PROJECT PROPOSAL COVER SHEET

Project No. _____ (*For Treaty use. Do not write anything here)*

Project Title: Co-Development and transfer of Rice Technologies

Project duration: 3 years

Target crops: Rice

Targeted developing country/ies Indonesia, Malaysia, Lao PDR and Phillipine

Other Contracting Party/ies involved

Project geographic extension (km²): 4,500,000
Total requested funding : US$484,902
Total co-funding: US$30000

Please select the type of project you are applying for:

☐Single-country Immediate Action Project (Window 2)
☐ Multi-country Immediate Action Programme (Window 2)
☐ Single-country Co-development and Transfer of Technology project (Window 3)
V☐Multi-country Co-development and Transfer of Technology project (Window 3)

Applicant

Name of Organization: _Indonesian Agency for Agriculture Research

Type of organization _Public Research Organization

Project Contact: Dr Karden Mulya

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SECTION A: EXECUTIVE SUMMARY

The effort to increase rice production and productivity in South East Asia are challenged by the adverse effects of climate changes.Local varieties from many countries in South East Asia may contain genes that are important for developing varieties adaptable to climate changes. Although local varieties are well adapted and tolerance to certain biotic and/or abiotic stresses, their productivity are relatively low compared to improved/modern varieties. The following projects will facilitate the collaboration among institution in the South East Asian countries in conservation and sustainable use of local rice varieties in order to meet the challenges of climate changes and food security.The overall objective of the project is to improve adaptation to climate change and enhance the food security of resource-poor farmers in South East Asian countries, by strengthening the conservation and sustainable use of rice genetic resources; with Specific objectives are to (1)identify phenotypic and genotypiccharacteristics of local varieties from participating countries, (2) improve the productivity of local varietiesin participating countries through the use of molecular markers and near isogenic lines (NILs), and (3) exchange improved/modern rice varieties among participating countries. The project will be implemented by a consortium which consist of the Indonesian Agency for Agriculture Research and Development (IAARD) as the leading organization, and the Malaysian Agriculture Research and Development Institute (MARDI), the National agriculture and Forestry Research Instititute (NAFRI) of Lao PDR, the PhilRice of the Phillippine and the International Rice Research Institute as the participating organizations. The activities of the project will be conducted for three years consist of workshops/meetings, trainings and field/ laboratory activities.

SECTION B: PROJECT DESCRIPTION AND CONTENTS

2.1. Problem definition

Rice is the staple food of over half the world's population and for thousand years it is predominant dietary energy source in Asian countries.Rice provides over 60% of the food intake in South East Asia and about 35% in East Asia and South Asia. Rice and its consumption increase every year due to population growth. Rice production, however, could not keep-up with population growth.

The effort to increase rice production and productivity are challenged by the declining of land availability, scarcity of water and labour, and adverse effects of climate change such as increased occurrences of drought and extreme temperatures, and flooding. Climate change could affect agricultural production through their impact on changes in temperature and water availability. The rainfall pattern has changed unpredictably, so that rice farmers has to change the planting and harvest seasons. Some parts of Indonesia, especially in the area located south of the equator, will have a long dry season and with short but more intense rainy season. Moreover, the climate is also likely to be more varied, with more erratic rainfall. Higher temperatures will also dry out the soil, reduce soil water resources and affect the growth of rice crop

Rice is cultivated in various agro-ecosystems in South East Asia,from irrigated lowland to freely drained upland, with various socio-economic and cultural system. This variation create variation of local varieties or landraces of rice among countries or within a country, even in the same agro-ecosystem. These landraces may contain important alleles that control the tolerance to certain abiotic stress such as drought or flooding and/or biotic stress such as blast or brown planthopper infestation. They may also have certain grain and nutritional quality as it preferred by local consumers or certain agronomic characteristic favored by local farmers.

Although most landraces and local varieties are well adapted and tolerance to certain biotic and/or abiotic stresses, their productivity are relatively low compared to improved/modern varieties. In indonesia, for example, local varieties productivitiies ranges from 3-5 ton/ha; whereas modern varieties can reach 8-10 ton/ha.Improving productivity of traditional varieties, therefore will contibute significantly to rice production.

