

## Konsorsium PETUAH (Perguruan Tinggi Untuk Indonesia Hijau)

Pengetahuan Hijau Berbasis Kebutuhan dan Kearifan Lokal untuk Mendukung Pembangunan Berkelanjutan  
(Green Knowledge with Basis of Local Needs and Wisdom to Support Sustainable Development)

# CoE PLACE Profile

## Center of Excellence Peatland Conservation and Productivity Improvement (CoE PLACE), Sriwijaya University, Palembang Indonesia

### Summary

Sriwijaya University (UNSRI) is one of the member of a consortium of seven universities in Green Knowledge for Green Prosperity of the people at some peatland areas in South Sumatra. The consortium was established for partnership with MCA Indonesia (Green Knowledge, GK), to leverage best resources from UNSRI through effective resource, sharing mechanism with respect to researches, lessons learned, experiences and intellectual capital needed to build a Center of Excellence (CoE) Peatland Conservation and related with the local needs of the regions to support sustainable development agenda.

Indonesia is a country that has a fairly extensive peatlands, scattered on the island of Sumatra, Kalimantan and Papua. The existence and development of peatland is very important not only in terms of the ecosystem but also from the view of improving people prosperity in the surrounding areas. Sriwijaya University has had a long experience in the agricultural development of

peatland in the province of South Sumatra. Through Green Knowledge-funded by MCA-I, Sriwijaya University received the opportunity to develop a Center of Excellence Peatland Conservation and Productivity Improvement (CoE PLACE). CoE PLACE is designed to improve the sustainable utilization of peatland with regard to the conservation of ecosystems and improving the productivity of peatland to achieve the welfare improvement of its people.

### Background

Sriwijaya University is a public university established in 1960 and located in South Sumatra Province Indonesia, which is surrounding by abundant swamp areas. Under these circumstances, Faculty of Agriculture, Sriwijaya University has long experience in the management of improving swamps area as conservation of ecosystem and productive agriculture land. The activities that have long been done were in relation in three aspects i.e. teaching and learning process, research, and community services. Based on the activities that

have been carried out, Sriwijaya University has been able to unite the activities of teaching, research and community service. These activities lead to the improvement of peatland management in terms of peatland conservation, peatland productivity improvement, and also peatland agricultural production systems.

In the activities of the MCA-I Green Knowledge, Sriwijaya University has the opportunity to engage with the development of peatland in South Sumatera Province. The activities carried out will lead not only to perform green knowledge based on local needs and wisdom, but also to support sustainable development of improving green prosperity at the surrounding community.

### CoE PLACE vision and development

The CoE PLACE will be managed to become a leading research center in Sriwijaya University towards **UNSRI<sup>++</sup>** (Undisputable excellence, Networking, Sustainability, Relevancy and Innovation), which means *Undisputable excellence* in various activities of tridharma in accordance with its mission, continuous care and improvement of *Networking* with various parties involved, always pay attention to the *Sustainability* of all activities through various planned programs, and its implementation with measurable indicators to improve *Relevancy* with the implementation of good management based on excellent of integrity and idealism to produce variety of *Innovations* that provide benefits to people and able to competitive in national and international levels.

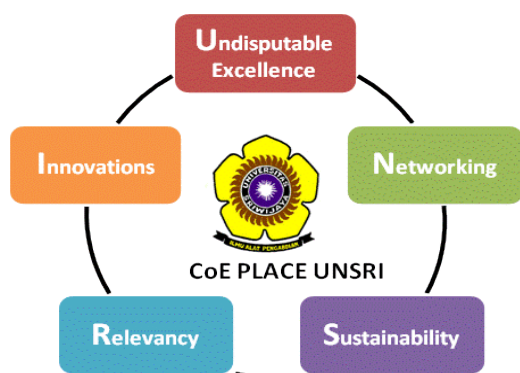


Figure 1. The vision of CoE Place UNSRI

CoE PLACE roadmap is developed in order to determine the various stages and steps to be taken towards the ideal of future CoE. In accordance with the tasks assigned, the CoE PLACE will be carried out towards (i) Capacity building for local and provincial stakeholders, through working closely with local academics, local governments and NGOs on related issues of low carbon development in South Sumatera Province; (ii) Capacity building for small medium enterprises and cooperatives, through providing various trainings, workshops, seminars in related green products and entrepreneurship initiatives including green job creation; (iii) Community learning exchange programs through working directly with community and community service organizations (CSOs) in applying related research in those locations; (iv) Research activity that strongly correlated with low-carbon development agenda in surrounding regions; (v) Provision of technical assistance to strengthen the academic curricula/programs in respective universities, supported by related researches and Subject Matter Experts (SME).

