Success Story-1

Line sowing of new variety of finger millet became popular among the farmers of Dang district

P. P. Javiya, B. M. Vahunia, S. A. Patel, J. B. Dobariya & H. A. Prajapati

Fingure millet (*Eleusine coracana* L.) is an underexploited minor millet with several edible and industrial uses. It belongs to the family Poaceae and ranks third in importance after sorghum and pearl millets. Its wide adaptability to diverse environments and cultural conditions makes it a potential food crop. Finger millet contains proteins (5-8%), ether (1- 2%), carbohydrates (65-75%), 2.5 to 3.5 per cent minerals and 15 to 20 per cent dietary fibers. Phytochemicals present in finger millet act as antioxidants and helps to maintain physiological balance and protect against oxidative damage. The fat content in finger millet was relatively low and it was a rich source of essential amino acids. On the whole, finger millet is a crop which has the capacity to address the global concerns about rising temperature, poor soils, and reduction in agricultural productivity, food insecurity and malnutrition. Finger millet is high in Ca, Fe and Mg and contains amino acid methionine, which are deficient in polished rice or maize.

India is the largest producer of Ragi in the world and the maximum further production is in the state of Karnataka. The major finger millet growing states are Karnataka, Uttarakhand, Maharashtra, Tamil Nadu, Odisha, Andhra Pradesh and Gujarat with a total area of 2.5 million per hectare and 2.2 million tons of production in India, millet is cultivated in an area of 12.45 million hectares with a yield of 1247kg/hectare and a production of 15.53 million tons for the years.

1.Situation analysis/ Problem:

Finger millet productivity in the dang district is low as a result of farmers' use throwing method for transplanting, improper land management, weed management and usage of indigenous varieties. Finger millet needs line sowing and timely transplanting of young seedling at recommended spacing. The crop production is ultimately decreased by improper transplanting method with use of indigenous seeds that produce plants with fewer tillering, slower growth and severe weed infestation. The majority of farmers throwing finger millet seedling at the time of transplanting, which required more seedling than recommended, ultimately driving up the price of seed. Because most of the farmers are impoverished and tribal, they lack understanding about proper sowing method, improve finger millet varieties and modern agricultural practices.

2. Plan, implement and support:

The KVK team of scientists conducted a survey in the village to determine the socioeconomic position, adoption gap, and technology requirements of farmers. The village's development plan has been created for several TOT activities. The KVK scientists have filled in a number of technological gaps, including those related to farmers' awareness of new, improved varieties, sowing techniques, seed rate, and the use of organic fertilizers in finger millet. A scientist of crop production, who specializes in crop production, decided to intervene on this point and conducted 3 year of on farm Trial of Sowing method in finger millet. The finger millet’s package of practices has been taught to the farmers. The KVK science team visited the farmer's field on a regular basis and guided them accordingly for various operations.

Tribal-dominated villages Borpada is located 7 kilometres from Krishi Vigyan Kendra's headquarters in Waghai, Dist. Dangs. These villages' farmers have poor resources and undulating,

fragmented land. The majority of farmers are marginal farmers. The farmers used throwing method for transplanting. Then the Krishi Vigyan Kendra intervened and trained the farmers of these villages about the land selection, new variety seed, line sowing at recommended spacing, seed rate, rouging of infected plant, use of organic fertilizer, harvesting and post-harvest handling of seeds and also provides seed of new variety of finger millet, biofertilzer and novel organic liquid nutrient to farmers.

