ICAR-CENTRAL ISLAND AGRICULTURAL RESEARCH INSTITUTE
PORT BLAIR – 744 101

MINUTES OF THE PROCEEDINGS OF THE TWELFTH INSTITUTE RESEARCH COMMITTEE MEETING HELD DURING ON 7TH AND 8TH NOVEMBER, 2019

The XII Institute Research Committee (IRC-2019) Meeting for Institute funded projects was held during 7th and 8th November, 2019 at Dr. N.T. Singh Conference Hall under the Chairmanship of Dr. B. Gangaiah, Director (Acting), CIARI. Dr. T.V.R.S. Sharma, Ex-Emeritus Scientist, ICAR-CIARI & Member to GB, ICAR, New Delhi Dr. P. Mohan, Professor, Pondicherry University, Dr. K.A. Naveen, Senior Veterinary Officer, DAH&VS, Port Blair and Dr. Arun Kumar, Director, ANSWSM, Port Blair and were the experts during the IRC. All the scientists of the Institute were attended the meeting.

At the outset, Member Secretary, welcomed Chairman, experts and scientists. In his remarks, he emphasized that the role of PME is to facilitate the projects and its monitoring and evaluation. Every scientist has to submit the RPP/RPF documents within the stipulated time frame to the PME cell. It has been observed that many scientists have not yet submitted even RPP I document and urged everyone to stick to the timeline and submit the pending RPP/RPF document.

In his opening remarks Dr. B. Gangaiah thanked the expert members and urged the house to participate in scientific discussion for improvement of the projects.

The presentation started with the ongoing projects as per the schedule:

ONGOING PROJECT

Social Science Section

1. Indigenous adaptation strategies of tribal vis-vis non-tribal farmers and impact of CIARI technologies in mitigating clime change effects on agriculture in Andaman & Nicobar Islands.

PI: R. Jaya Kumaravaradan, **Co.PIs:** S.K. Zamir Ahmed, B. Augustine Jerard, B.L. Kasinath, L.B. Singh, S.K. Pandey, Amit Srivastava & A. Kundu

Period : 2018 -2021, **Project Code :** HORTCIARISIL201801800204

Presented by : R. Jaya Kumaravaradan

Interaction: Dr. T.P. Swarnam suggested reviewing the works of Dr. P.K. Aggarwal for strengthenig climate resilience and economic impact studies of techologies.

Action points: The PI to review the works of Dr. P.K. Aggarwal to strengthen climate resilience and economic impact studies of technologies.

Remarks: The house approved the project to be continued

2. **Agricultural Information Sharing and Knowledge Generation Towards Sustainable Management of Island Ecosystem with Special Reference to Fishery by Developing Mobile Apps.**

PI : D. Karunakaran , **Co. PI :** R. Kirubasankar

Period : 2018-2021 , **Project Code :** HORTCIARISIL201801900205

Presented by : R. Kirubasankar

Interaction :

- Dr. S. Dam Roy enquired how the fisher folk who are mostly illiterate could handle the App for which Dr. R. Kirubasankar informed that necessary capacity building programmes will be conducted for the fisher folk to efficiently utilize the App.
- Dr. S. Dam Roy further suggested to include fish price data in the App for which Dr. R. Kirubasankar replied the price data will be included in course of time.
- Dr. A. Kundu enquired about the Application's user friendly features for which Dr. R. Kirubasankar informed that the App is being designed in the simplest possible way for usage by common people.

Action Points:

- To include price data in the Application.
- To conduct sensitization programme for the stakeholders.

Remarks: The House approved the project to be continued.

Fisheries Science Division

3. **Characterization of *Bacillus* spp. from Andaman Mangroves and Evaluation of its Antagonistic Effect on Fish Pathogens.**

PI: K. Saravanan, **Co PIs**: T. Sivaramakrishnan, J. Praveenraj, Harsha Haridas and Kiruba Sankar, R

Period:2015-2019, **Project Code**: HORTCIARISIL201501200169

Presented By: K. Saravanan

Interaction:

Dr. K. Saravanan explained in detail about the progress of the project such as characterization of *Bacillus* spp. along with *invitro, invivo* and field evaluation of potential Bacillus isolates. Dr. B. Gangaiah, Chairman, IRC enquired about the phosphorous solubilisation potential of Bacillus isolates. Dr. K. Saravanan replied that as the project was aimed at evaluating the dietary probiotic potential of Bacillus isolates and hence could not focus on phosphorous solubilisation. S. Dam Roy, I/c FSD congratulated for executing the project in a well-planned manner. As all the objectives were met, the PI recommended for closure of the project.

Action Point: The Chairman and house approved the project to be closed.

4. Cataloguing Inland Aquatic Diversity and Breeding of Indigenous Freshwater Fishes of Andaman and Nicobar Islands

PI: J.Praveenraj, **Co PIs**: R.Kirubasankar, Benny Varghese

Period: 2015-2019, **Project Code**:HORTCIARISIL201501100168

Presented By: J.Praveenraj

Interaction: Dr.J.Praveenraj summarized the research progress which includes new records and new species description. Dr. S. Dam Roy appreciated the project and highlighted the importance of killi fish which is used for mosquito eradication and *Danio rario*having importance in fish genetic studies. Dr. A. Kundu asked about the application of this project output for which Dr.J.Praveenraj replied that the candidate indigenous fish species can be promoted for its ornamental and food value. As all the objectives were met, the PI recommended for closure of the project.

Action Point: The Chairman and house approved the project to be closed.

5. Seaweed Diversity and its Culture Prospects in *in-situ* Conditions of Andaman

PI: Harsha Haridas, **Co PIs:** S. Dam Roy, K.Saravanan, A.K.O. Ratheesh and Kirubasankar,R

Period:2015-19, **Project Code**: HORTCIARISIL201501300170

Presented By: Harsha Haridas

Interaction: Dr. T.P.Swarnam enquired about the relevance of site selection studies under the project. PI replied that the Tsunami inundated areas can be effectively utilized for mariculture activities such as seaweed culture. Dr. A. Kundu raised the query of the prospects of seaweed culture in Andaman. The PI answered the culture is restricted due to scarcity of seed availability, rough weather conditions and crocodile infestations. Dr. Jaisankar asked about the previous studies on seaweed diversity of North and South Andaman. Dr. S. Dam Roy replied that there are publications especially CMFRI has published bulletin regarding the seaweed diversity across the Islands. Dr. K. Sakthivel enquired about the indigenous seaweed species for conducting metagenomics study. PI replied that *Gracilaria* species can be chosen for the work owing to its commercial application. Dr. B. Gangaiah, Chairman, IRC mentioned about the importance of seaweeds as well as the threat to diversity due to the non-native seaweed introduction through ballast water to the house. It was recommended to maintain the resources collected. The PI outlined the difficulties in conducting outdoor culture experiments due to scarcity of seed materials, adverse weather conditions with logistical issues. Considering the field level issues the PI requested the house to drop the outdoor cultivation objective. As all other objectives were met, the PI recommended for closure of the project.

