



SARAWAK RESEARCH AND DEVELOPMENT COUNCIL

RESEARCH AND DEVELOPMENT GRANT SCHEMES 2023

GRANTS DESCRIPTIONS AND APPLICATION QUICK GUIDELINES

SARAWAK RESEARCH AND DEVELOPMENT COUNCIL

LOT 229, SECTION 63, KTLD, NO.2

JALAN DATUK ABANG ABDUL RAHIM

93450 KUCHING SARAWAK

CONTACT US:

ENQUIRYRDC@SARAWAKRDC.ORG.MY

A. Preamble

The Sarawak Research and Development Council (Sarawak RDC) research funds are grants provided by the Government of Sarawak through the Council to carry out Research and Development (R&D) projects that can contribute to the discovery of new ideas and the advancement of knowledge in applied sciences and technology, focusing on high impact and innovative research with the potential prospect of commercialization.

The Sarawak Research and Development Council (Sarawak RDC) research funds will cover disciplines in science and technology (excluding digital technology). The Council does not support social sciences, economics, and the arts and humanities, but these may be incorporated into submissions as collaboration and synergistic research activities.

B. Sarawak RDC Research Priority Areas

Applicants should understand the Sarawak RDC's Priority Areas in Section 1.0 before submitting an application:

- I. Biomedical Health Sciences
- II. Biodiversity and Environment
- III. Food and Agriculture
- IV. Engineering Science and Technology

Please visit our website: <https://www.sarawakrdc.org.my/research/research-clusters>, for descriptions of these clusters. Applicants are also advised to read the section "Non-qualifying Project Activities".

C. How to apply

Applications must be filed in English using the grant administration system, [RPMON](#), which is available on our website.

Before you begin, take note of these general key points of application:

1. Existing Sarawak RDC grant recipients are ineligible to apply as main applicant.
2. The researcher's profile is up-to-date, as a reference for determining compliance with the application requirements.
3. Proposals that are currently funded by other grants or are of a similar theme will not be considered.

4. No two or more research teams from the same entity should submit separate proposals on projects with similar themes. They should instead collaborate and submit one proposal only.
5. Sarawak RDC funds are not to be used for capital expenditures (CAPEX), such as the purchase of equipment or construction of buildings.
6. The funds must not be used as a means to fund student stipends or hire research assistants in its entirety.
7. Proposals must include a clear research element with aim to commercialization. Sarawak RDC will not fund proposals for data collection or inventory. Research proposals that can show clear pathway to commercialization will have an advantage.
8. The proposed project has a high potential of generating significant long-term funding support and can be completed within the time frame specified.
9. Specifies a plan for dissemination of results, including policy recommendations, to various stakeholders in modes deemed appropriate.
10. A letter of intent and other associated documents are required as proof of the proposal's collaboration with the relevant industry/agency.
11. The Principal Investigator must have at least one (1) year of service remaining at the Institution as of the application deadline.
12. Those on study or sabbatical leave for more than 6 months from the closing date of the application are ineligible to apply for the role of Principal Investigator. They can, however, apply as members of the research group. The researcher should update and the institutional RMC should confirm information duration of study/sabbatical leave.
13. All applications must be evaluated and verified by the Director of RMC of the respective Institution/Agency.
14. Researchers must declare all funding obtained for the project funded by other sources.
15. Institutions and researchers must comply with the "Malaysia Code of Responsible Conduct in Research ([MCRCR](#))"

1.0 SARAWAK RDC RESEARCH PRIORITY AREAS

1.1 Biomedical Health Sciences

Healthcare and Biomedical Sciences sector including life science is a rapidly growing and evolving global market. It is an important contributor to the health outcomes of the people of Sarawak and holds huge potential in contributing to Sarawak's economy.

The Biomedical Sciences Research direction will be geared towards drug discoveries, translational science from laboratories to communities, hospitals, and industries, and innovative medicines or medical devices, with the aim of improving health outcomes, accessibility, and affordability, particularly in rural Sarawak.

The areas of interest and research activities are aligned with the areas identified by the World Health Organization, Sarawak State Health Department, and Ministry of Health Malaysia which are cardiovascular diseases, cancer, emerging and re-emerging infectious diseases, and antibiotic resistance.

