

Success Stories/ Case Studies

Successful case studies written in scientific way have motivational value among different stakeholders. KVKs have documented successful cases/success stories on different enterprises and commodities. In addition, focus on enhancing farmers' income and fighting farm level stress as faced by the farmers is given while documenting cases. KVKs, SAUs, ICAR institutes and other line departments are taking efforts to increase the profit of farmers along with prosperous sustainable agriculture. In this context, successful cases on different aspects especially floriculture, organic farming, intercropping, protected cultivation, poultry farming, resource conservation, hi tech nursery, integrated pest management, sericulture etc. were documented.

1. Rural Women Became 'Atmanirbhar' through Vermicomposting & Nursery – KVK Ratnagiri

Mrs Harshada Rajendra Palaye, 38 years old woman and a resident of Kondye village in Lanja tehsil of Ratnagiri district is involved in family farming. She 7th class educated and her spouse got education up to 10th class. She has land holding of 4.0 ha. Her husband was doing the job in a private company in Mumbai. She was cultivating subsistence crops like rice, finger millet, horse gram etc. in the traditional way. Her farm income was very limited due to lack of knowledge and skill about improved agricultural technologies.

Intervention

The leaflet on “vermicompost in enhancing crop productivity” prepared by KVK Ratnagiri made her curious about this technology. She attended five days vocational training on vermicompost production at KVK Ratnagiri. KVK also linked her activity with the Department of Agriculture, Government of Maharashtra for accessing subsidy. She got a subsidy of Rs. 30,000/- for construction of shed (15x10m) in the year 2010. KVK also provided vermiculture of *Eisenia Fetida* sp. for demonstration. The capacity building programme and institutional linkages helped her to build confidence in agribusiness start-up.

Even, considering the opportunities in Nursery management, she has undergone training on Nursery Management at Krishi Vigyan Kendra, Ratnagiri. She started ornamental, fruit and forest crop nursery along with the vermicompost production. The Krishi Vigyan Kendra, Ratnagiri has helped to certify the mother orchards of fruit crops and getting a license. Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli has certified the mother orchards. The Department of Agriculture has registered the nursery and issued the license.

Outcome

At first she prepared vermicompost of 5-6 tons and sold it at nearby villages. Approximately, she earned Rs. 50,000/-. After reaping an economic benefit, she felt that there is a huge demand for vermicompost due to awareness of organic farming in farming community. Therefore, she decided to expand her small-scale activity into a commercial business venture. She joined a Self-Help Group named -*Shri. Samarth Shetkari Swayamsahata Gat* consisting of five male and five female farmers. She sold vermicompost under trade name of Self- Help Group. The vermicompost prepared by group was available in 1 Kg, 5 Kg, 10 Kg and 40 Kg polybags. She used to take part in conferences and exhibitions organized by different agencies at district places and cities like Mumbai and Pune for publicity. Now, Shri Samarth Vermicompost became a brand name among the farming community in the Konkan region. At present, she achieved production capacity of more than 100 tons per year. She has a turnover of Rs. 12 lakh per year. She has employed 7-8 people in Kondye village.

After getting a grand success in vermicompost production, Mrs. Harshada moved to the idea of the ornamental nursery. Vermicompost is the main media for growing ornamental plants and the other reason behind starting ornamental nursery was the demand of ornamental plants in Mumbai for terrace gardening. Considering this opportunity, she has started ornamental, fruit and forest crop nursery. Initially she prepared 1000 vegetable seedlings and sold in the weekly market. After getting confidence,

she constructed polytunnel for preparation of grafts. Since last 3-4 years, she is producing about 10,000 grafts of cashew (Var. Vengurle-4), 4000 of Mango (Var. Kesar & Alphonso), 1000 Coconut (Var. Banavali) and 500 Kokum fruits crops. She is preparing about 2000 rose and 5000 Sonchaffa grafts

and around 30,000 agroforestry crops saplings viz. teak, Khair, sandalwood, bamboo, *Acacia mangium*, Aonla and Gulmohar (*Delonix regia*). She is selling these grafts and seedlings under the same trade name of Shri Samarth Shetkari Nursery in entire Konkan as well as in western Maharashtra.

Table 1: Economic Status of Agribusiness Startup

Name of Startup	Production capacity	Selling rate	Turnover/Year Rs.	Production Cost Rs.	Net profit Rs.
Vermicompost production	110 tons	Vermicompost @ 12 Rs/Kg Vermi-culture @ 500 Rs/Kg	13.50 Lakh	7.50 Lakh	6.0 Lakh
Nursery management	Mango-4000	100 Rs/graft	4.0 Lakh	10.05 Lakh	6.70 Lakh
	Cashew-8000	100 Rs/graft	8.0 Lakh		
	Coconut-1000	100 Rs/graft	1.0 Lakh		
	Kokum-500	50 Rs/graft	0.25 Lakh		
	Sonchaffa-5000	50 Rs/graft	2.5 Lakh		
	Rose-2000	50 Rs/graft	1.0 Lakh		
	Sub-Total				
	Agro-forestry-30,000	10 Rs/plant	3.0 Lakh	1.3 Lakh	1.7 Lakh
Grand Total			33.25 Lakh	18.85 lakh	14.4 Lakh

Impact in area

Mrs Harshada Palaye, ensured economic stability to her family. Every year, her financial turnover is Rs. 13.50 lakh from vermicompost units and Rs. 19.75 lakh from the nursery unit. The net profit of vermi-compost is Rs. 6 lakh and Rs. 8.4 lakh from the nursery. She is gaining profit of Rs. 14.04 lakh per year. She has not only made her family a self-reliant but also, provided assured employment for 10-12 persons throughout the year. Every employee is getting salary of around Rs. 7 to 8 thousand per month.

Awards and recognitions

Considering her contribution, Mrs Harshda Palaye and her SHGs has bestowed with 'Sevavrati Shinde Guruji Smruti Purskar (2019-20)' from Kunabi Seva Sangh, Dapoli- a NGO and 'Best Women Farmer Award' from NGO-Late Tatya Deshmukh Shetinsitha Sanstha, Lanja Dist: Ratnagiri.

Contributing and Enabling Factors

She opined that merely subsistence farming is not a solution to the resource poor farmers but promoting secondary agriculture and agribusiness start-ups give the financial stability to rural farming families. The institutional backstopping, direct marketing linkages, quality control and resource management are the



drivers of the success in agribusiness start-up. She felt that her family becomes economically self-reliant through these agribusiness ventures. Ten years before, her husband was employment seeker in Mumbai, now he became an employment provider due to his ambitious spouse.

