SUCCESS STORIES/CASE STUDIES

1. Chick pea variety GG-3 suitable for Rain fed area

Name	**:**	Mrs. Geetaben Rajeshbhai Vasava	
Village	**:**	Andu, Taluka: Dediapada, District: Narmada	
Age	**:**	33 years old	
Education	**:**	10^{th} Std.	
Land holding	**:**	1 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 farmer need to increase the use of improved varieties.

2. Technology, implementation and support

In view of the above situation, Krishi Vigyan Kendra, Narmada decided to give frontline demonstrations in the adopted villages of Narmada district. Improved variety of chickpea GG-3 was selected for FLDs during the year 2024-25. Most of the farmers used local chick pea 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 chick peas. 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	2023-24-2024-25	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. Uptake, spread and benefits

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 GG.-3, Organic Fertilizers (Rhizobium, PSB, KMB), and Supplementary Fertilizers (NOVEL) were used as per recommendation:



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

Among other farmers in the village, Smt. Geeta Ben Vasava has got 12.5 quintals/hectare in demonstration plot. In which improved technology module i.e. improved chickpea G.G.-3 varieties of seeds, for sowing method proper spacing (30cm) from furrow to furrow, seed treatment (Bavistin@5g/kg seed), recommended dose of fertilizer (20:20:50 NPK kg/ha) special care was taken.

Last year, chick pea yield was only 300-1000kg/ha. However, the highest yield was found 12.5 quintals/ha. In demonstration plot. Comparing the CBR score, it was found to be 1:3.10 in the demonstration plot during the year, while it was 1:1.31 in the local check.

Technical support/operation: -

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	13.8	15000	42800	25400	1.71
Yield chickpea variety (GG-3) demonstration plot by the farmer	16.7	16500	48100	33600	2.19
Increase in yield(%)	22.7				

This technology is gaining moment um among 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.

2. SUCCESS STORY IN FISH FARMING

Name	**:**	Mr. Vasava Rajeshbhai Dashariyabhai	
Village	**:**	Andu, Taluka: Dediapada, District: Narmada	
Age	**:**	39 years old	
Education	**:**	10^{th} Std.	
Land holding	**:**	1 acres	

Background

In a state where people claim fate is more important for success, the success story of a veteran farmer from Andu an interior village of Dediapada district is a shining example of how technologically and innovative cultivation methods can transform the agrarian economy and uplift the lives of millions of farmers.

Intervention

It had been an incredible journey for Rajeshbhai who in 2024 entered the world of fisheries and allied activities. For a year he travelled to various villages and hamlets nearby. He realized that in this modern and populated world, there are a lot of traditional ways to meet the demand for food which the farmers are relying upon to grow their crops. He got himself involved in fisheries through excavation of a fish pond of 72×24 meter. Technical and financial support was provided by the Dediapada KVK Department.

The man got himself fully involved fish culture. Looking for a way to increase his earnings, Rajeshbhai started selling fish which added an extra income to his savings. He procured fish seed from center of excellence department ukai Gujarat through KVK which after growing out to table sized in his ponds are sold to retailers and wholesalers. He is planning further to develop more tanks to boost fish production in the upcoming years.

Support and Encouragement

"This could not have been possible without the support, service, technical help and motivation from the Krushi vigyan kendr Dediapada," says Rajeshbhai. In the beginning he was not so sure about the tools and techniques for fish farming except some traditional ways. His interest in fish farming helped him to cope with the growing trends of fish farming. The krushi vigyan kendr scientist & expert from COE, Ukai also helped with in various ways to set up his farming, Strengthened his farming with modern technologies.

A Bigger Business

Besides fisheries and agriculture he had also been engaged in agriculture & horticulture till now. The farmer has grown Mango, drumstick , Cashewnut, along the sides of the pond which in turn provide an extra source of income. He never compromises with the norms for quality and quantity of his farming throughout the year which is the key factor for his success in aquaculture. As fresh fish is highly demanded in the markets of his locality, marketing is not a

problem for him. He is planning further to develop more number of fish culture ponds as profit is comparatively more in fish culture than other agriculture practices.

