

PAPER • OPEN ACCESS

Preface

To cite this article: 2023 *IOP Conf. Ser.: Earth Environ. Sci.* **1241** 011001

You may also like

- [Peer Review Statement](#)

- [Preface](#)

- [Preface](#)

View the [article online](#) for updates and enhancements.



ECS
The
Electrochemical
Society
Advancing solid state &
electrochemical science & technology

DISCOVER
how sustainability
intersects with
electrochemistry & solid
state science research

PREFACE

International Conference on Agriculture, Environment and Food Security (AEFS) is a leading international conference held by the Faculty of Agriculture, Universitas Sumatera Utara, Indonesia, for presenting novel and application experiences in agriculture and environment and food security. It also fosters communication worldwide among scientists, researchers, scholars, resource managers, practitioners, students, policymakers, and those interested in agricultural, environmental sciences, and food security.

AEFS Conference has been held annually since 2017. The AEFS Conference deliberations for the last four years were on the following themes of Agriculture, Plantation and Livestock for World Food Security (AEFS 2017); Prospects and Challenges of Sustainable Agriculture to Improve Food Security and Environment (AEFS 2018); Challenges on Food Security and Sovereignty in the Industrial Era 4.0 (AEFS 2019); Innovation and Technologies on Agricultural and Environmental Sustainability Systems (AEFS 2020); Precision Agriculture Technologies and Farming Systems Toward Food Security and Sustainability (AEFS 2021). Moreover, for the 6th AEFS 2022, the theme was focused on **“Strengthening Sustainable Agriculture for A Better Future”** with seven selected tracks, including Agricultural Engineering, Agricultural Economics, Food Science and Technology, Animal Science, Marine and Fisheries Science, Environmental Science and Plant Science (Agronomy and Plantation, Plant Breeding, Biotechnology, Integrated Pest Management and Soil Science).

We want to thank the Honorary Board, the Scientific Committee, the keynote speakers, all participants, the sponsor, and the organizing committee. The honorary board of the 6th AEFS 2021 were Dr. Muryanto Amin, S.Sos., M.Si (Rector of Universitas Sumatera Utara) ; Prof. Dr. Poppy Anjelisa Zaitun Hasibuan S.Si., M.Si., Apt (Vice Rector for Research, Community Service and Cooperation of Universitas Sumatera Utara); Prof. Ing. David Herak, Ph.D (Czech University of Life Science) and Prof. Dr. Ing. Frantisek Kumlala (Czech University of Life Science). Moreover, the Scientific Committee of this conference were Prof. Ing. David Herak, Ph. D. - Czech University of Life Science (Prague), Assoc. Prof. Ing. Abraham Kabutey, Ph.D - Czech University of Life Science (Prague), Prof. Carolee T Bull, Ph.D. - California State University (USA), Prof. Edison Purba, Ph.D - Universitas Sumatera Utara (Indonesia), Riswanti Sigalingging, Ph.D - Universitas Sumatera Utara (Indonesia), Prof. Taifo Mahmud, Ph.D. - Oregon State



University (USA), Prof. Frans Maathuis - University of York (UK), Prof. Dr. Ir. Hermanto Siregar, M. Ec - Institut Pertanian Bogor (Indonesia), Prof. Dr. Erman Munir, M.Sc - Universitas Sumatera Utara (Indonesia), Prof. Dr. Chris Franco - University of Flinders (Australia), Prof. Renatto Andrin Villano - University of New England (Australia), Prof. Bhesh Bhandari, Ph.D. - University of Queensland (Australia), Prof. Dr. Abd. Razak Alimon - Universiti Putra Malaysia (Malaysia) and Dr. Supaya Wenuganen - Maharishi University (USA). Furthermore, the structures of the AEFS 2022 Organizing Committee were:

Steering Committee : Dr. Ir. Tavi Supriana, M.S.
 Dr. Lisnawita, S.P., M.Si.
 Ir. Revandy I. M. Damanik, M.Si., M.Sc., Ph.D.

Organizing Committee

Chairman : Prof. Dr. Ir. Elisa Julianti, M.Si
Co-Chairman : 1. Riswanti Sigalingging, S.TP, M.Si., Ph.D.
 2. Irda Safni, S.P., M.CP., Ph.D.
 3. Rulianda Purnomo Wibowo, S.P., M.Ec., Ph.D.
Secretary : 1. Tasya Chairuna Pane, S.P., M.P.
 2. Putri Chandra Ayu, S.TP., M.Si.
Treasurer : Yustika Venawati, S.Si.
Secretariat : 1. R.B. Moh. Ibrahim Fatoni, S.Pi., M.P.
 2. Raju, S.TP., M.Si.
 3. Muhammad Khaliqi, S.P., M.Si.
 4. Hafnes Wahyuni, S.P., M.P.

