

C O N T E N T

ABOUT
SHERA & CDSR
————— **2**

GOALS &
OUTCOME
————— **4**

TARGETS
————— **6**

MANAGEMENT
& AFILIATE
————— **7**

RESEARCH
TOPICS
————— **12**

ACTIVITES
————— **13**

SUSTAINABILITY
PLAN
————— **18**

About SHERA & CDSR



USAID Sustainable Higher Education Research Alliances (SHERA) Program

- A 4-year university research partnership program between Indonesia and the U.S.
- Aims to increase the research capacity of the Indonesian higher education sector and improve the enabling environment for quality research within Indonesian higher education institutions.
- SHERA support to establish of up to five sustainable Centers for Collaborative Research (CCRs) in science, technology, and innovation (ST&I) research focus areas that are critical to Indonesia's development.

FOCUS AREA	THE WINNER
Food Security and Self Sufficiency	Institut Pertanian Bogor
Environment, Energy and Maritime Sciences	Universitas Gadjah Mada
Public Health and Infectious Disease	Univesitas Padjajaran
Urban Development and Planning	Universitas Indonesia
Innovative Technologies	Institut Teknologi Bandung

Centre for Development of Sustainable Region (CDSR)

Leading Institution: Universitas Gadjah Mada

Affiliate Universities:

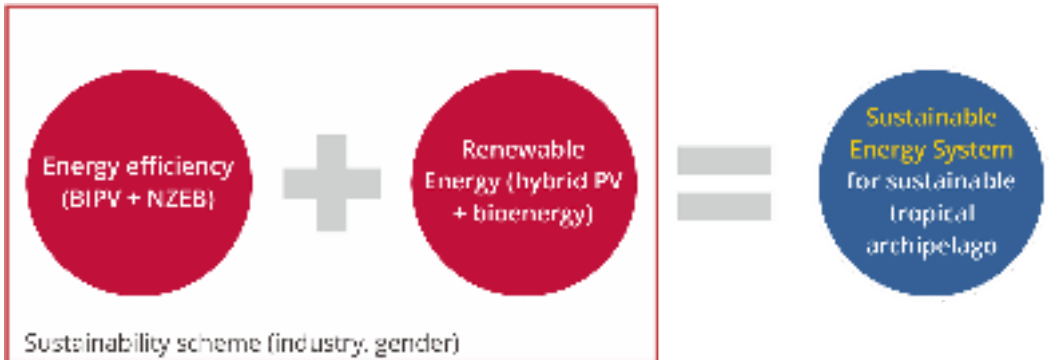
1. Universitas Indonesia
2. Institut Teknologi Bandung
3. Institut Pertanian Bogor
4. Universitas Bangka Belitung
5. Universitas Negeri Gorontalo
6. Universitas Muhammadiyah Gorontalo

Partner in USA: University of Colorado at Boulder



Goals of CDSR

“ Implementing hybrid energy system and energy efficiency and the supporting network to develop sustainable tropical archipelago. ”



Outcome & Output

SHERA Goal: Sustainable Improvement in Quality and Quantity of Science and Technology Research in Indonesian Higher Education Institutions

Outcome 1

Improved capacity of faculty, PhD students and postdoctoral researchers in target Indonesian universities

Outcome 2

Strengthened inclusive institutional environment for research and management in target Indonesian universities

Outcome 3

Enhanced collaboration in U.S.-Indonesia Consortium for collaborative research

Outcome 1.1

Increased trainings in research methods, writing and presentations skills

Outcome 1.2

Increased professional exchanges and collaborations

Outcome 2.1

Institutional policies in support for research and management developed in CCR members

Outcome 2.2

CCR best practices documented and disseminated to Indonesian higher education institutions

Outcome 3.1

Formal relationships established among U.S. and Indonesian institutions



Our Target

TARGETS	AMOUNTS
Number of peer-reviewed scientific publications	100
Number of academic research initiatives whose findings have been replicated, applied, or taken to market	3
Scholars who present at conference	60*
Number of short-term training courses held	9
Number of U.S. scholars visiting Indonesian institutions to lead short-term training courses for Indonesian partners' institutions	6
Number of Indonesian scholars who participate in in-person faculty exchanges held in the U.S.	32
Number of Indonesian scholars who receive ongoing mentoring from U.S. university partners	16
Number of CCR websites that are developed, operational and used regularly	1
Number of CCR knowledge products created	34
Number of CCR knowledge sharing events held on best practices & lessons learned	10
Number of selected affiliate institutions included in research consortium	7

*Conference held here in Indonesia

Lead Management

NAME	POSITION
Dr. Rachmawan Budiarto	Director and Partnership Manager
Sarjiya, Ph.D.	Monitoring, Evaluation and Learning Specialist
Suhono, S.T., M.Eng.	Monitoring, Evaluation and Learning Coordinator
Dwi Novitasari, S.T., M.T.	Monitoring, Evaluation and Learning Coordinator
Fitrotun Aliyah, S.T., M.Eng.	Grant and Finance Manager
Cæcilia Sri Agustina, S.E.	Finance Officer
Dwiasri Nuraini, A.Md.	Finance Officer
Ina Marga Mutia, A.Md.	Administration and Document Control