3. Output:

Economics:

Details of Technology	Year of trial	No. of Farmers /Demos	Area (ha)	Yield (q/ha)		
				T_1 : (Random throwing)	T_2: 30 x 10 cm	T_3: 22.5 x 7.5 cm
Line sowing of *Kharif* Finger millet (GNN 8)	1st	10	1	10.06	12.18	14.10
	2nd	10	1	9.45	11.94	13.20
	3rd	10	1	10.95	13.74	15.30

Details	Year of trial	Economics (Rs./ha)					
		Net Return (Rs.)			CBR		
		T_1	T_2	T_3	T_1	T_2	T_3
Line sowing of *Kharif* Finger millet (GNN 8)	1st	18168	24104	29480	2.82	3.41	3.95
	2nd	16460	21432	24960	2.65	2.79	3.08
	3rd	20660	26472	30840	3.07	3.21	3.57

The farmers' practices (Random throwing) allowed them to harvest 10.06, 9.45 and 10.95 q/ha of finger millet in 1st, 2nd and 3rd year of trial, respectively. In compared of treatment T_1(Random throwing), treatment T_3 (Sowing at 22.5 x 7.5 cm) was given 14.10, 13.20 and 15.30 q/ha in 1st, 2nd and 3rd year of trial, respectively, which was very higher then treatment T_1. Also found higher net return and BC ratio in treatment T_3 (Sowing at 22.5 x 7.5 cm).

Off campus training

Treatment T_1

Treatment T_2

Treatment T_3

4. Outcome

As a result of on farm trail, Farmers now have more tiller and fingers in the method of sowing at 22.5 x 7.5 cm with new variety of finger millet (GNN 8), as well as less weed infection. Additionally, they receive more family income thanks to line sowing, the application of organic fertilizers, weeding and other operations in accordance with scientific cultivation methods, which ultimately increased the farm family's standard of living.

5. Impact

Farmers are made aware of the significance, advantages and productivity of recommended sowing method, due to the increased yield of finger millet by the recommended sowing method. In comparison to treatment T_1 (Random throwing), which had a net return of Rs. 29480, 29960 & 30840/ha and a cost-benefit ratio of 3.95, 3.08 & 3.57 in 1^{st}, 2^{nd} and 3^{rd} year of trial, respectively.

Success Story-2

Mango Grafting: An Emerging business for Triable Farmers of the Dang District

H. A. Prajapati, P. P. Javiya, B. M. Vahunia, S. A. Patel & J. B. Dobariya

Name of farmer	Shri. Hasmukhbhai Rangubhai Bagul
Village	Godadiya, Ta: Ahwa, Dist: Dang State: Gujarat
Education qualification	9th pass
Land holding	1.15 ha (Irrigated)

Situation Analysis/Problem Statement:

Hasmukhbhai Rangubhai Bagul is a farmer of village: Godadiya,Taluka:Ahwa,District:Dangs in the Gujarat.He educated up to 9th standard and having 1.15 ha land. He has eight year experience in farming. Somehow, they were earning their livelihood by practicing rainfed agriculture in their land. He was growing local varieties of paddy, variandragiand hybrid varieties in vegetables during the kharif season and gram in rabi season.Use of the local varieties use of expensive hybrid seedling material of various vegetable crops could not give the satisfactory remuneration to Hasmukhbhai. Under such situation Hasmukhbhai was in search of new farming approach which gives a proper remuneration to his family.

Plan, Implement and Support:

By AGAKHAN NGO, he came to know about KrishiVigyan Kendra. Shri.Hasmukhbhai started to visit the KrishiVigyan Kendra in order to get proper guidance about grafting in mango. Horticulture scientist impressed to see his keen interest in mango grafting. The Scientist of KrishiVigyan Kendra guides him properly andtells him about how to prepare a mango graft with a scientific approach. The scientist of KVK started a series of activities *i.e.*training, demonstration, scientist visit to farmer's field, field day *etc.* to deal with the existing problems and observed a positive impact.

Output:

At present Hasmukhbhai has adopted proper scientific approach regarding the preparation of mango graft. He has taken proper care aboutmango graft and first year hasmukhbhai prepared 7000 nos. mango graft and last year he was prepared 10000 nos. grafts. He uses proper scientific approach in graft preparation as per the guidance provide by the scientist of KVK through training, demonstrations and very frequent farm visit.