The advantage of developing improved local varieties is that it will be easily adopted by farmers, provided that we could retain its agronomic characteristics and certain quality preferred by farmers and consumers. The availability of advanced breeding materials improved by molecular markers application such as Near IsogenicLines (NIL), TILs and back crossed lines which tolerance to biotic stress and have an improved yield

components at thethe International Rice Research Institute (IRRI) or in participating countries, will be helpful in improving local varieties.

Improved/modern varieties from one countrymight be transferred to other countries for adaptation to climate changes and increasing productivity of rice in the receipient countries . Each countries in South East Asia developed varieties for their own purposes. However, those varieties could be shared among other countries in the region with standard material agreement (sMTA) of the ITPGRFA and other regulation applies in each country. Prior to its distribution in a country, those varieties should be evaluated for its adaptability and acceptability. Participatory varietal selection might be applied for the evaluation.

2.2.Overall and specific objectives

Overall objective:

To improve adaptation to climate change and enhance the food security of resource-poor farmers in South East Asian countries, by strengthening the conservation and sustainable use of rice genetic resources

Specific objectives:

1. Toidentify phenotypic and genotypiccharacteristics of local varieties from participating countries.
2. To improve the productivity of local varietiesin participating countries through the use of molecular markers and near isogenic lines (NILs).
3. To exchange improved/modern rice varieties among participating countries.

2.3. Targeted outputs, activities and related methodology of implementation

Targeted outputs

Output 1:

Gene-pool of locally adapted varieties which has been evaluated phenotypically (productivity, tolerant to biotic and abiotic stresses, and nutritional value) and genotypically.The gene-pool consists of local varieties that already exist in the ex situ collection of participating countries or International Rice Research Institute (IRRI)

Activities 1.1. Sharing information and data base on genomic and morpho-agronomical charactersof local varieties from each participating institutions.

Activities 1.2.Selected pure (homogenous) local varieties in the gene-poolwill then be phenotypicallyevaluated in the field by participating countries based on IRRI standard evaluation. This field evaluation will be conducted at local environment condition in each country in the first and second year of the project.

Activities 1.3.Molecular characterization will be done by participating countries that have the capacity to do such a task, international organization such as the IRRI, or outsourced to a specialized company.The markers used for the characterization comprise universal primers for DNA fingerprinting analysis important for variety identity, and markers associated with yield components and desired traits such drought and/or diseases. This activity will be done in the second year.

Output 2:

Breedinglines of local varieties already introgressed with the desired traits, ready for further testing in order to improve the productivity and the adaptability to climate change

Activity2.1. Development of breeding lines from the crossing between NILs and local varieties in each participating country.NILs collection of IAARD consisting of 20-30 monogenic lines for each disease, bacterial leaf blight (BLB) and blast will be used in the materials transfer. Selected NILs, as donor parent will be crossed with local varieties chosen in each participating country. The local rice varietiescan be selected from the collection of gene-pool developed from this project, other designated countries or IRRI.This crossing activity will be started at the end of first year.

Activity 2.2.Phenotypic evaluation for targeted traits in the fields on produced F2 generations and conducted in the second year.

Activity 2.3.Applicationof molecular markers to identify target alleles in segregated populations.A number of molecular markers such as simple sequence repeat (SSR) and single nucleotide polymorphism SNP corresponding to productivity, biotic and abiotic stress.In addition, the NILs will be used as control in the phenotypic and molecular characterization of breeding lines derived from the crosses of selected NILs and local varieties. Both characterizations will be conducted simultaneously in the second and third year.

Output 3:

Improved/modern varieties transferred from one particpating country/institution to the other participating developing countries/institutions and participatorily evaluated in order to adapt to climate change and strengthened the food security in the recipient country.

Activity 3.1. Sharing information ondata base of released improved/modern varieties from particpating .

Activity 3.2. Transfer of improved/modern varieties among participating countries with the standard materials transfer agreement (sMTA) of the Treaty.

Activity 3.3. Participatory varietal selection in each participating country.The improved varieties transferred from one or more participating countries to the other country will be evaluated for their adaptability to the local condition and acceptability by local farmers..

2.4. Targeted PGRFA

Gene bank including gene-pool of local varieties,breeding lines of localvarieties and improved/modern varieties. As the exchanges of the rice genetic resources follow the sMTA of the Multi Lateral System of ITPGRFA, the genetic materials used in this project will be available for access except the materials under development (breeding lines) which available only at the discretion of the co-developers, i.e., the institutions involved in this project.