Drug discovery programs tapping into the vast natural product resources of the Sarawak rainforest will be developed further incorporating state research institutes, local start-ups and enterprises, and multinationals in collaboration with international research institutions. Such synergy will enable outcome-based programs that will drive research and development, and state economic growth.

Priority Areas:

- a) New drug/chemical entity discovery from Sarawak biodiversity, activity testing against diseases identified above incorporating high throughput screening and product development.
- b) Applied research on sustainable use of Sarawak biodiversity for industries such as nutraceuticals and food.
- c) Cutting-edge precision medicine and theranostic capability utilizing phenome science.
- d) Assay development, vaccines, and therapeutics.
- e) Point of care diagnostic/prognostic kit development.

1.2 Biodiversity and Environment

Sarawak, being part of Borneo Island, is blessed with the oldest rainforest in the world and its immense biodiversity ranging from terrestrial to marine life. This vast ecosystem is the centre of evolution for many endemic species some of which have not been discovered and/or documented. Further, traditional usage of Bornean flora and faunas for medicinal, culinary, and various other purposes have not been thoroughly documented, investigated, and commercialized. Such knowledge may hold potential key to the discovery of new drugs and other products useful to the global community.

With the increasing demand for food, agriculture, and forest-based products, intensified agriculture and forest production are expected to impact our ecosystem and biodiversity. One of the key challenges will be to identify solutions for a greener more sustainable economy that balance and utilize potential synergies between biodiversity, conservation, and various classes of ecosystem services, including agricultural and forest yields. However, current models are weak in their ability to predict the impacts of climate and landscape changes on biodiversity, while empirical evidence for hypothesized systematic effects of biodiversity changes on ecosystem functioning, particularly in Sarawak, remains sparse and contradictory.

Biodiversity research domain encompasses various sectors from biodiversity, forestry, conservation science, and commercialization of products through sustainable and greener processes. The goal is to foster closer cooperation and synergy among the sectors identified above through research on conservation science, sustainable forestry, green production processes, climate-ecosystem adaption, and cultural traditional knowledge and practice with a community-enabling policy such as the Access and Benefit Sharing scheme and approaches embedded.

Challenges: Current challenges in the sector encompass a decrease in wildlife population due to consumption behaviors i.e., uncontrolled wildlife meat consumption, the decline in wildlife habitat due to development and unsustainable land-use change, competition for commodities, and an increase in waste generation and pollution impacting biodiversity.

Priority Areas:

- a) Assessment of current and emerging threats to Sarawak biodiversity such as climate change.
- b) Advanced forestry research in areas of genetics, adaptive responses, growth, disease resistance, and sustainable forestry.

1.3 Food and Agriculture

The goal of this domain is to support innovation for more efficient and sustainable agriculture production to enhance food security, incomes, and nutrition that benefit small-scale farmers.

Such program will inculcate participation of poor and vulnerable sectors of rural societies in food and agricultural value chains and agribusiness commodity systems, food and nutrition security, productivity-enhancing innovations and modern technologies, natural resource management, climate change mitigation and adaption in agricultural and rural development to create resilient agricultural systems and community.

The focus areas are on new or under-utilized crops and high-value animal products to boost the local economy as well as accessibility to affordable nutrition, new technology, an approach to sustainable agriculture and food safety, and commercialization and globalization of Sarawak produce. Priority is also given to research that contributes to the development of improved market access and agricultural value chains for smallholders.

Challenges: Current challenges in this sector encompass a lack of pest and disease control approaches, quick species identification and cultivation method, lack of value-added products to expand commercial utility and outreach.

- a) Utility of new or under-utilized crops as new cash crops.
- b) New technology and approach in sustainable agriculture and food security including plant genetics, adaptive responses, and disease resistance.
- c) Soil and bio-enrichment research to find the right crop for the right soil-nutrient condition.
- d) Improving global market accessibility and value chains.

