



IMPROVING LIVELIHOODS OF TRIBAL FARMERS IN SELECTED VILLAGES OF DAHOD DISTRICT, GUJARAT

2020-21



PREFACE

The Central India Initiatives of the TATA TRUSTS with donor support of STTGDC targeted to bring irreversible changes in the 530 tribal households in 8 villages of Limkheda block of Dahod district, Gujarat. Specific area of focus under the program includes quantum leap and life choices. This includes high value agriculture, horticulture, asset creation for enhanced irrigation coverage, skill building, market linkages, setting up and strengthening community based institutional infrastructure for sustainable impact. In doing this it is expected to set up systems, mechanisms and processes that will enable enhanced quality of life and irreversible changes with the community taking the charge.

This document present 10 such case studies reflecting the processes and impact on individuals, groups and institutions for large scale adoption.

Field Implementation Support



ધો. લોમખેડા તાલુકા મંલિકા જાગ્યાલ સહકારી મંડળી લો.



NM Sadguru
Water and Development Foundation

Promotion of High Value Horticulture

Activity: Floriculture



Parvatiben Businghbhai from Antarsuba village has remarkable entrepreneurial skills. Her small portion of one acre land is buzzing with multiple crops. Parvatiben lives with her family of 7 members. When Women Horticulture Federation and project team approached her to take up floriculture, she was a bit sceptical about its success.

The village is remotely located and adjoining farmers are cultivating traditional maize and chick pea. Having water available, she ventured to take up horticulture. Initially she planted mango plants in the field and started inter cropping of maize and chick pea. She added 20 drum stick plants on boundary of farm close to her house. Drumstick grew fast and started yielding. She then attended training programs organised by Federation and participated in exposure visits to successful farmers who adopted new practices in farming.

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Six months back she took up rose cultivation with the seedlings arranged for by Federation under the project. She went for training to learn on how to take care of plants and what practices to be adopted to ensure good yield. She visited Kamboi village where fellow women adopted floriculture. She learned many things from them and returned to her village and planted around 500 rose plants as intercrop between mango trees. Due to rich soils and application of FYM, within 3 months the plants started flowering.

She reached to local flower shops in nearby towns with the help of her son and assured continuous supplies. She is now supplying daily 300 to 500 flowers to local shops who cater to temples, churches, mosques and social events. In addition, she supplies to shops in Limdi (a small town). On an average she is earning Rs.600-700/day for past 3 months and this will continue for 7 more months.

Apart from roses, she sells drum sticks at an interval of 3 to 5 days for Rs.800/20Kg. Parvatiben said that she has earned around Rs.30,000 from drumsticks alone. In addition, she also planted Tomato and Chilli plants in small portion of land that fetches Rs.25/kg and 40/kg respectively. At 2-3 days interval she sells tomato and Chilli worth Rs.1500/-. A rough estimate of her income from floriculture is around Rs.1.50 Lakhs per year. Her earnings from vegetables is around Rs. 50,000. All this is from less than 1 acre land.

When enquired about what she did with her income, she said 'I bought a bike(motorcycle) for my son'. When asked about her decision, she said commuting to town in cramped vehicles to sell flowers often cause delay (flowers to be shipped fresh). Having bike is better option to quickly deliver flowers and vegetables. She said 'he take me daily to Limdi and other places to sell flowers and vegetables'. Its much better. Her spirit and decision reflects her entrepreneurial bent. She fulfilled her sons dream to ride a bike and met her commuting needs to sell goods.

Outspoken and courageous Parvatiben is already a 'Lakhpati Kisan' and she didn't stop there. She ventured to take up Nursery and grow various vegetable seedlings. The project supported 18 such farmers to take up floriculture as a viable high value alternative crop which provides increased returns for the small holder farmers.

Village Initiative-Enhanced Irrigation Coverage

Activity: Micro Lift & Check Dam



Village Pada is a remote village in Limkheda with dry deciduous forests on hilly terrain intercepted with cultivable rainfed farms. Water is a scarce resource found in the valley where the river is almost dry throughout the year, except for the monsoon season. The terrain makes the survival tough for the farmers. Having limited option, many of the villagers use to migrate to nearby towns in search of labour.

