


## SUCCESS STORIES/CASE STUDIES

### 1. Improved variety of drilled rice: need of hour to fight against famine in tribal area

Name	: Mr. Ramjibhai Koyalabhai Vasava.	
Village	: Pratapnagar, Talkua: Nadod, District Narmada	
Age	: 53 years old	
Education	: up to 6 <sup>th</sup> std.	
Land holding	: about 2.5 acre	

#### 1. Situation Analysis :-

The 'Green Revolution' is the name given to the dramatic increase in cereal crop yields through modern agricultural inputs – irrigation, fertilizers, improved seeds, and pesticides – in the 1960s. For rice, the revolution began with the release by IRRI of the high- yielding semi dwarf variety IR8 in 1966. The world average rice yield in 1960, the product of thousands of years of experience, was about 2 t/ha. The rice varieties and technologies developed during the Green Revolution have increased yields in some areas up to 6–10 t/ha.

In tribal areas where traditional agriculture is characterized with age old cropping system mainly mono cropping which reflects the low productivity of various crops. The rainfed crops grown by the tribal farmers are drilled paddy, sorghum, pigeon pea and other pulses either single crop, mixed or intercrops. Paddy is the dominated crop in the area as rice is the staple food in the region. In Narmada district, the productivity of 8.90 qtl/ha drilled paddy and 24.10 qtl/ha transplanted paddy is low as compared to untapped yield potential. It has been observed that introduction of suitable improved varieties is still lacking in the area. This situation compels the tribal farmers to prefer unrecognized varieties of drilled (Direct seeding) paddy.



**Field of paddy variety PURNA**



**Paddy variety PURNA having panicle length about 20 cm**

## 2. Plan, Implement and Support :-

In view of the above situation, Krishi Vigyan Kendra decided to organize Front Line Demonstrations in adopted villages of Narmada district. An improved variety of drilled paddy named Purna developed by Navsari Agricultural University during the year 2015. The variety Purna was selected under FLDs from the year 2015-16 to 2020-21. The farmers' preferred varieties of drilled paddy were generally Nagpuri, GR-5, IR-28 and mix seed of unrecognized were considered as check plots to compare the yield potential of variety under FLDs i.e. Purna. These demonstrations were organized in an area of 125 ha. with the involvement of 310 farmers. The selected farmers were trained for the scientific cultivation of paddy prior to conduct the FLD. As in tribal areas, the technical know-how of the farmers is very poor. Therefore, it was decided to conduct method demonstration about the scientific method of seed treatment and simultaneously other concepts were included time to time in the training and other activities. Besides, regular visit of farmers' field were also arranged. The detailed information on activities carried out by KVK and support in building farmers' skills in adoption of this variety is shown below.

Sr no	Year	Name of activity	No. of participants
1	2015-16 to 2020-21	On campus training	10
		Off campus training	14
		FLD visit	35
		Group meeting	28
		Film show	30
		Diagnostic visit	45
		Field day	11



**Farmers training Programme**



**Field visit by scientists**

## 3. Output :-

Most of the farmers in Narmada district were sowing drilled paddy local and old variety. So, we had given improved variety and the basal dose of fertilizers including supplementary. Among all the farmers Mr. Ramjibhai Koyalabhai Vasava. obtained 36.60 Q/ha with improved

technology module ie Seed of Improved variety Purna ,Sowing method with proper distance (30cms) with row to row Seed Treatment (Bavistin @3 gm/kg seed),Recommended dose of fertilizers (75:25:00 NPK kg/ha). However, In previous year her drilled paddy yield was to the tune of 1000 to 15000 kg/ha only.

#### 4. Outcome:-

However, the highest yield was observed in the field of Mr. Ramjibhai Koyalabhai Vasava with the variety of Purna ie (36.60 Q/ha) which clearly indicated the superiority and suitability of not only the grain yield of new released variety but also the more yield of fodder. The CBR was also higher. It was 1:3.90 in demonstrated plots during the year as compared 1:1.83 in previous year.

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Previous yield with local variety	13.5	17500	27000	11800	1.78
Yield after adoption of cultivar Purna	36.6	15200	73200	55700	4.18
% Increase in Demonstration	71.1				

#### 5. Impact :-

Mr. Ramjibhai Koyalabhai Vasava fetched more prices in the market as compared to hybrid variety. Not only had that she becomes aware about the difference between the characteristics of hybrid seed and the improved varieties which demonstrated under the FLDs. The encouraging results of that varieties lead to motivate her to reduce their dependency on agro dealers about improved seeds. Not only that, the infestation of stem borer was low in this variety, new variety of Paddy Purna also good in eating and making Rotla purpose, required less water and having early maturity, higher fodder yield as compared to local variety; . In nutshell, the tribal farmers have become aware about the quality of rice as compared to local and old varieties for both purposes i.e. eating and marketing.

As a result, these varieties horizontally spread in 25 villages covering 312 farmers in 125 ha during these years. The farmers were benefitted economically as the cost of seed was reduced by using the improved seed.

Due to live contact, constant follow up, motivation and well communication of Scientists of Krishi Vigyan Kendra, Narmada and FLDs significant result, this technology is getting momentum among the tribal farmers of Narmada district. The standard of living of the farmers who benefitted by this technology has also been increased.

