

# Conference Programme Papers Abstracts

## Global Innovation on Sustainability and Sustainable Development



SAFE 2017 - International Conference  
Sustainable Agriculture, Food and Energy  
August 22-24, 2017, MALAYSIA

## CONTENTS



SAFE 2017 - International Conference  
Sustainable Agriculture, Food and Energy  
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# 5<sup>th</sup> International Conference Sustainable Agriculture, Food, and Energy **SAFE2017**

August 22-24, 2017  
Acapella Suites Hotel Shah Alam, MALAYSIA

**“Global Innovation on Sustainability and  
Sustainable Development of Agriculture,  
Food and Energy”**

## Organizing Institution



**SAFE NETWORK**  
Asia Pacific Network for Sustainable Agriculture, Food and Energy

## **CONTENTS**

Welcome Message from SAFE-Network Coordinator Dr. Novizar Nazir

Welcome Remark from the Rector of Andalas University-INDONESIA, Prof. Dr. Tafdid Husni

Welcome Remark from Conference Chairman/Vice Chancellor of Universiti Teknologi MARA (UiTM),  
**PROFESSOR EMERITUS DATO' DR HASSAN SAID**

## The composition of SAFE2017 Organizing Committee

#### Networking Discussion

SAFE2017 Program

#### List of Abstract based on Code of Sub-themes

## Abstracts

## SUB-THEME I Sustainable Agriculture and Technology (SAT)

## SUB-THEME 2 Food Science and Technology (FST)

### **SUB-THEME 3 Alternative Energy (AE)**

SUB-THEME 4 Sustainable Development: Towards the Ethical Future

SLIP THEME 5 : *Development, Management and*

# Welcome Message from SAFE-Network Coordinator



We welcome you to the 5<sup>th</sup> International Conference on Sustainable Agriculture, Food, and Energy (SAFE-2017), with the theme ' Global Innovation on Sustainability and Sustainable Development of Agriculture, Food and Energy, which will be held from August 22 to 24, 2017 in Shah Alam, Malaysia. This is the 5<sup>th</sup> conference of annual SAFE-Network conferences. The 1<sup>st</sup>, conference (SAFE-2013) was conducted in Padang, Indonesia (May 12-14, 2013), the 2<sup>nd</sup> (SAFE-2014) was in Bali, Indonesia (September 17-19, 2014), the 3<sup>rd</sup> (SAFE-2015) was in Ho Chi Minh City, VIETNAM (November 17-19, 2015), and the 4<sup>th</sup> (SAFE-2016) as in Colombo, Sri Lanka (October 20-22, 2016).

The objectives of the conference are:

1. To provide a forum for international researchers to exchange and share their experiences, new ideas, sustainability concepts and research results on sustainable agriculture, food, and energy.
2. To promote collaboration in research on sustainable agriculture, foods, and energy production.
3. To establish a regional networking among participants on sustainable agriculture, food, and energy.
4. To increase awareness of the importance of living and working in the manner that enhances the economic, environmental and social well-being of our community through research, education, regional partnerships, and community engagement.

SAFE-2017 provides an opportunity to many people to interact with prominent leaders in the field of sustainability and build global networking with scholars and professionals. This conference is aimed to bring together people from different areas and interests to share ideas, develop fruitful discussions, maintain existing or establish new partnerships, and share achievements in various works.

On behalf of **SAFE-Network**, we would like to convey our appreciation and thank you very much to the Universiti Teknologi MARA (UiTM), Malaysia for hosting this prominent conference.

SAFE-Network is our home. We come from different countries with different language, tradition and culture. However, we respect those differences. We are friend and we are family. Let's becoming bigger together! The more friendship sustained, the more world sustained.

Welcome to SAFE-2017 conference, Shah Alam, Malaysia. Enjoy Malaysia, enjoy the food, the culture and the friendship!

Looking forward to welcoming you to the SAFE2018 conference in Manila, the Philippines!

**Dr. Novizar Nazir**  
*Executive Chairman*  
*SAFE-Network Coordinator*



## **MESSAGE FROM THE RECTOR OF ANDALAS UNIVERSITY- INDONESIA**

I would like to congratulate and convey my gratitude to the SAFE-Network for undertaking the initiative to organize SAFE-2017 (the 5<sup>th</sup> International Conference on Sustainable Agriculture, Food, and Energy). Andalas University is delighted to be the organizer of the SAFE's annual conferences, which was firstly held in Padang, Indonesia, from 12 to 14 of May, 2014.

The theme of this year's conference is "Global Innovation on Sustainability and Sustainable Development of Agriculture, Food, and Energy". Sustainability is important because it ensures people have water and resources, and adopting its practices protects the environment and human health. Sustainability is now very important in many fields, including civic planning, environmental consultancy, agriculture, corporate strategies, health assessment and planning, and even into law and decision making. Sustainability draws on politics, economics and, philosophy and other social sciences as well as the hard sciences. Today, sustainability skills and environmental awareness is also a priority in many corporate jobs. We believe that various valuable innovation can help maintain or achieve the doctrine of sustainability, that is maintaining the conditions in which nature and humans can survive by appropriately utilizing the natural components of the environment. We believe that this conference will generate substantial contributions to create a valuable innovation and new value on sustainability and sustainable development of agriculture, food, and energy.

