

ATARI Kolkata NEWS



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From the Director's Desk

'We have to bring children into a new relationship to food that connects them to culture and agriculture'- Alice Waters

Adoption of latest technologies relating to agriculture and allied sectors, available with the National Agricultural Research and Extension System (NARES), by the farmers engaged in our country was very fast in comparison to other sectors during the last few years. This speedy agricultural transformation not only enables our country to become self-sufficient in food grain/ milk/ fish production but also provides food and nutritional security, socio-economic upliftment and sustainable agri-preneurship. During this period, for the first time, ICAR was awarded with First Prize for its Tableau,



'Kisan Gandhi' in the Republic Day Parade-2019. The tableau displayed the importance of dairy farming, use of indigenous breeds and livestock based organic agriculture for rural prosperity. The credit goes to the farmers, extension workers, scientists, policy makers and others who are continuously working in this endeavour. Like other stakeholders, the KVKs of Andaman and Nicobar Islands, Odisha and West Bengal and ATARI Kolkata personnel were very closely associated with the farming community at every nooks of districts under their jurisdiction for increasing farm income and rural employment through developing successful agri-enterprises. In addition to active participation in Annual Zonal Workshop-2019, during the period, KVKs including ATARI Kolkata put tremendous efforts in webcasting newly launched scheme 'Pradhan Mantri Kisan Samman Nidhi Yojana', in establishing micro-irrigation systems, in organizing DAESI programme, workshop on PPV & FR, launching workshop of ARYA Project etc. Besides, the activities like providing skill training programmes to the men and women farmers, rural youths, school dropouts and others; improving bovine germplasm to increase milk production through KKA Phase-III activities, organizing various capacity building programmes/ demonstrations/ extension activities, and many others were also conducted so that the earning of farmers could be doubled. I must appreciate the tireless efforts of our KVK personnel for working with the farming community.

I also congratulate to all the scientists and staff of this institute for bringing out this publication in time. Feedbacks and suggestions are always welcome.

(S. S. Singh)

Technologies applied successfully

Off-season vegetable cultivation: A lucrative agri-business

Sri P. Mohanta, 42 years old from Godapalasa village, Raruna, District-Mayurbhanj- II, Odisha adopted agriculture farming as sole income source for his livelihood after his graduation. Out of his total 15 acre of land, he was cultivating rice in 7 acre, maize in 5 acre and pulse crops in 3 acre during kharif season. But, he was unable to earn good profit from his 15 acre land due to lack of knowledge on modern agriculture farming. Under model village programme of KVK Mayurbhanj-



II, he was trained by KVK scientists on mechanization in maize starting from sowing to harvesting in order to minimize the labour cost for getting more profit. He was also trained for off-season vegetable cultivation. The KVK convinced him to do off-season vegetable cultivation in his 3 acres upland and accordingly, he started cultivation.



Demonstrations on tractor drawn seed-cum-fertilizer drill for sowing maize and inter-culture operation like weeding and ridging by power weeder-cum-ridger and improved hybrid vegetables suitable for kharif and net-trelley system in kharif bitter gourd were conducted in his plots. In first year, he invested Rs. 85700/- and got net profit of Rs. 139800/- from 3 acre

land. In the next year, he took another 5 acre land in lease and cultivated vegetables in kharif, rabi and summer season and got a net profit of Rs. 33400/. He also earned Rs. 132300/- from maize and Rs. 33600/- from paddy. For his endeavour, he was awarded with 'Best Farmer Award' at OUAT, Bhubaneswar foundation day



during the year 2018, and in many occasions by district line departments. He has created the job opportunities for five persons. Sh. Mahanta has become a very popular face as an established vegetable producer in the village as well as in the district. Large number of adjacent farmers are being visited to his farm and even, some of the visited farmers have started their cultivation.

Contributor: KVK Mayurbhanj-II, Odisha

Indigenous poultry farming through low-cost incubator in North and Middle Andaman

Indigenous poultry farming plays vital role in the socio-economic and cultural life of resource poor rural farmers of North and Middle Andaman. The majority of farmers

keep poultry birds under traditional scavenging system and they use broody hen to hatch eggs. In this region, a very few farmers adopted high input commercial broiler farming, and none of the farmers



were practicing artificial incubator for hatching eggs. As low-cost incubator was not available with the farmers in that region and they were mainly dependent on the Department of Animal Husbandry and Veterinary services, North and Middle Andaman Islands or private poultry farms for getting day old chicks.

The Animal Science Section of ICAR-CIARI, Port Blair in



collaboration with KVK Nimbudera started one project on "Sustainable duck production in North and Middle Andaman" which was funded by NABARD. Under that project, a 'Mini Egg Setting-cum-Hatching Unit' was installed at KVK Nimbudera premises. The farmers were trained and FLDs were conducted in the villages namely Basantipur, Harinagar, Shivapuram etc. The facility was extended to the farmers for their use with a minimum charge @ Rs.4/- per hatched chick.

