

Horticulture Bytes

January / 2024

Seventh Edition



APART: Adding Value to Increase Resilience, Production And Value Addition of Horticulture Value Chain

DoH & FP is the Operational Project Implementation Unit (OPIU) under APART

Major Project Interventions

- Development of 167 clusters in APART district
- Demonstration of Climate Resilient Technology and Market-Led Activities
- Demonstration of Post-Harvest Management (PHM) Techniques
- Application of IPM systems to reduce the use of pesticides and promote vermicomposting units
- Market linkage through
 - Value Chain Schools
 - Cold Chain Storage Facilities
 - Provision for specially designed 4-wheeler transport vehicles
- Formation of FFS (Farmer Field Schools) and FPCs (Farmer Producer Companies)
- Intensification of Vegetable Nursery for Seed Production
- Awareness and Capacity Building



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ASSAM AGRIBUSINESS AND RURAL TRANSFORMATION PROJECT (APART)

Message From The Director's Table

The seventh issue of Quarterly Online e-newsletter "*Horticulture Bytes*" initiated by OPIU-Horticulture and Food Processing to disseminate information and impact of APART activities in field level. This issue covered the activities performed during the quarter of October -December 2023.

During the period the major focus has been on PAEP (Potatoes Area Expansion Programme) for Rabi Season 2023-24. It is to be mentioned here that the cropping intensity of the State of Assam after 2022-23 area expansion interventions is **150%**, following that achievement the target for 2023-24 is set at **160%** and overall target up to 2026 is **175%**. It is expected that PAEP 2023-24 will contribute to achieve the desired cropping intensity of the state.

We have undertaken second cropping in Rice Fallows through Potatoes cultivation . For PAEP 2023-24 we have covered 18 districts viz, Sivasagar, Jorhat, Majuli, Golaghat, Dhemaji, Lakhimpur , Biswanath, Sonitpur , Karbi Anglong, Nagaon, Morigaon, Kamrup, Kokrajhar, Bongaigaon, Barpeta, Darrang, Cachar, Hailakandi. The total area to be covered are **13032** bighas and **4 varieties** have been selected like *K. chipsona* 3, *Lady rossetta*, *K. suryya*, *K. himalini*, *K. jyoti* for area expansion programme.

I hope this issue will be useful to understand the progress district wise.

**Shri Triranga Bharatiya Borah , Director
Horticulture and Food Processing, Assam**

In the quarter of October- December 2023 we have continued our efforts in strengthening Vegetables Value Chain Development and PAEP 2023-24. Strengthening the extension services for Horticultural sector is a need that OPIU-Horticulture under APART has been trying to address through training programmes and Demo plots. District Horticulture Coordinators have been engaged for the purpose who are contributing through Training programmes, field days for Potatoes and other Cole crops. For PAEP 2023-24, OPIU-Horticulture has provided technical trainings in all the districts in collaboration with Deptt of Agriculture. OPIU-Horticulture has printed the handbooks on BMP of Potatoes and provided the same to the concerned Technical persons for imparting the trainings. DHCs (District Horticulture Coordinators) initiated in providing **301** (Three hundred and one) nos of Technical Trainings on BMP (Best Management Practices) of Potatoes covering the areas under expansion. OPIU-Horticulture has taken up IPM demos of Pumpkin, Cauliflower, Tomatoes and provided Planting materials, technical support for Pineapple, Ginger and Banana Value Chain Development. OPIU-Horticulture provided seed support in flood affected areas for the Kharief Vegetables like Bottle Guard, Cucumber, Okra (lady's finger) which gave good returns to the farmers. DHCs has collaborated with DAMCs and provided much needed market linkages for the Vegetables Value Chain development which fetched good returns for the farmers. We are presenting a brief glimpse of the progress in this seventh issue and we hope it will be helpful for all.

Shri Bipul Das

ADA (R/FT) cum

Nodal Officer, APART-OPIU (Horti.)

Potato Area Expansion Programme 2023-24, APART (HORTI.)

OPIU- Horticulture (Directorate of Horticulture and Food Processing) has taken up PAEP (Potatoes Area Expansion Programme) 2023-24 with the objective to increase double cropping , increase cropping intensity of the state and improve farmers income. The production target area of the state is 5000 ha for the year 2023-24. The cropping intensity of the state after 2022-23 area expansion interventions is **150%**, the target for 2023-24 is **160%** and overall target up to 2026 is **175%**. It is expected that PAEP 2023-24 will contribute to achieve the desired cropping intensity of the state.

