

***Organic Farming:***

Total bigha covered for organic farming – 100 *bighas* of land

Total kitchen garden in the project area – 264

The HDFC Parivartan Marugandha program conducted a thorough assessment and planning of natural resource management (NRM) interventions in the first year, collaborating with the program area community. The interventions included activities such as developing water bodies, plantations, and orchards, all of which are intended to yield results in the long term. Although some of the activities have already started to show results, it will take another 10-12 months for the orchards to yield results.

The program was carried out in collaboration with the community to ensure their active participation. The NRM interventions included a range of activities, such as restoring and developing water bodies, setting up plantations, and establishing new orchards. These interventions were designed to deliver long-term result-oriented outcomes. While many of the activities have already started to show a positive results, the orchards will take another 10-12 months to produce results. Establishing orchards is a long-term investment that requires time for the tree to mature and produce fruits. It is expected that these orchards will provide a source of income for the local community and improve the local ecology and promote biodiversity. The program's focus on NRM interventions is crucial in promoting sustainable development in the program area. By involving the local community in planning and implementation, the program aims to ensure that the interventions are tailored to meet the needs of the community and promote their participation and ownership.

Intervention and monitoring of the first-year activity were conducted and the first-year results were successful. As the covid 19 was a hindrance to our activity but still project team conducted the activity according to the plan. The team has constructed



*Organic Farming*

water storage tanks and revived water bodies of the project area due to this activity the people got employment at the time of lockdown.

Promoting organic farming was one of the major activities with the 100 farmers and with the good rain, the production from the farm was huge, which motivated other farmers to practice organic farming due to which the project team created a seed bank for other farmers. **Azolla** plantation was one of the pilot activities of the project. This activity was conducted successfully with women beneficiaries of the project area.

Apart from that, kitchen garden seed distribution affected the health of women and children drastically by reducing the rate of disease caused.

The kitchen garden establishment helped the family get a good amount of nutrition through the availability of green vegetables. A climate grows house machine was placed with beneficiaries, producing wheat grass and fodder for their livestock. This affected the quality of life for livestock by increasing the percentage of milk production in cows and goats. Due to less water consumption, these hydroponics techniques become one of the major attractions of the villagers from the project area. Orchard plantation has shown results by producing fodder for 2 goats get fodder regularly due to this the beneficiaries could save money for their livelihood.

The conclusion that orchard farming can be a viable and sustainable option for certain regions and communities is based on the premise that orchards can provide several

benefits, such as a source of income, improved biodiversity, and carbon sequestration. However, the success of orchard farming depends on various factors that require careful consideration, planning, management, and market analysis. For example, selecting the appropriate tree species that are adapted to the local climatic and soil conditions, preparing the land and ensuring adequate irrigation, controlling pests and diseases, and pruning the trees to optimize their yield and quality. In addition, effective orchard management requires proper monitoring of the trees' growth and health, regular maintenance and fertilization, and timely harvesting and marketing of the produce. Market analysis is also essential to ensure that the orchard's products meet the demand and quality standards of the target consumers and that the pricing and distribution channels are profitable and sustainable. In conclusion, while orchard farming can be a promising option for certain regions and communities, it requires careful planning, management, and market analysis to maximize its potential benefits and ensure its sustainability.

Quantitative achievement	Qualitative achievement
50 orchard of fruit trees ( <i>Berry, Gunda and pomegranate</i> ) with 30 orchards with good rate of productivity for fruit and fodder.	- Increase in biodiversity of the region
- Expected increase of 25-28 thousand (annual income) per household after 3 years.	- Nutrition security due to availability of nutritious fruit for the households and community in generally
-Kitchen garden started with 264 families -15-20 percent annual need of vegetables for 264 families fulfilled	- Increase in vegetative cover. Food and nutrition security for 1400 women, men and children
-Consumption of green vegetable by family four times a week.	- Utilization of waste water for vegetable production - Fresh and organic vegetables became available for these families.
-Experiment on green fodder production through climate grow house technique	- Green fodder security for livestock can be ensured in future
- 2 Hydroponics were installed in two villages by producing 80 Kg of wheat grass monthly	- Increment in milk production and improvement in quality of milk

## **Orchards:**

The Project is an initiative aimed at promoting sustainable agriculture and horticulture practices in the Thar Desert, the western part of Rajasthan. In the year 2020, the project focused on planting seven orchards on a piloting basis with fruit plants such as lemon, ber, and Gunda. The project has been successful in achieving its objectives, with a significant increase in the yield of these fruit trees.