As a result of scientific intervention and technical support by CIARI, Port Blair and KVK North and Middle Andaman scientists, three



rural youths in three different locations of North and Middle

Andaman Islands are producing and supplying Vanaraja chicks to the farmers with a very low cost. Thus, the initiative helped farmers to earn more income, and also generated employment opportunities for the rural youths. Due to the motivation of KVK scientists, a 28 years old rural women, Smt. Sujata Bacchar of village- Basantipur purchased "*Mini Egg Setting-cum-Hatching Unit*" from

her own. Scientists were continuously providing technical support for successful hatching operation at the farmers' doorstep. Now, Smt. Sujata is supplying Vanaraja chicks to other interested farmers in the surrounding villages. The economic feasibility of adopting this technology is given below. Now, Smt. Sujata has become a source of inspiration for other poultry farmers in the district.

Parameters	Before Adoption	After Adoption
Farmers' Practice	Natural incubation using 'Broody hen'	Artificial incubation using ' <i>Mini Egg Setting-cum-Hatching Unit</i> '
No. of chicks produced	252	3444
Fixed Cost (Rs.)	1840	49700
Recurring Cost (Rs.)	9684	75600
Depreciation Cost @ 10% (Rs.)	0	4970
Gross Income (Rs.)	11340	154980
Net Profit (Rs.)	1656	79380
B:C Ratio	1.17	1.92

Contributor: KVK North & Middle Andaman, A & N Islands

Papaya cultivation: A boon for transformation towards prosperity

Mr. K. C. Haldar, village- Uttar Simla under Chinsurah- Mogra Block, District- Hooghly, West Bengal had 3.3 ha land. Mr. Haldar had vast experience in production of horticultural crops e.g. papaya, mango, vegetables etc. He is associated with cultivation with more than 35 years and is still very eager



to know something new technology and to adopt it in his own farming. At present, he is growing papaya in 1.5 acre of land and the lion share of his annual income comes from papaya cultivation. He earns a net profit of Rs. 4 to 5 lakh annually from his papaya cultivation. Papaya is cultivated mainly as fruit. Ripe papaya is very delicious having good nutritional value and its demand

remains throughout the year with good market price. Papaya can be grown throughout the year and it also bears fruits round the year. But, during Ramzan month, Durga puja and other festive months, the demand in the market is comparatively higher. Earlier, Mr. Haldar visited Hooghly KVK several times and took training on orchard management including papaya cultivation and he applied the knowledge in his cultivation. As papaya is very weather sensitive crop, outside improved varieties are not performing well in this region, he chose two local selected cultivars i.e. 'Deshi' and 'Bombai' which gave good production and were well adopted in this region. He used to collect seeds from his own crop with proper selection of fruits/ seeds and raised seedlings for his own. Mr. Haldar applied modern cultural practices like mulching with straw, use of organic matter to the papaya crop and so on. Chemical fertilizers were least preferred. The KVK scientists visited his orchard and shared their experiences and other technical know-how for management of the crop. He also developed a weeder implement to control weeds in his papaya fields. During harvesting period, he harvested about 300-400 kg fruits daily. Harvested fruits were



stored for 2-3 days for enhancement of ripening and then, it was transported to the market with paper wrapping in bamboo baskets. Scientific practices enabled him to get good quality (i.e. shape, size and colour) fruits. He sold his produce in Chandannagar market which varied from Rs. 20/- to Rs. 40/- per kg fruit. From this local market, the middlemen transported the fruits to nearby metropolitan city- Kolkata. The economics of production have been given below. Being a progressive farmer, Mr. Haldar is now very well-known person in his village. The lifestyle of his family has significantly been improved from his income. After visiting the papaya fields of Mr. Haldar, many farmers already started cultivation. Even, some farmers have shifted their traditional paddy and potato cultivation to different horticultural crops.

Economic feasibility of papaya cultivation from 1.5 acre of land for one year:

1.	Cost of seedlings raising: Rs. 30000/-
2.	Cost of manures, fertilizers, pesticides and other chemicals: Rs. 200000/-
3.	Cost of bamboo staking and other materials: Rs. 70000/-
4.	Cost of labour: Rs. 100000/-
5.	Post-harvest and marketing cost: Rs. 50000/-
6.	Total cost: Rs. 450000/-
7.	Total production: 45 tones
8.	Av. selling price: Rs. 20/- per kg
9.	Gross return: Rs. 900000/-
10.	Net return: Rs. (900000 – 450000)/- = Rs. 450000/-

Contributor: KVK Hooghly, West Bengal

Important activities of KVKs (January to June, 2019)

Sl. No.	Activities	Achievements
1.	Number of on- farm trials conducted (Number of technologies)	421 (122)
2.	Frontline demonstrations conducted (Number)	2919
3.	Farmers trained (in lakh)	0.391
4.	Extension personnel trained (in lakh)	0.04305
5.	Participants in extension activities (in lakh)	6.00117
6.	Production of seed (in quintals)	5148.93
7.	Planting material produced (in lakh)	8.16
8.	Livestock strains and finger lings produced (in lakh)	6.64
9.	Soil, water, plant, manures samples tested (in lakh)	0.1215
10.	Mobile agro-advisory provided to farmers (in lakh)	11.17

News from KVKs

'Krishi Kalyan Abhiyan Phase-III' conducted at Aspirational District KVKs

After the grand success of Krishi Kalyan Abhiyan Phase-I and Phase-II, the Department of Animal Husbandry, Dairying and Fisheries under Govt. of India had decided to extend the artificial insemination under genetic upgradation programme



through High Yielding Indigenous Breed (HY-IB) bovine semen and delivery of quality AI services at



farmers' doorstep to 100 more villages/ district in 112 Aspirational Districts of the country under Phase-III w.e.f. 15.01.2019 to 15.04.2019.

