

CAgE2015



PROGRAM BOOK

Conference on

AGRI-ENTREPRENEURSHIP DEVELOPMENT : ISSUES & TRENDS

Faculty of Agriculture, Universiti Putra Malaysia
26 - 27 January 2015

Jointly Organized by:



AGRICULTURE . INNOVATION . LIFE

**MESSAGE FROM
VICE CHANCELLOR
UNIVERSITI PUTRA MALAYSIA**



In behalf of Universiti Putra Malaysia, I wish to welcome all participants and honoured guests of the Conference on Agri-Entrepreneurship Development: Issues and Trends (AgE2015) jointly organized by UPM, PETA, FAMA, and our fellow partner universities NEJ, USU, UNPAD, UB and TUA.

Universiti Putra Malaysia is a research university recognised as one of the leader university in the field of agriculture. With the advancement of technology in agriculture, it has attracted more entrepreneurs to enter agricultural-based ventures. This Conference is a reflection of the efforts by UPM and the co-organisers to discuss the issues pertaining to agri-entrepreneurship development particularly among the young graduates. This meeting is expected to pave the way for sharing of experiences and to enabling interactions with relevant experts in the field of agri-entrepreneurship from various countries, especially Malaysia and Indonesia.

There is a concern worldwide that in the current setting, the young generations are shying away from the agriculture industry. However, with the issues of food security, increasing urban population, unstable world economy, and increasing food prices, the governments are putting back their focus on enhancing agriculture sectors and enticing the younger generations to participate in the industry. The amount of research grant in the field of agriculture is also a significant factor in pushing the field into a higher ground. Interest in the agriculture sector is seen from the increasing number of applicants for agriculture-based programs in institutions of higher learning. With hard work, innovation, and active participation, the future of agri-entrepreneurship can indeed be a bright one.

I wish to all participants of this Conference to take this opportunity to learn from each country's experience and share the knowledge for future betterment in the areas of agri-entrepreneurship development.

AGRICULTURE. INNOVATION. LIFE.

Prof. Dato' Dr. Mohd. Fauzi Hj. Ramlan
Vice Chancellor
Universiti Putra Malaysia



**MESSAGE FROM
DEAN
FACULTY OF AGRICULTURE
UNIVERSITI PUTRA MALAYSIA**



On behalf of the Faculty of Agriculture, Universiti Putra Malaysia, I would like to extend a warm welcome to our guests of honour and participants of the Conference on Agri-entrepreneurship Development: Issues and Trends. This Conference is a reflection of the efforts by UPM and the co-organisers to lead in the development of entrepreneurship in agriculture sectors. This meeting is expected to pave the way for sharing of experiences and to enabling interactions with relevant experts in the field of agri-entrepreneurship.

It is through the recognition of the importance of agri-entrepreneurship in agricultural sector that drove UPM, PETA, FAMA, UNEJ, USU, UNPAD, UB and TUA to initiate the organising of this Conference.

I wish to thank on behalf of the organisers to Yg. Bhg. Dato' Vice Chancellor UPM for accepting to officiate this Conference, and all paper presenters and participants who were specially invited to this Conference. I hope the deliberations of this Conference will significantly contribute to our initiative to discuss, to learn and to share knowledge and technologies to push forward the development of agri-entrepreneurship in the agricultural sector.

I wish to also congratulate the Organising Committee for their teamwork and efforts for successfully holding this event. In the future I am sure that there will be more similar meetings organised on agri-entrepreneurship where more progress are made bearing the fruits from our efforts today.

Prof. Dr. Abdul Shukor Juraimi

Dean

Faculty of Agriculture, UPM

MESSAGE FROM CHAIRMAN ORGANIZING COMMITTEE



On behalf of the Organizing Committee of the Conference on Agri-Entrepreneurship Development: Issues and Trends (CAgE2015), I would like to convey our great pleasure and appreciation to all participants. Our committee and its advisory board has worked diligently to ensure all program activities for both days – 26th and 27th January 2015 prepared and goes smoothly. For this Conference, 64 papers were accepted for oral presentation and 30 papers will be chosen to be published in the Journal of Agribusiness Marketing and Malaysian Journal of Agricultural Economics. It takes a lot of effort among all team players to make this event a success.

There are 40 international participants and presenters joining this conference and I extend my utmost gratitude for their cooperation given prior to this event. It is hoped that during this Conference, all the participants will learn and share experiences, as well as establish their working network.

I also wish to thank all members of UPM's partner agencies and universities – PETA, FAMA, UNEJ, USU, UNPAD, UB and TUA for assistance rendered during the preparation of this Conference. Hopefully we can emulate events such as this yearly at different university in the future.

Prof. Dr. Zainal Abidin Mohamed
Chairman
Organizing Committee
CAgE2015

Opening Ceremony

*Conference on Agri-Entrepreneurship Development: Issues and Trends
(CAgE2015)
&
Agri-Entrepreneurship Incubation Program 2015*

Dewan Pertanian

26 January 2015 (Monday)

- 10.30 am - Arrival of Distinguished Guests and Delegates
- 10.50 am - Arrival of YBhg. Prof. Dato' Dr. Mohd Fauzi Hj. Ramlan
Vice Chancellor, UPM
- 11.00 am - Negaraku and Putra Gemilang
- Doa Recital
- Welcome address by YBhg. Prof. Dr. Abdul Shukor Juraimi
Dean, Faculty of Agriculture, UPM
- Officiating address by YBhg. Prof. Dato' Dr. Mohd Fauzi Hj. Ramlan
Vice Chancellor, UPM
- Handing Over Licensing Agreement of *Ayam Akar Putra* between
UPM and APC Nature Farm Sdn. Bhd.
- 12.30 pm - Lunch
- 1.30 pm - End of ceremony



