SCIENCEFUND

GUIDELINE FOR APPLICANTS

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CHAPTER 1: INTRODUCTION TO SCIENCEFUND

1.1   PURPOSE OF SCIENCEFUND

The ScienceFund supports R&D projects which can generate new knowledge in strategic basic and applied sciences, and develop new products or processes necessary for further development and commercialization in agriculture. It is also aimed at generating more research capabilities and expertise within the country.

The outcome of research under ScienceFund which has commercial potential can be considered for additional funding under the TechnoFund.

1.2   ELIGILIBITY

The following entities are eligible for ScienceFund:

- Research Institutions (RIs) and Institutions of Higher Learning (IHLs) in the public sector;
- IHLs and RIs in the private sector, subject to approval by MOA.
- Government Science, Technology and Innovation (STI) Agencies

Private sector entities can participate in collaboration with the above mentioned institutions.

Local scientists or expatriates working under contract must furnish contractual documents as proof of employment during the period of the project duration

1.3   TYPES OF RESEARCH (TOR)

ScienceFund supports the following types of research activities:

- **Strategic Basic Research**
  Experimental or theoretical work undertaken primarily to acquire new knowledge directed into specified broad areas that are expected to lead to useful discoveries.

- **Applied Research**
  Research undertaken to acquire new knowledge for a specific application.

1.4   SCOPE OF FUNDING

The scope of funding under ScienceFund will be up to laboratory proof of concept. The quantum of funds approved will be determined on the merits of each application.

The funding (based on calendar year) can be utilised for the following categories:

- **Wages and Allowances for Temporary and Contract Personnel (V11000)**
  Includes wages and allowances for temporary and contract personnel who are directly engaged in the project. Only two (2) temporary or contract personnel are allowed for each project.

- **Travel and Transportation (V21000)**
  Includes travel and transportation expenses for domestic and overseas trips which are directly related to the project.

  Overseas trips must meet the following criteria:

  ❖ The purpose of the overseas trip should either be for attending conferences, seminars or workshops to present the results of the project, or for conducting a portion of the required research when domestic facilities and expertise are inadequate;
  ❖ The location of the overseas trip must appear as most suitable in terms of facilities, expertise and technology transfer.
  ❖ A maximum of one overseas trip is allowed during the duration of the project. The number of persons allowed for the overseas trip is limited to two, of which should include the Project Leader and a collaborator.
  ❖ Applications for overseas trip is to be submitted to and approved by relevant institutional committee/RMC.

  Travel is limited to economy class using MAS carrier and as far as possible using the shortest direct routes.

  Please note that expenses related to overseas trips will be funded under the ScienceFund up to 15% of the total expenses of the project or RM30,000 whichever is less. Any excess must be funded from other sources.

- **Rentals (V24000)**
  Only rental expenses for building space, equipment, transportation and any other item directly related to the project should be included. Rental of vehicles for the purpose of transportation must be from a licensed transport company.

- **Research Materials and Supplies (V26000)**
  Only expenses for research materials and supplies directly related to the project should be included.

- **Minor Modifications and Repairs (V28000)**
  Only expenses for minor modifications and repairs of the building, laboratory, equipment or any other item directly related to the project.

  The maintenance costs of existing equipment used during the duration of project period should also be included. The cost of maintenance of any equipment purchased will not be borne by the ScienceFund after the project is completed.

- **Special Services (V29000)**
  Includes expenses for special services directly related to the project (such as consultancy, payment for enumerators, usage of computer facilities, chemical analysis and data processing). Engagement of foreign expert(s) will be considered on a case-by-case basis.

- **R&D Equipment and Accessories (V35000)**
  Only purchase of special equipment and accessories (including accessories to upgrade the capability of existing equipment) directly related to the project should be included.

  Funding for special equipment and accessories is up to a maximum of 40% of total project expenses or RM100,000 whichever is lower. Any excess over this amount must be funded from other sources.

