



हर कदम, हर डगर  
किसानों का हमसफर  
भारतीय कृषि अनुसंधान परिषद

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### Multiple water use for income generation

Integrated farming using multiple water use interventions in flood plain wetlands named *chaur* leads to enhancement in rice and fish production, and other crops like wheat, mustard and tobacco etc. An attempt was made to improve the livelihood of small farm holders (20 households of Kaincha *chaur*) of Janadha Block in Vaishali district Bihar, during 2008-10 under the FPARP, funded by Ministry of Water Resources (GoI). During the endeavour, aquaculture formed a substantial part of adoptable technologies which lead to multiple use of abundant water for enhancing productivity to improve upon food security, health and environment which ultimately improved livelihood of the resource-poor farmers whose well being, by and large, depends upon this fragile but potential productive ecosystem. Most of the area of the *chaur* is cultivated for single crop only during normal rainfall situation but in case of drought years, opportunities do exist in larger areas for raising more than one crop. Keeping these facts in view, five alternative farming activities, viz. (i) fish culture in cages, (ii) fish culture in lowland through pen culture and trenches, (iii) rice-fish culture in seasonal waterlogged areas, (iv) horticulture - vegetable and livestock production in pond system, and (v) raising of fish seed from low cost eco-hatchery, were undertaken for demonstrations of integrated agro-aquaculture systems to uplift the socio-economic status of rural poor.

Shri Tripurari Chaudhary, an educated (B.Sc.) progressive farmer, who had major land holding (12 acres) in the working site was identified to lead all other farmers and to assist the scientists to undertake all the interventions in participatory mode. This farmer used to get an income of ₹ 2,00,000 from various crops and ₹ 50,000 from fishery activities/annum. Besides, technological gain related to various IFS modules operation and financial gain with the increase of income by ₹ 2,00,000/annum, the farmer at the end of the project took the initiative in establishing a commercial fish hatchery as a result of getting acquainted with the technical know-how provided by the scientists of ICAR-RCER, Patna. He was also helped in his endeavour by organizations like CIFA, Bhubaneswar; Department of Fisheries, Bihar and the financial institution such as Oriental Bank of Commerce, Hajipur, Vaishali. He finally established a commercial hatchery for fish seed production with a capacity of 40 lacks spawn/day at Jandha, Vaishali, in Bihar. Many farmers are coming forward to adopt techniques of multiple uses of water for their farming approach.

### Sri Sharad Pawar urges industries to pool resources and work collaboratively with public sector organizations

'To advance pro-poor agricultural R&D, it is required that both, the private and public sector research and development organizations, focus on pooling resources and work collaboratively for harnessing the synergies; to lead to desired initiatives on intensive agriculture researches for next generation technologies', said Sri Sharad Pawar, Union Minister of Agriculture and Food Processing Industries while inaugurating ICAR-CII Industry Meet-2011 at New Delhi on 23 May 2011.

While expressing his satisfaction over record production of 235.88 million tonnes of foodgrains during 2010-11, he expected record wheat procurement and oilseed production to reach an all time high. Sri Pawar urged industries to get involved in programmes of skill development in rural areas, which will not only provide them skilled manpower for the agri-businesses, but also skilled manpower for other industrial activities, at the same time creating employment for lakhs of under-employed and unemployed members of our rural population.



Sri Harish Rawat, Minister of State for Agriculture and Food Processing Industries complimented ICAR and CII for partnering in organizing the ICAR-CII Industry Meet-2011 and hoped that deliberations in the Meet shall provide the right opportunity to ICAR and Industry to develop the required understanding and governance framework for developing partnerships that harness the collaborative synergies for value creation, value protection, value sharing and value recovery; and explore opportunities for income and job creation along the value chain.

Earlier, Dr S Ayyappan, Secretary, Department of Agricultural Research and Education (DARE) and Director General, Indian Council of Agricultural Research (ICAR) enumerated an array of potential technologies, developed by ICAR for commercialization which included supportive farm machinery, nutraceuticals, value-added food products, diagnostics and immunologicals. ICAR is vigorously pursuing issues concerned with IPR and technology commercialization and 58 patent applications have been granted, he said.

Sri Ashok Sinha, Secretary, Department of Food Processing Industries elaborated the role of food processing industries in driving the rural economy and called it a sunrise sector with huge untapped potential. Sri Rakesh Bharti Mittal, Chairman, CII National Council on Agriculture and VC and MD, Bharti Enterprises Limited thanked ICAR for providing this unique platform which can help lead to rural prosperity, the ultimate goal. He hoped that deliberations will lead to harmony with farmers and research work in the laboratories. Dr Gokul Patnaik, Chairman, Global AgriSystem Private Limited suggested active collaboration of scientists with industries in the areas of extension, marketing, development of skills and management.

Sri Rajiv Mehrishi, Additional Secretary, DARE and Secretary, ICAR and Dr S. Mauria, Assistant Director General (Intellectual Property and Technology Management) also graced the occasion.

### Now on-line examination for NET and agricultural research services

The modern facility for conduct of 'on-line' examination of Agricultural Research Services is in tune with the current developments in ICT Sector in India, said Sri Harish Rawat, Union Minister of State for Agriculture and Food Processing Industries while inaugurating the National On-line Examination Centre in New Delhi on 24 May 2011.