2. Organic Farming by Agriculture Graduate: KVK Beed-I

An agriculture graduate youth Mauli Jadhav is engaged in farming from 2011. After completion of his graduation, he focused on organic farming along with production of traditional crop varieties of food grain and pulses. His family business is agriculture which was not profitable. Cost of production was high and ultimate agriculture profit was very low. He decided

to change agriculture practices when he realized that organic farming is low cost production technology with sustainability and profitability. Organically produced farm commodities fetch good market price and more demand despite low productivity. His family owns 12 ha of land along with 1 open well and 4 bore wells. They possess tractor and tractor drawn implements. They also have bullock pair and bullock drawn implements. Their cropping pattern was soybean followed by chickpea & rabi sorghum.

Plan, Implement & Support

After completion of agriculture graduation, he came in contact with KVK scientists during Kisan Mela organized by KVK Beed-I. After that he visited KVK frequently and linked with KVK experts.

He realized that organic farming system is always good for human and environment. Organically produced food grains and vegetables have good demand in market, fetching high value in terms of money. He sold out all exotic cows and started rearing desi cows i.e. Red Kandhari, Gir and Sahiwal. Now he gets 30 trolleys of dung compost. He started production of dung slurry and application in crop. He



Impact

Other farmers prefer to purchase seed from Mauli Jadhav as he follows good agriculture practices. Other farmers have started organic farming system for production of all crops. They have exited from chemical farming. ADM company Latur has hired Mauli Jadhav for consulting farmer for organic soybean production and organic farming registrations.

3. Sustainability through Sericulture: A case study of KVK Jalna-I

Shri Ram Devidas Yellikar is a rural youth from village Aalamgaon, Tq. Ambad Dist. Jalana having 10

maintained trees on bunds and raised trap crops for IPM. He used to cultivate traditional crop varieties on his farm like okra, suran, beans, bottle gourd, pumpkin, leafy vegetables. He also cultivated fruits trees like tamarind, jamun, lime, sweetlime, banana, ramphal, custard apple, papaya, guava.

He produced alternative for chemical inputs like Dashparni Ark, Waste decomposer, Gokrupa Amrut and used burnt cow dung ash for control of aphids incrops.

He is using traditional varieties of crops like sorghum (Dagadi), greengram, yellow sorghum, black gram, bajara, groundnut, sesamum, niger, coriander for cultivation. He is in second phase of organic conversion by NPOP certification of eco cert India.

Output

They got average annual income of Rs. 10 lakh. Cost of production reduced considerably due to recycling of easily available farm materials. Family medical expenditure reduced to nil for last 3 years. He is getting 30% more market price to his farm produce by selling directly to consumers.



acre land. He was following traditional farm practices with traditional crops i.e. cotton, soybean, jowar and Bengal gram. He could not get expected crop yield due to uncertainty of rainfall, big gap in two rains, late monsoon and unseasonal heavy rains and storms. It directly affected his income (Rs. 0.2 to 0.35 lakh per acre). This situation made him unsatisfied with agriculture profession.

Plan, Implement and Support

Krishi Vigyan Kendra, Jalna – I provided one month sericulturist training to Shri Ram Devidas Yellikar in the year 2018. After successful completion of training, he started sericulture enterprise. He planted mulberry

V1 variety for one acre area. He constructed silkworm rearing shed of 50 X 22 feet size. He adopted advance rearing technology and got continuous KVK support. He is taking four to five silkworm rearing batches



which resulted into regular income every two months. Now through sericulture enterprise he is getting Rs. 1.0 to 2.0 lakh net profit per acre per year which is nearly ten times of previous income per acre.



Output

Sr. No.	Year	DFL/Acre	Cocoon Production Kg/Acre	Total Gross Income Rs./Acre	Expenditure Rs./Acre	Net Profit Rs./Acre
1	2019-20	600	530	180000	65000	115000
2	2020-21	850	700	190000	70000	120000

Horizontal Spread

Many farmers from his own village visited his sericulture and about 25 farmers came forward and started sericulture.

Impact

He expanded mulberry area to two acre and became master trainer in the village.

4. Farmers to customers direct sale of vegetables and fruits during lockdown period: KVK Aurangabad-I

The availability of vegetables and fruits for people in the urban area has been a challenging task due to the harsh and unpredictable COVID-19 lockdown. The sale of fresh vegetables and fruits was completely stopped in Aurangabad city. All merchants cancelled deals of sale of sweet orange, watermelon and muskmelon during this pandemic period. It was very difficult situation for farmers. Their crops were ready for harvest, but no sale outlets were available in Aurangabad city. On other side people were not getting fresh vegetables and fruits or had to pay high rates.

KVK, Aurangabad-I in collaboration of State Department of Agriculture and ATMA, Aurangabad

has come with a very innovative idea to provide vegetables and fruits kit at doorstep of people in the Aurangabad city. KVK, Aurangabad-1; SDAO, Aurangabad and ATMA, Aurangabad jointly started direct selling of vegetables and fruits from farmers to consumers. In this way, KVK Aurangabad-I adopted two villages (Deogaon and Lakhegaon) and three farmers groups participated in this innovative idea (Jay Jawan Jay Kisan Group, Deogaon Tehsil Paithan; Yuva Mauli Farmers Group, Lakhegaon Tehsil Paithan; Krushi Samarpan Farmers Private Ltd. Paithan).

KVK, Aurangabad-1 provided technical and marketing support to farmers groups in the district with the help of State Department of Agriculture and ATMA Aurangabad and asked them to provide vegetables and fruits kit on pre-order of customers. For effective implementation, they formed WhatsApp groups of all staff of SDAO, ATMA, state agriculture marketing officers, city housing society president, few collector office staff, KVK staff, farmers, farmers groups and FPOs of Aurangabad district.

Farmers and farmers groups asked to make their vegetable baskets and fruit baskets as per availabilities for direct selling to customers. All

information regarding availability of this facility and procedure for making order of vegetable and fruit kits was communicated on different WhatsApp group. Orders of all people received on common group “FARMERS TO CUSTOMER DIRECT SALE” and by this way, order of vegetables and fruits received by farmers and information regarding confirmation and delivery status of this order was communicated to customers by sending messages to them by farmers.