The cultivation of fruit trees in orchards requires a high level of expertise and knowledge, as the growth and development of these trees depend on various factors such as soil quality, weather conditions, irrigation methods, fertilization, pruning, and pest control. Proper care and management of orchards are essential to ensure that the trees produce high-quality fruit.

One of the critical aspects of orchard farming is choosing the right variety of fruit trees to plant. Different fruit tree varieties have specific requirements for their growth and development, such as temperature, water, and nutrient needs. Farmers must also consider the market demand for different types of fruits and their profitability.

Orchards require a considerable investment of resources, including land, equipment, and labour. The initial setup cost of an orchard can be high, as it involves preparing the land, purchasing fruit tree saplings, and installing an irrigation system. Once the orchard is established, it requires regular maintenance, including pruning, pest and disease control, and fertilizer application.

Another benefit of orchard farming is that it is a long-term investment that can provide a consistent source of income for farmers. Fruit trees can produce high yields for many years, making orchard farming a sustainable business venture. Additionally, many fruit trees are known to improve soil quality and promote environmental sustainability.

Lemon trees planted as part of the project have shown excellent growth and have started bearing fruit in a short time. The fruit produced by these trees is of good quality, and the yield has been satisfactory. Farmers who have planted lemon trees in their orchards have reported increased excellent growth.

Ber trees, which are also known as Indian plums, have been successful in their growth. The trees have adapted well to the local climate and have produced some fruits at the end of the first year. The fruit has a sweet taste and is in high demand in the local market. Farmers who have planted ber trees have reported significant growth of these plants at the end of the year.

Gunda trees, which are also known as Cordia, have also been successful in their growth. The trees have adapted well to the local soil and weather conditions and have produced some fruit at the end of the first year. The fruit has a unique taste and is in high demand in the local market. Farmers who have planted gunda trees have reported significant growth of plants.



The success of the Marugandha Project can be attributed to various factors, including the use of modern agricultural practices, the availability of high-quality seeds, and the provision of technical assistance to farmers. The project has helped to promote sustainable agriculture practices and has increased the income of farmers in the region.

Orchards are agricultural plots of land specifically dedicated to growing fruit trees. They are often found in temperate or subtropical climates, where the environment is suitable for the cultivation of a wide range of fruit trees. Some common types of fruit trees grown in orchards include lemon, ber and Gunda.

In recent years, the demand for organic fruits has increased, leading to a rise in the number of organic orchards. Organic orchards use sustainable farming practices to produce fruits without the use of synthetic fertilizers and pesticides, making the fruits healthier and safer for consumption.

Conclusion: By the end of the Third year The Marugandha Project's orchards planted with lemon, ber, and Gunda trees have been successful in their growth and fruiting, leading to an increase in income for farmers in the region. This project serves as an excellent example of sustainable agriculture practices and their positive impact on farmers and the local economy.



## Azolla:

In the second year of the intervention, monitoring of the first-year activity was conducted and the results of the first year were successful. As the covid 19 was a hindrance to our activity but still project team conducted activity according to the plan

The project has also implemented successful Azolla farming in the Thar Desert region. Azolla is a tiny aquatic plant that is rich in protein, essential amino acids, vitamins, and minerals. It is an ideal feed supplement for livestock and has been used for centuries in traditional farming systems.



The Thar Desert is a challenging environment for agriculture due to its arid and barren landscape. However, Azolla has proven to be a suitable crop for this region, as it requires very little water and can grow in extreme temperatures. The Marugandha Project has introduced Azolla farming as a sustainable solution to address the region's water scarcity and lack of vegetation.

Azolla farming has been successful in several ways. Firstly, it has helped to provide a source of high-quality livestock feed for farmers in the region. This has reduced the cost of purchasing animal feed and has increased the quality of animal protein in the diet. Secondly, Azolla has nitrogen-fixing properties, which means that it can enrich the soil with nitrogen and other nutrients, leading to improved soil fertility.

The project has also been successful in promoting gender equity in the region. Women have been actively involved in Azolla farming, and the project has provided them with training and technical assistance. This has empowered women to be financially independent and has contributed to their overall well-being.

Moreover, the project has provided training on organic farming practices to farmers in the region. This has reduced the use of chemical fertilizers and pesticides, leading to improved environmental and health outcomes.