Management in Affiliate

NAME	POSITION
John Z. Za, Ph.D.	Partnership Manager (University of Colorado Boulder)
Prof. Dr. Ing. Ir. M. Sh. Gozali, M. Tech.	Partnership Manager (Universitas Indonesia)
Dr. Dianursandi	MEL Manager (Universitas Indonesia)
Sitiy Eka Nur Intan, S.T.	Grant & Finance Manager (Universitas Indonesia)
Dr. Eng. Moch. Donny Kurniawan	Partnership Manager (Institut Teknologi Bandung)
Brian Yudianto, Ph.D.	MEL Manager (Institut Teknologi Bandung)
Nani Kuslani, A.Md.	Grant & Finance Manager (Institut Teknologi Bandung)
Dr. Ulfahj, Sinegar	Partnership Manager (Institut Pertanian Bogor)
Prof. Dr. Ir. Iskandar Z. Sinegar, M.Par.Sc	MEL Manager (Institut Pertanian Bogor)
Aprilya Darmayanti, S. HUL	Grant & Finance Manager (Institut Pertanian Bogor)
Dr. Yusada K. Salimi	Partnership Manager (Universitas Negeri Gorontalo)
Dr. Su. Veyu Inriadi Anifin	MEL Manager (Universitas Negeri Gorontalo)
Triwangiul Umamah, S.Pd.	Grant & Finance Manager (Universitas Negeri Gorontalo)
Bika Ewarta Gusa, S.T., M.T.	Partnership Manager (Universitas Bangka Belitung)
Melin Sunanda, S.T., M.Eng.	MEL Manager (Universitas Bangka Belitung)
Iwan Dhata, S.T., M.T.	Grant & Finance Manager (Universitas Bangka Belitung)
Dr. Teha Banglusi, M.Si.	Partnership Manager (Universitas Muhammadiyah Gorontalo)
Tri Pratik Handiyani, S.Kom, M.Eng., M.Pd.	MEL Manager (Universitas Muhammadiyah Gorontalo)
Tison, S.Pd., M.Si.	Grant & Finance Manager (Universitas Muhammadiyah Gorontalo)

C D S R

CENTER FOR DEVELOPMENT OF SUSTAINABLE REGION

IN NUMBERS

7 Indonesia Universities*



1 U.S. Universities*



44
Months
Program



6
Main
Partnership
Research
Topics



183
Researchers*

consist of:

87 ♀ Female

& 96 ♂ Male

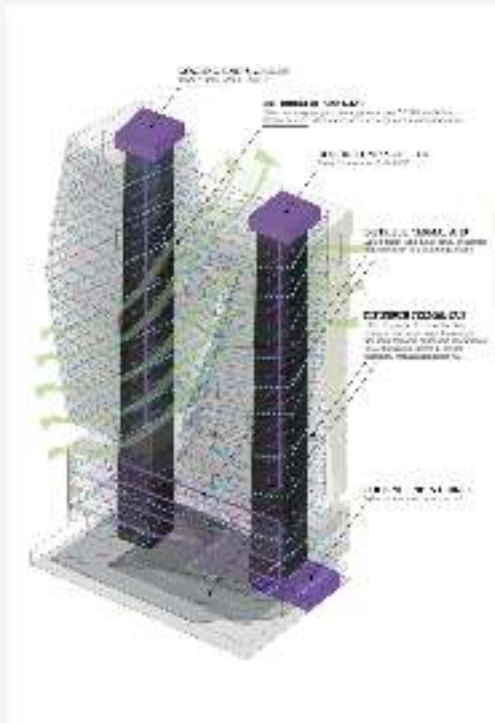
72 Researchers
S2**

66 Researchers
S3**

* Data until January 2018

** Education Background





Main Partnership Research Topics

1. Development of decentralized photovoltaics-and-bioenergy-based hybrid system for tropical rural and urban area.
2. Development of online integrated energy monitoring system for tropical coastal rural area and urban area.
3. Development of prototype of Building Integrated Photovoltaics (BIPV) integrated with Nearly Zero-Energy Building (NZEB) in tropical urban area.
4. Capacity development of local industry and other elements of the supporting network.
5. Increasing role of women in developing the sustainable energy system.
6. Development of method for determining sustainability level of the hybrid energy system.