- ✓ After getting success, Shri Hasmukhbhai realizes the importance of uses of scientific approach in preparation of mango grafting and he also adopted drip irrigation technology for aftercare of grafts.

Mango graft Preparation

Diagnostic visit

Field visit

Scientist visit to farmers field

Mango graft for selling purpose

Outcome:

Due to adoption of scientific practices, his constant effort and hard work and timely support from KVK, other line departments& NGOs he could achieve very impressive growth in preparation of Mango grafts which shown in Table.

Sr. No.	Crop name	Area (ha)	Yield (Nos.)	Cost of cultivation(Rs.)	Gross return (Rs.)	Net return (Rs.)
Year : 2020-21						
1	Mango grafts	0.60	7000	40000.00	140000.00	100000.00
Year : 2021-22						
2	Mango grafts	0.60	12000	264000.00	64000.00	200000.00
Year : 2022-23						
3	Mango grafts	0.80	10000	920000.00	200000.00	720000.00

Impact

Before coming in contact with Krishi Vigyan Kendra, Hasmukhbhai used to spend his own money and bring mango grafts from other districts and plant them. The surrounding villages also get the inspiration for the preparation of mango grafts and 5-10 farmers start mango grafting business on small scale. After the kvk intervention , Hamukhbhai's net worth per annum is 6.00 to 7.00 lakh (approx.).

For the success of Mango grafting in the tribal areas of Dang district, he believes that it is due to intensive guidance provided by the Scientist Mr. H.A.Prajapati. This impressive result of crop mango grafting turned Shri. Hasmukhbhai from poor farmer to happy progressive farmer. The success of Mango grafting in resource poor areas is a unique example to generate the employment as well as empower the tribal economy in the country.

Success story-3

Title – Popularizing Beauveria bassiana for control of pest in paddy

B. M. Vahunia, S. A. Patel, J. B. Dobariya, H. A. Prajapati & P. P. Javiya,

Name – Thakare Somabhai Pandubhai

Village – Lahandabas, **Ta. –** Ahwa**, Dist. -** Dang (Gujarat)

Mo. –9428494198

1. Situation Analysis/ Problem Statement:

Profile		
Age	56	Before contact with KVK, Waghai, he was not actively use plant protection measure. Economic condition is not strengthening after lot of work.
Education	3rd standard	
Land Holding	1 hactare	
Farming Experience	17 year	
Crop grown	Paddy, Bitterguard, Finger millet	
Animal own	00	

Thakare Somabhai Pandubhaiis a farmer of village Lahandabas, Taluka- Ahwa, District- Dangs in Gujarat. Somabhai complete his education up to 3Rd standardand having 1 Hactare of land. Somehow, he was earning his livelihood by practicing rain fed farming in her land. He was growing local and old varieties of Paddy, nagli during Kharif season and Strawberry in rabi season. Under such situation, he needed some additional or supplementary income to increase income, food & Nutritional security of her family. Therefore, he was in search of some alternate sources of income.

He gets in touch with KVK via a few individuals, who provide training and expertise on paddy farming and integrated pest management. He learned about the scientific farming of paddy and received paddy materials and a folder written in Gujarati by KVK scientist. He used to be a successful paddy farmer, but in the last few years, he has encountered problems with stem borer in her field. As a result of these attacks, he has seen a decrease in both price and paddy production. He was able to raise his income as a result of using Bauveriabassiana technology for stem borer management, hard effort, and prompt assistance from KVK.

Our district has been designated as an organic/natural farming district these days. Therefore, farmers like somabhai come to KVK to learn more and discuss with us how to switch from chemical to organic pesticides.