I would like to thank the organizing committee and the co-organizer institutions for the hard work and full commitment in the preparation of this conference. I also would like to congratulate the Universiti Teknologi MARA (UiTM), Malaysia, that has successfully hosted this conference. We hope that our good relationships could bring us to more collaborative works and activities in the future.

Finally, my personal respect and appreciation are addressed to all the participants. I wish you an enjoyable and memorable conference. Please enjoy the culture of Malaysia!

Thank you.

**Prof. Dr. Tafdil Husni**  
Rector of Andalas University

**MESSAGE FROM VICE CHANCELLOR OF UNIVERSITI TEKNOLOGI MARA (UiTM),  
MALAYSIA**



I wish you Selamat Datang to the “5th International Conference on Sustainable Agriculture, Food and Energy” to be held on 22–24 August 2017 in Shah Alam, Malaysia. It is a pleasure to welcome all distinguished plenary and invited speakers,

I wish you Selamat Datang to the “5th International Conference on Sustainable Agriculture, Food and Energy” to be held on 22–24 August 2017 in Shah Alam, Malaysia. It is a pleasure to welcome all distinguished plenary and invited speakers, delegates, and participants to this conference. Reaffirming the need for a more coordinated approach to improve effective collaboration between members of the academia and industry, UiTM is delighted to collaborate with the SAFE network in organizing this event. As global support for sustainability in the field of agriculture, food, and energy continues to grow, it becomes increasingly important that research and best practices in those areas are shared to address issues and to examine possible actions.

I am confident that this conference will provide the opportunity to strengthen partnerships with a wider scientific and industrial community. May this event be an insightful and effective exchange of information towards economically viable innovations without compromising environmental and social concerns in the world of SAFE.

**PROFESSOR EMERITUS DATO' DR HASSAN SAID**

Universiti Teknologi MARA (UiTM)  
MALAYSIA

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# SAFE NETWORK



Asia Pacific Network for Sustainable Agriculture, Food and Energy

## Mission:

**SAFE Network** is an Asia Pacific network of university and college educators, researchers, and activists, who collaborate in analysis, synthesis, connecting and educating the people for a better economy, ecology, and equity in agriculture, food and energy system.

## Objectives:

- Increase the capacity of the scientific community to address major sustainability challenges in agriculture, food and energy.
- Increase the capacity of the scientific community to enrich people through programs, services and support that help them increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

## Activities:

- SAFE Network provides annual workshop and conference under the theme of sustainable agriculture, food and energy.
- SAFE Network publish an International Journal in sustainable agriculture, food and energy.
- SAFE Network enables scholars to collaborate more effectively in applying an International /regional research grant.
- SAFE Network provides Exchange scholars/lecturers between members.
- SAFE Network provides program, services and support to help people increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

## Working Group

- WG1- Sustainable Agriculture
- WG2- Food Technology and Sustainable Nutrition
- WG3- Sustainable Energy
- WG4- Extension, Community Development and Scientific Communication

## Let's Join!

Any organization or individual committed to Sustainable Agriculture, Food and Energy can join the Network to:

- Get the latest information on Sustainable Agriculture, Food and Energy
- Build connections with colleagues across the country
- Access helpful assistance, workshop, training and resources.
- Get support to programs, services and support that increase capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.
- Share your knowledge and experience on Sustainable Agriculture, Food and Energy

# NETWORKING DISCUSSION

## Term of Reference

### INTRODUCTION

**SAFE-Network** was initiated by Andalas University and declared on 12<sup>nd</sup> May 2013 in Andalas University-Padang INDONESIA by 16 scholars from university and college educators, researchers, and activists from Australia, Indonesia, Japan, Malaysia, Thailand, Vietnam. The objectives of this network are to increase the capacity of the scientific community to address major sustainability challenges in agriculture, food and energy and to increase the capacity of the scientific community to enrich people through programs, services and support that help them increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

There are 5 main activities of SAFE-Network:[1] provides annual workshop and conference under the theme of sustainable agriculture, food and energy; [2] publish an International Journal in sustainable agriculture, food and energy; [3] enables scholars to collaborate more effectively in applying an International /regional research grant; [4] SAFE Network provides Exchange scholars/lecturer between members and [5] provides program, services and support to help people increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system. Until recently, SAFE-Network have already performed 3 annual conference and published conference papers in International Journal.

SAFE-network is growing. At the beginning of its establishment, there are 124 individuals involved in the SAFE-Network activity. At a conference in Bali in 2014, the members involved increased to 267. Currently, individuals involved in the SAFE-Network already numbered 624 people who come from 19 different countries and 62 institutions.