2.5. Direct and indirect beneficiaries

Direct beneficiaries:

Farmers directly involved in the field evaluation (60-80 persons)

Scientists and breeders (25-30 persons)

Indirect beneficiaries

Farmers which benefited from the project (60.000-80.000 persons)

Scientist and breeders (200-500 persons)

2.6. Impact and impact pathways

The overall impact of the project is to eradicate extreme hunger and poverty and to ensure environmental sustainability in developing countries particularly in South East Asia, where rice is the staple food and most rice farmers are poor farmers.The increase productivity of rice in SouthEastAsian countries will increase the availability of food in this region. Since this productivity increase is partly caused by the use of improved local varieties, it willbenefits small-scale farmers in marginal land where poor farmers traditionally used local varieties. This impact can be observed in four dimension, i.e., food security and poverty alleviation,adaptation to climate change and environmental sustainability,scientific impact, and capacitydevelopment and empowerment.

2.6 1. Food security and poverty alleviation

The increase productivity of rice in SouthEastAsian countries will increase the availability of food in this region. These increases are due the use of improved local varieties and the use of improved/modern varieties as it tranferred among the participating countries and adapted in the recipient countries. The use of improved local varieties will

benefit small-scale farmers in marginal land where poor farmers traditionally used local varieties..

2.6.2. Adaptation to climate change and environmental sustainability

As the rice breeders enable to access diverse local genetic resources with clear genetic background, their chance of effectively and efficiently developing rice varieties tolerance to adverse effects of climate changes are also increased; hence it will enhance the ressilience and adaptation to climate change. The availability of local and improved varieties adaptable to local environments will certainly increase farmers' capacity to adapt to climate changes. Farmers have many choices of varieties to be planted, some of which might be tolerant to extreme condition or seasonal and rainfall pattern shift due to climate changes. The genetic erosion due to the use of modern varieties can be slowed down since local varieties are conserved.

2.6.3. Scientific impact

The project will triggers the discoveries of genes or alleles that control certain traits such as tolerant to biotic or abiotic stress, as well as other important traits, since the gene-pool of local varieties may contain such alleles. The collaboration among rice breeders/scientist in co-developing technologies may create new ideas for research as the scientist will experience new environment of rice farming which otherwise will not be found in his/her country.

2.6.4. Capacity development and empowerment

The participating countries will benefited by this project through increasing knowledge of their breeder, rice scientist and information technologies expert. The project will also will improved management of gene banks and rice genetic resources management as a whole.The availability of local and improved varieties adaptable to local environments will certainly increase farmers' capacity to adapt to climate changes. Farmers have many choices of varieties to be planted, some of which might be tolerant to extreme condition or season and rainfall pattern shift due to climate changes. The genetic erosion due to the use of modern varieties can be slowed down since local varieties are conserved.

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3.1. Methodology of project implementation

3.1.1.Development of gene-pool of local varieties

3.1.1.1.Sharing information of data base of morpho-agronomical charactersof local varieties in each participating country.Each participating institution might have characterized and evaluated the local varieties in their respective countries in term of morphology(morphology on seed, leaf, flower etc.),agronomicic characters (yield and yield

components, flowering, resistance to biotic stresses such as Al and Fe toxicity; and biotic stresses such as BLB, blast oand brown plant hopper) and nutritional values (amylase and protein content, antioxidant). All of those informations are shared among participating countries through a web-portal and a workshop. Some of informations and will expectedly be provided by the IRRI. The workshop will be conducted in Bogor, Indonesia at the first quartal of year 1.

3.1.1.2.Phenotypic evaluation of selected pure local varieties in the gene-poolby participating countries based on IRRI standard evaluation. Each participating countries may choose 20-30 local varieties in the gene-pool for phenotypic evaluation in their local environment. The phenotypic evaluation will be conducted in two-season. The project will only fund field evaluation in one location in each participating countries, except in Indonesia as the leading countries. The phenotype that will be observed are agronomic characters such as yield and yield components, flowering, resistance to biotic stresses such as Al and Fetoxicity; and biotic stresses such as BLB, blast and brown plant hopper.Each unit of the field evaluation with a plot of 3 X 4 m^2 in size,consists of 20-30 varieties including control variety. It should be arranged in appropriate experimental design (RCBD, Randomized Complete Block Design)with three replications in each location.In Indonesia, these field activities will be performed in the screening sites at Taman Bogo, Lampung, South Sumatra and Subang, West Java in both dry and rainy seasons. These locations are chosen because of their environmental condition suitable for response to abiotic (Lampung) and biotic (Subang) stresses.Technical assistance will be provided by Indonesia (IAARD).