Ten Aspirational District KVKs of this Zone were given responsibility to upload AI related data in their respective KVK Portal. During the period, a total of 8191 inseminations were conducted in 10 Aspirational Districts under ATARI Kolkata.

Webcasting of 'Pradhan Mantri Kisan Samman Nidhi Yojana' launching programme

On 24 February, 2019, Hon'ble Prime Minister of India launched the new scheme- "Pradhan Mantri Kisan Samman Nidhi Yojana" (PMKSNY) from a programme organized at Gorakhpur, U.P. This programme was webcast pan India through all



the KVKs, ICAR institutes and Agriculture, Fisheries and Animal Husbandry Universities. Besides, PM's 'Mann ki Baat' programme was also broadcasted directly to



the participants simultaneously. Sasya Shyamala KVK, RKMVERI, Narendrapur, West Bengal was the only KVK in the country through which a woman farmer, Mrs. Mousumi Das of Block Budge Budge-I, South 24 Parganas, West Bengal, interacted as representative farmer. Shri Ramvilash Paswan, Hon'ble Minister for Consumer Affairs, Food and Public Distribution, Govt. of India; Mrs. Rupa Ganguli, Hon'ble MP, Rajyasabha; Swami Rajibeshananda, Assistant Secretary, RK Mission Ashrama, Narendrapur;



Dr. S. K. Malhotra, Agriculture Commissioner, GoI and Dr. S. S. Singh, Director, ATARI Kolkata attended the programme. Total 511 farmers and others have participated in the programme. In a befitting programme at North 24 Parganas (Additional) KVK, Hon'ble Governor of West Bengal Shri Keshari Nath



Tripathi visited and took an active role in the webcasting of PMKSNY launching programme.

Establishment of micro-irrigation systems

To enhance water use efficiency in agricultural production and to encourage the farmers for using water saving and conservation technologies, the Department of Agriculture and

Cooperation, Ministry of Agriculture and Farmers Welfare, GoI under "Per Drop More Crop" component on 'Pradhan Mantri Krishi Sinchayee Yojana' (PMKSY) launched this programme to establish demonstration units on micro-irrigation technologies (drip & sprinkler) in one hectare land at the selected KVKs of Aspirational Districts and KVKs under ICAR Institutes, and CAUs during the year 2018-19. Under ICAR-ATARI Kolkata, total twenty five KVKs i.e. three from Andaman & Nicobar Islands (Port Blair, Nimbudera and Nicobar), twelve from Odisha (Bolangir, Cuttack, Dhenkanal, Gajapati, Khurda, Koraput, Kandhamal, Kalahandi, Malkangiri, Nabarangpur, Nuapada and Rayagada) state, and ten from West Bengal (Birbhum, Burdwan, Dakshin Dinajpur, Malda, Malda-additional, Murshidabad, Murshidabad-additional, Nadia, Nadia-additional and North 24 Parganas-additional) state were involved for the programme. Each KVK was funded with an amount of Rs. 1.0 lakh to establish micro-irrigation demonstration unit. A total of 15 training programmes and 22 demonstrations were organized by the KVKs for the farmers of this zone during the period under report. About 78000 planting materials were produced from those units. More than 900 farmers from different corners of the districts and 100 officials from other departments also visited micro-irrigation demonstration units at different KVKs.

State/UT	No. of micro-irrigation demo unit	No. of training programme	No. of demonstrations	No. of planting materials produced	Visit made by the farmers	Visit made by the officials
A & N Islands	3	3	3	0	3	0
Odisha	12	3	5	20000	550	70
West Bengal	10	9	14	58700	409	30
Total	25	15	22	78700	962	100

DAESI programme organized

To educate agri-input dealers in their concerned districts on agriculture, to facilitate them to serve farmers better and to act as para-extension professionals,





a number of KVKs viz. Burdwan, Coochbehar, Dakshin Dinajpur, Nadia, North 24 Parganas- Ashoke Nagar and many others of West Bengal state conducted training programme on Diploma in Agricultural Extension

Service for Input Dealers (DAESI). In each batch, 40 candidates were participated. The programme was implemented by MANAGE, Hyderabad through SAMETI, West Bengal.

Events

‘World No Tobacco Day 2019’ celebrated

‘World No Tobacco Day’ was celebrated at ICAR-ATARI Kolkata on 31st June, 2019. All staff members of ATARI Kolkata assembled at Conference Hall of the institute to attend the programme. The Director, ATARI Kolkata highlighted the importance of the day. The programme was also commenced with an oath taking occasion by reading a pledge to fight against the intake of tobacco.