To improve the activity of SAFE-Network, then we need to jointly agree to undertake activities which are in line with the mission of SAFE-Network. In the context of that improvement, Networking Discussion is very important to be held.

#### **Objective:**

1. To discuss and approve proposals submitted by SAFE-Network Secretariat.
2. To provide an opportunity for each member to discuss the possibility of joint cooperation between their individual institutions

#### **PARTICIPANTS**

##### **Hosted by:**

1. Prof. Dr. Helmi, SAFE-Network Head of Steering Committee/ Andalas University. INDONESIA
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35. Prof. Dr. James Hellyward, Dean of Faculty of Animal Husbandry. Andalas University. INDONESIA
36. Dr. Rusdiana, Politeknik Unsri. INDONESIA

#### **Proposal I: Book Writing Activities**

**Title:**

**“Agriculture, Food, Energy and Sustainability: Asian Perspectives”**

**Editors:** Dr. Novizar Nazir, SAFE-Network Coordinator. Andalas University-INDONESIA

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**Publisher:**

This book will be printed and published by SPRINGER.

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**Proposal II: Philippines Summer Course (PSC2017) on Agritourism and Sustainability Development**

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**Host Institution:**

*Central Bicol State University of Agriculture, Philippines*

**Participants:**

*This one week course is intended for students who come from each member country of SAFE-Network. Total number of participants between 20-30 students*

**Lecturer:**

*The lecturers is on voluntary basis comes from each member country of SAFE-Network who have a commitment to share their experience, expertise and knowledge. The lecturer come at their own expense. SAFE-Network invite Gifu University-JAPAN, Prefectural University of Hiroshima-Japan, University of Ruhuna-Sri Lanka, Universiti Kebangsaan Malaysia, Universiti Sains Malaysia, Universiti Teknologi Mara (UiTM), Universiti Putra Malaysia, Andalas University-Indonesia, Kasetsart University-THAILAND, Nong Lam University Ho Chi Minh City, Pampanga State Agricultural University, Philippines, Central Bicol University of Agriculture, Philippines, University of Bengkulu, Gadjah Mada University, Padjadjaran University, Bogor Agricultural University, Jember University and other institution to participate.*

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**Proposal III: JOINT ACTION**

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1. International Advisory Panel on Sustainable Agriculture, Food and Energy (BALIGREEN)-**Prof. Wan Mochtar Wan Yussoff, Universiti Kebangsaan Malaysia-MALAYSIA**
2. Book Chapter Project on Food Issue
3. Journal Publication
4. ACTION PROGRAM

*Chairperson Committee:*

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# SAFE NETWORK



Asia Pacific Network for Sustainable Agriculture, Food and Energy

## Mission:

**SAFE Network** is an Asia Pacific network of university and college educators, researchers, and activists, who collaborate in analysis, synthesis, connecting and educating the people for a better economy, ecology, and equity in agriculture, food and energy system.

## Objectives:

- Increase the capacity of the scientific community to address major sustainability challenges in agriculture, food and energy.
- Increase the capacity of the scientific community to enrich people through programs, services and support that help them increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

## Activities:

- SAFE Network provides annual workshop and conference under the theme of sustainable agriculture, food and energy.
- SAFE Network publish an International Journal in sustainable agriculture, food and energy.
- SAFE Network enables scholars to collaborate more effectively in applying an International /regional research grant.
- SAFE Network provides Exchange scholars/lecturers between members.
- SAFE Network provides program, services and support to help people increase their capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.

## Working Group

- WG1- Sustainable Agriculture
- WG2- Food Technology and Sustainable Nutrition
- WG3- Sustainable Energy
- WG4- Extension, Community Development and Scientific Communication

## Let's Join!

Any organization or individual committed to Sustainable Agriculture, Food and Energy can join the Network to:

- Get the latest information on Sustainable Agriculture, Food and Energy
- Build connections with colleagues across the country
- Access helpful assistance, workshop, training and resources.
- Get support to programs, services and support that increase capacity to produce a better economy, ecology, and equity in agriculture, food and energy system.
- Share your knowledge and experience on Sustainable Agriculture, Food and Energy

