

WORKSHOP FOR FRGS APPLICANTS

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Introduction

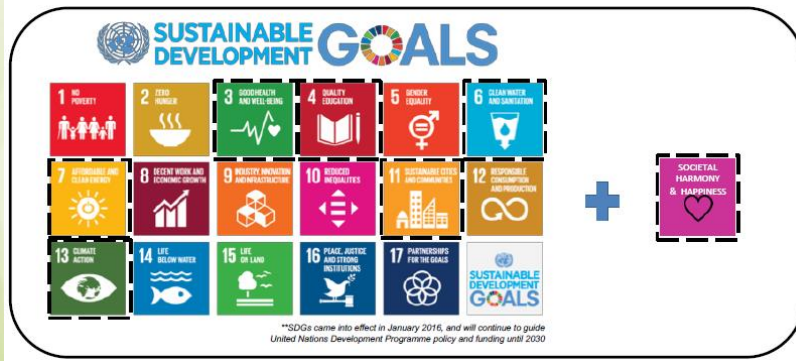
- Philosophy
 - FRGS scheme intends to encourage fundamental research to generate knowledge that will contribute to intellectual development, creation of new technologies and fostering a dynamic culture within the nation.
- Aim
 - To accelerate generation of new theories, concepts and ideas that can be the catalyst to new discoveries and break through the boundaries of knowledge and innovative creation

Definition of Fundamental Research

- 'Basic research that generates new ideas, principles and theories, which may not be immediately utilized; though are the foundations of modern progress and development in different fields
- The goal of fundamental research is to gain/discover new knowledge and understanding of the physical world that may lead to:
 - new theories or extending and refuting existing theories, models or algorithm
 - policy recommendation
 - improving technology at the fundamental level.

Expected Research Output

Sustainable Development Goals



Shared Prosperity Vision 2030 Key Economic Growth Areas

- 
I
KEGA 1:
 Islamic Finance Hub 2.0
- 
2
KEGA 2:
 Digital Economy
- 
3
KEGA 3:
 Industrial Revolution 4.0
- 
4
KEGA 4:
 Content Industry
- 
5
KEGA 5:
 ASEAN Hub
- 
6
KEGA 6:
 Halal & Food Hub
- 
7
KEGA 7:
 Commodity Malaysia 2.0
- 
8
KEGA 8:
 Logistic, Transportation & Sustainable Mobility
- 
9
KEGA 9:
 Coastal & Maritime Economy
- 
10
KEGA 10:
 Centres of Excellence
- 
II
KEGA 11:
 Renewable Energy
- 
12
KEGA 12:
 Green Economy
- 
13
KEGA 13:
 Smart & High Value Agriculture
- 
14
KEGA 14:
 Advanced & Modern Services
- 
15
KEGA 15:
 Malaysia Truly Asia

Fields of Research

National Priority Areas (NPA)	Research Cluster DP KPM 2019 - 2020	Research Domains DP KPM 2019 - 2020						
Food Security	Social & Economic Wellbeing	Pure and Applied Science	Technology & Engineering	Social Science	Information & Communication Technology	Clinical & Health Science	Arts & Applied Arts	Natural and Cultural Heritage
Energy Security	Food Safety & Security							
Plantation Crops	Infrastructure							
Cyber Security	Climate Change & Environment							
Water Security	Health							
Biodiversity	Education & Knowledgeable Civil Society							
Healthcare & Medicine	National Security							
Environment & Climate Change	Frontier Technologies & Advanced Manufacturing							
Transportation & Mobility								