Fish Culture Activities

The fish varieties arerohu&mrigal etc. Feed is applied daily @ 2-3% of the fish biomass. De-oiled rice bran, oil cakes, sesamum oil cake along with pellet feeds in bag method is practiced. He is adopting the method of producing fermented products and applying to fishes for better growth.

His earnings from fish culture was 11000/- ru. within six months. In future days It is projected that, the farmer is benefited from high income through the composite fish culture practice. It could be concluded that the man is now a fisheries entrepreneur and a community role model in fisheries.

A Community Role Model

In the recent years**,** Rajeshbhai and his family have undergone a remarkable change, emerging as role models in their village and nearby areas. He has been instrumental in encouraging about a dozen more villagers to become fish farmers – there's more than enough demand in their local area.

Local agencies, KVKs, farmers and other allied departments organize demonstration programmes in his model fish farm. He had promoted the concept of using quality fish seeds, use of advanced fingerlings, and pelleted fish feed based on his experiences and the training that he had experienced by the KVK & COE, in fish farming ukai Gujarat.

No	Year	Production(ha)	Gross income (ru.)
1	2022-23	55 kg	11000/-

3. SOYBEAN (NRC-37): A PROMISING IMPROVED VARIETY TO AUGMENT SOYBEAN PRODUCTIVITY IN TRIBAL AREA

Name	**:**	Mr.NarpatbhaiTarsignbhaiVasava	
Village	**:**	At & Po: Bebar, Talkua: Dediapada,	
Age	**:**	36 years old	
Education	**:**	Graduation (B.A)	
Land holding	**:**	Total 4 Acre 3 (Irrigated) + 1 (un irrigated)	

Technology Module:

Improved Varieties	:	NRC-37
Seed Rate/ha	:	60 kg
Seed Treatment	:	Carbendazim + Thiram (1+2 gm/kg seed) and Bio- fertilizers like Rhizobium (1 L/acre), PSB (1 L/acre), KMB (1L/acre)

Sowing Time	:	last week of June to first week of July
Spacing (cm)	:	45-60 cm X 2.5 cm
Irrigation with stages	:	3 times immediately after sowing, Flower initiation, pod filling mostly required. 30 DAS and 45 DAS.
Moisture Conservation Practices Followed	:	Use of Broad Bed Furrow Planter for sowing (removal of excess water through furrow during heavy rain & also irrigation in furrow during less rainfall
Fertilizer Application	:	20:80:40 NPK kg/ha, 40 kg of Sulphur as Gypsum 220 kg/ha as basal.
Insect/pest Management Practices	:	Neem oil 1500 ppm @ 50ml/pump and use of Pheromone traps @5/ha for leaf folder and pod borer.
Weed Control	:	Hand weeding and thinning operation done after 30DAS. Pre emergence (PE): Pendimethalin @ 1.0-1.5 a.i./ha in 500-600 litre of water.
Harvesting	:	95-110 DAS
Existing Cropping Systems	:	Sole crop only.

Farming situation :-

Soybean (Glycine max L. Merril) is the world's most important seed legume, which contributes to 25 % of the global edible oil, about two-thirds of the world's protein concentrate for livestock feeding. Soybean is now predominantly grown as rain fed crop in vertisols and associated soils with an average crop season rainfall of 900 mm.

Climatic vulnerability:-

Soybean grow best where the daytime temperature averages between 60^0F to 70^0F (16 - 21 ^{0}C). Soybean is not frost-tolerant. In Narmada district have two agro climatic zones. South Gujarat Zone II, AES-I (Dediapada, Sagbara, Garudeshvar & Nandod) with Rainfall: 1000-1250 mm and Middle Gujarat Zone III, AES-IX (Tilakwada) with Rainfall: 900-1000 mm.

Problems identified :-

The non-availability of good quality seeds of high-yielding varieties in the desired quantities in the district. In *Rabi* and summer season, it has been observed that scarcity of irrigation water at later stage is one of the major reasons for low productivity. Besides, poor economic statuses of the tribal farmers inhibit them to purchase major input *like* fertilizers as well as to perform important operation timely. Not only that, unseasonal rainfall at harvesting stage of *Kharif* crops, high temperature in October-November also major reason for delay in sowing of *Rabi* crops. Mostly pulses and oilseeds crop were found wilt and root rot in our district.