In this way, KVK Aurangabad-I adopted two villages and three farmers groups. KVK gave complete guidance and supported them for publicity in Aurangabad city for sale of their commodities. All precautionary and required measures during COVID-19 lockdown were strictly followed by all groups which provided fresh vegetables and fruits to people in the urban area.



In total, more than Rs. One Crore sale of vegetables and fruits was observed within 28 days by all farmers, farmers groups and FPOs. Total 65 participants participated jointly and still continuing. Among 65 participants, Aurangabad-I KVK farmers performed well with total sale of Rs 28,81,335 in 28 days (out of total Rs. 1,09,67,695) i.e. 26 per cent.

5. Income generation through Processing and marketing of Aonla and Banana Products: KVK Jalna-I

Background

Mrs. Meera Santosh Paul, At Post, Rohina Bk, Tq. Partur Dist. Jalna, is 35 years old farm woman having 2 acres of land 7 members a family and depends only on farm produce. Her husband is involved in farming growing soybean, cotton and sugarcane. The incomes earned from only 2 acres of farm are insufficient to

fulfil the family requirements. Hence, both of them decided to do processing to raise the income of family.

Intervention

In 2018, she approached KVK Jalna and discussed with the KVK scientists about her plan. KVK Jalna trained her on value addition of Aonla along with her husband. After training she started to purchase different processed products from KVK and marketed them for one year. KVK Scientist provided her proper guidance, support and demonstration on marketing strategy. This training of value addition and marketing made her confident to start her own processing unit of Aonla, Mango, Rose and Banana at Rohina village.

Output

She started to process the Aonla, Banana, Mango and Rose. Mainly she produced candy, pickles, supari, powder, murabba, moraonla, juice and syrup from aonla while pickles from mango and lemon. Banana wafers, banana powder and rose gulkand are also her value added products. She marketed her products under “Hirkani Brand”. The detailed quantity produced and sale of products during last three years is given in table.

Year wise production of processed products (quintal)

S. No.	Particulars	2018	2019	2020
		Quantity (quintal)		
1	Aonla Products	05	12	20
2	Banana Wafers	15	10	--
3	Mango Pickle	0.5	01	01
4	Lime Pickle	0.5	01	0.8
5	Rose Gulkand	0.5	0.5	0.25
6	Moringa Powder	0.25	0.10	0.10

Through processing and value addition of Aonla and Banana, she is earning Rs. 6 to 7 lakh with net profit around Rs. 1.5 lakh/ year.

Horizontal spread

Mrs. Paul is the first woman from her village to start a business. The women from her village as well as other nearby villages visited her processing unit and appreciated her work. She guided women from her villages regarding the processing unit and marketing strategy.

6. Doubling the income through crop diversification: KVK Washim

Mr. Sayyad Salim Sayyad Sattar, small farmer from Warud Tofa village of Risod Block, district Washim is having 1.80 ha land. Seasonal irrigations were done on dug well but the water level used to deplete from December onwards. Total 9 members in his family depend on the agriculture. Both he and his brother are involved in agriculture. Earlier before 2015 he used to grow agronomical crops like soybean & pigeon pea in kharif season while bengal gram and wheat in rabi season. His average income from entire 1.80 ha land was Rs. 1.15 lakh. Mono-cropping pattern, climate change and fluctuating market rates were affecting his income. He and his brother had worked as daily wage labour to fulfill the financial needs of family.

In 2015, Mr. Sayyad Salim came in contact with SMS (Horticulture) of KVK Washim. While discussing and looking the entire resources including soil type, irrigation facility and family labour availability, KVK suggested him to go for horticultural crops. In 2015, KVK has selected Mr. Sayyad Salim for assessment of late kharif Onion production technology and provided seed of Bhima Super variety. He prepared the nursery in the last week of July and transplanted the seedling in the month of September. KVK guided and provided all the technology from land preparation, Nursery raising, BBF system, INM and IPM. Because of his dedication and technical backstopping of KVK, he got the yield of 145 q from one acre irrigated land. The crop was harvested in the month of January, when the supply of onion in the market was limited. The high demand and less supply of onion in the market resulted into the average rate of Rs. 2300 per quintal. As an outcome from one acre land, he earned net profit of Rs. 276500 within a period of 6 months.

In the first year he renewed his well and increased the depth and water storage capacity. In next year, he continued the cultivation of late kharif onion and got the similar type of results. From year 2017-18, he started growing turmeric crop on one acre land & late kharif onion on one acre land. He got yield of 28 quintal dry turmeric and 165 quintal onion and earned net profit of Rs. 280000/- from two acres.

He has converted his total land towards horticultural crops including potato, garlic, turmeric, late kharif onion, rabi onion and ginger and generated net income of Rs. 525000/- from 1.80 ha land.

As an impact he developed his land with well-

maintained well, drip irrigation system, sprinkler irrigation system and solar water pump, built his house.

7. Shatayushi Organic FPO During COVID-19 crises: Success story of KVK Pune II

The increased usage of pesticides and chemical fertilizers affects human health as well as the land; hence the demand of organically grown vegetables and fruits in the market is increased. Unavailability of certified organically grown vegetables & fruits in the market evolved the idea of creating a FPO of farmers who can supply organic certified vegetables and fruits consistently.

Hence KVK decided to start FPO of organic farmers. The motive behind creating such a FPO was to grow variety of organic vegetables and fruits round the year on a sustainable basis and to supply in the markets of Mumbai and Pune which would be logistically feasible. Maintaining round the year availability and consistency of supply is the major concern. By keeping in view the consistency and round the year availability; Junnar Taluka was selected. The Junnar Taluka is a vegetable belt with assured irrigation and farmers were interested for organic cultivation. This area being adjacent to Mumbai and Pune Cities is a major advantage in logistics front.

KVK Pune II formed Shatayushi Organic Farmers Producer Company under company act for market linkages and other activities. FPO established their Collection Centre at Shroli Tal. Junnar, District- Pune as ICS office where all documentations and records were kept simultaneously from this collection center. They are collecting farmer's fruits and vegetables and after sorting, grading sent to distant buyers from Mumbai, Pune.

Challenges faced by the farmers before formation of FPO

Majority of vegetable farmers were marginal farmers, with average land holding of 5 acres of land. Vegetable farming is not a sustainable business for the marginal farmers, because of small land holding, lack of infrastructure & connectivity to the market. The challenges faced are as follows:

1. Can't optimize production process to get economy of scale due to small land holding.
2. Dependency on local mandis /agents to sell the produce.