1.5 VARIATION IN PROJECT COSTING

Any variation in funding after a project has been approved, need to be approved by the institution.

1.6 NON QUALIFYING PROJECT ACTIVITIES

The following are excluded from the main activities of the project except when they form an integral part of the project, in which case applicants must provide a statement indicating the research objectives to which the data would contribute.

- Scientific and technical information services such as collecting, coding, recording, classifying, disseminating, translating, analysing, evaluating, bibliographic services, scientific and technical information extension advisory services and compilation of data.

1.7 PROJECT DURATION

The project duration is 24 months.

1.8 PROJECT EXTENSION

Requests for project extensions must be made to the **Agri-Food R&D Clearing House Secretariat** for approval using the Progress Report (refer to Chapter 5). Under normal circumstances, requests for extensions will not exceed more than six months of the project completion date. Only under extenuating circumstances can projects be granted additional extensions.

1.9 NOTIFICATION OF RESULTS

Applicants will be notified, through their institutions the decision regarding their application within 14 working days after approval by Steering Committee.

1.10 ACCEPTANCE OF OFFER

Applicants can accept or decline the offer. In the case of acceptance, applicants must amend their proposals according to the comments and concerns of the Steering Committee.

1.11 RESEARCH AGREEMENT

The Research Agreement (RA) of approved projects will be signed between MOA and the head / CEO of institution. The head / CEO of institution is required to sign the RA within 14 working days upon acceptance of the approved projects.

The terms of agreement such as the scope of work, sharing of Intellectual Property Rights (IPR) and Exit Clause will be outlined in the RA.

1.12 OWNERSHIP AND USE OF R&D EQUIPMENT

All R&D equipment purchased under the project will belong to the project leader's institution. The maintenance of such equipment should be borne by the institution. However, such equipment is not for the exclusive use of the institution only but ought to be shared with other research organisations.

1.13 INTELLECTUAL PROPERTY RIGHTS

Ownership and management of IPR, royalties and any other form of fees received by the institution resulting from technology transfer, licensing of technology or any other form of commercialisation, shall be governed in accordance with the terms and conditions outlined in the Research Agreement.

1.14 PUBLICATIONS

Researchers are expected to publish the results of their projects, locally as well as internationally. To safeguard national interests, researchers must however, obtain prior approval from the head of their institution.

Researchers are encouraged to publish technical research papers in refereed journals / conferences on a regular basis and a copy of all publications be submitted to the **Agri-Food R&D Clearing House Secretariat**.

Researchers must indicate and acknowledge the sources of funding for the project and the contribution of the various entities.

1.15 MONTHLY FINANCIAL REPORT

Each research institution is required to submit to the **Agri-Food R&D Clearing House Secretariat** a Monthly Financial report of all approved projects in digital file (excel format) as shown in Table 1. The purpose of this report is to enable the **Agri-Food R&D Clearing House Secretariat** to submit an overall monthly financial report to the Ministry of Finance.

Table 1: Summary of Monthly Financial Report

Ref	Project No	Allocation Received from Previous Year (if any) (a)	Current Year Allocation (b)	Total of Allocation Received (a+b)	Temp. & Contract Personnel V11000	T &T V21000 Rentals V24000	Research Materials & Supplies V26000	Minor Modifications & Repairs V28000	Special Services V28000	Special Equipment & Accessories V35000	Total Spent (c)	Balance c–(a+ b)
1												
2												

CHAPTER 2: PROJECT APPLICATION

2.1 TYPES OF APPLICATION

Researchers will be invited to bid for research funding for ScienceFund projects based on research themes identified as priority by MOA.

2.2 APPLICATION PROCESS

Application for ScienceFund must be submitted to MOA/ Agri-Food R&D Clearing House Secretariat.

2.3 APPLICATION CYCLE

Submission of applications will be made throughout the year.

2.4 APPLICATION FORM

This section of the Guidelines is for filling in the ScienceFund Application Form.

