

2013

# PROCEEDINGS

## International Seminar on Climate Change & Food Security

October 24th-25th, 2013  
Palembang, South Sumatra



FACULTY OF AGRICULTURE  
SRIWIJAYA UNIVERSITY



# **Proceedings of International Seminar on Climate Change & Food Security**

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**FACULTY OF AGRICULTURE  
SRIWIJAYA UNIVERSITY  
2013**

# **Proceeding of 2013 International Seminar on Climate Change and Food Security**

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# **Climate Change & Food Security**

Selected peer reviewed papers from the  
2013 International Seminar on Climate Change and Food Security  
(ISCCFS 2013)  
October 24-25, 2013, Palembang, Indonesia

**FACULTY OF AGRICULTURE  
SRIWIJAYA UNIVERSITY**

# **WELCOME SPEECH DEAN OF FACULTY OF AGRICULTURE, SRIWIJAYA UNIVERSITY**

Assalamu'allaikum Wr. Wb.

Honorable Rector Sriwijaya University, represented by Vice rector 4, Dr. Muslim, South Sumatra government officers.

Honorable invited Speakers: Prof. Nasir Shamsudin, Dr. Negin Vaghevi, Dr. Perdinan, Dr. Olaf de Jongh.

Honorable committee of the conference led by Prof. Andy Mulyana.

Distinguished paper presenters, participants, Guests, Ladies and Gentlemen

Good Morning,

Praise to Allah, the Most Graciuos and the Most Merciful, which allow us to gather in this important activity.

It gives me great pleasure to speak to you this morning, to welcome you most at the afficial opening of the International Seminar on climate changeand food security with the theme of **Adapting Agriculture to Climate Change**. This seminar is organized by Faculty of Agriculture, Sriwijaya University in Management ini Southeast Asia Pacific (CCROM – SEAP) – IPB (Bogor Institute of Technology).This conference is part of many celebration activity of 50<sup>th</sup> anniversary of Faculty og Agriculture, Sriwijaya University, the Faculty of Agriculture Sriwijaya University was established in 26<sup>th</sup> September 1963.

Ladies and gentlemen,

Nowdays there are at least four hot topics that take more attention to everybody in the world. Those are: food, fuel or energy, water, and climate change. We can't escape from these problems. We have to find out solution how we deal with these challenges.

This conference is one of our efforts to do that by sharing our ideas, analysis, recommendations or proposals in order to ensure and sustain the food security for the people today and the next generations.

Besides invite speakers, in this conference there will be 38 other papers on issues related to the topics that will be presented by the participants coming from sereval countries in two class sessions in the afternoon strating at 1.30 PM. On this occasion I would like to thank to the invite speakers, Prof. Mad Nasir Shamsudin, He is previous dean of Faculty of Agriculture, University Putra Malaysia, Dr. Negin Vaghefi, she come from Faculty of Agriculture

Mazandaran University Iran, Dr. Perdinan from Centre for Climate Risk and Opportunity Management in Southeast Asia Pacific (CCROM – SEAP) - Bogor Institute of Technology, Olaf de Jongh, Netherlands Senior Expert.

I want to express our thankfulness to CCROM – SEAP IPB for the collaboration and support to this seminar. Hopefully our mutual cooperation and relationship will be continued in the future. I would also like to thank the program chairs, staff of Faculty of Agriculture Sriwijaya University, and the member of the program committees for their hard work. We are grateful to all those who have contributed to the success of this conference.

Finally, I humbly request to Rector to deliver his speech and also open this conference. So, enjoy your time in this conference, we hope, you will find your time with us exciting.

Thank you very much.

Wassalamu'allaikum Wr. Wb.

## **OPENING SPEECH RECTOR OF SRIWIJAYA UNIVERSITY**

Good morning and Assalamu'allaikum Wr. Wb.

Honorable Governor of South Sumatera or the representative  
Dean of Faculty of Agriculture, Sriwijaya University  
Distinguished keynote speakers  
Respected Guests  
Dear participants, ladies and gentlemen

First of all, allow me on behalf of our rector to extend our warmest welcome to all of the participant in this International Seminar on Climate Change and Food Security (ISCCFS) 2013.

In this opportunity, I would like to express my profound gratitude especially to CCROM – SEAP – IPB for the excellent collaboration. Also dean of Agriculture, Sriwijaya University and the organizing committee of this Seminar, who are work hard to prepare and realize this big and prestige seminar. My thanks also go to all presenters for their valuable and meaningful contribution to this seminar.