## **SAFE2017 PROGRAM**

**DAY 0: Monday, August 21, 2017  
ARRIVAL OF PARTICIPANTS**

**DAY 1: Tuesday, August 22, 2017  
PRE-CONFERENCE TOUR**

**DAY 2: Wednesday, August 23, 2017  
VENUE: ACAPPELLA SUITES HOTEL, SHAH ALAM. MALAYSIA**

Time	Activity
7.30-8.30 AM	Registration
8.30-9.00	<b>Opening Ceremony</b> <b>Venue: SERAYA BALL ROOM, Acapella Suites Hotel</b>
8.40-8.50	Opening by MC National anthem of Malaysia " Negaraku" National anthem of Indonesia " Indonesia Raya" Do'a
8.50-8.55	Conference Program Introduction by Local Conference Coordinator, <b>Prof. Azizah Hanom Ahmad. Universiti Teknologi MARA, MALAYSIA</b>
8.55-9.00	Welcome Remark from Rector of Andalas University, <b>Prof. Dr. Tafdil Husni</b>
9.00-9.05	Welcome Remark from Vice Cancellor of Universiti Teknologi MARA, <b>PROFESSOR EMERITUS DATO' DR HASSAN SAID</b>
9.05-9.10	Welcome Remark by the <b>Ambassador of the Republic of Indonesia in MALAYSIA</b>
9.10-9.15	Presentation of Opening Gimmick Presentation of Certificate of Appreciation and Special Gift from <b>Dr. Novizar Nazir (SAFE-Network)</b> to Universiti Teknologi MARA-MALAYSIA and Andalas University-INDONESIA
9.15-9.25	Presentation SAFE2018 logo to Delegates from PHILIPPINES, the President of CBSUA, Philippines and <b>Dr. Norman de Jesus</b> , Resident Coordinator of SAFE-Network [Philippines] from Pampanga State Agricultural University. Official Photo session

9.25-10.15	<b>KEY NOTE ADDRESSES</b> Venue: SERAYA BALL ROOM, Acapella Suites Hotel, Shah Alam
	<b>TRANSFORMING AWARENESS THE IMPORTANCE OF INNOVATION TO THE SUSTAINABLE AGRICULTURE, FOOD AND ENERGY</b> Session Chair: Dr. Norman de Jesus, SAFE-Network National Coordinator (Philippines), Pampana State Agriculture University.
9.25-9.40	<b>Presenter 1:</b> <b>Prof. Dr. Helmi Syarifuddin, SAFE-Network Regional Office, Andalas University-INDONESIA</b> <b>GLOBAL INNOVATION ON SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT IN AGRICULTURE, FOOD AND ENERGY : SAFE-NETWORK PERSPECTIVE</b>
9.40-9.55	<b>Presenter 2:</b> <b>Dr. Worajit Setthapun, Asian Development Institute, Chiang Rai Rajabhat University. THAILAND</b> <b>BUILDING SMART COMMUNITIES WITH GREEN TECHNOLOGY</b>
9.55-10.10	<b>Q &amp; A</b> Presentation of Certificate of Appreciation and Special Gift to Session Chair and Keynote Speakers
10.10-10.30	<b>COFFEE BREAK</b>
10.30-11.40	<b>Plenary Session :</b> <b>Current Issue of Sustainable Agriculture, Food and Energy</b> <b>Venue: Ball Room, Acapella Suites Hotel, SHAH ALAM</b> <b>Session Chair: Prof. Dr. Mangala de Silva, SAFE Network Resident Coordinator [Sri Lanka]. University of Ruhuna. SRI LANKA.</b>
10.30-10.45	<b>Presenter 3:</b> <b>Prof. Dr. Y.H. Taufiq Yap, Universiti Putra Malaysia. MALAYSIA</b> <b>SUSTAINABLE PRODUCTION OF BIOENERGY</b>

10.45-11.00	<b>Presenter 4:</b> <b>Dr. Ravindra Chandra Joshi</b> Ph.D. (Philippines), FRES (Lon.), MIBiol, CBiol (Lon.), Sigma Xi (USA), NRCP (Phils.) Visiting Adjunct Professor of Agriculture, University of South Pacific (USP) Fiji Visiting Professor, Pamanga State Agricultural University (PSAU), Philippines
11.00-11.15	<b>Presenter 5:</b> <b>Prof. Dr. Syaifollah Abdullah, Universiti Teknologi MARA, MALAYSIA</b> <b>NANO TECHNOLOGY FOR SUSTAINABLE FOOD PRODUCTS</b>
11.15-11.30	<b>Presenter 6:</b> <b>Hj. Zuraimi Isa, Head of Water Management Services Al-Rajhi Agriculture and Infrastructure, Jeddah. SAUDI ARABIA</b> <b>DESERT AGRICULTURE AND AQUACULTURE</b>
11.30-11.45	<b>Presenter 7:</b> <b>Dr. Khalid Al Malahy, CEO of Al Rajhi International for Investment (RAAI).</b> <b>DEVELOPMENT IN AGRICULTURE AND TECHNOLOGY</b>
11.45-12.20	<b>Q &amp; A</b> Presentation of Certificate of Appreciation and Special Gift to session chair and invited Speakers
12.20-13.30	<b>Plenary Session</b>
	<b>PUTTING THE AWARENESS OF SUSTAINABILITY OF AGRICULTURE, FOOD AND ENERGY INTO PRACTICE</b> <b>Venue: Ball Room, Acapell Suites Hotel, SHAH ALAM</b> <b>Session Chair: Prof. Nguyen Huy Bich, SAFE-Network National Coordinator (VIETNAM), Nong Lam University Ho Chi Minh City, VIETNAM</b>

