

Research Grant Program 2026

Kurita Water and Environment Foundation (KWEF) hereby informs you that your research proposal has been selected by the selection committee for the Overseas Research Grant Program 2026.

Accordingly, we kindly ask you to reconfirm the obligations of the grant recipient and to proceed with the required administrative procedures correctly.

1. Grant_ID	26Pid007
2. Name	NURUL HIDAYATI UTAMI
3. Institute	UNIVERSITAS NEGERI MALANG
4. Research Title	MICROALGAE-BASED WATER MONITORING IN WATER DEPENDENT HEALTH LAND LANDSCAPE OF BORNEO
5. Grant Amount	Japanese Yen 400,000.-
6. Research Term	from October, 2026 to September, 2027.

July, 2026



Prof. Tjandra Setiadi, Ph.D.
Chair of National Selection Committee
KWEF Indonesia



Katsunobu Kitami
President
Kurita Water and Environment Foundation

RINCIAN ANGGARAN BELANJA PENELITIAN
JUDUL : MICROALGAE-BASED WATER
MONITORING IN WATER DEPENDENAT HEATH
LAND LANDSCAPE OF BORNEO

No	Komponen & Rincian Kebutuhan	Volume	Satuan	Biaya Satuan (USD)	Total Biaya (USD)
I	Bahan Habis Pakai & Alat Sampling				\$463.48
1.1	Plankton net mesh size 20 µm (standar mikroalga)	2	Buah	\$70.22	\$140.45
1.2	Botol sampel HDPE 100 ml (gelap/amber)	60	Buah	\$0.84	\$50.56
1.3	Reagen pengawet Lugol iodine (100 ml)	2	Botol	\$25.28	\$50.56
1.4	Formalin teknis 4% & Alkohol 70%	1	Paket	\$22.47	\$22.47
1.5	Pipet tetes, haemocytometer, & cover glass	1	Paket	\$47.75	\$47.75
1.6	Kertas saring Whatman No. 42 & mika preservasi	2	Boks	\$33.71	\$67.42
1.7	APD lapangan (Sarung tangan nitril, masker, jas lab)	3	Paket	\$28.09	\$84.27
II	Transportasi & Akomodasi Lapangan				\$651.69
	Sewa kendaraan operasional darat (Banjarmasin - Stasiun Sampling)	4	Hari	\$39.33	\$157.30
2.1	BBM, tol, & parkir operasional	1	Paket	\$67.42	\$67.42
2.2	Sewa perahu klotok/lokal untuk titik rawa/perairan	3	Hari	\$44.94	\$134.83
2.3	Uang harian tim peneliti & asisten lapangan (3 orang × 4 hari)	12	OH	\$14.04	\$168.54
2.4	Akomodasi/penginapan tim di dekat lokasi (2 kamar × 3 malam)	6	Malam	\$20.79	\$124.72
2.5					\$646.07
III	Analisis Laboratorium & Pengukuran Parameter				
3.1	Sewa Water Quality Checker (pH, DO, Salinitas, TDS, Turbiditas)	4	Hari	\$28.09	\$112.36
3.2	Uji sampel kualitas air pendukung (Nitrat & Fosfat) di lab terakreditasi	12	Sampel	\$19.66	\$235.96
3.3	Sewa mikroskop dan kamera mikroskopik	5	Hari	\$33.71	\$168.54
3.4	Pengolahan data kelimpahan & indeks keanekaragaman (Shannon-Wiener)	1	Paket	\$129.21	\$129.21
IV	Honorarium & Jasa Pemandu Lokasi				\$123.60
4.1	Jasa pemandu lokal pendamping lintasan rawa	4	Hari	\$16.85	\$67.42
4.2	Honor enumerator/asisten pendamping identifikasi awal	2	Orang	\$28.09	\$56.18
V	Pelaporan, Publikasi & Administrasi				\$476.97
5.1	Penyusunan, pencetakan, & penggandaan laporan kemajuan & akhir	1	Paket	\$140.45	\$140.45
5.2	Biaya submit/APC publikasi jurnal bereputasi lokal/nasional	1	Artikel	\$224.72	\$224.72
5.3	Biaya administrasi perizinan lokasi & kelembagaan	1	Paket	\$56.18	\$56.18
5.4	Biaya ketersediaan jaringan & operasional data digital	1	Paket	\$55.62	\$55.62
VI	Dana Cadangan / Kontingensi				\$224.68
6.1	Cadangan tak terduga (kondisi cuaca/medan, penambahan spesimen)	1	Paket	\$224.68	\$224.68
TOTAL					\$2,586.49

