Preface

International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020)

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Abstract. The International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020) was organized by the Faculty of Agriculture, IPB University, Bogor, Indonesia. The ICoSAFS 2020 was conducted to facilitate exchanges among researchers about the advanced progress in sustainable agriculture and farming system research. The e-conference successfully attracted as many as 271 attendants, 80 presentations and scientists from 10 countries including Croatia, Indonesia, Japan, Malaysia, and the USA. The major scientific presentation topics discussed in the ICoSAFS 2020 include agricultural economics, farming system, landscape, plant production, plant protection, soil science, sustainable agriculture, and other miscellaneous topics associated with sustainable agriculture and farming system.

1. Introduction

Sustainable agriculture systems are among the focus subjects of researchers, farmers, and policymakers in various parts of the world. Sustainable agriculture practices are low input, promote organism diversity and use energy effectively and efficiently. A sustainable agriculture system is expected to meet food needs sustainably and minimize environmental damage of modern agriculture's negative side.

Sustainable agriculture views agriculture as an overall system optimization known as an agroecosystem concept. The main focus of sustainable agriculture is the production of certain commodities but also stability and sustainability. For this reason, the key to sustainable agriculture is to restore the organism diversity in agricultural land. Increase diversity is achieved through time and space dimensions. Diversity in time can be done by crop rotation, while the spatial dimension is by cover crops, intercropping, agroforestry and other similar practices.

The International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020) was held to facilitate the stakeholders' growing interest in sustainable agriculture. ICoSAFS 2020 was organized in collaboration with the Indonesian Forum of Higher Education.
in Agriculture (FKPTPI), Western Region and the Indonesian Chapter of the International Society for Southeast Asian Agricultural Sciences (ISSAAS).

2. The Aims of the ICoSAFS 2020

The aims of the International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020) are:

1. Creating media and scientific forums to discuss the latest developments of sustainable agriculture and farming system.
2. Encouraging and facilitating networking for Indonesian researchers and the IPB academic community at the international level.
3. Mediating publication of the research results for Indonesian researchers and the IPB academic community in a SCOPUS indexed proceeding.

3. The Activities of the ICoSAFS 2020

The ICoSAFS 2020 was organized in two-day's activities on 24 – 25 September 2020. The first day of the ICoSAFS was the opening ceremony, and seven invited speakers' presentations from six different countries (Croatia, France, Indonesia, Japan, Malaysia, and the USA). The second day of the ICoSAFS 2020 was the parallel session presentations of 72 participants from universities and research institutions. On the second day, ICoSAFS 2020 was organized in four different Zoom rooms. Each Zoom room organized four sessions, and within each session - there are 4-5 presentations.

4. The participants of the ICoSAFS 2020

The total participants attending the ICoSAFS 2020 were 271 attendants, consisted of invited speakers, presenters, and organizing committee members. Excluding the organizing committee members, the participants represented the academicians (i.e. lecturers, students and researchers from universities) and the research institutes. Based on their country of origin, 31 participants were from abroad (Croatia, France, Japan, Malaysia, Mongolia, Nepal, Taiwan, the USA, and Vietnam), and 240 were from Indonesia.

A breakdown of the total participants of the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) based on their affiliations is presented in Figure 1.

Out of 271 total participants, 80 participants presented their research findings, and seven were the invited speakers (Figure 1). Meanwhile, the breakdown of the ICoSAFS 2020 country of origin of the participants is presented in Figure 2. Most of the ICoSAFS participants were from Indonesia (89%) and the rest were from nine different countries (11%). The highest number of participants abroad were from Japan (12 participants), Malaysia (8), Taiwan (4) and the USA (2) (Figure 2). There is a representative one participant from each of the following countries: Croatia, France, Mongolia, Nepal and Vietnam (Figure 2).
Figure 1. Breakdown of the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) total participants conducted on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia

Figure 2. Total numbers and country of origins of the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) total participants conducted on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia
The total presentations in the ICoSAFS 2020 were 88 presentations, consisted of one keynote speech from the head of the Indonesian Forum of Higher Education in Agriculture (FKPTPI), Western Region, seven invited speakers, and 80 parallel scientific presentations. The breakdown of the presenters' affiliated institutions in the ICoSAFS 2020 is presented in Figure 3. Out of 80 presenters, 48 were from IPB University, nine from Andalas University, three from UIN SGD and three from Bengkulu University (Figure 3). Moreover, there are two presenters in the ICoSAFS 2020 from Bangka Belitung University, Jambi University, and Indonesia University (Figure 3). Meanwhile, the one presenter presented their research results in the ICoSAFS 2020 from Gajah Mada University, Malikussaleh University, Tanjungpura University, Trilogi University, Palangka Raya University, and Tadulako University, respectively (Figure 3).

In addition to presenters in the scientific sessions, there are eight non-presenting participants from IPB University, two from Tanjungpura University, and one from Halu Oleo University, Siliwangi University, Andalas University, and one from LIPI. The scientific topics of the presentations in the ICoSAFS 2020 were grouped into 12 topics. The number of presentations on each topic was presented in Figure 4. The discussed topics in the ICoSAFS 2020 include agricultural economics, agriculture sustainability, animal production, climate change, crop production, farming system, landscape, plant production, plant protection, soil science, water resource, and miscellaneous aspects of research.

![Figure 3. Total numbers and the associated institution of presenters of the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia.](image-url)
The 80 paper presentations in the ICoSAFS 2020 were grouped into 13 aspects of research and commodities. The research aspect and the commodities presented in the ICoSAFS 2020 include animal disease, animal products, estate crops, food crops, forestry, fruit crop, horticulture crop, ornamental crops, pest and disease, plant products, spice crops, vegetable crops and miscellaneous topics. A list of the research aspect and the commodities presented by more than one participant was presented in Figure 5. Moreover, the following aspect of research and commodities are presented by one participant, including animal disease, food crop, horticulture crop, pest and disease and spice crop. Moreover, 37 presentations belonged to the miscellaneous aspect of research and commodities.

The objects of research discussed in the ICoSAFS 2020 presentation include oil palm, rice, orchids, fruits, goat, pepper, and soybean. Each of those objects was presented by more than one participant (Figure 6). On the other hand, the following objects are presented by one participant including Albizia, banana, buffalo, cacao, cassava, cattle, cheese, chicken, chili, coffee, cucumber, Eucalyptus pellita, flowering plant, grass, honey, maize, sago, coconut, Sesbania, shallot, sweet corn, tea and tomato. Moreover, 38 presentations belonged to the miscellaneous object of research.

![Figure 4. Numbers research topics presented by the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) participants on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia.](image-url)
Figure 5. Numbers research aspect and the commodities presented by more than one participant in the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) conducted on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia.

Figure 6. Numbers crops presented by more than one participant in the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) conducted on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia.
The ICoSAFS 2020 also invited seven scientists working with sustainable agriculture and farming system from many different countries. List of invited speakers, their institution affiliation, country of origins and title of their presentations were presented in Table 1. Some of the invited speaker presentations were included in the proceedings.

Table 1. List of invited speakers and their title of the International e-Conference on Sustainable Agriculture and Farming System (the ICoSAFS 2020) on 24 - 25 September 2020, at the Faculty of Agriculture, Bogor Agricultural University, Bogor, Indonesia.