Plan, implementation and Support

KVK scientific team conducted a survey in the area to determine the adoption gap, the technological requirements of farmers, and their socioeconomic standing. The village's development strategy for several activities has been created. Amidst diverse technological gaps, the KVK Scientists have devised the subsequent activities:

- Training on role of IPM
- Give Extra motivation to use beauveriabassiana
- Providing literature in local language
- Technical Guidance for pest management in paddy
- Given beauveriabassianain FLD
- Advisory service
- Follow-up visit

2. Output

After training he got beauveriabassianaand carried out cultivation on her own and with KVK intervention.

3. **Outcome**

Somabhai get high production after uses of beauveriabassiana and KVK waghai also guide to remove stubbles after harvesting. Also suggest removal of infested plants.

4. **Economic Impact**

Details of Technology/ year	No. of Farmers /Demos	Area (ha)	Yield (q/ha)				% Increase in yield
			Demo			Check	
			Highest	Lowest	Average		
Beauveriabassiana(2021)	01	0.2	30.5	27	28.3	26.10	8.77
Beauveriabassiana(2022)	01	0.2	25.1	23	24.27	21.59	12.45
Beauveriabassiana(2023)	01	0.2	26	24.5	25.28	21.59	17.14

Details	No. of Farmers /demos	Area (ha)	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Gross Cost	Gross Return	Net Return	CBR	Gross Cost	Gross Return	Net Return	CBR
Beauveriabassiana(2021)	01	0.2	27476	50940	23464	1.85	26364	46994	20648	1.78
Beauveriabassiana(2022)	01	0.2	27476	43689.6	16231	1.59	26346	38872	12526	1.47
Beauveriabassiana(2023)	01	0.2	25000	48039	23039	1.92	24500	40943	16443	1.67

Success Story-4

Title: Economic Empowerment through Innovative Dairy Business

S. A. Patel, J. B. Dobariya, H. A. Prajapati, P. P. Javiya & B. M. Vahunia

Situation Analysis/Problem Statement

Saritaben Yogeshbhai Ganvit is a woman farmer of Village Gorya, Taluka- Ahwa, District Dangs in Gujarat, educated up to 12th standard and having 6.0 Acre of land. Her husband is also a farmer. They have two children a son and a daughter. Somehow, they were earning their livelihood by practicing rain fed agriculture in their land. She was growing local and old varieties of Paddy, Vari, Ragi and some vegetable during Kharif season. She had two bullocks and one cows of local origin. These animals were a burden rather than a source of income due to the meagre productivity; however the bullocks were used for the agricultural operations. Under such situation, it was difficult to sustain house hold food and nutritional security of her family. Therefore, she was in search of some alternate sources of income.

Saritaben Yogeshbhai Ganvit
Village:Gorya, Taluka-Ahwa, District Dangs - (Gujarat)
Age: 33 years , Education: 12th Standard , Size of Land holding: 6.0 Acre

Plan, Implement and Support

By some sources, she came to know about some welfare schemes for tribal. First of all she visited a co-operative dairy in a nearby village and she also decided to join co-operative dairy in her nearby village. Meanwhile her village, Gorya was care by KVK and ATMA -Dang of the district. A series of

animal husbandry activities like meetings, trainings, kisan gosthis, field visits, farm school, and visit to a dairy co-operative has been started by KVK scientists. Saritaben and other interested farmers had purchased HF cross-bred cow.

As cross bred cow was a new enterprise for them, they often faced so many troubles for proper guidance. In the beginning she was not able to maintain the proper health of her animals. she came in contact with Krishi Vigyan Kendra, through ATMA, Dang and was inspired to abandon conventional dairy practices and adopt animal husbandry in a scientific manner as per the guidance of scientists. Animal scientist of KVK was impressed to see her keen interest in dairy farming. It was found that the farmers of this village were rearing the animals with traditional method, imbalance in use of feeds and fodder as well as facing the chronic problem of anoestrus, repeat breeder and poor growth. The Scientist of KVK started a series of activities i.e. training, demonstration, farmer's scientist interaction etc to deal with the existing problems and observed a positive impact.

