

様式 A-1
(FY2024)

2024 年 2 月 5 日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 岐阜県立恵那高等学校・夏目佳代子
2. 講師氏名: Dr. NGUYEN Quang Binh
3. 講義補助者氏名: _____
4. 実施日時: 2024年 2月 5日 (水) 13:45 ~ 15:25
5. 参加生徒: 1 年生 23 人、 2 年生 22 人、 3 年生 0 人 (合計 45 人)
備考: (例: 理数科の生徒) 理数科の生徒
6. 講義題目: The role of engineering-based researchers in ensuring food security under the impact of climate change and other factors
7. 講義概要: 気候変動による影響である洪水のリスクを減らしながら、食糧生産を高めていくにはどうしたらよいか。解決方法の一つとして水稻栽培研究について。
8. 講義形式:
☒ 対面 ・ ☐ オンライン (どちらか選択ください。)
1) 講義時間 40 分 質疑応答時間 5 分
2) 講義方法 (例: プロジェクター使用による講義、実験・実習の有無など)
対面による講義
3) 事前学習
☒ 有 ・ ☐ 無 (どちらかに○をしてください。)
使用教材 講師から事前にいただいたアブストラクト
9. その他特筆すべき事項:

講師からの講義に加え、本校生徒が自分たちの課題研究(物理、化学、生物、または数学)に関する発表を英語で行い、講師から質疑応答やアドバイスを受けた。

Form B-2
(FY2024)
Must be typed

Date (日付)

6/2/2025

(Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ 実施報告書)

- Fellow's name (講師氏名): Binh Quang NGUYEN (ID No. P24064)

- Name and title of the lecture assistant (講義補助者の職・氏名)

- Participating school (学校名): Gifu Prefectural Ena High School

- Date (実施日時): 5/2/2025 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目): The role of engineering-based researchers in ensuring food security under the impact of climate change and other factors

- Lecture format (講義形式):

◆ ☒ Onsite ▪ ☐ Online (Please choose one.)(対面 ・ オンライン)((どちらか選択ください。))

◆ Lecture time (講義時間) 35 min (分), Q&A time (質疑応答時間) 10 min (分)

◆ Lecture style (ex.: used projector, conducted experiments)

(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))

Used projector

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

Food security is the top priority of many countries concerning the emerging food crisis associated with the population boom and war. In that regard, sustainable agriculture development is the most important in developing countries. The Vietnamese Mekong Delta (VMD) is the "rice bowl" of the region and poverty reduction in improving the income of citizens. However, climate change and human-made structures threaten water safety and sustainability in the Mekong River Basin (MRB), the tenth-largest river in the world (795,000 Km²), and a significant transboundary river basin in Southeast Asia.

Climate change is predicted to increase climate extremes in both magnitude and frequency by more severe floods, increasing the extent and duration of flooding. Besides climate change, human interventions have increasingly affected hydrological processes in the MRB, and thus people's livelihood in the VMD. Dams seriously reduced the sediment load entering the VMD, diminishing the natural fertilizer from fine sediment. Consequently, wetland compartments are disconnected from the main rivers, causing a lack of fresh water and nutrients for paddy fields in the VMD. Therefore, agricultural yield and productivity in the VMD have decreased, causing difficulties for local people and food insecurity.

Sustainable agriculture development in the VMD is thus urgent to safeguard the livelihood of the local people and the food security of the region and the globe. However, assessing the compound effects of climate change and human activities on the flood, and sediment remains unstudied. Therefore, we will investigate the combined effects of 124 existing and near-future dams and reservoirs, climate change from the Coupled Model Intercomparison Project Phase 6 (CMIP6), and Land Used/ Land Cover (LULC) change on flood, and sediment for the MRB. Subsequently, agriculture productivity in response to climate and human-induced hydrological changes is assessed, from which a sustainable agriculture development scheme is proposed and evaluated for the VMD. We will propose a nature-based solution (floating rice) to support regional and global food security and enhance the income of farmers in the VMD.

◆Other noteworthy information (その他特筆すべき事項):

- Impressions and comments from the lecture assistant (講義補助者の方から、本プログラムに対する意見・感想等がありましたら、お願いいたします。):

The role of forests in disaster mitigation: landslide, flood, earthquake, tsunami



Science Dialogue: Eno High School, Gifu, Feb 5, 2015

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