| No. | First author surname | Affiliation | Title |
|-----|----------------------|-------------|-------|
| 1   | Alain Rival         | CIRAD, France | Climate Change is Shaping Oil Palm Breeding Strategies |
| 2   | Ellyn Betume        | Institute of Pacific Islands Forestry, USA | The Biological Control Process and Describe the Next Steps in Our International Collaboration with Researchers in Indonesia to Find Appropriate Natural Enemies of Albizia |
| 3   | Hatano Ryusuke      | Hokkaido University, Japan | Agricultural soil management to reduce N2O emission |
| 4   | Lakshmi Patthi Srigiriraju | Provivi, USA | Mating Disruption: A Revolutionary Tool for Area-Wide Sustainable Management of Insect Pests in Rice and Corn |
| 5   | Mohammad Amizi Bin Ayob | Universiti Kelantan, Malaysia | Transformation Agriculture Economics Sustainability on Commodity Crops |
| 6   | Suwardi             | IPB University, Indonesia | The Role of Humic Substance to Improve Degraded Soils for Increasing Production of Agricultural Plants |
| 7   | Zlatko SVEČNJAK    | Zagreb University, Croatia | Intensive rice production systems in Europe |

5. Conclusion

The International e-Conference on Sustainable Agriculture and Farming System (The ICoSAFS 2020) was an immense success and attracts as many as 271 attendants. The participants were from ten countries and as many as 87 presentations (seven invited speakers and 80 scientific presentation from participants) were discussed in the ICoSAFS 2020 on the subject of sustainable agriculture and farming system. The major scientific presentation topics discussed in the ICoSAFS 2020 include agricultural economics, farming system, landscape, plant production, plant protection, soil science, sustainable agriculture, and other miscellaneous topics associated with sustainable agriculture and farming system.

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The ICoSAFS 2020 STEERING AND ORGANIZING COMMITTEES

On behalf of the International e-Conference of Sustainable Agriculture and Farming System (ICoSAFS 2020) Steering Committee and Organizing Committee, I would like to welcome all participants and contributors to the ICoSAFS 2020. The e-conference is organized to express our concern for establishing and developing aspects related to sustainable agriculture and farming system.

Faculty of Agriculture, IPB University has collaborated with the Indonesian Forum of Higher Education in Agriculture (FKPTPI), Western Region, and the Indonesian Chapter of the International Society for Southeast Asian Agricultural Sciences (ISSAAS). The e-conference is conducted virtually via the zoom meeting platform to anticipate still developing COVID-19 pandemic in the world. On behalf of the International e-Conference of Sustainable Agriculture and Farming System (ICoSAFS 2020) Steering Committee and Organizing Committee, we are grateful that this ICoSAFS is finally running on September 24 and 25, 2020.

In the two-day ICoSAFS 2020, we will have plenary sessions on the first day, featuring seven distinguished invited speakers. Parallel sessions are on the second day of ICoSAFS 2020. Approximately 80 presenters line up for the parallel sessions, discussing around 80 oral presentations. We hope that the scientific exchanges during the ICoSAFS 2020 prove beneficial and fruitful to all participants.

We would like to convey our sincere thanks to the invited speakers and all of the parallel session presenters. We would also like to express our gratitude to all of the moderators and all members of the steering and organizing committees who have made this e-conference a success.

Chairman of the Steering and Organizing Committees:

Dr. Ir. Suwardi, M.Agr
OPENING REMARK
THE DEAN, FACULTY OF AGRICULTURE, IPB UNIVERSITY

Distinguished Professors, Participants, Ladies, and Gentlemen:

I am delighted and honored to publish the proceedings of the International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020) in the IOP Publishing. The Faculty of Agriculture, IPB University organized the ICoSAFS E-conference, in collaboration with the Indonesian Forum of Higher Education in Agriculture (FKPTPI), Western Region, and the Indonesian Chapter of the International Society for Southeast Asian Agricultural Sciences (ISSAAS). The ICoSAFS E-conference was held on 24 - 25 September 2020 using the Zoom meeting platform.

Seven distinguished invited speakers have participated in the first day of the ICoSAFS E-conference plenary session. Moreover, eighty oral presentations of participants from universities and institutes under the Ministry of Agriculture are organized on the second day of the ICoSAFS E-conference parallel sessions.

