Success Stories

Krishi Vigyan Kendra, Dhemaji

Assam Agricultural University
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Integration of Pig-Fish–Horticulture in farming system at Dhemaji district for high income generation

Challenges:

Sri Priyoram Sonowal, resident of Salakhani village, Malinipur gaon panchayat of Dhemaji District was a common farmer like other villagers. Before come into contact with KVK Dhemaji he used to cultivate local paddy and vegetables in homestead garden. He reared one or two pigs yearly for meat purpose in open system without scientific feeding management and frequently infected by common diseases as did not follow management for health and hygiene. He had 10-15 numbers of poultry of local breeds for family consumption. He has road side area of 0.26ha including a pond of 0.13ha from where he could earn hardly around Rs 15,000.00 annually by selling fish only. He was not aware of the scientific management practices of fish and livestock in spite of the scope for increase income from the unit of area. He has 1.4ha land area for paddy cultivation where he cultivated traditional cultivars and raised vegetable crops in 0.20ha area under homestead garden. From his small earning he had run his family of 6 members. Thus, less aware to required technology and poor economic conditions were major impediment towards sustainable farm income. But, his true zeal and enthusiasm for modern agriculture, progressive mindset are the major strength to fulfill his ambition for systematic farming.

Initiative:

One day during Kharif 2013, Sri Priyoram Sonowal visited KVK Dhemaji after listening a Radio Programme and showed his interest to mobilize his available resources for better farm income. Observing his keen interest in agriculture and allied sector he was included in training programme on scientific practices in Sali paddy and vegetable cultivation, pig rearing and vermicompost production. He participated in demonstration programme on HYV paddy variety Ranjit was conducted at his field. Since then he has started cultivation of HYV paddy varieties

(Ranjit and Bahadur) and harvested sizeable production (@40-45q/ha) compared to local cultivars (@28-33q/ha).

The team of KVK Dhemaji visited his farm and observed available resources and suggested for a year round crop plan, scientific rearing of pig and poultry. In the year 2015-16 he was selected for implementation of 'Pig-Fish– Horticulture' integrated farming systems under the TSP project implemented by KVK Dhemaji in his 0.26ha plot. He was supported for renovation of fish pond, rising of embankments in an around the pond, a semi intensive pig sty with 3 numbers of piglets of ghunroo cross breeds, feeds for 3 months, a small vermicompost unit and quality fish seed.

Availing the facilities crated under TSP programme Sri Priyoram Sonowal started small pig farm integrated with the fish pond for piglet and fish production. He could reduce the feed cost of fish up to 40 per cent. He planted Assam lemon, Coconut, Banana, Papaya, seasonal vegetables on the newly renovated banks of the pond. He produces vermicompoost, used to grow different vegetable crops in his homestead garden. The activities were timely monitored and guided by the specialist of KVK Dhemaji. Thus his IFS unit of 0.26ha area has become productive since 2016-17.

Sri Priyoram Sonowal was exposed to the many technologies through demonstration and exposure visit to NRC pig, Rani, Guwahati; C.V.Sc, AAU Khanapara and HRS, AAU, Kahikuchi. He has attended different training programme which increases his capacities, confidence, knowledge and skill on different technologies. At present he is doing his farm activities with full of zeal and energetically and his farming is became a role model for villagers and for many youth of the district.

Key results:

The IFS unit has become productive since 2016-17 with average gross annual income of Rs.1, 24,050.00 from 0.26ha area only which was hardly Rs.15000.00 per annum before intervention of KVK Dhemaji. He is also a good record keeper and as per the record his last four years component wise income from IFS unit are as follows

Sl. No.	Head of Income	Income during			
		2016-17	**2017-18**	**2018-19**	**2019-20**
1	By selling of Fish @ Rs. 180/kg(Av.)	24500.00	29000.00	18500.00	20500.00
2	By selling Piglets @ Rs.2000/piglet	14000.00	42000.00	16000.00	21000.00
3	By selling pig @ Rs.180/kg	36000.00	37500.00	58000.00	60000.00
4	From vegetable cultivation (leafy vegetable, Chilli, Cucurbits)	18500.00	20000.00	22000.00	18000.00
5	Fruits (Guava, Banana, Assam Lemon)	500.00	1500.00	7000.00	7500.00
6	Vermicompost	-	4500.00	10500.00	7500.00
7	Others (Sugarcane, Ginger, Turmeric)	-	1200.00	2200.00	1500.00
8	**Total Gross Income (Rs.)**	**93,500.00**	**1,34,500.00**	**1,32,200.00**	**1,36,000.00**
9	Total Gross cost (Recurring only)	18500.00	37500.00	36000.00	35000.00
10	**Total Net Income**	**75,000.00**	**97,000.00**	**96,200.00**	**1,01,000.00**

Besides the IFS system, he is able to sale 18q paddy grain remain surplus after family consumption and thereby earned Rs.15000.00 net income. He also earns average Rs.2500.00 monthly from his small homestead garden through sale of surplus vegetables of different kinds.

Outcome:

Now, at the age 60 Mr. Priyo Sonowal doing hard in a smiling faces and enjoyed his engagement in farming sector. He runs his family with Rs 1, 46,000.00 net income and able to fulfills the need of the family members. Increases his social status, become role model for village youths and many Scientist from Assam Agricultural University, Officials from the district,

youth from different corners of the district, Students were witnessed his success appreciated his works.

Impact:

Witnessing the success of the system in Sri Sonowal's field, the nearby farmers who were practicing integrated farming in their homestead opted for scientific method of Integrated Farming System with organized systems. His success story was broadcasted AIR, Dibrugarh center for two times. Sri Priyoram Sonowal is a good farmer leader and under his leadership, group of village educated youth become real farmer and able to change the agricultural scenario of the village.

Lessons learned:

The intervention of proper technologies based on need analysis brings the success. The capabilities of the farmer always depend on his availability of resources. The major difficulties faced in bringing Sri Prioram Sonowal to a successful farmer was his poor economic condition which could be overcame by adopting him through TSP programme. Creation of facilities in marginal and small farmer is very important. the problem of farmers are varies with different micro ecological situation. Thus, understanding the interest of the farmer, proper need analysis, selection of proper technologies, capacity building, technological backstopping, creation of facilities, availability of quality inputs and holding the unit based on capacity are the major key points of success.

Supporting Images:

View of the farming system

Semi intensive pig sty of his farm

Leafy vegetable cultivation on bank of the pond

Horticulture crop component

Fish production if his pond

Piglet production in his farm

Integrated Farming system (IFS) of Mr. Priyoram Sonowal at Dhemaji

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Mr. Devojit Changmai – a successful entrepreneur in certified paddy seed and planting material production

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Challenges:

Sri Devojit Changmai is a 38 years old young and energetic farmer, resident of *Mothadang* village under the Sissiborgaon Revenue Circle of Dhemaji District with a small land holding of 1.13ha. He is the bread earner of the family of five members and agriculture is the only source of livelihood. He started farm activities initially with his father and was limited to paddy cultivation only as land situation was not suitable for other crops. The small land holding, limited capitals, less awareness to the modern scientific practices were major hurdles faced by him and the family could run by harvest of 35-40q paddy annually. Thus his annual income was Rs.28, 000.00 only by producing surplus paddy grain.

One day in June, 2015 Sri Devojit Changmai visited KVK Dhemaji in search of high yielding paddy seed to replace his local cultivars. He expressed his limitation and interest to adop new technologies for better harvest. He showed interest in seed production to have better price of his produce as his lands were suitable for paddy production only. Thus, he was adopted by KVK Dhemaji and was included in different training programme especially on scientific cultivation practices of HYV Sali paddy. The team of KVK Dhemaji frequently visited his farm helped him preparing a plan based on available resources to enhanced his farm income.

Initiatives:

In 2016, he participated in a training programme on Certified Seed Production of Sali paddy. Soon he realized the age long felt of the common farmers searching for quality seed especially Sali paddy. He interacted and enquired with the KVK personnel regarding any opportunity to go for certified seed production. Being observed his interest, KVK Dhemaji conducted an FLD programme on **"**Certified seed production of Sali paddy variety Ranjit and Gitesh**"** in 1.0 ha at his field during 2016-17. Under the deomonstration programme, he acquired hands on knowledge on certified seed production and in that year (2016-17), he could produced 26.0q and 12.0q certified seed of varieties *Ranjit* and *Gitesh* respectively certified by ASCA, Assam. Since then he has been producing certified seeds of other paddy varieties like Ranjit, Bahadur, Ranjit sub-1 and Bahadur sub 1.

He diversified his farm activities and practiced Fish-Duck-Horti IFS at his backyard with technical guidance from KVK Dhemaji. He started composite fish culture in his small popnd (0.10ha) reared duck breed along with different horticultural crops for better production. During 2017-18, he took part in a vocational training programme on planting material generation of horticulture plant and started a small nursery unit, produced saplings of Bhoot chilli, Assam lemon and Betel vine. He produced with his best capacity and marketed them directly to the consumer without any middleman. Witnessing the profitability, he established three net houses for nursery and latter on he registered his unit as "*Bishnujyoti Krishi Farm*" could able to earn a good amount from it. During 2019-20, again he started off season vegetable cultivation with high value crops by establishing two low cost poly houses with the help of technical guidance from KVK Dhemaji.

Output:

During, 2016-17 he produced 38.0 q certified seeds of both *Ranjit* and *Gitesh* and earned Rs.45, 375.00 through sale within the district. Likewise, during 2017-18 he produced 36.6q of variety *Bahadur sub-1* and 4.5q of variety *Ranjit*; during 2018-19 he produced 58.5q of *Bahadur Sub-1* and 26.5q of *Ranjit sub*-1 and in 2019-20, he produced 90q certified seed of *Bahadur Sub-1* certified by ASCA, Assam. From different component, at present his annual gross income is more than Rs 3 laces. During last 4 years his annual income is as follows.

Sl. No.	Head of Income	Income during			
		2017-18	2018-19	2019-20	2020-21
1	By selling of certified paddy seed	45,375.00	92,500.00	1,94,000.00	2,00,000.00
2	By selling of paddy as grain	12,000.00	12,000.00	16,000.00	18000.00
3	Income from Fish duck-Horticulture IFS	35,125.00	37500.00	25,500.00	18,200.00
4	Income from nursery unit	18,500.00	20,000.00	55,000.00	60,000.00
5	Income from vegetable cultivation			22,000.00	22,500.00
6	Income from poultry	12,500.00		11,500.00	9,800.00
7	**Total Gross Income (Rs.)**	**1,23,500.00**	**2,52,500.00**	**3,24,000.00**	**3,12,500.00**
8	Total Gross cost (Recurring only)	48,500.00	77,500.00	74,000.00	71,500.00
9	**Total Net Income**	**75,000.00**	**1,75,00.00**	**2,50,000.00**	**2,41,000.00**

Thus, he could able give better standard of living to his family members. Mr. Changamai has attended numerous training and exposure visit by various agencies including KVK. He was also selected to represent Dhemaji district in the 18th Foundation day Celebration of ICAR at ICAR-RCER, Patna. He was felicitated and awarded in many occasions at various levels.

Impact:

Knowing the importance of certified seed and quality planting material, progressive farmers of the district are planning to use certified seed and are procuring seed from Sri Devojit Changmai. The farmers of the district able to get quality paddy seed which helped them to increase the production. He becomes a source of quality seed and planting material for the farmers of the district. Many young farmers has come forward to adopt new technologies and get motivated by observing the success of Sri Devojit Chanmai.

Sri Devojit Changmai has become role model for many young farmers of the district. Now he leads a group of progressive farmers by establishing a society named as "Dhemaji Farmers and Agro Producers Society (DFAPS)". The society organizes and leads a group of about 350 progressive farmers of the district. His works has been recognized and appreciated by many organization.

Lesson learnt:

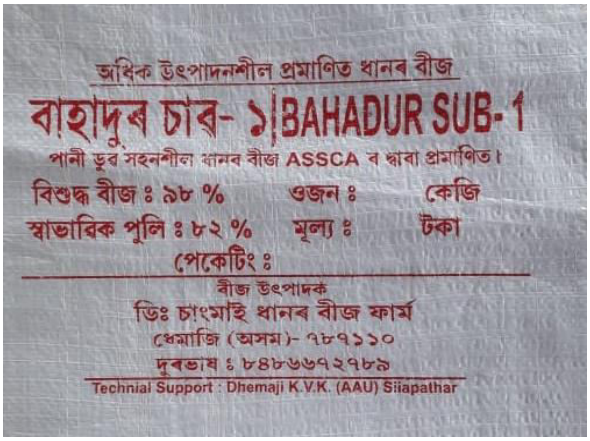
For successful intervention, identification of proper technology plays an important role. Similarly identification of client's capacity, assessment of available resources, input availability at reasonable cost and study on socio economic condition are to be taken into account before intervention. Based on these, proper planning and timely execution leads to success.

Supporting Images:

Crop field of variety Bahadur sub-1under certified seed production

Ceremonial harvesting and field day programme in the certified seed production plot conducted in the field of Sri Devojit Changmai

Bagging and packing of certified seed



Label of certified seed production

Offseason Tomato cultivation (March - June)

Bhut jolokia cultivation under shade net

Fish-Duck-Horticulture IFS

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Custom Hiring Centre (CHC) – a center for farm mechanization

Challenges:

Lack of farm mechanization is an important factor of low economic gain of farming sector. It is also prime reason of slow agricultural growth. Large section of the farmers are small and marginal, economically they are not sound to purchase all the farm machineries and implements. In other words, hiring of the machineries and tools may not be the solution in this case if the hiring rate is high. The 'Custom Hiring Center (CHC) a center where all the basic farm machineries and implements are available, may play a vital role to encourage the farmer and to well-timed completion of farm activities.

