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From the Director's Desk

'Life on a farm is a school of patience; you can't hurry the crops or make an ox in two days.' -Henri Alain

The COVID-19 pandemic and subsequent lockdown caused dramatic change in the livelihood of people across the globe. Indian farmers who were engaged in agricultural production were also affected in terms of harvesting and marketing of their produce due to the breakdown of established supply chain. All agricultural Scientists of Indian Council of Agricultural Research (ICAR) especially Scientists from Krishi Vigyan Kendras (KVKs), Agricultural Technology Application Research Institutes (ATARIs) and Extension Division of ICAR, staffs from KVKs at the every nook of the country were engaged day and night with the farmers in identifying their problems to minimize the effect of lockdown and in providing them way out/ solutions to prevent financial losses from harvesting and marketing. During that time, various platforms e.g. WhatsApp, SMSs, Google meet, Zoom, Webex and so on at different levels were extensively used to link buyers and sellers. As a result, different alternate agri-marketing channels have been established which are running successfully for the time being.



Not only that, during such a tough time, following all COVID protocols at the workplaces KVKs of this zone were actively involved in different mandated activities viz. OFTs, FLDs, trainings, extension activities, seed/planting materials production including many special programmes. The Central Govt. also took initiative to provide training to the migrant labourers (Garib Kalyan Rojgar Abhiyaan) at different districts which was successfully and timely completed by the selected KVKs of this Zone. The scientists of ICAR-ATARI Kolkata conducted review meetings of various ongoing programmes implemented in this zone to monitor the progress and also attended a large number of meetings/conferences/seminars/workshops etc. organized by different Union Ministries through virtual mode.

Various publications had also come out from ICAR-ATARI Kolkata during the period. I congratulate all the scientists and staff of this institute who took pain to publish this publication. Suggestions, comments and feedback are welcome for further improvement.

S. K. Roy

(S. K. Roy)

Technologies applied successfully

Value chain management for sustainable vegetable marketing during COVID-19 pandemic situations

During COVID-19 pandemic, vegetable price and demand both were very low at Sonamukhi, Bankura local market. Whereas, at the nearby metro city i.e. Kolkata, the vegetable the prices were quite higher. At that time, WBCADC and KVK Bankura, Sonamukhi came up with a marketing channel approach where the main objective was to abolish middle man activity. The WBCADC and KVK Bankura jointly conducted the activity where they collected vegetables from SHGs on weekly basis and sold at Kolkata.



In this value chain management, 'Dhipara Monalisa Mahila Swanirvar Dal', a SHG of Sonamukhi Block, Bankura involved actively. The group members of the SHG received different improved vegetables seeds and seedlings from WBCADC KVK Bankura along with various skill development trainings on nutritional garden, *Nutri Thali* and organic farming. That facilitated production of a variety of fresh vegetables on farm and subsequent marketing. Both the organizations provided refrigerator insulated *ToTo* rickshaw to the SHG so that they could supply fresh product at consumer door steps and abolish the middlemen.

This value chain marketing management enabled the farmers to get reasonable prices of their vegetables. According to the SHG members, the price of the vegetables provided by the institutions was much higher than the local markets. In that way, the SHG members earned a handsome income and did not have to

face the difficulty of storing perishable product and losses. 'Dhipara Monalisa Mahila Swanirvar Dal' of Sonamukhi has set an example of the well said proverb- 'If there is will there is way'. This is one kind of supply driven approach



too. Because, when the market and remunerative price both are assured, automatically the production gets a hike in quantity as well as quality. This kind of produce-market driven approach motivates the farmer to form FPO and FPC. This value chain marketing system becomes a model for organized marketing of vegetables not only in Bankura district but also in South Bengal areas.

Contributor: Bankura KVK, WB

Enhancing tribal farmers' income through agricultural technology interventions at Nicobar Islands

The KVK Nicobar adopted Nicobari tribal farmers who were practicing traditional *Tuhet* system of subsistence farming. The KVK scientists guided them with technological know-how and do-how of vegetable cultivation. We all know that at Nicobar Islands, the availability of agricultural land is very limited. However, in a span of last four years, the farmers have brought 4550 m² of his hitherto fallow land of 2 ha under vegetable cultivation. By incorporating 8 to 15 vegetable



crops, the diversification index of the farm increased from 0.58 to 0.77. Even as the acreage under high value vegetables increased, the farmers simultaneously accommodated other crops in minor proportions to tide over production and marketing risks. Thus, through area expansion, technological adoption, diversified cropping pattern, efficient resource management and tactical marketing, the farmers' gross income has increased 5.5 times from Rs. 93561/- to Rs. 515935/- while the net income has increased almost 12 times from Rs. 36711/- to Rs. 428872/-.



Therefore, it is imperative to support the earnest efforts of tribal farmers to increase the vegetable production at the Islands by lending necessary Institutional supports. Now-a-days, wherever possible, farmers are preparing land for vegetable cultivation.