Rules and Regulations

Duration of Service

- At least one year

Sabbatical

- Not more than 6 months

Co-researcher

- At least one co-researcher with the same expertise

Patent Search

- <http://lens.org/>

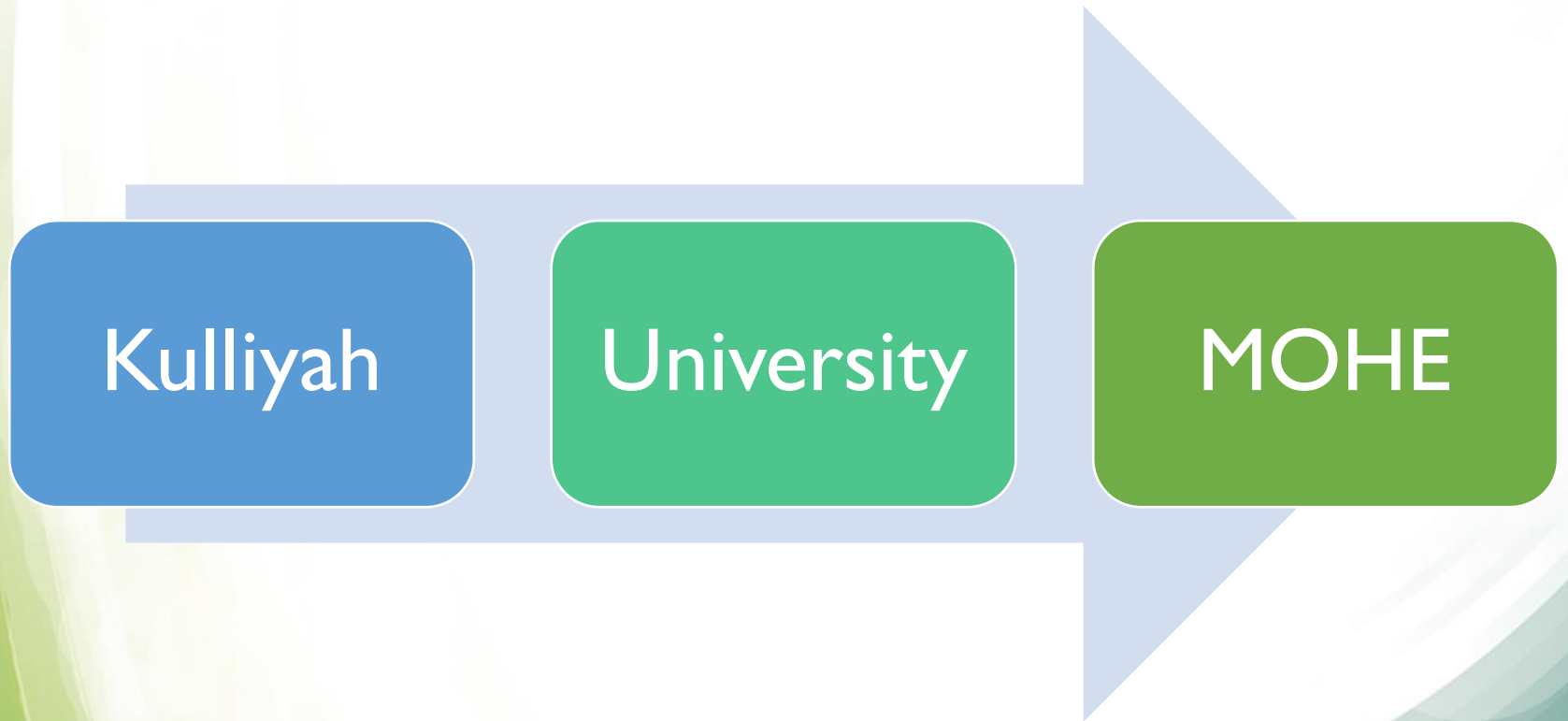
Industry Partners

- Encouraged to have partnership

Risk Management

- SWOT analysis

FRGS Evaluations



FRGS Evaluations

- **Clarity.** How researchers **cross-reference current literature and patents** in laying out their premises.
- **Content.** How researchers organize their ideas around aims linked to their hypothesis.
- **Coherence of concepts.** Do researchers present coherent set of ideas predicated by previous work.
- **Cutting edge.** Novel research. Do researchers take legitimate risks?

