

## **Proceedings of the Annual Zonal Workshop of KVKs, 2023**

### **ICAR-ATARI, Zone-VII, Umiam**

**(20-22 July, 2023)**

The Annual Zonal Workshop of KVKs-2023 under ICAR-ATARI, Zone-VII, Umiam was organized in collaboration with ICAR-National Research Centre (NRC) on Mithun, Medziphema, Nagaland during 20-22 July, 2023 at ICAR-NRC on Mithun, Nagaland. The primary objective of the workshop was to review the progress and achievements of mandated as well as other special programmes/activities of KVKs during 2022. The workshop started with its technical sessions on 20<sup>th</sup> July, 2023. The formal inaugural programme of the workshop was held on 21 July, 2023; which was graced by Dr. K.M. Bujarbaruah, Former DDG (Animal Science), ICAR and Former Vice-Chancellor, Assam Agril. University, Jorhat as the Chief Guest in the presence of Dr. Anupam Mishra, Hon'ble Vice-Chancellor, Central Agril. University, Imphal and Dr. Bidyut C. Deka, Hon'ble Vice-Chancellor, Assam Agril. University, Jorhat as the Guest of Honours.

Gracing the inaugural programme as Chief Guest, Dr. K. M. Bujarbaruah, Former DDG (Animal Science), ICAR & former Vice Chancellor, AAU, Jorhat highlighted the significance of natural farming and solar power generation in the north-eastern region. He encouraged KVKs to actively intervene in these areas following the principle of 'Local for Vocal' to promote sustainable agriculture in the region.

The Guest of Honour Dr. Anupam Mishra, Vice Chancellor, CAU, Imphal emphasized the importance of incorporating Artificial Intelligence, IoTs, and drone technology in KVKs operations for effective technology application in the field. He stressed the need for collaboration of KVKs with research institutions and private companies to develop innovative methodologies of technology dissemination.

Dr. Bidyut C. Deka, Vice Chancellor, AAU, Jorhat; the other Guest of Honour discussed about the progressive thinking and potential practices of the north-eastern region, which rejuvenated ideas for sustainable agriculture, now adopted by the policy makers in the country. Dr. Deka also highlighted the importance of millets cultivation and natural farming in the north-eastern hill region and discussed about the potential of commercializing the millet-based products for transforming north-east agriculture.

Initially, Dr. A K Mohanty, Director, ATARI, Zone VII in his welcome address, mentioned about the perspective plan for strengthening the KVK system in the context of 21<sup>st</sup> century extension system to bring more efficiency, quality and productivity and provided an overview of the KVK achievements in the region. Dr. Girish Patil S., Director, ICAR-NRC on Mithun, Medziphema, Nagaland proposed the ceremonial vote of thanks at the end of the inauguration session.

As part of the programme, Dr. U. S. Gautam, Hon'ble DDG (Agril Extension), ICAR and Dr R.R. Burman, ADG (AE) had an online interaction with the host organizations on 22<sup>nd</sup> July, 2022 regarding their monitoring and feedback mechanism for supervising the KVK activities and linkage with the state line agencies for translating the KVK accomplishments for large scale implementation in the field.

On this occasion, more than 20 publications from different KVKs and ATARI, Umiam were released by the dignitaries on the dais. An exhibition was also arranged for showcasing the technologies of different research institutes, unique products of the region and accomplishments of the KVKs, which was highly appreciated by the dignitaries and delegates attending the workshop. Besides invited guests, experts, representatives of host institutes, ATARI Scientists, the Workshop was attended by all Heads/ In-charge of KVKs under the zone representing four different states, namely Meghalaya, Mizoram, Nagaland and Tripura except Manipur because of prevailing law and order problems due to ethnic strife in the state.

The technical sessions began with the presentations of Annual Report of the year 2022 by individual KVKs under the zone. Dr. Girish C Patel, Director, ICAR-NRC on Mithun, Medziphema, Nagaland; Dr. I. Shakuntala, Dean, College of Veterinary Sciences, Jaluki, Nagaland; Dr. Ranjit Sharma, DEE, CAU, Imphal; Dr. G. A. K. Kumar, Head, Division of Social Sciences, ICAR-NRRI, Cuttack; Dr. S. Hazarika, Head, DSRE, ICAR RC for NEH Region, Umiam; Dr. A.K. Mohanty, Director, ICAR-ATARI, Umiam; Dr. H. Kalita, Joint Director, ICAR RC for NEH Region, Nagaland Centre; Dr. N. Haq, Principal Scientist, NRC on Mithun, Medziphema, Nagaland; Dr. A.K. Singha, Principal Scientist, ICAR-ATARI, Umiam; Dr. R. Bordoloi, Principal Scientist, ICAR-ATARI, Umiam; Dr. Amrutha, T. Scientist, ICAR-ATARI, Umiam, acted as Chairman/Co-chairman and Experts in different technical sessions of the workshop. All the technical sessions of the workshop began with a lead talk/ presentation by invited experts in different areas of importance relevant to KVK activities.

Some of the **General Recommendations** derived out of the workshop were highlighted below:

- All OFTs title and problems should be precise, specific, appropriate and self-explanatory.
- Minimum of 4-5 numbers of trials should be conducted by the KVKs depending on the nature of the problems and importance of the crops/enterprises in the areas of concern.
- All KVKs have to conduct one OFT or FLD on “One-District One-Crop” for effective implementation of the technologies for larger interest of farming community.
- For any work/demonstration taken up apart from KVK mandatory work, working budget/ fund should be provided by the concerned organization or institute
- Any kind of publications by the KVKs on the trials/ demonstrations conducted by them should be routed through PME Cell of ATARI only.
- Prior permission should be taken by the KVK from the ATARI in order to conduct any research-based trials on any varieties/breeds/ technology given by any research institute and required fund for conducting the trial should be provided by the concerned Institute.
- Policy documents should be prepared by the KVKs on the results of best performing technologies, which should be shared with State Government and ATARI can also extend help in this regard.
- At least 2nos. of research publications/paper per SMS, 4nos. of popular articles, 5nos. of extension bulletins, farmer’s innovations and success stories should be published every year by each KVK.