Contributor: Nicobar KVK, A & N Islands

Kadagnath and Aseel chicks production through micro hatchery empowered rural farm women

Mrs. Gouri Bala Naskar is a resident of village- Badukulla, P.O. Herobhanga, Canning, South 24 Parganas. Her family owns a land of 0.3 h which is used for agricultural activities. In her village, she was known as Pranimitra as she was engaged to provide first-aid treatment and immunization to farm animals. Though she was working as Pranimitra, she was searching a suitable option for livestock farming to enhance her income. During 2019, Mrs. Naskar attended a training programme on scientific backyard



poultry farming- supplementary feeding and health management at KVK Narendrapur. She came to know about Kadaknath and Aseel poultry birds. Both Kadaknath and Aseel are popular Indian backyard poultry breeds. Out of her interest, she started a small poultry farm with both the birds. Later, she procured a small incubator. Since 2020, she is using her incubator for hatching of fertile eggs from Kadaknath and Aseel poultry birds. The incubator, which is being used by Mrs. Naskar, is environmentally friendly and it also consumes very less power/ energy compared to other incubators. Mrs. Naskar reported that both backyard poultry birds showed higher growth rate compared to desi birds with higher returns and thus, created entrepreneurship opportunities. Both Kadaknath and Aseel birds have good laying capacity in the agro-climatic conditions of South 24 Parganas. She is not only selling good quality chicks but also selling fertile eggs to her fellow villagers. She is selling each chick @ Rs. 30-45/- per chick. From one cycle, she is earning about Rs. 1000/- to 1200/- from the selling of 25- 30 chicks. By using the small incubator,

she is earning about Rs. 15000/- in a year. After witnessing the success of Mrs. Gouri Bala Naskar, other farm women of Badukulla and its surrounding villages have shown their interest towards rearing of Kadaknath and Aseel birds. Earlier, the villagers had to depend upon middlemen and traders for poultry chicks. Now, the villagers find a new authentic source of popular indigenous poultry breeds like Kadaknath and Aseel chicks within the village itself. Backyard poultry farming with Kadaknath and Aseel birds has become a promising enterprise to improve



the socio-economic status and to provide livelihood security of the villagers in rural areas with low-cost initial investment and securing the availability of animal protein to the rural family in Sundarban areas of South 24 Parganas of West Bengal.

*Contributor: South 24 Parganas KVK,
Narendrapur, WB*

Increased agricultural income through modern scientific farming

Sri Rajendra Nimalu is a progressive farmer of village Pradhaniguda, Rayagada, Odisha who used to grow sweet corn in 1.0 acre (rainfed upland), rice in 2.0 acre (rainfed medium land) in kharif season and vegetable during both kharif and rabi season. With

the intervention of KVK scientists, he adopted line transplanting of rice cultivation. The scientists of KVK



provided package and practices of high yielding and hybrid vegetable and sweet corn cultivation. As per the advice of scientists, he produced vermicompost at his farm and utilized for crop production. The FLD and field day on sweet corn, paddy, vegetable etc. were also conducted. He grew high yielding varieties of rice and improved varieties of vegetables such as pointed gourd, lady's finger, tomato and sweet corn (var. Sugar-75) in 4.0 acres of land using vermicompost, soil test based fertilizers, mulching and drip irrigation in vegetables cultivation. He



got revenue of Rs. 309550/- with an expenditure of Rs. 151700/- and net benefit of Rs. 157850/-. Following the scientific method of cultivation, he harvested 19400 green cobs and got an average return of Rs. 97000/- from 1.0 acre area with net gain of Rs. 67000/- in one season. The economics of cultivation have been given below.

| Crop | Season | Yield (q/acre) | Cost of cultivation (Rs) | Gross income (Rs) | Net income (Rs) | B:C ratio |
|---------------|----------|----------------|--------------------------|-------------------|-----------------|-----------|
| Rice | Kharif | 42.8 | 55200 | 79950 | 24750 | 2.04 |
| Sweet corn | Kharif | 19400 cobs | 30000 | 97000 | 67000 | |
| Okra | Kharif | 48.6 | 28000 | 48600 | 20600 | |
| Pointed gourd | Kharif | 42.0 | 38500 | 84000 | 45500 | |
| Total | - | - | 151700 | 309550 | 157850 | |



He has been recognized as an innovative and progressive farmer among his fellow farmers. He was awarded as progressive farmer. He also encourages his farmer friends to follow soil test based fertilizer application and organic manures in farming. Nearby village farmers are also influenced and adopted by his

technology adoption. Sri Nimalu has also adopted mechanical weeding by using of dryland power weeder for weeding and ridging operation in the vegetable field. The implement works 8 times better than manual labour with a capacity of 2000 m² per hour in comparison to human capacity of 300 m² per



hour, and the cost of operation is only Rs. 550/-. The implement is appreciated in district level as well as in state level. Farmers of his village and nearby villages are also adopted this technology and using in their fields.

