

CALLS FOR PROPOSALS RUTrans 2023

CALL 1



TOPIC:

Sustaining planetary well-being: a solution-oriented call to tackle threats via a transdisciplinary research platform focusing on NON-COMMUNICABLE DISEASES.

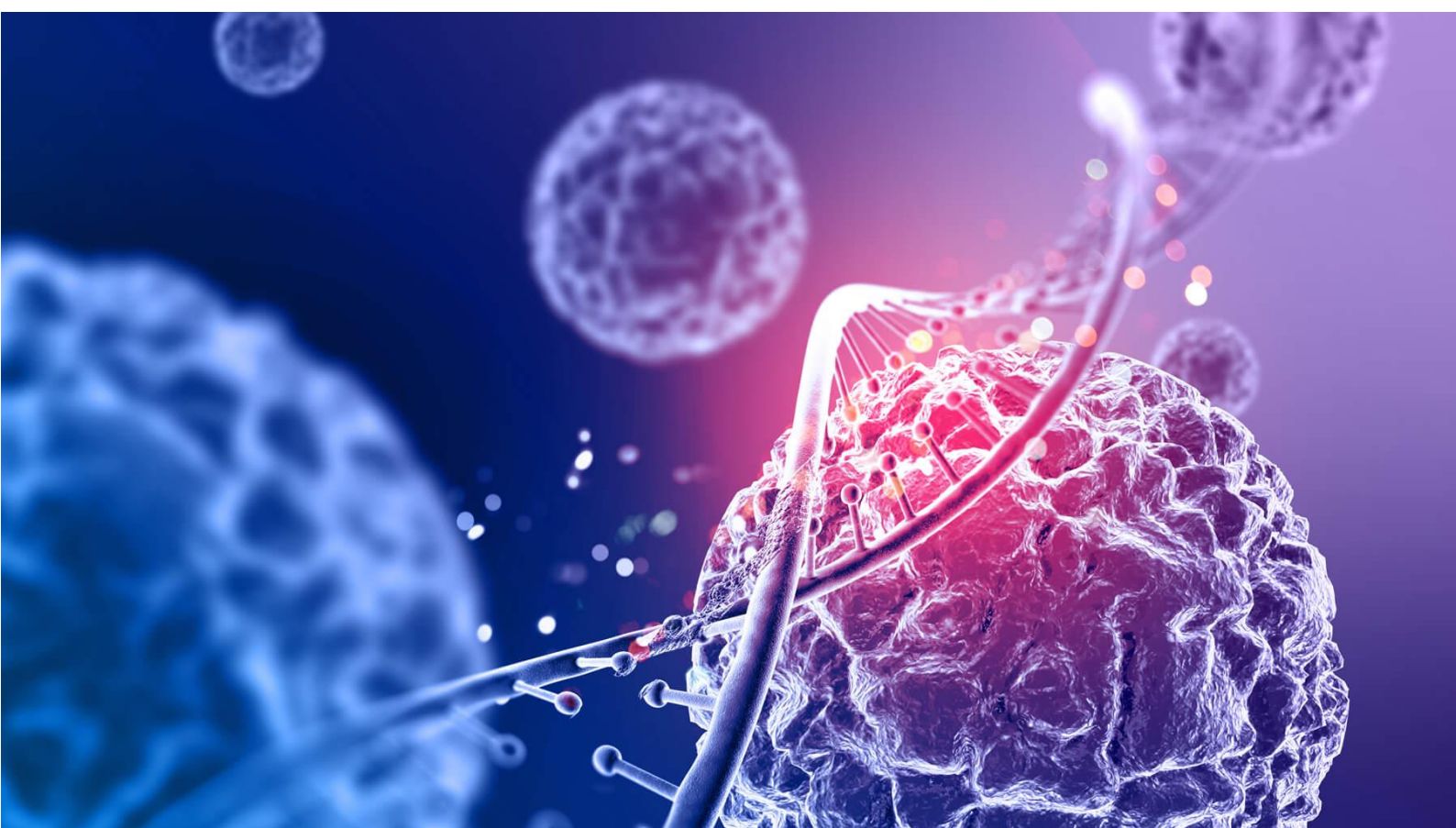
KERTAS PANGGILAN KERJA (CALLS FOR PROPOSALS)**PERMOHONAN SKIM GERAN UNIVERSITI PENYELIDIKAN TRANSDISIPLINARI (RUTrans) 2023**