PROGRAM SCHEDULE

Monday (26 January 2015)

- 0800 – 0830 Registration
(Venue: Admin Building Foyer)
- 0830 – 1030 Concurrent Sessions
(Venue: Lecture Rooms)
- 1030 – 1100 Refreshment
(Venue: Admin Building Foyer)
- 1100 – 1200 Opening Ceremony
(Venue: Dewan Pertanian)
- 1200 – 1300 Lunch break
(Venue: Dewan Pertanian)
- 1400 – 1500 Plenary Discussion: Youth Empowerment and Agri-Entrepreneurship
Development
(Venue: Dewan Pertanian)
- 1500 – 1630 Concurrent Sessions
(Venue: Lecture Rooms)
- 1630 – 1700 Refreshment
(Venue: Admin Building Foyer)
- 2000 – 2200 Conference Dinner
(Venue: Dewan Pertanian)

Tuesday (27 January 2015)

- 0830 – 1015 Concurrent Sessions
(Venue: Lecture Rooms)
- 1015 – 1030 Closing Ceremony
(Venue: Lecture Hall 1)
- 1030 – 1100 Refreshment
(Venue: Admin Building Foyer)
- 1100 – 1600 Tour to an agri-entrepreneur enterprise (for International Delegates)
(Assembly Point: Admin Building Foyer)



SCIENTIFIC PROGRAM

MONDAY (26 January 2015)

0800 – 0830

Registration

CONCURRENT SESSIONS

	Session 1A Production Economics Chairperson: <i>Dr. Yodfiatfinda</i> Lecture Room 1	Session 1B Agricultural Entrepreneurship Education Chairperson: <i>Dr. Hasni Arief</i> Lecture Room 2	Session 1C Agribusiness Economics and Management Chairperson: <i>Tn. Hj. Rohizad Ridzwar</i> Lecture Room 3
0830 – 0845	Analysis of Factors Influencing Productivity of Aquaculture System Floating Net Cage at Lake Cirata(Case Study at Lake CirataSub-districtCianjur West Java Province) Atikah N. , Ine M., and Isni N. <i>(CAgE -15-402)</i>	Feasibility Analysis of Smallholders Coffee Plantation in Jember Joni M. M. Aji1 , Julian A. Ridjal, Apriyanto D. Laksono, Ebban B. Kuntadi1, and Siswoyo H. Santosa <i>(CAgE -15-432)</i>	Farmers Awareness on New Local Feed Ingredients for Chicken: Palm Kernel Cake Siti Fatimah M. , Zainalabidin M., Golnaz R. and Juwaidah S. <i>(CAgE -15-374)</i>
0845 – 0900	Output Supply, Input Demand and Efficiency of Paddy Farming in Peninsular Malaysia Lira M. , Mad Nasir S., Zainalabidin M., Ismail L. and Alias R. <i>(CAgE -15-411)</i>	Influencing Factors towards Students' Entrepreneurial Attitude at Universitas Sumatera Utara Diana C. and Arwina S. <i>(CAgE -15-400)</i>	Potential of Feed Mills Industry in Malaysia Zakiah H. A.G. , Zainalabidin M., Ismail A.L. and Abu Hassan M. I. <i>(CAgE -15-383)</i>
0900 – 0915	Effectiveness of Microcredit Program for Small Business in Agro-Based Industry Among Rural Poor Rika T. , Zainalabidin M., and Jarir, H.H. J. <i>(CAgE -15-395)</i>	The Intention of BSEP Participants to Become Agri-Entrepreneurs Muhammad Mu'az M. , Zainalabidin M., Golnaz R. and Mad Nasir S. <i>(CAgE -15-408)</i>	Modelling of Boom and Bust of Cocoa Production Systems in Malaysia Abragimov A. , Fatimah M. A. and Bala B.K. <i>(CAgE -15-425)</i>

0915 – 0930	Designing A Model Development of Beef Cattle in West Java Indonesia Rochadi T. and Taslim (CAgE -15-396)	Brain Revolution in Malaysian Agri-Entrepreneurship: A Review Muhammad Ali and Norsida M. (CAgE -15-427)	Internal Reinforcement of Yoghurt Households Industry: A New Potential Micro Small Entrepreneur in Indonesian Urban Area Yoni A. , Hermawan S. and M. Rizal T. (CAgE -15-377)
0930 – 0945	Comparative Study on Rethurn to Technology and Scale in Broiler Industry Ilmas A. , MohdMansor I. and Kamal H. A. W. (CAgE -15-426)	Factors Influencing Students' Intention in Becoming Agri-Entrepreneur Elina W. G. , Golnaz R., Rika T. and Munirah J. (CAgE -15-385)	Implementation of Supply Chain Management in Mocav Cluster Agroindustry Evita S. H. (CAgE -15-429)
0945 – 1000	Profit Gap and Efficiency Measure of the Small-Scale Production of Shallot: The Case Study of Shallot Production in East Java Province - Indonesia Sujarwo , Michael R., Sayed S., and Nuhfil H. (CAgE -15-388)	Youth Empowerment Through Extension Education and Entrepreneurship Development in Nigerian Agriculture: Obstacles And Prospects for Improvements Olatinwo K. L. , Abdullilahi A. K. and Abu R. T. (CAgE -15-370)	Motor Cycle Role in Supporting Operating Sheep Farms and Marketing in the Southern District Tasik Malaya (Case Study in Gunung Kembar Farm Sheep Group at Ciroyom Village Bojong Gambir) Maman P. (CAgE -15-392)
1000 – 1015	The Indonesian Comparative Advantage on Food Crop Cultivation Hery T. , Tri Wahyu N. and Nuhfil H. (CAgE -15-391)	Theoretical Perspective of Incorporating Entrepreneurship in Agricultural Production Nuhfil H. and Sujarwo (CAgE -15-386)	Model of Economic Linkage between the Sulawesi Corridor and the East Java –East Kalimantan Province Arman , Setia H., Noer A. A., Akhmad F. and Yodfiatfinda (CAgE -15-376)
1015 – 1030	Competitiveness Analysis of Strategic Food Commodities in Lampung Province Wan A. Z. , Ali I. H., Eka K., and Novi R. (CAgE -15-371)	Intention towards Implementing Urban Agriculture Among City Dwellers NurDalinna I. , Juwaidah M., Zainalabidin M. and Golnaz R. (CAgE -15-430)	Nutritional Values of Swiftlet Guano: Evidence from the East Coast Economic Region, Malaysia Azizon A. , Wan Zahari .M. and Che Ku Amir Rizal C.K.M. (CAgE -15-424)
1030 – 1100	Refreshment		
1100 – 1200	Opening Ceremony (Venue: Dewan Pertanian)		
1200 – 1400	Lunch Break		