‘International Yoga Day 2019’ celebrated

‘International Yoga Day’ was celebrated at ICAR-ATARI Kolkata on 21st June, 2019. All staff members including Director assembled at Conference Hall of the institute to attend the programme. Sh. Kishnanlal Bajaj, a Yoga expert, was invited for the



programme. The expert demonstrated different *Yogasanas and Prayanams*, and briefed the positive effects and benefits on health. All the staff took active part in performing the various *Asanas* with zeal and zest. Dr. S. S. Singh, Director, ATARI Kolkata addressed the participants about the importance, expediency and advantage of practicing *Yoga* regularly.



Field visit for monitoring Farmer FIRST programme (FFP) activities

On 03.01.2019, Dr. S. Das, SRF of FFP, ATARI Kolkata visited Saharpada block, Keonjhar district, Odisha with Dr. D. Sethi and Dr. S. Mohanty, Co-PIs of FFP of ICAR-IIWM, Bhubaneswar. The



team visited the fields of farmers in Khuntapingu, Malarpada and Jamuda village and interacted with farmers regarding the interventions done by ICAR-IIWM. In Jamuda village, they visited the field of Mrs. Gita Nayak w/o Sh. S. B. Nayak. She was cultivating brinjal, tomato, chilli, banana, radish, Amaranthus, yam, tapioca with irrigation from a bore well. During discussion she revealed that she received 400 brinjal seedlings from Farmer FIRST project during 2017-18 and started vegetable cultivation for the first time. She earned Rs. 73000/- from brinjal and invested that amount to dig a bore well in her backyard. With assured irrigation source, she planted banana G9 variety in 0.5 acre. She cultivated brinjal, tomato and chilli in 0.5 acre land and radish and Amaranthus in 0.25 acres land. She planted yam and



tapioca on the border near the fencing. The team also visited field of Mrs. Meena Mohanta of Khuntapingu village. Mrs. Meena took 2 acres of land adjacent to her backyard on

lease and started vegetable cultivation in 2.5 acres of land. She used bore well as water source for irrigation using sprinklers. She earned Rs. 2.5 lakhs from vegetable cultivation in 2017-18 and about Rs. 70000/- from sale of vegetables by January 2019. She was also maintaining the power thresher given under the project. After that, the team visited the field of Sh. J. Mohanta, Sh. R. Mohanta and Sh. G. Khatua who cultivated brinjal, tomato, chilli, radish, Amaranthus and other vegetables. A total of 16 fields of different farmers were visited on the day and interacted with the farmers. Pheromone traps and yellow sticky traps were also found installed in all the farms. During the interaction, it was cleared that farmers were greatly benefitted by the solutions given through WhatsApp group of the project. It was also evident that they were very much impressed with the interventions and trainings done under Farmer FIRST programme.



Field visit for monitoring ARYA and other activities of Nimpith KVK

Dr. K. S. Das, Principal Scientist of ATARI Kolkata along with Sh. P. K. Garain, SMS (Plant Protection) of



Nimpith KVK visited carp hatchery of Sh. Anup Chhatui, Village & Post Office- Paschim Kultali, South 24 Parganas on 15th June, 2019 which was established under Attracting and Retaining Youth in Agriculture (ARYA) project. From his hatchery, Mr. Chhatui was earning around Rs. 40000/- per month and he was actively engaged for 4 months in a year for



this purpose. Rest of the period, he was involved in other agricultural activities. He is not only providing the quality fish germ-plasm to the fish farmers of the district but also has become the source of inspiration for other youths of nearby villages to establish such type of enterprise.

To monitor the activities of Nimpith KVK in the village Gilarchat and 27 No. Lat Radhakantapur under Raidighi Block, South 24 Parganas, Dr. Das also visited vegetable fields, land shaping models, vermi-compost unit, dairy farm, *Tricoderma* culture production unit etc. belonging to different farmers who were being guided by the scientists of Nimpith KVK. A number of progressive farmers namely Mr. B. Karmakar, Mr. T. Haldar, Mr. N. Haldar also accompanied the field visits on the day.



Meeting/workshop/ training programme organized/ conducted

Annual zonal workshop of KVKs of ATARI Kolkata and Patna organized

The annual zonal workshop of KVKs of ATARI Kolkata and Patna was jointly organized by ICAR-ATARI Kolkata, ICAR-ATARI Patna and



UBKV, Coochbehar during 8th-10th June, 2019 at UBKV, West Bengal. In this program, 127 KVKs of Andaman & Nicobar Islands (3), Bihar (44), Jharkhand (24), Odisha (33) and West Bengal (23) participated and presented their progress report (2018-19) and action plan (2019-20). Prof. C. Chattopadhyay, Vice Chancellor, UBKV, in his welcome address, put forth the salient achievements of the University and its KVKs in shaping the agriculture in northern part of West Bengal. In his inaugural address,

Dr. A. K. Singh, Deputy Director General (Agricultural Extension), ICAR, New Delhi, said "KVKs are to emerge as a single stop shop at district level to cater to every need of the farmer ranging from information, technology and inputs to marketing".





