

Form B-2
(FY2022)
Must be typed

Date (日付)
15/05/2022 (Date/Month/Year: 日/月/年)

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

- Fellow's name (講師氏名): Dr. Cornelius Mbathi WAINAINA (ID No. P20404)
- Name and title of the lecture assistant (講義補助者の職・氏名)
I did the lecture by myself but the teacher from Sanyo Gakuen (Mr. Zachary) was very helpful in translation of some parts and during question time
- Participating school (学校名): Sanyo Gakuen Junior and Senior High School, Okayama
- Date (実施日時): 09/05/2022 (Date/Month/Year: 日/月/年)
- Lecture title (講義題目):
Africa's Climate, Seasons, Environments and Rice Crop Improvement for enhanced food production
- 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) 45 min (分), Q&A time (質疑応答時間) 15 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))
Powerpoint presentation via screen display/ projector. Printed handouts also used.

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.
I gave a lecture to 12 students in their second year of high school and staff members of Sanyo Gakuen High School in Okayama. The lecture was during the science class time. My lecture topic was on rice crop improvement for stress-prone environments in Africa and on cultivation technology development for stress avoidance, more specifically in Kenya.
My lecture was divided into four parts: (1) Self introduction and my country introduction, (2) Explanation of Africa's climate zones and seasons, geography and natural resources (3) Science part describing about my studies/research activities based on climate and environment conditions in Kenya/East African Highlands, (4) Marine debris status and situation in Africa.
First part featured my family, my career path in research, and the unique and interesting aspects about my country such as wildlife attractions, nature and the kind of sports we dominate in the world (athletics). The second part I introduced about Africa's climate zones and their characteristics, seasons and natural resources. I explained how the strategic position of Africa on the global map influences the climate, seasons and agricultural activities. I linked how the

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environmental conditions influence the cropping calendar for rice (and other crops) especially in the East African Highlands. The third part was about my studies in rice productivity improvement and more specifically cold tolerance breeding. I presented the types of abiotic stresses that affect rice production globally. Then narrowed down to cold stress problem and its effect on rice production in Kenya and East African highlands in general. How the cold stress influences the cropping calendar for rice production in Kenya was presented in detail. I described what kind of strategies I am exploring and the research activities I do in addressing the challenge of cold stress and boosting rice production in my country. Such strategies include breeding and development of stably cold tolerant varieties, manipulation of flowering time by AWD practices and shifting of cropping calendar to coincide with times of favourable weather conditions. I showed many pictures about my field experiments carried out in Japan and in Kenya. I explained the procedure of breeding stable rice varieties and briefly introduced the concept of important genes identification or discovery, isolation and cloning which is part of my studies currently. The fourth part I briefly described the marine debris status in Africa, showed which countries are polluting the marine environments the most and the extent of pollution. I also explained the strategies being put in place to address the problem of marine pollution and showed examples of business innovations and scientific technologies for waste management. After the lecture, the students responded very positively and asked various well thought questions relating to my studies and research activities. It is my belief that my lecture inspired the students to pursue agricultural sciences in future and carry out studies addressing food security issues or food production in the world or maybe environmental and nature conservation studies.

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

The responsible teachers and the principal of the school gave me a warm reception and were very delighted to host me. We enjoyed a nice discussion together in the principals office. The visit and lecture was worthy. The students looked excited, eager and happy to meet me and to listen to my lecture content. Some other staff members also joined in to listen and their interest was very encouraging to me. I was so impressed by the attentiveness portrayed by the students throughout the lecture and their interaction with my lecture content through various questions. The teacher (Mr. Zachary) was very assistive in translating some of my answers and information in my lecture. The teacher confirmed to me that the students understanding had improved following my lecture. I hope my presentation may inspire them to study agricultural sciences or food systems research in future and visit Kenya for academic exchanges, site seeing or any other business.

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

No accompanying lecture assistant as the day of lecture was coinciding with other academic activities for our center. Nevertheless, my lecture was not inconveniencing to anyone and my Professor, INUKAI sensei was supportive about the event. He was also glad and happy upon hearing from me about the successful lecture and discussion with the high school students and school staff.