## 2. IMPROVED VARIETY OF SOYBEAN (NRC-37): A Promising variety to augment soybean productivity in tribal area

Name : Shri. Ravishankar Kuvarjibhai Vasava.  
 Village : Nanibedvan, Talkua: Dediapada, District Narmada  
 Age : 45 years old  
 Education: up to 10th std.  
 Land holding : 10 Acre (Irrigated)



### 1. Situation Analysis

Soybean is now predominantly grown as rain fed crop in soils with an average crop season rainfall of 900 mm, which varies greatly across locations and years. Introduction of soybean in these areas has led to a shift in cropping system from rainy season fallow followed by post-rainy season wheat or chickpea system fallow (wheat/chickpea) to soybean followed by wheat or chickpea (soybean–wheat/chickpea) system. At present, India ranks fifth in the area and production in the world after USA, Brazil, Argentina, and China. The contribution of India in the world soybean area is 10 %, but the contribution to total world soybean grain is only 4 % indicating the poor levels of productivity of the crop in India (1.1 t/ha) as compared to other countries (world average 2.2 t/ha). Soybean contributes 40 and 25 % to the total oilseeds and edible oil production of the country and earns valuable foreign exchange by exporting soya meal.



NMOOP of Soybean NRC-37



Field visit to demonstrated plot

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

The rain fed crops grown by these tribal farmers are drilled paddy, sorghum, pigeon pea and other pulses either single crop, mixed or intercrops. They grow paddy to fulfill food need of the family as rice is the staple food of this people. In view of this, Krishi Vigyan Kendra decided to organize Cluster Front Line Demonstrations under NMOOP in adopted villages of Narmada district. An improved variety of Soybean NRC-37 developed by Anand Agricultural University during the year 2017 (Endorsed) which having non-shattering, semi erect plant growth habit, white colour flower, presence of hairs on pods and spherical seed with yellow seed colour. This variety NRC-37 was selected under CFLDs from the year 2017-18 to 2020-21. The



farmers' preferred varieties of soybean were generally JS-335, GS-2, and mix seed of unrecognized which considered as check plots to compare the yield potential of variety under CFLDs i.e. NRC-37. These demonstrations were organized in an area of 80 hectors with the involvement of 200 farmers. The selected farmers were trained for the scientific cultivation of soybean prior to conduct the CFLDs. As in tribal areas, the technical know-how of the farmers is very poor. Therefore, it was decided to conduct method demonstration about the scientific method of seed treatment and simultaneously other concepts were included time to time in the training and other activities. During programme of input distribution we were gave information about critical inputs i. e. use of bio fertilizers (like *Rhizobium*, PSB, KMB), banana pseudo stem liquid (NOVEL), Neem oil (1500ppm) and bio pesticides (like *Tichoderma*, *Pseudomonas*). Besides, regular visit of farmers' field were also arranged. The detailed information on activities carried out by KVK and support in building farmers' skills in adoption of this variety is shown below.

Sr No	Year	Name of activity	No. of activity	No. of participants
1	2017-18 to 2020-21	On campus training	6	240
		Off campus training	10	320
		FLD visit	24	170
		Group meeting	12	340
		Diagnostic visit	24	78
		Field days	8	530



**Farmers training Programme**



**Field day celebration programme**



### 3. Output :-

Most of the farmers in Narmada district preferred to grow soybean varieties like JS-335 and old variety. Whereas, we were given improved variety like NRC-37 with bio fertilizers (like *Rhizobium*, PSB, KMB), banana pseudo stem liquid (NOVEL), botanicals like Neem oil

(1500ppm) and bio pesticides (like Trichoderma, Pseudomonas). Among all the farmers Shri. Ravishankar Kuvarjibhai Vasava. obtained 19.5 Q/ha yield of soybean with improved technology module ie Seed of Improved variety NRC-37, Sowing method with proper distance (45 x 10 cms) with row to row, Seed treatment (Carbendanzim @3 gm/kg seed), Recommended dose of fertilizers (20:40:00 NPK kg/ha).

#### 4. Outcome:-

The yield of soybean during previous years was to the tune of 1000 to 1500 kg/ha only. Whereas, the highest yield was observed in the demonstration field of Shri. Ravishankar with the variety of NRC-37 i.e (19.5 Q/ha) which clearly indicated the superiority and suitability of variety. Besides, it also gave more fodder (24.5 Q/ha straw yield). The CBR was also higher. It was 1:2.25 in demonstrated plots during the year as compared 1:1.99 in local.

	
NRC-37	JS-335
Pod setting comparison between NRC-37 and JS-335 (National check)	

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Previous yield with local variety	15.8	26300	52338	26038	1.99
Yield after adoption of cultivar NRC-37	19.5	27200	61314	34114	2.25
% Increase in Demonstration plot	23.4				

#### 5. Impact:-

Shri. Ravishankar Kuvarjibhai Vasava fetched more prices in the market as compared to others (Rs. 5 more per one kg). Not only had that he enriched himself about the difference between the characteristics of improved varieties which demonstrated under the CFLDs.

