

The United Graduate School of Agricultural Sciences, Tottori University

鳥取大学大学院連合農学研究科

GAN-RENDAI (Global Alumni Network-RENDAI)



General Meeting 2022



16, December 2022

<https://gan-rendai-t.ac.jp/>

開催趣旨

2017 年度に設立された GAN-RENDAI は、連合農学研究科に関わる者すべて（修了生・在学生・関係教員・関係機関）が交流するプラットフォームとしての組織である。2018 年 3 月に鳥取大学を会場として開催された第 1 回国際会議・シンポジウムでは、GAN-RENDAI の活用方法に関する意見交換並びにグローバルネットワークの構築や修了生の研究活動に関する報告が行われ、2018 年 12 月に中国農業科学院を会場として開催された第 2 回国際会議・シンポジウムでは、GAN-RENDAI にとって初の海外支部となる中国ブランチの発足に関する意見交換並びに中国在住の修了生から研究活動の報告が行われた。また、2021 年度には、GAN-RENDAI における人的ネットワークの強化を図り、GAN-RENDAI が有する情報を発信するプラットフォームとして WEB サイトを開設し、2022 年 3 月 15 日に中国ブランチ交流集会、3 月 25 日に 2021 年度総会をオンラインで開催した。2021 年度総会では、WEB サイトの活用方法の紹介、中国ブランチからの支部活動報告、修了生及び在学生からの研究活動報告に加えて、支部拡充計画等を含めた今後の活動方針に対しての意見交換が行われた。今回、2 番目の海外支部としてインドネシア支部が設立されることになり、交流集会および 2022 年度総会をジャカルタで開催することになった。2022 年度総会では、WEB サイトの活用方法の紹介、修了生及び在学生からの研究活動報告に加えて、支部拡充計画等を含めた今後の活動方針に対しての意見交換を行う。

児玉基一郎

GAN-RENDAI 会長 鳥取大学大学院連合農学研究科 研究科長



Event Objective

GAN-RENDAI is an organization established in 2017 as a platform for all those involved in the United Graduate School of Agricultural Sciences (alumni, current students, faculty members, and related organizations) to interact. In the first international conference and symposium held at Tottori University in March 2018, opinions were exchanged on how to utilize GAN-RENDAI, and reports were made on the construction of a global network and research activities of alumni. At the 2nd International Conference and Symposium held at the Chinese Academy of Agricultural Sciences in December 2018, opinions were exchanged on the establishment of the China Branch, the first overseas branch of GAN-RENDAI, and research activities were reported by graduates living in China.

In FY2021, GAN-RENDAI Headquarters established a website as a platform for disseminating GAN-RENDAI information and strengthening the human network within GAN-RENDAI, and held the China Branch Exchange Meeting on March 15, 2022 and the FY2021 General Meeting on March 25, 2022 online. At the FY2021 General Assembly, the participants exchanged opinions on future activity policies, including plans for branch expansion, in addition to the introduction of the use of the website, reports on branch activities from the China Branch, and reports on research activities by alumni and current students.

The Indonesian Branch will be established as the second overseas branch, and the exchange meeting and the general meeting for FY2022 will be held in Jakarta. The 2022 General Meeting will include an introduction to the use of the website, reports on research activities by alumni and current students, and an exchange of opinions on future activity policies, including plans for branch expansion.

Dr. Motoichiro Kodama
Chairperson of the GAN-RENDAI, Dean of the UGSAS, Tottori University



PROGRAM

Date Friday, December 16, 2022

Time 14:00-16:35 (Time in Jakarta, 16:00-18:35 Time in Japan)

Venue Hotel Gran Mahakam (Jakarta, Indonesia)

Method Face-to-face and online via Zoom

<https://us06web.zoom.us/j/87668785959?pwd=QlpIV3NVZk96V2lvZGJYTjVzQnhwQT09>

Meeting ID : 876 6878 5959 Passcode : 380112

Participants

- Alumni living in Indonesia
- United Graduate School of Agricultural Sciences (Dean, Vice-dean, Representative, Administrative staff)
- Alumni, Current students, Faculty members

Master of ceremony Dr. Hidehiko Ogata (Vice-dean of the UGSAS, Tottori University)