3.1.1.3.Molecular characterization of selected local rice will be performed by Indonesia supportedby the IRRI and/oroutsourced to a specialized company. The characterization are conducted usinguniversal primers for DNA fingerprinting and the markers associated with desired traits. The traits are yield components, nutritional value,and resistance to abiotic stress (drought, Al, Fe) and biotic stress (BLB, blast).

3.1.2. Productivity improvement of local varieties

3.1.2.1. Transfer of genetic selected materials to improve the productivity of local varieties in participating countries. Collection of monogenic lines in ICABIOGRAD-IAARD genebank will be shared and transfer to other participatingcountries that are interested in as the donor parent in their breeding program for improving the local varieties. NILs collection of IAARD consisting of 20-30 monogenic lines for each disease, bacterial leaf blight (BLB) and blast..

3.1.2.2.Development of population using NILs as donor parent and selected local varieties as recipient. Local varieties are chosen for this crossing based on their superior

agronomical characters and depend on the desired traits of each country.The local rice varietiescan be selected from the collection of gene-pool developed from this project or IRRI.

3.1.2.3. Phenotypicassay of F2 breeding lines for targeted traits will be done in the greenhouse and further evaluation in the field. This field evaluation will be conducted in two seasons (dry and rainy seasons). Each unit of the field evaluation is similar to local variety evaluation, with a plot of 1 X 2 m^2 in size, consists of 10-12 individual plant. The parent and elite variety are used as control planted in one plot. It is arranged in appropriate experimental design (RCBD, Randomized Complete Block Design) with three replications in each location.

3.1.2.4. Application of molecular markers to identify target alleles in segregated populations.

A number of molecular markers such as simple sequence repeat (SSR) and single nucleotide polymorphism SNP corresponding to productivity, biotic (BLB or blast) and abiotic stress (Fe, Al). Each participating country will conduct this activity, and share the molecular biology technology of using simple molecular marker based on gel-based technique.

3.1.3. Transfer of released varieties among participating countries

3.1.3.1. Sharing information on released varieties in each participating country

All information on improved/released varieties shared among participating countries.The information includes complete variety description, superior morphological and agronomical characters related to days to maturity and harvest, productivity and other desired traits.

3.1.3.2. Transfer of released varieties among participating countries.

The improved varieties canbe transferred from one country to the others with standard Material Transferred agreement (SMTA) of ITPGRFA. Eachcountry may use the transferred varieties adaptation test in their local environment or as the parental materials in their breeding programs.

3.1.3.3.Participatory varietal selection in each participating country

The improved varieties transferred from one or more participating countries to the other country will be evaluated for their adaptability to the local condition and acceptability by local farmers. Participatory varietal selection method will be applied for the evaluation.

3.1.4. Regional workshop, training and technical assistance

The project will conduct several workshop for preparation and monitoring progress of activities. There are at least 12 workshop during the 3 years duration of the project, consist of two workshop per year in Indonesia and one workshop per year in Malaysia and the Phillippine. There are also training 3 technical training during the duration of the workshop which will be conducted in Lao PDR.

3.2. Partnerships and collaboration arrangements

This project will involve the following partners:

1. Indonesian Agency for Agriculture Research and Development (IAARD) as the proponent and leading organization of this project. IAARD supervised several rearch centers and research institute one of which is the Indonesian Center for Agricultural Biotechnology and Genetic Resources Research and Development (ICABIOGRAD).The ICABIOGRADhost the National Gene Bank of plant genetic resources and has programs in plant genomic research and will actively involve in this project. The IAARD will coordinate the implementation of the project.
2. The International Rice Research Institute which has experts, facilities and mandates in coordinating international rice research. IRRI will plays the role in conducting genotyping and giving technical assistance in to the participating countries. The IRRI has a long history of cooperation with the IAARD and its research centers.
3. Malaysian Agricultural Research and Development Institute (MARDI).MARDI is a statutory body which has been mandated to conduct research in agriculture, food and agro-based industries. MARDI research endeavors for almost 40 years had fruitfully generated many new crop varieties and clones, animal breeds and its management practices. Cutting edge technologies in food processing and post-harvest handling are also developed for horticultural and livestock products. ICT technologies are being exploited in farm management and operations such as “precision farming” technology for rice estate, and yield estimation, using the imaging technology. New techniques are being developed in environmental management and optimum utilization of agricultural resources particularly soil, water and genetic resources
4. Philippine Rice Research Institute (PhilRice). PhilRice aims tohelp the Philippines attain rice self-sufficiency by increasing the productivity and profitability of rice farmers in a sustainable and competitive manner.PhilRice lead strategic efforts in national rice science for development, help ensure rice self-sufficiency and food