Soybean (NRC-37) having special features like Non-shattering, white colour flower and presence of hairs on pods which led to low insects -pests attacks. As well as required less water and having early maturity, higher fodder yield as compared to local variety.

As a result, these variety horizontally spread in 12 villages covering 200 farmers in 80 ha. during these four years. Because of live contact, constant follow up, motivation and good communication of Scientists with the farmers and significant result, this technology is getting momentum among the tribal farmers of Narmada district. The standard of living of the farmers who benefitted by this technology has also been increased.

### 3. Eco friendly farming of Bt cotton by adopting IPM

Name : Shri Karansinhbhai Radatiyabhai Vasava  
Village : Nanibedwan, Talkua: Dediapada, District Narmada  
Education: up to 12th std.  
Land holding : 10 Acre (6 Irrigated + 4 Non Irrigated)  
Major crop Cultivated: Paddy, Cotton, Pigeon Pea, Vegetables Motivation factor: KVK, Navsari Agricultural University, Dediapada



#### 1. Situation Analysis:

Cotton is a key cash crop having direct bearing on socio-economic structure of farmers of block Dediapada region of Narmada. It continues to suffer heavily from a complex of insect-pests and diseases, which affect the crop from seedling to harvest stage. The losses due to pests amount to 50-60% resulting in substantial yield reduction. Attaining the projected demand of 24 million bales of cotton by the end of 2020 will be a daunting task despite the intensive cropping and pest management systems that are currently available. Calendar based application of chemical insecticides and their injudicious use was the prime strategy to manage the various pests during 1980s. Though the crop occupied only 5% arable land, it consumed 54% of the total chemical pesticides before introduction of transgenic cotton in 2002. The altered cropping systems, multiplicity of non-descript cultivars, imbalanced fertilizer use, and intensive cultivation have aggravated the problems of pests and environmental hazards. IPM strategies had become imperative to sustain productivity of cotton in an eco friendly manner. A bio-intensive IPM module with much reliance on conservation and promotion of naturally occurring bio agents, bio pesticides and botanicals as tools for sustainable production of cotton was validated over 20 hectares under farmers' field conditions at block Dediapada regions of Narmada a predominantly rainfed cotton belt. Nanibedwan is located in the tribal belt of Dediapada block of Narmada. Major crops were cultivated such as cotton intercropped with pigeonpea, blackgram, jowar, groundnut, maize, soybean and vegetables. Shri Karansinhbhai Radatiyabhai Vasava is a farmer of village Nanibedwan who educated up to 12th standard and having 10.0 Acre of land. He was cultivating local and old varieties of paddy, pigeon pea, vegetable and using old practices due to this he got less profit. Under this situation, they found difficult to sustain household food and livelihood for his family.

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

KVK adopted Nanibedwan village since last three year. KVK were given various frontline demonstrations to the farmer of Nanibedwan including Shri Karansinhbhai Radatiyabhai Vasava. KVK scientists were guided the farmers to adopt the integrated insect pests management for farming of BT cotton. Regular field scouting formed a vital component of the pest management as it provided reliable information on the time when pest reached the economic threshold level. Management measures were applied when pest population reached ETL.

##### Scenario of cotton production practices followed previously by the villagers:

The village was found to be vulnerable to recurrent pest attacks due to the following reasons:

- Multiplicity of cotton cultivars: Farmers were growing 8-10 varieties / hybrids of cotton as a risk cover.



- Staggered sowing: The sowing operation spread from May end to early July. As a result, the vulnerable stages of the crop (buds and bolls) were available for a longer duration.
- Imbalance in use of fertilizers: Excessive use of nitrogen fertilizer resulted in higher vegetative growth which attracted more pests.
- Continuous availability of *Helicoverpa* hosts in the cropping system: Pigeonpea and chickpea grown in the cotton-based cropping system provided for sustenance of the pest cycles.
- Sanitation: Cotton stalks after the seed cotton harvest were not removed from the field immediately, which provided niche for continuation of the pink bollworm population.
- Ratooning: Some farmers practiced rationing of cotton.



**FLD on Cotton IPM and Field day celebration program**

### 3. Output :-

The management practices adopted in the bio-intensive module were by Shri Karansinhbhai. He started cultivation of cotton by adopting drip system and all practices of IPM like, Deep summer ploughing, Sanitation of field, weeds removal /Alternative hosts/previous crops stubbles, cultivation of inter crop/ trap crop, use of yellow sticky trap, Neem oil and used proper dose of recommended insecticides as per guidance of KVK scientists. He got high yield range of 19.7 Qtl /ha and at that time cotton price was good in the market.

### 4. Outcome :-

Shri Karansinhbhai found more yield range of 19.7 Qtl /ha and he fetched more price at that time cotton price was high in the market. Thus he earns about Rs. 84710/-ha net income which is 26.3 % more as compared to other farmers in the villages. The result of cotton IPM was highly praise worthy by the KVK Scientists, as well as villagers too.

