

**RASHTRIYA KRISHI VIKAS YOJANA  
GOA STATE CO-OPERATIVE MILK PRODUCERS' UNION LTD  
CURTI PONDA GOA -403401**

**SUCCESS STORY**

**“UPGRADATION OF NON DESCRIPT MILCH ANIMALS “(COWS)**

**INTRODUCTION:**

Domestic animal diversity represents one of the most neglected as well as threatened aspects of biodiversity. Local breeds of milch animals are vested with traditional farming and pastoral communities, who manage them according to their indigenous knowledge and in tune with local ecological constraints. Causal factors for their extinction include loss of grazing land, globalisation of the economy, catastrophes, conflicts, legal restrictions on the marketing of their products etc. Never the less, many local livestock breeds continue to represent the lifeline of rural populations. While they may not be able to compete with “improved breeds” in milk and meat yields, they fulfil a much wider range of functions and provide a larger range of products.

Being able to thrive even with low fodder inputs, their maintenance is ecologically more sustainable, especially in marginal environments. Requiring lower levels of health care and management, they commonly entail a lower workload for women in comparison with exotic breeds. As is becoming increasingly clear, they often have scope for speciality products and can be essential to preserve habitats and cultures. At the local level, the loss of a breed means the loss of a livelihood strategy and loss of indigenous knowledge. At the global level, it means decreased manoeuvring room for adapting to environmental and economic changes.

It also emphasises the need for the active involvement of indigenous communities and the role of local knowledge and institutions in conservation.

Project aims at supporting and fostering the following activities:

- Study and document indigenous knowledge relating to livestock breeding.
- Make case studies of local cows that are threatened and the social, economic and political factors involved.
- Exchange information between farmers' associations, scientific institutions
- Build capacity of farmers in the conservation and development of local cows breed.

Goa State has large number of indigenous non- descript milch animals. Due to their low milk production and lack of facility of indoor feeding these animals tend to wonder in search of feed and water .Available stock of animals contributes few thousand litres of milk for the State production, ranging from 1-3 litres of milk per animal /day. These animals are physically sound and having greater potential to sustain diseases and climatic changes . In spite of having good milk producing traits and disease resistance power, these animals are deprived of good animal management practices by their owners. Thus they become uneconomical to rear. They tend to destroy vegetation and even consume waste material leading to further decline in the health conditions .

Considering the available milk traits, milk quality and sustainability of these animals, it high time to ensure their genetic

improvement, reproductively and quality nutrition there by enhancing the milk producing capacity of these animals in the state.

### **NEED BASED OBJECTIVES OF THE PROJECT**

- ✓ To enhance the milk producing capacity of the local cows.
- ✓ To maintain genetic character responsible for disease resistance, climatic adaptability and enhance milk production traits.
- ✓ To develop good calves to have economically viable milch animals.
- ✓ As an awareness of crossbreeding technique in local cows.
- ✓ To save vegetative destruction by local cows
- ✓ To minimise the stray nature of the local cows.
- ✓ Promote employment in local youth in dairy sector.

### **PROJECT DETAILS**

As above mentioned project Scheme of local cow up gradation phase-I was implemented in 2008-09. Success of the phase –I has created awareness among milk producers and results of the same was encouraging hence same project was implemented in phase –II in 2011

Scheme of local cow up gradation was implemented in 2011 in 175 dairy Co-operative societies in the State with the support of RKVY. Awareness camps were organised at society level where in farmers and animal details were collected by Veterinarians, supervisors, cluster AI workers and secretaries of the concern DCS. Required information was compiled as per the Dispensary area mainly at Ponda, Curchorem, Colvale and Sakhali dispensary.

During implementation at DCS level 860 milk producers participated in the scheme. In order to avail local animals in oestrus 1200 local cows were examined for oestrus signs during infertility camps at village level.

Those cows showed oestrus signs were inseminated with Sahiwal / HF/Jersey semen depending on the size, breeding history and other parameters of the cow. Rest animals were treated for heat induction and synchronization of the heat by way of hormones or other relevant medication. Total 446 artificial inseminations were performed in the cows of 247 beneficiaries, where in 33 cows conceived with first insemination and balance 138 with subsequent inseminations for conception, thus average conception rate was 38.34 % for getting 171 pregnancies in the cows.

On confirmation of the pregnancy at 3 month cows were microchipped with Radio frequency Identification Tags thus making permanent identification of the animals.

### **Local Cow**



## Examination of Cow for pregnancy



## Radio Frequency Identification Ear Tags



## Microchipping



## Identification of Cows





**Upgraded daughter born from Sahiwal frozen semen (F 1)**



**F-2 Generation Heifer**



**F-2 Generation Heifer**



**F-2 Generation Cow yielding 13 lts / day**



**Proud owner with Calves**



**Proud owner with Local Cows**



**Calves born by Artificial Inseminations**



**Heifers**

### Upgraded Adult Cow (Local X Sahiwal - F2)



From Goa Milk Unions' Cattle feed Plant 450 kg pregnancy ration was made available at doorstep of the beneficiaries for feeding of pregnant animal during last 180 days of pregnancy period @ 2.5 kg / day. This pregnancy ration was specially designed as per the nutritional requirement of pregnant animals. All the cows were kept indoor and required feeding was under taken in cowshed only. This has restricted the movements of cows and thus avoiding loss of energy in search of fodder and destruction of vegetation and wondering as stray cattle's on road.

## Pregnancy ration of Goa Dairy



### **SCHEME OUTPUT**

It is reported that out of 171 pregnancies, one cow delivered prematurely with female calf .Other 170 calves were born healthy. Out of which 98 males and 73 females were born.

