

ZONAL MONITORING COMMITTEE INSPECTS NICRA VILLAGE

National Initiative on Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February, 2011. The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components viz. Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grants. The Technology Demonstration Component of National Initiative on Climate Resilient Agriculture deals with demonstrating an integrated package of proven technologies for adaptation of the crop and livestock production systems to climate variability. This component is implemented in 100 vulnerable districts of the country by Krishi Vigyan Kendras in a participatory mode. The Krishi Vigyan Kendra, Villupuram District is part of the Technology Demonstration Component Centers. The Project is implemented at Kattusiviri village, Mailam Block, Villupuram District. The interventions covered under the component are broadly categorized into four modules for the entire country. For the District, the climatic vulnerability is drought and hence, the interventions are tailored to mitigate the vulnerability through coordinated efforts.

Module I: Natural Resources

This module consists of interventions related to *in-situ* moisture conservation, water harvesting and recycling for supplemental irrigation, improved drainage in flood prone areas, conservation tillage where appropriate, artificial ground water recharge and water saving irrigation methods.

Module II: Crop Production

This module consists of introducing drought/temperature tolerant varieties, advancement of planting dates of rabi crops in areas with terminal heat stress, water saving paddy cultivation methods (SRI, aerobic, direct seeding), frost management in horticulture through fumigation, community nurseries for delayed monsoon, custom hiring centres for timely planting, location specific intercropping systems with high sustainable yield index.

Module III: Livestock and Fisheries

Use of community lands for fodder production during droughts/floods, improved fodder/feed storage methods, preventive vaccination, improved shelters for reducing heat stress in livestock, management of fish ponds/tanks during water scarcity and excess water, etc.

Module IV: Institutional Interventions

This module consists of institutional interventions either by strengthening the existing ones or initiating new ones relating to seed bank, fodder bank, commodity groups, custom hiring centre, collective marketing, introduction of weather index based insurance and climate literacy through a village level weather station.

Monitoring

The ICAR constituted the monitoring committee to review this programme with the following members for the Centre.

- Chairman : Dr. V. Veerabhadraiah, Ph.D., Former Director of Extension
University of Agricultural Sciences, Bangalore
- Vice Chairman : Dr. S. Prabhukumar, Ph. D., Zonal Project Director, Zone VIII,
Indian Council of Agricultural Research, Bangalore
- Members : Dr. K.A. Ponnusamy, Ph.D., Director of Extension Education,
Tamil Nadu Agricultural University, Coimbatore
Dr. Srinath Dixit, Ph.D., Principal Scientist, Central Research Institute for
Dryland Agriculture, Hyderabad
Dr. K. Kannan, Ph. D., S.r Scientist, Central Soil and Water Research and
Training Institute, The Nilgiris
- Member Secretary : Dr. DVS. Reddy, Ph.D., Principal Scientist, Zonal Project Directorate,
Zone VIII, ICAR, Bangalore

Project Implementing Centre

Krishi Vigyan Kendra, Oilseeds Research Station Campus, Tamil Nadu Agricultural University, Tindivanam is implementing the Project. The Scientific Team consists of:

- Dr. N. Sathiah : Professor and Head, Krishi Vigyan Kendra, Villupuram District
- Dr. M. Renuga : Subject Matter Specialist (Horti) and Nodal Scientist (NICRA),
Krishi Vigyan Kendra, Villupuram District
- Dr. K. Natarajan : Subject Matter Specialist (Seed Science and Technology),
Krishi Vigyan Kendra, Villupuram District
- Dr. K. Kavitha : Subject Matter Specialist (Plant Pathology),
Krishi Vigyan Kendra, Villupuram District
- Dr. K. Senthamizh : Subject Matter Specialist (Nematology),
Krishi Vigyan Kendra, Villupuram District

The Team KVK has been implementing various modules in the Project location.

Visit to NICRA Village

The Monitoring Committee visited the NICRA Village on 23.9.2013. The Committee was accompanied by the Project Implementing Team of the Krishi Vigyan Kendra, Villupuram, members of the Village Climate Risk Management Committee and a section of Project Farmers in the rural setup. The Committee made extensive field visits to study the various activities under the four modules of TDC. The Committee reviewed the technical progress and the relevance of the interventions during the field visits. The Committee was explained about the various ongoing interventions relating them to the climatic vulnerability in the Project Village as listed below.