Potato Area Expansion Programme has 4 (four) main strategies to achieve the targets:

1. Potato area expansion programme shall cover mostly Rice fallow land (preferred 80% of the total land taken).
2. Potato tuber support for specific varieties (*Lady Rosetta, Chipsona 3, K.surya, K.himalini, K. jyoti*) shall be provided by APART and other inputs (Fertilizer, plant protection, nutrients etc.) for cultivation to be arranged by farmers (or FPCs).
3. Massive Extension and Technology Transfer of Technologies implemented earlier under APART through adoption e.g. Best Management Practices (BMP), Zero Tillage Technology adoption.
4. 20% of cultivated area under FPC will be utilized for potato seed tuber production of the specific variety provided under the project. The idea is to generate potato seed tubers for the next year. This shall eliminate the need for input purchase for next cropping season and the FPCs need not buy potato seeds/ tubers in next cropping season.

ALLOCATION PAEP 2023-24 (APART)

Sl. No	District	Area (Bigha)	K. chipsona 3 (Kg)	Lady rossetta (Kg)	K.surya (Kg)	K. himalini (Kg)	K.jyoti (Kg)
1	Sivasagar	183	0	5500	14800	14800	19800
2	Jorhat	195	5850	0	15850	15850	21100
3	Majuli	65	1950	0	5250	5250	7050
4	Golaghat	652	41050	95800	17600	17600	23500
5	Dhemaji	162	10250	23950	4400	4400	5850
6	Lakhimpur	326	20500	47900	8800	8800	11750
7	Biswanath	1173	84500	197050	21100	21100	28150
8	Sonitpur	1173	84500	197050	21100	21100	28150
9	K. Anglong	65	2900	6850	2950	2950	3900
10	Nagaon	1955	123150	287400	52800	52800	70400
11	Morigaon	782	49250	114950	21150	21100	28150
12	Kamrup	912	57450	134150	24650	24650	32800
13	Kokrajhar	326	20500	47900	8800	8750	11800
14	Bongaigaon	489	30800	71800	13200	13200	17600
15	Barpeta	2151	154850	361350	38800	38700	51600
16	Darrang	2163	136300	318000	58400	58400	77800
17	Cachar	130	600	1350	11100	11100	14900
18	Hailakandi	130	600	1350	11100	11100	14900
	TOTAL	13032	825000	1912350	351850	351650	469200

Potato Area Expansion Programme 2023-24, APART (HORTI.)

For PAEP 2023-24 covers 18 districts viz, Sivasagar, Jorhat, Majuli, Golagaht, Dhemaji, Lakhimpur , Biswanath, Sonitpur , Karbi Anglong, Nagaon, Morigaon, Kamrup, Kokrajhar, Bongaigaon, Barpeta, Darrang, Cachar, Hailakandi. The total area to be covered are **13032** bighas and 4 varieties are selected like *K. chipsona 3*, *Lady rossetta*, *K. suryya*, *K. himalini*, *K. jyoti* for area expansion programme.

For these PAEP 2023-24, OPIU-Horticulture has provided technical trainings in all the districts in collaboration with DoA (Department of Agriculture). OPIU-Horticulture has printed the handbooks on BMP of Potatoes and provided the same to the Technical persons for imparting the trainings. DHCs (District Horticulture Coordinators) took the lead in providing technical trainings of **301** (Three hundred and one) nos of Technical Trainings on BMP (Best Management Practices) of Potatoes covering the areas under expansion



Name of the District: Golaghat

Name of DHC: Dr. Nilasree Borah

Ongoing demonstrations:

Sl. No.	Crop		Demo Nos.	Demo size (ha)	Present status	Remark
1.	Ginger	BMP	5	1.00	Ongoing	About to harvest
2.	Pineapple	BMP	3	0.25	Ongoing	Vegetative stage
3.	Potato	Area Expansion	11 (nos. of FPC)	86.93	Ongoing	Vegetative stage
		BMP	8	0.5	Ongoing	Vegetative stage
4.	Pumpkin	IPM	2	1	Ongoing	Seedling stage
5.	Tomato	IPM	2	1	Ongoing	Seedling stage
6.	Cabbage	IPM	1	1	Ongoing	Seedling stage

Number of Technical training completed:

- Technical training on IPM Pumpkin at Sungajan, Sarupathar on 22/12/2023
- Technical training on IPM Tomato at Noloni Pathar, Merapani on 27/12/2023

Adoption of Zero tillage technology at Kakodonga FIG under PAEP (Athkhelian FPC)



Adoption of Rainshelter technology by the farmer name Aboni Gogoi, Morangi



APART renovated warehouse site



Potato Seed Distribution ceremony under PAEP in Bokakhat , Golaghat District on 10/11/2023



Mechanical transplanting of potato seed under PAEP at Disoi FPC on 12/11/2023



Input distribution of IPM demonstration (Pumpkin, Tomato and Cabbage) on 23/11/2023