Initiatives:

To address this issue of farm mechanization KVK Dhemaji, Assam Agricultural University has established a CHC as an institutional arrangement component under TSP project entitled "Promotion of Agriculture Centric Sustainable Livelihood Security for Tribal Farmers of Assam" at 1 No. Holokhani village of Silapathar Dhemaji during 2013-14. The CHC has been strengthened with a Tractor, Rotavator, Paddy Reaper, Power tiller, Power sprayer, Seed cum Fertilizer drill, Power weeder, Paddy thresher and Maize sheller. A concrete house for keeping implements and village gowdons with threshing floor was also constructed under the project.

The CHC is effectively running by village level TSP project Monitoring Committee constituted with 11 villagers. The skill training and demonstration were provided to the member of the committee and 10 numbers of village youth to perform minor service and small repairing of the implements.

Output:

The activity of the CHC was started in Rabi, 2014 and has been running in sustainable way. The maintenance of implements and addition of tools and parts has been done by the center. At the end of the financial year, 2020-21, the gross income of the centre is more than Rs.9, 50,000.00 (Rupees eight lakh fifty thousand). The income is being used in running cost, payment

to driver, workers and recurring expenditure besides purchasing spare and parts. As a result of this CHC, now it has become an income generating venture for tribal youth, farmer of the village opted for double cropping; some youth become real farmer, farm operation become easier and able to complete time bound farm operation. The key achievement of CHC is as mentioned in following table.

Parameters	Changes		% change
	Before intervention	After intervention	
Area under different crop (Major crop)			
Paddy	30.0ha	35.0ha	16.67% increase
Summer vegetable	1.33ha	5.5ha	313.5% increase
Winter vegetable	2.4ha	5.00ha	108.33% increase
Area increase in double cropping-		9.50ha	Rice-Vegetable
Reduction in cost of Cultivation			
Land preparation	Rs.11500.00/ha	Rs.7875.00/ha	31.7% reduced
Harvesting of paddy	Rs.3500.00/ha	Rs.1875.00/ha	46.4% reduced
Threshing (paddy)	Rs.3750.00/ha	Rs.2250.00/ha	40.0% reduced
Spraying	Rs.1125.00/ha	Rs.600.00/ha	46.7% reduced
No. of farmers benefitted	More than 300 farmers of 6 villages		
Man days created by the center (Av.)	350 man days/ year		
Gross income of the center	Rs. 9,50,500.00		

Table: Key achievement on establishment of CHC

Outcome:

All the farm families (66 numbers) of the villages and more than 100 families of nearby villages have been benefitted directly or indirectly from the center. After establishment of the CHC the summer vegetable area increases from 1.3ha to 5.5ha (313% increase) and Rabi vegetable area increases from 2.0 ha to 4.0 ha (100% increases) and thereby area from mono cropping to double cropping which otherwise remain fallow after cultivation of Paddy.

Impact:

The CHC may able to change the agriculture scenario of the village and nearby village. The initiation of double and triple cropping has uplifted the economic and social living standards of the farmer. The vulnerability of farm operation towards damage of the produce due to adverse weather condition is reducing as activity could be done at required time. Many youth of the village come forward for cultivation, especially different vegetable crops.

Lesson learnt:

Establishment of custom hiring center in cluster villages might play an important role in development of agriculture sector which increase the cropping intensity. Selection of farm machineries and tools should be according to need of the farmers to whom the CHC is meant. The farm operation could be done in time and crop can be escape from the damage caused by un wanted climatic conditions.

Supporting Images:

The Tractor under CHC

The powertiller under CHC

The Tractor operated paddy threasher under CHC

Seed and fertilizer drill under CHC

The concrete CHC implement shed

The village gowdon with threshing floor

Threshing of Paddy on threshing floor

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Harnessing sustainable farm income by Sri Dhoneswar Basumatary through adopting mixed farming

Challenges:

Sri Doneswar Basumatary is a hard working young progressive farmer from 4 no Baligora village, Simen Chapori of Dhemaji district. Mr. Basumatary is elder son of 11 members family, completed his institutional study up to class X. According to land holding, Sri Dhoneswar Basumatary is a medium farmer with 5.33 ha area. In spite of all the available resources such as 3.13ha land holding, traditional habit of livestock rearing (pig and poultry), human resources in family, earlier, *i.e.* before 2014-15 his could hardly earns Rs. 1, 10,000.00 net income per annum due to lack of knowledge on resource utilization, scientific cultivation of crops, management of livestock etc. The Rice cultivation was major farm activity where cultivated only local cultivars in traditional method. He reared 2 to 3 numbers of pigs in open method for meat production. Likewise, reared backyard poultry of local breed, cultivated vegetable crops only for domestic purpose. Though the agriculture was the only source of livelihood for the family, the family members of Mr. Doneswar Basumatary had been engaged in agriculture practice as a tradition since long. The income from the agricultural activities was enough for day to day living but not enough to support the livelihood of the family. All resources were remain under utilized due to lack of knowledge on resource mobilization and un aware to the modern agricultural technologies.

Mr. Basumatary 1st came into contact with KVK Dhemaji through an OFT programme on sesamum after recommendation of his name by agriculture extension assistant in 2012. Later on, his village was selected as adopted village under TSP programme during 2014-15 by KVK Dhemaji and implemented different activities. Since then, he has been visiting KVK frequently and taking technical guidance in different aspects. The Scientist of KVK Dhemaji identified his leadership to organize the farmers and his faith in scientific cultivation, innovative mindset and interested in different farming activities. Mr. Basumatary has taken about seven (7) numbers of day training on Crop production & Animal Science, three (3) Skill training on Horticulture nursery management, Composite fish culture and Certified paddy seed production organized by

KVK, Dhemaji. He was also exposed to Horticultural Research Station, Kahikuchi & Krishi Vigyan Kendra, Kamrup under an exposure visit conducted by KVK, Dhemaji. He participated in different demonstration programme such as Toria variery TS-38 and Scientific rearing of goat.

Similarly, he also got the chance to participate in training on 'Commercial production of planting materials of major fruit crops of Assam' under STRY sponsored by Ministry of Agriculture, GOI. He has participated in different training programme, exposure visit conducted by KVK, Dhemaji through which he got the chance to interact with scientists and other progressive farmers

He and his father is actively engaged in farming in the Simen Chapori area and hold a very respectable place among the farming community of the district. He was a convener in establishment of the Dhemaji Farmers and Agro Producers Society (DFAPS), a society of progressive farmer and presently working as vice president of the society. The society organizes and leads a group of about 350 progressive farmers of the district.

Initiatives:

Being motivated, Sri Dhaneswar Basumatary started cultivation of HYV paddy varieties instead of local cultivars in his 4.0ha area. He adopted Ranjit, Bahadur, Nilanjana, Ranjit sub-1 and Bahadur sub 1 from where he could harvest average 150q paddy annually. From 2020-21, he started certified seed production of paddy for better price in the market. He is the only certified paddy seed grower in his locality. After getting training and demonstration on certified paddy seed production from KVK Dhemaji, he has started production of certified seed production and he has been producing average 40q to 50q certified paddy seed per season. Fellow farmers of his locality used to come to his field for seeds and advice.

His homestead garden is about 1.13 ha area where he raised different horticultural crops. During 2016-17 he started cultivation of apple ber in 0.65 ha area and he was the pioneer in apple ber cultivation in his locality. With the help of technical guidance he planted Assam lemon, Litchi, betelvine and ber as perennial crop. Using the inter space of these perennial crop he cultivated strawberry, pineapple, turmeric etc. to enhance the annual income. During 2020-21, he has started cultivation of Dragon fruit which is new to the district taking guidance from KVK along with a Litchi & Coconut garden in small scale.

He used to grow pumpkin and other vegetable in average 1.0 ha area annually. He also developed a Pig-Fish- Horti IFS within the homestead garden. He has constructed a semi intensive pig sty in the bank of pond and integrated with composite fish culture. He keeps 10 to 15 numbers of pigs for both meat and piglet production. He uses the traditional knowledge on backyard poultry rearing on rearing of improved poultry breed.

He also cultivated different vegetable crops in commercial scale. Sometimes he lease in upland for commercial cultivation of field crops such as sesamum, blackgram and toria. He followed Rice-vegetable and vegetable-vegetable double cropping sequences. During early summer during 2018-19 he could able to harvest 25,000 nos. of pumkin from 1 ha land and earned more than Rs.4laces net profit. Likewise during 2019-20, he cultivated pointed and spine gourd in 0.65ha area could earned a good profit. He played a leadership role in his locality and mobilized educated youth for large scale cultivation in cluster. Thus he organized cluster cultivation of black gram, sesamum and toria. Potato is another crop of his interest and has been cultivation in 0.5ha land in each year. During 2020-21 he cultivated maize in 0.26ha area

Sri. Dhoneswar Basumatary attended many training programmes and exposure visit programme conducted by KVK Dhemaji. He has adopted Scientific pumpkin and other cucurbits cultivation depending on the demand of the local market, from which he could able to make a lion share income through cultivation of different vegetable crops. Following him, numbers of education youth engage in commercial vegetable production.

Output:

Before coming contact to KVK Dhemaji, the net annual income was Rs. 1,10,000.00. Mr. Basumatary is an early adopter of the technology and from his experience in different training and exposure visit he has taken agriculture as commercial venture. During last 5 (five) years the pattern of income is as follows

Crop/ Enterprises	Income (Rs.) during				
	2016-17	2017-18	2018-19	2019-20	2020-21
A. Field crops					
Paddy (traditional)	56,000.00	66,500.00	75,000.00	48,000.00	53,000.00
Paddy HYV	1,50,000.00	1,80,000.00	2,07,000.00	1,50,000.00	1,50,000.00
Maize	50,500.00				40,000.00

Toria	28,500.00			18,000.00	32,800.00
Certified paddy seed			96,000.00	3,20,000.00	2,95,000.00
Black gram				28,000.00	25,400.00
B. Horticultural crop					
Apple ber	2,10,500.00	2,95,000.00	3,50,500.00	20,000.00	-
Assam Lemon	11,400.00	15,500.00	17,000.00	15,000.00	22,000.00
Betel nut	5,600.00	8,900.00	10,000.00	8,000.00	12,000.00
Vegetables	1,50,000.00	1,65,000.00	1,85,000.00	1,82,000.00	1,75,000.00
Strawberry				5000.00	
C. Livestock					
Piggery	30,600.00	42,000.00	58,000.00	78,000.00	95,000.00
Poultry	12,500.00	22,500.00	28,500.00	35,000.00	60,500.00
Goat	12,500.00	20,000.00	32,000.00		
D. Fishery	45,000.00	55,000.00	55,800.00	95,000.00	1,15,000.00
E. Income from rice milling (Processing)				1,50,000.00	2,50,800.00
Gross Income	**7,63,100.00**	**8,70,400.00**	**11,14,800.00**	**11,52,500.00**	**14,16,500.00**
Gross cost	2,64,600.00	2,94,750.00	3,48,520.00	**3,38,700.00**	4,36,000.00
Net return	**4,98,500.00**	**5,75,650.00**	**7,66,280.00**	**8,13,800.00**	**9,80,500.00**

Impact:

Sri Doneswar Basumatary is a hard working young progressive farmer and a leader farmer in the localities of the Simen Chapori of Dhemaji district of Assam. More than 80 farmers specially youth of his locality (Simen Chapori) follow him regarding adopting different technologies. He has engaged in conducting different frontline demonstrations. Thus he played important role in horizontal spread of following technologies in the district

1) Scientific cultivation of pumpkin
2) Submergence tolerant HYV paddy variety *Ranjit sub-1* and *Bahadur sub-1*
3) Sustainable Pig-Fish Horticulture IFS model
4) Improved backyard poultry breed *Vanraja* and *Kamrupa*
5) Scientific fruits crop cultivation in commercial scale (Apple ber, Litchi, Assam lemon, pine apple)
6) Use of mulching in vegetable cultivation

Mr. Basumatary is now a respectable leader among the farming community of Simen chapori. He was honoured by many organizations as progressive farmer. He motivated a group of youths for cluster farming. He led a young generation for farming, become a role model in the locality.

Dhemaji Farmers and Agro Producers Society (DFAPS) is an organization of more than 350 progressive farmers of Dhemaji where Sri Dhoneswar Basumatary has been working as **Vice President** since inception of the society. Making availability of the different quality inputs for agriculture and allied sectors, creating infrastructural facilities in the farmers' field and establishment of proper market linkage abolishing the influence of middlemen etc. are the main objective of this society. Establishment of direct linkage of the farmer to the different development departments and financial institutes is also a major activity of the society. The society uses social media to cater and disperse the required technological information to the farming communities of different corner of the district. Thus, we lead a group of more than 350 progressive farmers through this society.

"Gajensula" a self-help group of ten (10) fellow farmers. Sri Dhoneswar Basumatary has been associated since inception for last 10 years

Sri Dhoneswar Basumatary has given the service as the President of the block level management committee of ATMA

Lesson learned:

Mixed cropping is considered as sustainable model for resource full farmer. Mixed farming is the only way to mitigate the vulnerability to the many factors including climatic factors. By adoption of different enterprise, the risk may be reduced; Different enterprise such as piggery, fishery and horticulture has integrated successfully which increase the income of per unit area.