Characteristics of a **high quality** research proposal

- Informative title
- Convincing executive summary
- Clear problem statement and objectives
- Scientific background and rationale;
- Good selection of research methods
- Ethical considerations;
- Realistic budget and schedule

FRGS Evaluations

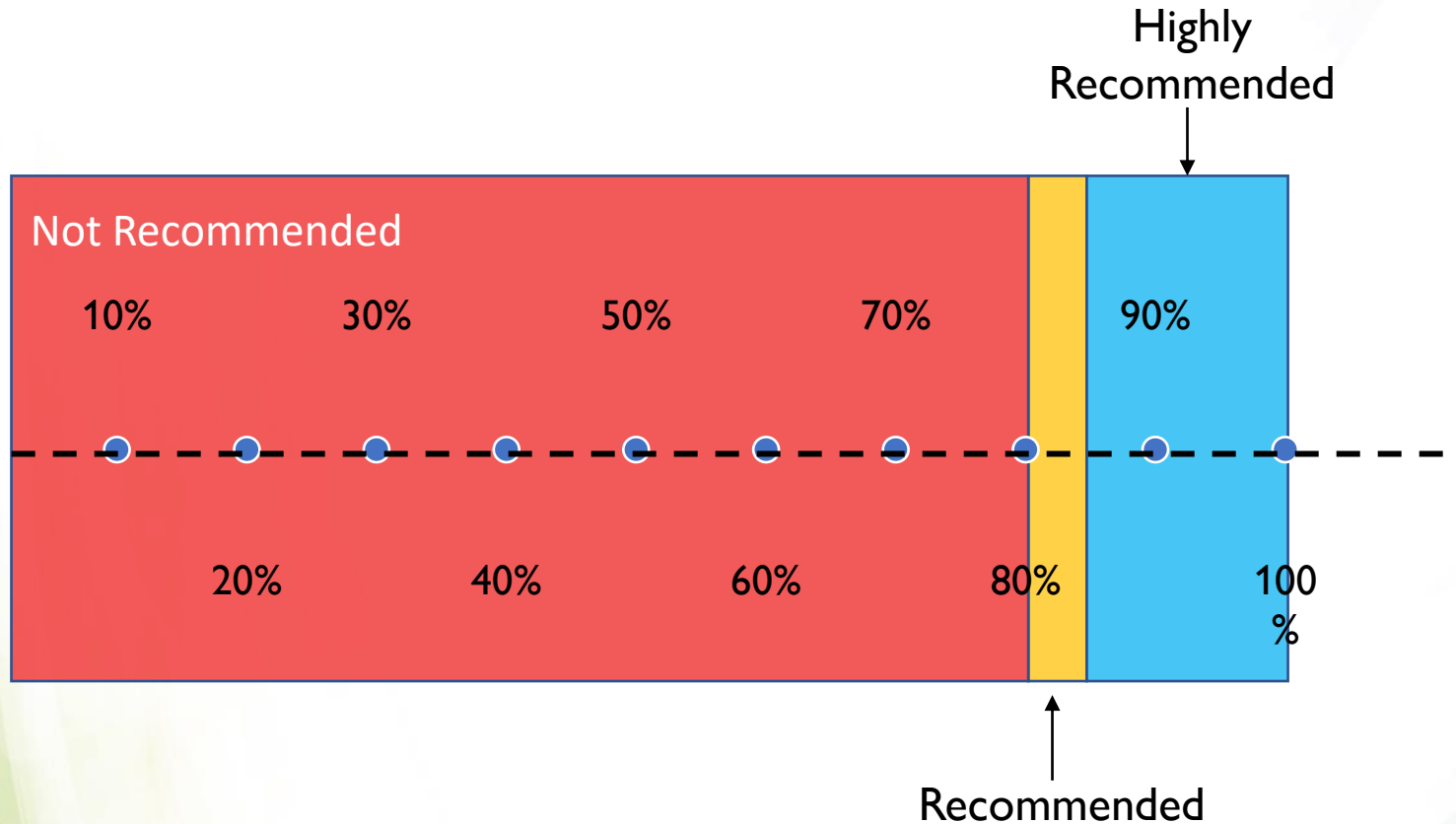
Components of Evaluations

- TITLE
- EXECUTIVE SUMMARY
- RESEARCH BACKGROUND
- OBJECTIVES
- METHODOLOGY
- TRACK RECORD & COMPOSITION OF TEAM
- EXPECTED RESULTS
- QUALITY OF PROPOSAL
- ELEMENT OF FRGS CRITERIA
- **ADDITIONAL INFO – PATENT SEARCH**