仕向送金申込書兼告知書
(APPLICATION AND DECLARATION FOR REMITTANCE)

「内国税の適正な課税の確保を図るための国外送金等に係る調書の提出等に関する法律」第3条に定める告知を行います。

受付番号	OMT20260916104003
ステータス	処理済み
送金指定日	2026/09/18

店名	675 SHINTOSHIN BANKING DEPARTMENT			お申込日	2026/09/17	送金指定日	2026/09/18	
顧客番号	6752738253			代 り 金 決 済 方 法	決済方法	金額	予約番号	
取組番号	EB-831-116232				外貨	USD	2,586.49	
送金種類	海外向電信送金(OVERSEAS TRANSFER)							
支払方法	☑口座引落とし(CHARGE MY ACCOUNT)							
	円貨口座 外貨口座 USD 普通 0131341							
送金金額	通貨(CURRENCY)	金額(AMOUNT)						
	USD	2,586.49						
	手数料別							

受取人宛支払方法 (PAYMENT INSTRUCTION)	☒ 通知払(ADVISE & PAY)	海外銀行手数料	(FOREIGN BANK'S CHARGES, IF ANY, ARE FOR ACCOUNT OF) ☒ 受取人負担(CREDITOR) ☐ 送金人負担(DEBTOR)
依頼人(APPLICANT)	KURITA WATER AND ENVIRONMENT FOUNDATION		
名前(NAME)			
住所(ADDRESS)	10-1, NAKANO 4-CHOME, NAKANO-KU, TOKYO JAPAN TEL 0367436796		
送金人名(NAME)	KURITA WATER AND ENVIRONMENT FOUNDATION		
送金人国名(COUNTRY)	JAPAN	送金人取引主体識別子(LEI)	
送金人住所(POSTAL ADDRESS)			
部門名(DEPARTMENT)			
サブ部門名(SUB DEPARTMENT)			
番地または通り名(STREET NAME)	10-1 4-CHOME NAKANO		
建物番号(BUILDING NUMBER)	建物名(BUILDING NAME)		
フロア(FLOOR)			
私書箱(POST BOX)	郵便番号(POST CODE)	164-0001	
部屋番号(ROOM)			
市区町村または都市名 (TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
特定地域名(DISTRICT NAME)	都道府県または州・省 (COUNTRY SUB DIVISION)	TOKYO	
真の送金依頼人名称(NAME)			
真の送金依頼人国名(COUNTRY)		真の送金依頼人取引主体識別子(LEI)	
真の送金依頼人住所(POSTAL ADDRESS)			
部門名(DEPARTMENT)			
サブ部門名(SUB DEPARTMENT)			
通り名・番地(STREET NAME)			
建物番号(BUILDING NUMBER)	建物名(BUILDING NAME)		
フロア(FLOOR)			
私書箱(POST BOX)	郵便番号(POST CODE)		
部屋番号(ROOM)			
市区町村または都市名 (TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
特定地域名(DISTRICT NAME)	都道府県または州・省 (COUNTRY SUB DIVISION)		
受取人名(NAME)	UNIVERSITAS NEGERI MALANG		
受取人国名(COUNTRY)	INDONESIA	受取人取引主体識別子(LEI)	
受取人住所(POSTAL ADDRESS)			
部門名(DEPARTMENT)			
サブ部門名(SUB DEPARTMENT)			
通り名・番地(STREET NAME)	JL. CAKRAWALA NO.5, SUMBERSARI, KEC. LOWOKWARU, KOTA MALANG		
建物番号(BUILDING NUMBER)	建物名(BUILDING NAME)		
フロア(FLOOR)			
私書箱(POST BOX)	郵便番号(POST CODE)	65145	
部屋番号(ROOM)			
都市名(TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
特定地域名(DISTRICT NAME)	州・省 (COUNTRY SUB DIVISION)	EAST JAVA	
その他住所(ADDRESS LINE)			
受取人本店所在国または居住国 (COUNTRY OF RESIDENCE)			