Editorial and Reviewing, PIC Committee :

1. Prof. Ing. David Herak, Ph.D
2. Riswanti Sigalingging., STP., M. Si., Ph.D
3. Prof. Ir. Edison Purba, Ph.D.
4. Prof. Dr. Ir. Elisa Julianti, M.Si.
5. Dr. Lisnawita, S.P., M.Si.
6. Irda Safni, S.P, M.CP, Ph.D.
7. Dr. Ir. Yaya Hasanah, M.Si.
8. Dr. Ir. Ma'ruf Tafsir, M.Si.

9. Dr. Khairunisa Lubis, S.P., M.P.
10. Ir. Revandy I. M. Damanik, M.Si., M.Sc., Ph.D.
11. Ir. Diana Chalil, M.Si., Ph.D.
12. Rulianda Purnomo Wibowo, S.P., M.Ec., Ph.D.
13. Era Yusraini, S.TP., M.Si.
14. Ir. Hotnida Sinaga, M.Phil., Ph.D.
15. Ahmad Muhtadi, S.Pi., M.Si.
16. Prof. Mohammad Basyuni, S.Hut., M.Si., Ph.D.
17. Prof. Dr. Ir. Noverita Sprinse Novelina, M.P
18. Dr. Nauas Domu Marihot Romauli, STP, M.Eng
19. Lukman Adlin Harahap, S.TP., M.Si.
20. Delima Lailan S. Nasution, S.TP, M.Sc.
21. Achmad Sadeli, S.Pt., M.Sc.
22. Fuad Hasan, S.Pt., M.Si.
23. Uswatun Hasanah, S.Pt., M.Si.
24. Peni Patriani, S.Pt., M.P.
25. Muhammad Khaliqi, S.P., M.Si.
26. Tasya Chairuna Pane, S.P., M.P.
27. R.B. Moh. Ibrahim Fatoni, S.Pi., M.P.
28. Karina Nola Sinamo, S.TP., M.Si.
29. Raju, S.TP., M.Si.
30. Putri Chandra Ayu, S.TP., M.Si.
31. Astrid Fauzia Dewinta, S.St.Pi., M.Si.
32. Adrian Hilman, S.TP., M.Sc.
33. Hafnes Wahyuni, S.P., M.P.
34. Nur Ulina Warnisyah Br Sebayang, S.P., M.Agr.
35. Khairunnisa, S.Pi., M.Si.
36. Vindy Rilani Manurung, S.Pi., M.P.
37. Zulham Apandy Harahap, S.Kel., M.Si.
38. Riantri Barus, S.P., M.P., M.M.
39. Sigit Sepriadi, S.Pt
40. Dina Lestari, S.T.
41. Kennie Cendekia Desnamrina S.Pt., M.Pt.
42. Vindy Rilani Manurung, S.Pi., MP
43. Edy Syahputra Harahap, S.TP., M.Si.

44. Julia Syahriani Hasibuan S.Pi., M.Si.
45. Nursa'adah S.ST., M.Agr
46. Rahmatika Alfi SP, MSi
47. Syahira Addina S.Pi, M.Si
48. Fetaro Zendrato, S.Kom.
49. Kristiawan Hadinata Ginting, S.E., M.Si.

Moreover, the 6th AEFS was supported by Faculty of Agriculture, Universitas Sumatera Utara, Medan, Indonesia (USU), Czech University of Life Science, Prague (CULS), Indonesian Association of Food Technologies (PATPI), Indonesian Society of Agricultural Economics (PERHEPI), Indonesian Phytopathological Society (IPS/PFI), Indonesian Association of Nutrition and Feed Science (AINI), Komisariat Daerah Sumatera Utara and Persatuan Insinyur Indonesia.