3. Lack of knowledge and faulty agronomical practices, mono cropping / indiscriminate use of insecticides resulting in high cost.
4. Lack of infrastructure, finance, cold storage, transportation, packing material etc. caused substantial financial losses.

Shatayushi Organic Farmers Producer Company

Mr. Manish Ramdas More is passionate about production and marketing of organic fresh fruits and vegetable. He is M Sc Agriculture and having 13 years experience in production and marketing of organic fresh fruits and vegetable. They grow organic vegetables and fruits, through an end-to-end eco- friendly process to provide fresh farm produce which are safe to consume. The FPO combine the knowledge of age-old wisdom with a modern technology for soil health, crop health and post-production processes. For the past five years, organic produce has continued to be embraced by more and more consumers while establishing a strong footprint in well-known modern retail chains and ecommerce platforms such as Amazon, Godrej Nature's Basket among others.

The major aim was to create a sustainable vegetable & fruit cultivation business model for the farmers. Key points of the model were,

1. Formed a group of 25-30 farmers having collective land of 80 acres.
2. Completed organic certification process for all the farmers.
3. Developed their own agronomy practices based on ancient Indian Vedic agriculture.
4. Planned crop production to produce a basket of 15-20 varieties of crop/ season.
5. Developed brand for their produce and tied up with modern retail outlets for marketing
6. Encouraged farmers to invest in sorting, grading and packing facility at their farm, to ensure quality control & minimize handling losses of the produce.
7. Invested in infrastructure like cold storage, vehicles, packing material, quality control process, certification etc.
8. Marketing tie-up with modern retail.

Impact

1. Achieved production of 3 tons of vegetables / Day.
2. Established Brand “ Shatayushi Organic” with leading retail outlets like, “Godrej Natures Basket”, “Amazon”, “Food hall”

3. Achieved turnover of Rs. 3 Crore from modern retail.
4. Quality is established with modern retail.
5. More revenue for the group farmers.
6. Created infrastructure like cold storage, transport vehicle, packing, sorting facility etc. at the village level.

Future Plan

The success of this model depends on, creating more number of farmer groups, in different climatic zones. In phase 1, we need to create 20 groups of farmers in Maharashtra, each group consisting of 15-20 farmers, bringing approx. 1000 acres of land. In phase 2, the model will be taken to different states with more groups of farmers.



8. Empowerment of Rural families through backyard poultry farming: KVK Latur

Backyard poultry farming in Latur district is a secondary income generation activity for the rural families. They were rearing desi poultry birds having low egg and meat production potential (60-70 eggs/year and adult bird weight 1.5 kg). They maintained these birds traditionally without any scientific approach, caused high mortality (20-100%) due to incidence of diseases like ranikhet and fowl pox. These were the reasons for reduction in income from backyard poultry farming with desi poultry birds, though there were increasing demand of eggs and meat in rural as well as urban areas.

Latur district is receiving 730 mm of rain with 25 rainy days in a year. Rests of the days in a year are having plenty of sunshine and dry weather. Climatic conditions in district support free range system of rearing. Also the backyards are full of natural feed resources like fallen grains, insects, earthworms, green grass, kitchen waste, left over and damaged

grains and vegetables grown in farm unfit for human consumption. Due to availability of these natural resources, backyard poultry farming with improved birds will become highly economical.

Plan, Implement and Support

To overcome the problems in backyard poultry farming with desi birds KVK, Latur identified the improved poultry birds (Vanaraja, Grampriya and Shrinidhi) suitable for backyard farming in rural areas developed by the Directorate on Poultry Research, Hyderabad. These are multi-colored dual purpose birds with attractive plumage, having better immunity against common poultry diseases (Ranikhet, Gumboro and Fowl pox) and better adaptability to free range rearing system.

KVK has assessed these birds and demonstrated in the villages. Each family provided 20 vaccinated one month old birds. Selected farmers were trained for how to manage these birds in backyard. After receiving birds from KVK, farmers housed these birds in cages or house made from local material at low cost during night time. During day time the birds were made loose in the surrounding area for scavenging. The birds utilized the natural feed resources like fallen grains, insects, earthworms, green grass, kitchen waste, etc. At the time of night housing, farmers offer cheap and available grains (Maize, Bajra, and Sorghum, Wheat) and kitchen waste & vegetable grown on their field which is unfit for human consumption to these birds to match up the energy deficiency. Plenty of clean and fresh water was made available at farm site. Farmers were advised to deworm the birds once in every three month period and give Ranikhet disease vaccine (R2B strain) and Fowl pox vaccine at the age of 9th weeks and after 6 months. Technological backstopping is provided by KVK at every step. KVK has maintained regular contact with farmers and required suggestions and advisory were given to solve location specific problems by field visits, mobile advisory.

Output

Backyard poultry farming with improved poultry breeds increased egg production by 173%, net income by 142% and reduced mortality by 50% than the desi birds along with increase in volume of production (Egg production 1314 Vs 480). Also improved poultry birds are having better adaptability to the rural backyard conditions and shown better immunity; hence the good survival rate than the desi birds.

Gain in Knowledge and skill: Participated farmers acquired skill of rearing these birds (feed management, shelter management, medication & vaccination, debeaking etc.) and also acquired skill of marketing of produce. Some of the farmers started incubating these eggs under desi birds to produce chicks. Produced chicks reared for next batch or sold to needy farmers.

Outcome

After attaining desirable market weight (4-5 months) farmers sold extra male birds for meat purpose and hens were kept for egg purpose. Egg laying started at the age of 155 to 170 days of rearing. After egg laying period (72 wks) the hens were sold for meat purpose. The annual egg production of demonstrated improved poultry birds is 146 eggs/hen compared to 60 eggs/hen in the desi birds. This resulted in net return (selling eggs and birds for chicken) of Rs. 10,625 from 20 birds unit of improved poultry birds (Vanaraja, Grampriya, Shrinidhi), which is Rs. 5955 higher than local bird (Rs.4670/20 birds unit).

Horizontal spread

The intervention fetched good income to the farmers through sale of eggs and birds for chicken. Consumers happily buy the eggs and chicken with better price from farmer as, it taste like desi birds. By observing the performance of farmers field, demand from other farmers, rural youth, women farmers and SHGs in the district increased for the one month old birds. KVK has supplied total 24947 one month birds to 678 families from 219 villages in the district, covering all the blocks in Latur district. 37 farmers started rearing one day chicks of improved birds by purchasing it from PDP, Hyderabad and private hatchery with technical support from KVK. Looking to the increasing need for day old chick from farmers in the district KVK has started 1000 chick capacity hatchery at KVK.