### **INDIRECT IMPACT**

Cows examined during infertility camps revealed many important aspects related to reproductive disorders which were corrected during the actual examination of reproductive organs.

- ✓ In most of local cows oestrus was not noticed by the owners as they were let loose, thus losing their regular breeding cycle.

- ✓ Cows let loose tend to breed with natural way through scrub bulls breeding was controlled due to introduction of artificial insemination.
- ✓ Many animals remained pregnant by way of natural breeding but was not noticed by owner in early pregnancy thus they were not given any ration in pregnancy period hence it affected the calf growth, post calving milk production.
- ✓ Some owners were reluctant to get their animals examined for reproductive assessment and subsequent artificial insemination. They believed that due to AI calf will be born with over weight leading to difficulty in parturition etc. This belief was overruled by this scheme.

### **IMPACT ON HEALTH AND MILK PRODUCTION**

Cows received pregnancy ration had normal calving, few cases had retention of placenta but no case was reported with metabolic disorder. Farmers reported that there was additional increase in milk @ 1.5-2 lts / day to post lactation. Thus this has created impact on economic viability in terms of milk in local cows when they are fed during pregnancy period. The main observation was persistency of lactation for more than 210 days as compared to 120 days in other animals who did not receive pregnancy ration. This has proved that animals can enhance milk yield if good feeding practices are followed during dry / pregnancy time in local cows. AI incentives paid to the milk producers has created awareness of Artificial Inseminations in local cows. Due to feeding of pregnancy ration animals remained indoor this has helped to save vegetation in open areas, stray nature of the local cows.

## **DIRECT IMPACT**

This scheme has proved to be result oriented in terms of milk, calves, breeding, feeding awareness amongst milk producers. Feeding attitude towards feeding of dry / pregnant animals helped to get better quality young calves having high milk yielding genetic potential.

Due to feeding of good quality pregnancy ration from Goa Milk Union @ 2.5 kg / day in last 180 days of pregnancy period helped local cows to develop nutritional body reserves to have good health and enhanced milk yielding capacity. Beside pregnancy ration mineral mixture and deworming was made available under this scheme, which minimised nutritional deficiencies and worm load. This has also supported growth of young calves and reduced neonatal mortality in calves.

- Calves born to these animals gained average birth weight of 21-23 kg as compared to 13-15 kg in animals without pregnancy ration at last trimester of pregnancy.
- Calves were healthy and had good growth rate.
- Feeding of pregnancy ration supported for higher colostrums which has helped for better passive maternal immunity to the young ones.
- Cows received pregnancy ration showed early oestrus signs post calving of 3 month.
- Calves born out of artificial insemination had better conception rate and higher milk yield of 10-13 lts / day in F1 generation and it is noticed that F2 generation has given 13- 15 lts milk / day.
- Calves born from local cows remarkably showed the presence of local characters like sturdiness, black hooves, good skin coat and

adaptability to the existing feeding practices and higher milk traits.

- Daughter's age at first calving was 27-32 month as compared 48- 55 months in local cows.
  - Body weight at first calving was reported 225 – 275 kg in F1 generations and 325-375 kg in F-2 generation as compared to 150-180 kg in local cows.
  - F2 generation Cows developed from calves under scheme have present market value of Rs 25000- 35000/ cow depending on average yield of 13-15 lts /day.
- a) Scheme has proved the importance of artificial insemination in local stray animals, feeding during pregnancy period and care of young calves to have their own cows with best genetical potential instead of purchasing animals from other states.

## **CONCLUSION**

The real value of genetic diversity is not properly reflected in current choices of breeds and associated technologies. Local cows that utilise low-value feeds, or survive in harsh environments, or have tolerance or resistance against specific diseases could be very beneficial in the future. Indigenous breeds can be improved to provide better outputs. Opportunities for improvement of indigenous breeds have never been explored systematically. To help state in improving the performance of indigenous breeds which is vital for maintaining genetic diversity and preserving the genetic material on which future agriculture may depend.

Project on Breed Up gradation of Non descript milch animals (Cow) was a need based programme. This project has achieved desired targets in local cows, in terms of Artificial Insemination technique, breeding, feeding of

pregnant animals, induction of milk giving traits of different established breeds and development of economically viable milch animals to strengthen dairy business. Targeted beneficiaries has seen the actual output of the project in terms of enhanced milk yielding capacity of their local cows , process of upgrading the existing stock of their animals in shortest span of time by way Artificial Insemination as compared to natural breeding . Major success was to develop own superior milch animals who are certainly contributing to the state milk production.

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**FUND UTILISATION REPORT**

**ON**

**"BREED UPGRADATION OF NON DESCRIPT MILCH  
ANIMALS "COWS "**

**2011- 2012**

**UNDER**

**RASHTRIYA KRISHI VIKAS YOJANA (GOI)**



## **RASHTRIYA KRISHI VIKAS YOJANA (GOI)**

**IMPLEMENTATION OF SCHEME “ BREED UPGRADATION OF NON  
DESCRIPT MILCH ANIMALS “COWS “**

### **MATERIALS, MAN POWER UTILISED**

- 1) Nondescript milch animals having age 4 years onward.
- 2) Identification of animals by Radio frequency device Microchips by  
TROVAN -ID – 100 Icon Technologies –Chennai
- 3) Technical services by : GOA STATE CO-OPERATIVE MILK  
PRODUCERS' UNION LTD

**Under guidance of**

- a )Veterinary Officers.
- b) DCS supervisors
- c) Cluster Artificial Inseminators

**Dispensaries – Ponda**

- Colvale
- Sakhali
- Curchorem.

**BREED UPGRADATION  
IN  
NON DESCRIPT MILCH ANIMALS  
“COWS”**