Supporting Images:

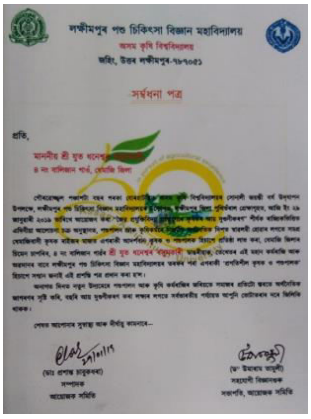
Apple ber garden of Sri Basumatary

Part of harvest of pumpkin

Piggery unit of Sri Basumatary

Piglet production

Goat farm



Honoured from different organization

Certified seed production of Ranjit sub-1

Strawberry cultivation by Sri Basumatary

Chilli cultivation (intercrop with Betel nut)

Integrated farming system

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Mr. Bhaben Saloi – a successful Agri Entrepreneur

Challenges:

Mr. Bhaben Saloi, a young energetic farmer aged 30 years is a resident of NilokhTaranipathar village, the adopted village of KVK Dhemaji for doubling farmers income (DFI) by 2022 programme. Mr. Haloi is a marginal farmer with a land holding of 0.52ha cultivable area and 0.20ha area as homestead garden.He also has 3 number of cattle, 2 number of pigs, 3 number of goats and 10 number of poultry of local breed. He has all the resources to an extent which can fulfill the daily needs of his family of five including his parents, wife and a 2-year-old daughter. But, cultivating local paddy and small quantity of vegetables in the homestead garden during the Rabi season could hardly meet the needs of the family. Before coming in contact with KVK Dhemaji he only cultivated traditional paddy varieties during Kharif and otherwise the land remains fallow throughout the year. He has all the required resources for development but due to the lack of a guiding factor and improper management *Mr. Saloi*was unable to fully exploit his resources and bring about the sustainability in his farming thus freezing his annual income to Rs.48,100.00 per annum only from the farming sector. But, his passion to learn new things and risk bearing ability while adopting a new concept has made him an early adopter of the technology with a progressive mindset.

Initiative:

Being an early adopter of technologies and having a good hold among the youths of his locality many new technologies were tested and also demonstrated with *Mr. Bhaben Saloi* along with the requisite capacity building.He adopted cultivation of HYV paddy with variety, Ranjit sub-1 and Bahadur sub-1 in 0.65ha area. He also adopted Rice – vegetable double cropping in 0.26ha area where he cultivated different rabi and summer vegetables in commercial scale. He was made aware about the new HYVs of Sali paddy developed by different institutes, duration and specific characteristics through demonstrations, trainings and exposure visits to different institutes. He was also given demonstrations on Year-round oyster mushroom cultivationwhereafter he constructed a low-cost mushroom house where 250 mushroom beds at a time can be adjusted by hanging method and cultivated oyster mushroom fromSeptember to March.*Mr. Saloi's* house hold

have an environment which can very easily accommodate animal component along with the crop component, looking at his interest he was given an OFT on “Improved pure pig breed – Ghungroo” to be reared under semi-intensive condition and rears 4-5 no. of pig including one sow for piglet production.The required technical knowledge was imparted to him through different training programmes and field visit. Backyard poultry rearing with improved breed Kamrupa is another farm activity where he produced more than 3600 no. egg and 150.00 kg meat annually.

Mr Saloi being a fore front adopter of technologies, also constructed a low-costbamboo framed polyhouse of 100 m^2 area for offseason vegetable cultivation in his front yard, where year-round production of vegetables can be obtained. This structure is also used for early production of seedlings for the Rabi season as it is very difficult to grow vegetable seedlings in open during the rainy season. *Mr. Saloi* is a commercial *Bhut Jolokia* grower. A low cost vermicomposting unit was demonstrated by KVK Dhemaji in his premise and continued vermicompost production. He also expanded his vegetable cultivation and included extensive cultivation of King Chilli (Bhoot Jolokia) for commercial purpose.

While closely observing his qualities it was found that his progressive mindset, never to be defeated attitude and both love and zeal for his profession makes him quite different from others. He always search for the best technology for each programme and think differently to get more return from his ventures. He produced with his best capacity and market them directly to the consumer without any middleman. Thus his exposure to each area of rural agriculture to modern and market intelligence gathered make him the way to successful entrepreneur.

Key results:

Mr. Saloi is able to harvest 250 kg oyster mushroom from his mushroom farm annually and earns an amount of Rs.42,000.00 net profit. From backyard poultry rearing he could earn Rs.25,500.00 net income by selling eggs and meat. *Mr. Saloi* is able to sale average 6-8 no. of piglets @ Rs.4000.00 each and 1-2 pig of 65 kg average weight @ Rs.180.00/kg and thus he earns Rs.45, 000.00 to Rs.48, 000.00 net income from pig raring. He also could sale 10 q more paddy after the family consumption and earned Rs. 12000.00 annually. From his kitchen garden he could earn more than Rs. 25,000.00 net income by selling *Bhut chili* in local market during summer season. He also earns more than Rs.30, 000.00 net income from rabi and summer vegetable cultivation. Thus, his annual net income goes up to Rs.1,79,500.00 with a gross income of Rs. 2,80,000.00.

From the farm activities carried out throughout the year, he is confident to run his family smoothly. He could reduce the expenditure to run his family as he produced his entire day to day requirements. He started to build a pacca house from his income. He started a scientific pig farm in small scale and planned to develop his mushroom farm. According to him marketing at this hour is purely market intelligence as with the advent of internet, the market is open to all.

Impact:

Observing the success of Mr. Bhaben Saloi, many youths of the village and nearby villages are motivated and started farming. He led a group of mushroom growers in the district and helped in the marketing of their produce.He is a pioneer in vermicompost production and sale of the produce after value addition in a commercial packaging. He has even started a scientific pig farm in small scale. He has a registered firm named J.R. Agro firm through which marketing of all his products are done. The economic upliftment of *Mr. Bhaben Saloi*'s an example of a successful Agri – entrepreneur for the youths of the district with diversified activities related to agriculture and other allied sectors.Apart from being a successful entrepreneur *Mr. Saloi* has become a role model for the youths of the district.

Lessons learnt:

Youths are the backbone of the Indian agriculture where their success depends on the intervention of proper technologies based on need analysis.Resourceful farmers can be driven towards success through exposure to proper need-based technology. Unmanaged resources and poor economic condition, could be easily overcame by adopting through different programmes. Thus, understanding the interest of the farmer, proper need analysis, selection of proper technologies, capacity building, technological backstopping, creation of facilities, and availability of quality inputs and holding the unit based on capacity are the major key points of success.

Supporting Images:

Layout of kitchen garden

Mr. harvesting Bhootchilli

Mr. Haloi harvesting Mushroom

Packing & Marketing mushroom in a brand name 'Pusti'

Piglet production in his farm

Mr. Saloi engaged in Paddy cultivation

Packing & Marketing of Black rice in a brand name 'Dhemaji'

Visitors visited his house

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Ms. Gupa Biswakarma- women entrepreneur Success in dairy farming

Challenges:

Ms. Gupa Biswakarma from No. 2 Boijoyantipur, Joyrampur, Bardalani block of Dhemaji district is a young lady belongs to a poor, common rural family. The livelihood of her family completely depends on agriculture and allied activities. Traditionally her family is involved in dairy keeping 4-5 local cows to obtain milk for family consumption. She acquired the Masters degree in Arts and still did not run for any govt. job and her only dream was to build a commercial dairy venture for self employment and to support her family. Being a lady it was not an easy task, she still took it as a challenge and tried her best to achieve the goal.

Initiative:

Ms. Biswakarma family has a land holding of 2 ha area where they produce paddy and some vegetables as per the season of the year. Her dairy farm has an area of 0.66 ha with permanent cattle shed. Apart from dairying she engaged in organic vegetable production using the manure of her farm and poultry rearing.

In Dhemaji District there are very few numbers of dairy entrepreneurs though there was high demand for milk. Moreover scientific rearing and management practices are lacking in livestock ventures, especially in dairying. Considering the scope and demand of the District she planned a scientific dairy farm. To start her project she formed one woman SHG and approached the District Veterinary and Animal Husbandry office Dhemaji for government support. Accordingly they were provided with two numbers of Holstein Frisian cows which was the starting point of her journey. Thereafter she participated two trainings on scientific dairying by the Department and KVK Dhemaji. Getting motivated she alone started her dairy farm in 0.66 hectare land area with concrete shed, store house for straw and keeping an most of the land area for fodder cultivation.

During this journey she faced many hardships and odds, mainly the shortage of green fodder but faced strongly with the help of KVK Dhemaji and State Veterinary department. She adopted the scientific fodder cultivation e.g. Hybrid Napier and Oats to cater the green fodder requirements with the technical help and input supports from KVK, Dhemaji. Supplementation

of area specific mineral mixture AAUVETMIN was successfully demonstrated to promote the health and milk production. She raised an organic vegetable garden to use her waste materials from the farm. She has also been rearing improved type of poultry in the backyard of her farm earned a handsome amount. Thus Ms. Biswakarma has been using each every resource toward generating income.

Key results:

With her scientific planning and hard work Ms. Biswakarma increased the strength of her farm from 2 numbers to 18 nos. of dairy cows. She has been able to produce around 130 liters of milk per day throughout the year and the peak touches more than 200 liters per day. Presently, she stops manual milking of the cows as she purchased a milking machine, saving lots of times and labour in the farm. She opened a milk booth at the heart of the Dhemaji town where she could sale the entire daily produce like hot cakes and cater the needs of the people of the town.

Outcomes:

The average monthly income of Ms Biswakarma comes around Rs. 1,00,000.00 and she is also helping a couple of other poor farmers of her locality to earn their livelihood. Another most important observation is that she used to bring her milk to the market place by using her Breeza car, which is procured from the profit earned from her farm only. Now, she is planning to construct a new dairy barn with the accommodation for more numbers of cows with up to date arrangement for feeding and other facilities.

Impact:

From her unit Ms. Biswakarma could able to strengthen her economic condition as well as societal status. Thus she became popular among the fellow dairy farmers of the locality. Many farmers visited her farm and get encouraged after watching her initiatives. In view of the Covid pandemic situation Ms. Biswakarma could be a very good example for the rural youth returning from other states where they worked for various private companies and corporate houses for their livelihood. Being established and running her venture from a very remote area of Dhemaji District itself is a huge challenge which she eventually faced with true determination and scientific temperament.

As recognition to her hard work and services to the society she was awarded as the Best Dairy Farmer of Dhemaji District in the International Livestock Mela at C.V.Sc. Khanapara in the year, 2020-21. She was awarded as the Best Progressive Farmer from Dhemaji District at Dhemaji Haat District Administration Dhemaji

Lessons learnt:

Sometimes the dreams come true as nothing is impossible like the above case of success story of Ms. Guap Biswakarma

Supporting Image

Oat grass at Ms. Gupa's field

Ms. Gupa Biswakarma at her cow shed along with KVK personnel

Field Day Programme organized at Ms. G. Biswakarma's fodder field

Exposure visit cum skill training held at Ms. Gupa's field

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Pig-Fish–Horticulture: a sustainable income generating farming system in Dhemaji district

Challenges:

Sri Budheswar Pamey, 45 years old an early adopter, innovative and progressive farmer, resident of Shantipur village of DimowDhemaji closely associated with KVK Dhemaji. Since inception of KVK Dhemaji he has under gone numbers of training programme on different aspects. He is gladly able to manage his five member family from 1ha cultivable land, fishery of 0.26ha area, rearing poultry and duck in backyard system, goat, rearing eri and maintaining betelvine plantation of 0.08 ha area. Also, he grows field crops such as horticultural crops such as banana, mango and coconut, and he also maintains a nursery and does bee-keeping, along with owning one milch cow. He is a hard worker who was self-motivated to take up a new initiative for profitable agriculture. Mr. Pamey lacked technical and scientific knowledge about agriculture and allied activities.

Initiative:

KVK scientist frequently visited his house and giving advice to manage his available resources. Sri Pamey is a innovative farmer and able to design numbers of farm small tools to make some farm operation easy cultivating his ideas. Tool for line transplanting of paddy, rat trapping cage, tool for mud plastering of bundh, soil digging tool, medicine to reduce residual effect of pesticide, hand fork for paddy weeding, integrated cultivation practices of Betelvine and *Keserugos,* bird scaring tool, tool for taking out the pupae from eri cocoon, threshing tool etc. are some tools designed and modified by Sri Budheswar Pamey.

With the intervention of the TSP project through Krishi Vigyan Kendra, Dhemaji, he could be initiated into Integrated Farming System (IFS) because of the complementary and supplementary nature of his agricultural produce. Before taking up the integrated farming system, he used to cultivate crops in a traditional way. After the KVK intervention, he has been able to practice agriculture with modern plant protection methods such as the use of balanced fertilizer, weed and water management and integrated pest and disease management. Owing to these factors, now he gets a good yield and has witnessed increased production and productivity of crops.

Sri Budheswar Pamey able to set an example among the small farmers and success in farming with efficient mobilization of available resources.

Key results:

The results and farm products of Mr. Pamey farm from last three is gradually been increase since 2017-18 with a average annual gross income of Rs.37000.00 to Rs.77000.00 in the year 2019-20 from 1.73 ha area in details is describe below:

Besides the IFS system, he is able to sale 22.00 q paddy grain remain surplus after family consumption and thereby earned Rs.18000.00 net income. He also earns average Rs.1600.00 monthly from his small homestead garden through sale of surplus vegetables of different kinds.