1400 – 1500	<p>Plenary Discussion: “Youth Empowerment & Agri-Entrepreneurship Development”</p> <p><i>Chairman:</i> Tn. Hj. Rohizad Ridzwan (FAMA)</p> <p><i>Panelists:</i> Prof. Dr. Nuhfil Hanani (UB) Prof. Dr. Wan Abbas Zakaria (UNILA) Dr. Diana Chalil (USU) Dr. Sigit Soeparjono (UNEJ) Dr. Ismail Abd Latif (UPM)</p>		
	<p>Session 2A Food Safety and Nutrition Chairperson: <i>Prof. Dr. Nuhfil Hanani</i></p> <p>Lecture Room 1</p>	<p>Session 2B Economic and Social Development Chairperson: <i>Prof. Dr. Wan Abbas Zakaria</i></p> <p>Lecture Room 2</p>	<p>Session 2C Food and Agricultural Marketing Chairperson: <i>Dr. Diana Chalil</i></p> <p>Lecture Room 3</p>
1500 – 1515	<p>Effects of Socio-Demographic Characteristics on Consumers' Purchase Intention towards Seaweed-Based Products in Malaysia Nurliyana A.M., Juwaidah S., Zainalabidin M. and Golnaz R. <i>(CAgE -15-384)</i></p>	<p>Visitors' Motivation to Visit, and Cultural and Heritage Attributes Towards the Overall Visitors' Satisfaction of Homestay Program in Selangor Faizah S., Amin M. A., Alias R. and Ismail A.L. <i>(CAgE -15-413)</i></p>	<p>Analysis of Processing Methods, Marketing Channels and Profitability Determinants of Selected Cassava Products in Kogi State, Nigeria Ekpa D., Adeola S.S., Umar M and Ekpa M.O <i>(CAgE -15-368)</i></p>
1515 – 1530	<p>Socio-Demographic Profile Role in Awareness and Preference Towards Natural and Synthetic Functional Food in Malaysia Phuah K. T., Zainalabidin M., Golnaz R., and Mad Nasir S. <i>(CAgE -15-379)</i></p>	<p>Crafting Knowledgeable Ranchers to Consolidate The Sustainability of Edible-Nest Swiftlet Ranching Industry Selvakkumar K.N. V., Nitty H. K., Mad Nasir S., Ismail A. L. and Mohd Noor Hisham M. H. <i>(CAgE -15-416)</i></p>	<p>Effect of Demographic Profile on Consumer Beef Preference Sitihawa J., Golnaz, R., Juwaidah. S., Rika.T. and Zainalabidin, M. <i>(CAgE -15-380)</i></p>
1530 – 1545	<p>Consumers' Willingness-To-Pay (WTP) for Organic Rice Based on their Socio-Demographic Profiles Ibitoye O. O., Nolila M. N., Nitty H. K. and Norsida M. <i>(CAgE -15-410)</i></p>	<p>Model of Development and the Enhancement of Medan Rattan Product Competitiveness Ritha F. D. and Setri H. S. <i>(CAgE -15-369)</i></p>	<p>Identification of Technical Difficulties in Implementing Agility Using Cluster Analysis Mukherjee A., Nitty. H.K, Mad Nasir S., and Ismail A.L <i>(CAgE -15-417)</i></p>

- 1600	Effectiveness of Go Green Campaign: An Empirical Investigation on Intention to Purchase Green Food Masoumeh H. , Zainalabidin M., Golnaz R., Mad Nasir S., and Ismail A. L. (CAGe -15-409)	Posdaya (Family Empowerment): A Concept of Family Entrepreneurship to Boost Rural Area Development in the West Java Province-Indonesia Yodfiatfinda , Maulidian and Yoni A. (CAGe -15-372)	Factors Influencing Consumer's Retail Formats Choice for Fresh Fruits Purchase in Klang Valley Malaysia Abdullahi A.G. , Amin M. A., MohdMansor I., Nolila M. N. (CAGe -15-407)
0 - 1615	Consumers' Awareness towards Food Label in Kelantan ZulAriff A.L. (CAGe -15-404)	Poor Farmers Empowerment Model through Entrepreneurial Development in North Sumatra Province Rahmanta (CAGe -15-373)	Integrated Farming System between Cassava and Sheep Hasni A. , Iman H., Mansyur and Siti N. (CAGe -15-393)
5 - 1630	Factors Underlying Food Choice Motives Among Malaysian Adults Ismawati S. , Zainalabidin M., Golnaz R., Mad Nasir S., and Juwaidah S (CAGe -15-378)	Perception of the Gazettement of Marine Park Area of Pulau Tinggi and Pulau Sibul and its Implications on Local Community NurAmalina H. , Nitty, H.K, Ismail A.L. and Yusoff, F.M. (CAGe -15-414)	Understanding the Knowledge of Aflatoxins Contamination in Peanut-based Products among Stakeholders: Manufacturer's Perspective NurNazurah M. A. , Nitty H. K., Mad Nasir S. and Jinap S. (CAGe -15-412)
0 - 1700	Refreshment		
0 - 2200	Dinner (Venue: Dewan Pertanian)		