security, increase farm productivity and profitability, reduce hunger and poverty, provide new knowledge and information, transform lives in rice farming communities, and make rice R&D rewarding for scientists and researchers.

5. National Agriculture and Forestry Research Institute (NAFRI). NAFRI is mandated to undertake integrated agriculture, forestry and fisheries research in order to provide technical information, norms and results which help to formulate strategy in accordance with the government policies. NAFRI has four main functions including: carrying out adaptive research, developing methods, tools and information packages, providing policy feedback, and coordinating and managing research

3.3. Project management team

No	Name	Country/Institution	Field of expertise	Main responsibility
1	Dr. KardenMulya	Indonesia/IAARD	Plant Pathology	Germplasm exchange-related international treaty policy, participatory breeding
2	Dr. Muhammad Sabran	Indonesia/IAARD	Statistical genetics	Database management, phenotypic evaluation, participatory breeding
3	Dr. Dwinita W. Utami	Indonesia/IAARD	Molecular Biology	Database management, molecular and phenotypic characterization
4	Dr. Puji Lestari	Indonesia/IAARD	Molecular Biology	Database management, Phenotypic and molecular characterization
5	Dr. TrijokoSantoso	Indonesia/IAARD	Molecular Biology	Phenotypic and molecular

				characterization
6	Dr. AsfalizaRamli	Malaysia/MARDI	Genetic and Plant Breeding	Database management, Phenotypic and molecular characterization
7	Ms. LoidaM. Perez	Philippines/PhilRice	Genetics/ Genetic Resources	Phenotypic and molecular characterization
8	Dr.ChanthakonBoulaph	Laos/NAFRI	Genetic and Plant Breeding	Data base management, Phenotypic and molecular characterization

3.4. Sustainability

The global gene-pool of local varieties will link with the global information system of ITPGRFA, IRRI rice data base and national gene bank data base management of each participating country, so it will be maintained. The improvement of local varieties will certainly be followed up by the participating countries as it is for their own benefit and link with their national rice improvement program. The transfer and adaptation of modern varieties will be maintained through the portal of the platform for co-development and transfer of rice technologies as initiative of IAARD (Indonesia) and Embrappa (Brazil), and has been recognized by the Governing Body at it last session.

SECTION D: APPENDIXES

By signing this submission form for full proposal, the applicant confirms that all the above statements, including the attached Appendixes, are true to the best of his/her knowledge. Any deliberately untruthful response will lead to the automatic exclusion from the further screening and appraisal process, and may lead to the denial of awarded grants from the Benefit-sharing Fund.

Signature of contact person: **Date and location**

Jakarta December 5, 2014

APPENDIX 1: INFORMATION ON THE APPLICANT

Organization: Indonesian Agency for Agriculture Research
Type of organization: Public Research Organization
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Telephone Number: +62-251-8333440
Fax Number: +62-251-8338820
Country and city: Indonesia, Bogor
Web page: biogen.litbang.pertanian.go.id

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APPENDIX2: LOGICAL FRAMEWORK