- When FLD is successfully performed for 2-3 years continuously depending upon the situation, bring out the policy document on the basis of data recorded and share with State Government, which may be considered to be included in State Government annual work plan for purchase of inputs like seeds and other materials for large scale dissemination of the technologies.
- All KVKs should identify 1–2 SMSs for the HRD programme on statistical analysis, impact analysis, livelihood analysis, etc. which will be conducted by the ATARI.
- For all trials and demonstrations conducted by KVK, SMSs and Farm Managers should regularly monitor them and keep proper record of cost of cultivations, gross income, net income along with the detailed observations on different parameters.
- Develop micro level start-up venture in floriculture/ bee keeping/ organic farming/vermicomposting/ mushroom production etc.
- At least 5000 farmers should be registered under Kisan Sarathi programme by all KVKs.
- All KVKs should explore fund from State Government under RKVY for various projects related to different commodities/enterprises including contractual man power.
- A one page concept note on '*Hunger free village*' and '*Zero technology gap village*' should be submitted by all the KVKs to ATARI.
- All KVKs should list out any constraint they may be facing with regard to boundary, quarters, infrastructures, etc.
- All the Senior Scientist & Heads or I/C of KVKs were advised to attend the Annual Zonal Workshop and present the progress report.
- To confirm the effectiveness of the technology trialed or demonstrated, statistical analysis should be done to see if it is statistically significant. Mere increase in yield cannot be considered as statistically significant.

**Technical session-wise presentation on achievements of KVKs are given below-**

S.No	Particular	
A.	<b>Technical Session-I (Review of KVKs of Nagaland)</b>	
a.	<b>Lead talk:</b> “Livestock for livelihood sustainability in Northeast region: Option for Mithun farming’ By-Dr. Girish Patel, S., Director, ICAR-NRC on Mithun, Nagaland.	
	<b>KVK</b>	<b>Specific Recommendation</b>
1	KVK Dimapur	<ul style="list-style-type: none"> <li>• The time of sowing must be included in the observation to be documented in the OFT “Performance of improved varieties of winter maize”.</li> <li>• Toria variety TS-67 is an old variety, take up new late sown variety.</li> <li>• In natural farming report, Farmers' feedback is crucial.</li> <li>• All SMSs should conduct weekly field visit on their trials/demonstrations to get exact result of their trials.</li> <li>• In FLD on Topiaca, full data on demonstration and control plot</li> </ul>

		<p>should be taken and percentage growth should be recorded to show its benefit.</p> <ul style="list-style-type: none"> <li>To register at least 5000 farmers in Kisan Sarathi.</li> </ul>
2	KVK, Kohima	<ul style="list-style-type: none"> <li>OFT 1 under agronomy, Pea variety VL-77 &amp; VL-88 has to be incorporated.</li> <li>OFT 2 have to be taken up with rice variety RCM-15, 16, 17 and Nagaland special rice as check.</li> <li>OFT on Tomato-T1 poly house, T2 open field and T3 farmers practice.</li> <li>OFT on Chilli- Arka kheti &amp; Arka meghna has to be added.</li> <li>OFT on Potato under soil science has to be conducted under FLD programme.</li> <li>OFT on Jalkhund- T1 assess water productivity, T2 drip irrigation &amp; T3 sprinkling to be incorporated under details of technology.</li> <li>Naga special should be clearly stated.</li> <li>Arka Anamika – technology detail is required.</li> <li>Radish – Chinese pink, not an Indian variety.</li> </ul>
3	KVK, Phek	<ul style="list-style-type: none"> <li>For Sponsored Training programme, it is better to approach State Departments.</li> <li>For drudgery reduction tools, Almora &amp; CIPHET have technology. Also, specific tools and implements required to be informed to ATARI for further action from ATARI (including existing problems, etc.) through Director, State Government. Observation on parameter and problem including farmers' feedback to be informed. Eg. Bulky for paddy thresher, etc.</li> </ul>
4	KVK, Mokokchung	<ul style="list-style-type: none"> <li>In Garden pea, reason why yield in demonstration is lesser than local check should be shown.</li> <li>Tomato variety Arka Samrat was taken in OFT and is repeated in FLD.</li> <li>BC is not mentioned in the 'Popularization of an Integrated Farming System' involving white peck in ducks and fisheries. Rs/piglets should be substituted with Rs/ducks in net returns.</li> <li>In Animal Science, only poultry is taken up, other trials should also be taken up.</li> <li>Soybean – Black grains not prepared.</li> <li>Cauliflower – Seed is from private company, so the source of technology cannot be IARI.</li> <li>Potato – Source of Technology is not ICAR-NEH, CPRS.</li> <li>Dhaincha- Application of salt (?) - T2 is not for upload.</li> <li>Soybean- Rhizobium 200g/kg is wrong (it should be max. 5 – 10g).</li> <li>Field pea – variety Aman is a very old variety.</li> <li>FLD - Net return (Rs/piglet) should be Rs/Kg.</li> <li>FLD- Gross return should be shown.</li> </ul>
5	KVK, Tuensang	<ul style="list-style-type: none"> <li>Low tunnel to be added in details of technology in OFT-5.</li> <li>Title of OFT-8 should be "Low yield due to high incidence of late blight" and TO2 should be added with another fungicide.</li> <li>OFT-11: weaning time and creep area heat source should be included in technology details.</li> <li>FLD-8: under plant protection, addition of more varieties of Pea.</li> </ul>