Grading Scale

- VERY GOOD (9-10)
- GOOD (7-8)
- ACCEPTABLE (5-6)
- POOR (3-4)
- VERY POOR (1-2)
- IF THERE ARE ANY SECTION THAT SCORES <5 – **AUTOMATIC REJECTION**

FRGS Evaluations



Proposal Evaluation

- Title:
 - Novel
 - Reflects fundamental issues
 - Brief
- Example:
 - Novel method to synthesize polymeric biphasic micro-particles using droplet microfluidic lab on a chip
- Wrong:
 - Development of autonomous farm tractor systems for agricultural operations

Proposal Evaluation

- Executive Summary should contain
 - Problem statement, objectives, methodology, expected output, Significance of output
 - Be concise
 - It is the most important part of your proposal
 - First impression of the reviewer will be based on the summary

Proposal Evaluation

- Objectives should be
 - Specific, Measurable, Achievable, Realistic and within time-frame (SMART)
 - Reflects the solution/output to the problem
- Example
 - To model a novel droplet microfluidic platform capable of synthesizing biphasic micro-particles
 - To develop a novel protocol to synthesize micrometer sized particles from monomer droplets

Proposal Evaluation

- Research background should
 - Elaborate the title
 - Explain the problem statement
 - Include a hypothesis and research questions which help solve the above problems
 - Cite recent references
 - Relating to current government policies

Proposal Evaluation

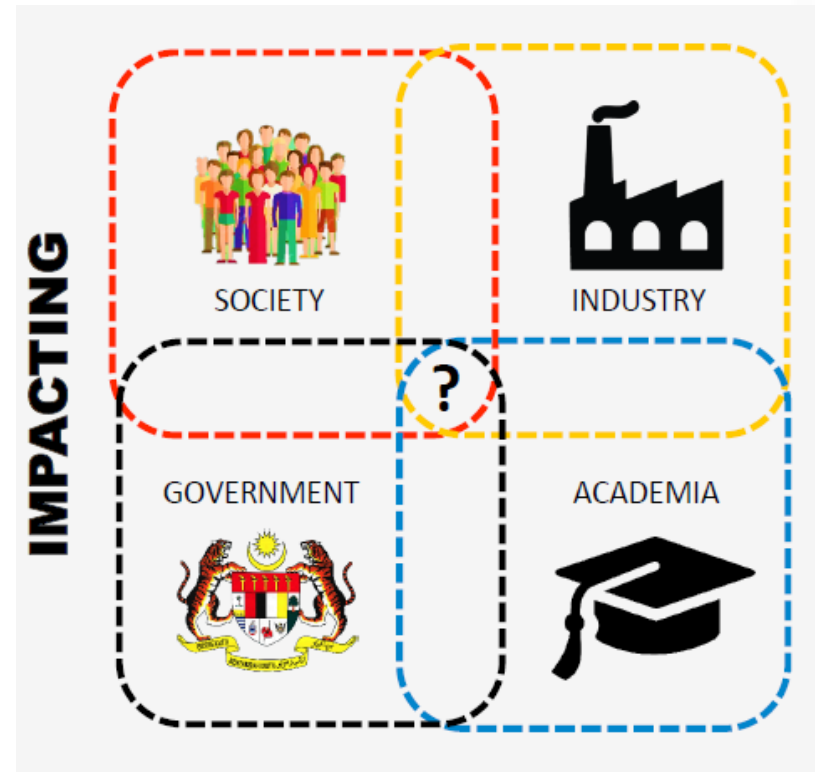
- Methodology should
 - Explain the methods to conduct the research (experiments, interviews, statistical analysis)
 - Try to be inline with the research objectives
 - Flowchart, Gantt chart and Milestones should match with each other

Research Deliverables

Expected Results should include

- Novel theory – Paradigm Pioneers
- At least **TWO** Publications in Indexed Journals
- PG students
 - 3 year project – 1 PhD
 - 2 year project – 1 MSc
- Impact to society
- Encouraged to file for patent
- Max Budget: RM250k

Quadruple Helix



Choosing your research team

- Should include researchers with a track record of having successful research project
- Researchers in the team should be qualified in the area that you wish to research in
- Team should be balanced to include both experienced and non-experienced researchers
- Adding too many researchers or those who are not related to the field of research reflects badly on your proposal

Quality of Research Proposal

- Research proposal should be of high quality
- No grammatical, spelling mistakes or technical mistakes
- Meticulous!!