12.20-12.35	Presenter 8: Dato' Dr. Zainal Omar, Amaravila Homegarden. MALAYSIA <b>ENHANCING HOUSEHOLE FOOD SECURITY AND WELBEING THROUGH HOMEGARDEN</b>													
12.35-12.50	Presenter 9: Prof. Dr. Abdul Manaf Ali, Universiti Sultan Zainal Abidin (UniSZA), Trengganu. MALAYSIA <b>PROMOTING TRADITIONAL VEGETABLE AND MEDICINAL PLANT THROUGH BIOLOGICAL ACTIVITIES</b>													
12.50-13.05	Presenter 10: Assoc. Prof. Yoichi Tominaga, Tokyo University of Agriculture and Technology. JAPAN. <b>NOVEL POLYCARBONATE-BASED ELECTROLYTES FOR Li-ION BATTERIES</b>													
13.05 – 13.30	<b>Q &amp; A</b> Presentation of Certificate of Appreciation and Special Gift to session chair and invited Speakers													
13.30-14.30	<b>Lunch Break, Poster Session &amp; Prayer</b>													
<b>14.30-16.30</b>	<b>Breakout Session I</b> Venue: Acapella Suites Hotel. Shah Alam, Malaysia Person in Charge: Prof. Dr. Fauzan Azima, ANDALAS University-INDONESIA													
Parallel Session	<table border="1"> <thead> <tr> <th>Room 1 SERAYA ROOM A</th> <th>Room 2 SERAYA ROOM B</th> <th>Room 3 SERAYA ROOM C</th> <th>Room 4 MERANTI ROOM A</th> <th>Room 5 MERANTI ROOM B</th> <th>Room 6 ORCHID ROOM, First Floor</th> </tr> </thead> <tbody> <tr> <td><b>Session Chair:</b> <b>PROF. ZAINAL MUKTAMAR</b> #Department of Sustainable Agriculture, University of Bengkulu, Indonesia</td> <td><b>Session Chair:</b> Dr. Helen Martinez, PhilMech. Philippines</td> <td><b>Session Chair:</b> Dr. Fahrurrozi, Faculty of Agriculture. University of Bengkulu. INDONESIA</td> <td><b>Session Chair:</b> Dr. Henny Purwaningsih. Bogor Agricultural University. INDONESIA.</td> <td><b>Session Chair:</b> Dr. Condro Wibowo, Jenderal Soedirman University-Purwokerto. INDONESIA</td> <td><b>Session Chair:</b> Dr. Nurul Huda, UniSZA Malaysia</td> </tr> </tbody> </table>	Room 1 SERAYA ROOM A	Room 2 SERAYA ROOM B	Room 3 SERAYA ROOM C	Room 4 MERANTI ROOM A	Room 5 MERANTI ROOM B	Room 6 ORCHID ROOM, First Floor	<b>Session Chair:</b> <b>PROF. ZAINAL MUKTAMAR</b> #Department of Sustainable Agriculture, University of Bengkulu, Indonesia	<b>Session Chair:</b> Dr. Helen Martinez, PhilMech. Philippines	<b>Session Chair:</b> Dr. Fahrurrozi, Faculty of Agriculture. University of Bengkulu. INDONESIA	<b>Session Chair:</b> Dr. Henny Purwaningsih. Bogor Agricultural University. INDONESIA.	<b>Session Chair:</b> Dr. Condro Wibowo, Jenderal Soedirman University-Purwokerto. INDONESIA	<b>Session Chair:</b> Dr. Nurul Huda, UniSZA Malaysia	<p><b>INTERNATIONAL WORKSHOP:</b></p> <p><b>HOW TO DO RESEARCH:</b></p>
Room 1 SERAYA ROOM A	Room 2 SERAYA ROOM B	Room 3 SERAYA ROOM C	Room 4 MERANTI ROOM A	Room 5 MERANTI ROOM B	Room 6 ORCHID ROOM, First Floor									
<b>Session Chair:</b> <b>PROF. ZAINAL MUKTAMAR</b> #Department of Sustainable Agriculture, University of Bengkulu, Indonesia	<b>Session Chair:</b> Dr. Helen Martinez, PhilMech. Philippines	<b>Session Chair:</b> Dr. Fahrurrozi, Faculty of Agriculture. University of Bengkulu. INDONESIA	<b>Session Chair:</b> Dr. Henny Purwaningsih. Bogor Agricultural University. INDONESIA.	<b>Session Chair:</b> Dr. Condro Wibowo, Jenderal Soedirman University-Purwokerto. INDONESIA	<b>Session Chair:</b> Dr. Nurul Huda, UniSZA Malaysia									