S. No.	Module	Intervention demonstrated
1.	Natural Resource Management	1. Water harvesting structure: Farm pond to harness the runoff and integration of crop cultivation and fisheries

		<ol style="list-style-type: none"> 2. Broadbed furrow method for cultivation of jasmine and button rose integrated with border planting of <i>Mondan</i> banana 3. Paddy cultivation under SRI as means of water saving method of crop cultivation 4. Microirrigation and fertigation combined with mulching in brinjal as means of water saving irrigation and insitu moisture conservation 5. Microirrigation and fertigation in rose, tuberose, jasmine as means of water saving irrigation and insitu moisture conservation 6. Compartmental bunding and injection wells in an area of 30 acres in the water starved area of the village and diversified crops cultivation 7. Water conservation through pipe irrigation and area expansion
2.	Crop Cultivation	<ol style="list-style-type: none"> 1. Shadenet nursery for raising vegetable seedlings of horticulture crops 2. Cultivation of short duration blackgram VBN (BG) 7 as intervention for adjustment of planting dates 3. Cultivation of short duration greengram VRM (GG) 1 as intervention for adjustment of planting dates 4. Cultivation of drought tolerant groundnut cultivar TMV 13 during kharif 2013 5. Crop diversification and rational allocation of lands for agricultural and horticultural crops
3.	Livestock	<ol style="list-style-type: none"> 1. Cultivation of Bajra Napier in small pieces of lands in several locations of the NICRA village 2. Azolla cultivation in shaded areas of the field for feed augmentation in cattle 3. Fodder bank model for livestock 4. Genetic upgradation of desi goats with Tellicherry breed 5. Area specific mineral mixture for milch cows and mineral lick for goats under nutrition management for ruminants
4.	Institutional	<ol style="list-style-type: none"> 1. Village Climate Risk Management Centre 2. Custom Hiring Centre 3. Infrastructure development like microirrigation for Rs. 15.00 lakhs, pipeline

		structure for Rs. 54,000/- under convergence
		4. Microweather station in the village
		5. Inputs management in the centre

The Committee following the visits to various locations held discussions with the members of clubs and committees in the village and advised to follow the programmes as stated in the guidelines. The Committee also discussed the compelling issues in interventions and suggested correction courses to the Village Climate Risk Management Committee. It also emphasized the need for greater role play by the President of the Village to realize the project goals.

Visit to Ezhil Mushrooms, Kilmavilangai, Olakkur Block

The Committee visited M/s. Ezhil Mushrooms enroute to Krishi Vigyan Kendra where the substrate for Button Mushroom production is being carried out by the KVK entrepreneur, Mr. V. Chandrasekaran and his family. The farmer has earlier demonstrated successfully the business in milky mushroom and oyster mushroom in his native village. The entrepreneur had undergone a series of training at the KVK, University and National Research Centre for Mushroom, Solan earlier. He explained the concept of short composting method for media preparation and the principles. The base materials including the media and casing soil after preparation on scientific methods under open house and controlled conditions are transported to Kothagiri, Ooty for cultivation of button mushroom. The farmer has acquired 1.00 acres of land for the mushroom enterprise in Ooty. The tissue culture to bedspawm production for this mushroom is attended by his family as they have the needed expertise which was originally given by the KVK. The farmer showed the stepwise methods in the enterprise. The farmer also demonstrated the low cost poultry in his farm house. The Committee appreciated the novel attempts of Mr. Chandrasekaran and his family.

Visit to Krishi Vigyan Kendra, Villupuram District

The Committee visited the Kendra in the afternoon. Dr. N. Sathiah, Professor and Head of the Kendra presented the progress report of the NICRA since inception. The Committee suggested various measures to improve the Institutional Intervention and emphasized that the project goals can be achieved only when the Village Climate Risk Management Committee in the NICRA village engages frequently and takes up actionable points. The Committee appreciated the efforts of the KVK in demonstrating all the identified programmes in the project village without deviation.

The Chairman of the Committee, Dr.V. Veerabadraiah, former Director of Extension inaugurated the new demonstration plot in the KVK, Tindivanam on 'Meadow Orchard in Guava' a concept evolved at Central Institute of Subtropical Horticulture, Lucknow. The Committee visited the elaborate exhibition arranged on this occasion. The members further visited the recent activities on Natural Resource Management intervention in the Centre and complimented the Team KVK for the efforts. Dr. N. Sathiah, Professor and Head, Dr. M. Renuga, Nodal Scientist, NICRA and other Scientists accompanied the Committee.

VISIT OF ZONAL MONITORING COMMITTEE TO NICRA VILLAGE

KRISHI VIGYAN KENDRA
VILLUPURAM DISTRICT

23.9.2013

MODULE I: NATURAL RESOURCE MANAGEMENT

The Committee inspected the Rain Water Harvesting Structure in the Project Village. The Farm Pond is having a storage capacity of 1680 m³. At present the farmer has integrated fisheries component. Rogu, catla, mrigal and grass carp seedlings have been stocked @ 1000 numbers. The Committee also witnessed paddy cultivation (Improved White Ponni) in the holding by the farmer.



Rainwater harvesting structure in NICRA Village

MODULE I: NATURAL RESOURCE MANAGEMENT

In the Project village, artificial recharge well (Injection Well) and compartmental bunding has been done. Through this the run off is collected, filtered and drained into wells which help in increasing the water level. This intervention has aided in assured cropping. The Committee studied the impact of the intervention and discussed on the possibilities of increasing the structures.