In his cultivable land, he cultivated HYV rice in 0.70 ha land, Hybrid rice in 0.2ha land, traditional rice variety in 0.1ha land from where he able to harvest 65-70 qt. paddy with a market value of Rs.78,000.00 (rupees seventy eight thousand only). After rice cultivation in 0.26ha land he cultivated different types of vegetables. He able to earn Rs.20, 000.00 net from fishery, Rs.12, 000.00 from betelvine and likewise Rs.15, 000.00 from duck and poultry annually.

Impact:

So, far market integration is concerned, earlier Mr. Pamey as a small farmer used to bring his produce for sale at different market points. Once, he started growing vegetables and fishery (IFS) commercially in large scale, the neighbouring vegetable and fishery vendors came to know about his produce and quality and vendors directly comes to his field for purchasing the produce. His sales his produce to the vendors directly and earns a good amount. Now he is a model farmer and entrepreneur of that locality.

Mr. Pamey is now earning near about **Rs. 2.80 lacs** annually from his farm. His services are being used for sharing his experience on field and as well as vegetables and fish cultivation with other farmers in order to motivate them. He has become a role model for other farmers in the area.

Lessons learned:

Integration of the available resources in farming gives the best possible option for an marginal farmer to obtain sustainable growth in farming which initiate livelihood promotion among the farmers.

Supporting images:

Demonstration of line transplanting to fellow farmers and officials during exhibition

Piggery unit under IFS

Demontration of HYV in Pamey's field

Glimpses of IFS unit of Mr. Budheshwar Pmey

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Sustainable livelihood through vermi-composting- Mr. Bijoy Pamey

Challenges:

Agriculture and allied sector is the indispensable sustenance for livelihood of more than 85% of the people residing in Dhemaji district. The farmers of the district are less aware of the modern tools and technology in agricultural and allied sectors. Krishi Vigyan Kendra, Dhemaji has been giving an untiring effort to upgrade the knowledge and to build up the capacity of the farming community of the district through execution of special programme. There is lots of scope for organic cultivation in the district as the farmers of the district are reluctant to use chemical fertilizers. For this, knowledge on in situ production and use of organic input is needed. Production of vermi-compost by using farm waste and kitchen waste was a suitable method of recycling in farmer's field. Vermi-composting a method of preparing enriched compost with the use of earthworms is one of the easiest methods of recycling agricultural wastes to produce quality compost. The vermi-composting is rich in plant nutrients, plant growth promoters and beneficial micro flora and enhances soil physical, chemical and biological properties of soil.

Initiative:

To impart the knowledge on the technology three (3) days duration training was conducted on 'Entrepreneurship Development through Vermi-compost Production'. During the training, the earthworm species *Eudrilluseugineae*was release in the tanks and thus the Vermi-compost production has been started. Bijoy Pamey, a youth of Dighali Chapori village of Sissibogaon Development Block, had constructed a low cost tank during the year 2014-15. From this year, he has been producing the Vermi-compost and supplying to the different tea garden of the District. Mr. Pamey has also been supplying the Vermi- wash and thereby earning an additional income to improve his livelihood..

Key results:

This was proven to be a successful venture with the first harvest after 3 months to be 520 kgs. There after 2100 Kgs of Vermicompost were collected in three batches. Vermicomposting

proves to be a profitable source of income where a net return of Rs 23,800 and BC ratio of 2.3:1 was achieved. The farmers could sell the produce fetching them good price and at the same time they are able to use the compost for their crop cultivation..

Sl. No.	Head of Income	Income during					
		2014-15	**2015-16**	**2016-17**	**2017-18**	**2018- 19**	**2019-2020**
1	By selling of vermicompost @ Rs. 10/kg(Av.)	5200.00	21000.00	48000.00	48000.00	54000.00	54000.00
2	By selling earthworm @ Rs.1200/kg	-	2400.00	7200.00	7200.00	7200.00	7200.00
3	By selling vermiwash @ Rs.5/lit	-	150.00	300.00	340.00	340.00	400.00
4	**Total Gross Income (Rs.)**	**5200.00**	**23550.00**	**55500.00**	**55540.00**	**61540.00**	**61600.00**
5	Total Gross cost (Recurring only)	3500.00	1200.00	2400.00	16400.00	2400.00	2400.00
6	**Total Net Income**	**1700.00**	**22350.00**	**53100.00**	**39140.00**	**59140.00**	**59200.00**

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Outcome:

Now, Mr. Bijoy Pamey engages himself in farming sector. He runs his family with Rs 1, 30,000.00 net income including organic vegetable cultivation and able to fulfills the need of the family members. He sets an example of organic vegetable farming in his village by using vermicompost andvermiwash.

Impact:

Initially, Sri Bijoy Pamey do not cultivate vegetable because of lack of knowledge, lack of irrigation facilities and unavailability of fertilizers. Pamey is marginal farmer with small land holdings with paddy as major crop which fetches low return but with the introduction of vermicompost, vegetable cultivation has become an important activity for the farmers and the limitations of non availability of compost has been met through introduction of vermicompost unit. Seeing the profitability from this enterprise with very less input and manpower required, more farmers have approached the KVK for assistance in setting up the vermicomposting unit.

Lessons learnt:

The intervention of proper technologies based on need analysis brings the success. The capabilities of the farmer always depend on his availability of resources. The major difficulties faced were their poor economic condition which could be overcame by adopting him through demonstration programme. Creation of facilities in marginal and small farmer is very important. The problem of farmers are varies with different micro ecological situation. Thus, understanding the interest of the farmer, proper need analysis, selection of proper technologies, capacity building, technological backstopping, creation of facilities and availability of quality inputs and holding the unit based on capacity are the major key points of success.

Supporting Images:

Vocational Training programme

Release of Earthworms to the tank

A tank full of raw materials

Measuring the quantity of harvest

Vermi- wash and ready compost of Mr. Bijoy Pamey

Mr. Pamey selling his compost

Mr. Pamey applying the Vermicompost in his Boro paddy cultivation

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Sustainable Livelihood through Vegetable farming by Mr. Mulan Bhuyan

Challenges:

Mr. Mulan Bhuyan son of Lt. Sarbananda Bhuyanis a resident of Matikhula village under the Dhemaji development block of Dhemaji district. Mr Bhuyan is a Higher Secondary passed out progressive farmer of 52 years of age. He is actively engaged in farming in the Matikhula area of the district. Mr. Bhuyan is a member of the progressive farmers group under the District Agricultural Office and holds a very respectable place among the farming community of the district. Mr. Bhuyan is endowed with a good land resource inherited from his fore fathers. He has a total land area of 2.26 ha of which he have a cultivable area of 2.00 ha. He has a family of 5 members with his wife and 3 sons who are totally dependent on his livelihood option which is farming.

During the earlier years of his cultivation in 2015-16, in spite of all the available resources such as 2.00 ha cultivable land, habit of backyard poultry rearing, human resources in family, his annual net income could not exceed an amount of Rs. 60,000.00 Per annum due to lack of knowledge on resource utilization, scientific cultivation of crops, management of livestock etc. He was mainly dependent on paddy cultivation as his major farm activity and cultivated only local cultivars.

Initiative:

Agriculture being the major source of livelihood for the family, Mr Bhuyan along with his wife and the elder son has been engaged in Agricultural activities.Earlier the income from the agricultural activities was enough for day to day living but could not meet up all the needs of the family.He 1st came into contact with KVK Dhemaji through a training programme on "*Planting material production of Horticultural crops"* during February 2017 which was given as per the request by a group of farmers of Matikhula area. The training imparted in Mr. Bhuyan field proved to be fruitful for him as he have a good resource of fruit crops such as *Assam lemon (200 plants), Guava var. L-4*9 (10 plants), *Litchi (2 plants)* and *Betal nut (300 plants)* which could be used as Mother plants. After the training Mr. Bhuyan took up the intervention of a small scale nursery for sale of saplings of fruit trees and became a regular visitor of KVK Dhemaji. He showed his interest in taking up new technologies, innovative mindset and in diversified agricultural activities. His ability to organize and lead his group of farmers was identified by Krishi Vigyan Kendra, Dhemaji and since he has been

constantly taking guidance in different aspects related to agriculture and other allied farming activities. Mr. Bhuyan has taken about four (4)numbers of trainings on Crop production, Horticulture, Animal Science and Fishery Science, one (**1**)trainingof Skill training on Horticulture nursery management, organized by KVK, Dhemaji.He participated in different demonstration programs. Witnessing his leadership quality and hardworking nature KVK, Dhemaji has taken up the demonstrations of organic farming programme under the *Paramparagata Krishi Vikash Yojana (PKVY)* in the Matikhula area.

Through KVK, Dhemaji he also got the chance to participate in different training programmes, exposure visits and demonstration programmes conducted by different developmental departments where he got the chance to interact with scientists and other progressive farmers.

Key results:

At present his homestead garden (1.20 ha) is full of different horticultural crops.He is the pioneer Assam lemon grower in that area with an area of 0.26 ha. Apart from Assam lemon he also have Litchi , Guava and other minor fruit crops in his homestead bari from where he has an annual net income of about Rs. 40,000.00 . He also grows seasonal vegetables in an area of about 0.50 ha where during the Rabi season he has an annual income of about Rs. 50,000.00 and during the Kharif season growing different Summer vegetables he earned a net income of about Rs. 25,000.00. Apart from the horticultural crops he also cultivates field crops in an area of 1.06 ha where he generally grows Sali paddy (Ranjit & Bahadur) followed by Toria or Potato. From Sali paddy he get an annual income of around Rs.11,000.00 and by selling the Toria (1.00 q) and Potato (18.00 q) he gets an income of around Rs. 20,000.00. He also reared backyard poultry where at present he possesses about 20 numbers of poultry of improved breed.

Mr Bhuyan also have an well maintained Beta nut plantations with more than 300 plants from where he get an annual income of about Rs. 1,00,000.00 by selling nuts in different processed form as well as as fresh Betal nuts. He is also actively engaged in a small scale nursery where he raised cuttings of Assam lemon, layered Litchi and Guava plants and also Betal nut saplings from where he earned a total income of Rs. 25,000.00

Mr. Bhuyan from his vast experience in farming since a long period of time has now developed to be a successful farmer with farming as his sole source of income and running

his family with good social status. His average annual gross income from different component goes up to Rs.5, 50,000.00 with annual net income Rs. 2, 71,500.00. He already has an established homestead garden with different fruits crop such as Guava,Litchi, Assam lemon etc. which is now a resource for his budding nursery which is taking up a good pace.

Impact:

Mr. Bhuyan is now a respectable leader among the farming community of Dhemaji. He was honored by many organizations as progressive farmer including the District Administration. Witnessing his success in farming he has motivated and inspired many youths of the district to take up farming as the source of livelihood. His confidence in farming have seen new horizons during the last few years, thus boosting his decision making ability according to his farm situation and market potential.

Lessons learnt:

Agriculture is the backbone of economic development of Dhemaji district, with its varied Agro-ecological conditions the district have immense potential of agriculture growth. Streamlining of the available resources for a medium farmer with immense potential of development, is the perfect way of achieving maximum possible income. Thus, it can be noted that in medium farmers understanding the need of the time analysis and acquaintance with the proper technology can bring about sustainability in farm production system of every farmer.

Photograph:

Mr Bhuyan harvesting vegetables from his farm

Mr Bhuyan feeding his poultry birds

Mr. Bhuyan harvesting vegetables

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Vermi-compost production- income generation venture for tribal farmers

Challenges:

Agriculture and allied sector is the Indispensable sustenance for livelihood of more than 85% of the people residing in Dhemaji district. The farmers of the district are less aware of the modern tools and technology in agricultural and allied sectors in general and the tribal farmers in particular. Krishi Vigyan Kendra, Dhemaji has been giving an untiring effort to upgrade the knowledge and to build up the capacity of the tribal populace (47.29 % of total population) through execution of special programme

The Jalakiasuti, a village under Sisiborgaon development block residing 160 numbers of Sonowalkachari tribal farm family. The villagers of Jalakiasuti are purely dependent on agriculture and allied sector. But the natural calamities (both draught and flood) are only the hurdles for agricultural activities in spite of hard labour and encouraging engagement of youth class in this sector. One water course in the name of Jalakiasuti originating from hillock of Arunachal Pradesh is streaming through the village, which was earlier thought as blessing of nature but distressing now a day due to mass deforestation in the hillock.

The natural calamities such as flash flood, draught spell, unseasonal raining etc are reasons for gradual distraction towards field activity. Out of total agricultural land 15 to 20 per cent of land has already been become marginal of low productive due to deposition of sand and silt.

Initiative:

The KVK Dhemaji has been implementing TSP-NICRA up scaling programme funded by CRIDA, ICAR, Hyderabad under ACRIPDA BNCA centre of Assam Agricultural University. During the execution of the TSP-NICRA up scaling programme different interventions has been carried out under the component of natural resource management, construction of low cost vermicompost technology. The team of KVK Dhemaji visited the village and observed available resources and suggested for a year round vermi-compost production. The technology of low cost vermi compost production is given by ACRIPDA BNCA centre AAU, Biswanath Chariali which required Rs.3,500.00 (Rupees three thousand five hundred) only to construct a tank

(measuring 2.5mx 0.91mx 0.76m) with locally available bamboo, thatch and plastic sheet including required quantity of earth worms. A total of 32 numbers of such tanks has established in the village out of which 22 units are in productive stage. The production of ready compost has started from July, 2014 onwards..