Federation team visited the village and surveyed to explore possible opportunities for water resource development to enhance the irrigation potential. Two sites were found suitable to harvest rain water. One site was suitable for constructing mini check dam where water can be

collected and allowed to recharge. Another site on downstream identified to construct an irrigation well.

The land of 12 families who participated in the project are located on elevation where as the interventions were on downstream. With the support of the project, they have added solar pump to the irrigation well, where water can be lifted around 70ft height and can irrigate around 12 Acres of farm land.

Farmers said that earlier they were cultivating maize and chick pea in kharif and rabi season. This year with the availability of water, they opted for vegetable cultivation. Chilli, Tomato, Brinjal, Beans, bitter gourd, soft gourd etc., were cultivated in 15-acre land in Rabi season. In Kharif they went for traditional grains Maize and Pigeon pea which is essential for their own household level consumption. Each family earned around Rs.25-28,000 in the Rabi season and cumulatively they earned up to Rs.60,000/acre per year from multiple crops from one acre of land. With the project support, few of the farmers also established trellis system of vegetable production in the irrigated command areas, thus generating substantial additional income.

Himmatbhai, Secretary of the group said that water is lifted with the help of solar power and reaching farms at a height and this has been a dream come true for them – transforming rainfed farming to irrigated cropping in all the three season. This is nothing less than miracle. We never thought this can happen. Cultivating vegetables in such hilly terrain was never thought off. Under the project a Total of 8 such small Lift Irrigation units, each with an irrigation command area of 10 – 12 acres has been established along with the construction of 3 check dam to help harvest the runoff water and recharge the ground water in these remote villages.



Agriculture Productivity Enhancement

Activity: Onion Cultivation



Surmiben Ranjit bhai in Nani Vasvani village, one of the project intervention village, has a family of 7 members. As part of the efforts under the project to motivate the farmers to diversify into high value crops, she was selected for engagements under the improved onion crop cultivation. This crop was taken up in the rabi season in her 2 acres land. Since she already had access to water supply from bore well, she preferred the crop over others. Not only surmiben, but several other fellow farmers from the village also adopted the onion crop cultivation (total 40 acres area under onion cultivation) as the farmers could understand the benefits and the assurance of a good returns as compared to the field crops.

Surmiben with her husband attended training programs on various aspects of the suggested package of practices and also opted for the quality seeds provided by Federation at reasonable



rates. It's a 4-month crop where nursery beds prepared soon after Kharif season and seedlings transplanted at the start of the winter season. Under the guidance of the project supported extension workers and the Federation, they planted the seedling in phased manner to ensure that they can manage and harvest the crop with available resources.

The family already harvested 10 tons of onions and other crop is ready for harvest. Even at Rs.10/kg they can fetch Rs.1.00 Lakh for what they have already harvested. Amrutaben Ganpat bhai neighbour took additional step and planted fenugreek in small portion (about 1200 sq.ft) of land next to onion crop. While onions are growing, fenugreek provided quick returns. She and her husband harvested fenugreek on alternative day and sell in Dahod (nearby city) market at Rs.1000/1200. It's a 3-month crop and they are estimating to earn about Rs. 35,000 worth fresh fenugreek as additional income apart from that of onion crop.

The only concern of the farmers with onion crop is the fluctuating market price. During season the price comes down to Rs.40-60/20 kg. Hence timing and storage facility plays important role. Farmers should be able to hold on to stock for a while till they get good returns. The farmers in Nani Vasvani are early movers who are getting reasonable price. Those who are late entrants to market may not get such price. Currently, under the project a total of 83 families were cultivating onion crop and has been able to make substantial profit.

Diversification to higher value crops

Activity: Seasonal Fruit Crop (Watermelon)



In Dabhda village, Sunilaben Gopi Kumar Patel is high on entrepreneurial spirit. The six-member family has land next to national highway. Spotting the opportunity, they realised that high value crops should be adopted for sustainable living. Shifting from maize and chickpea they adopted seasonal fruit cultivation.

As both husband and wife one day reached to Federation in Limkheda exploring how it can help them in taking up any commercial crop. They said they have enough water but not sure about what crop to be adopted and how to go about new crops.