1.4 Engineering Science and Technology

Engineering science is one of the key components in Sarawak that strengthen our existing industries, particularly in oil and gas and energy sectors. It is also one of the key factors that enable us to progress from a labor-intensive economy to an innovation-led economy. Engineering and manufacturing are two sectors that significantly contributed to state gross domestic product (GDP) and employment.

In light of increasing external competitive pressures and internal factor constraints, engineering science research and development play key roles in strengthening existing sectors, enhancing productivity, and seeding growth in new niches. Several focus areas have been identified within the domain of engineering science to enable Sarawak to compete in the global arena and create knowledge-intensive jobs for Sarawakians, including renewable energy technology development, manufacturing process and development of medical devices, improved industrial waste management including repurposing, and offshore engineering for the oil and gas industry as well as renewable energy.

Such sectors will require the development of various intersecting technologies, such as robotics and automation, and advanced material research and manufacturing.

Challenges: Current issues in this sector include a lack of competent manpower, unclear policies and procedures, and excessive capital expenditure.

Priority areas:

- a) Medical device manufacturing and technology development.
- b) Industrial waste management, recycling and repurposing.
- c) Construction on peat.
- d) Technology research and development for renewable energy.

2.0 TYPES OF RESEARCH AND DEVELOPMENT GRANTS

Sarawak RDC will support excellent proposals which are new research or innovation with a clear impact pathway that has the potential to be commercialized.

2.1 RESEARCH INITIATION FUND (RIF)

Sarawak has promising researchers and scientists whose desire to contribute to the state's development through research and knowledge dissemination initiatives is hindered by lack of funds. This situation serves as a barrier to translating promising research and training into scientific outputs that could be applied to promote development.

To address this concern and in line with the Council's thrust of promoting, undertaking and coordinating research programs relevant to the development of the state, Sarawak RDC will dedicate funds to be known as the Research Initiation Fund (RIF).

The RIF is envisaged to provide chosen research project proposals with start-up funds intended to enhance chances of securing long-term support from federal or state agencies.

Funding Amount and Duration

Applicants are advised that the grant amount is capped at RM50,000 for a research duration of up to 24 months.

Eligibility Criteria

- a) The principal applicant must be Early-career Researcher (ECR)* who will be the principal investigator (PI) for the project.
- b) The principal applicant must reside in Sarawak and be a full-time employed researcher at a public sector research organization in Sarawak (hospitals, universities, polytechnics, and research institutions), and the proposed project must be carried out at this institution.
- c) The applicant must have a co-applicant who is at least an Associate Professor level or show established seniority and research credentials in the subject area, to act as a mentor. The co-applicant need not be based in Sarawak.
- d) Researchers must be able to bear responsibility for the project throughout the entire project period.

- e) For the avoidance of doubt, researchers from the industry are eligible to receive funding but should participate via a joint collaboration with a co-applicant from the agencies or established research entities. The Sarawak RDC reserves the right to exercise discretion on this.

** Early-career Researcher (ECR)* – completed a post-graduate research education or post-graduate clinical training, within the past 3 years, and not more than 5 years (excluding career break).*

2.2 CATALYST FUND

Catalyst grants enable an organization/research team to carry out mission-orientated, focused, and output-driven innovative research. Funding awards are intended to foster close collaboration and synergy between research agencies within Sarawak, and with counterparts globally and in Malaysia.

Catalyst grants support projects carried out by a **group of two to four** individual researchers, of which one will be designated as the corresponding Principal Investigator (PI). Proposals will be evaluated on the **sole criteria of scientific excellence and innovation** as well as an **outstanding intrinsic synergistic effect**. Research proposals with clear pathways to commercialization outcomes will have an advantage.

FUNDING AMOUNT AND DURATION

Applicants are advised that the grant amount is capped at RM150,000 for a research duration of up to 3 years (36 months).

Eligibility Criteria

- a) The principal investigator (PI) for the project must reside in Sarawak and be a full-time employed researcher at a public sector research organization in Sarawak (hospitals, universities, polytechnics, and research institutions), and the proposed project must be carried out at this institution.
- b) PI must present an early achievement track record or a five-year track record, whichever is most appropriate. The principal applicant must be at least an Associate Professor level or show established seniority and research credentials in the subject area, to act as a mentor. The co-applicants need not be based in Sarawak, but is ideal.