TUESDAY (27 January 2015)

	<p align="center">Session 3A Production Economics Chairperson: <i>Dr. Evita Soliha Hani</i></p> <p align="center">Lecture Room 1</p>	<p align="center">Session 3B Entrepreneurship and Economic Development Chairperson: <i>Dr. Tavi Supriana</i></p> <p align="center">Lecture Room 2</p>	<p align="center">Session 3C Food and Agricultural Policy Analysis Chairperson: <i>Dr. Sigit Soeparjono</i></p> <p align="center">Lecture Room 3</p>
0830 – 0845	Determinants Analysis on the Development of Smallholders Dairy Cattle in West Java Cecep F., Andre R. D., and Sri Rahayu <i>(CAgE -15-394)</i>	Analyzing Entrepreneurship among Organic Paddy Farmers in North Sumatera Diana C. and Riantri B. <i>(CAgE -15-399)</i>	Rock And Roll Never Dies: The Potential Growth of Cocoa Industry in Malaysia ChakrinUtit and Mohdyusof S. <i>(CAgE -15-421)</i>
0845 – 0900	Malaysian Palm Oil Forecasting Model and Econometric Validation Tests WongK. K. S., Mad Nasir S., Zainalabidin M., JuwaidahS. <i>(CAgE -15-398)</i>	Engineering of Agricultural Cooperative Enhancing Competitiveness based on Agro-preneur Human Resources Suhartini, Fahriyah, Rosihan A. <i>(CAgE -15-387)</i>	Cost and Return of Poultry Subsector in Competitive Market Environment ZulianaZ. A., Ismail A. L., Zainalabidin M., and Abu Hassan M. I. <i>(CAgE -15-406)</i>
0900 – 0915	Analysis of the Technical Efficiency of Rice Farms in Madiun District, Indonesia - A Stochastic Frontier Analysis Syafrial, Hery T., Rosihan A. and Abdul W. M. <i>(CAgE -15-390)</i>	The Role of GMP Awareness and Certification in Determining the Entrepreneurs Intention towards Green Practices in Malaysia Viduriati S., Golnaz R., Zainalabidin M., Mad Nasir S. and Juwaidah S. <i>(CAgE -15-375)</i>	A Market Model of the Malaysian Cocoa: An Impact Assessment of the Palm Oil Prices AmnaAwad A. H. and Fatimah M. A. <i>(CAgE -15-420)</i>
0915 – 0930	The Technical Efficiency (TE) of Mango Farmer in Perlis, Malaysia Salina M., Juwaidah S., Ismail A. L. and Nolila M. N. <i>(CAgE -15-418)</i>	Developing Green Economy Prototype for Reducing Population Pressure on Land through the Development of Agroforestry Agroeco-business, The Case Study at Spillway Outlet Cirata Reservoir Upper Citarum River Basin on West Java Province in Indonesia Engkus K. W. <i>(CAgE -15-397)</i>	Awareness and Knowledge of Agriculture Fresh Produce Traceability among Producer and Wholesaler in Malaysia Juliana R. S. J., Norsida Man and Ismail A. L. <i>(CAgE -15-428)</i>

0930 – 0945	Enduring the Storm for Survival: Export Competitiveness of Malaysian Cocoa Che Ku Amir R. C. K. M., Kusairi M. N. and AlliaFarhanna R. (CAgE -15-428)	Critical Success Factors in Enhancing Beef Production of Various Farming Systems Rafidah Y. , Juwaidah, S., and Golnaz, R (CAgE -15-382)	Cost Analysis of Rice Milling: A Case Study of 7 Rice Mills in Malaysia Bonhee C. , Fatimah M. A., KusairiMohd N., ShaufiqueF.S. (CAgE -15-423)
0945 – 1000	Technical Efficiency Measurement by Data Envelopment Analysis: An Application in Open System Broiler Farms of Peninsular Malaysia Kamal H.A. W. and MohdMansor I. (CAgE -15-415)	The Sustainability of the Robusta Coffee Farming at the Southern Area of Lumajang Regency East Java Province Soetrio (CAgE -15-419)	The Role of Rural Institutions on Food Security Policy in East Java Province Nuhfil H. , Rosihan A. and Fahriyah (CAgE -15-389)
1000 – 1015	Revealed Comparative Advantage of Cocoa Products: Selected ASEAN Countries Nurhafizah M. , Allia F.R and Kusairi M. N. (CAgE -15-422)	Economics of Small-Ruminant Marketing in Northwest Nigeria: Analysis of Price Determinant Umar A. M. (CAgE -15-403)	Food Security Challenges in Nigeria: A Paradox of Rising Domestic Food Production and Food Import Haruna U. , Ahungwa G. T., Abdullahi M. A. and Muktar B.G. (CAgE -15-405)
1015 – 1030	Closing Ceremony (<i>Venue: Lecture Hall 1</i>)		
1030 – 1100	Refreshment		
1100 – 1600	Tour to an agri-entrepreneur enterprise (for International Delegates)		