ACTIVITIES

Steps to develop decentralized photovoltaics-and-bioenergy-based hybrid system for tropical rural and urban area

1st Year

- Formulating comprehensive lesson learned from several past projects conducted by parties involved (focuses on solar powerplant in Karimunjawa of PSE UGM-ITB-IPB, micro algae based biofuel of PSE UGM)
- Mapping of existing energy system, existing energy supply-demand pattern, and renewable energy resources in Semujur Island (Bangka Belitung Province)

2nd Year

- Increasing aspect of quality control of existing microalgae-based biofuel production facility
- Feasibility study (FS) and Detail Engineering Design (DED) for PV and bioenergy system in Bangka Belitung (Semujur Island)

3rd Year

- Installing PV system in Semujur Island and pilot bioenergy facility
- Increasing efficiency of microalgae-based facility in Yogyakarta
- Designing standard platform of urban and rural microalgae-based biofuel facilities

4th Year

- Increasing performance of hybrid energy system in Semujur Island
- Providing drafts of local regulations to accelerate development of hybrid energy system in Yogyakarta, Bogor, Bandung, and Bangka



ACTIVITIES

Steps to build online integrated energy monitoring system for tropical coastal rural area and urban area

- 1st Year**
 - Increasing capability and performance of existing online energy monitoring system in Karimunjawa, installing online energy monitoring system in existing microalgae-based biofuel production facility and to integrate it to system in four involved parties
- 2nd Year**
 - Increasing capacity of energy control room in five parties
- 3rd Year**
 - Installing online energy monitoring in Semujur Island, Bangka Belitung



ACTIVITIES

Steps To develop the prototype of Building Integrated Photovoltaics (BIPV) for Nearly Zero- Energy Building (NZEB) in tropical urban area

1st Year

- Formulating comprehensive lesson learned from several past projects conducted by parties involved Building Integrated Photovoltaics (BIPV) for Nearly Zero-Energy Building (NZEB) of Colorado Boulder
- Developing BIPV (including expected performance of thin film PV) and NZEB model on two existing buildings in Yogyakarta and Bandung

2nd Year

- Installing thin film PV (and comparison with conventional PV type) and its online energy monitoring system in two existing buildings in Yogyakarta and Bandung in BIPV-NZEB scheme
- Increasing energy performance (in term of energy consumption and production as well as predicted CO₂ emission reduction) of the selected two buildings
- Increasing capability of laboratories (by installing new instruments) in UGM and ITB conducting high level research of thin film PV and BIPV-NZEB

3rd Year

- Increasing energy performance by BIPV-NZEB of the selected building in Universitas Bangka Belitung

4th Year

- Developing standard designs of BIPV-NZEB of the selected building in Universitas Bangka Belitung
- Providing drafts of local regulations to accelerate development of NZEB in Yogyakarta, Bogor, Bandung, and Bangka Belitung

ACTIVITIES

Steps to develop capacity of local industry and other elements of the supporting network

- 1st Year**
 - Mapping of local parties in Yogyakarta, Central Java, West Java, Jakarta, and Bangka having capability to be included in supply chain network of PV and bioenergy system and BIPV-NZEB
- 2nd Year**
 - Developing design of supply chain and its supporting network of PV and bioenergy system and BIPV-NZEB
 - Installing new facilities, instruments and systems in two vocational schools (Jepara and Bangka) to maintain/repair/produce inverter and controller of PV systems (as local PV center)
- 3rd Year**
 - Connecting partners in supply chain and supporting network
- 4th Year**
 - Increasing quality control aspect in local PV center (Jepara and Bangka), establishing small business unit of PV components and integrated to control system in UGM, ITB, and UBB
 - Establishing proposed Centre for Development of Sustainable Region (CDSR) as a developing hub for the region (expected strategic partners: Ministry of Energy and Mineral Resources, ASEAN and Non-Aligned Movement Centre for South-South Technical Cooperation - NAM CSSTC)



ACTIVITIES

Steps to increase role of women in developing the sustainable energy system

- 1st Year** • Developing matrix of women role in sustainability design
- 2nd Year** • Capacity building woman local organizations in Jepara (nearest city from Karimunjawa Island) and Bangka

ACTIVITIES

Steps to develop of method for determining sustainability level of the hybrid energy system

- 1st Year** • Developing sustainability matrix for proposed hybrid energy system and energy efficiency
- 2nd Year** • Capacity building for vocational schools in Jepara (nearest city from Karimunjawa Island) and Bangka
- 3rd Year** • Increasing capacity of PV system for fisheries industry and green tourism in Karimunjawa Island
- 4th Year** • Proposing scheme for increasing sustainability of developed hybrid energy system and NZEB


Sustainability Plan Beyond the Period of SHERA Grant

1. Formalized the proposed CDSR as an important hub in ASEAN higher education development with strong partnership to USA Higher Education Institutions
2. Integration of relevant content of e-learning in UGM, UI, ITB, IPB, UBB, UNG and UMG developed by faculty members involved in the proposed CDSR
3. Developing CDSR as a significant locomotive for research development in HEIs, mainly in eastern part of Indonesia
4. Optimization of role of the CDSR to accelerate capacity development of Indonesia industry in renewable energy and green city
5. Optimization of role of the CDSR to strengthen the functional network to several relevant ministries to develop sustainable archipelago







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