- c) Co-applicants are encouraged to be comprising ECR, and students pursuing postgraduate degrees or clinicians.
- d) Researchers must be able to bear responsibility for the project throughout the entire project period.
- e) For the avoidance of doubt, researchers from the industry are eligible to receive funding but should participate via a joint collaboration with a co-applicant from the agencies or established research entities. The Sarawak RDC reserves the right to exercise discretion on this.

2.3 SPECIAL VENTURES FUND (SVF)

Special Ventures Fund (SVF) provides funding that enables an organization/research team to carry out specific projects, programs, and campaigns. Priority for SVF will be given to projects that align with Sarawak RDC's priorities and advance the state of Sarawak's strategic visions and development goals.

One of the main roles of Sarawak RDC is to drive technological advancement through small and medium enterprises (SMEs) in Sarawak. The SVF will provide early phase funds to Sarawak-based SMEs including technology start-ups to conduct research and development activities geared towards commercialization of the research outcomes, and attract venture capitals to invest in Sarawak.

This grant is applicable to all Sarawak-based SMEs conducting research and development activities. The SVF operates on a 1:1 match funding scheme on projects that are identified to be aligned with state vision, economic, and development goals.

Sarawak RDC will negotiate profit sharing with the institutions/organizations as appropriate.

Funding Amount and Duration

Applicants are advised that the grant amount is capped at RM200,000 from Sarawak RDC. The duration of research will be up to 3 years (36 months) with a heavy emphasis on outcome deliverables i.e. product and/or technology.

Eligibility Criteria

- a) Main applicant must be a legitimate start-up company or an established company incorporated in Sarawak.

- b) Company must provide a 1:1 challenge match. A company that is offered the SVF will be required to raise or have already secured an equal amount of funding from other sources in order to claim this award. This must be a cash match. "in-kind" services will not qualify as meeting the match.
- c) Sarawak RDC reserves the right to withdraw the grant offer should the company not be able to contribute the matching portion of the grant.

2.4 COMMERCIALIZATION FUND (PCF)

Commercialization Fund (PCF) is aimed at assisting local researchers, agencies, and companies to commercialize their proven and market-driven products/solutions/services.

Funding is available on a competitive basis and is intended to support focused, performance-based projects whereby applicants must show realistic and achievable technical and commercial targets. Products/services/solutions with high commercial potential are sought for our support.

Sarawak RDC will negotiate profit sharing with the institutions/organizations as appropriate.

Funding Amount and Duration

Applicants are advised that the grant amount is capped at RM150,000 from Sarawak RDC. Applicants may only access this fund once per project.

2.5 THEMATIC PROGRAMMES 2023-2026

Theme 1: Waging War Against Anti-Microbial Resistance

Funding allocation: RM 500,000

Ceiling: Varies per project proposal

Duration: 3-5 years

Aim: To develop and advance research programme in anti-microbial resistance and the discovery of new anti-microbials against clinically relevant pathogens.

Objectives

- a) To elucidate the molecular mechanisms and cellular biology of anti-microbial resistance using systems biology approaches.
- b) To identify and validate new druggable targets for existing and novel anti-microbial.
- c) To establish an in-depth understanding of the complex dynamic interactions between host, pathogens, and environment on anti-microbial resistance status, evolution, and transmission.
- d) To accelerate therapeutic discovery and establish a pipeline for next-generation anti-microbial development.

Theme 2: Engkabang, the Wonders of Sarawak

Funding allocation: RM 500,000

Ceiling: Varies per project proposal

Duration: 3-5 years

Aim: To develop a comprehensive research programme into phenotypic characterization and establishing the medicinal properties of *Shorea macrophylla* (Engkabang).

Objectives:

- a) In-To elucidate the medicinal properties of aqueous and organic extracts of *Shorea macrophylla*.
- b) To isolate, purify, and chemically characterize compounds derived from *Shorea macrophylla* extracts that showed medicinal properties.
- c) To establish an in-depth understanding of the molecular mechanism of action of, and accelerate therapeutic discovery from, compounds derived from *Shorea macrophylla*.
- d) To characterize the phenotype and understand the growth biology, disease resistance, and ancestry of *Shorea macrophylla*.