The 6th AEFS was conducted hybrid in Medan at Arya Duta Hotel and virtually via Zoom because of the domestic and overseas travel restrictions in many countries due to the Covid-19 pandemic. Indonesia's government has closed its border and banned large-scale events/gatherings (including academic activities), especially in big cities, to prevent and stop the spread of COVID-19. Since March 2020, academic activities in Indonesia have been held virtually. Universities are closed, and academics and researchers have to work from home. However, this condition must continue for academics and researchers in agriculture, the environment, and food technology to create various innovations. A virtual conference is an answer to provide opportunities for academicians and researchers in those fields who cannot participate in the physical conference and to continue to make various contributions to science due to COVID-19. Agriculture, environment and food security are vital to support human activities; there is an urgent to always continue the various development and innovations, especially during the COVID-19 pandemic. In 2022, the IC-AEFS entered its 6th year. By holding the 6th AEFS in the 2022 hybrid, scientists and academicians can stay motivated to continue their research and publication despite all the limitations.

The 6th AEFS was held on Thursday, October 27th 2022, from 8 a.m. to 6 p.m. at Arya Duta Hotel, Medan, Indonesia. The conference used Zoom's virtual meeting platform to deliver the virtual conference, which worked like a non-virtual conference. This conference had plenary and parallel sessions. The

plenary session was divided into two sessions with four keynote speakers. The keynote speakers for the first session were **Prof. Budiman Minasny** from The University of Sydney, Australia and **Prof. Henry M Manik** from IPB University, Indonesia. The keynote speakers for the second session were **Rulianda Purnomo Wibowo, SP., M.Ec., Ph.D** from Universitas Sumatera Utara and **Prof. Serafim Bakalis** from University of Copenhagen, Denmark. Each keynote speaker was given 30 minutes to deliver their speech. Moreover, the first plenary session was moderated by Lukman Adlin Harahap, STP., M.Si, Ph.D. and the second was moderated by Riswanti Sigalingging, STP., M.Si., Ph.D from Universitas Sumatera Utara. Furthermore, the discussions and Q&A sessions were held 30 minutes after the keynote speaker gave the speech. Participants were allowed to ask the keynote speaker/presenter using the chat room or ask directly by raising their hands (physical attendance) and pressing the raise hand button (Virtual attendance). When using the "raise hand" button, the moderator unmutes the participant and allows them to ask directly.

Moreover, for the parallel session, there were eight rooms (2 rooms for offline presenters and six rooms for hybrid) led by one moderator and 2 PICs in every room. They were the key people in maintaining the room and ensuring all the presenters received the Zoom meeting link to join and present their papers. Every author/presenter was given 10 minutes to present their paper (in detail: 7 minutes to present their paper and 3 minutes to answer other participant questions in the Q&A session). There were two presentation options for the presenter. They could present their paper directly in the Zoom meeting/in-room seminar or play their recorded presentation video. The committee made the second option to prevent technical issues because of the internet connection. The participants received the Zoom virtual meeting link to sign in and join the conference.

At this conference, 208 papers were submitted, 156 papers were accepted to present, 150 papers were accepted to proceed to IOP Publisher and only 141 papers were accepted for publishing; 188 participants gathered from 53 universities, 14 government agencies and two companies within the country of Indonesia. Moreover, there are 31 universities and five government agencies, both domestic and overseas, namely:

1. Aceh Landscape Development Centre, Langsa, Indonesia
2. Agency for Plantation and Livestock, Kalimantan Barat

3. Andalas University, Padang
4. Armenian State Pedagogical University, Yerevan
5. Badan Perencanaan dan Pembangunan Daerah Kabupaten Buton Utara
6. Batumi State University, Georgia
7. Bina Nusantara University
8. Binus University, Indonesia.
9. Branch of Green Power Co., LTD, Ben Tre Province, Vietnam
10. Coord. of Social Forestry of Konsu Mandiri, Imandau, Central Kalimantan, Indonesia
11. Corvinus University of Budapest
12. Directorate of Cereals Crop-Directorate General of Food Crops, Ministry of Agriculture Indonesia
13. Djuanda University
14. Engineering Research Center of Chestnut Industry Technology, China
15. Far Eastern Federal University (FEFU)
16. Gadjah Mada University
17. GMichigan State University, United States of America
18. Gorontalo Assessment Institute for Agricultural Technology Ministry of Agriculture, Gorontalo
19. Gulistan State University, Syrdarya, Uzbekistan
20. Halu Oleo
21. Hasanuddin University
22. Health Polytechnic of the Ministry of Health of Medan, Indonesia
23. Hebei Normal University of Science and Technology, China
24. Indonesian Catholic University
25. Indonesian research Institute for Animal Production
26. Indonesian Spice and Medicinal Crops Research Institute (ISMCRI)
27. Indonesian Vegetable Research Institute (Balai Penelitian Tanaman Sayuran - BALITSA)
28. Institut of Agrarian and Membran Technology of Batumi Shota Rustaveli State University, Georgia
29. Institut Pertanian Stiper
30. Institute of Technology of Surabaya
31. IPB University