		<ul style="list-style-type: none"> <li>• FLD-12: under extension, manual maize sheller with different rows should be added. Also extension scientist should collect and promote different types of Rajmash in the district.</li> <li>• Performance assessment of Broccoli variety Green magic under protected condition is not relevant.</li> <li>• In Manual Paddy thresher trial, state reason why Farmers Practice is better than technology demonstration.</li> <li>• VETMIN – Should be conducted as direct FLD.</li> </ul>
6	KVK, Zunheboto	<ul style="list-style-type: none"> <li>• OFT 1 &amp; 2 under agronomy, variety should be changed. Maize variety Vivek QPM-9 &amp; HQPM-5 has to be included.</li> <li>• OFT 3 under horticulture, problem diagnosed should be corrected as “Lack of organic packages for Citrus”.</li> <li>• OFT-4: T2 should be single row and flat bed system.</li> <li>• OFT-6: Problem diagnosed should be “High pest infestation”.</li> <li>• Title of OFT 7 &amp; 12, should be change according to the technology details.</li> <li>• To recheck all the mistakes in their power-point presentation and give presentation the next day. Mistakes in slides should be avoided at all cost.</li> </ul>
7	KVK, Mon	<ul style="list-style-type: none"> <li>• In climate resilient pig sty, saw dust should be atleast 1 ft&amp; wilting to be done &amp;not change weekly.</li> </ul>
8	KVK, Peren	<ul style="list-style-type: none"> <li>• Deworming should be done during pregnancy in progress.</li> <li>• Balanced fertilizer application in turmeric to be taken up with vermicompost.</li> </ul>
9	KVK, Kiphire	<ul style="list-style-type: none"> <li>• As QPM5 is already an accepted variety, hand over the datas recorded on the trial to ATARI, sign an MOU and publish the work.</li> </ul>
10	KVK, Wokha	<ul style="list-style-type: none"> <li>• For Indigenous fruits: Nutritional analysis is a must.</li> <li>• No need to take up trial1, 2 and 3 on any OFTs other than that of varietal trial.</li> <li>• Go for chain activities like production – animal feed – processing, etc.</li> <li>• Impact analysis to be clear and based on socio-economic, technical issue.</li> <li>• When FLD is conducted and completed for 2/3 years, it is not required to be reported in the power-point, instead write a concept note to State Government for policy (for all KVKs).</li> <li>• Technology in Mithun for all KVKs of Nagaland is a priority and all Home Science SMSs should take up Mithun meat processing.</li> </ul>
11	KVK, Longleng	<ul style="list-style-type: none"> <li>• Title of OFT should be “Rainbow rooster poultry bird in semi intensive system” and T3 with non-descript breed have to be added.</li> <li>• Problem diagnosed should be rectified based on the title.</li> <li>• FLD under animal science, 50% concentrated feed should be added.</li> </ul>
<b>B.</b>	<b>Technical Session-II (Review of KVKs of Mizoram)</b>	

b.	<b>Lead talk:</b> Climate resilient resource conservation technologies (RCTs) for sustainable agriculture in NER by- Dr. S. Hazarika, Head, DSRE, ICAR RC for NEH region, Umiam	
1	KVK, Aizawl	<ul style="list-style-type: none"> <li>• The expert recommended that if the result of Fertigation of tomato trail is successful then technology should be transferred to State Government Department for implementation.</li> <li>• Assessment of Bio Terracing Technique for slow conversion of Hill Slopes into terrace land, the data on change in slope may be included.</li> <li>• In case of assessment of cropping system Rice (IR 64) - Fenugreek (Lam Methi-3) – Baby corn (Golden Baby) under organic management system, a standard check is to be included for better comparison.</li> </ul>
2	KVK, Mamit	<ul style="list-style-type: none"> <li>• As severity of the problem is only 40% in the OFT titled “Intercropping of banana with soyabean and sesamum”. The expert suggested taking an OFT with severity of the problem exceeding 80%.</li> <li>• The expert seek clarification on the type of fish spices used for farmers’ practice in OFT titled ‘Incorporation of Amul Common Carp in feed based crop polythene system to increase farm production’</li> <li>• As the farmer are reluctant to pursue Kadaknath layer poultry technology, it was recommended not to continue as a FLD</li> <li>• The experts seek clarification whether the crop baby corn fall under Agronomy or Horticulture discipline. It should be specified.</li> </ul>
3	KVK, Lunglei	<ul style="list-style-type: none"> <li>• OFT -1 under Horticulture: addition of another variety Arka Meghna.</li> <li>• OFT-1 under Soil science. T2 should be 50% of T1; NPK dose should be given in unit and T3- soil status before and after.</li> <li>• FLD-1 under soil science, nitrogen and phosphorus dose to be rectified.</li> <li>• The expert suggested increasing the number of farmers in Kisan Sarathi</li> </ul>
4	KVK, Serchhip	<ul style="list-style-type: none"> <li>• It has been suggested to verify the fibre content of the Azolla feed.</li> <li>• As the sugarcane juice preserve with KMS has a longer shelf life, the expert suggested for further testing such as microbial count or any other analysis in sugar cane juice would be preferable.</li> </ul>
5	KVK, Champhai	<ul style="list-style-type: none"> <li>• There should be atleast three treatment in all the technologies assessed.</li> <li>• Problems identified should also be mentioned.</li> <li>• Details of technology should also be mentioned.</li> </ul>
6	KVK, Kolasib	<ul style="list-style-type: none"> <li>• Under plant protection OFT, it was suggested to incorporate the word ‘Integrated’ in the titled ‘Disease Management in Okra’</li> </ul>
7	KVK, Lawngtlai	<ul style="list-style-type: none"> <li>• In OFT under Home science, the economics of packaging (including vacuum sealer machine, sealer bag, cost of packaging per kg, farmer’s sale price during off-season etc) is to be included.</li> <li>• Finding out the major problem and prioritizing was advised for Agriculture Extension and to conduct OFT.</li> <li>• To increase the number of soil testing and SHC distribution.</li> </ul>