Technological intervention in brief :-

The rain fed crops grown by the tribal farmers are drilled paddy, sorghum, pigeon pea and other pulses either single crop, mixed or intercrops. They grow paddy to fulfil food need of the family as rice is the staple food in the tribal region. In case of oilseeds generally; our farmers cultivated Soybean, Groundnut like oilseed crops as sole. This was affected by wilt and root rots most common in our district. Therefore, under demonstration of NMOOP; High yield of

demonstration was found due to improved seed Soybean NRC-37 and drenching of NAUROJI NOVEL @ 50-150 ml per 10 L water at vegetative phase and also foliar application of NAUROJI NOVEL (Banana pseudo stem based liquid nutrients) @ 50-150 ml per 10 L water during flowering stage to more pod formation and have no pod shattring

Efforts made by KVK / methodology followed:-

In view of this, Krishi Vigyan Kendra decided to organize Cluster Front Line Demonstrations under NMOOP in adopted villages of Narmada district. Soybean variety NRC-37 was selected under CFLDs from the year 2023 to 2024-25. The farmers' preferred varieties of soybean generally JS-335, GS-2, and mix seed of soybean which is 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 30 ha. with the involvement of 75 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.

Sr No	Year	Name of activity	No. of activity	No. of participants
1	2023 to 2024-25	Group meeting	3	63
		On campus training	5	121
		Off campus training	4	101
		FLD visit	5	13
		Diagnostic visit	3	05
		Field day	2	78

FLD on Soybean NRC-37

Output, Outcome and Impact of the Intervention:-

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, banana pseudo stem liquid (NOVEL), botanicals like Neem oil (1500ppm) and bio pesticides (like

Trichoderma, Pseudomonas). Among all the farmers Mr. Narpatbhai Tarsignbhai Vasava obtained 19.8 Q/ha yield of soybean with improved technology module i.e. 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).

Outcome:-The yield of soybean during previous years was to the tune of 1012 to 1505 kg/ha only. Whereas, the highest yield was observed in the demonstration field of Mr. Narpatbhai Tarsignbhai Vasava with the variety of NRC-37 i.e. (19. 8 Q/ha) which clearly indicated the superiority and suitability of variety.

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	14.9	26200	49985	23785	1.90
Yield after adoption of cultivar NRC-37	19.8	27800	65637	37837	2.36
% Increase in Demonstration plot	33.78				

Impact:- Mr. Narpatbhai Tarsignbhai Vasava fetched more prices in the market, 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.

4. Title of the technological intervention: Improved technology Groudnut-GJG-32: Better option for Empowering the tribal farmer

Name	**:**	Kalpanaben Mahendrabhai Vasava,	
Village	**:**	At & Po: Boripitha, Talkua: Dediapada, District: Narmada (Gujarat),	
Age	**:**	36 years old	
Education	**:**	up to 10th std.	
Land holding	**:**	Total 5 Acre 3 (Irrigated)+2 (un irrigated)	

Technology Module:

Improved Varieties	:	GJG-32
Seed Rate/ha	:	100 kg
Seed Treatment	:	Carbendazim + Thiram (1+2 gm/kg seed) and *Pseudomonas fluorescence*, *Trichodermaviride*, Cultures of *PhosphoSolublsing bacteria* (PSB), *Potassium mobilizing Bacteria* (KMB) and *Rhizobium*Spp

Sowing Time	:	15 may to 15 of June
Spacing (cm)	:	45 cm X 10 cm
Irrigation with stages	:	Kharif season not apply for irrigation but it does require irrigation facilities are available like Flower initiation, peg formation, pod development stages
Moisture Conservation Practices Followed	:	Use of Broad Bed Furrow Planter for sowing (removal of excess water through furrow during heavy rain & also irrigation in furrow during less rainfall
Fertilizer Application	:	12.5:25:50 NPK kg/ha, PGPR 500gm/ha as Gypsum 125 kg/ha
Insect/pest Management Practices	:	Neem leaves extract 1% solution @ 50ml/pump for control of tikka disease
Weed Control	:	Hand weeding done after 20DAS. Intercultural operation should not be done at peg initiation stage
Harvesting	:	110-115 DAS
Existing Cropping Systems	:	Sole crop only.