NICHE AREAS	<ol style="list-style-type: none">1. Healthcare and Wellness2. Precision Medicine3. Artificial Intelligence4. Robotic Technology
TOPIC	Sustaining planetary well-being: a solution-oriented call to tackle threats via a transdisciplinary research platform focusing on NON-COMMUNICABLE DISEASES .
PROBLEM STATEMENT	<p>Specific Challenge:-</p> <p>The transdisciplinary research proposition should illustrate the intricate connection between solutions and the holistic well-being of humans and the planet. This applies to domains like hygiene, sanitation, water, waste management, food production and consumption, oceans, extreme weather events, and climate change. The central goal is to improve human health.</p> <p>The research should present solutions that address current and emerging challenges, encompassing at least one of the following aspects:</p> <ol style="list-style-type: none">1) The identification, management, and prevention of risks.2) Enhancing the resilience of health systems to climate impacts.3) Conducting monitoring, surveillance, and evaluation activities.4) Communication of risks to the public or stakeholders.5) The correlation between large-scale renewable energy resources and human health.
SPECIFICATION	<p>Scope Project: Research and Innovation must focus on the design, development and testing of at least (2) Technology Drivers (enablers) from:</p> <ul style="list-style-type: none">• 5G/6G • Sensor technology • 4D/5D Printing • Advanced Materials• Advanced Intelligence Systems • Neuro Technology • Bioscience Technology
JUSTIFICATION	The well-being of humanity is intricately tied to the health of the environment and other living beings. Pollution, resulting from human activities has been closely associated with harmful effects on human health, illustrated by factors like pollution from fires and the combustion of fossil and solid fuels, which can contribute to the onset of respiratory diseases and other related diseases. Furthermore, disruptions to the natural environment may pose a significant threat

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	to humans, particularly the elderly population. Amidst environmental disruptions, advocating a healthy lifestyle becomes complex, potentially resulting in elevated occurrences of non-communicable diseases and other health issues.	
EXPECTED OUTCOME	Significant Impact on Stakeholders such as product innovation, added value, cost reduction, quality improvement, income, etc. The solution-oriented call for transdisciplinary research aims to address current and emerging threats, especially non-communicable diseases, to improve quality of life and health outcomes and ensure planetary well-being. To deepen our understanding of the health effects of environmental disruptions, researchers should address these challenges by adopting multiple disciplinary approaches. Examples of these solutions include but are not limited to: <ol style="list-style-type: none">1. Powering wearable technologies for healthcare2. Shared virtual spaces to improve mental health3. Molecular-level mapping of biological processes to unlock life's mysteries4. Better-engineered circuits to interface with the nervous system5. New technologies to improve the efficiency of healthcare systems	
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00	
TARGETED STAKEHOLDES	Targeted stakeholders that can benefit from the Outcome/Impact throughout this program Industry, government agencies, NGOs, community	
APPLICATION	Application Method	The application for the Transdisciplinary Research University Grant Scheme (RUTrans) 2023 can be accessed at www.research.usm.my
	Closing Date	31 January 2024
	Application Guideline	Applicants should refer to the Guidelines for the Transdisciplinary Research University Grant Scheme 2023 at www.research.usm.my before being submitted to RCMO.

CALL 2



TOPIC:

Sustaining planetary well-being: a solution-oriented call to tackle threats via a transdisciplinary research platform focusing on COMMUNICABLE DISEASES.