Artificial Recharge wells (Injection wells)

MODULE I: NATURAL RESOURCE MANAGEMENT

Shadenet for cultivation of crops:

A small shadenet had been established under the project component for raising seedlings of horticultural crops which could be effectively utilized in adjusting the cropping cycle. The Committee witnessed the activities in the farm. Besides, the Committee also studied the crop diversification by the project farmer in this location. It included groundnut, pulses, mango, roses, jasmine, artemesia.



MODULE I: NATURAL RESOURCE MANAGEMENT

The Committee reviewed the progress of various interventions under the module. The Panchayat President was encouraged to rehabilitate the defunct drainage channel in the village by the Chairman of the Committee



FIELD INTERACTIONS

MODULE II: CROP CULTIVATION

In the Project village, the NICRA farmers have begun SRI cultivation method. This was possible due to intervention under NRM and Crop Cultivation module by the implementing team. The farmers were encouraged to compare SRI and non-SRI methods in order to experience the benefits of water saving irrigation methods.



WATER SAVING METHOD OF IRRIGATION

MODULE II: CROP CULTIVATION

The cultivation of floriculture crops has been undertaken in the project village under broadbed & furrow method of irrigation. The Committee suggested to bring the area under microirrigation in future for rational allocation of resources.

In order to adjust the planting dates as part of intervention against vulnerability, during kharif 2013, short duration greengram, VRM (GG)1 has been raised in the project location. The Committee studied the crop in maturity and suggested area expansion.



MODULE II: CROP CULTIVATION

Under the module, the component of microirrigation and mulching has been introduced. Through convergence, microirrigation for 13 acres at Rs. 15.00 lakhs has been obtained from the Department of Horticulture. The Committee discussed the prospects of it in the village with the project farmers



Water saving method in irrigation using drip irrigation and mulching

MODULE III: LIVESTOCK

Through the Project interventions fodder cultivation has been ensured in the village. More than 15 units of fodder system are presently available. Among the fodder species Bajra-Napier CO4 has gained acceptance among the farmers and since its introduction in 2011 the farmers have been continuously cultivating the crop in view of the effective mitigation to the vulnerability



Fodder cultivation under irrigated conditions

MODULE III: LIVESTOCK

The Project village has a wealth of *desi* type of goats. To genetically upgrade the local breeds the KVK provided Tellicherry goats raised in the Instructional Farm. The Committee inspected the progenies in the location.



Genetic upgradation of goats

VISIT TO THE VILLAGE CLIMATE RISK MANAGEMENT CENTRE

The KVK has established the Village Climate Risk Management Centre in Kattusiviri. This Centre is being utilized for the technology upgradation exercises. The Committee visited the Centre and interacted with the Committee President and a section of the members present.



MODULE IV: INSTITUTIONAL INTERVENTION

Under the Project a Village Level Meteorology Station has been established. The infrastructure is installed in the premises of the Government Higher Secondary School, Kattusiviri. The Station consists of:

- Stevensons Screen to hold all the thermometers
- Open Pan Evaporimeter
- Non Recording Rain Guage
- Soil Thermometer



VILLAGE LEVEL METEOROLOGY STATION

VISIT TO MUSHROOM EDP UNIT



The Committee visited the Composting Yard of KVK Mushroom Entrepreneur Mr. V. Chandrasekaran at Kilmavilangai, Olakkur Block. The Entrepreneur is producing the substrate by short composting method under open and controlled conditions for button mushroom production. He has established the unit in Kothagiri at Ooty after undergoing series of skill development programmes at KVK, Tindivanam and National Research Centre for Mushroom, Solan, Himachal Pradesh this year.

VISIT TO THE KRISHI VIGYAN KENDRA, VILLUPURAM Dt.

The Committee as part of the Review visited the Krishi Vigyan Kendra on 23.9.2013. The various facilities available in the Centre was shown to the members of the Committee. It included, Touch Screen Kiosk, Plant Health Diagnostic Facility, Soil and Water Testing Laboratory etc.



PRESENTATION AND DISCUSSION OF OUTCOME

Dr. N. Sathiah, Professor and Head presented in detail the progress of work done to the Committee. Following it there was an indepth interaction. The Committee suggested various measures to upgrade the programmes. The Committee appreciated the efforts of the KVK in key interventions under NRM, Livestock and Crop Cultivation and suggested strengthening of Institutional arrangements.



EXHIBITION AT KVK

An Exhibition was organized at the KVK in which the interventions carried out in the four different modules were displayed. The Committee evinced keen interest.



VISIT TO IFS UNIT IN KVK

The Krishi Vigyan Kendra, Villupuram District is maintaining an Integrated Farming System Model in the Instructional Farm. The components available in this model are Fisheries + Goat+Vermicompost integrated with gardenland/wetland +tree production. The Committee inspected the model and suggested to construct a second wier in addition to the one being constructed for drainage of runoff.