Key results:

Out of different components of the project low cost vermicompost production was the one of the activities under diversified farming component. To be success in an activity a constant and serious effort is vital. "Vermi-compost production is very easy and lucrative activity"- a comment given by Mr. Luhit Sonowal, a village youth leader and secretary of village management committee. In the end of January, 2015 a total of 60qt ready compost harvested from 22 tank and generated income of Rs.55,000.00 (Rupees fifty five thousand) by selling 50 qt after using 10qt in their own field. Getting encouraged from the flow of income generation and benefit in their filed each farmer started to construct more numbers of tanks by their own. Getting encouraged from the flow of income generation and benefit in their filed each farmer started to construct more numbers of tanks by their own.

Sl. No.	Head of Income	Income during					
		2014-15	2015-16	2016-17	2017-18	2018- 19	2019-2020
1	By selling of vermicompost @ Rs. 10/ kg (Av.)	55,000.00	58,000.00	58,000.00	58,000.00	58,000.00	58,000.00
2	By selling earthworm @ Rs. 1200/ kg	-	62000.00	62000.00	62000.00	60000.00	68000.00
3	By selling vermi wash @ Rs.5/lit	-	550.00	550.00	550.00	550.00	550.00
4	**Total Gross Income (Rs.)**	**55,000.00**	**120550.00**	**120550.00**	**120550.00**	**118550.00**	**126550.00**
5	Total Gross cost (Recurring only)	45,000.00	26400.00	26400.00	71400.00	26400.00	26400.00
6	**Total Net Income**	**10,000.00**	**94150.00**	**94150.00**	**49150.00**	**92150.00**	**100150.00**

Outcome:

Getting encouraged from the flow of income and benefit in their filed each farmer started to construct more numbers of tanks by their own. Among of the demonstrated farmers 4 farmer have constructed the pucca tanks for production of the Vermicompost 10 farmers constructed low cost unit with their own cost. Observing the benefits of vermocompost in crop production by the farmer 50 farmers have started production of vermicompost on their won effort. At present more than 100 farmers are engaged in production of vermicompost adopting low cost technology.

Impact:

The low cost vermi-compost production technology is very farmer's friendly one and easily can adopted by the farmer. Application of vermi-compost in crop field helps in maintaining soil health. The shortage of organic fertilizer in organic crop production specially in vegetable crop both in household and commercial level to a certain extent fulfilled by production of vermicompost. Low cost production technology helps in availability of the quality compost in affordable price. It also helps the farmer in following integrated nutrient management technology in different crop

Lessons learnt:

The intervention of proper technologies based on need analysis brings the success. The capabilities of the farmer always depend on his availability of resources. The major difficulties faced were their poor economic condition which could be overcame by adopting him through TSP programme. Creation of facilities in marginal and small farmer is very important. The problem of farmers are varies with different micro ecological situation. Thus, understanding the interest of the farmer, proper need analysis, selection of proper technologies, capacity building, technological backstopping, creation of facilities, availability of quality inputs and holding the unit based on capacity are the major key points of success.

Supporting Images:

Vocational Training on vermicomposting

The harvested compost-ready to harvest

Vocational Training on vermicomposting

The harvested compost-ready to harvest

Getting encouraged, farmers started to construct more such tank

Getting encouraged, farme started to construct cemented tank

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Educated youth Mr. Ranoj Deuri success in pig farming

Challenges:

Livestock rearing is one of the main source of livelihood for the people in Dhemaji districtalong with agriculture and other allied ventures. Land holdings of most of the farmers are not much and the rice cultivation is totally dependent of rain water leading to very uncertain income for sustainable livelihood. Mr. Ranoj Deuri, S/o. Mr. Chakreswar Deuri, village-Barmuria Deuri gaon, P.O.-Silapathar under Sissiborgaon ADO circle, Dhemaji is a highly educated youth who has dreams to achieve something big through pig farming and wants to earn in crores and wants to see piggery as an industry like poultry industry. He is having around 1.5 ha of land area out of which his father cultivated rice and vegetable crops for house-hold consumption in 1.37. He got an area of 0.13 ha of land and a pigsty with shed area of 220 sq. ft. which is sufficient to rear 4-5 nos. of fattening pigs. Now, Mr. Ranoj had a dream to fulfill from the resources he got from his father and he took the challenge of developing that small pig shed to a modern pigsty where from he can earn in lacs if not in crores and live a decent and sustainable livelihood from pig farming.

Initiative:

Mr. Chakreswar Deuri, father of Mr. Ranoj Deuri was a beneficiary of the piggery component of TSP Project, 2012-13 long back which was implemented in the financial year 2014-15 implemented by KVK, Dhemaji in collaboration with RARS, AAU, North-Lakhimpur. Under that Project he was given 5 nos. of pigs along with a pigsty of 10X22 sq. ft. size. Since then Mr. Chakreswar Deuri has been rearing 3-5 nos. of pigs of non-descriptive type for meat purpose and earned around Rs. 25,000.00 to Rs. 30,000.00 per year from that unit. During those years Mr. Ranoj Deuri was studying Engineering in a Engineering College in Tamilnadu. In the year, 2019 he came back home after completing his engineering degree with lots of exposure and ideas with respect to livestock rearing, especially the pig rearing. As he was very passionate about pig farming from childhood, instead of searching for jobs in government or private firms he straightway involved in pig rearing by expanding the pigsty which his father has been maintaining since long back. In between, Mr. Ranoj has undergone a 7 days long vocational

training programme under STRY by KVK, Dhemaji in 2020. He gain lots of knowledge from the training and become more confident about piggery as sustainable source of income. He re-arranged every aspect of the farm scientifically especially the feeds and feeding, water supply, waste disposal and other aspects of farm management. He procured some piglets of pure breeds like Large White Yorkshire, Hampshire etc. by replacing the non-descript type of pigs which his father already used to keep in the farm. He tried to feed the pigs with balanced feeds as per the age group of pigs. Most importantly, Mr. Ranoj converted the entire unit from fattener type to breeding unit.

Key results:

Within one year after renovation and re-arrangement of the farm, Mr. Ranoj could see the success and earned about Rs. 2,50,000.00 as net profit in the year, 2020 from selling of piglets. In the year, 2021 also he is expecting to earn more than Rs. 4,50,000.00 as he is planning to make the required amount of feed for his farm by himself by cultivating maize, the major ingredient needed for feed preparation. This year, Mr. Ranoj is also approaching the NABARD for financial assistance for expansion of his pig farm and if this happens, his real dream of playing in millions may come true in coming days.

In a span of one and half years, the annual income of Mr. Ranoj Deuri increased by around 7-8 times and his hunger for success is still on.

Impact:

Being a very young and highly educated boy and with lots of exposure to the livestock farms of the developed state like Tamilnadu, Mr. Ranoj becomes very popular among the piglet seekers of the locality as well as the adjoining districts of Arunachal Pradesh. Now, Mr. Ranoj's pig farm has become the site of exposure visit and he himself becomes the source of inspiration for the youth of the locality who returned back home from various states of the country due to Covid pandemic.

Lessons learnt:

Entrepreneurship mindset and exposure to the well-organized enterprise are some key factors that play useful role in success of any types of farm venture including pig farming.

Supporting Image



Pig farm of Mr. Ranoj Pegu along with a sow, piglets and growing pigs

Mr. Ranoj Pegu with some growing pigs in his farm

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Success story of farm women through diversification of agriculture and processing

Challenge

Nilakh Tarani Pathar one of the most disadvantageous villages in the Sissiborgaon Revenue Circle of Dhemaji District comprising 93 farm families depending purely on rainfed traditional agricultural practice. Rice is the major crop followed by cultivation of rabi vegetables for home consumption and additional income generation. A major portion of the youth has been engaged in daily wage outside the as well as State too due to lack capital, poor land holding and lesser agricultural productivity.

Mrs. Rinju Moni Chetia, a farm-women who engaged in normal household and agri activities was searching better opportunities to raise income in order to release her own cultivable land from leased one. Her family has a land holding of 1.33 ha including the leased one. Paddy is the sole crop grown in that land area. Small amount of homestead land has been used for growing seasonal vegetables towards household consumption. In livestock sector local breed of poultry and duck is being reared for additional income. All these activities are carried out without proper scientific management and lack of access to modern technology or scientific knowledge lead to lower productivity. Therefore she always looks for better ways raise her income and support her family.

Initiative

In the 2016-17 she came in to contact with Krishi Vigyan Kendra Dhemaji during one vocational training on pickle making at her village. She has keen interest in food processing and she opted pickle making at household from that point of time. As the raw materials easily available she started production of various pickles and sold her produce at the Silapathar weekly market regularly. From 2016-17, Mrs Chetia has been constant touch with KVK Dhemaji and she became an early adopter of newer and improved technologies. To increase the rice production she replaced her traditional varieties with *Ranjit* and *Bahadur*. She also adopted the scientific cultivation of HYV of Blackgarm (*PU-31*), Toria (*TS-38*) under the supervision of KVK Dhemaji. In livestock sector dual purpose poultry breed *Kamrupa*, improved pig breed *Ghungroo* cross has been adopted by her for additional income generation. In the year 2019-20 an advanced training on commercial pickle production was

given to her which indeed helped to increase her volume of production. Besides pickle she also produces various rice products and sell them in local market.

Key result:

Mrs. Chetia now becomes a farm woman with diversified agriculture from production, processing and marketing of agricultural produce by self. With her interest, hard work and dedication she has been able to produce more than 6 qt of pickle per year with brand name *Pranali* garnering net profit of Rs. 1,20,000.00. Last year she could earn Rs. 18,400.00 from filed crops, Rs. 20,350.00 from horticultural crops, Rs. 53,230.00 from livestock and Rs. 21,800.00 from other activities. She used to market her produce at local market, various agri fairs in and outside the District. Thus within 3-4 years she become self sufficient with appreciable return from her each venture.

Year wise changes in farm income and increase in farm income over

Total farm income (2016-17) (Rs.)	Total farm income (2020-21) (Rs.)	Increase in farm income over (2020-21) (Rs.)	Per cent increase over (2020-21) (%)
58650	233780	175130	298.60

Mrs. Chetia really sets an example of self employment through farming in the district for the common rural farm women. With her increased income she able to release her leased land as well as renovates their own home with added living facilities. To observe and learn her activities many farmers and SHG groups of different parts of the district use to visit her household. She was also awarded by the District Administration Dhemaji as progressive farm women. Thus unknown farm women from a distant remote village once of a time become successful through efforts with support and guidance from KVK Dhemaji within few years.

Lesson learned

The journey of Mrs Chetia is an inspirational one starting with poverty to fight back to self sufficiency. This has been possible due to the adoption and diversification of agriculture and allied sectors. It can be observed that common farm women can earn to support her family through activities like rearing of poultry, duckery, piggery, fishery, vegetable cultivation, mushroom production, vermin-composting and food processing. This is only possible through timely training and skill development, own interest and hard work.

Supporting images:

Vocational training participation

Pickle ready for sale in the brand name of Pranali

Egg and meat production from dual purpose poultry Kamrupa

Attended vocational tarining on pickle production

Certificate of Appreciation by District Administartion Dhemaji

Certificate of Appreciation by NRLM Dhemaji

News report publishes in Assamese Daily

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Mr. Pobitra Gogoi earning sustainable income through Fish farming

Challenges:

In a state where people claim fate to be more important for success, the success story of a veteran farmer from Khajuwa, Moridhal an interior village of Dhemaji district Mr. Pobitra Gogoi, S/o. Lt. Rameswar Gogoi is a 56 years old energetic active farmers with four family members including Mr. Gogoi is actively engaged in the development of agriculture (Rabi and Kharif vegetables), livestock (poultry & piggery) and fishery. He possesses 1.82 ha of land out of which 0.05 ha under vegetable cultivation, 0.026 ha under livestock production and 1.02 ha under fish pond is a shining example of how fisheries, animal husbandry and horticultural technologically and innovative cultivation methods can transform the agrarian economy and uplift the lives of millions of farmers. Mr. Gogoi does all his activities in a traditional manner before coming contact with the KVK Scientist, so for that he has frequently faces disease infestation, crop damages, unscientific management of fish pond etc. Moreover, agriculture is the main sources of livelihood in the district, in around 85 percent populations are directly and indirectly dependent on agriculture and allied sector for their livelihood. Among all the crops cultivated, Sali paddy covers the largest area and is the first most crops of the district. Now a day's some of the cultivable sources of land are degradable due to high rate of population growth, climate change and unpredicted flood during summer etc. So, for coup the agriculture sector in this situation we need some eco-friendly technologies to aware among all the farmers of the district.

Initiative:

It had been an incredible journey for Pobitra Gogoi who in 1992 entered the world of fisheries and allied activities. For a year he travelled to various villages and hamlets nearby. He realized that in this modern and populated world, there are a lot of traditional ways to meet the demand for food which the farmers are relying upon to grow their crops. He got himself involved in fisheries through excavation of a fish pond of 1.02 ha. Technical and financial support was provided by the Department as well as bank. In the meantime he got a chance to attend training programme conducted by KVK in the year 2018 from that onwards the man got himself fully involved fish culture. Gradually through horizontal expansion of the ponds he excavated two more tanks of 0.06 and 0.078 ha area in the year 2018 and 2019 respectively with a nursery of 0.06 with technical support from department. In the year 2018-19 KVK Dhemaji also demonstrated recent advances in fishery sectors in his tank with full technical guidance of KVK scientist. Recently he had got financial subsidy of Rs. 56,000/- towards excavation and other assistances from the fishery department. Looking for a way to increase his earnings, Gogoi started selling fish which added an extra income to his savings. He procured fish seed from H. fish seed& farm hatchery, Lakhimpur & private farm Gogamukh, which after growing out to

table sized in his ponds are sold to retailers and wholesalers. He is planning further to develop more tanks to boost fish production in the upcoming years.