New Criterion in FRGS 2020

Only evaluated
if proposals
scores > 75%

Patent Search

- Encouraged

Collaborations

- Encouraged

Risk
Management

- Encouraged

Patent Search

- Objective
 - To create awareness amongst researchers on producing unique and innovative research.
- [Http://lens.org](http://lens.org)
- To highlight existing research and to avoid submissions of proposals that are not novel or has less impact to the society and nation

Collaborations

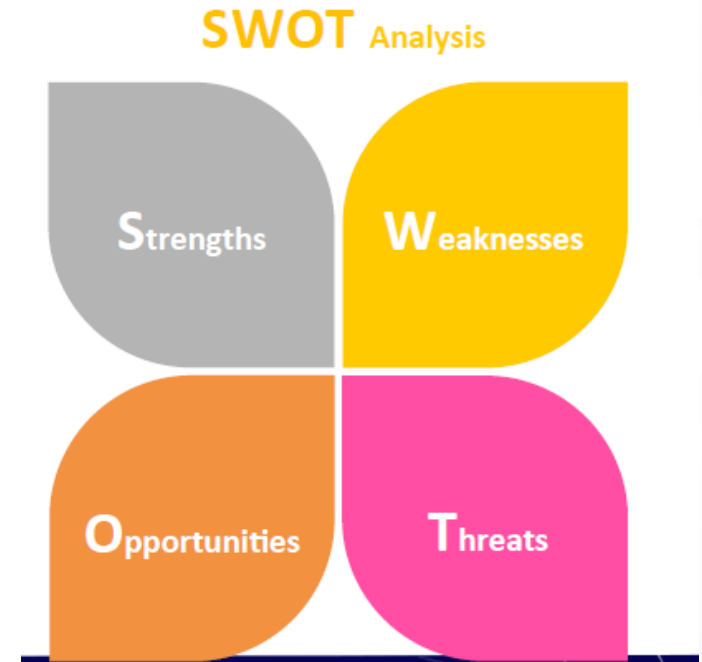
- Objective
 - To encourage collaborations with industries or agencies
- Evidences
 - Letter of Intent
 - Other documentation
- **Encouraged** for FRGS

Research Collaborator

- International/Industrial Linkages (Please identify any industry or end-user group involved in the project, and describe its role/contribution to the project)
- Agency/Organisation (Please identify all agencies/organisations collaborating in the project, and describe their role/contribution to the project)

Risk Management

- Types of Risks
 - Technical
 - Time
 - Budget
- Levels of Risk
 - Low
 - Medium
 - High
- Encouraged for FRGS



Budgeting

V11000	V21000	V24000	V27000	V28000	V29000	V35000
<ul style="list-style-type: none"> • GRA • PhD RM2,300 • MSc RM1800 	<ul style="list-style-type: none"> • Local Conferences -PI and GRA • International Conference – PI (2nd Year onwards) 	<ul style="list-style-type: none"> • Building, equipment, transport, etc. • Directly related to the project 	<ul style="list-style-type: none"> • Research materials and supplies 	<ul style="list-style-type: none"> • Maintenance and minor repair • Only within the duration of the grant 	<ul style="list-style-type: none"> • Professional services: printing, honorarium, consultation, training (<3 months), fees 	<ul style="list-style-type: none"> • Special equipment (e.g. camera, tape recorder), upgrading of existing equipment, computer, printer

Conclusion

- Focus on fundamental research
- Read the guidelines in detail
- Proposals should be prepared meticulously
- Good research team and Realistic budget
- May Allah ease your tasks and

ALL THE BEST!!