Project on-"New Extension Methodologies and Approaches (NEMA)"

New Extension Methodologies and Approaches (NEMA) is a network project of the Indian Council of Agricultural Research (ICAR) involving 11 ATARI's and 6 ICAR Research Institutes viz., IARI, CAZRI, CIFA, NDRI, IVRI and NRRI. ICAR research Institutes will lead the projects where as ATARIs will facilitate in implementing the project. Improved technologies viz., varieties, NRM, INM, IPM, technologies from fishery, veterinary, dairy, horticulture, engineering, etc. developed by NARS in last 5-10 years will be identified for five agro- ecosystems by the ATARIs in collaboration with Institutes and respective subject matter institutes will be responsible for technologies related to agriculture (IARI, NRRI, CAZRI), horticulture (IIHR), dairy (NDRI), animal husbandry/Veterinary (IVRI), fisheries (CIFA) across agro-ecosystems.

Concept note of NEMA

Indian agriculture has progressed remarkably in the post-independence era. As a boon of green revolution India has not only become self-sufficient in food production over the years, but also has made noteworthy impression in global food chain due to market liberalization in recent past. However, there are still a number of challenges that need to be taken care of immediately, so that the nation can meet its increasing demand for food availability and food security. Some of these challenges include land fragmentation, risk of climate change, depleting natural resources, lack of quality management of produce, low profitability of small and marginal farmers etc. Currently, India holds 1st rank in the world in production of many commodities like chickpea, jute, millets, ginger, banana, mango, lemon and milk and holds 2nd rank in case of rice, wheat, sugarcane, cotton, lentil, onion, potato, tea etc. In spite of this notable progress in total food production, per hectare productivity remains to be a matter of concern. The pressure grows even more since India occupies only 2.4 per cent of world's resources with which it has to feed 17 per cent of world's population.

To combat these challenges, generation and dissemination of improved technologies is the call of the hour. The new agricultural technologies are considered to be the prime mover to the process of agricultural development in India. Understanding farmers' perceptions of a given technology is crucial in the generation and diffusion of new technologies and farm household information dissemination. The National Agricultural Research System (NARS) of the country which is one of the largest agricultural research networks in the world is already engaged in developing state of the art technologies in the field of agriculture on regular basis. There are a good number of improved technologies like improved crop varieties and other technologies like zero tillage, direct seeded rice, SRI technologies etc. But the question arises about the rate of adoption of these technologies by the end users. Presently, there is meager documented information about the adoption status of improved NARS technologies and also the stakeholders' perception about these technologies over a substantial geographical region. There is no synchronous study to assess the extent of adoption, its determinants and impact. Whatever information is available is of scattered and sporadic in nature. This hinders researchers in drawing meaningful generalization. Therefore, there is a need for a country-wide integrated study that will bring into focus the understanding of adoption of improved technologies and its determinants in the country and as well as across the world. It will help in impact assessment of these technologies as a result of their adoption.

Thus, a network project is conceived to generate data on adoption of selected improved technologies, the determinants of adoption, constraints and impact from a large pool of samples across the country for generalization and drawing meaningful conclusion. The specific objectives of the study are given below.

Objectives

- To study the extent and determinants of adoption of selected improved NARS technologies
- To develop technology map for different agro-ecosystem
- To assess the impact of the technologies in different agro-ecosystem
- To undertake yield gap analysis and suggest suitable strategies to reduce gaps

Budget details of NEMA Project

Agricultural Extension Division, ICAR will be the overall implementing authority of the project. ICAR-IARI, New Delhi will be the Lead Centre and technically coordinate the project. ICAR-ATARI, Jodhpur will coordinate the Financial/ Budget component of the project. The proposed project duration is 14 months. The overall estimated budget under General Head is Rs.160.86 lakh.

Table-1: Budget estimated for FY 2018-19 (Zone-VII)

EXPENDITURE STATEMENT OF NEMA PROJECT FOR FY-2018-19								
								(Rs. In Lakh)
Sl. No	**Name of KVK/Host**		**TA**	**Consumables**	**Contractual Staff**	**Misc. Expenses**	**Institutional Over head**	**Total**
1	ICAR-ATARI, Zone-VII	Budget Allocation	0.00000	0.40000	0.00000	0.30000	0.00000	0.70000
		Opening Balance	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		Fund Received	0.00000	0.40000	0.00000	0.30000	0.00000	0.70000
		Expenditure	0.00000	0.40000	0.00000	0.30000	0.00000	0.70000
		Closing Balance	**0.00000**	**0.00000**	**0.00000**	**0.00000**	**0.00000**	**0.00000**

Table-2: Budget estimated for FY 2019-20 (Zone-VII)

EXPENDITURE STATEMENT OF NEMA PROJECT FOR FY-2019-20								
								(Rs. In Lakh)
Sl. No	**Name of KVK/Host**		**TA**	**Consumables**	**Contractual Staff**	**Misc. Expenses**	**Institutional Over head**	**Total**
1	ICAR-ATARI, Zone-VII	Budget Allocation	1.45000	0.94000	2.84000	0.15000	0.26900	5.64900
		Opening Balance	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
		Fund Received	1.27032	0.82352	2.48808	0.13141	0.23567	4.94900
		Expenditure	0.56044	0.21114	2.01100	0.01978	0.00000	2.80236
		Closing Balance	**0.70988**	**0.61238**	**0.47708**	**0.11163**	**0.23567**	**2.14664**

Achievements during 2019-20

As per instruction of ICAR-National Rice Research Institute (NRRI), Cuttack, the information for the impact study of NARS technology has been collected from the farmers of Sepahijala and South Tripura districts of Tripura in the prescribed format during the month of February, 2020. A total of 80 farmer respondents have been selected from the eight villages of the two districts of Tripura namely, Sepahijala and South Tripura. From Sepahijala district two villages each namely; Birendranagar and Manaipathar under Kathalia block and Shyamnagar and Paschim Takarjala villages under Jampuijala block were selected. Likewise, from South Tripura district, two villages such as Gardhang and Magurchhara under Satchand block and Muhuripur and East Charakbai villages under Jolaibari block were selected. From each village, 10 farmers were randomly selected from the list of total farmers of the village.

The analysis on personal and socio-economic characteristics of the respondents revealed that over half of the respondents (51.25%) belonged to middle age group (35-55 years), while 48.75 percent had medium (Middle school to higher secondary school) level of education. It is also noted that 65 percent of the population were Schedule Caste and Scheduled Tribe. Majority (66.25%) of the household have less than four members and 70 percent have only one earning members in the villages of the two blocks. More than half (57.50%) of the respondents were the members of Farmers club *viz*, Bharat Mata, Shiv Shakti, Khumpui, Vivekananda and others. The annual incomes of 93.75 percent of the farmers were found in low (0.1-1.3 lakh) and 91.25 percent were marginal farmers. The study also disclosed that more than half (61.46%) have 5 to 25 years of farming experience and 63.75 percent possessed 6 to 10 numbers of small farm machineries. It is also indicated that 41.25 percent of the farmers had medium level of extension agent contact. With regard to livestock, 43.75 percent were reported to have low possession of livestock (less than 2 nos.). The results also revealed that 86.25 percent of the respondents have medium exposure to mass media as well as social media and only 30 percent of the respondents have high participation in extension activities.