最終受取人名称 (NAME)				
最終受取人国名 (COUNTRY)		最終受取人取引主体識別子 (LEI)		
最終受取人住所 (POSTAL ADDRESS)	部門名 (DEPARTMENT)			
	サブ部門名 (SUB DEPARTMENT)			
	通り名・番地 (STREET NAME)			
	建物番号 (BUILDING NUMBER)	建物名 (BUILDING NAME)		
	フロア (FLOOR)			
	私書箱 (POST BOX)	郵便番号 (POST CODE)		
	部屋番号 (ROOM)			
	都市名 (TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
	特定地域名 (DISTRICT NAME)	州・省 (COUNTRY SUB DIVISION)		
	最終受取人本店所在国または居住国 (COUNTRY OF RESIDENCE)			
受取人口座 (CREDITOR ACCOUNT)		9888855531720001		
BIC (SWIFT) コード (BICFI)		BNINIDJAMLG		
国別銀行コード (CLEARING SYSTEM MEMBER IDENTIFICATION)				
決済機関 (CLEARING SYSTEM IDENTIFICATION)	銀行コード (MEMBER IDENTIFICATION)			
送金先銀行名 (NAME)		BANK NEGARA INDONESIA - PT (PERSERO)		
送金先国名 (COUNTRY)		INDONESIA		
送金先銀行住所 (POSTAL ADDRESS)	支店名 (DEPARTMENT)	MALANG BRANCH		
	出張所名 (SUB DEPARTMENT)			
	通り名・番地 (STREET NAME)			
	建物番号 (BUILDING NUMBER)	建物名 (BUILDING NAME)		
	フロア (FLOOR)			
	私書箱 (POST BOX)	郵便番号 (POST CODE)		
	部屋番号 (ROOM)			
	都市名 (TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
	特定地域名 (DISTRICT NAME)	州・省 (COUNTRY SUB DIVISION)	EAST JAVA	
	その他住所 (ADDRESS LINE)			
経由銀行BIC (SWIFT) コード (BICFI)		経由銀行国名 (COUNTRY)		
経由銀行名 (NAME)				
経由銀行住所 (POSTAL ADDRESS)	支店名 (DEPARTMENT)			
	出張所名 (SUB DEPARTMENT)			
	通り名・番地 (STREET NAME)			
	建物番号 (BUILDING NUMBER)	建物名 (BUILDING NAME)		
	フロア (FLOOR)			
	私書箱 (POST BOX)	郵便番号 (POST CODE)		
	部屋番号 (ROOM)			
	都市名 (TOWN NAME)	特定地区名 (TOWN LOCATION NAME)		
特定地域名 (DISTRICT NAME)	州・省 (COUNTRY SUB DIVISION)			
送金目的 (ITEM / PURPOSE)		☐ 輸入 ☐ 資本 ☐ 仲介貿易 ☒ その他貿易外	送金理由コード (PURPOSE CODE)	国際収支項目番号 (IMF CODE)
送金理由 (DETAILS)		RESEARCH GRANT		原産地 (ORIGIN)
船積地 (PORT OF LOADING)				
仕向地 (PORT OF DESTINATION)				
外国為替及び外国貿易法に基づく許可等 (LICENSE)		☐ 必要 (NECESSARY) 許可日付 (DATE) : ☒ 不要 (NOT NECESSARY) 許可番号 (NO.) :		
お債権整理番号 (DEBTOR S. REF. NO.)		(受取人には通知しません) I32-007		
参照番号 (END TO END IDENTIFICATION)		I32		
その他のメッセージ (REMITTANCE INFORMATION)		KWEF RESEARCH GRANT FOR ID 26PID007		
送金目的コード (PURPOSE OF PAYMENT CODE)		その他の報告事項 (OTHER INFORMATION)		