Federation sent them for training in cultivating vegetables and seasonal fruits such as Papaya and watermelon. They instantly picked up the idea of cultivating watermelon. Gopi Kumar



Community Focussed Micro Finance

Activity: Sant Kabir Mahila Mandal (Thrift Group)



learned about the improved practices of crop mulching and drip irrigation during one of the exposure visits. He requested the Federation to support him in setting up drip system. Sunilaben also learned about mulching which reduces water wastage (in flood irrigation) and conserves needed moisture for plant and reduce frequent weeding issues. Weeding is a labour-intensive activity and much of the revenues would otherwise be spent in the labour cost.

The family invested Rs. 30,000 as contribution in the project and took guidance from the project team and federation. The plot is little more than ½ acre with 20 ridges each covered with plastic mulch and planting stock of 650 placed at 3ft distance. They also installed solar insect traps and solar lights as natural crop protection measures.

With these measures and regular drip irrigation each plant is with almost 10 - 15 fruits. The family is expecting Rs.1.50 Lakhs at a rate of Rs.10-15 / kg watermelon in this season, which is a conservative estimate. When asked what they do with profits, they said that they will go for Taiwan Papaya which is a new variety and can fetch good price. Sunilaben and her husband are on way to become 'Lakpati Kisan'. Total 11 farmers have adopted this high value crop – water melon and are on the path of becoming Lakhpati kisan.

A women savings group “Sant Kabir Mahila Mandal”. Was formed in Usra, one of the project village in Limkheda. As agreed to, all the individual members of the group have been saving Rs.100/month per member and from this amount saved they were also carrying our small lending activity. They used the savings as small thrift to fund farming activities such as purchase of seeds in season, buy fertilisers or pesticides etc. This has been continuing since the recent past.

When Miraben (Secretary) came in contact with Federation, she realised that their group can take bigger loan to improve the income of group members. She requested the Federation for loan of Rs.1.00 Lakh to the group. Federation checked the track record and enquired where do they wish to deploy the loan amounts. Each member of the group had different plans for utilization of the loan amounts – primarily for the productive purposes. On assuring itself that



the group request is genuine, the Federation facilitated the lending of Rs.1.00 lakh to the group from the revolving fund available with the horticulture federation.

The Group members then lent the amounts to each member as per the investment requirements. For example, Miraben spent the loan in installing a bore well for additional water to cultivate vegetables. Nandaben (Pramukh) invested the sum to expand the capacity of an existing flour mill. She bought a new

motor to increase the capacity of flour mill with rice huller. Gangaben further deepened the existing bore well to help increase the water yield and thereby the area under irrigated cultivation. Kamliben bought a cow and is now selling two liters of milk every day. Similarly, Kasamben used the loan to supplement the funds required to buy a buffalo to support her income sources.

The Entire group is also involved in vegetable cultivation on regular basis and they sell the produce in the local market as well as the local trains that pass through their village. They pluck the vegetables in early morning and catch 6.30am train. Sell entire stock by noon and return by 2.00pm train. Out of 11 women, 8 women cultivate vegetables throughout the year and 3 during the Rabi season. During the season, they earn Rs.1000-1200/day. Nandaben earns an average of Rs.200/ day from the flour mill in addition to the vegetable that she grows and sells. All in all, every member of the group is an entrepreneur in herself.

When closely studied, every one contributed their own savings to establish assets such as bore well, flour mill, livestock etc., and used the loan from Federation as matching contribution. They took the loan from Federation at 8% interest and returned it with in 1 year.

When asked what they planned to do next, Miraben said they want loan of Rs.2.00Lakhs to expand the activity further and assured the Federation to return with interest. She said, the group has increased the saving from Rs.100/month to Rs.200/month since last 4 months. This is because of increased earnings of members with the loan from Federation. Sant Kabir Mahila Mandal is a role model for all other SHGs in the tribal areas. More than fifty such women self help groups are functional in the 8 project villages and constant hand holding support is extended to build up the capacities of the office bearers and also develop the local level women leadership to further build up on the collective efforts and be a self-sustaining entity at the village level.