Action Points: The Chairman and house approved the project to be closed.

6. Evaluation of Suitable Aquaponics System Incorporating Fisheries and Agri Components under the Island conditions.

PI: Harsha Haridas, **Co PIs:** S.Dam Roy, T.Subramani, K. Saravanan, Benny Varghese and S.Murugesan

Period: 2018-2021, **Project Code**: HORTCIARISIL201801700203

Presented By: Harsha Haridas

Interaction: Dr. A.Kundu enquired about the light constrain faced during the set up of aquaponics system. PI replied that it is corrected by taking appropriate measures by providing artificial lights to the plants and in future the set up shall be installed as outdoor system where enough sunlight will be available for the plants. Dr. S. Dam Roy appreciated the work which gave an innovative approach for aquaculture and its application in the peri-urban aquaculture concept. He suggested to carry-out the trials using hardy fish such as Tilapia. Dr. K. Abirami suggested that some of the leafy vegetables and cucurbits may be tried for the study. Dr. B. Gangaiah, Chairman, IRC suggested to explore the possibilities to extrapolate the work by transferring to the pond based system.

Action Points: The house approved for continuation of the project.

7. Documentation of Indigenous Fishing Practices of Nicobari Tribes

PI: A K O Ratheesh, **Co PIs**: Harsha Haridas, S.K. Zamir Ahmed, S.K. Pandey, Nagesh Ram & S. Dam Roy

Period: 2017-2019, **Project Code**: HORTCIARISIL201700400177

Presented By: Not presented

Interaction: Dr. S. Dam Roy, Head FSD informed the house that no communications were made by PI regarding the project progress for IRC. Hence the same was recommended for review in the next IRC with intimation to the PI of the project. The Head, FSD also requested the Chairman, IRC to ensure the presence of Scientist In-charge of Regional station, Minicoy for scientific deliberations in future.

Action Points: The house approved the project to continue.

8. Biology of Blue Fin Trevally (*Caranxmelampygus*) from Andaman Waters

PI: A K O Ratheesh, **Co PIs**: S. Dam Roy, R. Kirubasankar

Period:2017-2020

Project Code: HORTCIARISIL201700500178

Presented By: - Not presented

Interaction: Dr S Dam Roy, Head FSD informed the house that no communications were made by PI regarding the project progress through presentations for IRC. Hence the same was recommended for review in the next IRC with intimation to the PI of the project. The Head, FSD also requested the Chairman, IRC to ensure the presence of Scientist In-charge of Regional station, Minicoy for scientific deliberations in future.

Action Points: The house approved the project to continue.

Animal Science Division

9. Prevalence and economic impact of gastro-intestinal parasites of livestock in Andaman and Nicobar Island

PI: D. Bhattacharya, Co.PIs: M.S. Kundu, Jai Sunder, T. Sujatha, Perumal P, A. Kundu, Zachariha George and Arun Kumar De

Period: 2017-2020, **Project Code :** HORTCIARISIL201700100174

Presented by : D. Bhattacharya

Interaction:

- The chairman, IRC and the house was satisfied with the overall progress of the project.
- Considering the importance of the findings, Dr. A.Kundu asked for the preparation of a leaflet which may be useful for the farmers and the stakeholders in parasite control .

Action Points:

- Preparation of Leaflet toward the parasite control to stakeholders in line
- Prevalence of gastrointestinal parasites in swine

Remarks : The house approved the project to be continued.

10. Molecular epidemiology of Rhipicephalus microplus comples in A&N complex and screening for its acaricide resistance.

PI: D. Bhattacharya, **Co.PIs:** Jai Sunder, K. Muniswamy, R.R. Alyethodi, Perumal P, Arun K De, A. Kundu, S.K. Zamir Ahmed and Zacharia George

Period: 2018-2021, **Project Code:** HORTCIARISIL201801500201

Presented by: D. Bhattacharya

Interaction: The chairman IRC and house house was satisfied with the overall progress of the project.

Action Points: Study on *In vitro* and *in vivo* screening for acaricide resistance

Remarks: The house approved the project to be continued.

11. Augmentation of fodder resources to improve livestock productivity in Andaman & Nicobar Islands.

PI: M.S. Kundu, **Co-PI:** B. Gangaiah, T. Sujatha and A. Kundu

Period: 2015 – 2018, **Project Code:** HORTCIARISIL201500900166

Presented By: Not presented.

Interaction: Project was closed during last year IRC. Hence documents including RPP-III need to be collected and submitted to the PME by concerned Co-PI of this project.

Action Points: Project related documents such as RPP-III should be collected and submitted to the PME by concerned Co-PIs of the project.

Remarks : Submit the RPP-III and other documents related to the project

12. Pharmaco assessment of ethno-veterinary medicinal plants of A&N Island for poultry diseases.

PI: T. Sujatha, **Co.PIs: :** Jai Sunder, A. Kundu, D. Bhattacharya and A. K. De

Period: 2017-2020, **Project Code:** HORTCIARISIL201700200175

Presented by: T. Sujatha

Interaction:

- Dr. S. Dam Roy was with opinion that scientific names of different herbs included in the project should also be included along with their common or local names.
- Dr. A.Kundu urged for the development of Products from the ethnoveterinary medicinal plants.

Action Points:

- Invitro evaluation of identified EVM plants of tribes
- In vivo studies : Influence on production and immunity
- Study on cytotoxicity

Remarks : The house approved the project to be continued.