14.30-14.40	<b>Prof. Nurpilihian Baffal*</b> *Professor on Soil and Water Engineering, Padjadjanan University  <b>"RAINWATER HARVESTING AS A TECHNOLOGICAL INNOVATION TO SUPPLYING CROP NUTRITION THROUGH FERTIGATION</b>	<b>Prof. Firwan Tan*</b> Andalas University. Kampus Unand Limau Manis Padang 25163- INDONESIA	<b>Hanilyn Hidalgo,</b> Romnick Cedon <sup>2</sup> , Central Bicol State University of Agriculture. Philippines.	<b>Shanti Navaratnam# , Nik Abdul Aziz*, Nur Affah Idris*, Siti Zafirah Zainal Abidin* #,</b> Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia. <b>EFFECT OF GLYCEROL ON IONIC CONDUCTIVITY AND DIELECTRIC PROPERTIES OF POTATO STARCH-CHITOSAN BLEND BIOPOLYMER ELECTROLYTE INCORPORATED WITH SODIUM CHLORIDE</b>	<b>Amelia R. Nicolas, PhD</b> Department of Landscape and Environmental Management, College of Agriculture and Natural Resources, Central Bicol State University of Agriculture, Philippines  <b>MELIPONICULTURE: A SUSTAINABLE ALTERNATIVE LIVELIHOOD FOR AETA-TABANGNON TRIBE IN PRIETO DIAZ, SORSOGON, PHILIPPINES</b>	<b>Lecturer:</b> <b>Prof. Dr. Wan Muhtar Wan Yusoff.</b> International Coordinator of BALI Green and President of SRI, Malaysia
14.40-14.45	SAT-02	SDME-70	SDME-91	IPD-01	SAT-26	
14.45-14.50	SAT-06	SDME-71	SDME-101	IPD-02	SAT-27	
14.50-14.55	SAT-07	SDME-74	SDME-102	IPD-03	SAT-28	
14.55-15.00	SAT-08	SDME-76	SDME-103	IPD-04	SAT-29	
15.00-15.05	SAT-09	SDME-77	SDME-104	IPD-07	SAT-30	
15.05-15.10	SAT-10	SDME-78	SDME-105	IPD-08	SAT-31	
15.10-15.15	SAT-11	SDME-79	SDME-106	IPD-13	SAT-32	
15.15-15.20	SAT-12	SDME-80	AE-01	IPD-14	SAT-33	
15.20-15.35	SAT-13	SDME-82	AE-03	IPD-15	SAT-34	
15.35-15.40	SAT-14	SDME-83	AE-04	IPD-16	SAT-35	
15.40-15.45	SAT-15	SDME-84	AE-05	IPD-18	SAT-36	
15.45-15.50	SAT-16	SDME-85	AE-07	IPD-19	SAT-37	
15.50-15.55	SAT-17	SDME-86	AE-08	IPD-20	SAT-38	
15.55-16.00	SAT-18	SDME-92	AE-09	IPD-21	SAT-40	

16.00-16.05	SAT-19	SDME-94	AE-10	IPD-22	SAT-42
16.05-16.10	SAT-20	SDME-95	AE-12	IPD-23	SAT-43
16.10-16.15	SAT-21	SDME-97	AE-13	IPD-25	SAT-44
16.15-16.20	SAT-22	SDME-98	AE-14	IPD-26	SAT-45
16.20-16.25	SAT-24	SDME-99	AE-15	IPD-28	SAT-46
16.25-16.30	SAT-25	SDME-100	AE-16	IPD-29	SAT-48
16.30-16.45	Coffee Break				
16.45-18.00	<b>Breakout Session 2</b> Venue: Acapella Suites Hotel, MALAYSIA Person in charge: Assoc.Prof. SITI NORASMAH, UiTM-MALAYSIA				
	Room 1 SERAYA ROOM A	Room 2 SERAYA ROOM B	Room 3 SERAYA ROOM C	Room 4 MERANTI ROOM A	Room 5 MERANTI ROOM B
Parallel Session	Session Chair: Dr. ALIDA AZMI, Universiti Teknologi MARA-MALAYSIA	Session Chair: Prof. Ardi. ANDALAS University- Indonesia	Session Chair: Gigi B. Calica, Ph.D., Philippine Center for Postharvest Development and Mechanization. Philippines	Session Chair: Kesuma Sayuti Faculty of Agricultural Technology, Andalas University, Indonesia	Session Chair: Assoc. Prof. Dr. Nazlinda Abdullah, UiTM Malaysia
16.45-16.55	Usman Pato, V. S. Johan dan R. D. Hasibuan Faculty of Agriculture- Riau University. INDONESIA	Prof. Dr. Md. Mizanur Rahman Bhuiyan. SAFE- Network National Coordinator (Bangladesh). Soil Science Discipline Khulna University- Khulna. Bangladesh	EMDY Ekanayake <sup>1#</sup> , WAKG Thakshila <sup>1</sup> , TSK Dharmasari <sup>1</sup> , MAGD Samannali <sup>1</sup> , SS Jayasinghe <sup>2</sup> , EPS Chandana <sup>1</sup> , C Jayasumana <sup>3</sup> , SH Sribaddana <sup>4</sup> , PMCS De Silva <sup>1</sup>	Prof. Evawani Aritonang University of North Sumatra. INDONESIA.	BIRTH LENGTH AND WEIGHT NOT ASSOCIATED WITH STUNTING AMONG CHILDREN UNDER FIVE IN NORTH SUMATERA PROVINCE
	'ANTIBIOTIC AND ANTIBACTERIAL ACTIVITY OF LACTOBACILLUS CASEI SUBSP. CASEI R-68 AGAINST FOOD BORNE PATHOGENS	PROSPECTS AND PROBLEMS OF WATERSHED BASED AGRO- FORESTRY IN THE HILLS OF BANGLADESH	I Dept. of Zoology, University of Ruhuna, Sri Lanka, EMERGING CHRONIC KIDNEY DISEASE OF UNKNOWN ETIOLOGY IN PADDY AND SUGARCANE FARMERS IN TWO ADJACENT PROVINCES, SRI LANKA.	M. S. Faiz <sup>1</sup> , N.N.M Shariff <sup>2</sup> , Z. S. Hamid <sup>3</sup> <sup>1</sup> Academy of Contemporary Islamic Studies UiTM Shah Alam Selangor, Malaysia <sup>2</sup> Academy of Contemporary Islamic Studies UiTM Shah Alam Selangor, Malaysia <sup>3</sup> Faculty of Applied Sciences UiTM Shah Alam Selangor, Malaysia	MALAYONESEA CONCEPT OF SUSTAINABILITY ON THE ISSUE OF LIGHT POLLUTION
16.55-17.00	FST-02	SDME-01	SDME-35	FST-15	IPD-30