Dr. Singh emphasized upon the need for KVKs to embrace the ICT for reaching to more and more farmers as well as to develop competence for preparing business plan. He also mentioned about the implementation of already chalked out work plan for doubling farmers' income, expansion of village coverage in aspirational districts, training of FPOs as well as switching the focus from production to processing aspect. Dr. Singh further made a mention about the development of integrated farming system models through KVKs, post-harvest management and marketing etc. Prof. P. Biswas, Vice Chancellor, WBUAFS, Kolkata, in his address, pronounced the need of putting more and more emphasis on livestock and fishery sector for enhanced livelihood security specifically in eastern Indian states. Prof. D.D. Patra, Vice Chancellor, BCKV, West Bengal emphasized upon the need for creating more consciousness for role of micronutrients in maintenance of soil health and fertility as well as reaching to more number of farmers in the district by respective KVKs. Shri S. Mandal, CGM, NABARD gave insight into the need of training of FPO heads for preparing business plans and using Internet of Things (IoT) in agriculture. Dr. S. S. Singh, Director, ICAR-ATARI Kolkata and Dr. Anjani Kumar, Director, ICAR-ATARI Patna presented the achievements of the respective zones for the year 2018-19. Ten publications relating to doubling farmers' income, success cases and ARYA published by two ATARIs, UBKV and KVKs etc. were released during the occasion. During the workshop, one special session was organized on 9th June, 2019 in which Dr. A.K. Singh, DDG (AE) delivered the key note address. Dr. Singh expressed his satisfaction

on the assessment reports on impact study of KVKs by IFPRI, NILERD as well as reviews by Central Ministers. However, he urged the KVKs to take appropriate interventions towards doubling farmers' income, full-proof implementation of various programmes like Aspirational districts, knowledge systems and homestead agriculture management in tribal areas (KSHAMTA), value addition and technology incubation centres in agriculture (VATICA), nutri-sensitive agricultural resources and innovations (NARI) etc. He also emphasized upon working towards improvement of KVK rankings in coming days. Dr. Singh also cited certain major breakthroughs made by KVKs like enhancing pulse production, crop residue management, Kadaknath poultry breed, mainstreaming indigenous knowledge, climate resilience, Krishi Kalyan Abhiyan, intensification and optimization of rice-wheat system etc.

Earlier, one special session was also organized in which Dr. (Mrs.) Alka Arora, Principal Scientist, ICAR-IASRI, New Delhi delivered a lecture on the utility and operationalization of *KVK Portal* by introducing KVKs with the newer and modern functionalities of the portal and usefulness of the portal besides its linking with *DBT Bharat Portal* and stringent monitoring at the highest level. The Deans, Directors of Extension Education and HoDs from SAUs of Zone IV and V attended three days workshop of KVKs. Among others, scientists of ATARI Kolkata, other nearby ICAR institutes and faculty members were also present. After the inauguration, the KVKs presented their progress report and



action plan in six concurrent technical sessions. In his valedictory address, Prof. C. Chattopadhyay emphasized on need for working upon the factor productivity issue and publication in foreign journals by KVKs. Earlier, the rapporteurs of various sessions presented the outcome of respective technical sessions held during the workshop. Some of the KVK publications were also released by the galaxy of dignitaries during this session.

Regional workshop on PPV& FR conducted

A regional workshop on Protection of Plant Varieties and Farmers' Rights was organized on 15.03.19 at West Bengal University of Animal & Fishery Sciences, Belgachhia, Kolkata by ICAR-Agricultural Technology Application Research Institute, Kolkata with the fund support of Protection of Plant Varieties and Farmers' Rights Authority, New Delhi. More than 250 progressive farmers from Odisha and West Bengal, PPV&FR officials, ICAR scientists, university teachers, media personnel and others participated in this regional workshop. The inaugural



session was chaired by Prof. P. Biswas, Vice Chancellor, WBUA&FS, Kolkata in the presence of Dr. R.C. Agarwal, Registrar General, PPV&FRA, New Delhi; Dr. R. Singh, ADG(AE), ICAR, New Delhi; Dr. S.S. Singh, Director, ATARI Kolkata; Sh. R.S. Sengar, Deputy Registrar, PPV&FRA, New Delhi; Prof. P. K. Roul, Dean, OUAT; Prof. A. Goswami, DREF, WBUAFS, Belgachhia; Dr. P.P. Pal, Dr. A. Haldar and Dr. F. H. Rahman, Principal Scientists, ICAR- ATARI Kolkata and many others.

In his welcome address, Dr. P. P. Pal, Principal Scientist and Nodal



Officer, ICAR- ATARI, Kolkata elaborated the basic purpose of the regional workshop and appealed to the farmers to preserve the indigenous plant varieties for future research endeavour. Sh. R. S. Sengar, gave a brief account of PPV&FR activities where he stressed on the legal protection of farmers' rights, multiplication of the farmers' variety, prevention from misuse of farmers' variety by any private company and other related areas. He also informed that Odisha was the leading state in registering the farmers' variety in rice. Dr. S.S. Singh elaborated how the preservation of the indigenous farmers' varieties had been carried forward in India from one generation to another. He cited many examples of losing the right of indigenous plant varieties and animal breed due to non-preservation and registration in time. He also highlighted the association of ATARI Kolkata with PPV&FRA in creating large scale awareness among the farmers through almost all the KVKs of Bihar, Jharkhand and West Bengal since 2013-14. Dr. R. Singh enlightened the farmers about the importance of documentation of farmers' varieties especially for endangered species by which the farmers could get economic benefits and the seeds could also be used by other farmers. He also informed that 5000 varieties have already been registered through KVKs. Dr. R.C. Agarwal stated about the future road map of PPV&FR and narrated the detail procedure of registration of farmers' varieties and importance



of intellectual property right. He narrated in detail about the awards given by PPV&FRA to farmers' and farmers' community or club to encourage them towards conservation of indigenous varieties. The initiative taken by PPV&FRA to involve the state agricultural universities, state agriculture department, elected body at Panchayet level was also narrated by him for collection of native germplasm, certification and characterization at various levels before sending to PPV&FRA. In his Presidential address, Prof. P. Biswas pointed out the importance of protecting plant varieties for the benefit of the farming community as well as for the society.