Total loan disbursed by Federation is Rs-45 Lakhs covering 7 villages and 60 farmers. Farmers purpose of loan mainly was for dairy development, Irrigation asset creation and other non-farm activities.

Entrepreneurship Development Initiatives.

Activity: Kadaknath Bird Farming (Poultry)



Kampaben Kiranbhai living in remote Gorla village of Limkheda of Gujarat has a new-found business in their lives. Kampaben in her 30s is generally busy with her farming in a small patch of land. With 8 members in her family, she and her husband are quite occupied all through the day.

Most of the efforts were on subsistence farming and crops like maize, pigeon pea and chick pea were being grown. As part of the project outreach, they came in touch with the program team and the Limkheda Women's Horticulture Federation. She found that many women in her village are getting engaged with the Federation and there was an opportunity to attend a training program on improving the productivity of key agriculture crops.

During the training, she learned several new things - How to increase benefits from the same piece of land. She felt very happy and shared the learnings with her husband. They decided to take up horticulture in their small portion of land. They planted mango and lemon in their farm and started to take care of the plants.

In another meeting in the village while discussing what more can be done, they were offered to take up poultry farming. Initially they wondered whether they will be able to do it or not. Besides, it was an expensive affair as well as a risk to venture into a new activity.

Federation team explained them that to raise local breed doesn't benefit much. Something new to the area will always attract people and can give good results. Both Kampaben and Kiranbhai were convinced. However, they were not clear where and how to keep the poultry. So Kampaben took training on poultry.

Federation developed a small size 20 ft x 12 ft MS structure with good ventilation that can last for 10-15 years at a cost around Rs.80,000. Its important to have such strong shed to keep the birds safe from theft and any danger from wildlife. Side wall are covered with green net shade to protect from raising temperatures.

They went to Padra (town near Vadodara in Gujarat) looking for new breed of poultry. They found that "Kadaknath" breed (black hen) a new variety is in much demand. They purchased 100 birds at Rs.300/bird. Each one weighed about 250 grams when they bought to village. The birds were transported in small boxes at a cost of Rs.3000.

Few birds (around 5) could not bear the shock and died. But rest survived. Initially the birds survived on 2kg/day feed which gradually increased to 10kg/day. A kilogram feed costs around Rs.25/kg. Besides fresh water, air and feed, birds are screened for any diseases by the Vet arranged from CINI. In addition, they also engaged private doctor to provide timely care to the birds. Two months back, when 'Bird Flue' was spreading across Gujarat, these birds health was managed well. The family spent around 24,000 on feed and other operational expenses in 4 months.

After 4 months the birds are ready for sale. However, marketing is a biggest challenge to every producer. While wondering who will buy such birds in remote tribal village, this tribal family found its own way to market the birds. They posted the sale of birds in a WhatsApp group. Within few days they found a buyer for 15 birds. They sold them for Rs.15,000. With this experience they are sure of selling remaining birds at Rs.1200/bird. If they succeed, their total revenue in 4 months will be more than Rs.1.00 Lakh. As per Kampaben, "the birds are healthy and in good condition so they can fetch good price". When asked, what shall she do after selling all the birds, she said "we will reinvest the money in buying 200 birds". Kampaben and her husband is on way to be "Lakhpatri Kisan".

Livestock Development

Activity: Sirohi and Jhalawadi Goat Farming



Women Horticulture Federation with the support of CINI introduced Sirohi and Jhalawadi goats in tribal areas to enhance their livelihood. Sirohi breed (15 goats) procured from Rajasthan and Jhalawadi breed (11 goats) from Surendranagar of Gujarat.

Sumitraben Shakabhai from Goriya with all smiles on her face. There is every reason for this smile. Sumitraben and her husband has to feed 9-member family on limited land. She started a goat rearing farm next to her house in her village. Earlier she was having 6 local variety goats. Though goats did provide an additional source of income for the family, they were not quite remunerative.



She came across the Federation activities. along with fellow women in the falia (hamlet) she attended a training program on improved livestock management organized under the project and interacted with other women groups. She approached Federation with proposal to add few more goats. Federation did some research and offered her new variety of goats.