13. Selection and breeding of Nicobari fowl for its immunity and its evaluation under different seasons

PI: T. Sujatha, **Co.PIs:** Rafeeque R.Alyethodi, D.Bhattacharya, AK De, Jai Sunder and A.Kundu

Period: 2018-2021 **Project Code :** HORTCIARISIL201801600202

Presented by : T.Sujatha

Interaction:

- Dr. S. Dam Roy queried regarding the parameters taken under the project towards the immune measurement. T.Sujatha replied that cell and humoral mediate responses are taken.
- Dr. Dam Roy further queried regarding published reports on existence of immunity in nicobari fowl. Dr. A. Kundu replied that they have published papers including british poultry sciences. Further he narrated that the moto behind the project is to purify the stock based on their immune status.
- Dr. R.K Guatam was opinioned that the pathogen evolves and dynamically changes their pathogenicity and hence need to be confirmed that a particular flock is immune in the existing condition which was supported by Dr. D. Bhattacharya.

Action Points:

- Collect birds from endemic areas such as from Nicobar group of Islands along with collections from DPR. Hyderabad.

- Long shank birds may be culled as they are not true breeds
- Studies of mRNA expression for MHC Ags
- *Seasonal assessment & Contemporary comparison for* Egg production, MHC Ag levels, Blood profiling and Biochemical profiling
- Selection for highly homogenous MHC Ag (Parent Stock)

Remarks : The house approved the project to be continued.

14. Supplementing Zinc and Chromium to ameliorate heat stress in poultry

PI: P.A Bala, **Co.PIs:** Jai Sunder, T.Sujatha, A.K De, M.S Kundu and A.Kundu

Period: 2018-2021, **Project Code:** HORTCIARISIL201801400200

Presented by : P.A Bala

Interaction:

- Dr. P.A Bala informed that no feeding trails started under the project.
- It was opinioned by the chairman IRC that no need of presenting growth rate data which are not done under the project.
- Chairman IRC remarked that the project progress is not satisfactory and need major attention.

Action Points: Major focus on the project implementation and start of feeding trails as per the objectives approved

Remarks : Need to be improved.

15. Molecular signatures of eco-sustainability of Indigenous livestock breeds of A&N Island and Lakshadweep

PI: Dr. Arun Kumar De, **Co.PIs:** Jai Sunder, M.S.Kundu, D. Bhattacharya and A. Kundu

Period: 2017-2019**, Project Code:** HORTCIARISIL201700800181

Presented by: Arun Kumar De

Interaction:

- Informed the house that major objectives are achieved in this project and need some more time for the completion of the third objective i.e Genetic diversity of indigenous livestock breeds of Andaman and Nicobar islands based on mitochondrial markers hence requested extension till March 2020.
- House appreciated satisfactory progress made under the project
- Dr. A.Kundu suggested to include Lakshadeep goat, if possible and network project on buffalo may be applied

Action Points: Genetic diversity of indigenous livestock breeds of Andaman and Nicobar islands based on mitochondrial markers.

Remarks : The house approved the extension for the project till March 2020.

16. Development of Molecular Marker for Reproductive Performance and Egg Quality Evaluation in Chicken

PI: Arun Kumar De, **Co.PIs:** D. Bhattacharaya, Jai Sunder, P. Perumal, T. Sujatha, and A. Kundu

Period: 2018-2021, **Project Code :** HORTCIARISIL201801100197

Presented by : Arun Kumar De

Interaction: Dr. A.K De presented the progress made based on the existing deep litter system of poultry and pointed need of cage system of poultry rearing for this project for getting precise information on production and other parameters.

Action Points : Genotyping of Nicobari birds based on markers and its association with productive performance

Remarks : The house agreed the project to be continued

17. Molecular characterization of immune system genes of Nicobari fowl

PI: K. Muniswamy, **Co.PIs:** T. Sujatha, A.K.De, Jai Sunder, A. Kundu and D.Bhattacharya

Period: 2017-2020**, Project Code:** HORTCIARISIL201700300176

Presented by: A.K De

Interaction:

- Requested Rs. 2.0 lakhs for other objectives of the work ie.TLR receptor genes sequencing.
- The chairman, IRC and the house was satisfied with the overall progress of the project.
- The variability of Nicobari fowl should be increased by collection of more pure nicobari fowls from the Nicobar Islands and if need may be procured on payment basis.

Action Points:

- Purchase of Nicobari fowl from Nicobar Islands, if needed
- Characterization of Toll-like receptor genes of Nicobari chicken to be carried out.

Remarks : The house approved the project to be continued.

18. Physical and biochemical characterization of the semen vis-à-vis study on feasibility of artificial insemination in pig breeds of Bay Island

PI: S.K. Ravi, **Co.PIs:** Perumal, P., M.S. Kundu, D. Bhattacharya, Jai Sunder, Arun Kumar De, Rafeeque R. Alyethodi

Period: 2018-2021, **Project Code :** HORTCIARISIL201801200198

Presented by : S.K Ravi

Interaction:

- The chairman, IRC and the house was satisfied with the overall progress of the project.
- Dr. S.K Ravi requested the procurement of BOD for semen storage in liquid state.

Action Points: Continue with the other proposed objectives.

Remarks : House approves the project to be continued

19. Studies on endocrinological and biochemical profiles of bovine species for enhancing fertility in Bay Islands

PI: Ponraj Perumal, **Co.PIs:** M.S Kundu, D. Bhattacharya, Jai Sunder, A. K. De and A. Kundu

Period: 2017-2020 , Project Code: HORTCIARISIL201701300186

Presented by: P. Perumal

Interaction: The chairman, IRC and the house was satisfied with the overall progress of the project.

Action Points: Study the endocrinological, biochemical and heamatological profiles of reproductively affected animals

Remarks : The house approved the project to be continued.

20. Biochemical and molecular mining of hormonal profiles of buck under abiotic stressors and managemental interventions for its mitigation

PI: Ponraj Perumal, **Co.PIs:** S.K. Ravi, Arun Kumar De, Rafeeque. R. Alyethodi, K. Muniswamy, J. Sunder and A. Kundu

Period: 2018-2021, Project Code : HORTCIARISIL201801300199

Presented by: Dr. Ponraj Perumal

Interaction: The chairman, IRC and the house was satisfied with the overall progress of the project.

Action Points: Study the effect of melatonin implantation on endocrinological, biochemical and scrotal and testicular profiles of caprine species (buck) in different seasons.