	KVK, Siaha	<ul style="list-style-type: none"> <li>As the B:C ratio of all the treatments are at par in the OFT titled “Creep feeding of pre-weaned piglet”, the expert suggested rechecking of the B:C ratio of all the treatments.</li> <li>The experts suggested to mention the source of procurement of the pre-weaned piglet feed</li> <li>Under Plant Protection, the panel experts recommend not to conduct any demonstration on local variety.</li> </ul>
<b>C.</b>	<b>Technical Session-III (Review of KVKs of Meghalaya)</b>	
c.	<b>Lead talk:</b> Organic farming for sustainable agriculture in Northeastern region: Options and opportunities” by Dr. H. Kalita, Jt. Director, ICAR RC, Nagaland Centre	
1	KVK, East Khasi Hills	<ul style="list-style-type: none"> <li>Source of technology in all OFTs was not mentioned and need to be given.</li> <li>The percentage of seed production has to be mentioned.</li> <li>Quantity of quality seeds and planting materials production must be increased to achieve the target.</li> </ul>
2	KVK, Jaintia Hills	<ul style="list-style-type: none"> <li>Administrative building to be inaugurated at the earliest for which necessary actions may be initiated in consultation with the host institute.</li> <li>Source of technology should be given in all OFTs either 1<sup>st</sup> or 2<sup>nd</sup> year activity.</li> <li>Pig Lumsniang breed has to be compared with the existing breed other than local under OFT in Animal Science discipline.</li> </ul>
3	KVK South Garo Hills	<ul style="list-style-type: none"> <li>OFT on IFS model on Fish cum Mushroom need to be clearly specified in terms of methods and location.</li> <li>Source of technology under OFT activities has to be mentioned correctly.</li> </ul>
4	KVK, East Garo Hills	<ul style="list-style-type: none"> <li>Details of Technology/treatment under OFT should tally/match with the title.</li> <li>In case of FLD on Jalkund, it was suggested to show the area of harvested water and how much area may be covered in different vegetables. The Jalkund should be constructed in maximum numbers with gravity based system including Management Information System (MIS)</li> </ul>
5	KVK, West Garo Hills	<ul style="list-style-type: none"> <li>FLD under Agricultural Extension, net return and B.C ratio should be in an average value not in range.</li> <li>In case of OFT programme, control and treatments to be mentioned clearly.</li> </ul>
6	KVK, West Khasi Hills	<ul style="list-style-type: none"> <li>Under OFT, farmers practice (control) has to be mentioned.</li> <li>In case of OFT under Horticulture, authenticated source of technology should be mentioned.</li> </ul>
7	KVK, RiBhoi	<ul style="list-style-type: none"> <li>Source of technology should be shown in all OFTs conducted.</li> </ul>
<b>D.</b>	<b>Technical Session-IV (Review of KVKs of Tripura)</b>	

d.	<b>Lead talk:</b> Self-sufficient sustainable seed supply system for rice (4S4R): A viable business mode for FPOs by- Dr. G.A.K. Kumar, Head, Division of Social Sciences, ICAR-NRRI, Cuttack	
1	KVK, Khowai	<ul style="list-style-type: none"> <li>• In OFT-1 Title: Organic management in Cabbage, Yield is very less, is there a specific reason? If Yes, kindly put up the reasons</li> <li>• In OFT -5 Title: Refinement of Bio-intensive Chilli Thrips&amp; Mites Management, Put up the reasons for refinement</li> <li>• If this OFT is first year how is it possible to come under refinement? So change the title to Assessment instead of Refinement.</li> </ul>
2	KVK, Sepahijala	<ul style="list-style-type: none"> <li>• All the font sizes are small it is not readable for the experts and others to give suitable suggestions</li> <li>• In Horticulture, why do you still conduct OFT on Pineapple, it is already acceptable and even export to other countries so better to take up as FLD only.</li> </ul>
3	KVK, South Tripura	<ul style="list-style-type: none"> <li>• Trials on the title of OFT should be omitted.</li> <li>• OFT-9 the word Novel should be omitted and problem diagnosed should be low yield due to high incidence of leaf curl.</li> <li>• OFT-10, problem diagnosed has to be written as low yield due to high incidence of pest. T3 should be rectified or omitted. Yellow sticky trap has to be added.</li> <li>• OFT-11 Oat has to be added in the treatment and B. C. Ratio in the parameter.</li> <li>• FLD-7 under animal science, breed or variety name should be mentioned.</li> </ul>
4	KVK, Dhalai	<ul style="list-style-type: none"> <li>• In OFT Title: Assessment of Nano Urea in Kharif Paddy (variety-Gomati), use of Nano urea application is very controversial, the result should be rectified.</li> <li>• In OFT Title: Assessment of organic and chemical methods for the management of Chilli Leaf Curl Virus, Source of Technology should be checked</li> <li>• In OFT Title: Assessment of rhizome rot disease management in Ginger, COC can be used upto 8kg/hectare</li> <li>• In FLD Title: Popularization of IPM in Paddy major Pests, collaborate with Company for Light Trap of Insects</li> <li>• In OFT Title: Development of competitive skills of farmers and farm Women as entrepreneurs, Methodology should be changed</li> <li>• In FLD Title: Impact of Digitization, here the word Impact should be replaced by assessment.</li> <li>• In FLD where Marigold is used, the unit used should be changed to Numbers/hectare (nos./ha)and not to put in Quintal/hectare (q/ha)</li> </ul>
5	KVK, North Tripura	<ul style="list-style-type: none"> <li>• Cropping sequence should be changed, under technology options in OFT</li> <li>• First write the major crop followed by the minor crops in OFT</li> <li>• In OFT-11 Title: Assessment on adoption and knowledge level of Paddy farmers in using Trichogramma spp., mention the sampling method used.</li> <li>• In OFT 12 Title: Assessment of knowledge level of farmers on organic farming</li> </ul>