Eleven (11) Sirohi goats were procured from Rajasthan. She and her husband went to Sirohi and bought them at an average cost of Rs.4,500 to Rs.6,000 per goat. Goats are sold on weight at the rate of Rs.300/kg. The breed is known for quick weight gain and resistant to varying climates.

Back at the village, the Federation helped the family to develop a shed for the goats. The shed was designed while taking into account the various local parameters. It was built on MS frame with iron grill on all sides to protect goats from theft and poaching. The shade was built on raised platform at about 4 feet height. Wooden planks laid as flooring with slight gap between planks to collect excrete on ground. This makes the cleaning process easier and the dung can be collected

on weekly basis. The shade can be pulled up as per need for air and sunlight. Overall the shade provided good ventilation, protection and easy to clean features.

The structure size is 30ft x 20ft to accommodate about 50 goats. Farmer provided the land for structure. Total capex is around Rs. 450,000. Operational costs is negligible where one of the family member takes them to nearby forest for grazing. A 3 - 4 hour trip to the nearby forest for grazing is a routine for them. Besides, the goat are also fed with agri residues. Calcium Mineral bricks were also made available for goats to lick and add the required micro nutrients and minerals to facilitate the growth and weight gain.

Every 15 days the Vet from CINI visited the farm and provided the necessary guidance to the family. The project is now 4 months old and the number of goats rose from 11 to 19., i.e., 8 new kids were added. When they bought them, each goat weighed around 15 to 20kg. Now in four months each goat weighs around 30 to 35kg which will fetch them an average of Rs 12,000 per goat. In a way 50% cost is already recovered in 1st year and by second year the project will break even. Though they can be sold, the family is not selling as of now. Dung is collected and used in the farm. The family is on its way to 'Lakpati Kisan'. Sumitraben and Federation has also reached an agreement to share the profits at 60:40 ratio where Federation will reinvest the sum to extend similar support to other members to establish similar goat farms; It is estimated that within two years, the number of goats in the farm will increase to at least 35 to 40 units of pure breed Sirohi goats which will then be sold to the local villagers;

Community based Service Delivery

Activity: Pasu Sakhi



Manisha ben from Goriya village found a new job in her village. She studied teachers training course in Ahmedabad anticipating to get a job. But somehow that didn't work out. But she got a new job in Goriya where she is working as Pashu Sakhi.

Pashu Sakhi role is similar to that of a community level vet, who helps with the primary level care of animals in the village. Though she couldn't get a teacher's role, she is happy to take up this work in the village as it contributes in some way and gives her special status in the village. Whoever in the village finds any problem with their livestock that be goats, cows or buffalos they approach her.

The Vet appointed by CINI trained her to identify different problems in livestock. She is provided with medicine kit that has various types of medicines. She discusses the problem with the Vet on

phone and after diagnosis she offers medicines. This way when the Vet is not able to reach village she fills the gap.

Manisha ben said that in the recent few months itself she helped 20 families from her village for treating some or the other health issue of their animals. She said 'in emergency, we are the first doctors for the livestock'. The medicines are provided free of cost to families under the project support. As part of the project, she has also been provided with specific training's on basics of livestock health management at Chosala campus and one at nearby veterinary training centre and she has been extending the immediate medical support to the households on primary health care of the goats and other ruminants. Villagers are also finding her service useful.

So far, she is being provided honorarium under the project. Federation is planning to introduce paid services once the demand increases. Federation feels that at least the cost of medicines to be recovered. A remuneration of Rs.1500/- per month can be given to her for services apart from cost of medicines. The modalities are being worked out.

Though there is a mobile vet clinic, a Pasu Sakhi can play an important role in village. Localised care and nursing in emergency can save life of an animal which is much greater than the small fee paid as remuneration. This trade off can yield higher returns to the family who approach her. This concept is being further popularised among communities and having paid services available at their door steps. The Pashu sakhi also mobilizes the community for carrying out the timely vaccination of the livestock which protects the animals from the seasonal diseases and other health issues;

With increasing number of goat farms and dairy farms, Pashu Sakhi can play an important role in village livestock economy. However, before expecting her to be self-employed, the demand for services and potential earnings to be evaluated and Pasu Sakhi to be further trained and equipped. The program trained 8 Pasu sakhi from 8 villages to give better animal health care services.