Remarks : The house approved the project to be continued

21. Identification of Genome-wide molecular signatures responsible for higher fecundity in Andaman Local goats.

PI: Rafeeque R. Alyethodi, **Co.PIs:** A. Kundu, Jai Sunder, Arun Kumar De, Karunakaran, Perumal, A.P Bala and S.K Ravi

Period: 2018-2021 **Project Code:** HORTCIARISIL201801000196

Presented by : Rafeeque R. Alyethodi

Interaction:

- Dr. Rafeeque informed the house that the project methodology planned whole genome sequencing (WGS). A quotation of aprox 2.8 lakh rupees has been submitted for approval. Due to financial

crisis of the Institute, it was not sanctioned. Hence he taken a candidate gene approach and presented data accordingly.

- The WGS will be carried out in coming years, and requested for the money.
- The chairman, IRC and the house was satisfied with the overall progress of the project.

Action Points:

- Whole genome sequencing of Andaman Local goats.
- Candidate Gene approach for Kisspeptin exon 2, Inhibin, BMP genes
- Development of DNA tests for screening of identified SNPs

Remarks : The house approved the project to be continued.

Field Crops Improvement & Protection Division

22. Genetic improvement of rice for higher productivity in Andaman and Nicobar Islands.

PI: P.K. Singh, **Co-PIs:** R. K. Gautam, B. Gangaiah, S.K. Zamir Ahmed, K. Sakthivel, T. Bharathimeena and B. L. Meena

Period: 2017-2021, **Project Code**: HORTCIARISIL201700700180

Presented by: P.K. Singh

Summary: PI told different number of rice lines were evaluated for various yield and related traits. Among them over the years highest average grain yield were recorded for ANR 51 (5.16) compared to best check (CARI Dhan 7) (5.11). The rice lines were also evaluated for Bacterial Leaf Blight (BLB). Four lines viz. ANR 51 (5.16), ANR 43 (5.10), ANR 47 (5.09), ANR 53 (5.09) and ANR 44 (4.97) were found superior compare to check variety were selected for further evaluation in multiplication trials.

Interaction: The house discussed about the problems like bird damage and flash floods. The Chairman suggested small area of experiment can be protected with erecting aluminum sheets with mosquito net. PI informed that an indent has been given for purchasing of bird scaring device.

Remarks: The chairman approved the project to continue

23. Augmenting rice productivity through varietal purification of popular land races

PI: R.K. Gautam, **Co-PIs:** P.K. Singh, S.K. Zamir Ahmed, K. Sakthivel, S. Swain, Pooja Kapoor, Srividya S, Joshitha Vijayan and Rakesh B

Period : 2012-2018**, Project Code :** HORTCARISIL201200100146

Presented by: R.K.Gautam

Summary: PI presented that one high yielding selection in Khushbayya and two in Black Burma land races were found to be superior across years and locations. Data on FLDs and seed production of CARI DHAN 8 and CARI DHAN 9 was presented. MAS derived bacterial blight resistant-back crossed lines of C-14-8 and CARI DHAN 5 were genotyped and advanced.

Interaction: PI sought extension of the project until March 2019 to complete remaining project works. Dr. R.K Gautam requested the house to include Srividya S, Joshitha Vijayan and Rakesh B as Co-PI for completing the project work which was approved by the house.

Remarks: The project approved with inclusion of include for extension up to March 2019 with inclusion of Srividya S, Joshitha Vijayan and Rakesh B as Co-PIs.

24. Characterization of Viral diseases of Important Vegetable Crops of Andaman and Nicobar Islands and Development of Eco-friendly Integrated Disease Management (IDM) Modules.

PI: K. Sakthivel, **Co-PIs:** R.K. Gautam, P.K. Singh, K. Venkatesan, V.K. Pandey, V. Baskaran, T. Bharathimeena, Soobedar Yadav

Period : 2018-2021, **Project code :** HORTCIARISIL201800800194

Presented by: K. Sakthivel

Summary: PI presented that the characterization of chili leaf curl symptoms from 15 samples collected from South Andaman Islands and it revealed the presence of Tomato Leaf Curl Joyedpur Virus. He also informed the P, K, Zn, N mobilization potential of 12 *Bacillus* species collected and maintained which includes CIARI Bio-consortia strains till date and which could be well utilized for induced host resistance in viral disease management under islands in coming years.

Interaction: House discussed about the ways to identify the potential ability of bacteria to fix N. PI clarified that the same will be known by growing the bacteria in N-free medium.

Remarks: The chairman approved the project to continue

25. Enhancing pulse productivity of Andaman & Nicobar Islands through development and promotion of high yielding and stress tolerant varieties.

PI: Venkatesan, K., **Co-PIs:** R.K. Gautam, K. Sakthivel, P.K. Singh, S.K. Zamir Ahmed and Joshitha Vijayan

Period: 2018-2021, **Project code :** HORTCIARISIL201800700193

Presented by: Venkatesan, K

Summary: PI presented the last year progress on green gram black gram and beach pea about their collection, evaluation and data analysis. PI informed that three potential *Rhizobium* isolates (as CIARI-RHIZO) were identified from collected root nodules. PI highlighted the RAC recommendation to include improved lines from IIPR and the request has been sent for the same and trait specific pulse breeding for salinity, drought and Yellow mosaic virus to be carried out.

Interaction: The chairman appreciated the identification of three potential Rhizobium isolates to constitute the product CIARI-RHIZO. PI sought permission of the house to include Dr. JosahithaVijayan as Co-PI to assist in molecular activities.

Remarks: The chairman approved the project to continue with the inclusion of Dr. JosahithaVijayan as Co-PI to assist in molecular activities.

Natural Resource Management

26. Vulnerability assessment and adaptation led mitigation strategies of Andaman and Nicobar Islands farming to climate change

PI: B. Gangaiah, **Co-PIs:** T. Subramani, S. Swain, B.K. Nanda, V. Damodaran, K. Lohit Kumar, M.S. Kundu and A. Velmurugan

Period: 2015-2019, **Project Code:** HORTCIARISIL201500100158

Presented by: B. Gangaiah

Interaction: Hay, silage and fodder quality for animal feeding were discussed.

Action Points: Estimation of Silica content in rice fodder.

Remarks: To be extended up to March 2020 for achieving the Silica estimation from the date of IRC 2019.