Pro-tray planting method demonstration and media preparation (IPM Pumpkin)



Pineapple demo plot



Potato Plot under Potato Area Expansion Programme 2023-24 (PAEP)



Various Activities under Golaghat District

Status of the demos under Barpeta District

Name of the DHC: Dr. Minsura Begum

Sl No	Crop	Variety	DemoNos.	Present Status
1	Potato BMP	LR/ Chipso3	15(7 ha)	Ongoing
2	Potato area of expansion	Chipsona3, LR, Himalini, K Surya, K Jyoti	330 ha	Covering an area of 2130 bigha under Potato area expansion programme Undertaken in 11 FPCs namely Betbari Pragati FPC, Barpeta Luiporia FPC, Howly Agrofish FPC, Ramdhenu FPC, Mandia Milonjyoti FPC, Pub Jonia FPC, Pahumara FPC, Gomafulbari FPC, Sorbhog FPC, Aranai FPC, Nabaprayash FPC and few FPOs, Plants are 30 to 50 days old, plants are healthy and free from pest and disease infestation.
3	IPM Cauliflower	Megha	1 ha	Transplanting done in the main field.
	IPM Cabbage	Royal ball	1 ha	
4	Brinjal		1 ha	Undertaken in Pahumara FPC, planting not done yet.
5	IPM Pumpkin	Arjuna	1 ha	Transplanting done in the main field
6	IPM Tomato	Rocky	1 (ha) demo	Undertaken in Ramdhenu FPC, plants are 17 days old in protray.
7	Kharif Vegetable (Cucumber, Bottle gourd and Okra)	Mtani, Ankit, Indus 101	100 ha	Harvesting done
8.	Banana	G-9	1 ha	Ramdhenu FPC is selected for demo, demonstration not started yet.
9.	Potato seed production under low cost net house		4 nos under AWP 2023-24 , 2 nos under AWP 2022-23,1 no under AWP 2021 recycled in net house and open field multiplication done, plants are in healthy condition.	Sowing done in first week of Dec.

Status of Trainings/Field Days

Sl No	No of Trainings	Present Status	No of FieldDays	Present Status
1	Potato Area of expansion(17)	11 nos conducted	1	Not harvested yet
2	Potato BMP(10)	4 nos	4	Not harvested yet
3	IPM pumpkin, Brinjal, Tomato, Cabbage and Cauliflower(5)	2 (IPM cabbage and Tomato training conducted)	2	
4	Banana(4) under AWP 2022-23	2 nos completed		Planting done in July under Chakchaka block & under Bhawanipur block planting has been done in last week of Sept under AWP 2022-23, under Pahumara FPC total area under Banana demo was 25 bigha

Photographs on technical training related to BMP Demo, under PAE Programme to FPCs and potato seed production



Kharif bottlegourd and Cucumber demo

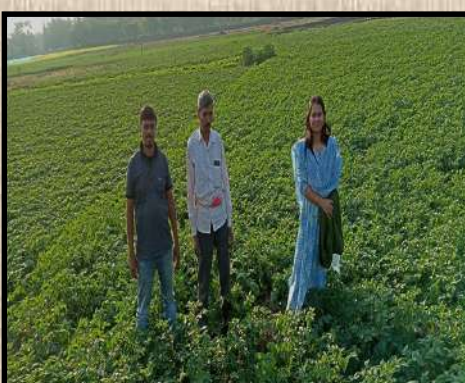


Banana demo

Potato Seed Production under Low cost insect proof net house



Potato Area Expansion Programme



Different Activities under Barpeta District

Case study on APICAL ROOTED CUTTING (ARC) technology- for Rapid local seed potato production , Barpeta

The potato sector in Assam continues to face serious problems accessing good quality planting materials at affordable prices for small and marginal farmers in potato growing areas. Seed accounts for 40-50% of the total cost of production, this is a huge burden for small farmers. The high cost of seed has led some small farmers to use discarded small –sized potato as seed in the potato growing belts.

Though if farmers want to purchase good-quality seeds at high price, there is no guarantee that they will be able to obtain high quality of seed in a timely manner because of transportation long distances (up to 2000 km), affecting their quality and delivery. Farmers are exploited with respect to quality, price and even on quantity, they buy in 50kg bags but most of the time it is found underweight. - Seed price is always unpredictable and high.

There is an urgent need to revive the Potato sector through developing alternate seed system which ensures good quality seeds at affordable prices to farmers. In order to strengthen the potato value chain in Assam state, Directorate of Horticulture and Food Processing promoting Apical Rooted Cutting (ARC) technology to support small-holder farmers to produce seeds locally) under Assam Agribusiness and Rural Transformation Project.