Output

At present, Saritaben has adopted scientific concepts to rear her animals as per the suggestions given by KVK scientists. She has extended her farm and today she owned 6 milking HF crossbred cows, 2 heifers and 2 calves. She has constructed a pakka house with manger and water tank. She uses proper concentrate feed, green and dry fodder, mineral mixture, timely vaccination, de-worming and diagnosis as per the guidance provide by the scientists of KVK through training, demonstrations and very frequent farm visits. She is a purchase chaff cutter for cutting fodder & regularly use this instrument. As result, a strong competition between various farm women to get more and more milk production developed.

Outcome

Due to adoption of improved practice, her constant efforts and hard work and timely support from KVK, ATMA Dang & other line departments and Vasudhara dairy she could achieve very impressive growth in dairy farming as per the table-1.

Impact of KVK

Sr. No.	Particulars/ Items	Before KVK intervention	After KVK intervention
1	Animals own	1-Desi cows 2- Desi Bullocks	**2020-21** 4- HF cows 1-Heifers 1 - Calves 2- Bullocks **2021-22** 5- HF cows 1-Heifers 1 - Calves 2- Bullocks **2022-23** 6- HF cows 2-Heifers 2 - Calves 2- Bullocks
2	Vaccination & De-worming	Not proper	Regular
3	Milk production (day)	Initial 1.5 lit/day	Average-18 lit/cow/day highest income up to Rs. 23,721/- per month
4	Highest milk production per	2.0 lit/day	Up to 8 lit/day/animal

	animal per day		
5	Anoestrus and repeat breeder problems	Yes	No
6	Inter-calving interval	More than 2 yrs	12-16 months
7	Service period	Average-170 days	90-95 days
8	No. of service per conception rate	7-8	1-2
9	Growth of calves and heifers	Poor	Good
10	Age of first calving	5-6 yrs	30-48 months
11	Economics enhancement Income per month(Net profit) Income through selling of self reared HF animals	 Not good Nil	 Rs.12,000-17,000 per month Planned in future
12	Modern assets in the house because of dairy farming	Nil	Freeze – 1 TV - 1 Mobile - 2 Motorcycle – 1 Tractor -1
13	Bank loan	-----	Paying regularly
14	C.B. Ratio		1: 2.1

Milk production Data

Sr. No.	Year	Annual Milk production	Annual Profit (Rs)
1	2020-21	3972 liter	141653.81
2	2021-22	5935 liter	209193.93
3	2022-23	5083 liter	193877.45

For the success of dairy farming in tribal areas she believes that it is due to intensive guidance provide by the Scientist of KVK and ATMA-Dang. In addition to this, humble support made by Vasudhara dairy as well as state government to provide subsidy for purchasing the cross bred cows and proper marketing facility, respectively.

She feels that having good genetic potential and dairy characters of HF cross bred animals plays an important key role in dairy business. She also emphasized that after starting the dairy farming she need not to go anywhere for earning employment as well as she could make herself away from the money lender's clutch to satisfy her needs. Now she can easily manage her all needs and able to think in advance for the sake of better education to her children due to dairy farming.

This impressive result of dairy farming turned Saritaben Yogeshbhai Ganvit & her husband from poor farmer to a happy progressive dairy farmer. The success of dairy farming in resource poor areas is a unique example to generate the employment as well as empower the tribal economy in the country.