27. Assessment of post harvest losses in fruits and vegetables and strategies for their reduction in the Islands.

PI: S. Swain , **Co-PIs:** S. K. Zamir Ahmed, L. B. Singh, Chandrika Ram, Manoj Kumar, T. Ahmed and P. Misra Sahoo

Period: 2015-2019, **Project Code:** HORTCIARISIL201500300160

Presented by: S. Swain

Interaction:

- Deliberation was made by the PI on the work done: estimation of post harvest losses from a survey of 58 families in 10 villages of Andaman & Nicobar Islands.
- PI requested for closure of project.

Action Point: Achievements and concluding work to be included in RPP III.

Remarks: The house approved the project to be closed.

28. Development of nutraceutical beverages from potential underutilized fruits and medicinal herbs of Andaman and Nicobar Islands

PI: S. Swain, **Co-PIs:** K. Abirami, Pooja Bohra and Pooja Kapoor

Period: 2015-2019, **Project Code:** HORTCIARISIL201500200159

Presented by: S. Swain

Interaction:

- In-vitro digestion was discussed to reveal bioavailability and bioaccessibility of noni juice

components in human model system.
- PI requested for closure of project.

Action Points: Achievements and concluding work to be included in RPP III.

Remarks: The house approved the project to be closed.

29. Development of production technologies for high value vegetables is soil less culture

PI: T. Subramani , **Co-PIs:** B. Gangaiah and V. Baskaran

Period: 2017-2020, **Project Code:** HORTCIARISIL201700600179

Presented by: T. Subramani

Interaction:

- Feasibility of hydrophonic maize fodder cultivation for dairy farming in Islands.
- Inclusion of local leafy vegetables in the vertical farming system.

Action Points:

- Economical feasibility analysis of soilless cultivation.
- Quality analysis of vegetables grown in soilless media and soil.

Remarks: The house approved the project to be continued with suggested modifications.

30. Organic farming studies for sustaining productivity of Island cropping system

PI: Kiran K. R., **Co-PIs:** B. Gangaiah, A.Velmurugan and K. Sathivel

Period: 2018-2023, **Project Code:** HORTCIARISIL201800900195

Presented by: Kiran K. R.

Interaction: Deliberation was made by the PI that coconut based multi tier cropping system was initiated along with FYM application.

Action Points: Nil

Remarks: The house approved the project to be continued.

Horticulture & Forestry Division

31. Conservation and utilization of coconut and arecanut genetic resources of Andaman and Nicobar & Lakshadweep Islands for high yield and product diversification

PI: B.A Jerard, **Co.PIs**: V. Damodaran, Soobedar Yadav, I Jaisankar, & S.K. Zamir Ahmad

Period: 2018-2023, **Project Code:**HORTCIARISIL201800200188

Presented by: B.A. Jerard

Interaction: The chairman emphasized upon the importance of plantation crops, particularly coconut and arecanut in ANI and the Institute needs to strongly focus on research in this line.

Action Points: To focus on the development of island suitable coconut and arecanut varieties.

Remarks The house approved the project to be continued

32. Improvement of vegetable and tuber crops for Andaman and Nicobar Islands.

PI: B.A Jerard, **Co.PIs: V.** Damodaran, Soobedar Yadav, I Jaisankar, S.K Zamir Ahmad. L.B Singh and B.L. Kasinath

Period: 2018-2022, **Project Code:**HORTCIARISIL201800300189

Presented by: B.A. Jerard

Action Points:

- Institute should focus on local genotypes of the indigenous vegetables for the development of new line/ varieties.
- Give more emphasis to Brinjal, Chilli, and indigenous leafy vegetable and targeted tuber crops.

Remarks: The house approved the project to be continued

33. Quality planting material production in horticultural crops.

PI: B.A Jerard, **Co. PIs:** V Baskaran, K Abirami, I Jaisankar, Ajit Arun Waman, Pooja Bohra, Soobedar Yadav, V Damodaran& S.K. Zamir Ahmad

Period: 2018-2024 **Project Code:** HORTCIARISIL201800500191

Presented by: B. A Jerard

Interaction:

- The work to be strengthen with the mother garden at the institute
- Chairman suggested to fulfil the demand of planting material with the help of institute and external fund project. He appreciated the necessity of project for the island farmers

Action Points: Supply the suitable planting materials as desired to be made available time to time for the Island farmers.

Remarks The house approved the project to be continued.

34. Development of production technology for ornamental crops in Bay Islands

PI: V. Baskaran, **Co.PIs**: K. Abirami and A. Velmurugan

Period: 2015-2019, **Project Code**: HORTCARISIL201100400140

Presented by: V. Baskaran

Interaction:

- The project is permitted to be extended till march 2020
- Jasmine sp. evaluation to be continue.
- Marigold and specialty flower to be demonstrated in the farmer garden/field

Action Points:

- The potential native ornamentals species identified are to be promoted in island climate.
- Final report to be submitted by 2020 and new project with clearly identified crop to be proposed.

Remarks: The house approved the project to be continued till march 2020.

35. Exploiting endemic and promising orchids of Andaman and Nicobar Islands from crop improvements

PI: V. Baskaran, **Co.PIs:**

Period: 2018-2022 Project **Code:** HORTCIARISIL201800400190

Presented by: V. Baskaran

Interaction: To collect and conserve all available endemic genus/species orchid in the institute and initiate the crop improvement work for the development of new lines/varieties.

Action Points: Developing the export potential varieties of orchid from Andaman island endemic germplasm.

Remarks : The house approved the project to be continued.

36. Enriching coconut plantations of Andaman and Nicobar Islands through augmentation of indigenous multipurpose tree resources

PI: I.Jaisankar, **Co. PIs:** B.A Jerard, T.P Swarnam&V Damodaran

Period: 2018-2022 Project **Code:** HORTCIARISIL201800600192

Presented by: I Jaisankar

Interaction: Chairman imquired the potential of the indigenous multipurpose trees as fodder crop.

Action Points: New multi-purpose tree to be identified from the endemic spp for further evaluation and promotion.