(Time : Local time in Indonesia)

- 14:00 - 14:15 Opening address and introduction of the current status of GAN-RENDAI and UGSAS
Dr. Motoichiro Kodama
(Chairperson of the GAN-RENDAI, Dean of the UGSAS, Tottori University)
- 14:15 - 14:20 Special address
Mrs. Diana Emilla Sari Sutikno (online)
(Consul General, Consulate General of the Republic of Indonesia, Osaka Japan)
- 14:20 – 14:30 Welcome address
Dr. Fumio Tamura (online)
(Trustee (Education and International Exchange), Vice-President, Tottori University)
Dr. Kumi Yasunobu (online)
(Vice-President (Promotion of International Exchange) , Tottori University)
Dr. Norihiro Shimomura
(Dean of the Faculty of Agriculture, Tottori University)
Dr. Adha Fatmah Siregar
(Chairperson of the GAN-RENDAI Indonesia branch, Indonesian Agency for Agricultural Instrument Standardization (IAAIS), Ministry of Agriculture)

14:30 - 14:45 Exchange of opinions
(1) Introduction of GAN-RENDAI Web site & SNS
(2) Report on Branch Activities and Future Plans for Branch Establishment
Dr. Yuan Wenye (Vice-chairperson of the GAN-RENDAI China Branch,
China Agricultural University)

Current Research Presentation by Alumni and students
(15 min for each presentation) (Prsentation:12 min, Q&A:3 min))

14:45 - 15:00 Research activity reports from alumni (1)
[Smart Soil Sensor Kit, a Rapid test for Determining Soil Properties]
Dr. Adha Fatmah Siregar
(Indonesian Agency for Agricultural Instrument Standardization (IAAIS),
Ministry of Agriculture, Assigned to Shimane University)

15:00 - 15:15 Research activity reports from alumni (2)
[Mineral Concentrations and Nutritive Value of Tropical Legumes in West
Sumatra, Indonesia]
Dr. Evitayani
(Faculty of Animal Science, Andalas University,
Assigned to Shimane University)

15:15 - 15:30 Research activity reports from alumni (3)
[Best management practices and its effect on soil properties in smallholder
oil palm plantations, Jambi Province, Indonesia]
Dr. Rahmah Dewi Yustika
(Research Organization for Life Sciences, National Research and Innovation
Agency (BRIN)), Assigned to Shimane University)

15:30 - 15:45 Research activity reports from alumni (4)
[Validation of laboratory analytical method]
Dr. Linca Anggria
(Indonesian Agency for Agricultural Instrument Standardization (IAAIS),
Ministry of Agriculture, Assigned to Shimane University)

15:45 - 16:00 Research activity reports from current students (1)
[Isolation and identification of hyphal bacteria from ectomycorrhizal fungal
isolates, and its role for fungal host growth]
Rudy Hermawan
(Bioproduction and Bioenvironmental Sciences, Assigned to Tottori University)

- 16:00 - 16:15 Research activity reports from current students (2)
[The Effect of Land Use Changes on Water Ecosystem in Relation to The
Distribution of Endangered Arowana Fish (*Schleropages formosus*) in
Sumatra Island, Indonesia.]
Arief Anthonius Purnama
(Global Dryland Science, Assigned to Shimane University)
- 16:15 - 16:30 Research activity reports from current students (3)
[Rural Household Food Consumption in Bengkulu, Indonesia: Estimating a
Demand System Based on SUSENAS Microdata]
Melli Suryanty SN
(Bioproduction and Bioenvironmental Sciences, Assigned to Tottori University)
- 16:30 - 16:35 Closing address
Dr. Hidehiko Ogata
(Vice-dean of the UGSAS, Tottori University)

GAN-RENDAI Constitution

Article 1 (Name)

- (1) This Association shall be called the Global Alumni Network, United Graduate School of Agricultural Sciences, Tottori University (hereinafter referred to as the UGSAS, TU).
- (2) The abbreviation of the Association shall be "GAN-RENDAI".

Article 2 (Purpose)

The purpose of this Association is to support the internationalization of the United Graduate School of Agricultural Sciences of Tottori University and to contribute to the development of the international society by deepening mutual exchange and friendship among members.

