IRRI International Rice Research Institute

REMET-RICE Newsletter

Reducing Methane Emissions from Rice Project

Issue 02 | September 2024

PHASE 2 HIGHLIGHTS

2024 Experimental Seasons

REMET-Rice team's pioneering experiments set the stage for advancements in rice research and GHG assessment

During the dry season (December 2023 - April 2024), the REMET-Rice team achieved significant milestones in their extensive research experiments. The team conducted 5 pivotal experiments, implemented rigorous protocols and SOPs for data collection and management.

- Five research experiments on greenhouse gas emissions
- Over 16 weeks of GHG emission measurements
- Over 4,000 soil samples collected
- Protocols and SOPs for data collection and management developed and implemented

With the ongoing 2024 wet season, the five experiments have been replicated, with additional supplemental field experiments to study the effects of Phosphogypsum application, supplemented with a pot experiment on novel inorganic methanogen inhibitors.

Over these two seasons, the team has gathered a unique wealth of data that will be made available to the project team for analysis and modeling applications.

Training Initiatives Strengthen REMET Team's Capabilities

REMET staff boost expertise with advanced training and capacity building

Training on basic and advanced soil spectroscopy techniques was held on 13-15 March 2024, at IRRI Headquarters. This training course was organized by the Bureau of Soils and Water Management of the Philippines Department of Agriculture (BSWM) and IRRI, with support from the REMET-Rice project and facilitated by Chemisphere Laboratory Sciences Inc. Participants were from the project team and partners including University of the Philippines Los Baños (UPLB), Philippine Rice Research Institute (PhilRice) and BSWM. They were expected to gain improved soil analysis skills with rapid and non-destructive assessment of soil properties approaches.

The REMET project team also acquired a new FTIR Instrument-Bruker Technology-Alpha II soil spectrometry equipment.

In June 2024, three REMET staff members participated in specialized training programs to enhance their expertise in their respective fields.

Mr. Caesar Arloo Centeno and Mr. Ryan Romasanta, Assistant Scientists and GHG measurement experts, attended a 2-day training seminar on Eddy Covariance-Flux Monitoring System at Luxent Hotel, Quezon City, Philippines, on June 20-21. Hosted by P.T. Cerna Corporation and Campbell Scientific, the seminar covered Eddy Covariance Theory, Turbulence Flow Structure, and Scalar and Energy Fluxes. It also featured a demonstration of a fully functional EC System. The training was designed for professionals in environmental management, meteorology, climate studies, hazard mapping, and agricultural research.

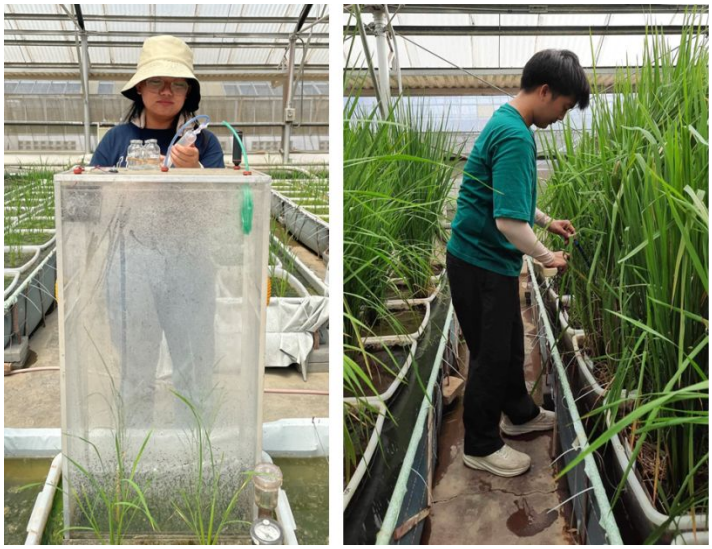
Ms. Anaida Ferrer, Project Coordinator, took part in the Introductory Monitoring & Evaluation (M&E) Capacity Building Program from June 24 to 27. Hosted by the International Rice Research Institute (IRRI) and Innovations for Poverty Action (IPA), the program highlighted M&E's role in evidence-based policymaking, agricultural development, and poverty alleviation. It provided practical skills for effective M&E in agricultural projects and promoted knowledge sharing and collaboration for sustainable development.

REMET Welcomes Students for Advanced Research Training

Nurturing the next generation of agricultural innovators

The REMET-Rice team is excited to welcome two talented students from the University of the Philippines Los Baños (UPLB). Ms. Dana Mae Paclayan, a Master's student in Agricultural Engineering, is focusing her research on the effects of alternate wetting and drying (AWD) on rice production. Her work aims to unravel the interactions between AWD and biochar, exploring how these factors influence various parameters in rice cultivation.

In the glasshouse, Mr. Diomedio Villanueva III, an undergraduate student in Agricultural Biosystems Engineering, is conducting experiments to evaluate the water application in relation to different levels of biochar. This research study will provide valuable insights into optimizing water use in rice systems.



*D*ana (left) taking gas samples from the closed chamber and Deo (right) measuring the redox potential of the soil.

This summer, the REMET project also welcomed a vibrant group of on-the-job trainees, eager to immerse themselves in agricultural research and development. Among them were BSc Agricultural and Biosystems Engineering students from Mindanao State University -- Ms. Jayrah Mariano, Ms. Asnifa Guindo, and Ms. Sittie Hafidah Badroden -- along with BSc Chemistry students from UPLB, Ms. Faith Ruiz and Mr. James Matthew Lintag. Their training was expertly guided by REMET Soil Scientist, Mr. Francis Rubianes.