Success Story-5

Adoption of natural farming system as a sustainable farming practice

J. B. Dobariya, H. A. Prajapati, P. P. Javiya, B. M. Vahunia & S. A. Patel

1. Background/existing problem:

Shri Raut Ishwarbhai Pandubhai's initiative in Mahalapada village of Dang district is truly commendable. His dedication to natural farming despite the challenges of water shortage sets a noble example for sustainable agriculture. By eschewing chemical inputs, he not only preserves the health of the land but also contributes to the well-being of the community and the environment. In regions like Dang district, where water scarcity is a pressing issue, adopting natural farming practices becomes even more critical. Natural farming techniques, such as mulching, intercropping, and water conservation methods like rainwater harvesting and drip irrigation, can help mitigate the impact of water scarcity while maintaining soil fertility and crop productivity. The fact that more than 50 farmers in Mahalapada village have followed Shri Raut Ishwarbhai Pandubhai's lead and embraced natural farming indicates a growing awareness of the importance of sustainable agricultural practices. This shift not only benefits the farmers by reducing input costs and improving the quality of produce but also contributes to the overall resilience of the agricultural ecosystem. Mahalapada village has a significant population engaged in agriculture, the adoption of natural farming on a larger scale could have far-reaching benefits for the entire community. It can lead to increased food security, enhanced biodiversity, and a more resilient agricultural system that is better equipped to withstand challenges such as water scarcity and climate change. Given that Mahalapada village has a significant population engaged in agriculture, the adoption of natural farming on a larger scale could have far-reaching benefits for the entire community. It can lead to increased food security, enhanced biodiversity, and a more resilient agricultural system that is better equipped to withstand challenges such as water scarcity and climate change.

2. Process and methods through which interventions by KVKs was made:

The transition from traditional farming methods to modern natural farming techniques, as exemplified by Shri Raut Ishwarbhai Pandubhai, illustrates the positive impact of adopting innovative approaches in agriculture. By embracing new methods facilitated by organizations like KVK Waghai and leveraging knowledge-sharing platforms such as agricultural festivals and motivational tours, Shri Raut Ishwarbhai Pandubhai has been able to significantly improve his agricultural practices and enhance crop yields.

Key advancements in his approach include:

1. Transition to Modern Techniques: Shri Raut Ishwarbhai Pandubhai shifted from traditional methods of planting and sowing to modern techniques. Instead of manually plowing and sowing crops, he adopted methods like the "Sri Method" of mulching, which helps conserve soil moisture and suppress weed growth.

2. Utilization of Natural Farming Inputs: He incorporated natural farming inputs such as cow urine-dung, jivamrut, and ghanjivamrut, which act as organic fertilizers and enhance soil fertility. This move away from chemical inputs not only improves the quality of the produce but also contributes to environmental sustainability.

3. Diversification and Intercropping: Shri Raut Ishwarbhai Pandubhai diversified his crop selection and implemented intercropping practices. This not only maximizes land use efficiency but also reduces the risk of crop failure and improves overall productivity.

4. Water Management: Recognizing the importance of water availability, he took steps to improve water management on his farm. Constructing a well and implementing water-saving techniques like furrow irrigation contribute to efficient water utilization, particularly crucial in regions facing water scarcity.

5. Market Orientation and Value Addition: Shri Raut Ishwarbhai Pandubhai actively engaged with market opportunities and received guidance from agricultural extension services to improve marketing strategies. This enabled him to effectively sell his produce, thereby increasing his income and ensuring economic sustainability.

By integrating these modern techniques and innovations into his farming practices, Shri Raut Ishwarbhai Pandubhai not only improved his own livelihood but also set an inspiring example for other farmers in his community. His success highlights the potential of combining traditional knowledge with contemporary agricultural advancements to achieve sustainable and resilient farming systems.

3. Types of interventions made by the KVKs to address the problem

a) Cultivating with Traditional Tools:

Cultivating only with the help of bullock/pada in plough, indicating a reliance on traditional methods of cultivation. Farming based on native and old methods, suggesting a lack of modern agricultural techniques. Avoidance of chemical fertilizers, instead relying on organic sources such as solid food burns. Lack of access to modern communication tools like TV and radio, which may hinder access to agricultural information. Marketing of products without proper information or strategy based on natural methods, potentially limiting market opportunities.

b) Modern Agricultural Techniques:

