

### **3. NATURAL RESOURCE MANAGEMENT(WATERSHED DEVELOPMENT PROGRAMME)**

A Holistic Watershed Development is implemented at 285 Micro watersheds of 26 Talukas of 13 districts of Gujarat which are sponsored under DPAP, EAS, DDP, IWDP, Hariyali & ICRISAT and covered 137096 H. Land of 288 villages & benefitted 14699 families. It helped to increased cropping intensity, crop yield, Ground Water Table, Forage production around the watershed areas.

#### **3.1. Summary of the Programme -**

- a) Districts (Taluka) – Panchmahal (Devgadhbariya, Jambughoda), Bharuch (Valiya), Ahmedabad (Dhandhuka, Barwala, Bavla), Amreli (Kunkavav), Bhavnagar (Palitana, Gariyadhar), Rajkot (Lilapur, Atkot, Jetpur, Jasdan, Maliya, Morbi, Rajkot), Junagadh (Manavadar, Vanthli, Visavadar, Bilkha), Valsad (Vansda), Dahod (Limkheda), Rajpipla (Nandod), Surat (Songadh), Patan (Patan), Jamnagar (Kalawad).
- b) Scheme - ICRISAT, DPAP, EAS, DDP, IWDP, & Hariyali
- c) Area Covered - 137096 H. of 288 villages.
- d) Families Benefitted- 14699
- e) Main Activities - Community Organization, Soil & Water conservation, Capacity Building

#### **3.2 STRENGTHENING DEVELOPMENT PROGRAMME (SDP) -**

**Sir Dorabji Tata Trust Sponsored** - SDP was initiated to prepare a model for Arid Zone. The proven technologies as model should be replicated in other parts of Arid zone. For this purpose, 2 villages of Rapar Taluka namely Pragpar & Tindalva had been selected.

##### **3.2.1 IMPACT OF THE PROJECT –**

- People have started adopting Horticulture of good fruit plants & trees.
- Due to training & exposure awareness among the people & their participation has been increased.
- Due to recharging of Wells the water level has increased upto 15 to 20 feet from bottom level. Electric motor works for 24 hours. T.D.S. count have been reduced by 40%.
- The problem of scarcity of drinking water is reduced to a certain extent due to Roof-water harvesting.
- Throughout the year, good quality vegetables are available due to Kitchen Garden activity.

- The Silvipasture model is established with multipurpose tree plantation.
- With the help of Crop Demonstration, good quality crops model have been prepared for semi arid area.
- Distribution of goat units resulted availability of good quality breeding bucks. Income through sale of goat milk get started which contains 4% of fat.
- Collecting waters from dew & giving it to plants 1 model was established.
- Due to Drip-Irrigation, there is increased land under irrigation & reduction in labour cost.
- With the help of Compost Unit Vermicompost is available in 45 days.



**Green Date & Pomegranate Orchard/Wadi**

### **WELL RECHARGE TO MONEY RECHARGE**

Rapar Taluka area of Kutchh district is a dry, desert & coastal area. Pragpar village is on the way to Rapar approximately about 11 kilometers on Adesar road. Pragpar village is a place where S.D.T.T. (TATA) sponsored Arid Zone Development Project is in operation. Under this project various activities are carried out. But, one of the most important activity is of Well-recharging. The impact of this well-recharge activity is unbelievable. Let us understand the story of a benefitted farmer.

Shree Bhavanbhai Mahadevabhai Ravalia is a farmer of Pragpar village. His family is of 6 members including his father. He is having a buffalo who gives 10 litres of milk/day. He owns 12 acres of land, where a well with a depth of 130 feet on which 10 H.P. submersible motor is fixed. The TDS of the well water was 3750. Previously, for rain & winter crop he used 6 acres of land for growing Rayada, Castor, Wheat, etc. But, after coming in contact with the project team of Pragpar S.D.T.T.(TATA) ; he understood the various activities along with well-recharge activities during exposure. In principle he was fully convinced & agreed to experiment for his well. The main difficulty faced was water for recharging well will have to be brought from a distance of 1000 meters. Estimated cost for this work was near about Rs. 50,000/- which was a huge amount for him. Provision of financial help from this project was limited which is only Rs.

6,000/- per well. So what about for the remaining amount? was the problem. It should be borne by the owner. Fortunately Shree Bhavanbhai Ravalia had thoroughly understood the importance of well-recharge & was optimistic about the result. He had realised the need for well-recharging & he showed a readiness to experiment in spite of the risk of financial responsibility. He had recharged his well as per S.D.T.T. (TATA) model. In first year, the impact found was as follows :

During monsoon in 12 acres of land the same crops were cultivated. Whereas in winter they added new crop like Cumin in 3 acres (because the TDS of well water is reduced to 2100 suitable for Cumin crop) Rayada in 3 acres, Wheat in 2 acres, Caster in 3 acres & 1 acre was for green fodder.

- Over and above the regular income, this year the additional income of Cumin - Rs. 75,000/-, Rayada - Rs. 33,600/-, Caster Rs. 35,000/-, i.e. the total additional income was 1,43,600/-. Moreover, he had mentioned other benefits. They are
- Seeds started germinating easily and speedily.
- Inter period of 2 irrigation is delayed upto 5 to 6 days.
- Layers of salt & minerals on land were not formed.
- Land become softer.
- Now water of well became safe for drinking otherwise previously they used to carry and bring it from home.

### 3.3 MODEL WATERSHED PROJECT -

**The International Crops research institute For The Semi- Arid Tropics, Patancheru, (ICRISAT) Hyderabad** is one of the eminent institute working at international level in the field of research & agriculture especially for dry, semi-dry areas. The institute is sponsored a model watershed programme at the village Mota Vadala Taluka Kalawad District Jamnagar.

#### 3.3.1 MAIN ACTIVITIES -

- a) **SOIL AND WATER CONSERVATION** : Under this programme in one acre land Afforestation, 2 Check Dams, 3 Nala Plugging, 1250 Rmt. Farm Bunding, and in 5 Ha. of land under Fodder Development Programme, Drip Irrigation and Plastic Mulching Demonstration is done.
- b) **INCREASE IN CROP PRODUCTION** : **Under Field Trial** of various varieties of Wheat, Groundnut, Cotton, Demonstration for use of Micro Nutrient (Zinc and Borron) and Demonstration for B.B.F. and R &F methods were done.

c) **INCREASE IN MILK PRODUCTION:** Improvement in breeds of cattle, organised of Cattle Infertility & Treatment Camps.

d) **CAPACITY BUILDING & SKILL DEVELOPMENT PROGRAMME:** Training & Exposure Tour.

### 3.3.2 IMPACT OF THE PROJECT -

- Level of awareness & interest in accepting new technology by farmers has been increased.
- Increase in adoption of improved varieties of Wheat- GHW-496, Bengal Gram- G2, Groundnut-ICR-48, ICGV-9114 & B.T. Cotton.
- Increase in crop production from 7.5% to 27%.
- Water level came up in the wells.



**Check Dam**



**Demonstration of Wheat & Gram – Drip Irrigation**



**Plastic Mulching – Water Melon**



**Performing A. I.**