32. Jambi University
33. Janabadra University, Yogyakarta
34. Lamandau Central Kalimantan Indonesia
35. M.B.Ch.B, Scripps Research Institute, National University, USA
36. Manado Health Polytechnic Department of Medical Laboratory Technology
37. Ministry of Agriculture
38. Ministry of Industry, Yogyakarta, Indonesia
39. Moscow State University of Civil Engineering
40. National Chiayi University, Taiwan
41. National Research and Innovation Agency, Subang, Indonesia
42. National University of Life and Environmental Science, Kiev, Ukraine
43. Nguyen Tat Thanh University, Vietnam
44. Organization for Agriculture and Food National Research and Innovation Agency of the Republic of Indonesia
45. Pangkajene Kepulauan State Polytechnic of Agriculture
46. Pangkep State Polytechnic of Agriculture (Polipangkep)
47. People's Friendship University of Russia (RUDN University)
48. Perwira Purbalingga University
49. Plekhanov Russian University of Economics
50. Polytechnic of Agricultural Development Yogyakarta-Magelang
51. PT Bumitama Gunajaya Agro
52. Research and Innovation Agency of Indonesia (BRIN)
53. Research Institute for the Development of Digital Technologies and Artificial Intelligence, Tashkent, Uzbekistan
54. Riau University
55. Russian Academy of Sciences
56. Sakhalin State University
57. Samara State Agrarian University, Russia
58. Saratov State Vavilov Agrarian University, Russia
59. Scientific Center of Vegetable and Industrial Crops of the Ministry of Economy of the Republic of Armenia, Armenia
60. Sekolah Tinggi Ilmu Tarbiyah Al-Hilal Sigli, Sigli, Indonesia
61. Slaughterhouse and Animal Health Center, Jambi Province, Indonesia
62. Syiah Kuala University

63. Tanjung Pura University
64. Tashkent Institute of Irrigation and Agricultural Mechanization Engineers, Uzbekistan
65. Tashkent University of Information Technologies, Uzbekistan
66. Tashkent University of Information TechnologiesUzbekistan
67. The University of Islam Lamongan
68. Ulyanovsk State Agrarian University, Russia
69. Universitas Alma Ata, Yogyakarta
70. Universitas Brawijaya
71. Universitas HKBP Nommensen
72. Universitas Islam Negeri Sultan Syarif Kasim Riau
73. Universitas Islam Riau
74. Universitas Islam Sumatera Utara
75. Universitas Katolik Santo Thomas
76. Universitas Labuhanbatu
77. Universitas Malikussaleh Aceh
78. Universitas Methodist Indonesia
79. Universitas Muhammadiyah Sumatera Utara
80. Universitas Negeri Gorontalo
81. Universitas Proklamasi 45,
82. Universitas Sam Ratulangi Indonesia
83. Universitas Sari Mutiara Indonesia
84. Universitas Sebelas Maret
85. Universitas Simalungun
86. Universitas Sultan Ageng Tirtayasa
87. Universitas Sumatera Utara
88. Universitas Teuku Umar
89. Universiti Malaysia Terengganu
90. Universiti Putra Malaysia
91. Universiti Sains Malaysia
92. Universiti Teknologi MARA (UiTM) Negeri Sembilan
93. Universiti Teknologi MARA (UiTM) Shah Alam, Selangor
94. University of Al-Qasim Green, Iraq.
95. University of Darussalam Gontor,
96. University of Darussalam Gontor, Indonesia

97. University of Jember
98. University of Lambung Mangkurat
99. University of Lampung
100. University of Panca Bhakti, Pontianak
101. University of the Philippines Los Baños
102. Universtas Medan Area
103. UPTD Peternakan Provinsi Sulawesi Tenggara
104. Uzbek Scientific Research Institute of Agricultural Mechanization,
Uzbekistan
105. Volgograd State Agrarian University

The 6th AEFS was succesfully conducted and there were no major technical difficulties during the conference. Some participants from outside Medan and ooverseas remarked that virtual conference feels more accessible than the non-virtual conference (physical conference). This shows how virtual conference can be a paradigm shift on how conferences in the future look especially during Covid-19 pandemic.

AEFS 2022 Organizing Committee