List of Delegates

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THE SUSTAINABILITY OF THE ROBUSTA COFFEE FARMING AT THE SOUTHERN AREA OF LUMAJANG REGENCY EAST JAVA PROVINCE

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Abstract

The objective of this review is to preserve the culture as well as the cultivation of the commodity of Robusta coffee in order to provide impacts towards the revenue and environmental aspects. Therefore, the specific goals to achieve are: specification of the farming business, profit value, sustainability level, as well as the modeling on the farming business development. The research site is at the Robusta coffee farming business center at the southern area of Lumajang Regency East Java Province. This research employs purposive sampling as the sample collection method. Data analysis is performed using revenue analysis to find out the profit rate, while the sustainability of the farming business is performed using the *Multi Dimensional Scalling* (MDS) and the *Rapfish rapid Appraisal technique* (RAP- Coffee) approach. Whereas the analysis on the development strategy is performed using the *Force Field Analysis* (FFA). The results of this research reveal that,

- a. the existence of the Robusta coffee farming business at the area under research is highly potential to be developed since it has yield potential of 2.665 tons in 2012 with the profit rate of 28.850.461,54/Ha
- b. in order to find out the sustainability level of the Robusta coffee farming business with the average value of interest rate and the sustainability indicator criteria (SIC), it is found that the ecological dimension is the main priority of the interest, followed by economical, ethical, social, and technological dimension in consecutive order.
- c. the strategy for developing the sustainability of the Robusta coffee farming business at the area under research is performed through the development of the farmer's institutional network of the coffee growers performed by enforcing the functional and institutional relations with the government institutions as well as input/output services institutions, respectively.

Keywords: Robusta coffee, sustainability, strategy

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INTRODUCTION

East Java is one of the centers of the coffee commodity (*Coffea spp. L.*), which is referred to as the high-rated plantation commodity since the cultivation process involves a big number of manpower while at the same time it provides the source of income to the people at the surrounding rural areas. Either viewed from backward or forward point of view, this business plays an enormous economical role. When viewed backward, this business is the employment field to many farmers, peasants, and other users of agricultural inputs. On the other hand, when viewed forward, it provides opportunity for business and employment on the trading sectors, as well as transportation and beverage sectors. Coffee is an the commodity of upstream industry which is only available to consume after being processed. The coffee growers even need to process the fresh coffee fruit into the dry beans before selling the crop. To most of the farmers, coffee also gains high economical value since decades ago as the source of living. Even with minimum maintenance and cultivation effort, it has successfully supported many families with decent life. Thus, when it is managed efficiently, the value may boost (Soetriono at. al., 2013).

The expansion of the main farming commodity area in East Java during the period of 2008-2012 has shown an average of 1,78%. Nearly all of the main commodities in East Java experience areal expansion, including coffee. However, the anomaly of the climate is responsible for the lateness of the coffee flowering which causes the decrease of production. Data shows that during the period of 2008-2010, the yield increased to 56.202 tons as compared to 2011 which reached only 37.397 tons, or 18.805 tons decrease of production. In 2012, the production bounced back to 54.239 tons (Office of Farming and Plantation East Java, 2012). The result of the study conducted by Soetriono and Soejono, 2013, reveals that another factor to cause the decrease is the competition to other commodity such as sugar cane. In East Java, coffee is mostly grown by the farmers at the southern area. It ranks high in the list of the strategic commodities since it is capable of fulfilling the domestic demand as well as the commodity for meeting the export demand which generates income. Soetriono, 2013, stated that the Robusta coffee is highly competitive. He also stated that the Robusta coffee which is grown in the southern area of the Eastern region of East Java is ready for international trade, although the rank begins to lose when competing with the Vietnamese one. By those facts presented above, this study attempts to discuss the available efforts to preserve the culture and cultivation of the commodity (sustainability) in order to provide impacts towards the revenue and environmental aspects. Therefore, the specific goals to achieve are: specification of the farming business, profit value, sustainability level, as well as the modeling on the farming business development.

METHODOLOGY of THE RESEARCH

The determination of the research area was conducted purposively (Nazir, 1999). The area chosen is located at the southern area of Lumajang Regency East Java Province. The selection is based on the consideration that Lumajang is a farming center which is adjacent to the exporting market. This research employs the purposive sampling method to gather the data regarding the farming business. Nazir, 1999, stated that purposive sampling method is the method in which the sample is conducted purposively. This is due to the fact that the sample of the research is not in accordance with the commonly-used regulation in the Rapfish, where "rule of thumb" expresses that sample is ready for three repetitive actions for the ordinate attributes (Stalans, 1995 in Pitcher, 1999).

The first data analysis by using the profit analysis (Soekartawi, 1999) is conducted through the following formulation

$$\begin{aligned}
 Y &= TR - TC \\
 TR &= P.Q \\
 TC &= TFC + TVC
 \end{aligned}$$

where,

- Y = Income gained by farmers (Rp)
- P = Unit price of the output (Rp)
- Q = Quantity of the output (kg)
- TR = Total Revenue (Rp)
- TC = Total Cost (Rp)
- TFC = Total Fixed Cost (Rp)
- TVC = Total Variable Cost (Rp)

The second analysis is the analysis on the sustainability of the Robusta coffee farming business (Pitcher, 1999) which is performed using the farming business approach. The problem-solving method is conducted using the observation, survey, and analysis techniques on social, economical, technical, and environmental aspects (ecology). Later, analysis on the sustainability method by using the Multi Dimensional Scaling (MDS) (Thamrin., et al, 2008) by using the Rapfish rapid Appraisal Technique is termed as RAP-Coffee.