NICHE AREAS	1. Healthcare and Wellness 2. Infectious or Tropical Diseases 3. Precision Medicine
TOPIC	Sustaining planetary well-being: a solution-oriented call to tackle threats via a transdisciplinary research platform focusing on COMMUNICABLE DISEASES .
PROBLEM STATEMENT	<p>Specific Challenge:-</p> <p>The inclusive transdisciplinary research in the focus area should aim to showcase how proposed solutions address communicable diseases through a holistic approach that considers the interconnectedness of human and planetary well-being. The interconnectedness highlights the significance of comprehending how humans and the environment play a pivotal role in disease transmission and emergence.</p> <p>The research should present solutions that address current and emerging challenges, encompassing at least one of the following aspects:</p> <ol style="list-style-type: none">1) The identification, management, and prevention of risks.2) Enhancing the resilience of health systems to climate impacts.3) Conducting monitoring, surveillance, and evaluation activities.4) Communication of risks to the public or stakeholders.5) The correlation between large-scale renewable energy resources and human health.
SPECIFICATION	<p>Scope Project: Research and Innovation must focus on the design, development and testing of at least (2) Technology Drivers (enablers) from:</p> <ul style="list-style-type: none">• 5G/6G • Sensor technology • 4D/5D Printing • Advanced Materials• Advanced Intelligence Systems • Neuro Technology • Bioscience Technology
JUSTIFICATION	Communicable diseases, such as Dengue, influenza, Ebola, and COVID-19 are infectious illnesses that can rapidly spread across the globe, affecting both human and planetary health. The close interaction between humans and the environment plays a crucial role in disease transmission and emergence. Environmental factors, including climate change, biodiversity loss, and ecosystem disruptions, influence disease dynamics and may lead to zoonotic

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	<p>spillover events. In the midst of various crises, these events could pose a threat to humans, especially the elderly, unborn, children, and pregnant women. Preventing communicable illnesses necessitates a comprehensive strategy that considers how human health and the earth's health are intertwined. The emergence and spread of communicable diseases must be prevented and controlled, and this requires resilient global environmental policies. Sustainable environmental practices and a resilient planet are vital in preventing and controlling the emergence and spread of communicable diseases.</p>	
EXPECTED OUTCOME	<p>Significant Impact on Stakeholders such as product innovation, added value, cost reduction, quality improvement, income, etc.</p> <p>This is a solution-oriented call for transdisciplinary research focusing on communicable diseases, aiming to prepare, prevent, and respond to disease outbreaks caused by planetary disruptions.</p> <p>Examples of these solutions include but are not limited to:</p> <ol style="list-style-type: none">1. Engineering viruses to augment human and animal health2. Molecular-level mapping of biological processes to unlock life's mysteries	
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00	
TARGETED STAKEHOLDES	<p>Targeted stakeholders that can benefit from the Outcome/Impact throughout this program</p> <p>Industry, government agencies, NGOs, community</p>	
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CALL 3



TOPIC:

**Innovative Approaches to Mitigating
Climatic Change Effects**

NICHE AREAS	Climate Change
TOPIC	Innovative Approaches to Mitigating Climatic Change Effects
PROBLEM STATEMENT	<p>This call aims to discover local solutions for reducing current greenhouse gas (GHG) emission rates, in line with the governmental commitments established under the 2015 Paris Agreement. Specific areas pertinent to this call encompass innovations within the energy, agriculture, manufacturing, construction, and transportation sectors.</p> <p>The specific challenge is to devise effective systems capable of both lowering GHG emissions and utilizing them to create value-added products. This challenge also extends to the formulation of policies that facilitate the transition towards a less carbon-intensive economy, as well as fostering a paradigm shift in societal thinking and action. We urge individuals to recognize and embrace their individual roles in fulfilling the targets set forth in SDG 13.</p> <p>The technological challenge is multifaceted. It necessitates the creation of cleaner and more sustainable systems for energy production and utilization that do not compromise economic considerations. Additionally, it calls for innovations in agricultural practices to reduce carbon footprints and make them more environmentally engaging. The manufacturing sector must also undergo a transformation to achieve greater efficiency while maintaining environmental responsibility, and transportation systems should evolve toward greater sustainability.</p> <p>The proposed solutions should be marked by innovation, grounded in knowledge, and demonstrate feasibility. Their benefits and significance must be systematically demonstrated. This call represents an opportunity to shape a sustainable future where environmental stewardship coexists harmoniously with economic prosperity.</p>
SPECIFICATION	<p>Scope Project: Research and innovation must focus on the establishment of unique innovative solutions that are relevant to Malaysia as well as to other emerging economies in tropical regions to address the main causes of global warming that eventually leads to the climate crisis. It may encompass various aspects of energy generation, agriculture, transportation, deforestation, or manufacturing activities.</p>