Contributor: Rayagada KVK, Odisha

Important activities of KVKs (July to Dec., 2020)

| Sl. No. | Activity | Achievement |
|---------|---|-------------|
| 1 | Number of on-farm trials conducted (Number of technologies) | 335 (57) |
| 2 | Frontline demonstrations conducted (Number) | 8964 |
| 3 | Farmers trained (in lakh) | 0.23 |
| 4 | Extension personnel trained (Number) | 2847 |
| 5 | Participants in extension activities (in lakh) | 0.93 |
| 6 | Production of seeds (in quintals) | 4174.3 |
| 7 | Planting materials produced (in lakh) | 17.43 |
| 8 | Livestock strains and fingerlings produced (in lakh) | 1.7 |
| 9 | Soil, water, plant, manures samples tested (in lakh) | 0.026 |
| 10 | Mobile agro-advisory provided to farmers (in lakh) | 19.3 |

News from KVKs

Skill development training for migrant labours (GKRA) organized

The Garib Kalyan Rojgar Abhiyaan (GKRA)-Skill Development Training for Migrant Labours is a 125-day Abhiyan launched by Hon'ble Prime Minister on 20th June, 2020 with the objectives to address the issues of returnee migrant workers and similarly affected rural population by Covid-19 pandemic through a multi-pronged strategy of

providing immediate employment and livelihood opportunities to the distressed, to saturate the villages with public infrastructure and creation of livelihood assets, and to boost the income generation activities and enhance long term livelihood opportunities. The GKRA programme was implemented in 4 districts (5 KVKs) viz. Balasore, Bhadrak, Bolangir and Ganjam of Odisha state under ICAR-ATARI Kolkata. The selected skill training areas for migrant

labours for Odisha state were integrated farming system, direct seeded rice, crop diversification to pulses, millets, oilseeds, off season vegetables, planting material production, poultry farming: quail farming, fisheries, sea based activities, processing of pineapple and tuber produce, cashew fruit based enterprise development and handicrafts. The total number of training target was 16 during 4 months i.e. @ 4 per month for each district. The target of total persons

trained was 560 i.e. 140 per month from each district. In spite of COVID-19 Pandemic restrictions, all 5 KVKs of this Zone worked hard

day and night. They implemented the programme very systematically and fulfilled all given targets within the stipulated time. The physical

and financial progress of GKRA Programme under ICAR-ATARI Kolkata has been briefed in the following table.

| <i>Name of State</i> | <i>No. of districts</i> | <i>No. of KVKs</i> | <i>Name of KVK</i> | <i>No of training conducted</i> | <i>No. of person trained</i> | <i>Fund released (Rs.)</i> | <i>Fund utilized (Rs.)</i> |
|----------------------|-------------------------|--------------------|--------------------|---------------------------------|------------------------------|----------------------------|----------------------------|
| Odisha | 4 | 5 | Balasore | 16 | 560 | 328000 | 281200 |
| | | | Bhadrak | 16 | 560 | 328000 | 328000 |
| | | | Bolangir | 16 | 560 | 328000 | 328000 |
| | | | Ganjam-I | 8 | 280 | 164000 | 162200 |
| | | | Ganjam-II | 8 | 280 | 164000 | 141200 |
| Total | | | | 64 | 2240 | 1312000 | 1240600 |

'World soil day' celebrated

The International Union of Soil Sciences declared 5th December as 'World Soil Day'. The Day's campaign aims to connect people with soil and raise awareness on

the critical importance in our lives and to restore/preserve soil health for boosting up soil productivity. All the KVKs under ICAR-ATARI Kolkata organized seminar/symposia/workshop both in online and offline mode. The soil health

cards (SHCs) were distributed among the farmers. A total of 3119 SHCs were distributed on the occasion by the scientists, senior officials and others at the KVKs. The state-wise summary of the programme has been given below.

| Name of State | No. of KVKs | No. of participating Hon'ble MPs | No. of participating MLAs | No. of participating senior officers | No. of participating farmers | Total no. of participants |
|---------------|-------------|----------------------------------|---------------------------|--------------------------------------|------------------------------|---------------------------|
| A & N Islands | 3 | 0 | 1 | 13 | 86 | 100 |
| Odisha | 33 | 7 | 20 | 442 | 1421 | 1890 |
| West Bengal | 23 | 0 | 3 | 98 | 1028 | 1129 |
| Total | 59 | 7 | 24 | 553 | 2535 | 3119 |

Events



All staff of ICAR-ATARI Kolkata assembled in the Conference Hall of ICAR-ATARI Kolkata on 27th October, 2020 to observe 'Vigilance Awareness Week 2020' with the slogan 'Vigilant India, Prosperous India'. Dr. S. K. Roy, Director of this Institute spoke about the moral

values, ethics, good governance practices etc. to generate awareness on the ill effects and prevention of corruption in the office as well as in the society. The programme was also commenced with an oath taking occasion by reading a pledge on integrity.

Meeting/ workshop/ training programme organized/ conducted

Online annual zonal workshop for KVKs

A two-day long virtual Annual Zonal Workshop for 59 KVKs of ICAR-ATARI Kolkata consisting

of the states of Odisha, West Bengal and Union Territory of Andaman and Nicobar Islands was held at ICAR-ATARI Kolkata on 1st to 2nd July, 2020. The workshop was inaugurated by the Hon'ble

Minister of State for Ag. & FW, Sh Kailash Chaudhary in the presence of Secretary, DARE and DG, ICAR, Dr. T. Mohapatra; DDG (AE), Dr. A. K. Singh; Vice-Chancellors of Universities;

Directors of ATARIs; Dean and Directors of Extension Education. Scientists from ATARI Kolkata, Senior Scientists and Heads of 59 KVKs and other staff from ATARI Kolkata were also present online. After a brief welcome, Dr. S.K. Roy, Director, ICAR-ATARI Kolkata presented the achievements of this zone during last one year.



