with proper management of blast disease) compared to other varieties (Table 3). In addition BRRRI dhan63 was found susceptible to blast disease. Farmers preference for BRRRI dhan63 was relatively low in Comilla, Netrakona and Kishoreganj

while slightly better (Table 3) in Mymensingh district because the farmers of Mymensingh generally preferred fine long slender grains.

In Boro 2018, a total of 42.3 tons paddy grains of BRR1 dhan58, 60 and 63 were produced from 48 bighas (6.4 ha) under 8 upazilas of 4 districts, Mymensing (Bhaluka and Trisal), Comilla (Homna and Muradnagar), Netrokana (Sadar and Purbadhala) and Kishoreganj (Pakundia and Katiadi). About 17.20 tons grains of those varieties were retained as seeds by the farmers for next season cultivation (Table 3). A total of about 1285 farmers gained awareness and knowledge about new Boro varieties (BRR1 dhan58, 60 and 63) through field day, field visit and knowledge sharing. Among them about 55% farmers preferred especially BRR1 dhan58 out for next season cultivation.

Farmers' Training:

A total of 90 farmers were trained in 3 batches in 2 upazilas (Valuka and Trisal) of Mymensingh and 1 upazila (Purbadhala) of Natrakona district. Farmers were updated their knowledge and skill on promising modern rice varieties and techniques of rice production. Farmers will grow new promising rice varieties in their field and apply the modern techniques for increasing yield per unit area. The trained farmers can contribute to increase rice production and help other farmers by sharing the knowledge he gained in the training. Farmers and resource speakers were paid honorarium by cheque.

Table 3. Grain yield, Growth duration, total production, retained seeds, knowledge sharing and motivated farmers for BRR1 dhan58, 60 and 63 during Boro, 2018 under URSP, NATP2

District	Upazila	Grain yield (t/ha)	Growth duration (day)	Total production (t/2 bigha)	Seeds retained (kg)	Knowledge sharing farmers(no.)	Motivated farmers (no.)
BRR1 dhan58							
Comilla	Homna	7.16	152	1909	800	135	75
	Muradnagar	7.64	153	2037	850	175	60
Mymensingh	Bhaloka	7.25	149	1933	1000	215	150
	Trisal	6.88	150	1835	1000	170	125
Kishoreganj	Katiathi	7.76	153	2069	1200	155	100
	Pakundia	7.42	151	1979	900	145	80
Natrakona	Sadar	5.75	150	1533	600	130	50
	Purbadhala	7.69	149	2051	1000	160	65
Mean/Sub total		7.19	151	15350	7350	1285	705
BRR1 dhan60							
Comilla	Homna	6.81	147	1816	600	135	65
	Muradnagar	7.22	146	1925	700	175	50

Mymensingh	Bhaloka	6.97	144	1859	750	215	80
	Trisal	7.05	145	1880	800	170	90
Kishoreganj	Katiathi	7.36	146	1963	800	155	75
	Pakundia	6.84	145	1824	700	145	70
Natrakona	Sadar	5.46	143	1456	600	130	40
	Purbadhala	7.15	145	1907	800	160	75
Mean/Sub total		6.86	145	14629	5750	1285	545
BRRi dhan63							
Comilla	Homna	5.45	148	1453	500	135	30
	Muradnagar	6.25	149	1667	500	175	25
Mymensingh	Bhaloka	6.18	147	1648	600	215	40
	Trisal	5.52	148	1472	400	170	45
Kishoreganj	Katiathi	5.67	149	1512	500	155	30
	Pakundia	5.85	148	1560	600	145	30
Natrakona	Sadar	4.82	144	1285	400	130	25
	Purbadhala	5.45	146	1453	600	160	30
Mean/Sub total		5.65	147	12051	4100	1285	255
Grand Total				42030	17200	1285	-

Pictorial views of programs conducted during Boro, 2018, URSP (NATP2)