Remarks The house approved to continue the project

37. Collection, conservation and evaluation of commercial fruits crops of Andaman & Nicobar Islands

PI: K Abirami, **Co.PIs**: V. Baskaran, B.A Jerard, Sachidananda Swain, K. Venktesan, D Basantia& Pooja Kapoor

Period: 2018-2023, **Project Code:** HORTCARISIL201800100187

Presented by: K Abirami

Action Points:

- Emphasized on local cultivar and germplasm/genotype for increase the production and productivity of fruits crop
- Focus on Guava, Mango, acid Lime as per RAC suggestion.

Remarks: The house approved to continue the project.

38. Collection, characterization, evaluation and mass multiplication of unconventional native and exotic fruit crops for bay islands.

PI: Pooja Bohra, **Co.PIs**: Ajit Arun Waman, T. Bharathimeena and S.K. Zamir Ahmed

Period: 2015-2021, **Project Code:** HORTCIARISIL201500800165

Presented by: B.A. Jerard (as Dr Pooja Bohra was on leave)

Interaction: Chairman inquired about the potential and demand of unconventional and exotic fruit crops in islands.

Action Points:

- Focus on locally available crop/genotypes of minor fruits & popularized it among the island farmers, instead mainland minor fruit crops.
- Maintain the mother blocks of improved commercial varieties for the multiplication.

Remarks The house approved the project to be continued.

39. Development of protocols for micro-propagation of selected fruit crops for Bay Islands

PI: Pooja Bohra, **Co.PIs**: Ajit Arun Waman, and L.B. Singh.

Period: 2015-2021, **Project Code**: HORTCIARISIL201500700164.

Presented by: B.A. Jerard(as Dr Pooja Bohra was on leave).

Interaction:

- Tissue culture plants hardening to be completed& evaluated in the field.

Action Points:

- Conserve the fruits germplasmfor the crop improvement work.
- Providing micro-propagated planting materials to island farmers.

Remarks: The house approved the project to be continued.

40. Development Collection, characterization and utilization of natural diversity of important Spice crops From Bay Islands and evaluation of their improved varieties

PI: Ajit Arun Waman, **Co.PIs**: Pooja Bohra, T. Sujatha and L.B. Singh
Period: 2015-2019, **Project Code**: HORTCIARISIL201500500162

Presented by: B.A. Jerard (as Dr Ajit Arun Waman was on leave)

Interaction: Chairman asked about the potential of commercial spices cultivation in the island.

Action Points: Focus on local genotypes/crop such as woody pepper.

Remarks: The house approved the project to be continued.

41. Exploration, characterization, micropropagation and agro-technique standardization of an important rhizomatous species-mango ginger from bay islands

PI: Ajit Arun Waman, **Co.PIs**: Pooja Bohra, I. Jaisankar and D. Basantia

Period: 2015-2019, **Project Code**: HORTCIARISIL201500600163

Presented by: B.A. Jerard(as Dr AjitArun Waman was on leave).

Interaction: Package of practices to be brought out as a bulletin.

Remarks: The house approved the project to be continued till march 2020.

42. Collection, characterization and evaluation of selected economically important aromatic crops in Andaman & Nicobar Islands

PI: Soobedar Yadav , **Co.PIs**: K. Abirami, and R.K. Gautam

Period: 2017-2020, **Project Code**: HORTCIARISIL201701000183

Presented by: Soobedar Yadav

Interaction: The Chairman enquired about the scope of aromatic crops in the islands, how it benefitted to farmers.

Action Points:

- Analyze the quality of essential oil obtained from island germplasm.
- Obtain the IC number of newly collected germplasm from Island areas and register unique line if any.

Remarks: The house approved the project to be continued.

43. Augmenting productivity of turmeric and ginger through better genotype and suitable agro-technique in Island climate.

PI: Soobedar Yadav, **Co.PIs**: A.A. Waman, V. Damodaran, S Swain and K. Shathivel

Period: 2017-2020, **Project Code**: HORTCIARISIL201701100184

Presented by: Soobedar Yadav

Interaction: The Chairman enquired about the potential and scope of growing turmeric and ginger in the islands.

Action Points: PI shouldstandardize the drying and essential oil extraction of the ginger.

Remarks: The house approved the project to be continued.

NEW PROJECTS

Natural Resource Management Division

1. Study of hydrological responses for augmenting water resources potential in micro-watershed of South Andaman.

PI: Sirisha Adamala, **Co-PIs:** B. Gangaiah, A.Velmurugan, B.K. Nanda and Tripti Dubey

Period: 2019-2022, Project **Code :** HORTCIARISIL201900200207

Interaction and suggestions:

- Study area can be limited to 3 farms: Garacharma, Sippighat and Nimbudera.
- Runoff losses and its impact on soil erosion and nutrient loss be quantified.
- Scope for further studies on 'desilting and sedimentation at weirs and check dams' at Bednabad and Chidiyatapu.
- Effect of different agricultural land uses on soil erosion to be included excluding urban areas.
- Problem with perennial Nallah at KVK Nimbudera. Include Nimbudera as study location and Co-PIs B.L. Meena and Manoj Kumar.
- Permeability study at different depths in future studies.
- Consider effect of soil texture on erosion.
- Achievable suggestions can be incorporated due to limitation of resources, infrastructure and man power.
- Understanding science gap should be given priority and developmental work may be given to estate section inclusive of scientist.
- Strengthen the work already completed at Kaju Nallah watershed and Garacharma research farm.

Remarks: The house approved the project with suggested modifications to the possible extent. However, the name of Ms. Tripti Dubey as Co.PI. will decided by the office as per rule.

2. Prevalence and diversity of antimicrobial resistance in *Enterobacteriaceae* from poultry, goat, pig, cow, dog and its surrounding environment.

PI: Jai Sunder, **Co.PIs**: A.K De, S. Bandyopadhyay (Sr Scientist , IVRI RS Kolkata), T.Sujatha, D. Bhattacharya

Period: 2019-2022 **Project Code :** HORTCIARISIL201900300208

Presented by : Jai Sunder

Interaction and suggestions :

- House queried about inclusion of Human component in the project. Dr. Jai Sunder replied human component may be considered next year and possibilities will be sought in this regards
- Dr. B.A. Jerad queried about usefulness of this project to the farmers, whether the project comes under the prioritized activity of the Institute, need of 4 man month by the PI and need of resources under the project. Dr. Jai Sunder replied that the farmers will be most benefitted by this project

via Farmers awareness regarding the antibiotic resistance. Further he replied that this project comes under the prioritized activity of the Institute. He justified PI's 4 man month involvement saying this is the only Institute project of the PI as a PI and no special resources are needed under this project.