To solve the problem, potato seed production through ARCs undertaken under Mandia Milonjyoti FPC under AWP 2022 -23 and Tazel Bhanu has been selected as beneficiary in an area of 1 bigha, inputs and seedlings were provided under APART, ARCs variety was K Himalini. Plot size under open condition 1072 m², under net house 134 m². Row to row distance was 60 cm and plant to plant distance was 25 cm. Fertilizer applied at recommend doses and plant protection measures applied timely, Weeding done on 15 and 35 DAP. On the same day of planting light irrigation surrounding the plant applied at alternate day upto 20 days. 30,50 after planting light sprinkler irrigation was given. 60 days after planting furrow irrigation was given. Dehaulingm has been done in ridge planting method 10 days before harvesting by removing the aerial parts of the plant.

Observations:

- Avg. Number of tubers/pl: 9.4
- Area in open field: 1072
- Total no of plants: 8000 nos Mortality: 20%
- Damage of seedling by bacterial wilt: 25%
- Crop stand : 55%(ie 3600 nos).
- In 54 no of plants total no of tuber: 664 out of which 595 nos can be used as seed
- In 54 no of plants weight of tuber: 5.715
- Tota tuber weight in open field: 153 kg
- Total no of tubers in 1072 m²: 32400, as seed 29,514 nos

Under net house:

- Total area : 134 m²
- Avg. no of tubers per plant: 8
- Total weight and no of tubers in 134 m²: 20.06 kg and 1815 nos

In a single plant no of tubers has been produced and the villagers were happy with the small tubers produced and could be solved quality seed problems if FPCs will produce seeds from ARCs.



Name of district- Karbi Anglong

Name of the DHC: Sudipta Das

Activities carried out during October- December, 2023- 24 Conducted Interactive Session of FPO/FPCs of East Karbi Anglong in collaboration with NABARD study team on Credit Flow Status

- Visited various nurseries of Karbi Anglong District to collect data from private sector nurseries in production and marketing of planting materials of fruit crops.
- Conducted Stake Holder Workshop on Efficient Nutrient Management and Collaboration with IFDC state Team at DAO Conference Hall Karbi Anglong
- Field visit to Ginger and Turmeric Demonstration Plots at Karbi Anglong district
- Attended training on data recording in increase in trading volume and status of open auction platforms under Market Modernization and Improvement Program under APART
- Attended Workshop on Briefing and Consultation on Japanese Agriculture under National Agricultural Chamber of Japan organized by North East Center for Technology Application and Reach (NECTAR)
- Field visit to Ginger and Turmeric Demonstration Plots at Karbi Anglong district
- Field visit for verification of plot for Potato Area Expansion Programme, 2023-24
- Completed 3 days visit to selected spices cluster and markets survey of commercial availability of raw and planting material, existing agro logistics status in the cluster and its vicinity, status of presence of agrologistics -facility or valuation, assessment of markets for trade, transport and infrastructure
- Completed trainings and distribution of potato tuber under Potato Area Expansion Programme, 2023-24
- Attended Viksit Bharat Sankalp Yatra with DAO Karbi Anglong at Block Campus, Manja, Karbi Anglong
- Completed trainings on BMP Potato
- Field visit with DAO, Karbi Anglong for APART activities and review by State Monitoring Team
- Attended and coordinated farmers for International Agri Horti Show on 16th to 18th October, 2023
- Visited selected Spices Clusters, Land Custom Stations and Sea Ports for Cross Border Trade under APART
- No. Of technical trainings completed- 15

**Spices Clusters, Land Custom Stations and Sea Ports for Cross Border Trade, West Bengal under APART**

ACTIVITIES UNDER OPIU-HORTICULTURE, APART , Kokrajhar District

Name of the DHC: Kabita Mushahary Narzary

A. BENEFICIARY VERIFICATIONS AND APPROVAL :

- There are total 8 nos. (0.5 ha each) of potato cluster demonstrations, 5 nos. of (1ha each) IPM demonstrations on Cauliflower – 2nos., Tomato 2nos. and Cabbage 1no. And, 50 ha of Potato Area Expansion programme under APART, AWP 2023-24 in the Kokrajhar district.
- Final Verification and DLCC approval of beneficiaries and proposed sites for demonstrations and other crop production activities have been done in the start of period.

B. INPUTS DISTRIBUTIONS :

Follow up taken & ensured for Timely Inputs supplies to the beneficiaries.

- Inputs received & distributions done to selected beneficiaries for IPM demonstrations (2 nos. of Cauliflower, 1no. of Cabbage and 2 nos. of Tomato).
- Planning for Potato seeds receiving, distributions and implementations of Area Expansion programme of Potato with DAO and FPC BODs were done.
- Received of Potato Seeds for eight (8 No.s) numbers of Cluster demonstrations and Potato Area Expansion Programme of 326 bigha area (50 ha) and distributions were done.