Specific Technology	Yield (q/ha)	Gross cost (Rs/ha)	Gross income (Rs/ha)	Net income (Rs/ha)	B:C ratio
Previous yield without IPM local Local farming practices	15.6	26000	67080	43080	1.80
Yield after adoption of IPM practices	19.7	24000	84710	58710	2.26
% Increase in Demonstration plot	26.3				

## **5. Impact:-**

As a result, this technology was horizontally spread in 10 villages covering 150 farmers in 60 ha. during these four years. Because of live contact, constant follow up, motivation and good communication of Scientists with the farmers and significant result, this technology is getting momentum among the tribal farmers of Narmada district. The standard of living of the farmers who benefitted by this technology has also been increased.

#### 4. Low cost Mushroom cultivation

**Name :** Vasava Mukeshbhai Raisingbhai  
**Village:** Soliya, Ta: Dediapada, Dist: Narmada  
**Age:** 32 Years ,  
**Education:** 10<sup>th</sup> std.  
**Size of land holding:** 4.0 Acr. (1 Irrigated + 3 Non Irrigated)  
**Major crop Cultivated:** Paddy, Cotton, and Pigeon Pea  
**Motivation factor:** KVK, NAU, Dediapada



##### 1. Situation Analysis:

Diversification in any farming system imparts sustainability. Mushrooms are not only imparting diversification but also help in addressing the problems of quality food, health and environment related issues. One of the major areas that can contribute towards goal of conservation of natural resources as well as increased productivity is recycling of agro-wastes including agro industrial waste. Paddy is the major food grain crop in India as well as in Gujarat. So, large amount of paddy straw has also been produced. KVK scientists conducted PRA survey in Narmada district and found that, farmer's mainly using paddy straw as food for animals. Utilizing these wastes for growing mushrooms can enhance income and impart higher level of sustainability in this region as well as in whole country.

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

KVK Narmada conducted various programmes for the awareness of importance of technology related to Agriculture. KVK adopted Soliya village under **Mera Gav Mera Gourav** and different demonstrations were given to the farmer of Soliya including Mr. Mukeshbhai Raisingbhai Vasava and came in the contact of KVK, Narmada. Skill training on Mushroom cultivation conducted with 20 trainees in 2019 and among them five was from Village Soliya. Mr. Mukeshbhai received the oyster mushroom spawn along with full kit package of demonstration and practices from KVK. He decided to initiate Oyster Mushroom cultivation along with his farming at house hold level. After knowing potential value of mushroom he got much more interest in Mushroom cultivation. Consequently he started small scale Mushroom Production unit near his home. **“One person with passion is greater than ninety nine with interest.”**



**Mushroom cultivation**



**Scientists visited at Mushroom unit**

### 3. Output :-

Vocational/ Skilled training for Rural youth, method demonstration on Oyster mushroom, Full kit package for demonstration (which content like spawn, Formalin, Carbendanzim, polythene bags) were supplies by KVK. Post evolution visits, Monitoring and feedback and guidance were given by Scientist (Plant Protection) after establishment of small scale Oyster Mushroom cultivation and Production unit at their home. TSP District Planning Officer-Narmada and KVK were organized various programmes like Vocational/ Skilled training for Rural youth, group meetings of FIGs and SHGs farmers. By adoption of mushroom cultivation, Shri. Mukeshbhai earns a sum of about Rs.14000/ month from 1<sup>st</sup> year from mushroom cultivation.. Now he becomes popular as mushroom grower in his village. During 2<sup>nd</sup> year he was got Rs 41500/- from 60 cylinders. So he further wants more income and 3<sup>rd</sup> year he was grown about 80 cylinders.

### 4. Outcome:-

Mushroom was only source of income during COVID-19 pandemic. Shri. Mukeshbhai was got Rs 54000/- net income in 3<sup>rd</sup> year. He tried to spread and popularize this low cost technology of Oyster mushroom among villagers. He was joined FIGs to cultivate the mushroom under ATMA. He was received Best farmers Awards at taluka level under ATMA.

Impact factor	1 <sup>st</sup> year After Adoption	2 <sup>nd</sup> year After Adoption	3 <sup>rd</sup> year After Adoption
Crop / Agricultural	Mushroom	Mushroom	Mushroom
Yield of Mushroom / one unit (Size 20 X15 Sq.ft.)	5 kg X 40 cylinders = 200 kg	5.5 kg X 60 cylinders = 330 kg	5.0 kg X 80 cylinders = 400 kg
Cost of cultivation	6000/-	8000/-	10000/-
Total income	20000/-	49500/-	64000/-
Net income	14000/-	41500/-	54000/-
Sale Value	Rs. 100 / kg.	Rs. 150 / kg.	Rs. 160 / kg.
B : C Ratio	2.33	5.18	5.40





**Training on Oyster Mushroom**



**Mushroom harvesting**

## **5. Impact :-**

Through Mera Gav Mera Gourav programme created awareness about low cost technology of Oyster mushroom. Now he has a regular income source through mushroom by selling into local market and nearby hotel. With this he receives good identity as a progressive farmer and got ATMA best farmer award. Because of live contact, constant follow up, motivation and good communication of Scientists with the farmers and significant result, about five FIGs of farm women and farmers were started mushroom farming at their villages.