		<ul style="list-style-type: none"> <li>- Under prioritized problem- Inadequate knowledge is not a correct problem so choose another problem to match the OFT</li> <li>• FLD-1 Title: Popularization of zero tillage pea cultivation under rice fallow at Rabi Season <ul style="list-style-type: none"> <li>- The word zero tillage should not be written, it should be changed to minimum tillage</li> </ul> </li> <li>• FLD-5 Title: Demonstration method on Fish disease control and water quality management in aquaculture <ul style="list-style-type: none"> <li>- Among the parameters, water quality test should be added since the title also reflects about the water quality</li> </ul> </li> <li>• FLD Title: Perception of Pesticides dealers toward pest management in North Tripura, the design should be checked since it is not correct design</li> <li>• In FLD 9 Title: Popularization of Guinea Grass, <ul style="list-style-type: none"> <li>-Fodder Data should be taken</li> <li>-Effect of fodder on milk yield should be given separately</li> </ul> </li> <li>• FLD- 10 Title: Popularization of Kadaknath <ul style="list-style-type: none"> <li>- Cost involvement calculations are wrong and it should be checked</li> </ul> </li> </ul>
6	KVK, Gomati	<ul style="list-style-type: none"> <li>• OFT Title: Training need assessment – Methodology should be checked</li> <li>• OFT Title: IPM in Brinjal against Fruit and Shoot Borer <ul style="list-style-type: none"> <li>- Source of Technology is not available in the slide</li> </ul> </li> <li>• OFT Title: IPM in Chilli <ul style="list-style-type: none"> <li>- Source of Technology is not available in the slide</li> </ul> </li> </ul>
7	KVK, Unakoti	<ul style="list-style-type: none"> <li>• Title of OFT-3 &amp; 4 problem diagnosed should be corrected as “Poor existing variety of low nutrient content”</li> <li>• OFT-5: pruning 20 days interval from 20<sup>th</sup> March 2022 under technology details.</li> <li>• FLD-3: Horticulture, Arka Rakshak should be replaced with another variety.</li> <li>• FLD-6: chemical 2,4-D should be replace with other suitable technology.</li> <li>• OFT 1 Title: Assessment of different sowing dates of Aus paddy to optimize cropping sequence <ul style="list-style-type: none"> <li>- Date of sowing in this OFT is not correct and it should be clarified</li> </ul> </li> <li>• OFT 6 Title: Assessment of optimum stocking density in multiple stocking and harvesting of Carp grow out system <ul style="list-style-type: none"> <li>- The stocking density is not correct , it should be checked and corrections to be made</li> </ul> </li> </ul>
8	KVK, West Tripura	<ul style="list-style-type: none"> <li>• OFT Title: Fertilizer of NPK on Paddy <ul style="list-style-type: none"> <li>- There are different Treatments T1 to T4 – all of them should be noted differently to specify the different treatments</li> </ul> </li> <li>• OFT Title: Empowering SHGs’ through skill training, here check the methodology</li> <li>• FLD Title : Demonstrating Biofortified Maize HQPM 5 <ul style="list-style-type: none"> <li>- The cropping sequence should be corrected</li> </ul> </li> <li>• FLD Title : On Gomati- Since state has already adopted Gomati rice variety there is no need for taking as FLD on Adoption of Gomati</li> </ul>

**DDG (AE), ICAR interaction on 22<sup>nd</sup> July, 2023 with Host institutes/ KVKs emerged the following points for action-**

- Monitoring mechanism for KVK activities and programmes under ICAR RC for NEH Region must be established and strengthened.
  - Timely fund utilization and submission of AUC for KVKs must be taken with utmost care and priority by ICAR RC for NEH Region, Umiam. This is also applicable for all KVKs under different host institutes for compliance.
  - Central Agril. University (CAU), Imphal may initiate actions for preparation of revised technology inventory with the latest technologies available from different sources for the benefit of different stakeholders.
  - Documentation on feedback information from extension to research system out of trials and demonstrations of technologies by KVKs in farmers' field.
  - To ascertain and record number and details of technology recommendations made by KVKs incorporated in the Package of Practices of State Department of Agriculture along with action plan for next year.
  - OFTs in extension discipline will be designed as per the samples of OFT to be shared by the Division of Agricultural Extension, ICAR, New Delhi and accordingly plan OFTs in Extension for the next year.
  - Convergence of KVKs with line departments and agencies like ATMA in various programmes and activities for the benefit of farmers in the zone.
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The following topics were covered by experts before start of every technical session-

- a. *“Livestock for livelihood sustainability in Northeast region: Option for Mithun farming”* by Dr. Girish Patel, S., Director, ICAR-NRC on Mithun, Nagaland
- b. *“Climate resilient resource conservation technologies (RCTs) for sustainable agriculture in NEH region”* by Dr. S. Hazarika, Head, DSRE, ICAR RC for NEH region, Umiam.
- c. *“Organic farming for sustainable agriculture in Northeastern region: Options and opportunities”* by Dr. H. Kalita, Jt. Director, ICAR RC, Nagaland Centre.
- d. *“Self-sufficient sustainable seed supply system for rice (4S4R): A viable business model for FPOs”* by Dr. G.A.K. Kumar, Head, Division of Social Sciences, ICAR-NRRI, Cuttack.

**The KVK-wise specific recommendations for time bound actions made by the house are given below:**

**State: MEGHALAYA**

Sl. No	Specific recommendations
1.	<ul style="list-style-type: none"> <li>Source of technology in all OFTs was not mentioned and need to be given.</li> <li>The percentage of seed production has to be mentioned.</li> <li>Quantity of quality seeds and planting materials production must be increased to achieve the target.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, East Khasi Hills)</b></p>
2.	<ul style="list-style-type: none"> <li>Administrative building to be inaugurated at the earliest for which necessary actions may be initiated in consultation with the host institute.</li> <li>Source of technology should be given in all OFTs either 1<sup>st</sup> or 2<sup>nd</sup> year activity.</li> <li>Pig Lumsniang breed has to be compared with the existing breed other than local under OFT in Animal Science discipline.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Jaintia Hills)</b></p>
3.	<ul style="list-style-type: none"> <li>OFT on IFS model on Fish cum Mushroom need to be clearly specified in terms of methods and location.</li> <li>Source of technology under OFT activities has to be mentioned correctly.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, South Garo Hills)</b></p>
4.	<ul style="list-style-type: none"> <li>Details of Technology/treatment under OFT should tally/match with the title.</li> <li>In case of FLD on Jalkund, it was suggested to show the area of harvested water and how much area may be covered in different vegetables. The Jalkund should be</li> </ul>

	constructed in maximum numbers with gravity based system including Management Information System (MIS) <b>(Action: KVK, East Garo Hills)</b>
5.	<ul style="list-style-type: none"> <li>FLD under Agricultural Extension, net return and B.C ratio should be in an average value not in range.</li> <li>In case of OFT programme, control and treatments to be mentioned clearly.</li> </ul> <b>(Action: KVK, West Garo Hills)</b>
6.	<ul style="list-style-type: none"> <li>Under OFT, farmers practice (control) has to be mentioned.</li> <li>In case of OFT under Horticulture, authenticated source of technology should be mentioned.</li> </ul> <b>(Action: KVK, West Khasi Hills)</b>
7.	<ul style="list-style-type: none"> <li>Source of technology should be shown in all OFTs conducted.</li> </ul> <b>(Action: KVK, RiBhoi)</b>