Changes in tillage made to level the land, indicating a shift towards more efficient land preparation methods. Implementation of the "Shri Method" of mulching for paddy planting, a modern technique to conserve soil moisture and suppress weed growth. Application of organic manures such as cow dung and cow urine to the beds, promoting soil health and fertility. Encouragement of earthworm activity through mulching, contributing to soil aeration and nutrient cycling. Utilization of natural pest control methods such as *Nimastra, Agniastra, Brahmahastra, and Dashaparniank* for disease control, reducing reliance on synthetic pesticides.

c) Positive Outcomes and Achievements:

Great reduction in production costs and increase in production, indicating improved efficiency and profitability.Elimination of labor-related issues, suggesting improved working conditions and productivity. Improved yields of grains and pulses, indicating enhanced crop performance and food security. Diversification of crops with the planting of fruit trees like mango, lemon, saffron, and cashew, contributing to income diversification and agroforestry practices. These interventions demonstrate a transition from traditional farming practices to modern, sustainable techniques facilitated by the KVKs. The adoption of innovative approaches has led to significant improvements in agricultural productivity, economic viability, and environmental sustainability.

The involvement of various agricultural and governmental bodies, including Krishi Vigyan Kendra (KVK), ATMA staff, and horticulture officers, demonstrates a collaborative effort to support and guide farmers like Shri Raut Ishwarbhai Pandubhai in adopting modern farming practices. Here's how these interventions have been beneficial:

1. **Expert Guidance:** Representatives from KVK, Waghai, ATMA staff, and horticulture officers provide valuable expertise and guidance on improving crop diversity and implementing sustainable farming practices. This guidance helps farmers like Shri Raut Ishwarbhai Pandubhai make informed decisions and adopt innovative techniques.

2. Inauguration Visit: The visit of dignitaries such as the Mahasammit Governor of Gujarat, along with other government officials, highlights the recognition and support for initiatives promoting sustainable agriculture. This visit not only acknowledges the efforts of farmers but also encourages others to follow suit.

3. Local Knowledge Exchange: Farmers in Mahalpada village and neighboring areas share their local knowledge and experiences with natural farming. This exchange of information fosters community learning and strengthens the adoption of sustainable agricultural practices across the region.

4. Continuous Support and Guidance: Ongoing support from KVK, Waghai, ATMA project officers, and horticultural officers ensures that farmers receive continuous guidance on various aspects of agriculture, including mango grafting, drumstick planting, and multiple cropping systems. This support helps farmers diversify their crops and enhance their agricultural productivity sustainably.

Overall, these interventions demonstrate a coordinated effort by various stakeholders to promote sustainable agriculture and support farmers in adopting modern farming practices. By leveraging expertise, local knowledge, and continuous guidance, farmers like Shri Raut Ishwarbhai Pandubhai can enhance their livelihoods while contributing to environmental sustainability and food security in the region.

4. Inputs and Outputs process

a. Details of last three years in agriculture sector

Detail	**2021-22**			**2022-23**			**2023-24**		
	Kharif	***Rabi***	**Summer**	**Kharif**	***Rabi***	**Summer**	**Kharif**	***Rabi***	**Summer**
Crop	Paddy	Bitter gourd	Green gram	Paddy	Bitter gourd	Green gram	Paddy	Bitter gourd	Black gram
Total area hector)	1.0	0.4	0.5	1.0	0.4	0.5	1.0	0.4	0.5
Total production(K.G)	4700	4900	210	5200	5300	280	6000	5600	300
Total income (Rs.)	60,000	92000	12000	68000	117000	33500	90000	118000	40000
Total cost (Rs.)	16000	18000	2000	18000	21000	3000	20000	18000	4000
Gross net profit	44000	74000	10000	50000	96000	30500	70000	100000	36000
Data per hectare area									