Additionally, the project hosted two international students. Mr. Chia-An Lin, MSc student from National Taiwan University joined our modeling team, where he received specialized training under the guidance of Ms. Emmali Manalo and Dr. Tao Li. In July, Ms. Hayuningtyas Annisa Budiyanti, MSc student from Columbia University, NY, joined the team. Her internship focused on conducting a literature review on biochar as a climate change mitigation strategy and assessing its economic impact. She was co-supervised by Dr. Ando Radanielson and Dr. Alisher Mirzabaev from the Policies and Investments Research Unit of IRRI.

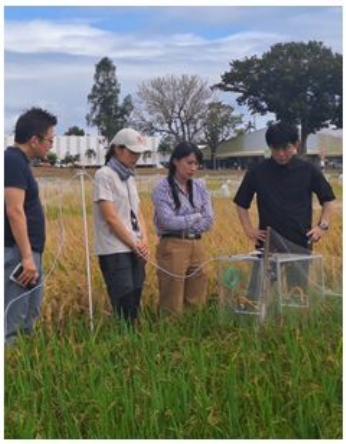
IRRI Showcases Climate Research: Building Global Collaborations

IRRI welcomes global visitors to explore climate research and forge new collaborations

IRRI recently hosted a series of distinguished visitors, fostering discussions on collaborative opportunities and showcasing its cutting-edge climate change research. Visitors engaged in meetings with IRRI scientists, exploring potential collaborations and exchanging innovative ideas. Field tours offered a firsthand look at IRRI's pioneering experiments and research initiatives.

During the REMET-Rice project field visit, guests were introduced to both manual and automatic greenhouse gas (GHG) sampling methods. The team demonstrated their collection techniques and the strategic placement of GHG chambers to minimize variability in emission measurements. The automatic sampling process, using laser-based trace gas analyzers, highlighted the advanced technology in the project's research.

From February to June 2024, the REMET-Rice project hosted visitors from various international and regional organizations, including the Thailand Rice Department, Japan's Ministry of Agriculture, Alcom Carbon Markets, and more. The field tour also welcomed Dr. Ismahane Elouafi, the new Executive Managing Director of CGIAR. Photos from these visits are available for viewing <HERE>.



Left: Field tour and demo for the Thailand Rice Department (TRD).

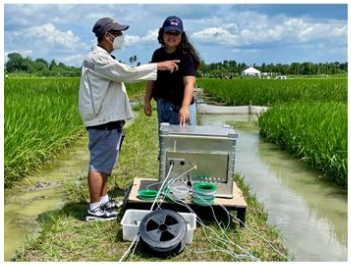
Top: Field tour and demo with CGIAR Executive Managing Director Dr. Ismahane Elouafi, and visitors from Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF).

Project Planning Meetings and Field Day

Refining strategies, overcoming challenges, and setting a clear path for success

The REMET-Rice project team held their first season review on 23 April 2024 followed by a Field tour on 8 August 2024 at IRRI HQ for a Project Review and Planning Meeting. The team assessed their performance against initial goals, highlighting successes, challenges, and areas needing adjustment. The insights from the meeting guided the plan for the next season activities and strategies for efficient resource and logistics management.

The project Field Tour brought the teams from different disciplines of the project together to share their activities with demonstration sessions and hands-on practice.



Team Building and Workshop at Caliraya Resort

Forging unity at an inspiring team building and workshop in Caliraya

The REMET-Rice team and the Modelling and Soil Sustainability teams held an invigorating team-building workshop at Mountain Lake Resort, Caliraya, on May 16-17, 2024. The event combined camaraderie and creativity, aiming to forge a new identity that reflects the group's expanding scope and ambition.

Participants engaged in dynamic team-building exercises and a brainstorming session, ultimately naming the group "Advance Modeling for Environment, Emission, Exchange, and Extension (AM4E)." The retreat strengthened bonds and set the stage for a more cohesive and innovative future.

Upcoming Training: GHG Emission in Rice Systems

IRRI is pleased to announce the "GHG Emission in Rice Systems: Basics of Mechanisms and Standards for Measurements" training course, scheduled for 25-29 November 2024, at IRRI, Los Baños, Laguna, Philippines.

Course Highlights:

- Focus on GHG monitoring in rice systems
- Emphasis on measuring emissions and implementing mitigation practices
- Combination of lectures, field demonstrations, and hands-on training
- Construction of field GHG emission measurement tools
- Adherence to various GHG inventory standards

This course is ideal for agricultural professionals looking to enhance their skills and knowledge in GHG monitoring and mitigation in rice systems. We look forward to welcoming participants worldwide to this training course!

Click here for more details and registration.

Contributions from the Community:
The strength of our newsletter lies in the diverse experiences and perspectives that you, our readers, bring to the table. If you have a story, research findings, or reflections on rice cultivation that you wish to share with the REMET-Rice family, we invite you to contribute.

How to Contribute:
Connect with our editorial team to share your ideas, articles, or any valuable content through the following contact information:

Email: a.ferrer@irri.org / e.manalo@irri.org

Your contributions will not only enrich our newsletter but also contribute to the collective knowledge that propels the REMET-Rice project forward.

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