To find out the strategy of the sustainability of the agribusiness, Force Field Analysis (FFA) is employed based on the pushing and hindering factors (Sianipar and Entang, 2003).

Table 1. Level of Urgency among factors

Num.	Factors	Comparison Level of Urgency of Factor				Urgency Value (UV)
		D1	D2	D3	D4	
1.	D1	X				
2.	D2		x			
3.	D3			x		
4.	D4				x	
Total Urgency Value (TVU)..... =						

The determination of the values for the supporting aspect and the interrelated factors is done using the likert scale. By considering the pushing and hindering

factors which are identified directly from expert, a quantitative assessment is available in the scales of 1-5 as follows:

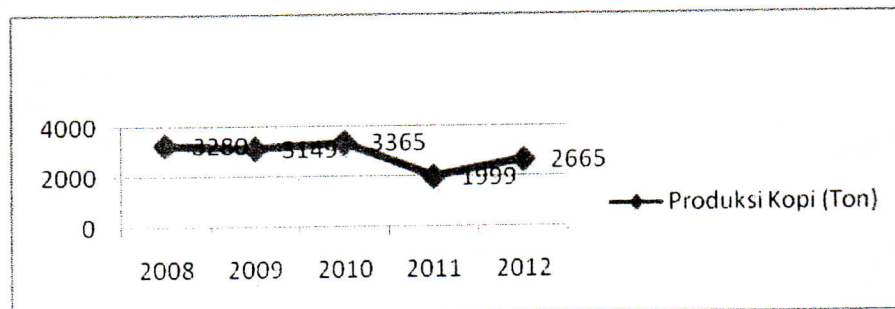
- 5 = very high (value of support/value of interrelation)
- 4 = high (value of support/value of interrelation)
- 3 = moderate (value of support/value of interrelation)
- 2 = poor (value of support/value of interrelation)
- 1 = very poor (value of support/value of interrelation)

RESULTS and DISCUSSION

1. The existence of Robusta coffee at the area under research

Robusta coffee is one of the high-rated commodities in East Java, particularly in the Southern Region. This is due to the proper geographical conditions, climate, temperature, and precipitation that support the coffee planting. The farming business of the Robusta coffee is conducted from downstream area to the upstream one. The upstream sector refers to the soil preparation, cultivation/breeding process, up to the harvesting process. Meanwhile, the downstream sector refers to post-harvesting treatment, marketing, as well as the respective process to provide added value to the coffee, into the half-ready product or even ready-to-consume product. Data of the research reveals that production diminished in 2011 and bounced back in 2012. The decrease in 2011 is due to the climate factor in macro assumption.

Below is the coffee yield in Lumajang Regency during 2008-2012



Picture 1. the coffee yield in Lumajang Regency

Picture 1 shows the coffee yield in Lumajang Regency during the period of 2008-2012. The yield experienced fluctuation. In 2008, Lumajang Regency generated 3.280 tons, and decreased 131 tons in 2009 to only 3149 tons in 2009. In 2010, the yield increased to 3.365 tons, meaning that there was 216 tons increase compared to 2009's production. In 2011, the decrease was quite significant. A record of 1.336 decrease resulted in only 1.999 tons coffee yielded. In 2012, the number bounced back to 2.665 tons, meaning that there was 666 tons increase.

The change on the climate during 2010 to 2011 was so drastic that it affected the cultivation of coffee. The change made the flowers fell off the trunk that the production decreased. the climate change has caused the increase on temperature as well as seasonal pattern. the increased temperature has caused the area of the coffee plantation to shift to higher areas. The unpredicted rainy season

has hindered the growing of the coffee. The climate change, too, has aroused the plant pest and diseases.

2. The revenue of the Robusta coffee farming business

The attempts of improving the people's welfare in an area may be done by accelerating the rate of the economy growth as well as strengthening the structures of the economy of the respective area. Regarding the South Crossing Line in East Java to lower the gap of the economy growth between the northern and southern area, one of the available alternatives which is correlated to character, culture, and the condition of the soil, coffee growing seems to be interesting. The results of the revenue analysis is presented in table 1.

Table 1. The agribusiness profit of the Robusta coffee in Lumajang in 2014

Num.	Analysis Technique	Calculation Result	
1.	Conversion of the area (Ha)	1 Ha	
2.	Average production (Kg)	2.276	
3.	Average selling price (Rp)	Rp. 23.000,00	
4.	Revenue (Rp)		Rp. 52.369.230,77
5.	Fixed Cost (Rp)	Rp. 1.917.230,77	
6.	Variable Cost (Rp)	Rp. 21.601.538,46	
7.	Total Cost (Rp)		Rp. 23.518.769,23
8.	Revenue (Rp)		Rp. 28.850.461,54
9.	R/C Ratio	2,77	