Production (K.g/h.)	4700	12250	420	5200	13250	560	6000	14000	600
Income (Rs. /h.)	60,000	230000	24000	68000	292500	67000	90000	295000	80000
Expenses (Rs./h.)	16000	45000	4000	18000	52500	6000	20000	45000	8000
Profit (R/h.)	44000	185000	20000	50000	240000	61000	70000	250000	72000

B. details of last three years in animal husbandry sector

Sr. No.	Year	No of Animal	Milk production	Income	Cost	Net benefit
1.	2021-22	2 (Dangi Cows)	2500 liter	Rs. 25 per liter (62500)	36500/-	26000/-
2.	2022-23	2 (Dangi Cows)	2700 liter	Rs. 25 per liter (67500)	37000/-	30500/-
3.	2023-24	2(Dangi Cows)	2900 liter	Rs. 25 per liter (72500)	40000/-	32500/-

In the first year of Bitter gourd cultivation 1 acre and yielded 4900 kg, which in the market got Rs.92000 and he gate net income of Rs.74000 after deducting expenses. In the 2nd year 5300 kg produce from 1 acre, which was sold in the market and fetched Rs.1,17000 of which 96000 net income after deducting expenses. In 3rd years Rs. 5600 kg production in 1 acre was obtained, which was sold in the market and fetched Rs.1.18000 in which 1,00,000 net income received after deducting expenses. Also in the summer season, about Rs.76, 500 were received from crops like Green gram/black gram/onion. Mixed crops like brinjal, tomato, green chilies got a saving of 10-12 thousand for the household as well as increased additional sales. Other income was also got from crops like turmeric, mango.

5. Outcomes and Impact of the intervention

Shri Raut Ishwarbhai Pandubhai's commitment to sustainable farming practices is evident in his innovative approaches to seed preservation, soil fertility management, and crop protection. His efforts not only benefit his own farm but also inspire and guide other farmers in the region. Let's break down his methods and their impact:

1. **Seed Bank and Seed Preservation:** Instead of purchasing hybrid paddy seeds, Shri Raut Ishwarbhai Pandubhai creates a seed bank by saving seeds from his own harvest. This practice ensures seed diversity and reduces dependency on external sources.
2. **Soil Fertility Management:** He utilizes natural fertilizers like dhanamrut and jivamrut, made from locally available materials, to enrich the soil and provide essential nutrients to the crops. This approach promotes soil health and enhances crop productivity.
3. **Crop Protection:** Shri Raut Ishwarbhai Pandubhai employs a combination of natural pest control methods such as Nimastra, Brahmastra, Agnistra, Dashparniark, and fungicide applications to protect his crops from pests and diseases. These methods minimize reliance on synthetic pesticides and promote ecological balance.
4. **Promotion of Biodiversity:** By planting flowering plants along the fields, Shri Raut Ishwarbhai Pandubhai attracts bees, which aids in pollination and increases crop production. This practice highlights the importance of biodiversity in agricultural ecosystems.
5. **Community Outreach and Knowledge Sharing:** Shri Raut Ishwarbhai Pandubhai actively shares his knowledge and experiences with fellow farmers in his village and beyond. By guiding others in adopting sustainable farming practices, he contributes to the spread of environmentally friendly agriculture in the region.
6. **Expansion of Sustainable Farming Practices:** His efforts have led to the adoption of sustainable farming practices by other farmers in nearby villages, resulting in a network of farmers practicing natural farming techniques. This expansion demonstrates the scalability and effectiveness of his approach.
7. **Training and Mobile Guidance:**

Shri Raut Ishwarbhai Pandubhai and other farmers receive training and guidance from agricultural extension services, including information delivered via mobile phones. This ensures continuous learning and adaptation to new agricultural methods and technologies.

Overall, Shri Raut Ishwarbhai Pandubhai's holistic approach to farming exemplifies the potential of sustainable agriculture to improve livelihoods, preserve the environment, and foster community resilience in rural areas. His dedication to experimentation, knowledge sharing, and community empowerment sets a powerful example for sustainable agricultural development.