In his inaugural address, Sh. K. Chaudhary appreciated the performance of different activities of KVKs during COVID-19 pandemic situations. He highlighted the importance and the guidelines to form of FPOs in every district for the benefit of farmers and the role of KVKs on that issue. Sh. Chaudhary urged upon 'One district one crop', 'Per drop more crop', 'Farmer FIRST programme', replication of climate resilient technologies in climate



vulnerable districts, developing IFS and cultivating medicinal plants in KVKs and villages, contract farming, Doubling Farmers Income etc. He advised the scientists of KVKs to be a part of 'Atmanirbhor Bharat' mission and to further increase the linkage with farming community.

Dr. T. Mohapatra pointed out that KVKs did excellent job in communicating advisories to the farmers during harvesting their

crops under COVID-19 pandemics in different languages. He also focused on the developing integrated farming systems particularly role of horticultural crops, developing and using highly saline and deserted lands for agricultural production, adopting villages by KVKs w.r.t. doubling farmers income by the year 2022.



Dr. A. K. Singh emphasized upon the development of agro-tourism in KVKs, harnessing fish production in the state of Odisha and West Bengal, quality seed and planting materials production, processing, value addition and marketing. He also urged about the successful implementation of 'Garib Kalyan Rojgar Abhiyaan' in the zone. Some publications like 'Krishi Kalyan Abhiyan: Towards agricultural development in Aspirational districts', 'Inspiring farmers through Farmer FIRST', 'ICAR-ATARI Kolkata News', 'NICRA Newsletter' etc. were released during the occasion.



The Director of ATARI-Jabalpur, Kanpur and Patna; Vice Chancellor of OUAT-Bhubaneswar, UBKV-Pundibari, RKMVERI, Belur Math; Dean and Directors of Extension Education from Odisha, West Bengal and RLBCAU, Jhansi also shared their views online. Later, three concurrent Technical Sessions were on wherein all the KVKs

presented their achievements during 2019-20 and Action Plan for 2020-21 online followed by a valedictory session in the last day under the Chairmanship of Dr. R. Singh, ADG(AE).

Online review workshop of GKMS for KVKs

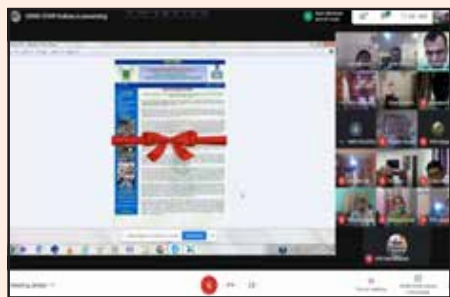
The ICAR-ATARI Kolkata organized First Annual Zonal Review Workshop of Gramin Krishi Mausam Sewa (GKMS) consisting of the 24 KVKs in the states of Odisha and West Bengal on 21st July, 2020 through online video conferencing. The programme was inaugurated by the welcome address by Dr. S.K. Roy, Director, ATARI Kolkata with gracious presence of Dr. P. K. Agarwal, VC, OAUT, Bhubaneswar; Dr. C. Chattopadhyay, VC, UBKV, Coochbehar; Dr. C. Guha, VC, WBUAFS, Kolkata; Dr. R. Singh, ADG (AE), ICAR, New Delhi;



Dr. K. K. Singh, Head, AAS, IMD, New Delhi; Dr. K. Ghosh, IMD, Pune; Dr. S. Bandopadhyay, DDGM, RMC, Kolkata and Dr. G. Debnath, Head, Meteorology Div. Kolkata Airport. The Directors of Extension Education of SAUs of Odisha and West Bengal and Heads and SMSs of all the 24 KVKs were also present.

Dr. F. H. Rahman, Nodal Officer, GKMS summarized the year round activities and progress of the DAMU unit of different KVKs and briefly discussed salient activities and achievements of the of the GKMS scheme. Dr. K. K. Singh, primarily focussed on some pitfalls in content generation and the need for expertise

in translating forecast to advisory knowledge. Dr. G. Debnath stressed upon the importance of the scheme in agriculture production with present climate change scenario. Dr. R. Singh briefly discussed the importance of the Agromet advisory service and how it can help in adopting different challenges of the farmers to reduce the losses. Dr. P. K. Agarwal shared his views regarding the importance timely dissemination of Agromet advisory service and how it reduced several lives and crop losses for farmers



especially in cyclone prone areas like Orissa. Dr. C. Chattopadhyay made his valuable suggestions regarding strengthening mechanism of dissemination system so that more number of farmers could be reached. Dr. C. Guha congratulated the scientists of KVK's for doing excellent work particularly during the time of cyclone 'Amphan' due to which huge losses to property and lives could be averted. The inaugural session was followed by a technical session where respective scientists from already established DAMU unit presented their salient achievements. The technical Session was Chaired by Dr. K. K. Singh and Co-Chaired by Dr. K. Ghosh. A technical bulletin GKMS Newsletter was released in presence of all the delegates.