C. SOIL SAMPLE COLLECTIONS AND TESTING :

- Soil sample collected for testing reports were submitted to Soil department, Kokrajhar.

D. TECHNICAL TRAININGS CONDUCTED:

- Technical trainings on IPM demo of Cabbage (1no.), IPM demo Cauliflower(2nos.) and IPM demo of Tomato (2nos.) have been conducted under APART, AWP 2023-24.
- Technical trainings on Best Management Practices of Potato Cultivations (9 nos.) and Potato seed Productions (5nos.) have been conducted in this period of AWP 2023-24.
- Technical Trainings on Best Management Practices of Potato, Seed Productions of Potato have been conducted in different production clusters under FPCs alongwith Awareness for Cluster Approach and Business or commercial oriented productions in the Farmers Producers Companies (FPCs).

E. MONITOTING & LEADING HORTI- DEMONSTRATIONS AND ALL HORTICULTURAL ACTIVITIES :

- Monitoring of seedling raisings for IPM demos: suggested for Neem oil sprays, sticky traps placements etc.
- Ensuring timely land preparations and fertilizers applications as per recommended doses according to the soil tested reports for demonstrations.
- Monitoring plantings of IPM demonstration as per recommended PoP: border crops, spacing of main crop, trap-crops etc.
- Organised Ceremonial planting programmes under different clusters for awareness in all technical aspects of planting potato in large farmers practically.
- Attended plantings of Potato for monitoring the planting geometry and to ensured the recommended spacing at different clusters.
- Monitoring of all standing crops of demonstrations under OPIU – Horticulture, APART, in the district.
- The 1st Phase Aphid monitoring in the potato fields have been done for the purpose of area expansion under seed productions as per the allotment.



Land Preparation Potato Area Expansion



IPM Demonstration of cauliflower



Potato Cluster demonstration plot

Success Story of Technology Adoption :

Name of Farmer : Shri Naranarayan Barman

Village :Nayachara Pt-iii,

Kokrajhar Development Block

Technology Adopted :

Stacking in Tomato cultivation

Benefits:

- Low diseases & pest incidence
- Higher productions
- Quality produces, easy intercultural operations and easy harvest
- Almost near 100% harvest of the produce. e. no loss of produces in the field
- Attracting more traders and customers from farm gate



Activities under APART (Horti), Kokrajhar District

Activities carried out under APART, Nagaon District

Name of the DHC: Pankaj Hazarika

Shantanu Kalita

Sl No	Crop	Demo Nos.	Activities done	Present status
1	Cabbage(IPM)	2	Input distribution done, Technical training done..	Vegetative Stage
2	Cauliflower(IPM)	2	Input distribution done, Technical training done..	Seedling stage
3	Tomato(IPM)	2	Input distribution done, Technical training done..	Seedling stage
4	Brinjal(IPM)	1	Input distribution done, Technical training done..	Seedling stage
5	Pumpkin (IPM)	2	Input distribution done, Technical training done..	Seedling stage
6	Potato(BMP)	20	Input distribution done, Technical training & aphid monitoring going on.	Vegetative stage
7	Potato(Area Expansion)	10	Input distribution done, training done & aphid monitoring going on	Vegetative stage

Status of Trainings

Sl. No	Crop	No of Trainings	Present Status
1	Pumpkin(IPM)	2	Completed
2	Cabbage(IPM)	2	Completed
3	Cauliflower(IPM)	2	1 left
4	Tomato(IPM)	2	1 left
5	Brinjal(IPM)	1	Completed
6	Potato (BMP)	14	5 left
7	Potato (Area Expansion)	17	12 left
8	Seed production of potato program under Area expansion	20	10 left



Activities carried out under Sonitpur District

Name of the DHC: Shyamanta Bora

Durlove Borah

Sl No	Crop	Demo Nos.	Activities done	Present status
1	Cabbage(IPM)	1	Input distribution done, Technical training done..	Vegetative Stage
2	Cauliflower(IPM)	2	Input distribution done, Technical training done..	Curd Formation stage
3	Tomato(IPM)	2	Input distribution done, Technical training done..	Vegetative Stage
4	Brinjal(IPM)	1	Input distribution done, Technical training done..	Growth & development stage
5	Pumpkin (IPM)	2	Input distribution done, Technical training done..	Growth & development stage
6	Potato(BMP)	15	Input distribution done, Technical training & aphid monitoring going on.	Vegetative stage
7	Potato(Area Expansion)	10	Input distribution done, training done & aphid monitoring going on	Vegetative stage
8	Banana	7	Monitoring is going on.	Growth & development stage