Key results:

The entire farm products of Mr. Gogoi farm from last few years is steadily been increase with an average annual gross income of Rs. 37000.00 to Rs. 77000.00 in the year 2019-20 from 1.82 ha area. Which are details describe below:

Sl. No.	Head of Income	Income during		
		2017-18	2018-19	2019-20
1	From vegetable cultivation (leafy vegetable, Chilli etc.)	6500.00	7900.00	8300.00
2	By selling of Fish @ Rs. 180/kg(Av.)	15000.00	48000.00	120000.00
3	By selling table size fish @ 160/kg (Av.)	0.00	16000.00	22000.00
4	By selling pig @ Rs.180/kg	3500.00	18000.00	19600.00
5	Muga cocoon	4000.00	3500.00	8000.00
	Total Gross Income (Rs.)	**29000.00**	**93400.00**	**177900.00**
	Total Gross cost (Recurring only)	7500.00	21700.00	38000.00
	Total Net Income	**21500.00**	**71700.00**	**139900.00**

Apart from the above component, he is incapable to sale 50 to 60 kg of Chicken remain surplus after family consumption and thereby earned Rs.10,00.00 to Rs.12,000.00 net income. He also earns minimal periodic income from his small homestead garden through sale of surplus vegetables of different kinds.

Mr. Gogoi is cultivating vegetable cultivation of an area of 0.05 ha, Fishery rearing tank in an area of 1.02 ha, Nursery pond 0.06 and 0.078 ha respectively, some plantation 0.13 ha from where he earned approximately Rs.8300.00 vegetable cultivation, Rs.142000 from fishery, Rs.19600.00 from piggery unit and Rs.8000.00 from muga cultivation annually. Recently he has also started ITK method of Kawoi fish breeding with the technical support from KVK with a total area of 3 liter capacity of spawn.

Impact:

Though earlier he is a small farmer, now he is a lead farmer among the fisheries as well as animal sectors. Due to his young enthusiastic nature since inception lots of new farmers related into these sectors follows Mr. Gogoi's farm and his advices. Far-off market integration is concerned, earlier he is a small fish and vegetable grower & vendors used to bring his produce for sale at different market points of the district. Once, he started scientific management of fish rearing & nursery pond along with growing vegetables commercially in large scale, the local vendors came to know about his produce and quality and they directly comes to his farm for purchasing the produce. Now he is a model farmer and entrepreneur of that locality.

As of now Mr. Gogoi earning near about Rs.1.40 lacs annually from his components. His services are being used for sharing his experience on field and as well as broadly among the

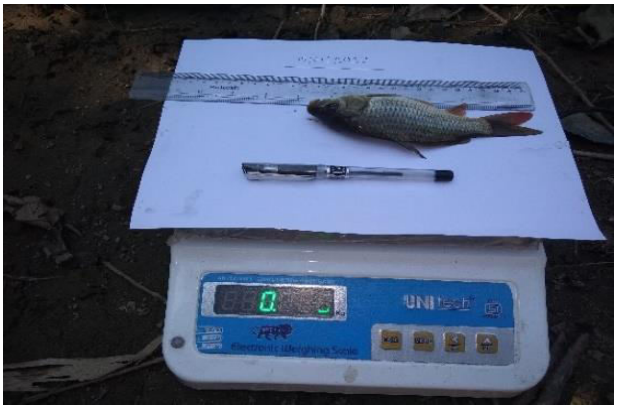
fisheries communities in order to motivate them. He has become a role model for other farmers in the area.

Lessons learned:

Strong willpower to do something in life they don't have any kind of barrier in their road to finding or achieved the goal. Poor financial condition can be overcome with clear vision and his enthusiastic willpower.

Supporting images:

Harvesting of fish



Measuring of cultivable fishes

Scientific management of fish pond

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A success in efficient use of resources – Mr. Dinanath Mallah

Challenges:

Mr. Dinanath Mallah a resident of Pipalguri village under the Sissiborgaon Development Block solely depends on Agriculture. He is a marginal farmer supporting seven family members holding only 0.70 ha cultivable land area, which is used for before coming in contact with KVK, Dhemaji he was hardly able to manage his daily family needs. He was unaware of the modern tools and technology in agricultural and allied sectors. After hearing the name of Krishi Vigyan Kendra, in a radio programme, one day in the month of September, 2011 he visited KVK, Dhemaji with his various problems and honestly approached the scientists of KVK, Dhemaji. Observing his interest in agriculture, all scientists present discussed with him to look for the possibilities within his available resources. He was included in a number of training programme conducted by KVK, Dhemaji.

Initiatives:

A demonstration on "IPM in Sali rice with HYV Ranjit" was conducted in 0.20 ha land providing all inputs during Kharif, 2012 from which he was able to harvest a good quantity of produce as otherwise he generally grows the local paddy cultivars which yielded only enough for their livelihood. Witnessing the successful technology of HYV Sali Paddy he was eager for adoption of new technologies in his locality. Later on trials onlate sown Toria var *JT-90-1*, Green gram var *"Pratap"* was also conducted in the later years where he was able to get a whooping harvest from the crops. Mr. Mallah is a resourceful farmer in terms of Animals. Observing his resources in Animals he was supported with a *Mesang* type Goat house, a Betel cross breed buck was provided for upgrading the local goats. Along with the demonstration and trials he was also technically guided by providing trainings on different topics from time to time on different topics. Different demonstrations on forage crops were also undertaken in his field as fodder scarcity during the lean period

Key results:

Mr. Mallah is a hard working farmer after adopting the new technologies have received a whooping production of 9.6 q from Ranjit paddy which is much more as compared to his earlier harvest obtained from the same piece of landwhich boosted his confidence on scientific cultivation technique. He showed interest in the use of hisresources to the maximum possible extent, where he went for Toria cultivation var. *Jeuti* under double cropping after Paddy cultivation and Green gram var. *Pratap* where he got an extra income after the sale of the produce of 1.14 q of Toria and 0.80 q Green gram where he got the extra income which was used for his livelihood promotion.

The Betel cross breed buck was used by the nearby farmers for service to their female Goats have given an extra income for his Buck along with the benefit of Beetle cross kids from his local Goats which have given him Betel cross kids, that fetched a good income.

Today, optimistically he is earning his livelihood using his available resources, growing diversified crop such as Sali paddy, Boro paddy, Toria, Potato, Blackgram, Betelvine etc. At present, he is having 3 numbers of cows, 7 numbers of goat and 20 backyard poultry. His surplus income is about Rs. 1,40,000.00 out of which Rs.40,000.00 is earned from crop sector and Rs. 1,00,000.00 from livestock sector after fulfilling the daily needs of 7-member family. Mr. Dinnath Mallah is now a regular visitor of KVK, Dhemaji with a smile of satisfaction.

Impact:

Mr. Mallah is now a progressive farmer in the locality with a hard-earned respect among the farming community of Dhemaji. He has been in contact with KVK, Dhemaji since 2011 and has motivated many young farmers to take up the new improved technologies in farming. His age long experience in farming has given him the much needed confidence to take up new technologies according to his farming situation and the market demand. His confidence has motivated a group of farmers for farming in his locality.

***Lessons learnt*:**

A marginal farmer with very limited resources can be directed towards success after analyzing the need of the proper technology and channelizing the resources towards achieving success and sustainability in farming.

Supporting images:

Mr. Dinnath Mallah with a handful harvest

Demonstration on IPM in Paddy

Trials on Green gram var. *Pratap*

Trials on Toria var. *Jeuti*

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Mr. Nirmal Borah- A success in diversified farming

Challenges:

Mr. Nirmal Borah son of Mr. Mileshwar Borah resides in Borpathar area of Silapathar under the Sissiborgaon development block of Dhemaji district. Mr. Nirmal Borah, a 52-year-old farmer primarily engaged in farming with a total land holding of 2.40 ha land, out of which he has a farm land of 2.14 ha. The farm land is used for local paddy cultivation in 1.03 ha of land and the rest 1.11 ha of land is used for cultivation of seasonal vegetables and fruit crops including Banana, Assam lemon and other fruit cropsin traditional *Bari* system. Inspite of his hard work, he earned minimal return from his farm due to poor management and unscientific practices leading to frequent pest and disease infestation. A part of his livelihood also comes from dairy and indigenous poultry rearing in open without scientific feeding management for which they are frequently infected by common diseases due to poor management for health and hygiene. He could hardly earn an annual net income of Rs. 80,000.00 from his farm activities. He completed his institutional study up to HSLC Mr. Borah heads a 5-member family, consisting of his 3 daughter and his wife.

Initiative:

Mr. Borah came into contact with Krishi Vigyan Kendra, Dhemaji through a local NGO, hearing about KVK; he approached the office during 1st quarter of 2014 and showed his interest on cultivating fruit crops and other vegetables. He also requested the KVK scientist to visit his farm for supervision and advice. Looking at his interest in farming along with his interest for innovations in Agriculture, Mr. Borah was then exposed to new improved technology through exposure visits to B. N. college of Agriculture, Bishwanath Chariali, Horticulture Research Station, Kahikuchi, Guwahati and C.V.Sc, AAU, Khanapara during the year, 2014conducted by KVK, Dhemaji. He was passionate enough to adopt new technologies which he witnessed during the exposure visits and looking at the interest of the farmer on the newer technologies, Krishi Vigyan Kendra, Dhemaji decided to conduct a demonstration on *Papaya cultivation var. Red Lady* at an area of 0.043 ha with 50 plants during 2015 to introduce the crop as a fruit in the front yard *Bari* of Mr. Borah which happens to be in the close vicinity of the village approaching road. He was satisfied with the technology which was 1st of its kind in the district and thereafter he maintained his connection with KVK andattended many trainings. During, the year 2018 Mr. Borah was given 15 no. of Vanaraja chicks for demonstration purpose as backyard poultry is one of the important livelihood options for most of the rural families in the district and poultry rearing can enhance household food security and contribute to poverty reduction through provision of supplementary food, employment and generates additional income by sale of eggs and meat. He was also taught about various vaccines, medicines and other supplements to be

given to the birds time to time and also various managemental aspects on scientific poultry rearing. He completed his demonstration programme successfully and grew more interest for rearing the same with more numbers of birds. He then procured 100 nos. of Vanaraja chicks of his own from a poultry dealer in Guwahati in the month of June, 2019.

Key results:

Mr. Borah has been in direct contact with KVK, Dhemaji since 2014 and is presently maintaining his farm efficiently under the guidance of KVK, Dhemaji. After his initial success in Papaya cultivation with an average yield of 3.50 kg per fruit earning him a net income of Rs. 38,000.00 from 50 plants. In the later years he himself have cultivated Papaya var. R*ed Lady* covering 0.40 ha area, from where he was able to receive a handsome amount of net income. He has continued Papaya cultivation since thenand is now a regular fruit supplier of the local market

In rearing his birds with sincerity and dedication maintaining all required bio-security measures and maintains standard managemental practices. Age the age of 6 moths, the average weight of female and male birds was 2.0 and 3.50 kg, respectively. There were 57 nos. of male and 38 nos. of female birds at his hand on 6^{th} months of age, when the female started laying eggs. At that point, Mr. Borah sold 52 nos. of male birds @ Rs. 300.00 per kg of live weight and earned Rs. 46,800.00. He kept the other male birds for breeding the female birds. On the other hand, the hen started laying egg and on an average they laid 21 nos. of eggs per day for last 6 months. The size of the eggs was bigger than the eggs from indigenous birds and colour was brown like the local one. Therefore, the people are happy to pay Rs. 10 per egg like local eggs and even there was higher demand for it in the locality. Mr. Borah earned a total of around Rs. 35,000.00 by selling the eggs in 6 months in addition to his house-hold consumption. During the entire period he earned around Rs. 45,000.00 as net profit from after considering all the expenses and his monthly income comes about Rs. 3750.00 per month from the exercise in addition to his normal income from other Agri-Horti based activities. In addition, presently Mr. Borah has 5 nos. of male and 33 nos. of female birds, whose value would be around Rs. 25,000.00

Impact:

Mr. Nirmal Borah is highly pleased from the results of the programme and he became an example for the fellow farmers of Silapathar area. He has crafted the path for a sustainable agriculture through diversified farming. Papaya consumed as a fruit is a new introduction in the district and witnessing the demand of the crop in the local market many fellow farmers have come up for cultivation of the same.

The performance of Vanaraja birds in terms of the age at the point of laying, weight of the birds, weight and colour of eggs and average egg production. People of the locality

also highly appreciate Mr. Borah for carrying such a noble way earning and many of them already bought fertile eggs from Mr. Borah and hatched chicks of Vanaraja by using their own broody hen.

Thus, rearing around 100 nos. of Vanaraja birds under backyard system can be a good income source for a small family that will, in addition, ensure high quality protein production and nutritional security for the family members and also provide sustainable livelihood for poor landless, small and marginal farmers of the district. Mr. Borah also narrated his success story of Vanaraja bird rearing in a radio programme broadcasted by All India Radio, Dibrugarh, which may become a source of inspiration to many others.

Lessons learnt:

Intervention of proper technologies based on need analysis bringssuccess.Diversification of crops and enterprises in a weather dependent agriculture helps in minimizing the risk in farming. Capacity building and acquittance with the new technologies along with the availability of quality inputs are the major key points of success.