As the Dean of Faculty of Agriculture, IPB University - I wish to extend my warm welcome to all of the invited speakers from the USA, Japan, Croatia, France, Malaysia, and Indonesia; to all representatives from the Indonesian Forum of Higher Education in Agriculture (FKPTPI), Western Region and all participants from various universities and institutes under the Ministry of Agriculture and the Indonesia Institute of Science (LIPI).

I understand that the ICoSAFS 2020 E-conference aims to enhance the knowledge exchange among participants in sustainable agriculture and farming systems. Under the circumstance that COVID 19 pandemic is ongoing; therefore, the ICoSAFS E-conference was conducted using the ZOOM meeting platform. I hope the ICoSAFS E-conference enables the participants to be actively involved and creates networking among participants.

I would like to take this opportunity to express my gratitude to all delegates for their full support, cooperation, and contribution to the ICoSAFS 2020. I also wish to express my appreciation to the Organizing and the Steering Committee for their hard work and dedication to the successful ICoSAFS 2020 E-conference.

To conclude, I wish the participants a very fruitful and productive meeting in the ICoSAFS 2020. Please stay healthy and stay safe during these difficult situations.

Dean, Faculty of Agriculture,
IPB University

Dr. Ir. Sugiyanta, M.Si
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RECTOR OF IPB UNIVERSITY

The Honorable:
1. All Invited speakers from the USA, Japan, Croatia, France, Malaysia, and Indonesia,
2. Chairman of Indonesian Forum of Higher Education in Agriculture (FKPTPI), Western Region,
3. Chief of Indonesian Chapter, International Southeast Asia Agricultural Science (ISSAAS),
4. All participants from various Indonesian Universities, institutes under the Ministry of Agriculture, Republic of Indonesia, and under the Indonesia Institute of Science (LIPI).

It is a great pleasure to welcome you to the IPB University, Bogor-Indonesia, and to the International e-Conference on Sustainable Agriculture and Farming System (ICoSAFS 2020), which is hosted by the Faculty of Agriculture. The covid-19 pandemic has limited our mobility; However, it should not limit our desire to broaden networking and knowledge exchange among scientists. The virtual e-conference opens such an opportunity to even wider audiences.

Distinguished participants, ladies, and gentlemen,

Sustainable agriculture systems are the focal point of researchers, farmers, and policymakers in the world. It represents agriculture with low input, diverse organisms, and effective and efficient energy use. A sustainable agriculture system is a solution to the food problems but implemented sustainably by minimizing modern agriculture’s negative environmental impacts. Sustainable agriculture views agriculture as overall system optimization. It is also known as the agroecosystem concept, focusing on stability and sustainability of the production.

For this reason, the key to sustainable agriculture is to restore the diversity of organisms on agricultural land. Diversity can be increased through time and space dimensions. Diversity in time dimension may be done by crop rotation, while in the spatial dimension used cover crops, intercropping, agroforestry, and other similar approaches.

Distinguished participants, ladies, and gentlemen,

The ICoSAFS 2020 aims to bring together scientists, policy-makers, and practitioners in different levels of government, international organizations, and academic institutions to exchange and share their experiences and research results related to various aspects of sustainable agriculture and farming system; encourage and facilitate networking among Indonesian researchers, in the international arena; and mediating research result publication of the IPB academic staffs and researchers from various research institutes in Indonesia in a Scopus indexed proceeding.

I believe that all participants would participate in an open and constructive dialogue about sustainable agriculture and farming system. I am sure that through this event, we will learn the global context of sustainable agriculture and farming system to provide positive contributions to the environment. So I thank you all in advance for your valued contributions.

Finally, I hope that this encouraging moment will facilitate us as academicians and professional practices to share ideas, experiences, and better collaboration. Wishing good health and furtherance of each of yours, I conclude my address, and I declare the International E-Conference on Sustainable Agriculture and Farming System (ICoSAFS) 2020 open virtually.

Thank you very much.
Rector - IPB University

Prof. Dr. Arif Satria, S.P. M, Si,