- **Project Number**

The project number is defined by the research cluster, institution category, institution name and serial number. It will be determined by the Agri-Food R&D Clearing House Secretariat once the proposal is submitted to the Ministry of Agriculture and Agro-based Industries (MOA). The coding structure is as shown in Figure1 below.

Figure 1: Coding Structure for Project Number

05	-	XX	-	XX	-	SFXXXX
Cluster		Institution Category		Institution Name		Serial Number

Note: SF stands for ScienceFund

Example: The project number **05-01-04-SF0001.**

05	– refers to the Agriculture cluster
01	– refers to Public Institution of Higher Learning
04	– refers to UPM
SF0001	– refers to the project serial number.

- **Project Title**
  The title should be concise, clearly indicating the subject of the investigation and reflecting the key idea(s) of the project.

- **Project Objectives**
  This section describes the measurable objectives of the project and defines the expected results.

- **Research Background**
  The research background should cover the following elements:
  - ❖ The major issues and problems to be addressed by the research.
  - ❖ Research necessity and importance.
  - ❖ Variables and parameters of the research.
  - ❖ Hypothesis or theory, if any.
  - ❖ Setting the limits or boundaries of the proposed research in order to provide a clear focus.

  The literature review should be addressed in this section to meet the requirements below:
  - ❖ The application must be novel (should not "reinvent the wheel").
  - ❖ Demonstrates knowledge of the research problem.
  - ❖ Demonstrates understanding of the theoretical and research issues related to the research question.
  - ❖ Critically analyse, integrate and synthesise the relevant literature information.

- **Socio-economic objectives (SEO)**
  The socio-economic objectives (SEO) represent the purpose or sectoral beneficiaries for which R&D activities are conducted. The SEO classification allows a systematic analysis of R&D funding at three different levels under the SEO Divisions. There are 5 SEO Divisions, namely Defence and Security, Economic Development, Society, Environment and Advancement of Knowledge.

  The appropriate divisions will determine the SEO Classification that best describes the beneficiary group of the project from the Malaysian Research and Development Classification System, 5th Edition or the latest edition. To classify the research project, please use the following definitions:

  - ❖ **SEO Category**
    The SEO Category describes the sector of the national economy for which it will be the main beneficiary of the R&D being practised.

❖ **SEO Group**
A sub-division under the SEO Category, which groups socioeconomic activities that have common characteristics.

❖ **SEO Area**
A sub-division under the SEO Group, which represents a specific area of research.

- **Fields of Research (FOR)**
The fields of research (FOR) represent R&D activities classified according to their scientific and academic disciplines. Please choose the FOR classification which most appropriately describes the scientific discipline being practised. Please select the FOR from the Malaysian Research and Development Classification System, 5th Edition according to the following:

❖ **FOR Category**
A sub-division of scientific or academic disciplines.

❖ **FOR Group**
A sub-division under the FOR Category.

❖ **FOR Area**
A specific discipline within an FOR Group which describes a science or a technology area.

- **Research Approach**

❖ **Research Methodology**
The research methodology demonstrates how the applicant plans to tackle the research problem. It should have details of the analytical techniques, research design and description of research activities. Specialised equipment, facilities and infrastructure, whether new or existing, required for the project should also be identified at this stage.

The applicant should compare the methodology with alternative methods and justify that the approach chosen is the most appropriate.

❖ **Project Activities**
It will provide the work plan and the list of the activities necessary for the project, including those associated with the transfer of the research results to customers / beneficiaries. It should also outline the sequence of the proposed activities and identify them in numbered stages, steps or phases.

The research activities as well as the timing and duration will be reflected in the Gantt chart.

❖ **Milestone**
A milestone is achieved when a significant phase in the project is reached, for example completion of testing, commissioning of equipment, etc. There must be at least 2 milestones per calendar year. The first milestone at the start of the project is optional while the last milestone denotes the end / completion of the project.