- House queried about the sample size, PI replied different places of A&N Islands are targeted. The project also envisages collecting samples from Nicobar as they are not exposed to many antibiotics.
- Dr. B. Jerard pointed that No livestock is mentioned in the work plan presented which may be added and agreed by Dr. Jai Sunder. He further narrated that Dogs also included considering its important as a pet animal to human.
- Possibilities of inclusion of stray animals are suggested which later queried and may objected saying that stray dogs are not exposed to antibiotics and may be omitted.
- The external expert Dr. Naveen appreciated the project and suggested to emphasis on which are the antibiotics to be studied and should be specific and accordingly the plan need to be fine tuned. Focus may be given also to the non-pathogenic bacteria. Interaction with ICMR will be fruitful approach. He expressed his hope that this project will come up with suggestions relevant to A&N Islands .

Action Points:

- To study the prevalence of *Enterobacteriaceae* in livestock and poultry, dog and its surrounding environment.
- To study the antimicrobial resistance among the *Enterobacteriacae* isolates.
- To study the clonal relationship of identified pathogenic *Enterobacteriaceae.*

Remarks : The house appreciated the project and approved it.

Fisheries Science Division

3. Seafood quality and safety assessment studies in commercial fish landings of Andaman Islands.

PI: SreepriyaPrakasan, **CoPIs**:S Dam Roy, Deepitha R P, K. Saravanan,HarshaHaridas and Gladston Y

Period: 2019-2022, **Project Code**: HORTCIARISIL201900800213

Presented By: Sreepriya Prakasan

Interaction and suggestions : Dr. T.P.Swarnam suggested to include heavy metal analysis in the study. Dr. S. Dam Roy replied that it can be taken at a later stage of the work. Dr. A. Velmurugan enquired about the post harvest component in the project for which the PI replied about the importance of quality in seafood products. Dr. Debasis Bhattacharya appreciated the work and suggested to propose a projectfor funding from ICMR. He further added to work on pathogens like *Vibrio cholerae* in the study. Another query was raised about the list of pathogens to be studied under the project for which the PI replied that pathogens like *Escherichia coli, Staphylococcus aureus* and *Listeria monocytogens*will be analysed.Dr. A. Velmurugan recommended to work on adulterant studies that would help in identifying the spoiled fishes in the market. Dr. Jaisankar suggested to include awareness programmes for the stakeholders.

Action Points: The house approved the project.

4. Documentation of parasite infecting commercial marine and fresh water of Andaman Island.

PI: J. Praveenraj, **Co PIs:** S. Dam Roy, R. KirubaSankar,K. Saravanan, Gladston, Y.

Period:2019-2022, **Project Code:** HORTCIARISIL201900900214

Presented By: J.Praveenraj

Interaction and suggestions : Dr. Debasis Bhattacharya suggested to include the term 'prevalence' in the title. The external expert, Dr. P.M. Mohan suggested to focus only on freshwater parasites rather than marine for which Dr. S. Dam Roy replied that the studies related to marine parasites is also important from the context of Andaman and Nicobar Islands and hence need to be included in the project.

Action Points: The house approved the project.

5. Assessment of Elasmobranch fisheries of Andaman Islands.

PI: Gladston Y, **Co PIs**: S.Dam Roy, R.Kiruba Sankar, Ajina S.M., DeepithaR.P, Benny Varghese.

Period:2019-2022 ,**Project Code:** HORTCIARISIL201900900214

Presented By: Dr. Gladston Y

Interaction and suggestions : The external expert, Dr. P.M. Mohan suggested that elasmobranch fisheries assessment to be done for all the twenty landed species not restrict to 2 or 3 species. Dr. A. Kundu mentioned to modify the title as elasmobranch fishery with reference to three species. Dr. S. Dam Roy mentioned that population studies of three species itself a huge task and but the data can be collected for all the landed species.Finally, Dr. P. M. Mohan agreed with the present title with assessment of all landed elasmobranch fishes and the population dynamics for the selected common species.He suggested the CMFRI methodology to be followed and advised that more focus should be done at Junglighat landing centre for the data collection.

Action Points: The house approved the project.

6. Exploring the post-harvest utilisation trends and market potential for value added products from commercial fish landings of Andaman.

PI: Deepitha R P, **CoPIs:**S.Dam Roy, SreepriyaPrakasan, Harsha Haridas, Ajina S M, T Sujatha

Period:2019-2022, **Project Code:** HORTCIARISIL201901100216

Presented By: Deepitha, R. P.

Interaction and suggestions: Dr. A Kundu enquired about the fish meal production possibilities in the Islands for which Dr. S. Dam Roy replied that fish meal production requires surplus catch of fishes which may not be possible in these Islands. Dr Mohan suggested to study about the bycatch data of the island for which Dr. S. Dam Roy replied that most of the data related to the

bycatch is already available with the Fisheries Department. He further added the importance of research on post-harvest aspects in these Islands.
Action Points: The house approved the project.

7. Biology and population dynamics of major perch fishes of Andaman Islands.

PI: Ajina S. M., **Co PIs:** S. Dam Roy,Gladston Y, A.K.O Ratheesh, SreepriyaPrakasan, S. Murugesan

Period:2019-2022 , **Project Code:** HORTCIARISIL201901100217

Presented By: Ajina S M

Interaction and suggestions : The external expert, Dr.P.M. Mohan appreciated the project and work plan and explained the importance of the work in the present scenario. Also the importance of study related to biology was appreciated by the expert.

Action Points: The house approved the project.

Field Crops Improvement & Protection Division

8. Evaluation and popularization of native microbial formulations for plant disease management and growth promotion in Andaman and Nicobar Islands.

PI: K Sakthivel, **Co-PIs:** ----

Period : 2020-2022 Project Code : HORTCIARISIL201900400209

Presented by: K. Sakthivel

Interaction and suggestions: The house discussed about scientific components in the project and advised to take major crops with selected traits. Also it was suggested to include one mainland microbial product in each trial from any ICAR institute for comparative evaluations. House informed that this project will help in upscaling the science to the island society by harnessing native solution for crop specific problems in organic farming approaches and also this project facilitates scientific wetting of product performance with the help of concerned scientists in multiple crops.