Furthermore, in compiling the positioning analysis and standardized criteria of CoE maturity and roadmap of CoE PLACE, there are three things that need to be considered, i.e. (i) CoE PLACE will strengthen the knowledge accumulation and a database of three components of the GP Project: Natural Resources Management (NRM), Renewable Energy (RE) and Sustainable agriculture (SA) aiming to improve agricultural productivity, better NRM practices, and to support the deployment of community-based RE; (ii) The location of the project and focus CoE PLACE on Green Knowledge and Green Prosperity Community-based activities on Peatland management at South Sumatera Province; and (iii) development of CoE PLACE. In relation to the peatland restoration activities, The CoE PLACE has developed its knowledge cluster as (1) peatland water management, (2) Peatland restoration, (3) Peatland productivity and improvement, and (4) Peatland livelihood improvement.

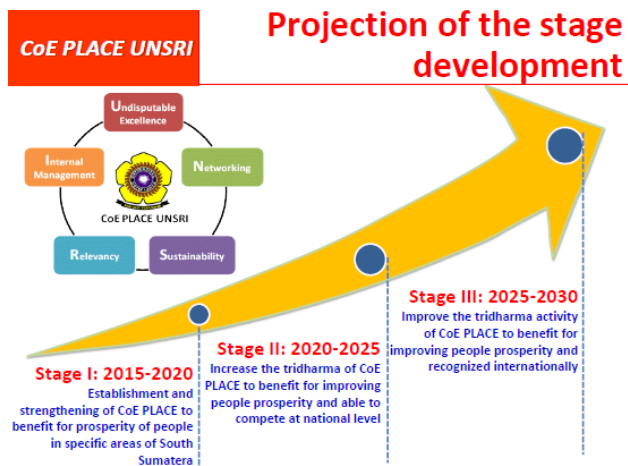


Figure 2. Stage development of CoE PLACE UNSRI

CoE PLACE Unsri development until 2030 is planned with improved target in three phases (Figure 2). *In the first phase* (2015-2020), the CoE PLACE Unsri is planned to have to stand up and be able to contribute to the improvement of public welfare. In this period, in accordance with the objectives of the project's green knowledge, the CoE PLACE expected to have been able to contribute in improving the welfare of people in the province of South Sumatera. *In the second phase* (2020-2025), the CoE PLACE is planned to be able to increase its contribution through Tridharma activities to the society and be able to compete at a national level. Furthermore, *in the third phase* (2025-2030), the CoE PLACE will increasingly demonstrate its ability to compete at international level. Moreover, we will focus on the overall primary mission of the CoE PLACE, which will constantly focus on improving the prosperity of the people in the coastal land areas.

### Current networking and linkages

The existence of Sriwijaya University in South Sumatera has become a trigger to carry out a wide range of activities that support tridharma activities in peat land areas. Various activities have been carried out to strengthen the expertise of researchers contributed for agricultural development that assist the development of peat land.

Peatland acts like a giant natural sponge. It regulates water, reduces the risk of drought and floods, releases water gradually during the dry

season, and supplies water for people and animals. The forest is a source of timber and other products, and acts as a sink that absorbs carbon dioxide – important to prevent global climate change. There are 21 million ha of peatland in Indonesia which store a total of 33.7 billion tons of carbon. Managing the peatlands in a sustainable way not only means guaranteeing an important resource for local communities. It also means conserving a biodiversity resource of worldwide importance. Swamplands cover about one-quarter of Sumatra, Indonesia's third-largest island. Much of them are covered by deep peat. In places the peat forms domes that act as natural reservoirs whose only source of water is rain. In its natural state, the peat is permanently wet. But when it dries out it becomes highly vulnerable to fire, which can burn both above and below ground.

We have made as an initial steps of the strategic areas filtered to define the focus of CoE PLACE. The CoE PLACE will focus its activity on both conservation and productivity improvement of peatlands. Both activities should be run in a balanced way. Peatlands conservation is very important in term of improving a healthy global environment, but to increase land and crop productivity should also be a main focus. In that context, there must have a balanced attention between the activities of improving ecological environment and increasing the economy. Those activities can be done through the implementation of sustainable intensification of land. The intensification does not only mean to increase farm production, but also to intensify the improvement of ecological environment. The balance of this intensification will ultimately lead to the improvement of people's welfare.

In order to carry out research activities in peatland, we need to define the triangle dimension of sustainable agriculture. The three angles of making up sustainable agriculture are the environmental dimension, social dimension and economic dimension. These three dimensions should be taking place simultaneously. The focus of activities on these dimensions leads to three different things,

i.e. environmental dimension activity leads to the ecological improvement, social dimension leads to inclusive activity, and the economic dimension of land leads to increased productivity. On the way between the environmental dimension and the economic dimension activities will contribute to the production of green innovation. The economic dimension and the social dimension should be in line with the frugal innovation. Moreover, the social dimension and the environmental dimension should pay attention to the grassroots innovation

### **Peatland Restoration Agency**

CoE Place get involved with some of the activities carried out by the Peatland Restoration Agency (*Badan Restorasi Gambut*) and Peat Restoration Regional Team of South Sumatra Province (*Tim Restorasi Gambut Daerah, Propinsi Sumatera Selatan*). CoE Place experts are involved as a team of experts and a team of implementers in the two institutions. Activities undertaken include conduct focus group discussions and other activities, whether conducted by the agencies and the activities of CoE Place. Moreover, CoE Place has produced several policy briefs and technical review that will be disseminated to a wide range of relevant stakeholders.