Trial plot at Bhaluka, Mymensingh



Farmers Training at Purbadhala, Netrakona

12. Research highlight/findings/achievements:

- Total 16 up scaling programs (total 96 bigha or 12.8 ha) were conducted in different upazilas of 6 districts, Mymensing, Comilla, Barisal, Jhalokathi, Kishoreganj and Netrokona in two seasons (Aman and Boro)
- During T. Aman 2017, a total of 31.5 tons paddy grains of BRRRI dhan70, 71, 75,76 and 77 were produced in 4 districts from which a total of 15.5 tons were retained as seeds by the farmers.
- A total of about 1300 farmers gained awareness and knowledge about new varieties of Aman and out of them 80% farmers preferred BRRRI dhan75 in central region having highest average yield of 5.69 t/ha with attractive slender grain and BRRRI dhan76 was highly preferred in Barisal region having highest average yield of 5.08 t/ha which was about 1.5 t/ha higher than the local Shadamota and Lalmota (generally produced around 3-3.5 t/ha).
- During Boro 2018, a total of 42.3 tons paddy grains of BRRRI dhan58, 60 and 63 were produced in 4 districts from which a total of 17.20 tons were retained as seeds by the farmers
- A total of about 1285 farmers gained awareness and knowledge about new varieties of Boro and out of them 55% farmers preferred specially BRRRI dhan58 in central region having highest average yield of 7.19 t/ha with attractive medium slender grain and 151 days growth duration while it needs about 160 days for BRRRI dhan29.
- A total of 16 field days were conducted in 2 seasons (Aman and Boro) in different upazilas of 6 districts, Mymensing, Comilla, Barisal, Jhalokathi, Kishoreganj and Netrokona.
- A total of 40 plastic drums (each capacity of about 75-80 kg paddy) were distributed among innovative farmers of the up scaling program areas for storing seeds.
- A total of 90 farmers were trained in 3 batches in 2 upazilas (Valuka and Trisal) of Mymensingh and 1 upazila (Purbadhala) of Natrakona district.

B. Implementation Position

1. Procurement:

Description of equipment and capital items		PP Target		Achievement		Remarks
		Phy (#)	Fin (Tk)	Phy (#)	Fin (Tk)	
(a) Office equipment						None
(b) Lab &field equipment						None
(c) Other capital items	Laptop	1	60000.00	100%	59500.00	As per BRRRI Procurement Committee
	Printer	2	40000.00	100%	40000.00	„
	Toner	3	18000.00	100%	5100.00	Price re fixed as per BRRRI Procurement Committee
	Seed moisture meter	1	16000.00	100%	28900.00	„
Total			134000.00		133500.00	

2. Establishment/renovation facilities: Not applicable

Description of facilities	Newly established		Upgraded/refurbished		Remarks
	PP Target	Achievement	PP Target	Achievement	

3. Training/study tour/ seminar/workshop/conference organized:

Description	Number of participant			Duration (Days/weeks/ months)	Remarks
	Male	Female	Total		
(a) Training (one day farmers training)	88	2	90	One day	100% achieved
(b) Workshop	-	-	-	-	-

C. Financial and physical progress

Fig in Tk

Items of expenditure/activities	Total approved budget	Fund received	Actual expenditure	Balance/unspent	Physical progress (%)	Reasons for deviation
A. Contractual staff salary	197849	197849	197849	0	100%	
B. Field research/lab expenses and supplies	843200	843200	843200	0	100%	
C. Operating expenses	202991	201555	176990	24565	88%	After harvesting of Boro, 2018, TA & DA was minimum.
D. Vehicle hire and fuel, oil & maintenance	230000	219636	217000	2636	99%	Slight variation in amount during hiring of vehicles
E. Training/workshop/seminar etc.	90000	90000	90000	0	100%	
F. Publications and printing	70000	0	0	0	100%	
G. Miscellaneous	32460	32460	32460	0	100%	
H. Capital expenses	133500	133500	133500	0	100%	
Total	1800000	1718200	1690999	27201		

D. Achievement of Sub-project by objectives:

Specific objectives of the sub-project	Major technical activities performed in respect of the set objectives	Output(i.e. product obtained, visible, measurable)	Outcome(short term effect of the research)
To enhance rapid dissemination of BRRI released new promising T. Aman and Boro rice varieties to the farmers of the specific suitable areas.	1 In T. Aman, 2017 and Boro, 2018 a total of 16 up scaling programs were undertaken. These programs were farmers participatory each comprising 0.8 hectare (6 bighas) of land (total 96 bigha or 12.8 ha). The locations were different upazilas of Mymensing, Comilla, Barisal, Jhalokathi, Kishoreganj and Netrokana using new promising T. Aman and Boro rice varieties	1. In T. Aman 2017 a total of 31.5 tons paddy grains of BRRI dhan70, 71, 75,76 and 77 were produced in 4 districts from which a total of 15.5 tons were retained as seeds by the farmers 2. In T. Aman 2017 a total of about 1300 farmers gained awareness and knowledge about new varieties of Aman	BRRI released new promising T. Aman and Boro rice varieties will be grown widely in surrounding areas of the program sites in coming seasons. As a result total rice production will be increased and contribute to national food security to some