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JUSTIFICATION	USM carries the APEX Agenda and mitigating climate change is one of our key commitments.
EXPECTED OUTCOME	<ol style="list-style-type: none">1. Transdisciplinary research and innovative solutions leading to a significant reduction in the current levels of greenhouse gas release.2. Possible wealth creation in terms of value-added products or business opportunities from the effective solution developed.3. Local approach to effectively address the problem with international relevance.
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00
TARGETED STAKEHOLDES	<p>Targeted stakeholders that can benefit from the Outcome/Impact throughout this program</p> <ol style="list-style-type: none">1. Environmental Advocates and Organizations: Environmental groups and advocates working towards reducing greenhouse gas emissions and combating climate change can benefit by leveraging the innovations and solutions generated through this objective.2. Government Agencies: Government bodies and agencies responsible for environmental policy and regulation can benefit from new policies and technologies that can help meet emissions reduction targets set by the 2015 Paris Agreement.3. Researchers and Scientists: Researchers in the fields of energy, agriculture, manufacturing, and transportation can benefit from the knowledge and insights generated by innovative solutions and practices.4. Businesses and Industries: Companies operating in energy, agriculture, manufacturing, construction, and transportation sectors can benefit by adopting more sustainable practices and technologies, potentially leading to cost savings and improved market competitiveness.

	<p>5. Local Communities: Communities in regions where these solutions are implemented can benefit from cleaner environments, potential job creation, and improved quality of life.</p> <p>6. Consumers: As industries adopt cleaner and more sustainable practices, consumers may benefit from reduced environmental impacts, potentially lower costs, and access to more eco-friendly products and services.</p> <p>7. Investors: Investors interested in environmentally sustainable initiatives may find opportunities to support and finance projects and technologies aimed at reducing greenhouse gas emissions.</p> <p>8. Future Generations: The long-term benefits of reduced greenhouse gas emissions and a transition to a less carbon-intensive economy will be felt by future generations, who will inherit a more sustainable and environmentally responsible world.</p> <p>9. Global Society: Addressing climate change and meeting the targets of SDG 13 benefits society as a whole, as it contributes to mitigating the negative impacts of climate change, such as extreme weather events and rising sea levels.</p>	
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CALL 4



TOPIC:

**Navigating Climate Change with Resilience through
Innovative Solutions for Minimizing Impact on Life**

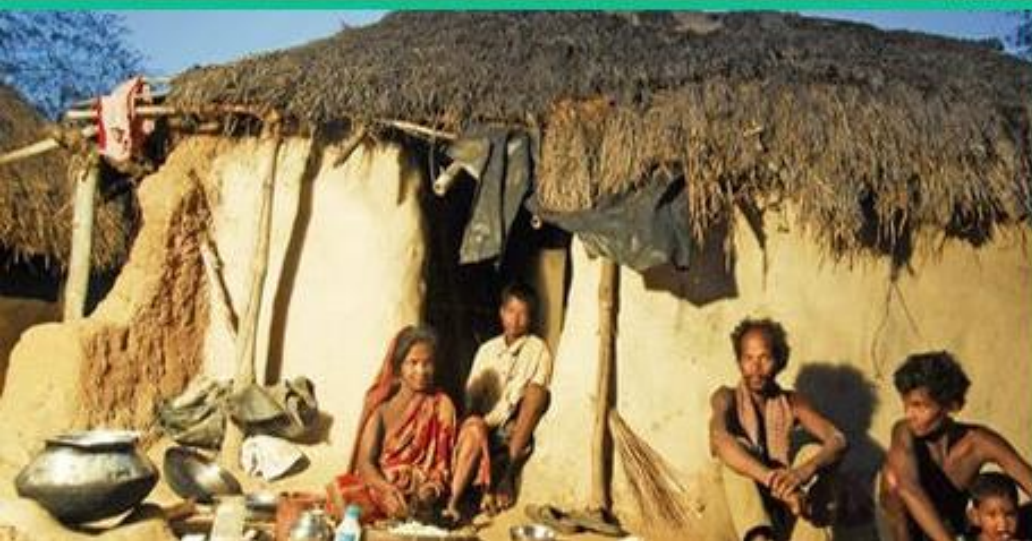
NICHE AREAS	Climate Change
TOPIC	Navigating Climate Change with Resilience through Innovative Solutions for Minimizing Impact on Life
PROBLEM STATEMENT	<p>This call seeks transformative solutions to address the multifaceted impacts of climate change, encompassing food security, water scarcity, stormwater management, economic resilience, and displacement challenges. The specific objective is to forge innovative products, policies, and management systems that can effectively align with the ambitious targets of SDG 13.</p> <p>At its core, the technological challenge is to establish a comprehensive suite of solutions, including products, policies, and management strategies, that can proactively mitigate, delay, or adapt to the effects of climate change while minimizing adverse impacts on the well-being and livelihoods of communities. The solutions we seek should embody innovation, draw from a strong knowledge base, demonstrate practical feasibility, and systematically illuminate their potential benefits and significance.</p> <p>In summary, this call beckons visionaries to contribute their expertise and creativity in crafting solutions that will not only enhance climate resilience but also safeguard the prosperity and welfare of people in the face of a changing climate.</p>
SPECIFICATION	<p>Scope Project: Research and innovation must focus on the establishment of unique and innovative solutions that are relevant to Malaysia as well as to other emerging economies in tropical regions to address the main causes of global warming that eventually lead to the climate crisis. It may encompass various aspects of energy generation, agriculture, transportation, deforestation, construction, development, or manufacturing activities.</p>
JUSTIFICATION	<p>USM carries the APEX Agenda and mitigating climate change is one of our key commitments.</p>