Webinar on 'FPOs- the road ahead' for KVKs

ICAR-ATARI Kolkata organized a webinar on 'Farmers Producers Organizations (FPOs)- the road ahead' on 18th September, 2020. Dr. S. K. Roy, Director, ICAR-ATARI Kolkata presented a brief overview

of FPOs and its role in agricultural development. He underscored the role of KVK in mobilizing farmers, capacity building, providing hand holding support and FPO formation. Mr. M. K. De, Deputy General Manager, Bankers Institute Rural Development, Lucknow spoke on 'Framework for formation and promotion of 10000 FPOs by GoI and experience of FPO movement'. He emphasized on backward and forward linkage, business plan and market led agricultural production. FPOs can federate at District, State and National level based on their need, success and product to promote packaging/branding and domestic / international trading of quality produce. Such Federation may avail advisory of National Project Management Agency (NPMA) and will be eligible for Credit Guarantee facility to strengthen their activities relating to setting up of infrastructure & supply chain informed Mr. De., Dr. K. C. Gummagolmath, Director (M&E), Manager, MANAGE, Hyderabad shared his views on the topic 'Is FPO a panacea for farmers' woes?'. He cited the example of Narayangoan Producer Company a federation of 17 FPOs with over 12000 members and Sahyadri farms that has leveraged ICT in a great way by geo-tagging all farms. It has adopted good agricultural practices and complete traceability. It has a share of 17 % of total grapes exported to Europe. He narrated several more success stories on direct marketing by KVK, Kodagu and KVK, Bagalkot. Dr. A. Mukherjee, Scientist, ICAR-Research Complex for Eastern Region, Patna presented a researcher's perspective on the factors governing success of FPOs. He added that dynamic leadership, hard work of members and investing in your own people are the key factors for any successful company. He also stressed on product mix, e-marketing etc. A question and answers session was also conducted

wherein queries received through chat were placed before the experts by the moderators.



In the second session, a few selected CEOs of FPOs spoke about their experiences and journey. Mr. K. Behera, CEO, Gorekhnath Agri-Producers Co. Ltd, Ms. S. Addy Maity, M.D., Globalmoyna Farmers Producers Co. Ltd, Mr. S. Karmakar, CEO, Hooghly Vegetable Growers Producer Co. Ltd. shared issues and challenges of FPOs. The webinar was attended by all the 59 KVK and their staffs. Additionally, the event was streamed live on official Facebook page of ICAR-ATARI Kolkata which recorded a viewership of nearly 1000 people including several farmers, farm woman and other FPO members.

Webinar on 'New farm act 2020 for the benefit of farmers'

ICAR-ATARI Kolkata organized a webinar on 'New Farm Act 2020 for the benefit of farmers' on 29th October, 2020. Dr. S. K. Roy, Director, ICAR-ATARI Kolkata presented a brief overview of three new farm acts and its new regulation which will create an ecosystem where the farmers and traders will enjoy the freedom of choice of sale and purchase of agri-produce and promote barrier-free inter and intra-state trade and commerce outside the physical premises of markets notified under State Agricultural Produce Marketing legislations.

The webinar was conveyed by Dr. P. P. Pal, Principal Scientist, ICAR-ATARI Kolkata. Dr. N.C. Sahu, Head, Sasya Shyamala KVK,

West Bengal presented a detailed perspective on the new farm acts 2020. He tried to negate the controversy/ barrier related to these new farm acts by citing examples related to contractual farming by private companies working for potato chips and malt barley. He also stressed on provision of freedom of choice to sell and buy the produces outside the AFMC (Mandis) by the farmers in this new farm act. Prof. D. Sarkar, Head, Dept. of Agricultural Economics, Visva Bharti Biswavidyalaya, Santiniketan as expert gave detailed inputs about the three farm acts 2020 viz. Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act- 2020, the farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 and the Essential Commodities (Amendment) Act, 2020. These



acts for the first time are based on the market trends. He elaborated different aspects of acts and its sub sections like quality, grade and standards of farming produce, sale or purchase of farming produce, exemptions with respect to farming produce, mechanism for dispute resolution, farming agreement fail to settle their dispute within a period of thirty days by the Sub-Divisional Magistrate who shall be the Sub-Divisional Authority for deciding the disputes under farming agreements etc. He reiterated the need of these acts which will directly benefit the farmers further fulfilling the vision of 'One Nation One Market'. An open discussion was also conducted wherein queries received through chat were placed before the experts by the conveyer.



The webinar was attended by all KVKs of West Bengal, their SMSs and farmers. Additionally, the event was streamed live on official Facebook page of ICAR-ATARI Kolkata, which recorded a viewership of nearly 100 people including several farmers, farm societies etc.

Webinar on 'National nutrition mission- the way forward' for KVKs

ICAR-ATARI Kolkata organized a one-day webinar on 11th November, 2020 on 'National Nutrition Mission- the way forward' for creating large scale awareness among the farmwomen, adolescent girls and special women like pregnant as well as lactating by inviting them in the KVKs of this zone. Giving a brief account of the proposed programme, Dr. P. P. Pal, Pr. Scientist and Coordinator of this virtual programme narrated in brief about the importance of nutrition among common people and its relation with doubling farmers' income as it has been kept as one of the components of this ambitious programme. Dr. S. K. Roy, Director, ICAR-ATARI Kolkata, while delivering welcome address, highlighted the target of mitigating malnutrition, under nutrition and obesity within 2030. He also gave an account of the present scenario of nutritional status of our country like India ranks 10th in malnutrition and 17th as per population of stunted children among all the countries.