Status of Trainings

Sl. No	Crop	No of Trainings	Present Status
1	Pumpkin(IPM)	2	Completed
2	Cabbage(IPM)	1	Completed
3	Cauliflower(IPM)	2	Completed
4	Tomato(IPM)	2	Completed
5	Brinjal(IPM)	1	Completed
6	Potato	8	4 left
7	Potato (Area Expansion)	14	2 left
8	Banana	1	completed



Activities carried out under Kamrup District

Sl No	Crop	Demo Nos.	Activities done
1	Cabbage(IPM)	1	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training done..
2	Cauliflower (IPM)	1	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training done..
3	Tomato(IPM)	2	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training done..
4	Brinjal(IPM)	1	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training done..
5	Pumpkin (IPM)	1	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training done..
6	Potato(BMP)	10	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, Technical training & aphid monitoring going on.
7	Potato(Area Expansion)	3	Beneficiary selection & DLCC approval of beneficiary completed, Input distribution done, training done & aphid monitoring going on
8	Banana	1	Beneficiary selection & DLCC approval of beneficiary completed

Name of the DHC: Mitali Bordoloi

Archita Kumbang

Status of Trainings

Sl. No	Crop	No of Trainings	Present Status
1	Pumpkin(IPM)	2	Completed
2	Cabbage(IPM)	1	Completed
3	Cauliflower (IPM)	1	Completed
4	Tomato(IPM)	2	Completed
5	Brinjal(IPM)	1	Completed
6	Potato	7	1 left
7	Potato (Area Expansion)	3	Completed
8	Banana	3	Yet to start

Additional Activities:

**Market Linkage of Malbhog and G-Naine banana to Greenlea Fresh ,Guwahati through Rangsang FPC,Kamrup in coordination with DAO Kamrup and Directorate of Horticulture & FP,Khanapara. Total two consignment has been sent
First Consignment 745 hands @Rs 58/hands
Second Consignment 800 hands @Rs 58/hands.**



Activities carried out under Hailakandi District

Name of the DHC: Afzal Hussain Mazumdar

On the basis of the work allotted, Potato could be grown as one of the major commercial field crops in Hailakandi district. One of the major objectives of APART project is to ensure expansion of potato production and productivity in the district through improved package and practices along with proper extension and training programmes.

In order to support the area expansion programme of potato cultivation, the following initiatives has been undertaken by the District Horticulture Co-ordinator (DHC) under the supervision of District Agricultural Officer, Hailakandi:

- Allotment of potato tubers.
- Conducting Soil Test.
- Distribution programmes through FPC's.
- Conducting training to FPC's and farmers.
- Visited potato cultivated areas of FPC share holders and local farmers.
- Distributed pesticides and insecticides.

Till now Conducted Technical Trainings on :

- Three best management practices of potato.
- One technical training on area expansion.
- Three technical trainings on potato seed production

FPC-wise Allotment of Potato area Expansion under APART , 2023-24 at Hailakandi district.

Sl. No.	FPC Name	Block	Area (Ha)	Area (Bigha)	Varity(Kg)				
					LR	K Chipsona 3	K. surya	K. himalini	K. Jyoti
1	Hailakandi FPC	Hailakandi	8.27	33	350	150	2800	2800	3750
2	Meen Unnayan FPC	Lala	8.02	32	300	150	2750	2750	3700
3	Lala FPC	Lala	8.27	33	350	150	2750	2750	3750
4	Katlicherra FPC	Katlicherra	8.27	32	350	150	2800	2800	3700
Total			32.60	130	1350	600	11100	11100	14900



Activities carried out under Biswanath District

Name of the DHC: Bhushanjyoti Boruah

Sl. No.	Crop	DemoNos.	Total Demo Area	Present Status
1	Potato BMP	7	3.5 ha	Planting complete. Crops are at vegetative stage.
2	Cabbage	1	1 ha	Transplanting complete. Crops are at vegetative stage.
3	Tomato	1	1 ha	Transplanting complete. Crops are at vegetative stage.
4	Pumpkin	1	1 ha	Transplanting complete. Crops are at vegetative stage.

