

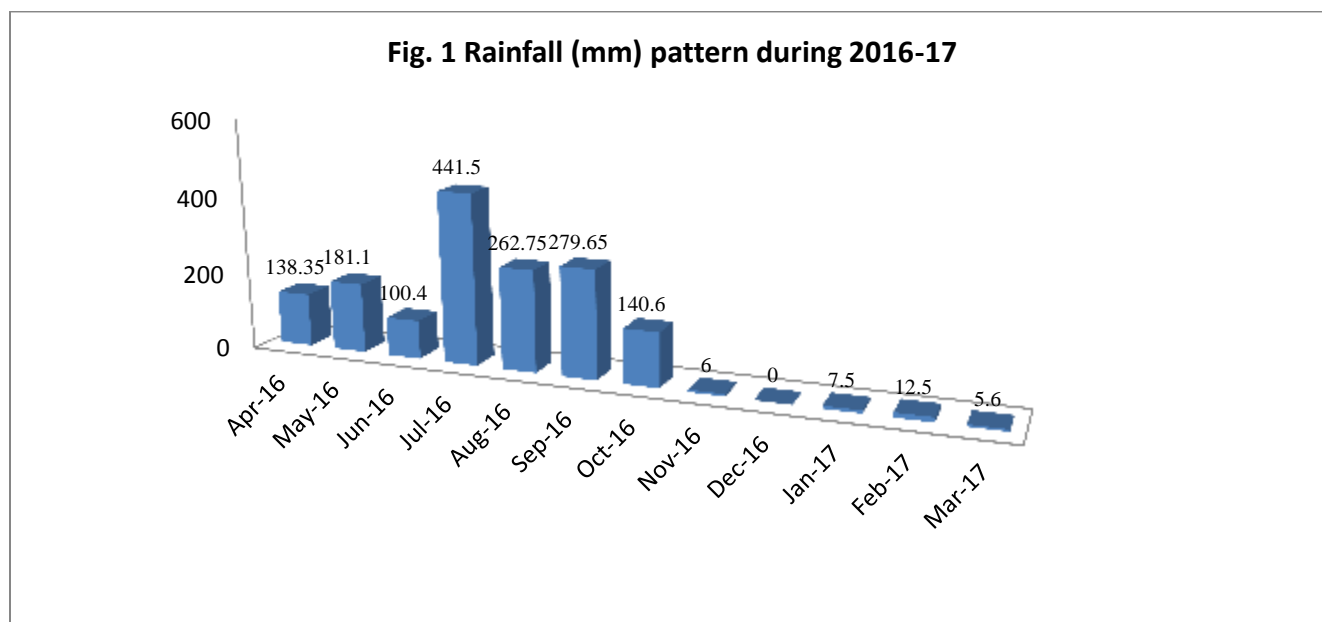
## SUCCESS STORY

### ROUND THE YEAR VEGETABLE CULTIVATION IN PROTECTED CONDITION

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#### 1. Situation analysis/Problem statement:

The productivity of vegetables in Ri-Bhoi district of Meghalaya are very low due to diverse climatic condition viz., high rainfall during rainy season, moisture stress, frost during winter season, poor soil nutrient due to losses resulted by the process of leaching, toxicity of heavy metal ions like iron and aluminium inflicts maximum losses to the crops. The rainfall pattern of recent year was shown in Fig 1 which affects on the productivity vegetables. Farmers produce good amount of vegetables like cucumber, capsicum, tomatoes etc during their main season which leads to market glut and fall in their price. The protective cultivation is the best alternative for regulating the above factors as per requirement of the crops in order to realize the maximum potential of the crops. It also helps in raising good quality nursery of crops and also protect the crops from extreme and unseasonal weather conditions. Polyhouse technology also helps in providing quality products, off seasonal production of jobs, increases production, minimise disease and pests attacks, increases growth rate and life span of crops.



#### 2. Plan, Implement and Support:

- ❖ KVK Ri Bhoi has decided to introduce low cost polyhouse technology for off season production of vegetables in Kyrдем village. Kong Biona Lymphuid and Kong Daialin Lamare, two women farmers from Kyrдем village were very successful in their endeavour. In the past, the nursery of different crops were not raised under protected condition. Thus, the nurseries were under risk of damage from heavy rainfall and hailstorm. There were times when the farmers had to raise nursery for the second time if the first one fails. This leads to loss of time, money and other resources. But under polyhouse, the nurseries were being protected from all weather aberrations as well as from many insect and pests. Cucumber, capsicum, broccoli, lettuce and tomato were remunerative crops for polyhouse cultivation in this area. Capsicum and broccoli were also high value crops and thus they helped the farmers

in getting additional income. The nurseries of crops like tomato, cabbage, cauliflower, chilli were also being raised in polyhouse.

❖ The training and demonstration of three low cost poly houses was done with vegetables like tomato, capsicum, brinjal, cabbage, bitter gourd etc were sown for nursery and vegetable purpose round the year. Low cost polyhouse was constructed using locally available bamboo, metallic wire for developing the frame. UV stabilized film of 200  $\mu$  (800 gauge) used for covering the roof and 75 per cent shade net on the side walls. The estimated cost of construction of a 100 m<sup>2</sup> size poly house varies between Rs. 15,000 to Rs. 18,000 i.e, the construction cost Rs. 150 to Rs. 180 per m<sup>2</sup>. While constructing the polyhouse the height at the center was kept about 2m and 1.5m at the side. In case of tomato and cucumber, proper staking was done with bamboo sticks and tying with rope. During tomato cultivation, prevalence of low temperature and high humidity causes severe infestation of diseases. Under polyhouse cultivation high yielding tomato variety Cheeranjivi, Megha tomato 2, brinjal (var. Chaya), bitter gourd (Abhishek), cabbage (Wonder ball), capsicum(Royalwonder) etc was sown and seedlings were transplanted in time.