Distinguish guest ladies and gentlemen,  
Recently, the issue of Climate change and food security are still hot issue to be discussed. Issue on the climate change, global food, economic, and fuel crisis have become a major concern in sustaining wood food security. Food security is a complex sustainable development issues. Some approaches, strategies and policy implementation are important to guarantee and strengthen food security such as; maximizing and maintenance of water supply sustainable manner, agriculture innovation, management and maintenance of water supply systems, introducing improved varieties and cultural practices et cetera.

Climate change and agriculture are interrelated processes, both of which take place on a global scale. Climate change will after all four dimensions of food security: food availability, food accessibility, food utilization and food systems stability. It will also have an impact on human health, livelihood assets, food production and distribution channels, as well as changing purchasing power and market flows. Assessment of the effects of global climate changes on agriculture might help to properly anticipate and adapt farming to maximize agriculture production. At the same time, agriculture has been shown to produce significant effects on climate change, primarily through the production and release of greenhouse gases such as carbon dioxide, methane, and nitrous oxide.

We believe and feel confident that this seminar will stimulate a discussion and share the ideas of multi-disciplinary researchers, scientists, practitioners and policy makers will be a major contribution in the prevention and settlement of various problems due to climate change and food security.

Collaboration and mutualistic group works are needed to overcome the existing and potential problems related to climate change and food security. I hope this seminar could figure out some solution and applicable recommendations for sustaining our food security which insure some anticipating and adapting strategies to the climate change influences.

Distinguished guests, ladies and gentlemen

I wish you all an enjoyable time and success during this seminar. And we all wish a better life with clean, health, and save our environment and food security now and in the future.

I hope you enjoy the beauty of Palembang City as one of the oldest city in Indonesia which also have variety of interesting culture and places.

Finally, I declare this international seminar on climate change and food security in Palembang is officially opened.

May our God always guide and bless all of us, Aamiin.

Thank you very much,

Wassalamu'allaikum Wr. Wb.



## PREFACE

Dear Readers,

The Organizing Committee would like to express our thank and appreciation to all invited speakers, paper presenters and guests for participating in the 2013 International Seminar on Climate Change and Food Security (ISCCFS 2013) held during October 24-25, 2013 in Palembang, Indonesia.

ISCCFS 2013 is sponsored by Faculty of Agriculture, Sriwijaya University, in accordance with the celebration of 50 years' birthday of the Faculty, in collaboration with Centre for Climate Risk and Opportunity Management in Southeast Asia Pasific (*CCROM - SEAP*)-IPB, Bogor. The theme of the Seminar **Adapting Agriculture to Climate Change**, with four topics discussed on the issues of (1) Climate Change Economics. (2) Climate Change Adaptation in Food and Agriculture Perspective, (3) Biodiversity and Food Security, and (4) Innovation to Address Climate Change Challenges.

As worldwidely known, today we hardly achieve an equilibrium position between producing sufficient food and feeding growing population. Extreme weather events such as droughts and floods are predicted to become frequent, adding to the global burden of hunger caused by poverty, improper governance, social and economic conflicts, and poor market access. We also already realized that Greenhouse gases (GHGs) in agricultural production are emitted by fertilizers, ruminant digestion, rice cultivation, land clearing for agriculture. Therefore, adapting to climate change to achieve and secure food security as well as trade commitments become both challenges and opportunities for our agriculture system in the future.

This is mean that agriculture is both part of the problem and part of the solution to climate change. However because of the multiple socio-economic and bio-physical factors affecting food systems and hence food security, the capacity to adapt food systems to reduce their vulnerability to climate change is not uniform in one to another region. We must therefore seize every opportunity to shift away from inefficient and Environmental unfriendly farm practices, supply chains and diet choices towards long-term sustainable, profitable and healthy system. Dependence of agriculture on the climate condition implies that agriculture has an important role to play in adaptation to climate change.

That is way we also believe that the ideas of multi-disciplinary researchers, scientists, practitioners and policy makers will be a major contribution in the

prevention and settlement of various problems due to climate change and food security.

The purposes of this seminar are to: identify major barriers to achieve food security with consideration to current and evolving climate change; to identify required interventions (i.e. policy issues regarding planning, programming, resource mobilization and allocation, delivery services as well as monitoring and evaluation) that could reduce these barriers and promote sustainable food availability as a basic pillar of food security; and share lesson-learned related to cope with climate change to achieve food security.

We would like to thank the seminar chairs, staff of Faculty of Agriculture Sriwijaya University, and the member of the program committees for their hard work. We are also grateful to everyone who has contributed to the success of ISCCFS 2013. We hope that all participants and other interested readers would benefit scientifically from the proceedings and also find them stimulating in the process. Finally, we would like to wish you success in your technical presentations and social networking.

We hope you have a unique, rewarding and enjoyable days at ISCCFS 2013 in Palembang, Indonesia.

With our warmest regards,  
The Organizing Committees  
October 24-25, 2013  
Palembang, Indonesia

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