## Organic farming-100 Bigha

As the covid 19 was a hindrance to our activity but still project team conducted activity according to the plan Promoting organic farming was one of the major activities with the 100 farmers and with the good rain, motivated farmers to practice organic farming due to the project team had created seed by the end of the first year of the project and this bank service to provide for other farmers.

The Marugandha Project is an initiative that promotes sustainable agriculture and horticulture practices in the Thar desert of Rajasthan state. As part of this initiative, the project has implemented a successful organic farming project in the Thar Desert region. Organic farming is a method of agriculture that avoids the use of synthetic fertilizers and pesticides and focuses on the use of natural and organic inputs.



The Thar Desert is a challenging environment for agriculture due to its arid and barren landscape. However, the Marugandha Project's organic farming has been successful in several ways. Firstly, it has reduced the use of chemical fertilizers and pesticides, which has improved environmental and health outcomes. This has resulted in a reduction in soil and water pollution and has led to improved health outcomes for farmers and consumers.

Secondly, organic farming has improved soil fertility by promoting the use of natural and organic inputs. This has led to an increase in soil organic matter and microbial activity, leading to improved soil structure, water-holding capacity, and nutrient availability. This has resulted in increased crop yields and improved crop quality.

The project has also provided training on organic farming practices to farmers in the region. This has empowered farmers to adopt sustainable farming practices and has contributed to their overall well-being. Moreover, the project has encouraged the use of traditional and indigenous farming practices, which are well-suited to the local agro-climatic conditions.



Furthermore, organic farming has promoted the cultivation of a diverse range of crops. This has led to improved nutrition and food security in the region. The project has also promoted the cultivation of crops that are well-suited to the local agro-climatic conditions, leading to increased crop productivity and income

#### **Kitchen garden:**

The kitchen garden establishment helped the family get a good amount of nutrition through the availability of green vegetables. A climate grows house machine was placed with beneficiaries that resulted in producing wheat grass and fodder for their livestock. This affected the quality of life for livestock by increasing the percentage of milk production in cows and goats. Due to less water consumption, these hydroponics techniques become one of the major attractions of the villagers from the project area. Orchard plantation has shown results by producing fodder for 2 goats get fodder regularly due to this the beneficiaries could save money for their livelihood.

In conclusion, the Marugandha Project's organic farming project has been a success in the Thar Desert region. It has reduced the use of harmful chemicals in farming, improved soil fertility, promoted the use of traditional and indigenous farming practices, and increased crop diversity and productivity. The project serves as an excellent example of how sustainable farming practices can contribute to the well-being of farmers, consumers, and the environment.







### Title - The Azolla Lady

**Under the HRDP Marugandha Programme, Urmul Trust in collaboration with HDFC Bank had experimented with innovative fodder production. The challenge was to produce quality fodder for livestock at minimal cost and low water usage in the project area. The experiment with the Azolla plantation turned out successful in multiple villages. Azolla proved to be a nutritious food for the cattle and it enhanced the quality of milk also.**

Rajo Devi, a native of Ujjalan village, owned 100 goats and 10 cows. Animal rearing was her major income source. Since she was struggling with the shortage of fodder supply, the idea of growing Azolla attracted her. She underwent a three-month training organized by the programme team and realized the business potential of the Azolla plantation. It can also be used as a bio-fertilizer, a mosquito repellent and even in the preparation of salads. Azolla is considered an effective bio-scavenger as well since it absorbs heavy metals.

Rajo reached out to the village SHG and other women to explain the benefits of Azolla for livestock. They started commercial production of Azolla and made it available to the villagers at a reasonable price. This success story gained momentum on social media and many women were motivated by Rajo Devi's initiative.

*“ Farming Azolla is not an easy job. During summer, it will get dry and at the time of winter, it requires a lot of sunlight. So one needs to understand the seasonal behaviour of the plants. Azolla plantation provided sufficient fodder for my livestock initially. Later other villagers also came up to feed their animals with this nutritious green fodder”.*

Rajo Devi

Case story 2 : Name of the beneficiaries: Salma Ismail Village: Badlee Nathusar

No. Of family members 4 and Income sources: Farming and Tuition teacher

### Title- Orchards for fruits and fodder

One bigha orchard was a smart idea to promote fruit production in the arid areas of the Thar desert. Under Marugnadha, supported by Urmul Trust and HDFC Bank Parivartan saplings of various fruit trees were distributed. Production and availability of nutritious fruits contributed to food, nutrition and fodder security for the households and community at large.