	<p>suitable to the respective location.</p> <p>2. A total of 16 field days were conducted in 16 up scaling program sites to build up awareness about the varieties among the farmers for rapid dissemination.</p>	<p>and out of them 80% farmers preferred BRRRI dhan71, 75 and 76.</p> <p>3. During Boro 2018 a total of 42.3 tons paddy grains of BRRRI dhan58, 60 and 63 were produced in 4 districts from which a total of 17.20 tons were retained as seeds by the farmers</p> <p>4. During Boro 2018 a total of about 1285 farmers gained awareness and knowledge about new varieties of Boro and out of them 55% farmers preferred BRRRI dhan58 and 60</p>	<p>extent.</p>
<p>To strengthen quality seed production by up scaling program through improved management and facilitate storage and distribution of the seeds among farmers.</p>	<p>1. Rouging at the time of vegetative, flowering and maturity were done with special care in each plot so that the grains produced were treated as good quality seeds. Weeds and insects were properly controlled and diseases were properly managed. A reasonable amount of the produced seeds were retained by the farmer and exchanged among neighbouring farmers.</p> <p>2. A total of 40 plastic drums (each capacity of about 75-80 kg paddy) were distributed among innovative farmers of the program areas for storing seeds.</p>	<p>1. Farmers of the up scaling program sites had understood the importance of quality seeds. They had observed the impact of rouging at 3 stages (vegetative, flowering and maturity) to avoid mixture to maintain quality seeds. Farmers also have understood the importance of controlling weeds, insects and diseases.</p> <p>2. Distribution of plastic drums encouraged farmers to store their seeds by their own. They were motivated to sell and exchanged seeds of new promising rice varieties among neighbouring farmers in coming seasons.</p>	<p>1. Farmer's dependency for quality seeds of new rice varieties to BADC or other organization will be reduced and in this way the new promising rice varieties will be disseminated rapidly among the farmers.</p>
<p>To train farmers for updating their knowledge and skill on modern rice production.</p>	<p>1. A total of 90 farmers were trained in 3 batches in 2 upazilas of Mymensingh and 1 upazila of Natrakona district.</p> <p>2. Farmers were updated their knowledge and skill on promising modern rice varieties and techniques of rice production</p>	<p>1. Farmers will grow new promising rice varieties to increase yield per unit area.</p> <p>2. They can apply the modern techniques during rice production to increase yield.</p>	<p>The trained farmers can contribute to increase rice production and help other farmers by sharing the knowledge he gained in the training.</p>

E. Materials Development/Publication made under the Sub-project: None

Publication	Number of publication		Remarks (e.g. paper title, name of journal, conference name, etc.)
	Under preparation	Completed and published	
Technology bulletin/ booklet/leaflet/flyer etc.			
Journal publication			
Information development			
Other publications, if any			

F. Technology/Knowledge generation/Policy Support (as applied):

i. Generation of technology (Commodity & Non-commodity)

Not applicable

ii. Generation of new knowledge that help in developing more technology in future

Not applicable

iii. Technology transferred that help increased agricultural productivity and farmers' income

Adoption of new promising rice varieties by the farmers will increase the yield per unit area with the same cost of production as with the previous varieties. As a result the farmers' income and livelihood will be increased significantly.

iv. Policy Support

Farmers needed policy support for enough quality seed production of the newly released promising rice varieties by BADC and other GO and NGO organizations. Besides, farmers should be supported by storage facilities through government incentives.

G. Information regarding Desk and Field Monitoring

i) Desk Monitoring[description :

The PI and Co-PI participated in different workshops held at BARC Dhaka arranged by PIU-BARC, NATP2 on different issues related to the different projects. The concerned experts presented the highlights of the projects activities. Besides, the suggestions on the positive and negative sides of project activities were given which contributed for the improvement of the project activities.

ii) Field Monitoring:

Technical Division/Unit, BARC and PIU-BARC, NATP2 could not visit the field activities. Technical Division once informed the PI to visit the field but could not make available time later. However they always advised the PI and helped in different ways for smooth running of the project activities.

The PI, Co-PI and concerned Scientific Assistants, DAE people visited the field in several times (a total of around 50 times) for proper execution and monitoring of the project activities. It helped to solve the field problems and keep coordination with DAE personnel. It also helped to conduct field day and farmers' training. Besides, local leaders, elite people like UZ chairman, Union Chairman, Political leaders visited the field in different occasions along with farmers.

H. Lesson Learned/Challenges (if any)

i) Funds were not available in due time as a result some of scheduled operations were not implemented in proper time.

iii) Lack of storage facilities at farmer’s level is one of the major constraints to keep seeds by the farmers themselves. As a result enough seeds of new promising varieties could not be retained by the farmers. It is one of major challenges for rapid dissemination of new promising varieties among the farmers.

I. Challenges (if any)

In case of farmers training it is complex to conduct training by issuing cheque to the farmers. As it was one day training, it needs to spend extra time that would be more valuable and could be used for the training to update the knowledge and skills of farmers about the modern rice varieties and technologies.

Signature of the Principal Investigator
Date

Seal

Counter signature of the Head of the
organization/authorized representative
Date

Seal