Source: Primary data, managed in 2014

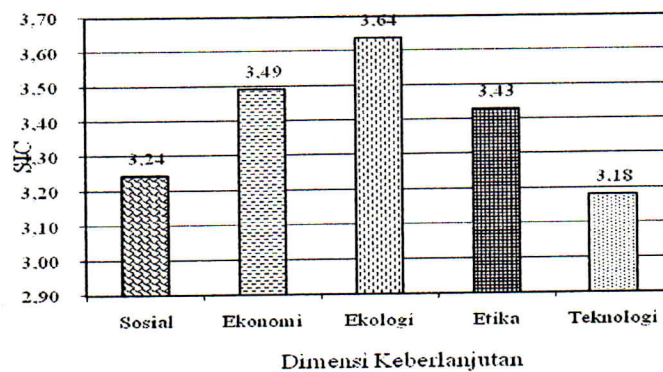
Table 1 shows the revenue gained from the Robusta coffee farming business at the area under research Rp. 52.369.230,77 with the total expenditures of Rp. 23.518.769,23 and revenue Rp. 28.850.461,54. The results of the analysis reveals that the Robusta coffee farming business is financially profitable. In addition, the efficiency on the cost is 2,77 (based on the R/C ratio) meaning that the Robusta coffee farming agribusiness is efficient and profitable. The R/C value of 2,77 translates as a Rp. 1,77,00 profit of every Rp.1,00 used as the cost. This finding is in line with Soetrono's study in 2013.

3. The sustainability of the Robusta coffee farming agribusiness at the area under research

The sustainability of the robusta farming agribusiness in Lumajang is examined using the *RAP-Coffee* data analysis by using the *Multi Criteria Analysis* (MCA). The MCA analysis approach is used as the evaluation structure on the indicator of the sustainability of the Robusta coffee farming agribusiness by using the participatory methodology by involving the stakeholders who play important roles in the development of the business. This method is divided into two stages, namely (a) ranking determination of each importance rate and relative weights, (b) scoring of each attribute being assessed by the importance rate of each attribute (indicator) respondent (expert) by using the Saaty scale (1-9).

Based on the dimension analysis, the dimension of ecology ranks the highest in the SIC with the score of 3,64. Economy dimension ranks second (SIC score 3,28). Ethic dimension ranks third with the SIC score of 3,43 followed by the Technology Dimension with the SIC score of 3,11. The *RAP-Coffee* analysis by using MCA reveals that the importance of the sustainability of the Robusta coffee farming agribusiness is determined by the ecological dimension. Meanwhile, the sustainability of the Robusta coffee farming agribusiness depends

on the economy factor. This is due to the fact that if the economy dimension is not paid attention or is non-profitable, there will not be any sustainable Robusta coffee farming agribusiness, which many people are aware of. The visualization of the SIC score of each sustainability dimension is seen on picture 2.

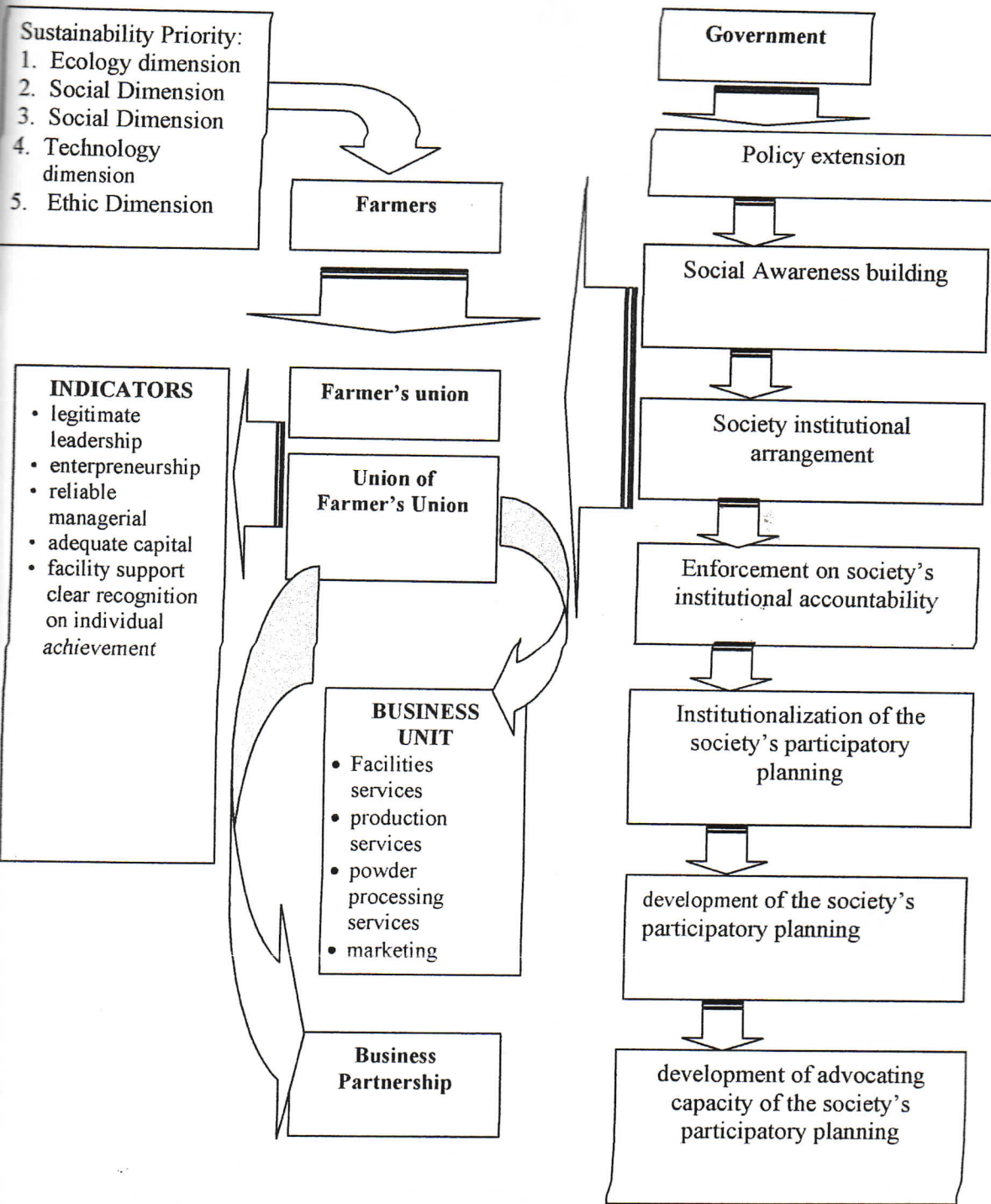


Picture 2. Sustainability Indicator Criteria (SIC) of the Robusta coffee farming agribusiness.