Farming situation :-

Groundnut (Arachis hypogaea L.) is the world's most important oil seed crop grown, Groundnut is now predominantly grown as rain fed crop in vertisols and associated soils with an average crop season rainfall of 1250 mm.

Climatic vulnerability:-

Groundnut grow best where the daytime temperature averages between (22 -28^{0}C). In Narmada district have two agro climatic zones. South Gujarat Zone II, AES-I (Dediapada, Sagbara, Garudeshvar & Nandod) with Rainfall: 1000-1250 mm and Middle Gujarat Zone III, AES-IX (Tilakwada) with Rainfall: 900-1000 mm.

Problems identified :-

The non-availability of good quality seeds of high-yielding varieties in the desired quantities in the district. In summer season, it has been observed that scarcity of irrigation water at later stage is one of the major reasons for low productivity. Besides, poor economic statuses of the tribal farmers inhibit them to purchase major input like fertilizers as well as to perform important operation timely. Not only that, unseasonal rainfall at harvesting stage of Kharif crops, Mostly oilseeds crop were found wilt and root rot in our district.

Technological intervention in brief :-

The rain fed crops grown by the tribal farmers are drilled paddy, sorghum, pigeon pea and other pulses either single crop, mixed or intercrops. They grow paddy to fulfil food need of the family as rice is the staple food in the tribal region. In case of oilseeds/pulses generally; our farmers cultivated Groundnut like oilseed crops as sole. This was affected by wilt and root rots most common in our district. Therefore, under demonstration of NMOOP; as bio fertilizers NAUROJI liquids like Rhizobium, PSB and KMB for crop growth.

Efforts made by KVK / methodology followed:-

In view of this, Krishi Vigyan Kendra decided to organize Cluster Front Line Demonstrations under NMOOP in adopted villages of Narmada district. Groundnut variety GJG-32 was selected under CFLDs of Oilseeds village model (OMV) from the year 2024-25, which is considered as check plots to compare the yield potential of variety under CFLDs i.e. GJG-32. These demonstrations were organized in an area of 20 ha. with the involvement of 50 farmers. The selected farmers were trained for the scientific cultivation of Groundnut 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 extension activities.

Sr No	Year	Name of activity	No. of activity	No. of participants
1	2024-25	Group meeting	4	61
		On campus training	6	119
		Off campus training	4	103
		FLD visit	5	11
		Diagnostic visit	13	06
		Field day	6	36

FLD on Groudnut-GG32

Celebration of field day

Output, Outcome and Impact of the Intervention:-

Output:-Most of the farmers in Narmada district preferred to grow Groundnut varieties old variety. Whereas, we were given improved variety like GJG-32with bio fertilizers (like Rhizobium, PSB, KMB), banana pseudo stem liquid (NOVEL).,Among all the farmers Smt. Kalpanaben Mahendrabhai Vasava obtained 22.05 Q/ha yield of Groundnut with improved technology module i.e. Seed of Improved variety GJG-32, Sowing method with proper distance

(45 x 10 CMS) with row to row, Seed treatment (Carbendanzim+thirum@3 gm/kg seed), Recommended dose of fertilizers (12.5:25:50 NPK kg/ha).

Outcome:- The yield of Groundnut during previous years was to the tune of 1550 kg/ha only. Whereas, the highest yield was observed in the demonstration field of Smt. Kalpanaben Mahendrabhai Vasava with the variety of GJG-32 i.e. (22.05 Q/ha) which clearly indicated the superiority and suitability of variety.

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	18.10	27800	77658	49858	2.79
Yield after adoption of cultivar GJG-32	22.05	28950	95236	66286	3.28
% Increase in Demonstration plot	31.08				

Impact:- Smt. Kalpanaben Mahendrabhai Vasava fetched more prices in the market as compared to others. Groundnut (GJG-32) having special features like it has high yielding, Spanish bunch type, pod size and reticulation are medium, pod beak medium and constriction shallow and having early maturity as compared to local variety.

As a result, this variety horizontally spread in 2 villages covering 100 farmers in 50 ha. during these one year.