受付番号 : OMT20260916104003
 帳票ID : OMT0107

印刷日時 : 2026/09/18 15:00:11
 印刷者 : 満田匡彦

企業様への確認事項	○「外国為替及び外国貿易法」による規制取引（https://www.resonabank.co.jp/hojin/service/kokusai_gaitame/gaitame/sokin/pdf/gaitame.pdf）に該当しないことを確認しました。 <主な規制対象取引> ・外為法に基づく「資産凍結等の措置の対象者」として指定されたものとの取引（ロシア・ベラルーシの制裁対象者により株式等を50%以上所有されている団体との取引を含む） ・送金受取人/送金受取人の実質的支配者（過半数株式の保有者や過半数の役員など）が北朝鮮関係者に該当する取引 ・北朝鮮関連制裁対象者、北朝鮮居住者およびその外国にある支店、出張所その他の事務所、上記により実質的に支配されている法人等、およびその外国にある支店等 ・北朝鮮を原産地、船積地域、仕向地とする貨物（商品）の輸入・仲介貿易代金の取引 ・北朝鮮・イランの核関連活動等に寄与する目的の取引 ・ロシア・ベラルーシにかかる役務提供規制、対外直接投資規制、証券取引規制、原油上限価格規制等に該当する取引 ・漁業、皮革または皮革製品・武器・武器製造関連設備・麻薬等製造業にかかる組合等の外国における事業活動のための支払 ○通貨の種類・直接間接を問わず、OFAC規制に該当する可能性のある取引（https://www.resonabank.co.jp/hojin/service/kokusai_gaitame/gaitame/sokin/pdf/ofac.pdf）でないことを確認しました。 ・関係者の所在地や関係国等に、イラン、キューバ、北朝鮮、シリア、クリミア地域、ドネツク人民共和国、ルハンスク人民共和国が含まれている取引 ・ロシア政府が一方的に独立を承認した自称国家 ・制裁対象者関連の取引 <OFAC規制の観点から、りそな銀行でお受けできない取引の例> ・貨物の原産地・最終消費地・荷揚げ地・船積地・中継地がイラン、キューバ、北朝鮮、シリア、クリミア地域等に該当する取引 ・お客さまの海外現法を通じて行うイラン、キューバ、北朝鮮、シリア、クリミア地域等との関連取引 ・制裁対象者を親会社とする子会社との取引等
同意欄	☒ 上記内容に同意し、承諾いたします。
添付ファイル	☐ あり ☒ なし

外国為替相場情報 > 2026年9月14日の為替相場

2026年9月14日の為替相場

[本日の為替相場](#) | [1990年以降の為替相場](#) | [月末・月中平均の為替相場](#) | [前年の年末・年間平均](#) | [世界の為替相場](#) | [現地参考為替相場](#)

2026年9月14日の為替相場 As of September 14, 2026					
Currency	通貨名	略称 Code	TTS	TTB	*
US Dollar	米ドル	USD	154.65	152.65	
Euro	ユーロ	EUR	179.55	176.55	
Canadian Dollar	カナダドル	CAD	112.40	109.20	
Pound Sterling	イギリスポンド	GBP	211.75	203.75	
Swiss Franc	スイスフラン	CHF	188.90	187.10	
Danish Krone	デンマーク・クローネ	DKK	24.12	23.52	
Norwegian Krone	ノルウェー・クローネ	NOK	16.83	16.23	
Swedish Krona	スウェーデン・クローナ	SEK	16.22	15.42	
Australian Dollar	オーストラリア・ドル	AUD	111.81	107.81	
New Zealand Dollar	ニュージーランド・ドル	NZD	91.12	87.12	
Hong Kong Dollar	香港ドル	HKD	20.02	19.16	
Malaysian Ringgit	マレーシア・リングギット	MYR	unquoted	unquoted	
Singapore Dollar	シンガポール・ドル	SGD	122.03	120.37	
Saudi Riyal	サウジアラビア・リヤル	SAR	41.81	40.21	
UAE Dirham	UAE・ディルハム	AED	42.59	41.23	
Chinese Yuan	中国元	CNY	23.20	22.60	*4
Thai Baht	タイ・バーツ	THB	4.72	4.56	
Indian Rupee	インド・ルピー	INR	1.77	1.47	*2
Pakistan Rupee	パキスタン・ルピー	PKR	0.64	0.48	*2
Kuwaiti Dinar	クウェート・ディナール	KWD	507.84	491.84	
Qatari Rial	カタール・リヤル	QAR	42.91	41.55	
Indonesia Rupiah	インドネシア・ルピア	IDR	1.00	0.76	*3
Mexican Peso					
Korean Won					*1
Philippine Peso					*2
SouthAfrica Rand					
Czech Koruna					
Russian Ruble					
Hungarian Forint					
Polish Zloty					
Turkish Lira					

1. Grant Amount: JPY 400,000

2. Exchange Rate :
MUFG Bank USD TTS on 14 September 2026
JPY 154.65 = USD 1.00

3. Remittance Amount: JPY 400,000 ÷ 154.65 = USD 2,586.49

米ドル、ユーロの外貨現金両替相場

		販売レート(円→外貨) CASH Selling	買取レート(外貨→円) CASH Buying
米ドル	USD	156.45	150.65
ユーロ	EUR	182.05	174.05



Nurul Hidayati Utami <nh.utami@ulm.ac.id>

Your application registered

KWEF 2026 <notify@webcas.net>

Tue, Mar 24, 2026 at 1:56 AM

To: nh.utami@ulm.ac.id

Mar 24, 2026, 02:56:32 / Indonesia

Dear NURUL HIDAYATI UTAMI

Your application has been successfully registered.