An exhibition of indigenous plant varieties and seed materials was also arranged on this occasion which was



inaugurated by the dignitaries. The farmers from both the states brought more than 700 samples of seeds and plant materials of rice, oilseed, pulse, vegetables, cash crop, millets, fruit crops etc. The progressive farmers displayed their exhibits in the stall and interacted with visitors, scientists, KVK personnel and fellow farmers. An interaction session was kept to facilitate the farmers to get clarification regarding registration of indigenous varieties, time lag between submission of registration form and receipt of certificate from the PPV&FR personnel as well as other dignitaries.

Three technical sessions were also organized for the benefit of the farmers in the post lunch period. Prof. P. K. Roul presented in brief about PPV&FR in Odisha perspective. Dr. B. Roy, Associate Professor, UBKV, Coochbehar highlighted the issues of breeders' right, researchers'

right and farmers' right. Dr. P.K. Bhattacharyya, Associate Professor, BCKV, Nadia elaborated the Act in details, procedure of registration and implementation.

Launching workshop of ARYA project organized

In a view to expansion of ARYA programme in seven new KVKs Odisha & West Bengal (KVK Sambalpur, Ganjam-I, Puri, Cuttack, Hooghly, Purulia, Uttar Dinajpur) and to assess the performance of the two existing KVKs (KVK Nayagarh & Nimpith), a launching workshop was conducted on 28th March, 2019 at ATARI Kolkata under the Chairmanship of Dr. S.S. Singh, Director, ATARI Kolkata. The workshop was attended by Prof. P. Bandopadhyay, Director of Extension Education, BCKV, Nadia; Dr. M.P. Nayak, Joint Director (Ext.), OUAT, Bhubaneswar; Dr. P. Adhiguru, Principal Scientist, ICAR, New Delhi; Dr. S.K. Roy, Dr. P.P. Pal, Dr. A. Haldar, Dr. S.K. Mondal, Dr. F.H. Rahman, Dr. K.S. Das, Principal Scientists, ATARI Kolkata, Senior Scientist & Heads and the concerned Subject Matter Specialists of the respective KVKs.



The formal welcome address was delivered by Dr. P. P. Pal. He deliberated the importance of this flagship programme and the basic purpose of the launching workshop. Dr. P. Adhiguru briefed about the objectives of the project emphasising the detailed guidelines in which it should be conducted. Dr. S.S. Singh, the Chairman of the programme, laid emphasis on the basic need of the project and stated the importance of the project in addressing large scale rural distress. He requested the KVKs



to ensure a monthly income of at least Rs. 10000/- for the youths involved in this project on a sustainable basis. The DEE, BCKV and Joint Director, OUAT also discussed region specific issues regarding this programme. All the participating KVKs presented their action plan for 2019-20 and

the two ARYA implementing KVKs namely, KVK Nayagarh, Odisha and KVK Nimpith, West Bengal presented the achievements during 2016-17 to 2018-19 including expenditure and a few related issues. Several action points came out during the day-long interaction session.

Meetings/workshops/symposia etc. attended by scientists/ staff

Sl. No.	Name of the programme(s)	No. of scientist(s)/ staff attended
1	Conference on Farmers FIRST for conserving soil and water resources in Eastern region at ICAR-IISWC, Sunabeda, Koraput	2
2	Technology Fair, District and State level Krishi Mela of KVKs	2
3	Consultation meet at ICAR-CISH, Lucknow regarding KVK Malda budget utilization, action plan and planning of zonal level SMS horticulture meeting at Malda on banana disease control	1
4	State level workshop on skill development in agriculture and allied sectors in West Bengal at SAMETI Narendrapur	1
5	DPC meeting LDC to UDC at ATARI Kolkata	4
6	Meeting at ICAR-NCIPM, New Delhi and WTC, IARI, New Delhi on developing action plan for IPM and water management in agriculture	1
7	Meeting of Directors, ATARIs and DDG (AE), ICAR, New Delhi on formulating KSHAMTA project under Agricultural Extension Division, New Delhi	1
8	Meeting at OUAT, Bhubaneswar to review KVKs expenditure	1
9	Meeting with Head, ICAR-RCER, Patna on preparing action plan of integrated farming systems for KVKs under ATARI Kolkata	1
10	Meeting of ASCI at CRIJAF, Barrackpore, West Bengal	1
11	XIV th Agricultural Science Congress at NASC, New Delhi	7
12	Orientation training programme on 'Operational Modalities for KVKs' at OUAT, Bhubaneswar	1
13	Regional workshop on PPVFRA at WBUAFS, Kolkata	4
14	Launching workshop on ARYA at ATARI Kolkata	10
15	XIX th Indian Veterinary Congress at WBUAFS	3
16	Scientific advisory committee (SAC) meeting at KVKs	7
17	Meeting with Addl. Secretary (Agriculture) at Nabanna	1
18	KVK and field visit of Car Nicobar, North and Middle Andaman and Port Blair KVKs	1
19	Visit of ICAR-IIFSR, Modipuram, Meerut on adoption of potential cropping/ farming systems under climate change situations, and availability of quality potato seeds for KVKs of WB and Odisha state.	1
20	DPC meeting of AAO post of ATARI Kolkata	6
21	Interactive meeting with Hon'ble Director General on DFI in Eastern region at CIFE Kolkata Centre	7
22	Inaugural programme of 'Pradhan Mantri Kisan Samman Nidhi Scheme' at Narendrapur	1
23	Meeting with Dean, Extension Education, OUAT, Bhubaneswar on Pre-Zonal Workshop 2019 for KVKs under OUAT	2
24	Annual zonal workshop 2019 for KVKs under ATARI Kolkata and Patna at UBKV, Coochbehar	10
25	Field visit for monitoring progress of Farmers FIRST Programme and ARYA project under ATARI Kolkata	2
26	QRT meeting of ICAR-ATARI Kolkata	14
27	DAESI programme at KVKs	7
28	Viva-voce/ synopsis submission meeting of post-graduate students of different Institutes/ Universities	6