Supporting Images:


Vanaraja birds under backyard rearing system


Scientific cultivation of Papaya var. Red lady

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Aging with grace and respect: Mr. Dimbeshwar Hazarika

Challenges:

Mr. Dimbeswar Hazarika is a 62 years old person involved in farming since 20 years. He resides in Kamargaon village of Dhemaji district and owns 1.73 ha land, out of which he cultivates paddy in 1.06 ha and vegetables in 0.26 ha. Mr. Hazarika owns 2 pigs, 15 to 20 no. of poultry and 20no. of ducks for family consumption. He practiced traditional farming practices where his crops and animals were frequently infested by pest & diseases freezing his daily income to around Rs. 12000.00 per month which was too less to support a family of nine members including his Wife, Sons, Daughter-in-laws and Grand children's. He have a homestead garden of 0.20 ha area with *Som,* Coconut, Arecanut & Bamboo. In spite of a healthy resource, he is unable to obtain a handsome income mainly due to non-adoption of any scientific practices, ill managed crops and unscientific rearing of animals. The traditional mindset of the farmer sticking to the age old practices with injudicious use of chemicals were the major challenges to overcome.

Initiative:

Mr. Hazarika is an experienced farmer with a good resource who came in contact of KVK, Dhemaji during 2017 and after analyzing his situation and farm he was advised to go for Multiple as well as Integrated Farming System (IFS). Based on that,he tookan adjacent 0.13 ha land on lease.Interventions were initiated in the homestead garden by advising him to go for intercropping in between the Coconut & Arecanut plants, he rightly followed the advice and planted Assam lemon & Thailand Ber in between. He has also initiated growing of Tapioca & Maize for animal feed. He also cultivates year-round vegetables in an area of 0.26 ha, where he himself sell the produce weekly in the market. He was adopted under the PKVY project and was supported through the IARI- NEH component by providing seeds of seasonal vegetables. He continuously engage his 0.26 ha area of farming in cultivating short duration vegetables. Studying his land situation he was advised for early season potato cultivation of the *Pokhraj* variety, which he have continued for the last 3 years capturing the early market. A trial on Bio-fortified Sweet potato consisting of two varieties was given to him observing his skills in marketing. He was also given a demonstration on "*Low cost vermicompost production technology".* He was also supported with trails such as "*Kuchia culture in cemented tank"* and "*Rearing of Japanese Quail"* which increased his income manifold.

Key results:

Shifting from cultivation of traditional paddy varieties to HYVs have increased the surplus production to 18.00 q, which is an additional income to the family left out after the family consumption earning an amount of Rs. 30,000.00. The net income from seasonal

vegetable cultivation is around Rs. 56,000.00 by the end of the year 2020-21. The income from homestead garden by selling Assam Lemon, Betelnut and Thailand Ber is around Rs. 5000.00. The income earned by selling eggs and meat from the backyard poultry is Rs. 20,000.00. Mr. Hazarika is also able to sell 4 piglets @ Rs.4000.00 earning an amount of Rs.16,000.00 and 2 pigs for meat purpose earning Rs. 24,000.00.

Mr. Hazarika is a regular *Muga* rearer for which he has a *Som* plantation in 0.26 ha area, from where he is able to earn an amount of Rs. 35000.00 annually. *Mr. Hazarika* has a fish pond of 0.13 ha from where he is able to earn an amount of Rs.25000.00

The results and farm products of Mr. Hazarika's farm from last three is gradually been increasing since 2018-19 as the details given below

Sl. No.	Head of Income	Net Income (Rs)		
		2018-19	2019-20	2020-21
1	Paddy	12000.00	22000.00	30000.00
	From vegetable cultivation (leafy vegetable, Chilli etc.)	22500.00	35300.00	56000.00
2	By selling of Fish @ Rs. 180/kg(Av.)	6000.00	20000.00	25000.00
3	By selling pig @ Rs.180/kg	12000.00	20000.00	40000.00
4	Muga cocoon	20000.00	30000.00	35000.00
5	Vermicompost	0.00	2000.00	10000.00
5	Fruits (Assam lemon, Banana)	500.00	1500.00	5000.00
	Total Income (Rs.)	**73000.00**	**130800.00**	**201000.00**

Impact:

So, far market integration is concerned, earlier Mr. Hazarika as a small vegetable grower used to bring his produce for sale at different market points. Once, he started growing vegetables commercially in large scale, the neighboring vegetable vendors came to know about his produce and quality and vendors directly comes to his field for purchasing the produce. His sales his produce to the vendors directly and earns a good amount. Now he is a model farmer and entrepreneur of that locality.

Mr. Hazarika is now earning near about Rs. 2.01 lacs annually from his farm. His services are being used for sharing his experience on field and as well as vegetables cultivation with other farmers in order to motivate them. He has become a role model for other farmers in the area.

Lessons learnt:

A marginal farmer with all the resources could easily be driven towards success through integration of all the resources. When farming is done in integration with nature, the peace, happiness and success we get from farming is not comparable to any other business in the world.

Supporting images:

Cultivation of *AhiniaKachu*

Cultivation of Sugarcane

Fish rearing in captive culture

Vermicompost production unit

Rearing of *quail* poultry

***Kuchia* (eel fish) production unit**

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Deep Jyoti Tamuli: A successful dairy farmer

Challenges:

Alongside agriculture livestock rearing is the major mean of livelihood among the farming community of Dhemaji district. Pig rearing is main livestock activity practiced by the farmers of the district as more than 47% of the total population of the district belongs to tribal community and around 90% of the populations are non-vegetarian. Commercial dairy farming is at very primitive stage due to various factors like poor economic condition of farm families, non-availability of quality breeds of cow, feeds including green fodders and less interest of the tribal people towards dairy farming though they use to keep large numbers of indigenous cows with very less milk production potentiality. As a result of the campaign made by KVK Dhemaji and efforts of the Department of Veterinary and A.H., a very few farmers especially youths are coming forward for commercial dairy farming in the district in the nearby town areas of Silapathar, Dhemaji and Gogamukh.

Mr. Deep Jyoti Tamuli, 27 years old, resident of Aradhal near Dhemaji town is one of such growing dairy farmer. The economic situation of his family was not much sound as his father has been working as part-time carpenter and he was the eldest sibling of his family with one younger brother and three sisters. His family had only 6 bighas of farm land only for cultivation which was not sufficient to run the family. He could continue his education up to X^{th} standard only and then he had to sacrifice his institutional education to support the study of hisbrother and sisters for which he started livestock farming.

Initiative:

Initially he started a small piggery unit with 6 nos. of sows and a small dairy farm with 2 nos. of cows including a cross bred Jersey. Almost five years back from now, during 2015-16, he came into contact with the KVK, Dhemaji, when he had one cow of local breedand a cow ofcrossbred in his farm, and could produce 4-5 litre of milk daily. Unfortunately, during that time, once he got a sudden shock as he lost all pigs due to attack of some diseases. Then his interest was inclined toward dairy farming.

Observing his interest, KVK suggested him for cultivation of good quality fodders and supported with supplying some planting materials of Napier grass and seeds of Oats through demonstration programme so that he could arrange enough green fodder required for the year-round, especially during rabi season when there is scarcity of fodder in this part of the state. He grabbed the opportunity with both the hands and successfully cultivated and expanded his perennial fodder garden to almost 1.5 acre of area. Technological backstopping has been given to him regularly by the KVK Scientist.

Later on, he managed to purchase a second-hand power tiller from his savings and engaged in paddy cultivation in his small land holding and also could able to earn some amount by ploughing in the paddy field of others farmers onrent basis. He was also sent for a month long training programme on 'Repairing of power tillers and other agriculture tools' at SIRD training centre at Kahikuchi, Guwahati by KVK Dhemaji. After attaining the training successfully, he has been working as part time mechanic to repair the power tiller in nearby locality. Gradually he had procured two new Jersey crossbred cows and got two Jersey crossbred heifers in his farm by AI technique. Thus, he has six cows in his farm and arranged in such a way that 3-4 nos. of cows remains on lactation throughout the year. He also used to keep 5-6 nos. of goats in his farm alongside cows for meat purpose which served for him as ATM in true sense.

Key results:

The capacity of his farm production increased to 25-30 litres of milk per day throughout the year. He has already purchased a scooty for distributing milk. Mr. Tamuli is delightedly engaged himself in daily routine starting at 4.30am doing all his farm works by himself including farm cleaning, milking, feeding of cows and growing fodders and even distributing his farm produced milk daily in door to door basis riding his motor cycle. His hard working attitude and the honesty in maintaining milk quality paid high dividend to him. He never faced any problem in selling the milk produced in his farm.

Now, Mr. Deep Jyoti Tamuli earns a handsome amount of Rs. 7,20,000.00 as gross income annually and thereby Rs. 35,000.00 net income per month. He is able to run his family cheerfully. His success in dairy farming is visible from the fact that his brother and one of his sisters completed education with MBA and could engaged themselves in their own fields comfortably.

Impact:

Mr. Deep Jyoti Tamuli really sets an example of self employed rural youth through dairy farming and entrepreneurship instead of waiting for government jobs or travelling from state to state in search engagement in private companies for livelihood. He might be a model farmer for attracting and retaining rural youth in farming sector in the district. This is a matter of pride for KVK Dhemaji that he always acknowledges the services received from KVK and the guidance for showing the path of success.

Lessons learnt:

Small-scale dairy farming can be a very honest and comfortable way of livelihood if it is carried out in very planned and organized manner.

Supporting Images:

Oat grass at Mr. Deep Jyoti's field

Carrying of Oat grasses by Mr. Deep Jyoti from his field to the dairy shed

Harvesting of grasses by Mr. Deep Jyoti Tamuli

Feeding of Oat grasses by cows at his house

Milking of cows by MrTamuli

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Mr. Jitu Sonowal Success in mix farming

Challenges:

Agriculture is the main source of livelihood for the people in Dhemaji district and around 85 percent of the population is directly and indirectly dependent on agriculture and allied activities. Land holdings of most of the farmers are not much and the rice cultivation is totally dependent of rain water leading to very uncertain income for sustainable livelihood. Mr. Jitu Sonowal, S/o. Mr. Lalit Sonowal, village-Salakhani, P.O.-Silapathar under Sissiborgaon ADO circle, Dhemajiis also such a farmer. He is having 1.47 ha of land area out of which he cultivated rice in 1.07 ha and rest amount of land was occupied by beetelnut, small scale vegetable cultivation for fulfilling household requirements. He also reared one pig every year for meat purpose and earned around Rs. 8,000.00 to 9,000.00 per year. Though he is very hard working farmer, he could not able to run his family in comfortable way to his satisfaction. All total Mr. Jitu earned about Rs. 75,000.00 in the year 2018-19 from which he could hardly manage his family's livelihood, consisting of 2 girls child and wife.

Initiative:

By the time Mr. Priya Sonowal, one of his fellow farmer of the same village, become very successful pig rearer and his IFS unit under TSP Project implemented by Krishi Vigyan Kendra, Dhemaji was a success story of the area. Mr. Jitu Sonowal was very interested in pig farming and already has been rearing pigs of local type by tethering method. He approached the KVK Dhemaji office seeking advice for pig rearing in scientific way and looking for a good breed of piglet to rear. By seeing the interest of Mr. Sonowal Krishi Vigyan Kendra selected him for conducting an On Farm Trial (OFT) on Scientific rearing of improved pig breed- HDK75 in the year 2019-20 and gave 3 numbers of piglets of the above breed consisting of a male and two female and encouraged him to rear it for breeding purpose. He took the opportunity with both the hands and made a pig shed with concrete floor and started rearing the piglets with utmost care and sincerity.

At the same time Mr. Jitu came in contact with other scientists of KVK and got advice in various aspects on rice and vegetable cultivation. He startedsowing HYV rice varieties and also used the land area for vegetable cultivation basically used for rice cultivation after harvesting the rice. He started cultivating pumpkin, cucumber, cowpea, ground nut *etc.* in the fields after harvesting rice; thereby he converted all of his cultivable land to double cropping system. He also planted areca nut in the available land between the beetalnut plants. With the technical inputs from KVK he also started a low cost vermicompost unit in his backyard and the produce of the unit is used in his vegetable fields. Adopting the concept of pig breeding farm he also started goat breeding farm, which was mainly used for meat purpose earlier.

Now the things have been changed for Mr. Jitu after coming in contact with the scientists of Krishi Vigyan Kendra, Dhemaji through the OFT programme on piggery. Due to his hard work and sincerity he reaped success in every crop he cultivated due to timely required advice from KKV scientists in terms of crop and variety selection and other managemental aspects as well as disease and pest control measures.

Key results:

Adopting the HYV of rice he earned around Rs. 35,000.00 from the area of 1.07 ha. By cultivating pumpkin in 0.39 ha. of land after harvesting rice he earned about Rs. 25,000.00. In the same way by cultivating cucumber and cowpea in 0.13 and 0.067 ha of land, post rice harvesting, he earned about Rs. 20,000.00 and Rs. 15,000.00, respectively in last year. Mr. Jitu also earned Rs. 30,000.00 from 50 numbers of beetalnut plants and Rs. 6,500.00 from 60 numbers of arecanut plants and an amount of Rs. 8,000.00 from king chilli planted as inter-cropping with beetalnuts. The major share of his income in the last year came mainly from animal components i.e. piggery and goatery. He sold 4 nos. of goats earning around Rs. 25,000.00 and still a total of 10 nos. of goats are with him. He also earned about Rs. 45,000.00 as net income from selling 12 numbers of piglets of HDK75 variety and still have 2 sows, a boar and 3 nos. of piglets in his farm. Thus, his annual income in last year became around Rs. 2,10,000.00 from all the components and running his livelihood in very comfortable condition.