The KWEF Selection Committee will review your application fairly, and selected researchers are expected to receive notification by August 2026.

For inquiries, please email your C_ID number to kwef_ovs@kurita-water.com, while our reviews are following our policy and we cannot respond to any inquiries regarding the review process.

Thank you.

Kurita Water and Environment Foundation

<your Applied Data>

C_ID : KARG_32

Name : NURUL HIDAYATI UTAMI / Age : 36 / Title : / Student : Doctoral Student / Supervisor : Prof. Dr. Fatchur Rohman, M.Si / Institute : UNIVERSITAS NEGERI MALANG / Department : BIOLOGY EDUCATION / Mail : nh.utami@ulm.ac.id / Phone : +6285950030618 / Building : faculty of Mathematics and Natural Sciences at Universitas Negeri Malang (UM) / Street : Jl. Cakrawala No.5, Sumbersari, Kec. Lowokwaru / City : malang / State (Prefecture) : EAST JAVA / Zip : 65145

Research Topic : MICROALGAE-BASED WATER MONITORING IN WATER DEPENDENT HEALTH LAND LANDSCAPE OF BORNEO

Education Background

Bachelor : 2012, Bachelor of Biology Education, universitas Lambung Mangkurat, Indonesia

Master : 2015, Master of science education in Biology Education, Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

Doctor : Expected Graduation 2028, Doctor in Biology Education, Universitas Negeri Malang (UM), Indonesia

Others : Lecturer in Biology Education Faculty of Teacher Training and Education (FKIP), Universitas Lambung Mangkurat (ULM)

Academic Career

2016-2020 Lecturer in Biology Education

Faculty of Teacher Training and Education (FKIP), Universitas Lambung Mangkurat (ULM)

2020-present assistant Professor in Biology Education

Faculty of Teacher Training and Education (FKIP), Universitas Lambung Mangkurat (ULM)

Awards / Major research

Utami, N. H., et al. " The various type of microalgae in lentic habitats " J. Phys. Conf. Ser., 2020, 1422(1), 012027.

Utami, N. H., et al. "Participatory Strategies for Fostering Environmental Awareness and Domestic Waste Management through Waste Segregation among Primary School" Unram J. Comm. Serv., 2024, 05(1), 154-162

Utami, N. H., et al. " Evaluation of Wetland Environmental Awareness Among Biology Students" JMISC-Edu, 2025, 11(2), 288-297.

Utami, N. H., et al. " Problem based learning on wetland socioscientific issue: A pathway to enhance scientific literacy and collaborative skill" BINO: J. Biol. Innov., 2025, 06(1), 104-113.

Research Expenditure

Tools : "(120) Minor purchase/upgrade of basic field and laboratory equipment"

Consumables: "(100) Laboratory and field consumables ex microscope slides and cover slips, sample preservatives, pH calibration buffers, basic reagents water quality analysis etc"

Analysis : "(60) Costs for water quality analysis, including parameters that cannot be measured with portable meters and may require specific test kits or external laboratory services"

Travel : "(100) Transportation and field travel costs for several sampling campaigns to Kerangas sites in South

Kalimantan: local transport (vehicle rental/fuel), daily field allowances, and basic accommodation for assistant(s) during fieldwork"

Others : "(20) Printing and preparation of dissemination materials, communication, and minor administrative expenses related to project implementation and reporting"

Uploaded File : KWEF-26APL-F51 ENG.docx (37,540Byte)

KWEF Overseas Research Grant 2026

for Indonesia, Malaysia, Thailand and Vietnam

*Please describe and submit your proposed research so that it fits within this form.