Dr. A. K. Singh, DDG (AE), ICAR, New Delhi during inauguration programme highlighted that the programme had a special

importance in the current time. He invited all the stakeholders to come forward for eradicating anaemia, deficiency of iron, iodine and other micro-nutrients through appropriate incorporation of the essential elements in the daily diet of children and women. He urged upon cultivating bio-fortified varieties that would greatly help in compensating the existing deficiencies. He advocated for consuming what you produce and desired that the message should be spread across the country. As per the DDG (AE), the concept of growing different nutritious crops is already present in the rural areas of eastern India but it is not being properly advocated among the mass. In this regard, he advised to go for nutri-garden model for all the KVKs that would ensure availability of nutritious food round the year at the own home. The other areas underlined by him includes proper technique of food processing and cooking to retain the quality of vegetables, awareness on taking more vegetables and fruits and proper preparation of Nutri Thali including all the required nutrients. He urged upon all the KVKs to work with 15 lakh angwanbadi workers of the country and identify as well as train the selected women in the line of 'Krishi Sakhi' and 'Pashu Sakhi' adopted by Ministry of Rural Development, Govt. of India. He urged to prepare an implementable action plan like development of Whatsapp group of all home scientists of this zone, identification of different recipes as well as combination of bio-fortified crops, development of nutri-model for its wide circulation through media and exchange ideas among them. He also requested to make videos of 2-3 minutes duration for its sharing through media and uploading into KVK- and mKisan-Portal.

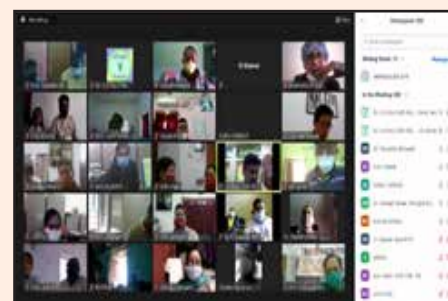
The experts invited from Calcutta University, Assam Agricultural University, Central Agricultural

University and GB Pant University of Agriculture and Technology covered the areas of ways to combat hidden hunger, linking agriculture, national resource management, holistic nutrition-a challenge during COVID-19 pandemics and women vis-à-vis triple burden of malnutrition. Arrangements were also made for a question answer session and translation of the lecture of the experts in vernacular for the benefit of large number of women and girl children linked to this programme. Altogether 59 KVKs and more than 1000 women and girls attended the webinar on this day.

Online review meeting of CFLD on Pulses

An online review meeting of Cluster Frontline Demonstration (CFLD) on Pulses was held on 9th December, 2020 at ICAR-ATARI

Kolkata under the Chairmanship of Director, Dr. S. K. Roy. It was also joined by Dr. H. K. Sahoo, Joint Director Extension, OUAT, Bhubaneswar, Senior Scientist & Heads and Nodal Officers of CFLD on Pulses of Odisha, West Bengal and A & N Islands KVKs. A total of 65 participants were attended the meeting. Dr.S. K. Roy reviewed the progress of CFLD Pulses (rabi) for all 55 KVKs where the demonstrations were carried out. He stressed on successful demonstration of lentil in West Bengal and rabi green gram in Odisha. Dr Roy emphasized the



new technologies like integrated pest management, line sowing etc. and urged that adoption of new varieties should be taken up in the programme. In West Bengal, out of 300 ha target area, 290 ha was achieved during rabi season. The KVK Uttar Dinajpur, West Bengal has shifted 10 ha field pea to 10 ha summer green gram. Whereas in Odisha, farmers were selected for demonstration for the target of 410ha area during rabi season i.e. from end of December, 2020 or early January, 2021.

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

| Sl. No. | Name of the programme (s) | No. of scientist(s)/ staff attended |
|---------|---|-------------------------------------|
| 1 | Online annual zonal workshop 2020 for KVKs of ATARI Kolkata | 10 |
| 2 | Online workshop to celebrate 'National Fish Farmers Day' | 4 |
| 3 | Online 92nd Foundation Day and Award ceremony of the ICAR | 2 |
| 4 | Online inauguration of the building of KVK Bolangir, Odisha | 3 |
| 5 | Online Annual Zonal Workshops 2020 of other ATARIs | 1 |
| 6 | Online inaugural programme for SMS (Agromet) | 4 |
| 7 | Online interface meeting with KVKs addressed by Secretary (DARE) & DG (ICAR) | 3 |
| 8 | Online seminar on 'Export challenges and mitigation strategies for fresh and processed fruits and vegetables in COVID-19 time' organized by the Ministry of Food Processing Industries, GoI | 3 |
| 9 | ICAR-CIFA-NFDB online consultation meet fostering freshwater aquaculture technology dissemination through KVK network | 1 |
| 10 | Webinar on 'Present challenges and future prospects of dairy sector in Eastern India' organized by ICAR-NDRI ERS Kalyani | 3 |
| 11 | Online RAC meeting of 11 ATARIs organized by different ATARIs | 6 |