### **Working Group of Peatland Revitalitation and Mangrove Rehabilitation**

There are two working group in South Sumatera related in the agricultural improvement of swamp land, i.e. working group of mangrove and working group of peat land revitalitation. This working group consist of some institution such as university staff, local government, private company and NGO. This working group has working hand in hand with other stake holders in peatland conservation and revitalitation in South Sumatera. Some experts from Sriwijaya University are actively involved in these working groups.

In conducting its activities, in 2013 it has been established a local region mangrove working group (*Kelompok Kerja Mangrove Daerah, KKMD*) at South Sumatra provincial level, Ogan Komering Ilir district level, and Banyuasin district level. This local region

mangrove working group will work in cooperation with the working group at national level to conserve and rehabilitate mangrove. The working group has a function as an organization that provides input to local governments. Activities that had been carried out by a team of experts of Sriwijaya University was conducting mangrove restoration in Sembilang National Park. This activity was a JICA Project on capacity building for restoration of ecosystem in conservation areas (JICA-RECA), Sembilang National Park Mangrove Restoration funded by JICA Japan from 2010 to 2015.

South Sumatra Peat Land Revitalization Working Group (*Kelompok Kerja Gambut Sumatera Selatan*) was established through the South Sumatra Governor Decree in 2014. This working group activity related to the conservation, rehabilitation and utilization of peat land in South Sumatra. However, this working group has not been working optimally this year, especially in the presence of broad peat fires in 2015. Recently, Peat Land Revitalization Working Group conducted a focus group discussion in the context of the use of peat in a peat hydrology unit (*Kesatuan Hidrologi Gambut, KHG*) of Merang Kepayang Musi Banyuasin.

Sriwijaya University has long experiences in tridharma activities related to the development of peatlands. The activities undertaken are part of an effort of Sriwijaya University in order to help improving community welfare around the university, in which most of people live in swampy land areas. Implementation of these activities have been carried out in various matters related to the teaching learning process, research, and community service.

In education activity, there are many subjects are focused on agriculture in swampy land. The courses given are not only related to agriculture, but also in other field of health, engineering and socio-cultural. Moreover, many research activities conducted by lecturers at the Faculty of Agriculture are focused on agricultural development in swampy land. These research activities are not only done in South Sumatra, but also in other provinces such as Jambi, Riau, West Kalimantan and East Kalimantan.

Through our long experiences, some researchers have also been carried out in collaboration with universities from Japan, such as the Saga University, Mie University and Kagoshima University.

### **Research collaboration**

Research collaboration activities with Saga University have been focused on mangrove research and mangrove rehabilitation. This research collaboration has been conducted since 2006 through a study entitled *Development of technology and CDM models replanting of mangrove to support rehabilitation in the tsunami devastated the area*. This collaboration research was funded by JSPS (Japan) and DGHE (Indonesia) from 2006 to 2008. Other research collaboration was *studies on development of CO<sub>2</sub> fixation capacity models of mangrove trees and its quantification for supplement of organic carbon into the surrounding coastal ecosystems*, funded by JSPS Japan (2012-2014).

Research collaboration with Kagoshima University are being conducted through a study entitled *improving crop varieties and developing best practice to Stabilize Agronomy crop productivity on Swamp Area in Indonesia*. This research collaboration was carried out with other Japanese Institutions (Kagoshima University, Japan International Research Center for Agricultural Sciences JIRCAS, Nagoya University, Mie University, Tohoku University, Tokyo University), and IPB Bogor, funded by JSPS Japan (2012-2016). Moreover, activities of research collaboration with Mie University is a research titled *Development of new submergence-tolerant rice through*

*introgression of Sub-1 gene into the local swamp genotypes and improvement of submergence tolerant at seedling stage*, funded by Sriwijaya University (2015-2017).

Currently we engage in research and community development collaboration with GAPKI South Sumatra Chapter and Peat Restoration Regional Team of South Sumatra Province. We particularly welcome any institutions to carry out collaboration in peatland restoration projects in Indonesia.

### **CoE PLACE experts**

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*Dr. Munandar (Agronomist)*  
*Dr. Edward Saleh (Water Management Specialist)*  
*Dr. Muh. Bambang Prayitno (Peatland Specialist)*  
*Dr. M. Yazid (Environmental Management Specialist)*  
*Dr. Dessy Adriani (Agriculture Economist)*  
*Dr. Suwandi (Plant Pathologist)*  
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Local Project Implementer Unit

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