The timings of the milestones will be reflected in the Gantt chart.

❖ **Risk of the Project**
Describe the factors that may cause delays or prevent implementation of the project as proposed. Give an estimate on the degree of risk.

● **Benefits Of The Project**

❖ **Output Expected**
The output expected varies amongst the different types of research.

For **strategic basic research** projects, use the following list of outputs:
- Hypotheses
- Theories
- Algorithm
- Structure
- Data
- IPR

For **applied research** (technology development) projects, use the following list of outputs:
- Method / technique
- Demonstrator / prototype
- New / improved product / device
- New / improved process
- New / improved software
- New / improved material
- New / improved service
- IPR

❖ **Human Capital Development**
The indicators are as follows:
- Post doctorate

- Doctorate
- Master
- Bachelor
- Research staff with new specialisation

❖ **Economic Contribution**
   The indicators are as follows:
   - Sales of manufactured product / device / equipment
   - Royalties from licensing
   - Revenue from consultancies
   - Cost savings
   - Time savings
   - Others

❖ **Infrastructural contribution**
   The indicators are as follows:
   - New equipment
   - New information networks
   - Others

- **Research Collaboration**
  The collaboration is in the form of sharing of expertise and research facilities, marketing opportunities and other related research resources. Details on the role of key collaborators should be provided. Such commitment should be substantiated by documentation proof such as memorandum of agreement, letter of consent or any other form of agreement.

  For the project team, state all the collaborators involved based on their roles and time allocated. The man month of the project team will be automatically calculated based on the staff cost estimation worksheet.

- **Staff Cost Estimation**
  The computation of daily rates for individual researchers or research staff is done according to the following formula:

Daily Rate = $\dfrac{\text{Emolument}}{\text{Annual Working Days}}$ x Research Utilisation Factor

Where:

❖ **Emoluments** includes:
   - Annual basic salary
   - EPF contributions by employer
   - Performance bonuses
   - Allowances

❖ **Annual working days** are computed by deducting the total days in the year (365) with the following number of days:
- Rest days (Saturday and Sunday)
- Vacation
- Public holidays

❖ The **research utilisation factor** is calculated as follows:

$$\text{Research utilisation factor} = \frac{\text{Annual days on research projects and activities}}{\text{Annual days on research projects}}$$

The research factor ensures that time spent on activities which are not project specific (e.g. training, attendance of conferences, administrative tasks related to research proposals, recruiting of research staff, etc) is reflected in the daily rate.

- **Project Funding**
  In addition to the ScienceFund, the applicants have to indicate and specify which of the following funding sources may provide funding for the project.

  ❖ Domestic funding sources;
  - Other Government Funding Schemes;
  - Internal Funding;
  - CESS Fund;
  - Industry sources;
  - Others; please specify

  ❖ International funding sources
  - World Bank
  - Asian Development Bank (ADB)
  - United Nations Development Programme (UNDP)
  - Others; please specify

- **Summary of Relevant Past Research Project**
  Applicants should provide a summary of past research, if any, which has relevance to the proposed research.

- **Contractual obligations under this project**
  Applicants must indicate any contractual obligations with third parties.

- **Ownership of intellectual property rights**
  Applicants must indicate the organisation(s) that will own the intellectual property rights that may arise from this project.

CHAPTER 3: PROJECT EVALUATION

The project evaluation consists of Institutional Screening, and Technical and Financial Evaluation before it goes to Steering Committee for approval.

3.1   INSTITUTIONAL SCREENING

All applications are to be screened by the Institutional Screening Committee to ensure that the applications conform to the ScienceFund requirements.

The Institutional Screening Committee is required to assess various technical aspects of the research proposal using the Institutional Screening Form. It should also ensure the project leader and research team are technically competent and the project costs are fair, and there is optimal utilisation of available research equipments and infrastructure.