Economic Benefit occurred to secondary level participants

Depending upon the birds unit size (20-100 birds) participants farmers getting additional net income of Rs. 10600 to 53000/ year (Rs. 880 to 4400 per month) by selling eggs and birds for chicken. 37 farmers started with chicks rearing in shed getting net income of Rs. 45,000 to 2, 25,000 per year depending upon the birds placed in shed (100-500 birds).

9. Era of geranium crop in Gujarat: Case study of KVK Banaskantha I

Geranium is one of the worldwide popular aromatic crops that receives higher market price. In seasonal crops, cost of cultivation is increasing day by day due to increase of labour cost so farmers are turning towards new cropping systems which give them higher net income with minimal operational cost. Geranium is one of the aromatic plants having geraniol and citronellol oil as the main aromatic principles. It is mainly cultivated in states like Uttar Pradesh, Maharashtra, Andhra Pradesh, Tamilnadu, Punjab, Himachal Pradesh etc. Banaskantha district comes under North Gujarat and has sandy soil with hot and dry climate. Geranium crop was never commercially planted in Gujarat, but under the guidance of KVK the farmer has successfully harvested geranium and also extracted oil.

Geranium crop was introduced in Banaskantha district of Gujarat in 2019-20 on the field of Shri Shrikantbhai Panchal from Bhoyan village of Deesa taluka. The crop was successfully harvested after every 3-4 months and gave an average yield of 20 liters oil per cutting per acre and recovery rate of 1 liter oil from 1000 kg of green biomass.

KVK Interventions

KVK modified package of practices for geranium crop as per the climatic condition. For successful production of geranium, mechanized raised beds were prepared with proper management of major and micro nutrient along with organic manures. The healthy, high yielding and quality planting material were procured from Maharashtra. Inline drip lateral were spread on raised bed and after giving proper moisture the planting of geranium was done with 3.5 ft x 1.25 ft. spacing in November month. INM, IPDM were adopted for successful geranium production viz., water soluble fertilizers along with trichoderma, Pseudomonas, Pochoniya, Metarrizium, waste

decomposer, NPK biofertilizer etc. for minimizing cost

of cultivation. In short time this crop has emerged as a high returning crop for farmers of Gujarat state. There was less pest and disease incidence that ultimately lead to lower cost on plant protection measures. KVK also guided farmers for nursery raising of geranium through media preparation, selection of cutting and care and management of sapling.

Output

The farmer extracted and sold the geranium oil with a rate of Rs.12500 per litre. KVK trained the farmer for nursery raising and through this technology he has produced planting material of 155000 geranium sapling and he has received additional income of around Rs. 12.00 to 13.00 lakh. Due to introduction of geranium, the farmers are very happy and interested for cultivation of this crop in their field. More than 2440 farmers till now visited the geranium field.

Horizontal Spread

Shri Anandbhai Patel (IAS), Collector of Banaskantha, and more than 2440 farmers visited the geranium field as well as around 5100 farmers through social media appreciated the efforts of farmer. During winter season of 2020-21, farmers of Banaskantha, Valsad, Ahmedabad, Junagadh, Rajkot and Mehsana districts of Gujarat have procured planting material for cultivation of geranium crop and some of them have started planting of geranium.



10. Honey production by adopting scientific and technical methods: KVK Dang

Dalubhai Pecheryabhai Gamit is a 51 year old progressive farmer of village Nishanna, Tal: Shubir, Dist: Dang, Gujarat having 3.95 ha of farmland with one bore well, 4 cattles and other essential farm machineries and equipments. His formal education is

10th standard. He was interested in adopting new

technologies and new production methods for the farming system. In his farm he adopted different technologies such as organic farming, use of net house for vegetable production, drip irrigation, honey Bee production. Dalubhai is an ordinary farmer in the district, but what makes him special is his in-depth expertise in honey farming. Through intensive

research for more than five years, he has successfully developed a season cycle that can boost the production of honey with the same number of honey bees.

Output

Bee keeping had increased his annual income by Rs. 25000 over and above Rs. 14500 earned by crop

production, Horticulture & Animal husbandry during 2018-19. In per cent terms it was about 172% higher than that of crop production, Horticulture & Animal husbandry. Honey bee keeping activity helped to increase employment by 92 man days (52.79%) for small farmers. The productivity levels achieved during last five years from honey bee is given in table ...

Table 2. Productivity Levels achieved in Apiculture (Honey production) during the last five years.

Year	Gross income in lakh	Expenses in lakh	Net profit Income in lakh
2016	0.85	0.25	0.60
2017	0.90	0.25	0.65
2018	0.92	0.20	0.72
2019	1.00	0.30	0.70
2020	1.30	0.35	0.95

Horizontal spread

Presently, Dalubhai trains the local tribal's to cultivate honey and has not only attended seminars in Karnataka, Maharashtra, but also in other states. He was associated with NGOs. He had also established self-employment centre for tribal farmer at his village Nishanna. He trained more than 250 farmers for scientific bee keeping. Giving knowledge about various government schemes and benefited to them.

Innovative interventions

If the bee-hives are kept in different farmer during different season, it can help boost the production of honey by 30-40%. Another important innovation that Dalubhai has come up with is the creation of rani honey bee the only bee that can deliver larva within 16 days. In a bee-hive no female bee other than rani, can deliver larva and if she dies, the entire bee-hive gets destroyed.

Out of 8 types of honey bee of dang district he has produced honey from 3 types of honey bee. By the hard work, interest and knowledge, he has established honey bee box and honey pot so easily honey is collected. The box is arranged in crops like maize, mango, cashewnut so the production is increased by 30 to 40 percent. He has trained and shared information among farmers in various training and awareness programmes.

11. A case study on dragon fruit cultivation: KVK Kutch I

Mr. Khushalbai Surjibhai Savala from Ramaniya village of Mundra Taluka of Kutch district has 5.4 ha (11 acre) land with irrigation facility. Earlier, he was sowing cotton and castor crop as cash crops. During peak season of cotton picking and castor harvesting labour availability was the problem. He was earning Rs. 5 to 7.5 lakh as net income from 5.0 ha of cotton and castor. Cost of cultivation was higher due to higher labour and input cost.