| <i>Sl. No.</i> | <i>Name of the programme (s)</i> | <i>No. of scientist(s)/ staff attended</i> |
|----------------|--|--|
| 12 | Online SAC meeting of KVKs under ICAR-ATARI Kolkata organized by different KVKs | 6 |
| 13 | Online meeting on network projects of 8 ATARIs organized by different ATARIs | 6 |
| 14 | Online Director's Conference organized by ICAR, New Delhi | 1 |
| 15 | Online district level committee meeting on ARYA project | 4 |
| 16 | Online meeting with WBADMIP | 1 |
| 17 | Online review workshop of cluster frontline demonstration on pulses organized by ICAR-ATARI Kolkata | 2 |
| 18 | Webinar on ' <i>National nutrition mission- the way forward</i> ' organized by ICAR-ATARI Kolkata | 10 |
| 19 | Online meeting on celebration of ' <i>Kisan Diwas 2020</i> ' organized by ICAR-CIWA, Bhubaneswar | 4 |
| 20 | Online meeting on ' <i>Farmer Producer Organizations - the road ahead</i> ' organized by ICAR-ATARI Kolkata | 8 |
| 21 | Webinar on ' <i>Poshan Abhiyan</i> ' organized by AE Division, ICAR, New Delhi | 6 |
| 22 | Online meeting on ' <i>New farm act 2020</i> ' organized by ICAR-ATARI Kolkata | 8 |
| 23 | Online meeting with DDG/ ADGs/ Director of ATARIs/ Nodal Scientists on Third Party Evaluation of KVKs at Council organized by AE Division, ICAR, New Delhi | 2 |
| 24 | Online meeting on ' <i>Sensitization workshop on transforming Animal Husbandry</i> ' organized by ICAR-ATARI Pune | 3 |
| 25 | Webinar on ' <i>Kisan Sarathi</i> ' organized by Division of ICT, Govt. of India | 5 |
| 26 | Meeting of Committee for screening applications for different post at KVKs under ICAR-ATARI Kolkata | 6 |
| 27 | Selection committee meeting for selecting various posts at ICAR-ATARI and KVKs | 10 |
| 28 | Online seminar on ' <i>Gender issues and Atmanirbhar Bharat in agriculture</i> ' | 6 |
| 29 | Online PM inaugural function organized by RLBCAU, Jhansi | 6 |
| 30 | Online conference on PM Kisan | 6 |
| 31 | Online meeting for new extension methods for NEMA project organized by AE Division, ICAR, New Delhi | 6 |
| 32 | Online meeting of Thesis Seminar of Masters and Doctoral students of different universities | 5 |
| 33 | Online workshop ICAR-ATARI Patna to finalize animal Science OFTs organized by ATARI Patna | 1 |
| 34 | Online training workshop for vigilance officers of ICAR Institutes | 1 |
| 35 | Webinar on ' <i>Impact of COVID-19 on dairying, poultry and fisheries: National perspective</i> ' organized by Indian Journal of Animal Health, Kolkata | 1 |
| 36 | Webinar on ' <i>Purchase procedures</i> ' delivered by Shri. D. Kumar, Former Director of Finance, ICAR during vigilance week | 1 |

| Sl. No. | Name of the programme (s) | No. of scientist(s)/ staff attended |
|---------|---|-------------------------------------|
| 37 | Online agro climatic zonal (ACZ) conferences for strategic planning & development of agriculture & allied sectors under the chairmanship of agriculture commissioner, DAC&FW. | 1 |
| 38 | Online review meeting on NICRA-TDC organized by ICAR-ATARI Kolkata | 3 |
| 39 | Online meeting on GKMS organized by ATARI Kolkata | 3 |
| 40 | Online inaugural programme of DAMU | 4 |
| 41 | Online XXV meeting of the ICAR Regional Committee-II | 3 |
| 42 | Webinar on 'Principles and practices of natural farming' and National level consultation on BPKP natural farming through Webex organized by NITI Aayog, Govt. of India | 4 |
| 43 | Other online meetings on various issues | 10 |

Publications

Research articles

- Chowdhury S, Nath S, Pal D, Murmu P, Dora K C and Rahman F H. 2020. Fortification of wheat based instant noodles with surimi powder: A review. *Current Journal of Applied Science and Technology*, **39**(18): 117-125.
- Das G, Saha S, Rahman F H, Sarkar S, Sarkar S, Biswas S, Hembram S, Barman P, Sultana S, Roy B and Ganguly B. 2020. Sustainable irrigation through renovation of pond: A case study on change of crop production, irrigation, cropping pattern and cropping intensity level in sub-Himalayan terai region of India. *Current Journal of Applied Science and Technology*, **39**(21): 7-18.
- Mahapatra N, Rahman F H, Mishra P, Sahoo T R, Sahoo P K and Mishra S N. 2020. Assessment of scope and efficiency of off-season rice straw mushroom (*Volvariella volvacea* L.) cultivation in coastal Odisha. *Current Journal of Applied Science and Technology*, **39**(27): 28-34.
- Mahapatra S S, Sunitha N, Reddi Ramu Y and Rahman F H. 2020. Potential of Various Organic Nutrient Management Practices for Augmenting the Growth, Yield Attributes and Yield of Finger Millet [*Eleusine coracana* (L.) Gaertn]. *Current Journal of Applied Science and Technology*, **39**(33): 126-135.
- Majumder D, Roy R, Rahman F H and Rudra B C. 2020. Impact assessment of block level agro advisories for saving input cost of farmers under old gangetic plains of West Bengal - A Case Study in Malda. *Current Journal of Applied Science and Technology*, **39**(20): 86-96.
- Mandal S, Karmakar M and Rahman F H. 2020. Study on soil nutrient status according to global positioning system in different blocks of Birbhum district of West Bengal, *Current Journal of Applied Science and Technology*, **39**(21): 64-70.
- Rahman F H, Ghorai D, Sarkar S, Kundu S S and Das S. 2020. Doubling Farmers' Income through integrated farming system approach in Purba Barddhaman District of West Bengal. *Current Journal of Applied Science and Technology*, **39**(24): 133-141.
- Sammi Reddy K, Srinivasarao C, Girija Veni V, Prasad J V N S, Sharma K L, Sumanta K, Chandrasekhar C, Jha R K, Choudhary S K, Deokaran, Mishra S K, Nityanand, Rani S, Singh V K, Das L K, Ekka A B, Kumar S, Singh R K, Sujan S, Gangopadhyay P K, Jyoti M N, Nagesh R, Rahman F H, Kumar A, Singh S S and Singh A K. 2020. Mitigation strategies to enhance carbon sink potential in climate vulnerable districts of Eastern India. *Climate and Development*, **13**(4): 360-373 [https://doi.org/10.1080/17565529.2020.1780190].
- Thakur S, Rahman F H, Bhattacharjya S K, Chakraborty A, Mahato B, Ghosh C, Biswas P, Maity L, Dutta D, Patra S, Rath S, Bhattacharjya M K and Pradhan V. 2020. Agrometeorological advisory service: a key to enhance the farmers' income in red and lateritic zone of Purulia district of West Bengal. *Current*

