

Title:

Quantification of Greenhouse Gas Emissions from Rice Fields in the Mekong Delta, Vietnam

Introduction and goal:

Rice cultivation emits about 16 % of Vietnams overall greenhouse gas (GHG) emissions. A notable amount of these gasses comes from the fermentation of rice straw incorporated in the flooded rice paddies. Within the **BioRist** project, an innovative biogas plant should be developed to digest rice straw in a controlled way and to reduce GHG emission. To evaluate this innovative approach, emissions from rice fields with and without incorporated rice straw have to be compared. Therefore, three groups of students should **measure GHG emissions from rice paddies**. Each group will cover one of the three rice crops per year and will measure **for ca. four months**. Overall the measurements will cover an entire year. Each group will consist of a student from TU Berlin and a student from the Industrial University Ho Chi Minh City.

Additionally, to the comparison of rice fields with and without incorporated rice straw, the **GHG emission potential of the digestion residues** of the **BioRist** pilot biogas plant should be quantified.

The measurements will be conducted with a photoacoustic gas monitor connected to a flux chamber. Measurements are planned for five days a week and should last up to eight hours a day. The free accommodation (regular house) is next to the test rice field.



Figures: top: Rice field, right: flux chamber

Requirements:

- Bachelor degree in engineering
- Good English skills in writing and talking
- Willingness to live and work in a rural region in tropical climate
- Interest in a foreign language, ability to communicate and cooperate with foreign people in a team
- Vaccinations (e.g. rabies, typhus, etc.)

Schedule:

- June and July preparation of the field trip: literature research, vaccinations
- August to November: field trip to Hậu Mỹ Bắc B (Mekong Delta, Vietnam) with an introduction into the measurement from the previous group and regular measurements
- September to December: data evaluation and writing of the thesis (supervision via Skype and email)



In case you are interested in this topic or you have questions please do not hesitate to write us an email.