The Institutional Screening Committee must ensure that ethical clearance related to the research project has been obtained from the relevant authority. The Institutional Screening Report should be submitted to MOA/ Agri-Food R&D Clearing House Secretariat together with the application form.

3.2   TECHNICAL AND FINANCIAL COMMITTEE

All applications will be further evaluated by the Technical Committee. The committee will study the proposals based on the merits of the research objectives, appropriateness of research methodology, ability of researchers and the cost effectiveness of the proposal.

The Chairman and members of the Technical Committee are appointed by the Ministry of Agriculture and Agro-based Industries. Members of this committee consist of experts from the public and the private sectors. However, additional experts, including international peer reviewers can be invited as and when necessary, to assist in the evaluation.

3.3   STEERING COMMITTEE

Projects evaluated by the Technical Committee are then submitted to the Steering Committee for final assessment and approval.

The Steering Committee is chaired by the Secretary General of MOA. The members consist of the Chairman of the Technical Committee, permanent representatives from relevant agencies of MOA, as well as appointed members from the relevant Ministries / Government Departments / IHL.

Any decision made by the ScienceFund Steering Committee is final. An unsuccessful proposal may be resubmitted only after the revision takes into account the comments and concerns of the Committee. The resubmitted

application will be treated as a new proposal and subject to the standard evaluation cycle.

CHAPTER 4: DISBURSEMENT OF FUND

4.1   INITIAL DISBURSEMENT

The project allocation for the first year will be disbursed to the relevant institutions upon acceptance of the approved projects and the return of the signed Research Agreement to the Agri-Food R&D Clearing House Secretariat.

4.2   PROGRESS PAYMENT

The projects that meet the planned milestones will then be reviewed by the Technical Committee. The subsequent yearly disbursement will be made on recommendations of the Committee.

CHAPTER 5: PROJECT IMPLEMENTATION AND MONITORING

5.1   PROJECT IMPLEMENTATION

All projects funded by the ScienceFund must be conducted in accordance with the terms and conditions outlined in the Research Agreement.

The projects will be closely monitored to ensure that they are carried out successfully. Through the Institutional Coordinator, researchers are required to submit the following reports:

- Progress Report (PR)
- End of Project Report (EPR)

The reports will be reviewed by the Technical Committee and recommendations made to MOA through the:

- Progress Assessment Report (PAR)
- Outcome Assessment Report (OAR)

5.2   PROGRESS REPORT (PR)

The Progress Report is a quarterly report to be submitted to the Agri-Food R&D Clearing House Secretariat. The deadlines for submission are 31 January, 30 April, 31 July and 31 October each year. Failure to submit the

Progress Report by the stipulated time may result in suspension of the progress payments.

The report can also be used to apply for changes in:
• milestone;
• project schedule;
• budget; and,
• methodology

5.3 PROGRESS ASSESSMENT REPORT (PAR)

The Progress Report will be used to assess the overall progress of the project and to determine its future direction as well as disbursement of any payment due.

Progress assessment will be carried out by the Technical Committee and the recommendations made to MOA through the Progress Assessment Report.

In addition to reviewing the above report, MOA may from time to time conduct on-site monitoring of projects and colloquiums.

5.4 END OF PROJECT REPORT (EPR)

Researchers are required to submit through the Institutional Coordinator, an End of Project Report within 3 months of project completion. The End of Project Report is to be submitted to the Agri-Food R&D Clearing House Secretariat.

The End of Project Report requires the following information:
• Direct outputs of the project;
• Extent of achievement of the original project objectives;
• Technology transfer and commercialisation approach;
• Benefits of the project, particularly project outputs and organisational outcomes; and
• Assessment of the project team, research approach, project schedule and project costs.
• Sectoral / national impacts of the project.

5.5 OUTCOME ASSESSMENT REPORT (OAR)

The purpose of the Outcome Assessment Report is to assess / review the End of Project Report submitted.

The Technical Committee may recommend for further funding under the TechnoFund for projects that have commercial potential.