Plan, Implementation & Support

Mr. Khushalbai is highly progressive farmer and attends all programmes conducted by KVK. He got idea of Dragon fruit cultivation from one of his friends Mr. Vishal Gada, who had prepared nursery of Dragon fruit. He purchased 6000 nursery plants of Pink Red Variety in 2015 and planted on 2 ha land.

He adopted organic farming practices, gave 2 to 3 kg FYM per pole at the time planting in July to September. Rigid poles at distance of 12 x 12 ft were built with RCC ring of 30 inch above the bottom of the pole. He planted 4 plants per pole. He had given cow dung with urine slurry @ 1 lit/pole (4 plants) at the duration of 30 days on regular basis. Moreover, he has given Jivamrut @ 50 lit/acre with drip at 15 to 20 days interval. There was no incidence of pest and disease. Sometimes fungal diseases were observed at base of the plant. To control this diseases farmer had reduced

irrigation intensity. He had sold fruits at Mumbai and Ahmedabad. Marketing was done through traders of the cities.

Income from Dragon fruit nursery

He had sold total 90,000 plants from his dragon fruit nursery @ Rs. 25/plant and earned total Rs. 22.50 lakhs. He has developed mother plant unit and sells

Avg. 30,000 plants annually. Cost of nursery maintenance is Rs. 180,000 annually.

Thus, he is earning Rs. 6 to 7 lakh per ha. Earlier his income was Rs. 1 to 1.5 lakh/ha from seasonal commercial crops.

Intercrop: Miliya Dubia, Date palm and Drumstick grown as intercrop in Dragon fruit.

Economics

Sr. No.	Year	Expense (Rs./2ha)	Gross income (Rs./2ha)			Net Income (Rs./2ha)
			From Fruit	From Nursery Plants	Total	
1	1st	17,00,000	1,50,000	0	1,50,000	(-) 15,50,000
2	2nd	2,70,000	2,50,000	7,50,000	10,00,000	7,30,000
3	3rd	2,70,000	6,00,000	7,50,000	13,50,000	10,80,000
4	4th	2,70,000	7,60,000	7,50,000	15,10,000	12,40,000

Outcome

Due to the innovation made by Mr. Khushalbai and due to his nursery plant supply other 24 farmers have started Dragon fruit cultivation. Today, almost 500 acre area is covered under Dragon fruit cultivation in the district. Farmers are making fruit supply in almost all cities like; Ahmedabad, Mumbai, Jaipur, etc. This innovative cultivation of Dragon fruit in the district like Kutch has proved highly beneficial because it requires very less water. It can also be grown in salty water up to 2000 ppm. Annually, 12 to 15 Crore income is earned by farmers in a district and almost all cultivators have made their income more than the double as compared to previous income.

Impact

Dragon fruit cultivation is increasing day by day in Kutch district. Today, Kutch district become hub of nursery of Dragon fruit plants. District farmers supply plants in other district and other state also.



12. Paddy seedling raising Technology - Dapog method: KVK Valsad

Paddy is the main food crop of Valsad district. Farmers of Valsad district raised paddy seedlings with traditional method known as "Aadar". Farmers make a ½ to 1 feet height layer of leaves, twigs, branches of plant, agricultural waste and cow dung cake on selected 0.12 ha. (13,007 sq. ft.) area and burn all the biomass. After "Aadar" practice they made flat bed and sown seeds @ 35 kg ha⁻¹. Weak and yellow seedlings with undeveloped roots were ready to transplant in 25 to 30 days, which were severely damaged during heavy rain. This method is costly, laborious and deteriorates soil health. Aadar increases the soil temperature more than 100°C in the upper 5 cm, with a concomitant partial reduction of the bacterial population eroding amount of organic matter and loss soil nutrients. Quantity of lost soil nutrients replenished through costly fertilizers increases cost of cultivation.

KVK Intervention

Dapog method was developed in Philippines, in which seedlings are raised on surface, like banana leaves or plastic sheets without disturbance of soil. On plastic sheets 92-100 beds of size 1 m wide and 5 m long, were made on raised surface and boundaries were provided with frames with the help of waste bamboo or bricks or stones. Each frame was filled with a mixture of 70% soil, 20% FYM, 10% ash and 100gm Urea and SSP. About 36 to 48 hours pre-germinated paddy seed (Jaya variety) at the rate of 20

kg ha⁻¹ was uniformly spread. The bed was mulched with paddy straw net to protect from bird damage.

To stop deterioration of soil health and makes a paddy cultivation more profitable, Krishi Vigyan Kendra – Valsad conducted frontline demonstration on dapog method of raising paddy seedlings in Asma and Ozar villages. To aware the tribal farmers about dapog method, KVK expanded the technology by various extension activities like, training, group discussion, method demonstration and field days etc. in Asma, Rabdi, Ozar and Lakhmapore villages of Valsad.

Growth and yield parameters

With the Dapog method, paddy seedlings can be transplanted within 14 to 17 DAS (Days after sowing) however in traditional aadar flatbed nursery, transplanting was delayed. The delay also reduced maximum tiller number, and extended crop duration with delayed maximum tillering, flowering and maturity. Crop lodging during heavy rains were found minimum compared to traditional aadar flatbed nursery raised plot. Grain yield was consistently increased by 7.71 to 9.10% with younger seedlings transplanting.

Table 3. Impact of paddy seedling raising methods on yield and yield attributes of paddy

Yield and yield parameters	Traditional Aadar flatbed nursery		Dapog nursery	
	Kharif 2019	Kharif 2020	Kharif 2019	Kharif 2020
Average number of tillers per plant	9.7	9.4	11.2	11.8
Grain yield (kg ha ⁻¹)	3364	3247	3645	3572
Straw yield (kg ha ⁻¹)	2804	2756	2795	2670
Straw bundle yield (kg ha ⁻¹) (1bundle of 200 -250 gm straw)	8995	8742	9020	8857
Increase in grain yield (%)	Kharif 2019		7.71	
	Kharif 2020		9.10	

Economic gain

The seed requirement and its cost in dapog nursery was reduced up to 70% i.e. 20 kg ha⁻¹ as compared with 35 kg ha⁻¹ for the traditional Aadar flatbed nursery. The dapog nursery does not require tractor ploughing as it is established near the homestead in a small area of 0.04 per ha as against 0.12 ha⁻¹ for a traditional aadar flatbed nursery so inputs and labour cost also reduced. The overall cost for the dapog nursery was 26.13% less for one ha. than transplanted paddy. Transplanting younger healthy seedlings raised in dapog nursery, improves number of tillers, flowering results in 7 to 9% more grain yield of paddy, simultaneously increase net profit by 19.09 to 23.51% against traditional aadar flatbed nursery. Highest BCR of 1.86 (Kharif 2019) and 1.76 (Kharif 2020) were recorded with dapog nursery compared to traditional aadar flatbed nursery BCR of 1.66 (Kharif 2019) and 1.55 (Kharif 2020).