Article 3 (Business)

In order to achieve the purpose of the preceding article, the Association shall carry out the following activities

- (1) Regular or extraordinary general meetings
- (2) Activities as a base for mutual exchange and information exchange among members
- (3) Other activities necessary to achieve the objectives of the Society

Article 4 (Membership)

The following persons shall be members of the Association

- (1) Graduates and current students of the United Graduate School of Agricultural Sciences, Tottori University
- (2) Faculty and staff related to the education, research, and administration of the United Graduate School of Agricultural Sciences, Tottori University and related faculty and staff
- (3) Other persons and organizations related to the international exchange of the United Graduate School of Agricultural Sciences, Tottori University approved by the Steering Committee.

Article 5 (Officers)

1. The Association shall consist of following officers
 - (1) Chairperson : 1
 - (2) Vice-chairperson : 1
 - (3) Auditor: 1 person
2. The Chairperson shall be the Dean of the United Graduate School of Agricultural Sciences, Tottori University, who shall manage the Society.
3. The Vice-chairperson shall be the Vice-dean of the United Graduate School of Agricultural Sciences, Tottori University, and shall assist the Chairperson. The Vice-chairperson shall take the Chairperson's duties in his/her absence.
4. The Auditor shall be the Secretary General of the Faculty of Agriculture, Tottori University, and shall be responsible for the administration of the affairs of the Association.

Article 6 (Steering Committee)

1. The management of the Association shall be handled by the Steering Committee, which shall consist of the following members
 - (1) Chairperson
 - (2) Vice-chairperson
 - (3) Auditor

- (4) Representative Member, the United Graduate School of Agricultural Sciences, Tottori University
- (5) Branch Manager
2. The Chairperson shall convene the Steering Committee as necessary and chair the meeting.
3. The Steering Committee shall deliberate on the following matters
 - (1) Matters to be submitted to the General Assembly
 - (2) Matters related to the operation of the Branch
 - (3) Other important matters concerning the execution of the business of the Association.
4. The Steering Committee may establish an Operation Planning Committee for smooth operation.

Article 7 (General Assembly)

1. The Chairperson shall convene the General Assembly and chair the meeting.
2. The General Assembly shall deliberate on the following matters
 - (1) Business report and settlement of accounts
 - (2) Business plan and income and expenditure plan
 - (3) Matters related to the revision of the constitution
 - (4) Other matters that the Chairperson judges should be submitted to the General Assembly.

Article 8 (Branches)

1. In order to achieve the objectives of the Association, domestic and international Branches may be established with the approval of the Steering Committee.
2. A Branch shall be organized with members from a country and region where a Branch locates.
3. The activities of the Branch may be conducted in the same manner as the Association.

Article 9 (Accounting)

The management of the Association shall be funded by the income from the subsidy for the management of Tottori University and donations.

Article 10 (Secretariat)

The secretariat of the Association shall be located in the Administrative Division of the Faculty of Agriculture, Tottori University.

Article 11 (Others)

Matters other than those specified in this constitution that are necessary for the operation of the Association may be decided by the Chairperson in consultation with the Steering Committee.

Supplementary Provisions

1. This constitution shall take effect on March 25, 2022.

Abstract of Research Activities

Name	Adha Fatmah Siregar
Country	Indonesia
Current Post	Head of Technical Service of ISRI, ICALRRD, Indonesian Agency for Agricultural Instrument Standardization, Ministry of Agriculture
Title of Research	Smart Soil Sensor Kit, a Rapid test for Determining Soil Properties
<p>(Summary)</p> <p>Indonesia as an agricultural country has varies of soil types and soil fertility levels. In order to improve plant productivity, it should be followed by improving and maintaining soil fertility that can be achieved by supplying adequate nutrient to obtain optimal yields. The addition of proper plant nutrients improves soil fertility, and it is also a key element to increase plant productivity, The accurate information on soil properties is one of the factors for determining the proper amount of nutrient added into soil. Based on that, Indonesian Center for Agricultural Land Resources Research and Development (ICALRRD) under Ministry of Agriculture has developed an innovation a 4.0 technology for determining soil chemical and physical properties and equipped with fertilizer recommendation for rice, maize and soybean called as Smart Soil Sensing Kit.</p> <p>This Smart Soil Sensing Kit is developed based on NIR spectrometer (NeoSpectra) for the predictions of soil properties. Meanwhile for the fertilizer recommendation, it developed based on field trial data based. This work started from 2018 and Smart Soil Sensing Kit 1,0 version has been launched on December 5, 2019 on the World Soil Day Celebration. In 2021, we have developed The Smart Soil Sensing Kit 1.1 version, which already using android based connected to smartphone. The research teams are still doing the updating and improving the features and recommendation for plantation and horticulture crops. It is expected that by developing Smart Soil Sensing Kit, precision fertilization, with a site-specific condition could be an effective option to improve plants productivity and maintaining soil fertility conditions to support sustainable agriculture.</p>	