Probably this is the first scientific organization in India where the examination of National Eligibility Test (NET) and Agricultural Research

Services will be conducted 'on-line'. Agricultural Scientists Recruitment Board (ASRB) shall be conducting NET examination in 23 disciplines at 25 select centres of the country from Kashmir to Andamans simultaneously.

Shri Rawat appreciated and commended, in the current globally competitive environment, the long-term success of any organization would to a large extent depend upon its ability to induct and retain the best quality manpower. By revolutionizing the manpower induction system including by incorporating latest ICT Technologies, ASRB has indeed made a commendable contribution to the ICAR system, he said.

Dr S Ayyappan, Secretary, DARE and Director General, ICAR congratulated ASRB for establishing a National Network to conduct on-line examination for recruitment of ARS. Dr Ayyappan also said, this facility will go a long way in conduct of scholarship examinations of ICAR, admission system and all allied service examinations which have become an integral part of Human Resource Development.

Earlier, Dr C D Mayee, Chairman of ASRB proudly announced that Agricultural Research Services have achieved another milestone in the history of recruitment. The ASRB has taken up the massive job of recruitment of more than 300 posts of Assistants for the first time using the on-line mode, he further said.

### **Integrate secondary agriculture for increasing profitability in hills: Dr S Ayyappan**

Dr S Ayyappan, Secretary, DARE and Director General, ICAR emphasized the integration of secondary agriculture such as mushroom cultivation, protected cultivation, off-season vegetable cultivation with primary agriculture for increasing the economic



profitability of hill farmers. He visited the KVK, Uttarkashi (Chinyalisaur) on 16 May 2011 and appreciated the initial beginning made by the KVK in acquiring the infrastructure facilities and working on problematic areas like control of white grub, fruit fly, replacement of old varieties of wheat, rice and millets. Dr K D Kokate, Deputy Director General (Agricultural Extension) appreciated the efforts of KVK-Uttarkashi in technology transfer. He stressed upon the staff of KVK to fulfill the seed demand of farmers of Uttarkashi by producing the sufficient quantity of seed of vegetables, cereals and pulses.

Village Dunda is selected for the demonstration and dissemination of agricultural technology by KVK, Uttarkashi for the implementation of project National Initiative on Climate Resilient Agriculture. This project was launched at village site by Dr S Ayyappan. He said that the Climate change is posing major threat to agricultural productivity. Dr K D Kokate said that to mitigate the effect of changing climate, ICAR has launched this project and 100 KVKs are involved in implementation of this project and KVK, Uttarkashi is one among them. Dr J C Bhatt, Director and Dr A K Singh, Zonal Project Director expressed their views on the occasion.

### **Muzaffarnagari sheep produces triplet lambs at CIRG**

Muzaffarnagari sheep are mainly distributed in Muzaffarnagar and adjoining districts of Western Uttar Pradesh. However, a sizeable number of animals is also found in some parts of Delhi and Haryana. The breed is highly adaptable to semi-arid region and is known for faster growth rate and is mainly meant for mutton purpose but also



produces sizeable quantity of wool which is not of fine quality. Being large-sized breed, Muzaffarnagari sheep are genetically capable of producing single lamb and only 5% females give birth to twin lambs. Birth of triplet lambs is a very rare occurrence in this breed.

The selective breeding being undertaken Network Project on Sheep Improvement for mutton production at Central Institute for Research on Goats has improved its twinning rate to around 14.0%. The age at first lambing has also reduced to 590 days. This year, for the first time since the inception of the project in 1976, one ewe has given birth to triplet lambs which is the first such case reported in the country. The total weight of these triplets at two-month age was 20.8 kg against 12.5 kg in single born lambs which was 8.3 kg higher (66.4%). Thus, the higher weights of triplets at two month-age and subsequent ages over single born lambs is an important factor for the sheep keepers to get higher returns per sheep. This rare phenomenon of triplet birth invites attention of Animal Breeders and Geneticists to produce more number of twins and triplets in Muzaffarnagari sheep through various breeding and reproduction techniques. The multiple births in this breed will go a long way in enhancing mutton production in the country.

### **Application of microorganism in agriculture and allied sectors**

The 5th Annual Review Meeting of the project "Application of Microorganisms in Agriculture and Allied Sectors" was organized at National Bureau of Agriculturally Important Microorganisms (NBAIM), Mau Nath Bhanjan during 14-15 May 2011 under the Chairmanship of Dr S Ayyappan, Secretary, DARE and Director General, ICAR.

Dr Ayyappan very categorically placed on record the efforts made by the NBAIM in networking Indian scientists working in microbial research and emphasized that in the days to come, the microbes with their unique intrinsic properties, have the ability to transform primary agriculture into secondary agriculture that will be more effective, productive, eco-friendly and sustainable. He also released the whole genome sequence of *Mesorhizobium ciceri*.

Addressing the participants, Dr S K Datta, Deputy Director General (Crop Sciences) reiterated that the biological revolution is going to revolutionize Indian agriculture very soon in which the role of microbes are enormous. "Specific Priority Areas for 12th Plan" were deliberated and it was decided to organize a Brain Storming Session on "Application of Microorganisms in Agriculture and Allied Sectors" in near future.

The progress in the project in different thematic areas such as Microbial Diversity and Identification, Nutrient Management, PGPR and Biocontrol, Microbial Management of Agrowaste, Bioremediation and Microbes in PHT, Microbial Management of Abiotic Stress and Microbial Genomics was also evaluated and several recommendations were made.

Dear All  
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