Relatively, the technology dimension ranks the lowest in the average score of SIC. Hence, the Robusta coffee farming agribusiness needs to focus on the improvement on the technology dimension combined with the technology aspect. The policies of the Robusta coffee farming agribusiness is expected to improve the design of the development pattern of the business by employing the sustainable cultivation and post-harvesting efforts since this dimension is one of the requirements in improving the economical value as well as the ecological value of the Robusta coffee. This would mean that the dimensions of economy and ecology are most-seriously-addressed for achieving the "sustainable state".

4. Modeling and development strategies in improving the sustainability of the Robusta coffee farming agribusiness

The focus of the strategy in the FFA analysis states that the key pushing factor in improving the sustainability of the Robusta coffee farming agribusiness is the development of the farmers' institutional networking system through the enforcement on the functional and institutional relationship with governmental institution as well as input-output services institutions as seen in picture 3.



Picture 3. Modeling of the sustainability of the Robusta coffee farming agribusiness at the area under research

Picture 3 explains that: the farmer's institutionalization (farmer's union) serves several functions, namely (1) the learning media for the members to gain knowledge, skill, and attitude as well as the media where independence grow.

Thus, production will increase, revenue will increase, and their life should be more prosperous; (2) the media for cooperation where farmer as individuals, or among farmers, or among farmers' union may cooperate in a better atmosphere in order to generate a more efficient farming business while at the same time become more resistant to threat, hindrance, or other disturbances; (3) the production unit, meaning that the farming business should be seen as the unity to be developed to achieve the desirable scale of economy, either in quantity or quality, as well as continuity.

The observation at the research area generates the following finding: the institution of the farmer's union has several characteristics, among others are (1) knowing each other well; (2) tend to have uniform goals and interests in running the farming business; (3) have the similar tradition or residential background as well as social, language, education, and ecological aspects and; (4) there are clear job divisions as well as responsibilities among the members based on the mutual agreement.

The institutionalization is facilitated and empowered by government or local authorities in order that the union may grow and develop into strong and independent organization. Therefore, in the attempts of developing the sustainability of the Robusta coffee farming agribusiness, the government roles are: (1) extending every policy line; (2) growing institution's awareness towards the policy; (3) providing feedback and input actively; (4) reinforcing the institution's accountability; (5) developing the institution system by considering the local wisdom; (6) developing the network of the institution; (7) developing human resources.

The government's role in the institution of the Union of the farmer's union are: (1) holding legitimate leadership; (2) stimulating and generating entrepreneurship; (3) possessing reliable managerial ability; (4) possessing adequate capital; (5) being supported by adequate facilities and (6) clear recognition regarding individual achievement. Those abilities serve as the motor in running the organization.

Regarding the agricultural facilities, there is a need of the fertilizer institutionalization starting from allocation up to distribution as well as the supply and distribution of the pesticides. Regarding the coffee production, there is the need of manpower institutionalization, irrigation, as well as land tenure in terms of the relationship between land owner and peasant. Regarding the powder processing, there is a need of institutionalization on powder processing, starting from the post-harvesting processing up to the packaging. Regarding the marketing services, there is a need of the supply on the market information. The institutionalization on the farming management is a process of delivering a certain product to the consumer, where efficiency is an important indicator. Regarding the capital services, there is a need of credit institution.

However, to improve the performance of the business, networking creation is an important aspect. Building a network is a process of building communication, sharing ideas, information and resources on the basis of mutual understanding and trust. This form of mutual understanding may be formed into an MoU that helps reaches mutual success.

CONCLUSION AND RECOMENDATION

1. Conclusion

- a. The existence of the Robusta coffee farming business at the area under research is highly potential to be developed since it has yield potential of 2.665 tons in 2012 with the profit rate of 28.850.461,54/Ha
- b. in order to find out the sustainability level of the Robusta coffee farming business with the average value of interest rate and the sustainability indicator criteria (SIC), it is found that the ecological dimension is the main priority of the interest, followed by economical, ethical, social, and technological dimension in consecutive order.
- c. the strategy for developing the sustainability of the Robusta coffee farming business at the area under research is performed through the development of the farmer's institutional network of the coffee growers performed by enforcing the functional and institutional relations with the government institutions as well as input/output services institutions.

2. Recommendation

- a. the strategic option to promote the sustainability of the Robusta coffee farming agribusiness is performed through developing business partnership. The partnership will be effective when performed in participatory way by involving the entire business owners during the process of planning, actuating, monitoring, as well as evaluating stages.
- b. government attempts to promote the value reinforcement which becomes the foundation of the harmonic relationship between human and nature. This means that the aspect of the sustainable environmental function should also be the main consideration in designing the business.
- c. government needs to pay serious attention on the approach attempts on the use of social capital like local knowledge, local institution as the entering stage to every business development phases of the robusta coffee farming agribusiness.

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