❖ The literature and technical support in terms of consultancy, advisories, training, exposure visits to ICAR KVKs Instructional Farm, farmer and scientist interactions, field days were organized to showcase the technologies to the neighbouring farmers and villagers for large scale adoption.

### 3. Output:

The result showed that the vegetable production in protected condition round the year was increased by 138 per cent as compared to normal cultivation (Table 1). Similarly the net return, profitability was also increased by double in the technology demonstrated during last three years (Table 2) with the benefit cost ratio of 2.45

**Table 1. Vegetable production round the year**

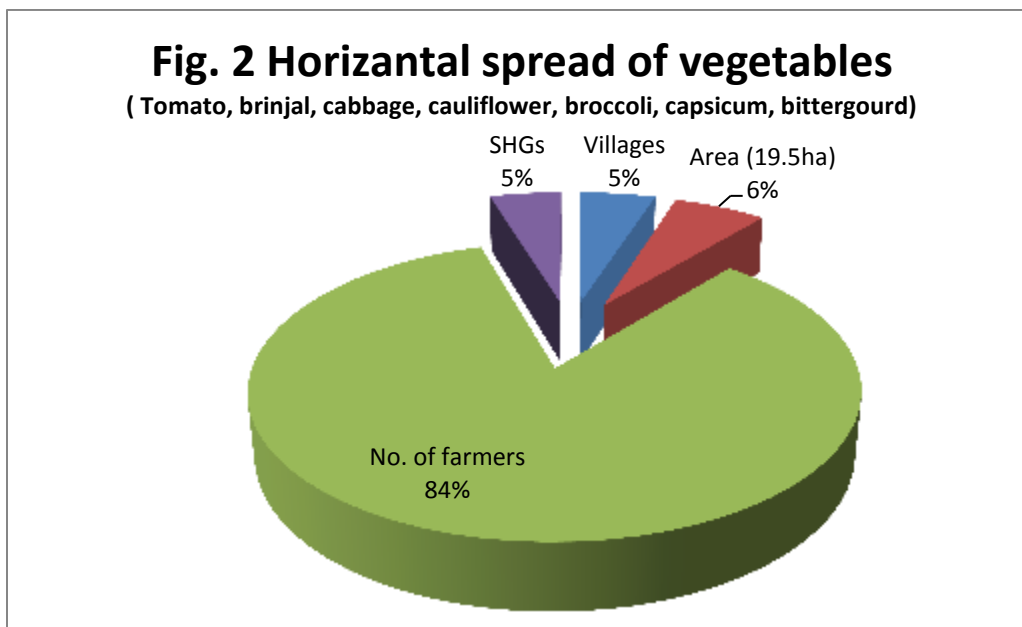
Crops	Variety	Yield(q)/unit /yr	Local yield(q/yr)	% increased in yield
Tomato	Megha Tomato-2	35	27.6	127
Tomato	Rocky	45	34.6	130
Brinjal	Chhaya	30	28	107
Bitter gourd	Abhishek	31	23	135
Cabbage	Wonder ball	120	90	133
Capsicum	Royalwonder	24	12	200
Capsicum	California Wonder	19.2	15	128
Lettuce	Grand Rapids	1	0.65	154
Broccoli	Pushpa	23.4	18.7	125
Cucumber	Malini	14	12.3	114
<b>Total</b>		<b>343.1</b>	<b>248.15</b>	<b>138</b>

**Table 2. Economic performance of round the year vegetable production**

Crops	Gross return(D) (Rs/unit/yr)	Gross return(L) (Rs/unit/yr)	Net return(D) (Rs/unit/yr)	Net return(L) (Rs/unit/yr)	% change in income/yr	B:C (D)	B:C(L)
Tomato	52500	41400	23800	12700	187	1.83	1.44
Tomato	45000	34600	21000	10600	198	1.88	1.44
Brinjal	45000	42000	18000	15000	120	1.67	1.56
Bitter gourd	46500	34500	16500	4500	367	1.55	1.15
Cabbage	60000	45000	25000	10000	250	1.71	1.29
Capsicum	36000	18000	21700	3700	586	2.52	1.26
Capsicum	28800	22500	13200	6900	191	1.85	1.44
Lettuce	1500	975	1000	475	211	3.00	1.95
Broccoli	35100	28050	16500	9450	175	1.89	1.51
Cucumber	21000	18450	5000	2450	204	1.31	1.15
<b>Total</b>	<b>514650</b>	<b>372225</b>	<b>304950</b>	<b>162525</b>	<b>188</b>	<b>2.45</b>	<b>1.78</b>

#### 4. Outcome:

The farmers were very happy with the technology as their crops were being protected especially during the nursery stage. The off season vegetables provided good prices to the farmer. Horizontal spread to 5 per cent SHGs of 60 members in 3 villages covering 19.5 ha (6%) benefiting 84 per cent of farmers (Fig 2)



## 5. Impact:

- ❖ This technology provides job opportunity and income round the year for the rural youths, farm women, school dropout etc and also for more income per unit of land. The technology of protected cultivation of vegetable including community nursery for higher productivity and income in large scale which might definitely help in doubling the farmers income. The large scale adoption (more than 75 % of beneficiaries and more that 55 % of non-beneficiaries) of the technology in Ri-Bhoi district evidence for the district in particular and in the state economy in general.