Farmers of Valsad district are pleased with our efforts for motivation and other nearby farmers came forward to adopt dapog method of paddy seedling nursery. About 84 farmers of Asma, Rabdi, Ozar and Lakhmapore villages of Valsad district started to raise paddy seedling with dapog method.

13. Organic Farming of Tuber Crops to improve Economic Status: KVK Tapi

In Tapi district, farmers are mainly cultivating the vegetable crops like okra, brinjal, Chilli, tomato and cucurbits on a commercial basis. In our daily diet, tuber crops play an important role after cereal and pulse crops. However, the farmers of Tapi district were deprived of cultivation of tuber crops for many years. Elephant Foot Yam (EFY) and greater yam is a tuber crop. In general, most of the vegetable crops are perishable in nature, hence spoil quickly & cannot be stored. EFY and greater yam has long shelf life; hence it can be stored for a long time and can sell the produce when market rate is high. The cost of EFY and greater yam cultivation is low. Therefore, the demonstrations of EFY and greater yam were organized in Tapi district with the objectives that the farmers can earn good income by cultivating the tuber crops along with other vegetable crops.

Plan, Implement and Support

The demonstrations of EFY cv. Gajendra and greater yam var. Shri Neelima, Shri Swati, Shri Nidhi were given to 7-7 farmers of Tapi district with the aim that farmers can earn good income by cultivating tuber

crops at low cultivation cost. Training on its scientific cultivation was also given to the farmers. One demonstration was also organized in 2019-20 at Sureshchandra Dinubhai Gamit's farm in Ghata village of Vyara taluka. Sureshbhai had planted EFY and greater yam in 10 guntha area on May, 2019 at a distance of 90 x 90 cm with ridge and furrow method. In which, EFY was planted in an area of 6 guntha and greater yam was planted in an area of 4 guntha. Maize crop was also planted as an intercrop. Demonstration plots were frequently visited by KVK scientists and technical guidance was also given as per need. Field day was also organized at demonstration plot.

Outcome

For the cultivation of EFY and greater yam, Sureshbhai had invested Rs. 3970. The crop wise detail information are given in the below table. After planting, he got the first year EFY corm production 350 kg and greater yam tuber 110 kg on February: 2020. Out of which, Sureshbhai kept 200 kg of EFY corm and 20 kg of greater yam tuber for next/second year planting. He earned Rs. 4000 from selling of 150 kg EFY corm and Rs. 9800 from selling of 90 kg greater yam tubers. Hence, he earned total Rs. 13800 from selling of the produce. He got market price of Rs. 20-40 per kg EFY corm and Rs. 70- 120 per kg greater yam tuber for the selling. After deducting the total

Cost of cultivation of EFY (6 Guntha)		
Sr. No.	Particulars	Cost (Rs.)
1	Ploughing	300
2	Pit digging & Corm planting	350
3	FYM (1000 kg)	500
4	Irrigation	500
--	--	--
5	Labor charges & other cost	520
A	Expenses incurred by Sureshbhai	2170
B	EFY corm (By KVK)	1200
	Total Cost of Cultivation (A+B)	3370
	Gross Income	12000
	Net Income	8630
	B:C Ratio	3.56

14. High Value Mushroom Production: KVK Vadodara

Mr. Rathwa Shailesh Somabhai is a tribal small farmer in the Kawant Taluka of Chhotaudepur district earlier they followed traditional farming. Income generation

expenses, he got net profit of Rs. 9830 and also saved estimated cost of EFY & greater yam planting material Rs. 10400 for the next year planting.

Impact: Sureshbhai earned more income by growing tuber crops organically with other vegetable crops. From this successive result, he has extended EFY cultivation in an area of 25 Guntha and greater yam in an area of 10 Guntha in this year (2020-21) at a dist. of 90 x 90 cm with ridge and furrow method. In which, maize, cowpea, cluster bean and bottle gourd have also been planted as mixed crop. From the inspiration of Sureshbhai's success, Shantilal Naginbhai Gamit of Ghata village has also planted EFY this year. Thus with less care & labor cost, the income of farmer has increased by tuber crop cultivation and around 20-25 farmers has started its cultivation in Tapi district.

Farmers Feedback

1. Less cost of cultivation due to negligible pest & disease infestation.
2. Good market price due to less no. of daughter corm in EFY cv. Gajendra.
3. Can get more income by less effort due to less care & management require compared to other vegetable crops.
4. Due to long storage life, it can be sold at any time of the year or when market price is high.

Cost of cultivation of Greater yam (4 Guntha)		
Sr. No.	Particulars	Cost (Rs.)
1	Ploughing	300
2	Pit digging & tuber planting	200
3	FYM (800 kg)	400
4	Irrigation	500
5	Support	200
6	Labor charges & other cost	200
A	Expenses incurred by Sureshbhai	1800
B	Greater yam tuber (By KVK)	1400
	Total Cost of Cultivation (A+B)	3200
	Gross Income	12200
	Net Income	9000
	B:C Ratio	3.81

for the family under these conditions/ situations was difficult because of the limited resources of water, soil type and climatic conditions and limited availability of money. After than he was exploration for alternate livelihood was discussed at family level and the need arose Krishi Vigyan Kendra.

Plan, Implement and Support

Mr. Shaileshbhai learnt about the prospects and opportunities in mushroom cultivation and contacted with Krishi Vigyan Kendra, Vadodara. Discussions followed by technical visits to various mushroom units gave him the confidence of integrating mushroom as an added enterprise in his farm. He started, experimenting with Oyster mushroom after completing the 4 days skilled training on mushroom cultivation from Krishi Vigyan Kendra, Vadodara in

2018-19. He required technical backstopping in his place so the techniques were provided by the experts of the KVK. The KVK was encouraged to production of oyster mushroom through skill development programme of the 60 farmers. His active role in mushroom and mushroom production enabled year round production of the Oyster mushroom.

