

Towards Climate Resilient Livestock Production System in Punjab



The pilot project initiated by Punjab State Council for Science and Technology, Government of Punjab illustrates sustainable interventions to achieve sustainable milk production through climate resilient bovine stock management. The project would benefit 3,000 small and marginalized farmers whose main occupation is livestock rearing in 3 vulnerable districts of Punjab namely Tarn Taran, Bhatinda and Ludhiana. The project includes maintenance of milch cross breed cattle and stray cattle in temperature regulated environment, improved feed management, and weather based livestock insurance. Cattle ponds for stray cattle would be developed with integration of climate smart elements. Weather based insurance tool would be developed which correlates variation in temperature and milk yield to evaluate monetary compensation required to be provided to the small and marginalized farmers.

PROJECT RATIONALE

Climate change and its extreme weather events such as drought, flood, and long heat waves has been adversely affecting crop and livestock productivity thereby endangering the food security of the country. Global warming is expected to reduce livestock food production due to cattle mortality, competition for limited fodder and water resources, pastureland degradation, and livestock diseases. Besides, small and marginalized farmers of Punjab have been observed to have limited financial resources to develop climate responsive livestock management infrastructure in the state. The project would foster climate proofing initiatives of livestock rearing, its management, and would promote overall socio-economic development of small and marginalized farmers.

PROJECT FACTS

NAFCC Support	INR 182.4 Million(USD 3.04 million)
No. of Participants/ Beneficiaries	3,000 Households
Project Duration	October 2015- October 2020

Project Approach

The approach for the project included:

Small and marginalized farmers from project districts having landholdings of 1-2 ha and having 5-15 dairy animals are chosen as beneficiaries of the project. For ensuring effective gender participation, 30% of the overall beneficiary under the project would be women. For facilitating sustainable livestock production in heat stress condition, oestrus management (2 animals per house) and artificial insemination would be carried out. To serve small farmers, 10 animal capacity each cattle sheds harboring 10 cattles would be constructed at 3 chosen KVKs and remaining 7 at other Government Institutions. A set of 10 trainings would be carried on pre-insemination and post-insemination of cattle across 100 villages of project districts. Climate resilient cattle ponds would be constructed for stray cattle's to prevent over extraction of pasture land and livestock/agriculture based waste methane gas utilization.

Impact of the Project

- The indigenous dairy animals like the Murrah/Niliravi buffalo and Sahiwal cow's gene pool would be improved by artificial insemination of germplasm from cross breed variety of cattle.
- The problem of cessation of normal ovarian activity during summer would be reduced to minimum through the practice of "Fixed-Time Artificial Insemination" method resulting into the higher milk yield.
- A disease forecasting system providing a correlation between disease occurrence and changes in climate, vegetation cover etc. would be developed in line with National Animal Diseases Referral Expert System (NADRES).
- Biogas digester and bottling plants from the cattle sheds would utilize 50,000 kg/day of dung derived from 2,000 cattle and would have a potential to generate 2, 500 m³/day of biogas.
- Weather linked insurance product would be designed for compensating loss in milk yield based on the correlation between Thermal Heat Index (THI) of the district and variation in milk productivity with the technical support from the insurance company.



National Bank for Agriculture and Rural Development
Plot No. C-24, 'G' Block, Bandra-Kurla Complex, Bandra (E), Mumbai - 400 051.
E-mail : fsdd@nabard.org • Website: www.nabard.org