Your Name	NURUL HIDAYATI UTAMI	Country	Indonesia
Institute (College)	UNIVERSITAS NEGERI MALANG		
Research Title	MICROALGAE-BASED WATER MONITORING IN WATER DEPENDENAT HEATH LAND LANDSCAPE OF BORNEO		
Outline of proposed Research (Oct. 2026 – Sep. 2027)		*Fit your description within the frame	
1. Background and Rationale The heath forest (kerangas) in South Kalimantan represents a unique ecosystem that develops on highly nutrient-poor, quartz-sand soils that are strongly acidic (pH < 4) and rich in tannins. Its vegetation is characterized by species such as <i>Melaleuca</i> sp. (galam), <i>Baeckea frutescens</i> (ujung atap), various <i>Syzygium</i> species (Myrtaceae), and <i>Cratoxylum formosum</i>. This ecological uniqueness makes kerangas heavily dependent on surface water availability and shallow soil moisture to maintain efficient nutrient cycling and ecosystem functioning. Over the past two decades, Kalimantan has experienced massive land conversion for plantations, mining, and infrastructure development, altering hydrological patterns, triggering habitat fragmentation, shrub and grass encroachment, and declining biodiversity and ecosystem multifunctionality. In kerangas, water is not merely a supplementary element but the primary regulator of nutrient cycling, carbon sequestration, and evapotranspiration. Extreme drought events rapidly diminish these regulatory capacities and disrupt the functional balance of the landscape. Microalgae—including eukaryotic algae and cyanobacteria—serve as primary producers and drivers of biogeochemical cycles that are highly sensitive to changes in pH, nutrient availability, and water quality, making them promising early-warning indicators of ecosystem conditions. However, no water quality monitoring framework based on microalgal communities has been specifically developed for the hydrologically dependent heath forest (kerangas) ecosystems of South Kalimantan. Consequently, the dynamics of anthropogenic pressures on their hydrological functions and ecological health remain difficult to detect and quantify at early stages. This study therefore plays a crucial role in addressing that gap by providing a scientific foundation for sustainable monitoring and management of heath forest (kerangas) ecosystems. 2. Research Objectives (a) To characterize the physicochemical properties of water and the spatiotemporal patterns of water occurrence (permanent, seasonal, ephemeral) across heath forest (kerangas) ecosystems in South Kalimantan that are currently under land-conversion pressure. (b) To identify the composition, diversity, and community structure of microalgae at heath forest (kerangas) sites spanning these water-condition gradients, using light microscopy and community indices. (c) To analyze the relationships between environmental parameters (pH, nutrients, turbidity, etc.) and microalgal community metrics in order to determine how changes in water quality and availability are reflected in microalgal community dynamics in heath forest (kerangas) ecosystems. (d) To determine key microalgal species or functional groups that are most sensitive to changes in kerangas water conditions, thereby providing candidates for early-warning bioindicators of ecosystem disturbance driven by anthropogenic pressures. 3. Methodology This study employs a concurrent mixed methods design integrating quantitative field sampling and laboratory microalgal analysis. The process is structured into four sequential phases. Phase I (Baseline Survey) maps gradients of water occurrence (permanent, seasonal, and dry wetlands), measures physicochemical parameters, and describes microalgal communities across kerangas sites. Phase II (Correlation and Index Development) analyzes the relationships between water quality and microalgal community metrics to identify key species and construct a composite index. Phase III (Field Validation) develops and tests a microalgae-based monitoring framework at sites experiencing varying levels of anthropogenic pressure. Phase IV (Dissemination and Policy Engagement) synthesizes the findings into practical guidelines and discusses their implications with stakeholders as a basis for early detection of hydrological degradation and ecosystem decline in kerangas.			
Expected Outcomes (Oct. 2026 – Sep. 2027)		*Fit your description within the frame	
This one-year study is expected to generate several key. The outputs that are meaningful for advancing both scientific understanding and practical water-quality monitoring in kerangas ecosystems. - First, it will produce an integrated database on water occurrence gradients (permanent, seasonal, and dry), basic physicochemical parameters, and the composition and structure of microalgal communities across selected heath forest (kerangas) sites in South Kalimantan, providing an initial quantitative picture of how anthropogenic pressures and hydrological variability are reflected in water quality and microalgal assemblages. - Second, the research is expected to identify several key microalgal species or groups that are sensitive to changes in pH, turbidity, and water availability, along with a set of community indices (diversity, dominance, and functional-group composition) that can be used as early indicators of heath forest (kerangas) water conditions. - Third, these findings will be integrated into a preliminary microalgae based water monitoring framework that is operational and user-oriented, including simple guidelines on site selection, sampling frequency, parameters to be measured, and interpretation of biological indicators. Finally, this framework will be translated into practical recommendations and concise dissemination materials for relevant agencies, ensuring that the grant produces not only scientific publications but also a concrete, early-warning tool for detecting hydrological degradation and ecosystem decline in heath forest (kerangas) landscapes			