17.00-17.05	FST-04	SDME-02	SDME-36	FST-16	IPD-31
17.05-17.10	FST-05	SDME-03	SDME-38	FST-17	IPD-33
17.10-17.15	FST-06	SDME-04	SDME-39	FST-18	IPD-34
17.15-17.20	FST-07	SDME-05	SDME-40	FST-19	IPD-35
17.20-17.35	FST-08	SDME-06	SDME-41	FST-20	IPD-36
17.35-17.40	FST-09	SDME-07	SDME-43	FST-22	IPD-39
17.40-17.45	FST-10	SDME-08	SDME-44	FST-24	IPD-40
17.45-17.50	FST-11	SDME-10	SDME-46	FST-25	IPD-42
17.50-17.55	FST-12	SDME-11	SDME-47	FST-26	IPD-43
17.55-18.00	FST-13	SDME-12	SDME-50	FST-29	IPD-44
18.00-18.05	FST-14	SDME-13	SDME-51	FST-30	IPD-46
18.05-18.10	SAT-50	SDME-14	SDME-52	FST-32	IPD-47
18.10-18.15	SAT-51	SDME-15	SDME-53	FST-35	IPD-48
18.15-18.20	SAT-52	SDME-16	SDME-55	SDME-108	IPD-49
18.20-18.25	SAT-53	SDME-17	SDME-58	SDME-109	IPD-50
18.25-18.30	SAT-54	SDME-18	SDME-59	SDME-110	IPD-51
18.30-18.35	SAT-57	SDME-19	SDME-60	SDME-111	IPD-52
18.35-18.40	SAT-60	SDME-21	SDME-61	SDME-107	IPD-53
18.40-18.45	SAT-61	SDME-22	SDME-62	SDME-27	IPD-54
18.45-18.50	SAT-62	SDME-24	SDME-64	SDME-32	IPD-57
18.50-18.55	SAT-64	SDME-25	SDME-65	SDME-33	
18.55-17.00	SDME-68	SDME-26	SDME-66	SDME-67	

## 19.00 – 19.15 CLOSING CEREMONY

Venue: SERAYA Ball Room, Acapella Suites Hotel

Key points/highlight from the Conference

Assoc. Prof. Dr. Nurul Huda, SAFE-Network Resident Coordinator (MALAYSIA), UniSZA Trengganu. MALAYSIA  
Dr.Irawati Chaniago, Andalas University-INDONESIA [Secretary of SAFE-Network]

Closing Message: Prof. Dr. Hj. Khudzir Bin Hj Ismail, Dean of Faculty of Applied Science, UiTM, [Chairman SAFE2017 Conference]  
Farewell Dinner at TUPAI-TUPAI RESTAURANT, SHAH ALAM

DAY 3: THURSDAY, August 24, 2017 | DEPARTURE OF PARTICIPANTS

**[4] SUSTAINABLE DEVELOPMENT, MANAGEMENT AND EMPOWERMENT (SDME)****SDME-01**

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**Developing Integrated Ecotechnology of Honey  
Bee Cultivation and Smallholder Rubber Plantation  
for Improving Farm Productivity and Sustainability**