## 5. Control of chickpea pod borer with T-shaped supports (bird perches) in Covid epidemic circumstances.

**Name:** Mr. Govindbhai Dhanjibhai Vasava

**Village:** Chikda, **Taluka:** Dediypada, **District:** Narmada

**Age:** 30 years

**Education:** 10th Std.

**Land holding:** About 3 acres



## 1. Situation analysis

In tribal areas, the farmer practices conventional farming with low productivity. The rainfed crops grown by tribal farmers include paddy, sorghum, maize, pigeon pea, chickpeas and other legumes as a single crop, mixed or intercrop. In monsoon, paddy is the main crop in the area as rice is the staple food in the area. Then in winter chickpea crop is also grown especially in moist black soil in Narmada district. It has been observed that the area still lacks suitable improved varieties. To rectify this situation tribal farmers need to increase the use of improved varieties.



**Improved variety of chickpeas (GG-5) demonstration plot.**

## 2. Plan, Implement and Support :-

In view of the above situation, Krishi Vigyan Kendra, Narmada decided to give front line demonstrations in the adopted villages of Narmada district. Improved variety of chickpea GG-5 of Junagadh Agricultural University was selected for FLDs during the year 2019-20. Most of the farmers used local chickpea seeds. This was compared as a check plot to compare with the yield of the demonstration plot. These demonstrations were held in a total area of 50 hectares. In which 125 farmers have benefited. The selected farmers were first trained on scientific cultivation of chickpeas. The technical knowledge of farmers in tribal areas is very poor. Therefore, it was decided to demonstrate the scientific method of seed treatment and at the same

time training and other activities were organized from time to time as per other requirements. Apart from this, regular visits were also made to the farmers' farms. In addition, the extension activities carried out by KVK and the information which helped in enhancing the skills of the farmers in adopting this variety are shown in the table below.

SR. NO.	YEAR	ACTIVITIES	PARTICIPANTS
1	2019-20	On campus training	75
		Off campus training	200
		FLD visits	45
		Group meeting	05
		Method demonstration	02
		Diagnosis field visit	35
		Field day	06

### 3. Output :-

Most of the farmers in Narmada district were cultivating local and old varieties in the conserved moist soil. Therefore, in the demonstration plot we have introduced the improved variety of chickpea G.G.-5, Organic Fertilizers (Rhizobium, PSB, KMB), and Supplementary Fertilizers (NOVEL) were used as per recommendation:

	
<b>On campus farmers training</b>	<b>Field day and field visit</b>

Among other farmers in the village, Shri. Govindbhai Dhanjibhai Vasava has got 15.7 quintals / hectare in demonstration plot. In which improved technology module i.e. improved chickpea G.G.-5 varieties of seeds, for sowing method proper spacing (30 cm) from furrow to furrow, seed treatment (Bavistin @ 5 g / kg seed), recommended dose of fertilizer (20:40:00 NPK kg / ha) special care was taken. However, 'T' shaped supports (bird perches) were installed before the onset of flowering gram to check pod borer infestation in the field. So that the predatory birds can sit on the 'T' shaped support. Currently, all the Agro service shops were closed due to a complete lockdown during the Covid- epidemic. Under these circumstances, by placing these 'T' supports in the field, the predatory birds came to sit on the 'T' shaped support and eat the gram pod borer caterpillars. This technology were reduced the population gram pod



borer in the field by natural control. Thus pods suffered less damage than due to gram pod borer caterpillars.

#### 4. Outcome :-

Last year, its chickpea yield was only 300-1000 kg / ha. However, the highest yield in Shri Govindbhai Vasava's farm was found 15.7 quintals / ha. in demonstration plot. Comparing the CBR score, it was found to be 1: 2.10 in the demonstration plot during the year, while it was 1: 1.71 in the local check.



**Improved variety of chickpeas (GG-5) put 'T' shaped supports in demonstration plot**

Specific technology	Yield (q/ha)	Cost of cultivation (rs/ha)	Gross income (rs/ha)	Net income (rs/ha)	B:c ratio
<b>Yield of previous method</b>	12.8	14000	41800	24400	1.71
<b>Yield after placing 'T' shaped supports in the chickpea variety (GG-5) demonstration plot by the farmer</b>	15.7	15500	47100	32600	2.10
<b>Increase in yield (%)</b>	22.7				

#### 5. Impact:-

As a result, this technology was horizontally spread in 10 villages covering 250 farmers in 100 ha. during these four years. This technology is gaining momentum among the tribal farmers of Narmada district through constant contact by the scientists of Krishi Vigyan Kendra, Narmada and FLD, following the advice instructions and timely guidance. Adoption of this technology also increased the living standard of farmers.



## 6. Sesame crop variety GT-5 became a boon for the farmer at the time of the epidemic Covid.

Name: Mr. Mathurbhai Devjibhai Vasava

Village: Khurdi, Taluka: Dediyapada,

District: Narmada

Age: 3 years

Education: 8th Std.