Manisha ben is a pioneer and role model in this endeavour.

Cluster Level Initiatives

Activity: Renewable energy



Solar insect traps are one of the better innovation that are helping many farmers to increase crop yields. Many crops often fail to yield expected results due to insect / pest infestation. Insects and pests need to be controlled at initial stage to save the crops. Application of chemical pesticides though popular in yester years, now farmers are aware about their side affects on humans who consume such food. Thus, invented mechanical measures to control insect/pest infestation.

Solar trap is a small innovation that cost around Rs.4500/unit kept in the middle of the farm on an elevated platform. The light turns on automatically in the evening between 6pm to 8.30pm, the time when the insects are active. The light attracts the insects flying during this

Value Chain Engagement/Marketing

Activity: Collective Marketing



time. A liquid tray mounted at the bottom of solar light is filled with water and used engine oils (waste) which works as a trap. Insects attracted to the light get trapped in the oil. The light turns off automatically after set time. During the day small solar panels charge the battery that powers the light during the night time.

This device has been installed across 30 sites in the 8 project villages where vegetable cultivation / fruit cultivation is adopted. Besides solar trap, sticky insect traps are also installed in fields. Together they have given very good results. The sticky trap are fixed at intervals in the field at about 3 feet height. Insects, during the day time get attracted to the sheet and get stuck on the sticky portion of the sheet. Aphids and other fruit flies are controlled with the help of such manual methods.



With availability of water and quality inputs, many women from 8 project villages started cultivating vegetables and selling them in nearby villages and towns. Some villages were closer to main highways and others are remotely located. Those who are closer to railway or highways find transportation to reach nearby cities with ease. However, those who are remotely located find it difficult to reach markets in time. Besides, the cost of transportation adds on to their operational expenses. With this they always found their income lesser as compared to those with access to transport.

Realising this need, soon the Federation with support under the STTGDC supported project set up a collection centre to procure vegetables and fruits. The centre was set up in Goriya village where women from surrounding villages reach the Centre in the early morning. The vegetables are loaded in a common vehicle and transported to Dahod. The revenues are shared back to each women as per sale value. Federation keeps 5% of the revenue towards the collective services



provided and the members are happy to pay for the transportation and collective marketing facilitation service being offered by the federation.

This model is working very well for women who produce vegetables in smaller quantities. They often find it expensive to sell in faraway market place. Eventually they opt out of vegetable cultivation. For all such women, the Collective Marketing initiative is a boon.

In first 100 days the collective marketing group sold 66,600 kg of vegetables in Dahod market for about Rs.10.00Lakhs. The average value of vegetables was Rs.15/kg. The transportation cost is around Rs.1/kg. This system is highly beneficial for those who cannot afford transportation cost for small volumes and tend to leave the crop in field or sell it at lower price.

The project along with the horticulture Federation has been providing the handholding support to the women groups at initial stage of vegetable cultivation. Over a period, the collective also plans to reach out to distant markets and sell the crop at a higher price. Federation staff keeps the record of vegetables collected, transported and sold on daily basis and the sale realisation and transport expense. All this is done in a transparent and open environment so that a sense of trust is built into the program. A Total 273 farmers from the surrounding villages have benefited from this collective marketing facility so far. The number will increase as season progresses and more such collective marketing platforms are planned to be initiated.

List of Project Villages from Limkheda Block, Dahod:

- | | |
|-----------------|-----------------|
| 1. Goriya | 5. Moti Vaswani |
| 2. Pada | 6. Antarsuba |
| 3. Usra | 7. Dhabda |
| 4. Nani Vaswani | 8. Khirkhai |



સિની (કલેક્ટીવ્સ ફોર ઇન્ટીગ્રેટેડ લાઈવલીહૂડ ઇનિશિએટિવ્સ)

અમદાવાદ ઓફિસ : ૩, સાનિધ્ય બંગલો, હોટલ લેન્ડમાર્ક સામે,
ઈસ્કોન-બોપલ રોડ, આંબલી, અમદાવાદ - ૩૮૦ ૦૫૮.

દાહોદ ઓફિસ : આનંદ ભવન, બીજો માળ, ચાકલિયા રોડ,
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