**SDME-02**

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**Fisherman Food Security Study In Bengkulu City,  
Indonesia: Structural Equation Modeling Approach**

**SDME-03**

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**Effect of Medicated Block Licks Containing  
Melastoma malabaticum Extract on Growing  
Kacang Goat Infected Experimentally with  
Haemonchus contortus**

**SDME-04**

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**Morphological Characteristics of Sweet Corn  
Inbred Lines Developed under Organic  
Environment**

**SDME-05**

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**Decision Making for Implementing Technology of  
The System of Rice Intensification (SRI) by Rice  
Paddy Farmers Size**

**SDME-06**

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**DIET PATTERN DIABETES MELLITUS  
PATIENTS IN THE PUSONG VILLAGE,  
LHOKSEUMAWE CITY, INDONESIA**

**SDME-07**

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**Relationship Among Awareness of Climate  
Change, Government Policy, Social Capital, Job  
Satisfaction and Loyalty of Fisher in The Bengkulu  
Province: A Structural Equation Model**

**SDME-08**

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Development of SUJAKAU for Increased of Immunity  
“The Expression of Zinc (Zn) and Iron (Fe) for increase IL -10 and IL-12 on Elementary Students after  
Infected Malaria Diseases Who Lived in Endemic Area”

**SDME-09**

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**Barriers of Stingless Beekeeping Industry  
Developments in Bicol, Philippines**

**SDME-10**

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**THE RELATIONSHIP OF FAST FOOD  
CONSUMPTION WITH AGGRESSIVE  
BEHAVIOUR AMONG SCHOOL AGE CHILDREN  
IN MEDAN, INDONESIA**

**SDME-11**

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**Green Supply Chain Productivity Modeling for  
Agroindustry Improvement of Oyster Mushrooms**

## SDME-07

## **Relationship Among Awareness of Climate Change, Government Policy, Social Capital, Job Satisfaction and Loyalty of Fisher in The Bengkulu Province: A Structural Equation Model**

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**Abstract**— Nowadays Bengkulu fishers face strong challenges mainly from climate change in which influences their livelihood. On the other side, there is government policy and social capital that could help and protected them in pursuing of better live. The aim of this study was to test a cause and effect model of factors affecting job satisfaction and loyalty of fisher in The Bengkulu Province. A structural Equation Model was proposed in which relationship among Awareness of climate change, Government policy, Social Capital, job Satisfaction and Loyalty of Fisher in Bengkulu were explored. The research sample consists of 350 fishers whom live in seven central fishing locations along coast in Bengkulu. The data were collected from March to April 2017 using a questionnaire that capture factors associated to job satisfaction and loyalty of fisher. The result revealed that awareness of climate change has direct and negative relationship with Job satisfaction whereas Government policy and social capital have direct and positive effect on job satisfaction. On the other hand, Awareness of climate change has direct and negative effect of fisher loyalty while social capital has direct and positive on fisher loyalty. Meanwhile, job satisfaction has direct and positive relationship on fisher loyalty. Lastly, research also so that government policy has indirect effect on fisher loyalty.

**Keywords**— Awareness of climate change, Government policy, Social Capital, job Satisfaction and Loyalty of Fisher

## SDME-08

## **"The Expression of Zinc (Zn) and Iron (Fe) for Increase IL -10 and IL-12 on Elementary Students after Infected Malaria Deases Who Lived in Endemics Area"**

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**Abstract**— Over the past decade there has often been a shortage of Zn and Fe simultaneously. In cell culture, Zn and Fe are micronutrient substances that are useful because they can increase the immune response so that the number of malaria parasite cultures decreased or negative. The presence of Zn and Fe as micronutrients in the body is influenced by nutritional status. A child can be said has a good nutritional status if the micronutrient elements in the body are fulfilled. This study aims to analyze the expression of IL-10 and IL-12 children suffering malaria by providing zinc and fe supplementation in elementary school children in malaria endemic area. This study is an experimental study by giving treatment to the research subjects. The treatments are divided into 4 groups, there are the treatment group with @ 20 mg / day Zinc (Zn), Fe @ 20 mg / day, Zn and Fe @ 20 mg / day simultaneously and the controlling group (placebo). The dose that given in this study was 20 mg. The design of this study is Randomized Controlled Trial Pre-Post Test Design. By giving Double Blind treatment. Data analysis was statistically analyzed by using one way ANOVA analysis with 5% reliance level ( $\alpha = 0.05$ ). The results of this research shows that obviously the levels of IL-12 is increased after the treatment of supplementation of Fe and Zn, while IL-10 is decreased. The approach that can describe that situation is that the presence of seasonal malaria, low transmittability, low percentage of API and the Zn levels which is up to normal in the 9-12 years-old children cause the increasing of protective IL-12 levels so that IL-10 is no longer needed for Re-stabilizing the levels of IL-12, so that the levels of IL-10 in this study is decreased.

**Keywords**— Zn and Fe, IL-10, IL-12, malaria

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