Land holding: about 10 acres



### 1. Situation analysis

Sesame was cultivated in kharif, rabi and summer seasons in some parts of Maharashtra, Madhya Pradesh, Chhattisgarh, Gujarat states. In Gujarat in particular, farmers in Saurashtra and Kutch region mainly cultivate rabi sesame. Sesame seeds are a good source of energy as they are high in fat. It contains polyunsaturated fatty acids and healthy fats like omega-3. It also contains fiber, iron, calcium, magnesium and phosphorus which help in increasing energy levels. Sesame seeds have been used as a spice and as a source of edible oil for many years. Sesame seeds are used to top hamburgers and sprinkled on desserts and various Asian dishes in South Asian, Middle Eastern, Mediterranean and Caribbean cuisine.

Cereal crops grown by farmers in Narmada district include paddy, jowar, maize and other pulses like pigeonpea, chickpea, blackgram, beans as mixed or intercrop crops. The area still lacks suitable improved varieties. Thus there is a need to give priority to improved varieties to bring about change in the farming of tribal farmers. Our KVK Narmada were decided to give front line demonstrations using improved varieties of sesame seeds in oilseed crops for farmers in the area.



**Sesame GT-5 Demonstration plot**

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

In view of the above situation, Krishi Vigyan Kendra decided to give front line demonstrations in the adopted villages of Narmada district. Improved variety of Sesame GT-5 of Junagadh Agricultural University was selected for FLDs during the year 2019-20. Khuradi

village was adopted by KVK and selected to give CFLDs demonstration under National Oilseed and Oil Palm Scheme during the year 2019-20. Most of the farmers used local sesame seeds. This was determined as a check plot to compare with the yield of the demonstration plot. A total demonstration of sesame was covered about 20 hectares area with 50 farmers benefited. The selected farmers were first trained in scientific cultivation of sesame. To increase the technical knowledge of the farmers, a direct method demonstration program was conducted with the farmers about seed treatment through scientific method. In addition, training, field day celebrations and other activities were organized from time to time as per other requirement. In addition, regular visits were made to the farmers' farms. The extension activities carried out by KVK and the technical guidance given which helped in enhancing the skills of the farmers in adopting this diversity are shown below.

Sr. no.	Year	Activities	Participants
1	2019-20	On campus training	50
		Off campus training	150
		FLD visits	30
		Group meeting	03
		Method demonstration	02
		Diagnosis field visit	25
		Field day	02



**On campus Farmers training**



**Seed distribution programme**

### 3. Output :-

Most of the farmers in Narmada district were cultivating local varieties. Decided to hold front line demonstrations for the purpose of using improved varieties of sesame seeds in oilseed crops used by farmers in the area. Therefore, in the demonstration plot we have introduced the improved variety of sesame GT-5, Organic Fertilizers (Rhizobium, PSB, KMB), and Supplementary Fertilizers (NOVEL) were used as per recommendation: Among other farmers in the village, Mr. Mathurbhai Devjibhai Vasava was found 2.5 quintals / hectare in demonstration plot. In which improved technology module i.e. improved sesame seeds of GT-5 variety, sowing method suitable spacing 3-20 cm x 10-12 cm. , Seed treatment (Bavistin @ 5 g / kg seed) as well as the recommended dose of fertilizers (20:20:00 NPK kg / ha) were taken.

Initially sucking insects and leaf-eating caterpillars were found to damage in the area. Foliar application of herbal medicine neem oil (1500 ppm) were used to control the population.

Currently, all the Agro service shops were closed due to a complete lockdown during the Covid-epidemic. In these circumstances, using this neem oil (1500 ppm) were reduced the population of sucking insects and leaf-eating caterpillars damage in the demonstration plot of the sesame.

#### 4. Outcome :-

Last year its yield was only 300-400 kg / ha. But at present, the highest yield was 9.5 quintals / ha recorded in the farm of Shri. Mathurbhai. Compared to the CBR score, the index plot during the year was 1: 2.85 while the local check was 1: 2.07.




Specific technology	Yield (q/ha)	Cost of cultivation (rs/ha)	Gross income (rs/ha)	Net income (rs/ha)	B:c ratio
Yield of previous method	7.6	16500	34200	17700	2.07
Yield after adoption of Improved variety of sesame GT-5 by farmer with use of Neem Oil 1500 ppm. And Novel.	9.5	15000	42750	27750	2.85
Increase in yield (%)	25.0%				

#### 5. Impact :-

As a result, this technology was horizontally spread in 6 villages covering 100 farmers in 40 ha. during these four years. This technology is gaining momentum among the tribal farmers of Narmada district through constant contact by the scientists of Krishi Vigyan Kendra, Narmada and FLD, following the advice instructions and timely guidance. Adoption of this technology also increased the living standard of farmers.