Abstract of Research Activities

Name	Evitayani
Country	Indonesia
Current Post	Lecturer at Department of Animal Nutrition and Feed Science, Faculty of Animal Science, Andalas University
Title of Research	Mineral Concentrations and Nutritive Value of Tropical Legumes in West Sumatra, Indonesia
<p>(Summary)</p> <p>Animal keeping in the west Sumatra is a major and the most important source of income for the majority of the population. Natural pasture especially tropical legumes and crop residues contribute about 75% of the nutrient requirements for ruminants. Legumes have great potential to increase the productivity of livestock in the humid tropics. This study was carried out to evaluate the macro and micro mineral concentrations and potential nutritive value of tropical legume forages (leaves and twigs) in West Sumatra during rainy and dry seasons. The macro (Ca, P, Mg and S) and micro (Zn, Fe, Mn and Cu) mineral concentrations and the chemical composition, <i>in vitro</i> dry matter (IVDMD), organic matter (IVOMD) and crude protein digestibility (IVCPD), <i>in vitro</i> gas characteristics and estimated metabolizable energy (ME) showed variation among legume forages and between different seasons. From the above results, it could be concluded that macro and micro mineral concentrations and nutritive value of the legumes grown in West Sumatra, Indonesia was relatively higher during rainy season compared with dry season. Between the species, <i>Pueraria phaseoloides</i> and <i>Leucaena leucocephala</i> appeared to have better quality than other species. The chemical composition of <i>Pueraria phaseoloides</i> and <i>Leucaena leucocephala</i> contained much higher crude protein but was generally lower in cell wall constituents (CWC or NDF) in both dry and rainy seasons. It suggested that proper supplementation with sources of nitrogen and energy might be required to support grazing ruminants, especially during dry season. Further studies on feeding trials are needed to quantify the animal responses when offered these legume forages.</p> <p>The achievements after graduated from The United Graduate School of Agricultural Sciences, Tottori University have 21 (twenty one) published in International Journal and 3 patent for commercial research.</p> <p>The research organization is Research Institute and Community Service (LPPM), Andalas University</p>	

Abstract of Research Activities

Name	Rahmah Dewi Yustika
Country	Indonesia
Current Post	Researcher, National Research and Innovation Agency of Republic Indonesia (BRIN)
Title of Research	Best management practices and its effect on soil properties in smallholder oil palm plantations, Jambi Province, Indonesia

(Summary)

The Best Management Practices (BMP) could improve oil palm production in smallholder plantations. This study aims to identify the effect of BMP and farmers' practice (REF) on bulk density (BD), total N, available P, and organic C. The research was conducted in the smallholder oil palm plantations in Jambi Province, Indonesia. BMP applied pruned fronds stacks in inter-rows and within rows with fertilizer application above it except nitrogen fertilizer applied in the weeded circle. Besides, REF practice applied prune fronds stacks in inter-rows with all type of fertilizer application in the weeded circle. The result based on transect analysis showed that organic C, total N, and available P significantly higher near oil palm trees. In contrast, BD did not show a significantly different. Comparing BMP and REF practice revealed that BD, organic C, and total N did not differ significantly in all point observations. However, available P showed significantly different in point 2, 4, and 6. As this study was conducted in the second year of BMP treatment, the soil properties of BD, organic C, and total N were not influenced by BMP treatment. Need longer term observation to identify BMP's treatment which will be conducted in the fourth year of study. BMP study give land management information to improve soil properties that support oil palm production.