Status of the Potato Area Expansion

Sl. No.	Block	Name of the FPC	Total Area (Bigha)	Status
1	Sootea	Jeuti A Garaka FPC	530	Planting complete. Crops are at vegetative stage.
2	Sootea	Sootea FPC	66	
3	Biswanath	BiswanathJaibik FPC	140	
4	Sakomatha	Fehujali FPC	67	
5	Baghmara	Burhigang Valley	241	
6	Bihali	Gangmou FPC	64	
7	Chaiduar	Chaiduar FPC	65	
Total			1173 Bigha (156.4 Ha)	

Status of the Potato Net House

Sl. No.	Farmer's Name	Variety	Block	Village
1	Sujit Das	K. Surya	Baghmara	Pulisumoni
2	Rupam Nandi	K. Surya	Baghmara	Uttar Gingia
3	Pranab Bhuyan	Lady Rosetta	Sootea	Barabhuyan

Status of the Technical Training

Sl. No.	Crop	Number of Technical Training	Technical Training Completed
1	Potato BMP	7	7
2	Potato Area Expansion	4	4
3	Potato Seed Production	15	15
4	Cabbage	1	1
5	Tomato	1	1
6	Pumpkin	1	1



SUCCESS STORY(MECHINAZATION OF POTATO CULTIVATION), Biswanath District**JEUTI A GARAKA FPC, Barabhuyan, P.O.-Sootea, Sootea block, Biswanath, Assam**

In Assam, most of the farmers are small or marginal farmers, which makes it crucial to bring them together on a common platform in order to reduce the costs of mechanized cultivation, to improve post-harvest management and to engage in agribusiness activities for better income generation. It is from this point of view that Farmer Producer Companies (FPCs) are formed and supported by APART so as to increase farmer's incomes and assist them in developing their businesses.

In Biswanath, a FPC called Jeuti A Garaka has been formed at Sootea and supported by APART based on the production cluster that had been identified under APART as being primarily concerned with the cultivation of rice and potatoes. The details of the FPC is given below.

Name: Jeuti A Garaka FPC

Incorporation (CIN) no: U01100AS2021PTC021336

Machinery Support

SI No.	Scheme	Name of the Machinery
1	CHC under APART	Paddy Transplanter, Reaper, Axial Flow Thresher, Portable Rice Mill, Drum Seeder,
2	APART	Potato Grader, Potato Planter, 3 no. of battery-operated power sprayers
3	VLFMB	Potato Digger, Rotavator, Tractor

The machineries under CHC are provided to the farmers on rental basis. The use of machineries leads to the reduction in cost of cultivation. In this Year (2023-24) the FPC brought a new Semi-Automatic Potato Planter for cultivation.

Adoption of Technology:

One of the main objectives of APART demonstration is to disseminate the technology to the farmers. As part of APART potato demonstration, along with training, the farmers are able to get a better understanding of how to implement the package of potato practices using BMP demonstration and new technologies, such as Zero Tillage. Such technologies are largely adopted by the farmers for variety and method of cultivation to get better yield.

APART potato demonstration lead to the adoption of processing variety as well as the mechanization of potato cultivation. After APART Demonstration, in order to maximize the use of space, farmers are using a double row planting system in which they are able to get a higher yield from a single plot of land than before they were able to do so. Adoption of machinery such as potato planter, potato grader and potato digger in potato cultivation leads to the low labour cost, less time which ultimately leads to the low cost of cultivation.

Name of the Adopted Technology	Name of the Adopted Variety/ Machine	2021-22		2022-23		2023-24	
		No of Adopter	Area (Bigha)	No of Adopter	Area (Bigha)	No of Adopter	Area (Bigha)
Adoption from Mechanization demo.	Potato Planter	9	29	27	138	82	530
	Potato Digger			5	24	-	-



Potato Area Expansion Activities

Activities carried out under Lakhimpur District

Name of the DHC: Haribhakta Khanikor

- A. Survey and identification of land for cultivation of Potato tubers under BMP Potato and Potato Area Expansion Programme under APART, AWP 2023-24 along with BTM and ATM of the concern block. A total of 5 FPCs containing more than 50 nos. of beneficiaries were selected for the same and distributed the input *i.e.* Potato tubers to each selected FPCs as per guideline.
- B. Survey done for distribution of Rabi Vegetables seed as per guideline. Accordingly, the inputs were distributed among beneficiaries in concern with DAO, Lakhimpur and ADO along with BTM, ATM of the respective blocks. Periodic visit is done to different demonstration site to observed the status of the crop health.
- C. Provided technical training on IMP vegetables, BMP Potato and PAEP.
- D. Periodic visit to the potato demonstration site as a part of aphid monitoring as per APART guideline
- E. Conducted publicity programme “ Special Gram Sabha” as a part of PM KISAN on 23/12/2023 at two GPs of Dhakuak-hana.
- F. Arrange departmental stall on 30/12/2023 on “ Zonal Farmers Meet 2023” held at AAU Zonal Research Station, North Lakhimpur.
- G. Visited three numbers of FPC of Lakhimpur district along with the officials of ARIAS Society, DSSC APART, Lakhimpur and ICCOA to discuss about establishment of common service centre.

Nos. of technical training Completed:

Technical Training on BMP Potato (2023-24) - 4 nos.