**State: MIZORAM**

Sl. No	Specific recommendations
1.	<ul style="list-style-type: none"> <li>The expert recommended that if the result of Fertigation of tomato trail is successful then technology should be transferred to State Government Department for implementation.</li> <li>Assessment of Bio Terracing Technique for slow conversion of Hill Slopes into terrace land, the data on change in slope may be included.</li> <li>In case of assessment of cropping system Rice (IR 64) - Fenugreek (Lam Methi-3) – Baby corn (Golden Baby) under organic management system, a standard check is to be included for better comparison.</li> </ul> <b>(Action: KVK, Aizawl)</b>
2.	<ul style="list-style-type: none"> <li>As severity of the problem is only 40% in the OFT titled “Intercropping of banana with soyabean and sesamum”. The expert suggested taking an OFT with severity of the problem exceeding 80%.</li> <li>The expert seek clarification on the type of fish species used for farmers’ practice in OFT titled ‘Incorporation of Amul Common Carp in feed based crop polythene system to increase farm production’</li> <li>As the farmer are reluctant to pursue Kadaknath layer poultry technology, it was recommended not to continue as a FLD</li> <li>The experts seek clarification whether the crop baby corn fall under Agronomy or Horticulture discipline. It should be specified.</li> </ul> <b>(Action: KVK, Mamit)</b>
3.	<ul style="list-style-type: none"> <li>OFT -1 under Horticulture: addition of another variety Arka Meghna.</li> <li>OFT-1 under Soil science. T2 should be 50% of T1; NPK dose should be given in unit and T3- soil status before and after.</li> <li>FLD-1 under soil science, nitrogen and phosphorus dose to be rectified.</li> <li>The expert suggested increasing the number of farmers in Kisan Sarathi</li> </ul> <b>(Action: KVK, Lunglei)</b>
4.	<ul style="list-style-type: none"> <li>It has been suggested to verify the fibre content of the Azolla feed.</li> <li>As the sugarcane juice preserve with KMS has a longer shelf life, the expert suggested for further testing such as microbial count or any other analysis in sugar cane juice would be preferable.</li> </ul> <b>(Action: KVK, Serchhip)</b>
5.	<ul style="list-style-type: none"> <li>There should be atleast three treatment in all the technologies assessed.</li> <li>Problems identified should also be mentioned.</li> </ul>

	<ul style="list-style-type: none"> <li>Details of technology should also be mentioned.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Champhai)</b></p>
6.	<ul style="list-style-type: none"> <li>Under plant protection OFT, it was suggested to incorporate the word 'Integrated' in the titled 'Disease Management in Okra'</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Kolasib)</b></p>
7.	<ul style="list-style-type: none"> <li>In OFT under Home science, the economics of packaging (including vacuum sealer machine, sealer bag, cost of packaging per kg, farmer's sale price during off-season etc) is to be included.</li> <li>Finding out the major problem and prioritizing was advised for Agriculture Extension and to conduct OFT.</li> <li>To increase the number of soil testing and SHC distribution.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Lawngtlai)</b></p>
8.	<ul style="list-style-type: none"> <li>As the B:C ratio of all the treatments are at par in the OFT titled "Creep feeding of pre-weaned piglet", the expert suggested rechecking of the B:C ratio of all the treatments.</li> <li>The experts suggested to mention the source of procurement of the pre-weaned piglet feed</li> <li>Under Plant Protection, the panel experts recommend not to conduct any demonstration on local variety.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Siaha)</b></p>

**State: NAGALAND**

Sl. No	Specific recommendations
1.	<ul style="list-style-type: none"> <li>The time of sowing must be included in the observation to be documented in the OFT "Performance of improved varieties of winter maize".</li> <li>Toria variety TS-67 is an old variety, take up new late sown variety.</li> <li>In natural farming report, Farmers' feedback is crucial.</li> <li>All SMSs should conduct weekly field visit on their trials/demonstrations to get exact result of their trials.</li> <li>In FLD on Topiaca, full data on demonstration and control plot should be taken and percentage growth should be recorded to show its benefit.</li> <li>To register at least 5000 farmers in Kisan Sarathi.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Dimapur)</b></p>
2.	<ul style="list-style-type: none"> <li>OFT 1 under agronomy, Pea variety VL-77 &amp; VL-88 has to be incorporated.</li> <li>OFT 2 have to be taken up with rice variety RCM-15, 16, 17 and Nagaland special rice as check.</li> <li>OFT on Tomato-T1 poly house, T2 open field and T3 farmers practice.</li> <li>OFT on Chilli- Arka kheta &amp; Arka meghna has to be added.</li> <li>OFT on Potato under soil science has to be conducted under FLD programme.</li> <li>OFT on Jalkhund- T1 assess water productivity, T2 drip irrigation &amp; T3 sprinkling to be incorporated under details of technology.</li> <li>Naga special should be clearly stated.</li> <li>Arka Anamika – technology detail is required.</li> <li>Radish – Chinese pink, not an Indian variety.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Kohima)</b></p>
3.	<ul style="list-style-type: none"> <li>For Sponsored Trainingprogramme, it is better to approach State Departments.</li> <li>For drudgery reduction tools, Almora &amp; CIPHET have technology. Also, specific tools and implements required to be informed to ATARI for further action from ATARI (including existing problems, etc.) through Director, State Government. Observation on parameter and problem including farmers' feedback to be informed. Eg. Bulky for paddy thresher, etc.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Phek)</b></p>