Application Criteria and Guidelines

- a) Proposals must be submitted by a Research Consortium of at least 2 partners from the following sectors: health care, public sector, academia, business, and civil society.
- b) Lead partner must be based in Sarawak.
- c) Funding is available for multi-agency, multi-disciplinary projects addressing either one or more of the objectives, or all of the objectives of the themes above.
- d) The spirit of these programmes is to encourage collaboration and sharing of resources among research institutions and agencies in Sarawak, thus submission by a single entity will not be considered.
- e) Similarly theme proposals from different entities will be encouraged to collaborate.
- f) Details of these thematic programmes are available on our website.

3.0 GUIDELINES FOR BUDGET PREPARATION

3.1 Scope of Funding

Scope	Funded by Council	Not Funded by Council
Administration	<ul style="list-style-type: none"> • Graduate Research Assistant (GRA) directly involved in the project 	<ul style="list-style-type: none"> • Management fee / Administration charges to the respective entity/institutions • Allowance/bonuses/consolation to any of the project team members • Facility/office rental to the respective entity/institutions • Utility bills and internet subscription • Payment of student tuition fees (this is not a scholarship) • Payment of EPF & SOCSO • Professional subscription or memberships fees • Journal subscription • Filing fee for Intellectual property
Pre-clinical testing/clinical testing/field trials/stress test/user acceptance test	<ul style="list-style-type: none"> • Screening • Sampling • Payment for subjects/volunteers • Data analysis • Services related to the research activities 	<ul style="list-style-type: none"> • Overhead costs • Utility charges • Rental of premises or plant

Regulatory and standards compliance	<ul style="list-style-type: none"> • Product testing • Compliance with standards 	<ul style="list-style-type: none"> • Training related to the compliance • Implementation of projects oversea
Market study, validation, and evaluation	<ul style="list-style-type: none"> • Consultant for market validation and evaluation • Data analysis (man-hours) • Enumerators fee (charge/sample) • Sample development cost 	<ul style="list-style-type: none"> • Outsourcing of production • Travel and transportation • Meeting arrangement cost • Incentive to respondents • Facilities rental • Exhibition cost
Raw materials & consumables	<ul style="list-style-type: none"> • Raw materials and consumables directly related to the project 	<ul style="list-style-type: none"> • Purchase of books, stationeries, and subscriptions to journals, reference materials etc • Product design, packaging, and launching • Advertisement, brochure, website design, and development
Accessories needed	<ul style="list-style-type: none"> • Accessories needed include items that are necessary to upgrade the capability of existing equipment directly related to the project 	<ul style="list-style-type: none"> • Computer, laptop, printer, scanners, small gadgets, smartphones, or tablets • Storage equipment such as external hard disks/pen drives)
Minor modifications and repairs	<ul style="list-style-type: none"> • Costs, minor modifications and repairs of existing equipment used during the duration of the project period 	<ul style="list-style-type: none"> • Cost of maintenance of existing equipment will not be covered by this grant upon the completion of the project

Equipment	<ul style="list-style-type: none"> • Small equipment, which is not available at host agencies/institutions and is related to the project 	<ul style="list-style-type: none"> • Capital assets such as land, building, furniture and vehicle • Rental of space, building or land
National Conference	<ul style="list-style-type: none"> • Allowed for approved allocations in the proposal, must be directly related to the research • Oral presentation of full paper or posters that will be published as fully indexed articles 	
International Conference	<ul style="list-style-type: none"> • Only allowed for oral presentation of a full paper that will be published as full SCOPUS or WOS-indexed articles. 	<ul style="list-style-type: none"> • Exclude international conferences organized by <u>local organizer.</u>

The funding can be utilized for the following categories:

Vote 11000 - Wages and Allowances for Graduate Research Assistant (GRA)

- a) Allowance ceiling is only eligible for full-time mode GRA with a maximum of **RM2,000 per month (PhD); RM1,800 per month (MSc)**.
- b) Priority for Postgraduate students/Research assistants must be given to Sarawakian, in the first instance, and other Malaysians thereafter.
- c) Foreign students/workers are not eligible for this funding.
- d) Deduction of Employees Provident Fund (EPF) and Social Security Organization (SOCSO) is not allowed from this grant.