## 7. Value addition for Economic Empowerment

<b>Name</b> : Neeta Ben Mukesh bhai <b>Village</b> : Gopaliya Ta: Dediapada Distt-Narmada <b>Age</b> : 34 years <b>Education</b> : 10 <sup>th</sup> std <b>Land holding</b> : 5 acre	
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### 1. Situation analysis

Smt. Neeta ben, who belongs to Gopaliya Village in Narmada district, is a successful Entrepreneur, who has set an example for the women of Dediapada .She started her income generation activities by producing bamboo pickle and rice papad with locally available raw materials. She sold the products in the local market and friend circle. However, the income was not up to her satisfaction

### 2. Plan, Implement and Support

She approached KVK, Narmada in the year 2018, seeking know how and guidance for improving her skill In order to enhance the productivity and acceptability of her products, KVK Narmada organized Vocational trainings on income generation She was Participated in the 7 days on campus Vocational training of preparation of papad, conducted at KVK. Rice, Ragi, mushroom flour & Potato Papad, which is primarily a snack item, is very popular in Gujarat and it's eaten as a snack or along with meals also. Soon after the training she started production of value added papad with added natural herbs carom seeds, cumin seeds, Coriander, mint, red chilli etc.) The detailed information on activities carried out by KVK and support in building farmers skills in adoption of training is shown below:-

Sr. No.	Year	Name of activity	No. of participants
1.	2017-18 to 2020-21	On campus Training	12
		Off campus Training	14
		SHG meeting	12
		Method Demonstration	10
		FLD Visit	20
		Field day	10

### 3. Output:

Neeta lives with a family of eight people in Gopaliya village Dediapada taluka of Narmada district in Gujarat. Her family relies mostly on farming for their diets and livelihood.



She is a woman who has been actively engaged with self-help groups and has worked with KVK for the last 3 years. She joined KVK and attended training programmes, she said that prior her technical knowledge was poor now she is happy with their efforts

		
<p><b>Vocational training</b></p>	<p><b>Participation in farmers fair</b></p>	<p><b>Potato papad</b></p>

#### 4. Outcome:

During the present lockdown, due to corona virus it is selling like home/pure products/. The demand has increased manifold and she is working overtime to meet the demand. In training programs she was given first-hand experience in demonstrating the preparation of papad, spices /ragi biscuits and red rice products. Prior to KVK her income was very less. But now after the intervention and coupled with her hard work and sincerity, her income has increased manifold. Over the last few months, she is earning a net income of about Rs. 15,000/- (Rupees fifteen thousand) per month. She is a successful Woman Entrepreneur and a perfect example of women empowerment.

#### 5. Impact:

It can be concluded that income generation trainings found effective in view of income generation for farm women During the trainings she got new contacts (Self-Help Groups) among the trainees, from sagbara taluka of Narmada districts, who readily accepted to take up the profession of papad making. And they have started making papad at household level by taking raw materials from her.

## 8. Kitchen garden: Power house of Kitchen

**Name :** Sarla ben Rai ji bhai

**Village:** Guldachaam Ta: Dediapada Distt-Narmada

**Age:** 34 years

**Education:** 10<sup>th</sup> std

**Land holding:** 5 acres



### 1. Situation analysis:

Krishi Vigyan Kendra is working for the tribal community since long years together. The major emphasis was given on productivity enhancement in the field crops and income generation. The major objective behind these activities was 'betterment of the lifestyle of the tribal farming community. Regular contacts and some informal surveys by the KVK inferred the fact that the nutrition of this tribal mass was not up-to the standard. Moreover, malnourished conditions were observed especially in women and children. Considering these facts, KVK decided to intervene in this matter through establishing Kitchen Gardens. Because, continuous supply of fresh vegetables, all the year round, can be accomplished to a great extent by growing fruits and vegetables in a kitchen garden. As balanced nutritional food is incomplete without vegetables as these are the major source of nutritional vitamins and minerals required by human body besides being rich source of carbohydrates and protein.



**Training**



**Kitchen garden**



## 2. Plan, Implement and Support

Homestead production of fruits and vegetables provides the poor people the direct access to important nutrients that may not be readily available or within their economic reach. Hence kitchen gardening is an important strategy to improve household nutritional security. In villages namely Guldacham and Bedchha, of Narmada district by involvement of 200 tribal farm women were trained for the organic cultivation of Kitchen garden through FLDs. As in tribal areas, The technical know-how of the farmers is very poor. Therefore it was decided to conduct Method demonstrations about the scientific method of organic vegetables cultivation and simultaneously other concepts (Marketing, value addition) were included time to time in the training and other activities. The detailed information on activities carried out by KVK and support in building farmers skills in adoption of kitchen garden is shown below: -

Sr. No.	Year	Name of activity	No. of participants
1.	2017-18 to 2020-21	On campus Training	10
		Off campus Training	15
		SHG meeting	12
		Method Demonstration	10
		FLD Visit	25
		Field day	10

## 3. Output:

Sarla, s family relies mostly on farming for their diets and livelihood. She is a woman who has been actively engaged with self-help groups and has worked with KVK for the last 2 years. Prior to KVK she involves with only Farming activity. Though her previous experience was not overtly successful she was open to joining the KVK kitchen garden intervention. The reason for her to join FLDs programme of KVK was due to the nature of her family's diet. A key intervention through the Kitchen garden FLDs distribution of seeds and seedlings to SHGs and helping to create kitchen gardens near to home or their backyard. These kitchen gardens are meant to increase food diversity in the diets of the participating families and reduce reliance on the market for introduced fruits and vegetables.