4.	<ul style="list-style-type: none"> <li>• In Garden pea, reason why yield in demonstration is lesser than local check should be shown.</li> <li>• Tomato variety Arka Samrat was taken in OFT and is repeated in FLD.</li> <li>• BC is not mentioned in the 'Popularization of an Integrated Farming System' involving white peck in ducks and fisheries. Rs/piglets should be substituted with Rs/ducks in net returns.</li> <li>• In Animal Science, only poultry is taken up, other trials should also be taken up.</li> <li>• Soybean – Black grains not prepared.</li> <li>• Cauliflower – Seed is from private company, so the source of technology cannot be IARI.</li> <li>• Potato – Source of Technology is not ICAR-NEH, CPRS.</li> <li>• Dhaincha- Application of salt (?) - T2 is not for upload.</li> <li>• Soybean- Rhizobium 200g/kg is wrong (it should be max. 5 – 10g).</li> <li>• Field pea – variety Aman is a very old variety.</li> <li>• FLD - Net return (Rs/piglet) should be Rs/Kg.</li> <li>• FLD- Gross return should be shown.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Mokokchung)</b></p>
5.	<ul style="list-style-type: none"> <li>• Low tunnel to be added in details of technology in OFT-5.</li> <li>• Title of OFT-8 should be "Low yield due to high incidence of late blight" and TO2 should be added with another fungicide.</li> <li>• OFT-11: weaning time and creep area heat source should be included in technology details.</li> <li>• FLD-8: under plant protection, addition of more varieties of Pea.</li> <li>• FLD-12: under extension, manual maize sheller with different rows should be added. Also extension scientist should collect and promote different types of Rajmash in the district.</li> <li>• Performance assessment of Broccoli variety Green magic under protected condition is not relevant.</li> <li>• In Manual Paddy thresher trial, state reason why Farmers Practice is better than technology demonstration.</li> <li>• VETMIN – Should be conducted as direct FLD.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Tuensang)</b></p>
6.	<ul style="list-style-type: none"> <li>• OFT 1 &amp; 2 under agronomy, variety should be changed. Maize variety Vivek QPM-9 &amp; HQPM-5 has to be included.</li> <li>• OFT 3 under horticulture, problem diagnosed should be corrected as "Lack of organic packages for Citrus".</li> <li>• OFT-4: T2 should be single row and flat bed system.</li> <li>• OFT-6: Problem diagnosed should be "High pest infestation".</li> <li>• Title of OFT 7 &amp; 12, should be change according to the technology details.</li> <li>• To recheck all the mistakes in their powerpoint presentation and give presentation the next day. Mistakes in slides should be avoided at all cost.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Zunheboto)</b></p>
7.	<ul style="list-style-type: none"> <li>• In climate resilient pig sty, saw dust should be atleast 1 ft&amp; wilting to be done &amp;not change weekly.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Mon)</b></p>
8.	<ul style="list-style-type: none"> <li>• Deworming should be done during pregnancy in progress.</li> <li>• Balanced fertilizer application in turmeric to be taken up with vermicompost.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Peren)</b></p>
9.	<ul style="list-style-type: none"> <li>• As QPM5 is already an accepted variety, hand over the datas recorded on the trial to ATARI, sign an MOU and publish the work.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Kiphire)</b></p>

10.	<ul style="list-style-type: none"> <li>For Indigenous fruits: Nutritional analysis is a must.</li> <li>No need to take up trial 1, 2 and 3 on any OFTs other than that of varietal trial.</li> <li>Go for chain activities like production – animal feed – processing, etc.</li> <li>Impact analysis to be clear and based on socio-economic, technical issue.</li> <li>When FLD is conducted and completed for 2/3 years, it is not required to be reported in the powerpoint, instead write a concept note to State Government for policy (for all KVKs).</li> <li>Technology in Mithun for all KVKs of Nagaland is a priority and all Home Science SMSs should take up Mithun meat processing.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Wokha)</b></p>
11.	<ul style="list-style-type: none"> <li>Title of OFT should be “Rainbow rooster poultry bird in semi intensive system” and T3 with non-descript breed have to be added.</li> <li>Problem diagnosed should be rectified based on the title.</li> <li>FLD under animal science, 50% concentrated feed should be added.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Longleng)</b></p>

**State: TRIPURA**

Sl. No	Specific recommendations
1	<ul style="list-style-type: none"> <li>In OFT-1 Title: Organic management in Cabbage, Yield is very less, is there a specific reason? If Yes, kindly put up the reasons</li> <li>In OFT -5 Title: Refinement of Bio-intensive Chilli Thrips &amp; Mites Management, Put up the reasons for refinement</li> <li>If this OFT is first year how is it possible to come under refinement? So change the title to Assessment instead of Refinement.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Khowai)</b></p>
2	<ul style="list-style-type: none"> <li>All the font sizes are small it is not readable for the experts and others to give suitable suggestions</li> <li>In Horticulture, why do you still conduct OFT on Pineapple, it is already acceptable and even export to other countries so better to take up as FLD only.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Sepahijala)</b></p>
3	<ul style="list-style-type: none"> <li>Trials on the title of OFT should be omitted.</li> <li>OFT-9 the word Novel should be omitted and problem diagnosed should be low yield due to high incidence of leaf curl.</li> <li>OFT-10, problem diagnosed has to be written as low yield due to high incidence of pest. T3 should be rectified or omitted. Yellow sticky trap has to be added.</li> <li>OFT-11 Oat has to be added in the treatment and B. C. Ratio in the parameter.</li> <li>FLD-7 under animal science, breed or variety name should be mentioned.</li> </ul> <p style="text-align: right;"><b>(Action: KVK, South Tripura)</b></p>
4	<ul style="list-style-type: none"> <li>In OFT Title: Assessment of Nano Urea in Kharif Paddy (variety-Gomati), use of Nano urea application is very controversial, the result should be rectified.</li> <li>In OFT Title: Assessment of organic and chemical methods for the management of Chilli Leaf Curl Virus, Source of Technology should be checked</li> <li>In OFT Title: Assessment of rhizome rot disease management in Ginger, COC can be used upto 8kg/hectare</li> <li>In FLD Title: Popularization of IPM in Paddy major Pests, collaborate with Company for Light Trap of Insects</li> <li>In OFT Title: Development of competitive skills of farmers and farm Women as entrepreneurs, Methodology should be changed</li> <li>In FLD Title: Impact of Digitization, here the word Impact should be replaced by assessment.</li> </ul>