Remarks: The project was approved. However, the name of Co.PIs to be submitted by PI before submitting the RPP-1.

9. Evaluation of rice genotypes for high phosphorus efficiency in Andaman and Nicobar Island conditions

PI: Joshitha Vijayan, **Co-PIs:** R.K. Gautam, P.K.Singh, Rakesh, B., Srividhya, S., Kiran, K.R., B. Gangaiah

Period : 2019-2022, **Project Code :** HORTCIARISIL201900500210

Presented by: JoshithaVijayan

Interaction and suggestions : The house discussed about the varieties to be included for screening and also suggested to include lines from NRRI, Cuttack, IIRR, Hyderabad and local

rice genotypes. PI sought permission from the house to include a statistician from ICAR-CRIJAF and the same was approved.

Remarks: The project was approved. Approval of Co.PI from ICAR-CRIJAF to be obtained before submitting RPP-I.

10. Development of high yielding and bacterial wilt resistant varieties of Tomato for Andaman and Nicobar Islands

PI: Rakesh, B. , **Co-PIs:** K Sakthivel, PK Singh, JoshithaVijayan, VBaskaran, and RK Gautam

Period : 2019-2022 , **Project Code :** HORTCIARISIL201900600211

Presented by: Rakesh B

Interaction and suggestions: The house discussed about yield component and rootstocks. It was further clarified that yield has to be indispensable component of the breeding program. And since there is lack of understanding on the performance of resistance sources and/or QTLs in Island conditions, exploring rootstock is a good option.

Remarks: The project was approved.

11. Physiological dissection of submergence tolerance mechanisms under island ecosystem in rice.

PI: Srividhya, S. , **Co-PIs:** JoshithaVijayan , PK Singh, RKGautam and D Vijayalakshmi

Period : 2019-2022, **Project Code :** HORTCIARISIL201900700212

Presented by: Srividhya , S.

Interaction and suggestions : The house discussed about differences in response of the rice crop to submergence stress specific to island, combining tolerance to submergence and salinity. Chairman and the house suggested to include the deep water tolerant checks like Jalmagna and Jalnaaga, combine pSTOL and Sub1, fabricate screening tanks for different stages of crop, suggested to work on nutrio-physiological aspects and to include expert member from NRRI, Cuttack.

Remarks: The project was approved with the inclusion of Dr. D. Vijayalakshmi, Associate Professor, Crop Physiology, TNAU, Coimbatore as an external expert. Approval of Co.PI from TNAU, Coimbatore to be obtained before submitting RPP-I.

Concluding remarks :

During the IRC 2019 a total of 43 projects were presented by the scientists, of which 06 were closed and 37 recommended to be continued. A total of 11 new projects were also recommended by the house.

Division	Ongoing 2018– 19	Close	New institute funded project	In Hand 2019-20
Hort. & Forestry	13	-	-	13
FCI&P	04	-	04	08
NRM	05	02	01	04
Animal Sci.	13	01	01	13
Fisheries Sci.	06	03	05	08
SSS	02	-	-	02
TOTAL	43	06	11	48

At the end, the member Secretary, IRC thanked the Chairman, IRC, expert members and all the scientists for their valuable suggestion, remarks and active participation.

The following officials attended:

1. Dr. B. Gangaiah, Director (Acting) & Chairman
2. Dr. K.A. Naveen, Senior Veterinary Officer,DAH&VS, Port Blair
3. Dr. P. Mohan, Professor ,Pondicherry University, Port Blair
4. Dr. Arun Kumar, Director , ANSWSM, Port Blair
5. Dr. T.V.R.S. Sharma, Member, GB, ICAR, New Delhi
6. Dr. B. A. Jerard, Pr. Scientist & Head, Hort. & Forestry
7. Dr. A. Kundu, Director, HoD, Animal Science
8. Dr. S. Dam Roy, HoD I/c Fisheries Science
9. Dr. S.K. Zamir Ahmed, Pr. Scientist & I/c SSS
10. Dr. P.K. Singh, Pr. Scientist& HoD I/c, FCI&P
11. Dr. R.K. Gautam, Principal Scientist
12. Dr. Debasis Bhattacharya, Pr. Scientist
13. Dr. A. Velmurugan, Pr. Scientist
14. Dr. V. Baskaran, Pr. Scientist
15. Dr. T.P. Swarnam, Pr. Scientist
16. Dr. T. Sujatha, Sr. Scintist
17. Dr. K. Abirami, Sr. Scientist
18. Dr. I. Jaisankar, Sr. Scientist
19. Dr. R. Kiruba Sankar, Scientist
20. Dr. T. Subramani, Sr. Scientist
21. Dr. Arun Kumar De, Scientist
22. Dr. Sachidananda Swain, Scientist
23. Dr. P.A. Bala, Scientist
24. Dr. K. Sakthivel, Scientist
25. Dr. Soobedar Yadav, Scientist
26. Dr. K. Saravanan, Scientist
27. Mr. J. Praveenraj, Scientist
28. Dr. P. Perumal, Scientist
29. Dr. Sanjay Kr. Ravi, Scientist
30. Dr. K. Venkatesan, Scientist
31. Dr. R. Jaya Kumaravaradan, Scientist
32. Dr. Harsha Haridas, Scientist
33. Dr. Rafeeque Rahman Alyethodi, Scientist

34. Mr. Kiran K.R., Scientist
35. Ms. Deepitha, R.P., Scientist
36. Dr. Rakesh B., Scientist
37. Ms. Sirisha Adamala, Scientist
38. Mr. Gladston Y., Scientist
39. Mrs. Ajina S.M., Scientist
40. Dr. Joshitha Vijayan, Scientist
41. Ms. Sreepriya Prakasan, Scientist
42. Dr. Srividhya, S., Scientist
43. Dr. L. Brojendra Singh, SMS, KVK
44. Er. B.K. Nanda, SMS , KVK
45. Dr. Jai Sunder, Pr. Scientist, Incharge, PME Cell & Member Secretary IRC 2019

28/11/19

(Jai Sunder)
Officer Incharge, PME Cell &
Member Secretary, IRC-2019

F.No. 4-4/PMEC/IRC Proceeding/2019
Dated: 26.11.2019

Copy to : All concerned through e-mail for information and necessary action.
P.S. to Director for information to the Competent Authority.