## 4. Outcome:

According to Sarla, the kitchen garden has been impactful for their family. This garden includes turmeric, onion, beetroot, papaya, Drumstick, Spinach, brinjal, pigeon pea (toor), chilli, green leafy vegetable and tomatoes. She planted fruit plants such as Mango, Guava, and Banana etc. sarla proudly claimed that the vegetables grown in the garden were being utilized in recipes within their home. Additionally, she said the quantity was more than sufficient for the foods to be distributed equally for the whole family. The intervention has also been successful in reducing reliance on the market. Kitchen gardens increase household income either by sale of the products grown in the gardens or by the consumption of the same food items that the families would have otherwise purchased from markets using a significant portion of the family income, All of them

have benefitted economically from the initiative. The plants in the kitchen garden harvested for approximately 75 days, saving Rs 100 per day for each family on an average. This ultimately led to a saving of approximately Rs, 3000 per family.

**Table 1: Yield and Economic Evaluation of Kitchen Garden planted in 250 m2 Area**

S.N.	Crop	Yield / Bed (5X4m)	Economic Evaluation			
			Gross Cost	Gross return	Net return	B:C Ratio
1	Chillies	8.50	473.00	960.00	487.00	1:2.02
2	Carrot	19.00	420.00	864.00	444.00	1:2.05
3	Beetroot	20.50	370.00	1029.00	659.00	1:2.78
4	Amaranthus	17.00	339.00	648.00	309.00	1:1.91
5	Radish	25.60	441.00	1166.00	725.00	1:2.64
6	Coriander leaves	23.90	255.00	924.0	669.00	1:3.62
7	Cauliflower	52.00	442.00	941.00	499.00	1:2.13
8	Cabbage	56.00	422.65	820.00	398.00	1:1.93
9	Brinjal	59.00	342.80	712.00	370.00	1:2.08
10	Tomato	32.70	473.00	1009.00	536.00	1:2.13
11	Spinach	31.45	336.00	663.00	327	1.19

## 5. Impact:

Sarla also encouraged exchanging seeds with other farm women to increase food diversity within the whole village. Seed exchange and proper maintenance of the kitchen garden will allow this intervention to be sustainable for the future. Majority of the households who are beneficiaries of kitchen garden initiative in Guldachaam using organic methods of cropping including organic manure. Lesser dependence on chemical fertilizers and pesticides automatically makes kitchen gardening an environment friendly initiative. Due to live contact, constant follow up, motivation and well communication of scientists of Krishi Vigyan Kendra ,Narmada and significant result of kitchen garden FLD in improvement of nutritional security of households in remote tribal areas.



## 9. Handicraft is a Key to income generation

**Name :** Sneha Ben Dinesh bhai

**Village :** Nivalda Ta: Dediapada Distt-Narmada

**Age :** 22 years

**Education:** illiterate

**Land holding :** 3 acre



### 1. Situation analysis:

Miss Sneha ,22 year old girl from Nivalda is a handicraft entrepreneur who is trying to make her own identity. As she has interest in stitching and making new things from old clothes. She did stitching course and attended vocational training on 'handicraft preparation from macramé, Banana and Coconut fiber'. This training course gave her knowledge and skill for preparation of different products.. After training, she was in regular contact with KVK, to upgrade her skills. As she shown keen interest in learning and her persistent efforts to become independent made KVK Home Scientist to guide her in best possible way. She was advised to start own shop with creative designs from home. She is an excellent learner and has efficiency to utilize her talent and leisure time in best possible manner for income generation.

### 2. Plan, Implement and Support

As she is making handicraft item from home, she was motivated by KVK, scientist to open shop to attract good number of customers and also add display material in it. She opened a small shop (made with bamboo structure) one and half year ago with basic material and presently, she is selling so many items prepared with macrame thread such as mirror holder, pot holder, purse decorative item for home like toran ,wall panel etc. KVK narmada organized vocational training Motivation to start enterprise and gave her Technical guidance for starting the unit.

	
<p align="center"><b>Training</b></p>	<p align="center"><b>Handicraft items</b></p>

### 3. Output:

She was advised by KVK to train some more girls of the nearby area to develop contacts and disseminate her skills in the nearby area. At present she is giving training to three girls in her village. She was advised to start whats app group of the customers and update that group on regular basis by adding handicraft material and latest designed by her. Apart of this, she actively participated in the events and exhibitions and fairs at kvk, korvi and govt.college organized for the welfare of farmers, self-help groups, and entrepreneurs by different organizations. This gives a boost to her business. Now she has a customer base of more than five different nearby villages

### 4. Outcome:

This is just the beginning, she is a very hardworking girl, she started this business almost two and half year back. Initially, she earned almost Rs. 10,000/- annually which gradually increases to Rs. 12,000/- in the second year and after getting proper support and guidance from KVK, Narmada and opening asmall shop, now she is earning 20,000/- annually.

### 5. Impact:

Sneha is a great inspiration for the other ladies of her locality and nearby villages. She always wanted to do something on her own, according to her doing something on her own makes the woman confident and independent which will lead her to be an independent and self-reliant personality in the future. Nowadays, she is promoting her product through different platforms and is planning to expand it to a huge level. *Where is will there is way*-is a proverb set for Sneha.