	<ul style="list-style-type: none"> <li>In FLD where Marigold is used, the unit used should be changed to Numbers/hectare (nos./ha) and not to put in Quintal/hectare (q/ha)</li> </ul> <p style="text-align: right;"><b>(Action: KVK, Dhalai)</b></p>
5	<ul style="list-style-type: none"> <li>Cropping sequence should be changed, under technology options in OFT</li> <li>First write the major crop followed by the minor crops in OFT</li> <li>In OFT-11 Title: Assessment on adoption and knowledge level of Paddy farmers in using Trichogramma spp., mention the sampling method used.</li> <li>In OFT 12 Title: Assessment of knowledge level of farmers on organic farming <ul style="list-style-type: none"> <li>Under prioritized problem- Inadequate knowledge is not a correct problem so choose another problem to match the OFT</li> </ul> </li> <li>FLD-1 Title: Popularization of zero tillage pea cultivation under rice fallow at Rabi Season <ul style="list-style-type: none"> <li>The word zero tillage should not be written, it should be changed to minimum tillage</li> </ul> </li> <li>FLD-5 Title: Demonstration method on Fish disease control and water quality management in aquaculture <ul style="list-style-type: none"> <li>Among the parameters, water quality test should be added since the title also reflects about the water quality</li> </ul> </li> <li>FLD Title: Perception of Pesticides dealers toward pest management in North Tripura, the design should be checked since it is not correct design</li> <li>In FLD 9 Title: Popularization of Guinea Grass, <ul style="list-style-type: none"> <li>Fodder Data should be taken</li> <li>Effect of fodder on milk yield should be given separately</li> </ul> </li> <li>FLD- 10 Title: Popularization of Kadaknath <ul style="list-style-type: none"> <li>Cost involvement calculations are wrong and it should be checked</li> </ul> </li> </ul> <p style="text-align: right;"><b>(Action: KVK, North Tripura)</b></p>
6	<ul style="list-style-type: none"> <li>OFT Title: Training need assessment – Methodology should be checked</li> <li>OFT Title: IPM in Brinjal against Fruit and Shoot Borer <ul style="list-style-type: none"> <li>Source of Technology is not available in the slide</li> </ul> </li> <li>OFT Title: IPM in Chilli <ul style="list-style-type: none"> <li>Source of Technology is not available in the slide</li> </ul> </li> </ul> <p style="text-align: right;"><b>(Action: KVK, Gomati)</b></p>
7	<ul style="list-style-type: none"> <li>Title of OFT-3 &amp; 4 problem diagnosed should be corrected as “Poor existing variety of low nutrient content”</li> <li>OFT-5: pruning 20 days interval from 20<sup>th</sup> March 2022 under technology details.</li> <li>FLD-3: Horticulture, Arka Rakshak should be replaced with another variety.</li> <li>FLD-6: chemical 2,4-D should be replaced with other suitable technology.</li> <li>OFT 1 Title: Assessment of different sowing dates of Aus paddy to optimize cropping sequence <ul style="list-style-type: none"> <li>Date of sowing in this OFT is not correct and it should be clarified</li> </ul> </li> <li>OFT 6 Title: Assessment of optimum stocking density in multiple stocking and harvesting of Carp grow out system <ul style="list-style-type: none"> <li>The stocking density is not correct, it should be checked and corrections to be made</li> </ul> </li> </ul> <p style="text-align: right;"><b>(Action: KVK, Unakoti)</b></p>
8	<ul style="list-style-type: none"> <li>OFT Title: Fertilizer of NPK on Paddy <ul style="list-style-type: none"> <li>There are different Treatments T1 to T4 – all of them should be noted differently to specify the different treatments</li> </ul> </li> <li>OFT Title: Empowering SHGs’ through skill training, here check the methodology</li> <li>FLD Title : Demonstrating Biofortified Maize HQPM 5 <ul style="list-style-type: none"> <li>The cropping sequence should be corrected</li> </ul> </li> <li>FLD Title : On Gomati- Since state has already adopted Gomati rice variety there is no need for taking as FLD on Adoption of Gomati</li> </ul>



**DDG (AE), ICAR interaction on 22<sup>nd</sup> July, 2023 with Host institutes/ KVKs emerged the following points for action-**

- Monitoring mechanism for KVK activities and programmes under ICAR RC for NEH Region must be established and strengthened.
  - Timely fund utilization and submission of AUC for KVKs must be taken with utmost care and priority by ICAR RC for NEH Region, Umiam. This is also applicable for all KVKs under different host institutes for compliance.
  - Central Agril. University (CAU), Imphal may initiate actions for preparation of revised technology inventory with the latest technologies available from different sources for the benefit of different stakeholders.
  - Documentation on feedback information from extension to research system out of trials and demonstrations of technologies by KVKs in farmers' field.
  - To ascertain and record number and details of technology recommendations made by KVKs incorporated in the Package of Practices of State Department of Agriculture along with action plan for next year.
  - OFTs in extension discipline will be designed as per the samples of OFT to be shared by the Division of Agricultural Extension, ICAR, New Delhi and accordingly plan OFTs in Extension for the next year.
  - Convergence of KVKs with line departments and agencies like ATMA in various programmes and activities for the benefit of farmers in the zone.
-