Sl. No.	Name of the programme(s)	No. of scientist(s)/ staff attended
29	Workshop on network project on “New Extension Methodologies and Approaches (NEMA)” at Hyderabad	2
30	Monitoring visit of KVKs	7
31	Midterm review meeting of ICAR RCM-II at ICAR-CIFRI, Barrackpore	2
31	Regional coordination committee meeting 2019-20 at Regional Fodder Station, Kalyani	2
32	Meeting of financial literacy week organized by Reserve Bank of India, Kolkata	1
33	Seminar on ‘Bio Nano Fertilizer’ organized by IFFCO at RRS, Chinsura	2
34	Meeting of ABHYAS diploma course proposed by ICAR at Sericulture Office, Kolkata	1

Publications

Research articles

- Ananth P N, Sundaray J K, Kumar V, Barik N K, Pal P P and Sontakki B S. 2019. Positioning farmers' innovation in agricultural innovation systems, Odisha: A case from Eastern India. Accepted for publication in *Current Agriculture Research Journal*.
- Ghosh S, Sahu N C, Rahman F H and Das K S. 2019. Periphyton based climate smart aquaculture for the farmers of Indian rural Sunderban areas. *Indian Research Journal of Extension Education*, **19**(1): 60-72.
- Haldar A, De S, Singh V, Datta M, Pal P and Prakash B S. 2019. Age-specific peripheral anti-müllerian hormone concentrations in goats (*Capra hircus*). *Indian Journal Animal Research*, **53**(5): 599-603.
- Nandan R, Singh V, Singh S S, Kumar V, Hazra K K, Prasad N C, Poonia S P, Malik R K, Bhattacharyya R and McDonald A. 2019. Impact of conservation tillage in rice-based cropping systems on soil aggregation, carbon pool and sand nutrients. *Geoderma*, **340**:104-114.
- Nath C P, Hazra K K, Kumar N, Prahara C S, Singh S S, Singh U and Singh N P. 2019. Including grain legume in rice-wheat cropping system improves soil organic carbon pools over time. *Ecological Engineering*, **129**: 144-153.
- News. Published by the Director, ICAR-ATARI Kolkata, Vol. 2, No. 2, pp: 1- 12.
- Haldar A and Kumar A. 2019. District-wise action plan for Doubling Farmers' Income by 2022 in Jharkhand. Published by the Director, ICAR-ATARI Patna, Bihar, India, pp: 1- 132.
- Haldar A and Singh S S. 2019. District-wise action plan for Doubling Farmers' Income by 2022 in West Bengal. Published by the Director, ICAR-ATARI Kolkata, Salt Lake, Kolkata, West Bengal, India, pp: 1- 83.
- Haldar A, Kumar A, Singh S S, Roy S K, Pal P P, Mondal S K, Rahman F H and Das K S. 2019. Success Stories: Pathways for Doubling Farmers' Income by 2022 in Bihar and Jharkhand. Published by Director, ICAR-ATARI, Patna, Zone-IV, Sahaynagar, Patna, Bihar, India, pp: 1- 187.
- Kumar A and Haldar A. 2019. District-wise action plan for Doubling Farmers' Income by 2022 in Bihar. Published by the Director, ICAR-ATARI Patna, Bihar, India, pp: 1- 194.
- Rahman F H and Bhattacharya R. 2019. NICRA Newsletter: Towards climate smart agriculture, Published by the Director, ICAR-ATARI Kolkata, Vol. V, No. 1, pp: 1 – 8.
- Rahman F H, Nath S and Bhattacharya R. 2019. Climate Resilient Agriculture through natural resource management in Eastern India. In Book: ‘*Perspective of climate change and Inland fisheries in India*’, published by the Director, ICAR-CIFRI, Barrackpore, pp: 151-169.
- Abstracts presented in national/ international seminars, conferences etc.**
- Das S, Ghosh D K, Bandopadhyay A, Das K S and Mondal S K. COCOSAP “NEERA” and its value addition: Prospect and possibilities in Eastern region. Abstract published in the compendium of 106th Indian Science Congress held at Lovely Professional University, Pharwara, Jalandhar on 3-7th January, 2019, pp: 160.
- Dutta N, Das K S and Mondal S K. 2019. Use of remote sensing technology in agriculture. Abstract published in the compendium of 106th Indian Science Congress held at Lovely Professional University, Phagwara, Jalandhar on 3-7th January, 2019, pp: 81.
- Haldar A. 2019. Integrated farming system: A potential technology for Doubling Farmers' Income by 2022 in Eastern India. Abstract published in the compendium of 14th Agricultural Science Congress at NASC Complex, Pusa, New Delhi held on February 20- 23, 2019, pp: 616.
- Mondal S K, Das K S and Singh S S. 2019. A meta-analysis of field trials conducted on livestock technologies by KVKs of Eastern India. Abstract published in the compendium of 14th Indian Agricultural Congress “*Innovations for Agricultural Transformations*” organized by NAAS and ICAR, New Delhi