Abstract of Research Activities

Name	Linca Anggria
Country	Indonesia
Current Post	Indonesian Agency for Agricultural Instrument Standardization, Ministry of Agriculture
Title of Research	Validation of laboratory analytical method

(Summary)

Indonesian Soil Research Institute has 4 testing laboratories, namely Chemistry, Biology, Physics, and Mineralogy. Laboratory of ISRI as national reference laboratory needs to update analytical methods and laboratory equipment used. To improve the quality of laboratory performance, several methods or activities are carried out, including taking proficiency tests at national, regional and international levels. ISRI Laboratory as the government representative for Sealnet, Glosolan, and INFA. Besides that ISRI has a program every year to develop or adopt analytical methods by validating them such as CEC and humic acid. Currently the type of CEC determination by using a manual percolation tool, while the limited personnel and the demand for quick and precise analysis requires an increase in the ability of laboratory equipment that can simplify analysis. CEC analysis method with an automatic percolation tool is a technology that can facilitate analysis in the laboratory. Meanwhile, humic acid is widely found in peat soils, where peat lands in Indonesia are quite extensive, such as in Kalimantan and Sumatra. Validation of method including limit of detection (LOD), limit of quantitation (LOQ), linearity, accuracy, precision and uncertainty.

Abstract of Research Activities

Name	Rudy Hermawan
Country	Indonesia
Current Post	Current student, The United Graduated School of Agricultural Sciences, Assigned to Tottori University
Title of Research	Isolation and identification of hyphal bacteria from ectomycorrhizal fungal isolates, and its role for fungal host growth.

(Summary)

Bacteria are cosmopolitan microbes. They can live anywhere as long as their environment is supportive of the organism's life. They can also live even in other organisms as endo-symbionts. Some endo-hyphal bacteria can affect a fungal habit or phenotype as an interaction outcome. As an endo-symbiont-bacteria, the existence of bacteria in hyphal isolates is quite important to know. This study detected and identified the bacterial diversity around some ectomycorrhizal fungal isolates. 22 codes of ectomycorrhizal fungal isolates were used and gotten from Fungus/Mushroom Resource and Research Center (FMRC), Tottori University. The hyphae had three categories, such as Hyphae 1, Hyphae 2, and Hyphae 3. All hyphae (all categories) were observed the colony growth on MMN Agar 1/5 (modified medium by 1/5 composition as the normal composition). Some results showed the better growth for hyphae 1, while some showed the best growth for hyphae 3. The bacteria affect the fungal diameter colony and appearance on MMNA (1/5) medium. The bacteria were 19 codes isolated from Hyphae 1. Then, the bacteria from Hyphae 2 were 12 strains. All bacteria are described the colony appearance and SEM observation. Some of them showed unique characters like yellow color and unusual shape cells. Qualitative observation of bacterial existence on hyphae using SYTO BaLight Bacterial Viability Kits L13152. Identification is conducting by Polymerase Chain Reaction (PCR) techniques using 10F and 1507R of general bacterial primers. All bacterial isolates will be identified using molecular study. The phylogenetic tree will be constructed using Randomized Axelerated Maximum Likelihood (RAxML) software. Then, the bacterium will be continued to bacterial role tests of the fungal host growth.

The output of this study has a willing to explore bacterial diversity as hyphal bacteria and find the new record for hyphal bacterial diversity. Then, studying about their role for their fungal host growth. In Indonesia, not many researchers are interested in this research field. After finishing the study in Tottori University, I am willing to search for a position as a post-doctoral project in Japan. I would like to be a taxonomist for the microbiology field, especially for fungal objects.