In the second year of the project, the team started planning an orchard in one *bigha* of Salma Ismail, a native of Bradlee Nathusar. She was very active and supportive of the project team in natural resource management intervention. The project team provided her with three kinds of nutritious plant saplings, *Bear*, *Gunda* and *Nimbu* to set up the orchard. It became a great success as the plants started bearing fruits in a very short period. Also, the orchard serves as a source of fodder for her cattle.

Now Salma has started planting vegetables in her orchards to produce more nutritious food for her family. She is growing tomatoes, green chill and ladyfinger on her farmland. During the rainy season, she also sells some of the produce from her kitchen garden to nearby households.

*"It takes time for these plants to grow in desert areas. So we will have to wait for the favourable season and should keep watering the plants. Now, the plants in my orchard are looking healthy and have started bearing fruits. I want my family to eat more nutritious and diverse food. So recently, I have planted a variety of vegetables also".*

Salma Ismail



Case story 3 : Name of the beneficiaries: Puri Arjun Kumar Village: Ujjlan

### Title - Magic of hydroponics

Hydroponics is a method of growing plants in the absence of soil using sprayed water. When compared to soil-grown crop production, it has proven to be extremely water-efficient. With the help of HDFC Bank Parivartan, the Marugandha project team identified two



one in Selvi Gomat and the other in Ujjlan. Puri Arjun of Ujjlan was very much enthusiastic about setting up the hydroponic system. He along with his brother learned how to install the



machines and how to operate them. They tried growing wheat in the hydroponic station under close monitoring by the Marugandha team. The result was quite surprising; the wheat plants grew up fast and the yield was good. The team could see the system functioning well in Selvi Gomat village also. With his experience with wheat, Arjun went on to grow Channa, Mirchi and Dhaniya in his hydroponic station and found success.

"I lost my job at the store during the lockdown. When the Marugandha team came up with this programme, I was looking for a new job. They constructed a hydroponics system in my home, and I began cultivating crops using this machine as a new hobby. I think the water used to be

quite minimal, and the process to be very simple. People come to view the equipment, thus my house has become a tourist attraction in my village."

Puri Arjun Kumar

*Case story 4: Name of the beneficiary:- Azmat Islamdin Village:- Selvi Gomat*

**Title - Our fruitful garden**

A kitchen garden is a place where herbs and vegetables can be grown around the house and used whenever they are needed. Local varieties of radish, broadleaf mustard, chilli, beans, pumpkins, and other vegetables are becoming more common in kitchen gardens.

With the help of Urmul Trust and HDFC Parivartan, the Marugandha programme team assisted 264 families in establishing kitchen gardens. One of them is Azmat Islamdin of Selvi Gomat village. The team assisted the family with seedlings, fencing, and water storage methods. In his kitchen garden, he decided to grow tomatoes, radishes, chilli, pumpkins, peas, carrots, and mushrooms. The family received a bountiful harvest of organically grown vegetables. They no longer buy vegetables from the market because they grow their vegetables at home.

"The most significant impact of growing a kitchen garden at my house is that I can no longer spend money on purchasing vegetables from the market and can instead use vegetables grown in our backyard. I have a family of 6-7 members to care for, and I am the only breadwinner in the family, so there was a lot of pressure and stress on me to earn and make a living for them, but that stress and tension are no longer there, thanks to the kitchen garden. I'm so glad that Urmul Trust informed me and my family about this wonderful initiative. I am very excited and intend to continue growing my kitchen garden in the future."

Azmat Islamdin





*Case stories 5: Name of the beneficiaries: Laxmi Devi Village: Odhaniya*

**Title - Going organic**

Urmul Trust has been working on organic farming in Odhaniya village, Jaisalmer district, as part of the HRDP Marugandha Programme. The farm is brimming with Bajra (Peral millet), Moong (Mung bean), Til (Sesame), and Guar (cluster bean) due to a good monsoon this year. Laxmi

Devi, a village farmer, is pleased with the results of organic farming supported by Project Marugandha. The farmer family has begun to recognise the advantages of organic farming. Because it is nutritious, healthy, and helps to prevent some diseases. These organic products were previously consumed only at home. But this year, due to increased production, they began selling them on the market, earning between RS 2,000 and 3,000 per month.

*“The organic seeds provided by the project team are of the best quality and we have started seeing the results in our field. I recommend all the farmers, those who are struggling with low production can use this seed. And after all this year we are getting a good amount of rainfall also”.*

Laxmi Devi