Trainings

The entrepreneur underwent series of trainings in the district. The details are furnished below.

Period	Topic	Training type	Location
2018-19	Oyster mushroom production	Skilled training On campus	KVK, Vadodara
2019-20	Oyster mushroom production	Skilled training On campus	KVK, Vadodara
2020-21	Oyster mushroom marketing	Off Campus	Vijali village in Kawantblock organized by District Dept. of Horticulture with collaboration of KVK Vadodara

Output

From 2019 onwards he is supplying spawn & other materials in collaborations with Pvt. Company to the local producers of Chhotaudepur and nearby areas. He has displayed his products in Krishi Melas conducted during every year at ATMA, Chhotaudepur & Vadodara, KVK, Vadodara, SAU Krishi Mela and State level krishi mela organized by Govt. of Gujarat. The developing story of mushroom in his farm was telecast in state level programme on "Lokmat" and "TNN" news TV channels which attracted youth towards him and in State level news Paper like "Divya Bhaskar". The KVK facilitated his participation in many inhouse empowerment programmes like farmer shibir, innovative farmers meet etc.

Outcome

Mr. Shaileshbhai had an ancestral property of 3.50 acres of land in Vijali, Kawant taluka of Chhotaudepur District. The whole family was engaged in cultivation of paddy, Maize, Pigeon pea and vegetables in this piece of land. This continues to be their first occupation even today. After entering into mushroom enterprise, the number of crops stood at an average of 5 per year from the baseline of 2 crops per year following the intervention of KVK. The mushroom production at inception was 264kg /month during 2019. Currently, it has risen to 600kg / in 60 days with 100% commercial consumption and earns Rs. 2.10 lakh in a year as net profit only from mushroom cultivation. The enterprise is providing employment to three rural persons besides his family. The mushrooms are sold in local and regional trade methods. The entrepreneur as a resource person in programmes organized by different



institutes during 2020-21 and experience share to needy farmers. Mr. Shaileshbhai also received the Best district level farmers award from ATMA during 2017-18 and best state level farmers award in 2018-19. In 2020-21 he started the value addition in Mushroom like as mushroom pickle and mushroom dry powder.

Impact

Chhotaudepur district basically is under the tribal district and the main problem is migration so farmers were migrating in Saurashtra region of Gujarat. In this situation Mr. Shaileshbhai is innovative in Mushroom cultivation. After this Mushroom cultivation, the rural youth interested in Mushroom cultivation and KVK, Vadodara trained the 60 farmers in last year on Mushroom cultivation and all are adopted the Mushroom cultivation. After the success seeing of Shaileshbhai and other farmers in mushroom cultivation Dept. of horticulture & District Panchayat, Chhotaudepur implemented a pilot project of Rs. 40 lakhs for 275 farmers in technical support of KVK Vadodara.

15. Increased Income through Dairy and Vermicompost: Tapi

Mrs. Jasuben Chhakabhai Chaudhari Ramaji Faliyu, of village: Unchamala, Tal: Vyara, Dist: Tapi cultivated crops like sugarcane, paddy and mango, on 2 ha land.

Situation analysis/Problem statement

Like other farmers, animal husbandry along with agriculture is the inherited agribusiness of Jashuben's family. In agriculture, paddy and sugarcane are preferred cash crops. While mango is cultivated in about 1 acres as a horticultural crop. Before adopting the new system, she raised only one cow as a livestockkeeper. The main purpose was to use milk and manure as fertilizer in agriculture for home consumption. Thus, before adopting the new system, farming and animal husbandry were disorganized as well as conventional.

Plan, Implement and Support

KVK, Tapi conducts training and extension activities for the tribal farmers of Tapi district to increase their income through farming and animal husbandry. Accordingly, Jashuben also came in contact with Krishi Vigyan Kendra, Tapi through ATMA, Tapi and was inspired to abandon conventional dairy practices and adopt animal husbandry in a scientific manner as per the guidance of scientists. KVK, Tapi scientists frequently visited on the spot and gave guidance

according from time to time. During 2018-19, she also joined 200 hrs training programme of 'Organic Grower' at KVK, Tapi sponsored by Agricultural Skill Council of India (ASCI) under RKVY.

Outcomes

Starting animal husbandry with only one cow, Jashuben had around 15 small and large cattle. But due to her ill health, she has kept only 5 animals at present. While through their own experience they have been making vermicompost manure and vermivash from animal dung for the last three years. It is also used for home farming and retail as organic inputs. In addition, during year 2019-20, she has earned a total income of Rs. 84900 by selling 83 Kg earthworm at the rate of 300Rs. per Kg. In the same way, she has earned a total income of Rs. 25000 by selling 1000 liter Jivamrut at the rate of 25 Rs. Now Jashuben has also mastered in the art of animal husbandry and organic farming and has become known as an ideal farming woman for the farmers of her village as well as the surrounding villages. During the year 2013-14, she has received the Taluka Level Best Atma Farmer Award in the field of Animal Husbandry. Similarly, during the year 2015-16, she has received the District Level Best Atma Farmer Award in the field of Animal Husbandry. She has been awarded a certificate by Hon'ble Collector-Tapi on the occasion of "Mahila Swavalamban Divas" on 08-08-2018.

Table 4: Details of expenditure and income from dairy

Year	Total no. of Milking Animals	Total no. of Lactating Milking Animals	Gross total income (Rs.)	Total Expenditure (Rs.)	Net income (Rs.)	Net income per Lactating Income (Rs.)
2016-17	12	08	842854	545000	297854	37231
2017-18	11	07	806940	557000	249940	35705
2018-19	07	05	742459	576000	166459	33291
2019-20	05	02	228077	167289	60788	30394

NB :- (1) Animal Feed/ Labour would be include in Total cost (Rs.)

Table 5: Details of expenditure and income from Vermicompost and Vermivash

Year	No. of vermibed	Vermicompost production (Kg)	Income (Rs.)	Vermivash Production (Lt.)	Income (Rs.)	Total Income (Rs.)	Total Expenditure (Rs.)	Net Income (Rs.)
2016-17	02	6000	30000	-	-	30000	4500	25500
2017-18	10	30000	150000	-	-	150000	21000	129000
2018-19	16	48000	240000	2000	10000	250000	33600	217400
2019-20	18	54000	270000	-	-	270000	118800	151200

NB :- (1) Vermicompost selling rate Rs. 5/kg

(2) Vermivash selling rate Rs. 5/kg