Project title:Co-development and transfer of rice technologies				
	Intervention logic	**Indicators/targets**	**Sources and means of verification**	**Assumptions**
Impact	To contribute to the achievement of Millennium Development Goals 1 and 7: • *To eradicate extreme poverty and hunger* • *Ensure environmental sustainability*			
Outcome	To improve adaptation to climate change and enhance the food security of resource-poor farmers in selected developing countries, by strengthening the sustainable management of plant genetic resources for food and agriculture (PGRFA).			
Output 1	Gene-pool of locally adapted varietieswhichhas been evaluated phenotypically (productivity, tolerant to biotic and abiotic stress , and nutritional value) and genotypically	60-90of local varieties that arephenotyped for traits? relevant for climate adaptation,useful for farmers and breeders 3-5 of useful alleles discovered in local varieties	Report of the project Web page of co-development and transfer of technology	Participating countries willing to share materials and information on their local rice genetic resources
Output 2	Breeding lines of local varieties already introgressed with the desired traits, ready for further testing in order to improve the productivity and the adaptability to climate change;	4-10 of improved lines of local varieties developed for further testing and to be released as varieties in the participating countries60,000-80,000 farmers potentially adopted the released improved local rice varieties	# report of the project #survey on productivity of improved local varieties	The NIL and markers are available from IRRI and other contracting parties
Output 3	Improved varieties transferred and adapted to the participating developing countries in order to adapt to climate change and strengthened their food security	60-100varieties transferred and adapted in the participating countries 12-15 of PGRFA institutions in participating countries benefitting from improved access 100,000-150,000farmers adopted the improved varieties	➢ Treaty's data store Surveys ➢ Report of the project	Participating countries willing to share the material and information on their improved varieties

APPENDIX 3: WORKPLAN(Gantt Chart)

Project title: Co-development and transfer of rice technology

		1st Year						2nd Year						3rd Year					
		Months						Months						Months					
		2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12
	Gene-pool of traditional varieties																		
	Output 1 :Gene-pool of locally adapted varieties which has been evaluated phenotypically (productivity, tolerant to biotic and abiotic stresses, and nutritional value) and genotypically.																		
	Activity 1.1 Sharing information and data base on genomic and morpho-agronomical charactersof local varieties from each participating institutions.																		
	Activities 1.2.Phenotypically evaluation of selected pure (homogenous) local varieties based on IRRI standard evaluation.																		
	Activities 1.3.Molecular characterization of selected pure local varieties for DNA fingerprinting and analysis for yield components and desired traits such drought and/or diseases. This activity will be done in the second year.																		
	Breeding lines of local varieties																		

	OUTPUT 2. Breedinglines of local varieties already introgressed with the desired traits, ready for further testing in order to improve the productivity and the adaptability to climate change																	
	Activitiy2.1. Development of breeding lines from the crossing between NILs and local varieties in each participating country.																	
	Activity 2.2. Phenotypic evaluation for targeted traits in the fields on produced F2 generations and conducted in the second year.																	

APPENDIX 4: BUDGET

Project title: Co-Development and Transfer of Rice Technologies

Allocation of budget by outputs

-	**Total Budget Cost (USD)**
Output 1:	
Staff	2.400
Travel	46.967
Training and Workshops	28.294
Materials and/or Equipment	50.000
Logistical Support	3.300
Field Activities/Farmers and rural communities	51.696
Other	1.000
Total Cost Output 1:	**183.657**
Output 2:	
Staff	2.400
Travel	46.967
Training and Workshops	28.294

Materials and/or Equipment	32.000
Logistical Support	3.300
Field Activities/Farmers and rural communities	51.696
Other	1.000
Total Cost Output 2:	165.657
Output 3:	
Staff	2.400
Travel	23.483
Training and Workshops	28.294
Materials and/or Equipment	28.450
Logistical Support	3.300
Field Activities/Farmers and rural communities	35.250
Other	1.000
Total Cost Output 3:	119.777
Indirect costs (%)[2]	23.500
Total amount requested to the Benefit-sharing Fund	484.902

CO-FINANCING:	
(Institution)	**Total**
1. ICABIOGRAD	10.000
2. PhilRice	7.500
3. NAFRI	5.000
4. MARDI	7.500
Total co-funding	**30.000**
Grand Total	

Notes/[2] Indirect costs should not exceed 10 % of the total budget and may consist of use, rent and maintenance of offices, buildings or the organization's fixed equipment; postage; printing; generator; security; telephone; internet.

APPENDIX 5: DISBURSEMENT INFORMATION

Bank Name: BRI (Bank Rakyat Indonesia)
Bank address: Jl. DewiSartika No, 6, Bogor
Branch: Bogor
Country:Indonesia
Beneficiary:BB-BIOGEN
Account number: 0012-01-001915-30-2
Account currency: US $
IBAN Code: -
SWIFT Code: BRINIDJA