Notes:

- i. For RIF grant applicants, please note that Vote 11000 must not exceed 10% of the total grant ceiling.
- ii. Sarawak RDC grants are not fellowships.
- iii. The main supervisor of the PhD or MSc's students must be the Principal Investigator from the same Institution.
- iv. Allocation transfer is not allowed to other vote head.

Vote 21000 - Travel and Transportation

Includes travel and transportation expenses for the domestic and international trips directly related to the project. General terms of attending conferences for oral presentation of full paper:

- a) Budget has been approved in the proposal.
- b) Travel is only allowed from year 2 onwards.
- c) The **project leader or team member** is only allowed to go **once** over the project duration.
- d) Only two (2) people are allowed to the same international conference.
- e) Only oral presentation at conferences or seminars on the findings of the project.

- f) The cheapest route is to be used for travel. Travel is limited to an economy class using the shortest direct routes either MAS or AirAsia except under extenuating circumstances.
- g) The project leader or collaborator needs to send an application for approval to Sarawak RDC before attending the conference together with a copy of the abstract/paper that is going to be presented.
- h) When domestic facilities and expertise are inadequate to conduct a portion of the research. However, the venue must be suitable in terms of facilities, expertise, and technology transfer.
- i) Graduate research assistant (GRA) is only allowed to attend local conferences, workshops, or seminars related to the findings of the project using the grant.
- j) The allocation for traveling trips will be funded up to a **maximum of 20% of the total expenses of the project or RM15,000.00 whichever is less.**

Vote 24000 - Rentals

- a) Only rental for special equipment not available in the institutions involved in the project and any other items directly related to the project can be included.
- b) Justification and quotation must be included in the proposal.

Vote 27000 – Research Supplies and Materials

- a) Only research-related supplies and materials are allowed.
- b) Details of cost and quantity with quotation must be included in the proposal.
- c) Expenses such as utilities, books, stationeries and subscriptions to journals etc are not allowed.

Vote 28000 – Maintenance and Minor Repair Services

- a) Only expenses for minor maintenance and minor repairs of laboratory, equipment, or other research-related items can be included.

- b) The cost of maintenance of existing equipment used during the implementation of the project is allowed.
- c) The cost of maintenance of existing equipment will not be covered by this grant upon the completion of the project.
- d) Total allocation for vote 28000 shall not exceed 10% of the total project fund.

Vote 29000 – Professional Services

This vote covers other special services directly related to the project such as:

- a) Consultancy - agreement/letter of intent must be submitted together with the project proposal.
- b) Payment for enumerators.
- c) Sample testing and analysis.
- d) Data processing.
- e) Paper publications related to the project.
- f) Registration fees for the conference.
- g) Attending courses/training related to the project.
- h) Engagement of foreign expert(s) will be considered on a case-by-case basis.
- i) Total allocation for special service shall not be more than 20% of the total project.

Notes: Payment of allowances or service fees to the Project Leader or member of the research is not allowed.

Vote 35000 – Accessories and Equipment

- a) Purchase of special equipment and accessories (including upgrading existing equipment) related to the research project is allowed on the first year with justification and relevant quotation.
- b) Total allocation for vote 35000 shall be capped at 30% of the total project cost.

The researcher must provide justification, and information on the specialized equipment and accessories including specifications, quotations, and estimated costs for the purchase.

Note: Sarawak RDC reserves the right to demand the refund of any expenditures deemed to be unapproved use of the grant.

3.2 NON-QUALIFYING PROJECT ACTIVITIES

Scientific and technical information services such as collecting, coding, recording, classifying, disseminating, translating, analyzing, evaluating, bibliographic services, scientific and technical information extension advisory services, and compilation of data, are excluded from the main activities of the project **except** when they form an integral part of the project. In such a case, applicants must provide a statement indicating the research objectives to which the data would contribute.