Technical Training on PAEP- 4 nos. (2023-24)- 5 nos.

Technical training on Mechanization of Potato (2023-24) – 3 nos.

Technical training on IMP Vegetables (2023-24) – 2 nos.

Technical training on Aphid Monitoring- (2023-24)- 3 nos.



Activities carried out under Jorhat District

Name of the DHC: Atrika Mudoi

Runjun Borah

APART activities in the Horticultural sector has been led by DHC's, Jorhat. During the period DHCs carried out production demonstration on IPM Demonstrations of Cabbage, Cauliflower, Pumpkin and Brinjal and best management practice on Potato Demonstration. In Jorhat district 30 ha potato area expansion programme is going on. All demos are link with Farmers Producer Companies. Technical training on IPM Demonstrations, BMP on potato and area expansion training on potato all are carried out by DHCs.

DHCs carried out regular field visit, tracking technology adoption in field and try to link potato beneficiary under PMFBY.

No of Technical Trainings (TT) completed:

IPM Demonstration training : IPM Cabbage demo-1 TT, IPM Cauliflower demo-1 TT, IPM Brinjal demo- 1TT, IPM Pumpkin demo- 1 TT , BMP Potato -3 TT, and area expansion of potato programme done 20 numbers of TT.



GPS Map Camera
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Activities carried out under Goalpara District

Name of the DHC: Sanju Borgohain

APART activities in the Horticultural sector has been led by DHC, Goalpara . During the period DHC s carried out production demonstration on Banana and Pineapple, IPM Demonstrations on Cabbage, Cauliflower and Brinjal, Technical training on Banana and Pineapple, Technical training on IPM Demonstrations , Demonstration on PHM on Cabbage and Cauliflower, as resource person for input dealers’ training, post-harvest machineries training, grand harvest program of Paddy, Conducted detailed survey on market and production site of chilli and turmeric under Cross Border Trade program

No of Technical Trainings completed:

4 Technical training on Pineapple (AWP 2022-23), 1 Technical training on Banana (AWP 2022-23): 4 Technical training on IPM (AWP 2023-24) were conducted in Goalpara district covering 450 farmers. These trainings were imparted to bring in scientific management practices of Horticultural crops in the district.



Activities carried out under Bongaigaon District

Name of the DHC: Makibar Rahman

It was planned to support FPCs with potato seeds and trainings under area expansion programme in consultation with our OPIU-Horti under Assam Agribusiness and Rural Transmission Project (APART). Accordingly, we have distributed total 1466 quintal potato tubers for an area 489 bigha of land under Chilarai FPC, Bhairavchura FPC and Aie-Valley FPC of Bongaigaon district. Another 172.5 quintal potato also distributed for cluster demonstration. For implementation of technologies total 11 nos. Of technical training have been imparted as 4 nos. for area expansion program and 7 nos. under potato cluster approach. We have successfully completed all four number of technical training for integrated pest management (IPM) of vegetables namely cauliflower, cabbage, pumpkin and brinjal. Aphid monitoring at different stages of crop growth also going on. Another 3 nos. of training conducted under training to FPC members on potato seed production. I have conducted five number of grand harvest program of sali paddy including two numbers of hands on demonstration of different harvest and post harvest machines, two training on GAP and one exposure visit of farmers within district under OPIU- Agri. It is found that women participation in the activities are increasing day by day. Two number of net house potato seed production unit has been established under PD - ATMA, Bongaigaon for the first time. Monitoring going on at the fifteenth number of potato cluster demonstrations



Adoption of varieties and technologies :

A farmer of Krishijyoti Agro Producer company Ltd. namely Chitta Ranjan Barai s/o- Gobinda Barai resident of Village 1 No Nowapara of has received a potato cluster demonstration from Department of Agriculture, Bongaigaon & Director of Horticulture and Food Processing, Khanapara in 2022-23. As demand and importance of processing varieties of potato increasing now a days, Variety Lady Rosetta is virus resistant and red violet colour variety, dry matter content about 21% and used for chips making having good yield potential. He found 44 quintal potato yield per bigha and his produces was market linkage with Sidhivinayak Agri Processing Pvt. Ltd for the first time. He has earned an amount of 1.5 lac rupees. So, he has adopted the variety and following all practices imparted with technical training in 7 bigha of land. He has adopted another variety, Kufri Surya after his visit to our potato varietal Cafeteria. He is expecting more production than first year and a good market linkage. A team from M&E, Janata Bhaban also visited his plot, they have highly appreciated his practices after visiting his field.



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HORTICULTURE Bytes

Seventh Edition, January/2024

OPIU (Horticulture)-APART

Directorate of Horticulture and Food Processing,

Assam, Khanapara, Guwahati-22