Technical bulletins, books etc.

- Das K S, Mondal S K, Rahman F H, Pal P P, Roy S K, Singh S S and Haldar A. 2018. ATARI Kolkata

held at NASC, New Delhi on 20th-23rd February, 2019, pp: 320.

Rahman F H and Roy S K. 2018. Efficient Water conservation measures for augmented farm productivity in NICRA adopted Eastern India villages. Abstract published in the compendium of XIV Agricultural Science held at NASC New Delhi on Feb 20-23, 2019.

Singh S S and Haldar A. 2019. Potential technologies for doubling farmers' income by 2022 in Eastern India. Abstract published in the compendium of 14th Agricultural Science Congress at NASC Complex, Pusa, New Delhi held on February 20- 23, 2019, pp: 173.

Invited lectures

Haldar A. 2019. Endocrinology based technology for augmenting reproductive efficiency in livestock: A way forward for transferring to the farmers' field'. In Compendium of 19th Indian Veterinary Congress and XXVI Annual Conference of Indian

Association for the Advancement of Veterinary Research (IAAVR) on 'Innovative Progress in Animal Health and Production for Safe and Secured Food under One Health Perspective' held on February 1-2, 2019 at West Bengal University of Animal and Fishery Sciences, Kolkata. Published by West Bengal University of Animal and Fishery Sciences, Kolkata and Indian Association for the Advancement of Veterinary Research, pp: 447- 461.

Haldar A. 2019. Livestock wastes: Challenges on environmental issues and prospects for utilization. Lecture delivered at National Seminar on 'Waste management for greener and cleaner environment' held at Kalyani University, Kalyani, West Bengal on March 26, 2019.

Haldar A. 2019. Developing data base of district agriculture and compilation of inventory of technologies, preparation of annual action plan and perspective plan as per mandate of KVK. Lecture delivered to

the Senior Scientists and Head of KVKs of Odisha at ICAR-ATARI, Kolkata on January 5, 2019.

Singh S S and Rahman F H. 2019. Resource Conservation technologies in the Eastern region for Doubling Farmers Income. Lead paper published in the compendium of National Conference on 'Resource conservation in Eastern region of India'. Published by Indian Association of Soil and Water Conservationists, Dehradun, Uttarakhand, pp: 119-130.

Others

Haldar A, Baxla S L, Kumar D, Ghosh S, Malik H, Kumar A and Singh S S. 2019. Poster presented on 'Fodder cultivation: A way forward for doubling income of the dairy farmers in Eastern India'. Abstracts published in the compendium of 14th Agricultural Science Congress held at NASC Complex, Pusa, New Delhi on February 20- 23, 2019, pp: 770-771.

Personalia

Joining

Shri Roshan Lal has joined this office as Assistant Administrative Officer (AAO) on 22.05.2019.
Shri Jyotirmoy Das has joined this office as Young Professional-II on 14.06.2019.

Relieving

Shri J. Prabu Kumar, Assistant Administrative Officer (AAO) has been relieved from this office on 21.05.2019.
Shri Siddhanta Das, DEO, CFLD on Oilseeds resigned on 16.03.2019.
Mrs. Bani Ghosh, SRF, CFLD on Oilseeds resigned on 31.03.2019.

Award/ recognition

- ❖ Dr. K. S. Das, Principal Scientist of this institute, has been awarded with a certificate of appreciation and he has been associated as Member, Scientific Advisory Board, *International Journal of Livestock Research* (an online journal) for his outstanding contribution to quality of the Journal in the year 2018.
- ❖ Dr. A. Haldar, Principal Scientist of this institute, acted as Co-Chairman, Organizing Committee of 19th Indian Veterinary Congress and XXVI Annual Conference of Indian Association for the Advancement of Veterinary Research (IAAVR) held at West Bengal University of Animal and Fishery Sciences, Kolkata on February 1-2, 2019.

A PDF version of the Newsletter is also available at: <http://www.atarikolkata.org/publications>



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