Outcomes:

In a span of 2 years, the annual income of Mr. Jitu Sonowal increased by around 1.8 times and he now became a model farmer to the people of that area and expected to be followed by fellow farmers of the area like he had followed Mr. Priya Sonowal earlier.

Impact:

With hard work and dedicated efforts of Mr. Jitu Sonowal, his entire cultivable area comes under the cropping intensity of more than 200% and in the same way the yearly earnings also becomes double folded, which become a living example for the farmers of that locality.

Lessons learned:

Nothing is impossible for a person who believes in hard work, dedication and sincerity.

Supporting Image

Cultivation of Betelvine

Cultivation of Pumpkin

Cultivation of Cowpea

Cultivation of Cucumber

Pig farm, piglets, iron supplemetation of piglets and ceremonial ditsribution of piglets to farm women under FLD programme of KVK

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Muga rearing: A profitable venture in Dhemaji district

Challenges:

In Assam, Sericulture is an age-old traditional cottage industry. Next to agriculture, Sericulture is the major agro-based industry generating large number of employment in the rural areas of Assam with minimum investment cost. It plays a very vital role in the socio-economic development of the weaker section of the rural population especially during their off-agricultural season.

Dhemaji occupies a unique place in the production of different kinds of silks *i.e Pat, Muga* and *Eri* - which have a very high demand in the national and international markets. **Muga silk** (*Antheraea assamensis*) and **Eri Silk** worm rearing (*Samiacynthiaricini)* and production of silk yarn and fabric is wide spread amongst the people of Dhemaji. However due to lack of proper infrastructure and appropriate marketing facility this industry has not been exploited to its full potential.

In the year 2014 efforts has been taken by KVK Dhemaji under the project Tribal Sub-Plan to promote scientific Muga rearing among the tribal farmers of the district. A number of 120 tribal farm families were selected for the programme from four different blocks (Cluster) of the district namely Machkhowa, Bordoloni, Dhemaji and Jonai where muga rearing is practiced traditionally. A village level committee was formed for smooth running of the programme covering each cluster. In each cluster, a meeting was organized to discuss the prospects and constraints of muga rearing with the selected farmers. It was found that acute shortage of quality mugadfl and lack of mechanized post cocoon operation poses threat to the sericulture enterprise. Also, gradual decrease of host plant farms limits wide scale rearing. To address these problems, few measures were taken under the Tribal Sub Plan of KVK Dhemaji to facilitate muga rearing and post cocoon operations in large scale.

Initiative:

To overcome the shortage of quality seeds, convergence was made with Central Silk Board, Muga Silkworm Seed Organization, Boko to supply muga seeds as per different rearing seasons. Seeds were distributed to each rearer. Arrangement was made to visit of muga fields by the Scientist from Central Silk Board. They interacted with the farmers and discussed various issues faced by the farmers at field level while rearing. The rearers were provided with host plants along with some small implements needed for rearing of the muga silkworms along with Bird Scarring Nylon nets that were used in the host plants during rearing to protect the farms from predatory birds thus minimizing considerable loss in rearing process. As availability of host plants is a paramount for Muga rearing, trainings were conducted at cluster levels for rejuvenation of the old farms along with the care and management of the old trees.

The clusters were also facilitated with four Community Reeling and Spinning centres in order to speed up the post cocoon operations, where various spinning machines, tools and utensils were provided for reeling and spinning of both muga and eri cocoon. Provision for both manual and electrical operations helped the farmers to increase the yarn production without any power problem.

Key points:

The harvesting occurred after 25-28 days of rearing and farmers were encouraged due to successful result. Instead of various difficulties, Mr. Mohan Hazarika and Bimal Hazarika from Batgharia cluster reported more 15000 harvested cocoon from 200 gm seeds.

Addition of the community reeling and spinning centre along with the supply of quality seeds to the rearers have facilitated the rearers in efficient post cocoon operations. The farmers also went for value addition of muga cocoon through yarn and specific muga dresses. Yarn production through traditional reeling practice is time consuming, laborious with low yield or output. With the availability of these reeling centres people see new hope towards muga rearing and its marketing.

In order to speed up and facilitate mechanized post cocoon operations, were developed at Bordoloni, Machkhowa, Jonai and sissiborgaon under the TSP programme. A training programme was organized to make the farmers familiar with various operations while handling the machines and implements.

Impact:

Increase in number of muga rearers: In every cluster the number of rearers increased due to interventions taken under TSP programme. For example, in Borbilla Bhebeli cluster the no. of rearers increased from 30 to 46 within the period. In Boikuhapur cluster under Jonai block also reported increase in mugar earer from 20 to 31 and more people are willing join under the project.

Increase in host plant raising: To increase the number of host plants and rearing farms 15000 (Fifteen thousand) Som saplings were distributed under the programme. This enables to add newer farms in each cluster and after six years the planted sapling will be ready for rearing.

Ease of yarn production and value addition: A major change in the sericulture trade is observed as people went for yarn production instead of directly selling the cocoons at lower prices. Due to the availability of mechanized facilities at the Community reeling and spinning centres, the cocoon producers now able to produce muga yarns at subsidized rates. This enable the rearers to fetch higher prices and thus increased economic return from the enterprise.

Lessons learnt:

Sericulture being one of the major factor of economic growth of the district, the rearers get the economic income with very limited source of resources as along with the poor economic status the traditional method of reeling involves lot of hard work which also detoriate the quality of the final product. With the introduction of the new methods of reeling the laborious work of the rearers have been minimized and able to earn a good return through value addition of the yarn whereby the farmers are able to fetch more price for their product. Thus, increasing the capacity of the farmers by facilitating them with the required inputs have given new hope of increasing the income.

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A successful Woman Entrepreneur of Dhemaji District:

Mrs. Bhabani Kachari

Challenge:

Women play important roles in bringing up the family with their continuous effort in almost all spheres of family living. Besides their routine household activities rural women used to be busy mostly in handicraft activities which fetch less earning to their family income. The women of the Jalakiasuti village were not aware of other income generating activities which can be operated from home without many resources. Mrs. Bhabani Kachari, a young women farmer who was found interested towards newer activities to increase her family income. But due lack of proper know how and technical support she could be able adopt any income generating activity before being came contact to KVK Dhemaji.

Initiative

Considering situation of women farmer of the village KVK Dhemaji has planned to carry out various diversified livelihood options through training, demonstration to farmer and farm women. To impart specific skill for entrepreneurship development, vocational training on carpet making, pickle preparation, textile dying and printing, mushroom production etc. were provided to the farm women groups where Mrs. Kachari had actively participated. After getting the training she had started production of carpet and other value added textile material from her home. She also produced homemade pickles from locally available fruits and vegetables together with her SHG members.

To impart more advanced training she was sent to participate in the Three month certificate course on textile dying and printing at AAU, Jorhat for skill manpower generation. There she learnt various advanced skill and technology of producing value added textile products through dying and printing.

Mrs. Kachari also got the opportunity to various textile units at Jorhat under the TSP project of Deptt. of Textile and Apparel Designing, C.Sc, AAU, Jorhat in the year 2019-20. After this visit she was given one modern handloom unit under the project and subsequently training was provided on production of value added textile products from jacquard loom.

Key results:

After going through newer exposure and training, Mrs Kachari able to produce diversified items like carpet, tye & dye products, pickles, mushroom etc. Till now she has alone prepared 100 nos. of small carpets from which she sold 80 pieces garnering more than Rs. 24,000.00. She also sold tie and dyed duppattas (40 nos), block printed rumal pieces(25), pillow cover(30 nos). She also weaved traditional dresses like *Riha*, *Mekhela*, *Gamosa* other *muga eri* products etc and sold it to near locality. She is also known for use of natural colours in preparation of various textiles items. From the intervention under TSP project she developed the skill of producing household linen items like cushion cover, table mat, window curtain with traditional motifs. In the year2019-20 she earned Rs. 79,000.00 from selling various textile and handloom products.

She also engaged in mushroom cultivation, vermicompost production for additional income generation. Her year wise income has been recorded below:

2016-17	2017-18	2018-19	2019-20	2020-21	Percent increase
43200.00	58800.00	73400.00	93600.00	84600.00	195.8%

Weaving and other activities including carpet making are indoor activity with minimum resources as well as scope of higher market potentiality. These activities are very rewarding as it converts the free time of farm women to engage in profit making ventures. Thus opting these activities Mrs. Kachari diversified her product portfolio and could able market her produce at different platforms like fair, hut, exhibition etc. Her ventures are many time visited by Scientist from AAU, Jorhat, District Officials and other SHG groups..

Impact:

Inspired by the example of Mrs. Bhabani Kachari other women SHG's are coming towards carpet and other handloom product making in the locality of Silapathar area. In this course she conducted four vocational training to different women SHG groups on textile dying and carpet making. Few of the trainees have started producing carpets and dyed material regularly and sell it to nearby markets, fairs etc. She was awarded as Best Dry Land Farmer Award 2015-16 for adoption of Climate resilient technologies by CRIDA, Hyderabad. She was also felicitated as progressive women farmer in many occasions at the Districtand invited to interact with women groups by various agencies. Now she is a progressive women leader running a VO group under ASLRM Dhemaji and also a Bank Mitra.

Lesson learnt:

Though agriculture and the allied activities are the key income sources for the farm families but other income generating activities can also play vital role. Some of these activities may be very new for those village women but provision of training and other physical inputs will help to attract and retain the farm women. Moreover these activities are suitable for the women SHG groups as they can produce and market their produce in more structured way and broader platform.

Supporting images:

Mrs. Kachari participated in Carpet making vocational training

Active participation in pickle making vocational training

Production of carpets at own home

Participation in Vocational training of Carpet making

Providing training to farm women on textile dying

Letter of appreciation from DRDA, Dhemaji

Contributors:

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Sustainable income through vermi-compost production

Challenges:

Sri Raju Bhajani, resident of Nilakh Tarani Pathar village, Sripani panchayat of Dhemaji District was a common farmer like other villagers. Before come into contact with KVK Dhemaji he used to cultivate local paddy and vegetables in homestead garden. He used cow dung for cultivation of paddy and other vegetables, which was not sufficient for total land holding. He also used chemical fertilizers for paddy as cow dung was not available. He has all inputs for vermi-compost production but he was not aware of the scientific production. Thus, lack of awareness to required technology and poor economic conditions were major impediment towards sustainable farm income.

Initiative:

In 2015, Mr. Raju Bhajani, village Nilakh Tarani Pathar visited to KVK Dhemaji, got training in Vermi-compost production. He was so happy with guidance of KVK Dhemaji that he immediately started Vermi-compost production at his farm/residence. He got 750 gm earthworms (redworms i.e. *Esenia foeitida*) from KVK, Dhemaji. Earlier he started Vermi-composting in open ground under tree shade; simultaneously he started vegetable cultivation also. The experiment was very successful. Next year he established well developed vermi-compost unit of 7x3x2.5ft with 3 beds with locally available bamboo, thatch and plastic sheet.

Key results:

Today he is producing about 4500 kg of vermi-compost per year from the said 3 beds. About 2500 kg vermi-compost is sold in the market @ Rs. 10.00/kg, earning Rs. 25000.00 /year. Rest 2000 kg of vermi-compost is used in his vegetable cultivation as well as crops crop fields (Rice, Toria etc.).

Sl. No.	Head of Income	Income during				
		2015-16	2016-17	2017-18	2018- 19	2019-2020
1	By selling of vermicompost @ Rs. 10/kg(Av.)	10,000.00	25,000.00	30,000.00	36,000.00	45,000.00
2	By selling earthworm @ Rs.1200/kg	-	7200.00	72000.00	9000.00	9000.00
3	**Total Gross Income (Rs.)**	**10000.00**	**32200.00**	**37200.00**	**45000.00**	**54000.00**
4	Total Gross cost (Recurring only)	3500.00	7000.00	1200.00	1200.00	1200.00
5	**Total Net Income**	**6500.00**	**25200.00**	**36000.00**	**43800.00**	**52800.00**

Outcome:

Horizontal Spread Taking the lesson from Mr. Raju Bhajani, other farmers of the village are taking interest in vermi-composting. Presently 20 farmers of village Nilakh Tarani pathar have established vermi-compost units in backyard of their houses and are producing vermi-compost successfully.

Impact:

The success of any production system is basically depend on need, availability of inputs and marketing channels by which one can marketed with remunerative price by using locally available resources. The key to the success of organic farming system is the production of all inputs like, manures, plant protection etc. economics of vermi-compost production indicated that it is 50-57% economical enterprise as compared to costly chemical fertilizers. The low cost vermi-compost production technology is very farmer's friendly one and easily can be adopted by the farmer. Application of vermi-compost in crop field helps in maintaining soil health. The shortage of organic fertilizer in organic crop production specially in vegetable crop both in household and commercial level to a certain extent fulfilled by production of vermi-compost. Low cost production technology helps in availability of the quality compost in affordable price. It also helps the farmer in following integrated nutrient management technology in different crop

Lessons learnt:

The intervention of proper technologies based on need analysis brings the success. The capabilities of the farmer always depend on his availability of resources. The major difficulties faced were their poor economic condition which could be overcame by adopting him through demonstration programme. Creation of facilities in marginal and small farmer is very important. The problem of farmers are varies with different micro ecological situation. Thus, understanding the interest of the farmer, proper need analysis, selection of proper technologies, capacity building, technological backstopping and creation of facilities and availability of quality inputs and holding the unit based on capacity are the major key points of success.

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