Abstract of Research Activities

Name	Arief Anthonius Purnama
Country	Indonesia
Current Post	Current student, The United Graduated School of Agricultural Sciences, Tottori University, Assigned to Shimane University.
Title of Research	The Effect of Land Use Changes on Water Ecosystem in Relation to The Distribution of Endangered Arowana Fish (<i>Schleropages formosus</i>) in Sumatra Island, Indonesia.
<p>(Summary)</p> <p><i>Schleropages formosus</i> (Arowana) is one of the surviving primitive fish species naturally found in primitive habitats not affected by human disturbances. The fish is very famous around the world among hobbyists because of its exotic appearance and scarcity. The protection of Asian Arowana and its habitat is a major concern for several levels of stakeholders. One of the locations for efforts toward the sustainable protection of Arowana in its natural habitat is in East-Central Sumatra. This research identified the effect of land use change on the water quality in relation to the distribution of Endangered Arowana. The purpose is to provide recommendations for sustainable plantation systems and Arowana conservation. We designated four wide areas according to the stratification of river flows that pass through the Arowana conservation area and present land use. The QGIS 3.26 software was used to generate maps using the RUSLE method. Arowana and water observation was carried out 4 times a year and replicated 5 times at each observation. We analyzed the extent of changes in the Arowana habitat to oil palm plantations over a period of 2 years (2020-2021). There has been an increase in the area of oil palm plantations by 517.67 ha (2,310.84 ha to 2,828.51 ha), all of these changes were in areas that were previously swamp and swamp forest. Some areas that previously had Heavy erosion became very heavy, and also from moderate to heavy erosion. Since 2020 Arowana was found in 89 individuals. Currently, the quality of water is still good for Arowana living, but the Arowana is only found in the wide area of Middle Mahato. We continue to do observations until the beginning of 2023 for the completeness of data for 3 years (2020,2021,2022). This research is one of the studies of the effects of agriculture (oil palm) on aquatic biodiversity, especially endangered species. In Indonesia, there is still much that needs to be analyzed regarding the effect of agricultural activities on biodiversity. My job in Indonesia is as a lecturer at the Pasir Pengaraian University. In the future, I intend to continue to do collaborative research with Shimane University and Tottori University. This is for agricultural and biodiversity sustainability in Indonesia.</p>	

Abstract of Research Activities

Name	MELLI SURYANTY SN
Country	INDONESIA
Current Post	Current student, The United Graduated School of Agricultural Sciences, Assigned to Tottori University
Title of Research	Rural Household Food Consumption in Bengkulu, Indonesia: Estimating a Demand System Based on SUSENAS Microdata

(Summary)

< Current research >

Food consumption is often used as an indicator to determine the welfare of consumers and households. Modelling consumer demand has been one of the most significant trends in consumer theory literature over the last couple of decades. In this research, demand and consumption are used interchangeably. The research aims to estimate the food demand of rural households in Bengkulu Province, Indonesia, using the Quadratic Almost Ideal Demand System (QUAIDS) and microdata from the SUSENAS. This study intends to estimate not only expenditure elasticities, uncompensated and compensated price elasticities, and Morishima elasticities of substitution but also the effects of household demographic characteristics on household food demand. We use household expenditure data from the Indonesia Socio-Economic Survey (SUSENAS), a cross-section data survey collected annually by Indonesia Central Statistics Agency (BPS). There are 13 food categories that Bengkulu rural households consume. To simplify the estimation of demand, we aggregate these categories into five food groups, namely: staple food (rice, tubers), animal food (fish, meat, egg and milk), vegetables & fruits (vegetables, nuts, fruits), prepared food, and other food (seasonings, drinks, instant foods, oil and coconuts). The results show that demand for animal food is the most sensitive to food expenditure, whereas the demand for staple food is the most expenditure inelastic. Staple food, animal food, vegetables & fruits, and other food are substitutes for each other. On the other hand, prepared food and staple food complement each other. Other food is the easiest to be substituted, and staple food is the most difficult to be substituted. The demographic variables, as well as prices and expenditures, impact household demand. For example, as family size increases, the demand for staple food increases, while the demand for animal food, vegetables & fruits decreases. Staple farmer households have a higher need for staple food than non-agricultural households. Due to being unmarried, divorced or bereaved, single households have a lower demand for staple food but a higher demand for prepared food.

< Future prospects >

The finding from my current research will be an input to develop the demand food model in the rural area with an additional variable, such as the effect of COVID-19. Furthermore, I will compare household food consumption between rural and urban areas before and after the breakout of COVID-19. I may discover many interesting new phenomena that can strengthen existing demand theories. As a lecturer at the University of Bengkulu, I intend to continue collaborating with Tottori University. This research is essential because it will provide an overview of food consumption behavior in households in Bengkulu. Household food consumption behavior can be used to project food demand and imply for the policy of food security.