Journal of Applied Science and Technology, 39(18): 55-60.

Udgata J, Barik M, Phonglosa A, Joshi S K, Mishra P J, Rahman F H, Garnayak L M and Parida D. 2020. Assessment of balance nutrition (N, P, K, Zn and B) and green manuring on yield, nutrient uptake, economics and soil fertility of rainfed rice (*Oryza sativa* L.) in drought prone areas of Odisha. *Current Journal of Applied Science and Technology*, 39(27): 10-19.

Technical/ popular article

De H K, Das M K and Das K S. 2020. Doubling Farmers' Income through carp seed rearing. *Indian Farming*, 70(11): 30-33.

Technical bulletins

Rahman F H, Bhattacharya R and Roy S K. 2020. NICRA Newsletter: Towards climate smart agriculture, Published by ICAR-ATARI Kolkata, 6(1): 1- 8.

Rahman F H, Nandi S and Bhattacharya R. 2020. GKMS Newsletter, Published by ICAR-ATARI Kolkata, 1(1): 1- 8.

Sen H S, Mandal B, Ghorai D, Sahu N C, Rahman F H, Murmu K, Chandra S, Bandyopadhyay S and Sarkar D. 2020. *Fertilizers and Environment News*, Published by the Society of Fertilizers and Environment, 6(2):1-16.

Abstracts presented at National/ International Seminars/ workshops etc.

Das S, Rahman F H, Mukherjee S and Nag K. 2020. Response of biofertilizers and primary nutrients on growth and yield of garlic (*allium sativum* L.) in new alluvial soil of West Bengal. Paper presented in the National Webinar on 'Agrochemicals for Upkeeping Environment' organized by the Society for Fertilizers and Environment in collaboration with Bidhan Chandra Krishi Viswavidyalaya during 27th to 29th August, 2020.

Bhattacharya R and Rahman F H. 2020. *In-situ* moisture conservation to cope up the moisture stress condition for different crops grown in Eastern India'. Paper presented in the National Webinar on 'Agrochemicals for

Upkeeping Environment' organized by the Society for Fertilizers and Environment in collaboration with Bidhan Chandra Krishi Viswavidyalaya during 27th to 29th August, 2020.

Invited lectures

Haldar A. 2020. Delivered a lecture on National Fish Farmers' Day through online video conferencing organized by F/O Fishery Science, WBUAFS, Kolkata on 10.07.2020.

E-Book published

- E-book on 'National agro-advisories for farmers'.
- E-book on 'Breaking the productivity and profitability barriers for pulses: cluster frontline demonstration'.

News Items

- 'Annual zonal workshop 2020 of KVKs under ATARI Kolkata' for ICAR, KVK portal and ICAR-ATARI Kolkata website.
- 'Vigilance awareness week 2020 celebration' for KVK portal.
- Webinar on 'New Farm Act 2020' for KVK Portal.

Award / recognition

Dr. S. K. Mondal, Pr. Scientist, ICAR-ATARI Kolkata received Certificate of Excellence in Reviewing from the Chief Managing Editor of Asian Journal of Biotechnology and Genetic Engineering in September 2020.

Personalia

Joining

Dr. Subhramalya Dutta, SRF of ARYA project has joined this Institute on 09.11.2020.

Relieving

Dr. Suddhasuchi Das, SRF of Farmer FIRST Programme has been relieved on 17.08.2020.

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



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An Institution of Indian Council of Agricultural Research (ICAR)

Bhumi Vihar Complex, Block-GB, Sector- III, Salt Lake, Kolkata- 700097 (W. B.)

Tele-fax: +913323352355, E-mail: atarikolkata@gmail.com, Website: www.atarikolkata.org



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Director,
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Compiled and Edited by

Das K S, Mondal S K, Murmu S,
Roy S K, Pal P P, Haldar A and Rahman F H

Contributed by

Roy S K, Pal P P, Haldar A,
Mondal S K, Rahman F H and Das K S

Designed by

Mondal S K and
Das K S