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EXPECTED OUTCOME	<ol style="list-style-type: none">1. Transdisciplinary research and innovation solutions to minimize compromise needed in terms of the well-being and livelihood of the people to the impacts induced by climate change.2. Demonstration of tangible benefits of the approaches.3. Local approach to effectively address the problem with international relevance.
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00
TARGETED STAKEHOLDES	<p>Targeted stakeholders that can benefit from the Outcome/Impact throughout this program</p> <ol style="list-style-type: none">1. Communities Impacted by Climate Change: Local communities facing the adverse effects of climate change, such as food insecurity, water scarcity, and economic losses, stand to benefit directly from the research's innovative solutions. These communities may experience improved livelihoods, increased resilience, and enhanced well-being as a result of effective mitigation and adaptation measures.2. Governments and Policymakers: Government entities responsible for developing and implementing climate policies can benefit from the research findings. Evidence-based insights can inform the creation of effective policies and strategies to address climate-related challenges and align with international sustainability goals like SDG 13.3. Environmental and Humanitarian Organizations: NGOs and organizations focused on climate resilience, food security, and disaster relief can leverage the research's outcomes to enhance their programs and interventions, ultimately benefiting the populations they serve.4. Researchers and Academics: Scientists, researchers, and academic institutions can benefit from the research by gaining access to valuable data, methodologies, and insights. This can

	<p>contribute to a deeper understanding of climate change impacts and the development of future studies.</p> <p>5. Businesses and Industries: Private sector entities, particularly those involved in agriculture, water management, and disaster preparedness, can use the research to inform sustainable business practices and investments. This may lead to more resilient supply chains, reduced operational risks, and new market opportunities.</p> <p>6. International Organizations: Global organizations working to combat climate change, such as the United Nations and its specialized agencies, may find the research proposal valuable in assessing progress toward SDG 13 targets and shaping international climate policies.</p> <p>7. Educational Institutions: The research can be a valuable resource for educational institutions, serving as a basis for curriculum development and raising awareness about climate change-related challenges and solutions.</p> <p>8. General Public: Increased understanding and effective solutions for climate change impacts can benefit society at large by raising awareness and promoting sustainable behaviors, potentially reducing the overall societal burden of climate-related disasters.</p>	
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CALL 5



TOPIC:

**Enhancing Social and Economic Opportunities for
The Vulnerable Communities**

NICHE AREAS	1. Poverty and Population 2. Social Wellbeing
TOPIC	<p>Enhancing Social and Economic Opportunities for the Vulnerable Communities</p> <p>Description: This project aims to address the critical issues on social inclusion and economic security of vulnerable communities to enhance their social and economic opportunities. Vulnerable communities include, but not limited to refugees, immigrants, people with disabilities (PWD), people living with HIV, people in contact with the law, older adults, children, and marginalised groups.</p> <p>Phases of the project:</p> <p>Needs assessment phase</p> <p>In this phase, researchers would conduct comprehensive needs assessment of the chosen vulnerable community to identify their specific challenges. During this stage, researchers would need to acquire qualitative and / or quantitative data to better understand the social and economic situation of the vulnerable community. This stage could also involve engagement with community members, organizations, and experts to understand the root causes of the existing social inclusion and economic insecurity.</p> <p>Intervention / solution development phase</p> <p>In this phase, researchers would develop evidence-based solutions and / or interventions tailored to the needs of the community. Strategies and interventions could be designed through community participative approach with collaboration from community leaders, community, experts, and policy makers.</p> <p>Capacity building phase</p> <p>The proposed solutions and / or interventions are to be piloted in selected vulnerable community to test their effectiveness and get feedback from community members. This phase focuses on training and empowering the community to take ownership of the proposed solutions and / or interventions.</p>

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PROBLEM STATEMENT	Despite growth and development of the nation, vulnerable communities face significant barriers to social inclusion and economic security. Among them are obstacles in accessing resources, poverty, limited opportunities for employment and financial resources, social exclusion and discrimination in society, health care disparities, barriers to quality education, discrimination within the legal system on human rights issues, lack of social support, struggle with mental health, risk of abuse and neglect, and inadequate living conditions. The combinations of these challenges could lead to increased vulnerability and limited social wellbeing of the communities.
SPECIFICATION	Scope of Project: The scope of this project includes collaborative, multidisciplinary and transdisciplinary approach involving various stakeholders to address the challenges associated with enhancing the social and economic opportunities of vulnerable communities.
JUSTIFICATION	USM carries the APEX Agenda and addressing the needs and challenges of the bottom billions that include the vulnerable communities is our key commitment.
EXPECTED OUTCOME	Significant Impact to Stakeholders such as social innovation, added value, cost reduction, quality improvement, income etc. <ol style="list-style-type: none">1. Transdisciplinary new knowledge and discourses including production of localised knowledge2. Innovative and transformative solutions and initiatives that will have policy impact3. Sustained engagement with key stakeholders to ensure change beyond project period
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00
TARGETED <u>STAKEHOLDERS</u>	Targeted stakeholders that can benefit from the Outcome/Impact throughout this program <ol style="list-style-type: none">1. Vulnerable communities2. Government (federal, state, local)3. Industry4. Civil society (including academia)

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CALL 6



TOPIC:

**Addressing Social Inequalities Utilising the
Malaysia MADANI Policy Framework**

NICHE AREAS	1. Knowledgeable Civil Society 2. Social Wellbeing
TOPIC	Addressing Social Inequalities Utilising the Malaysia MADANI Policy Framework
PROBLEM STATEMENT	<p>This call invites proposals that will potentially offer transformative responses to the complex impacts of inequality on social development and wellbeing, particularly through utilising the Malaysia Madani policy framework as well as framework arising from Malaysia's commitments to regional and international instruments.</p> <p>Inequality is a long-term threat to social and economic development, efforts towards poverty reduction and society's and individual's sense of fulfilment, wellbeing and self-worth. Persistent inequality is a hindrance to the achievement of sustainable development, thus, reducing inequalities (SDG 10) is a specific goal of the United Nations' 2030 Agenda for Sustainable Development. In addition, eradicating discrimination, which is a key factor for inequality, and promoting equality form targets of several other Sustainable Development Goals (SDGs) including SDG 1 (No poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Wellbeing), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities) and SDG 16 (Peace, Justice and Strong Institutions).</p> <p>Recently, the Malaysian government launched a policy framework, Malaysia Madani, which consists of six pillars (Sustainability, Good Wellbeing, Creativity, Respect, Confidence and Perfection in Goodness) to achieve a civilised, advanced and inclusive Malaysia. Addressing inequalities is an important action to fulfil the requirements of the framework pillars. Universiti Sains Malaysia's APEX Agenda, introduced in 2008, is broadly consistent with the Malaysia Madani framework. The APEX Agenda comprises nine thrusts: The Future, Uniqueness, Sustainability, Universality, Humanity, Sacrifice, Change and Wellness). Addressing social inequalities is also cognisance with many of these thrusts.</p>

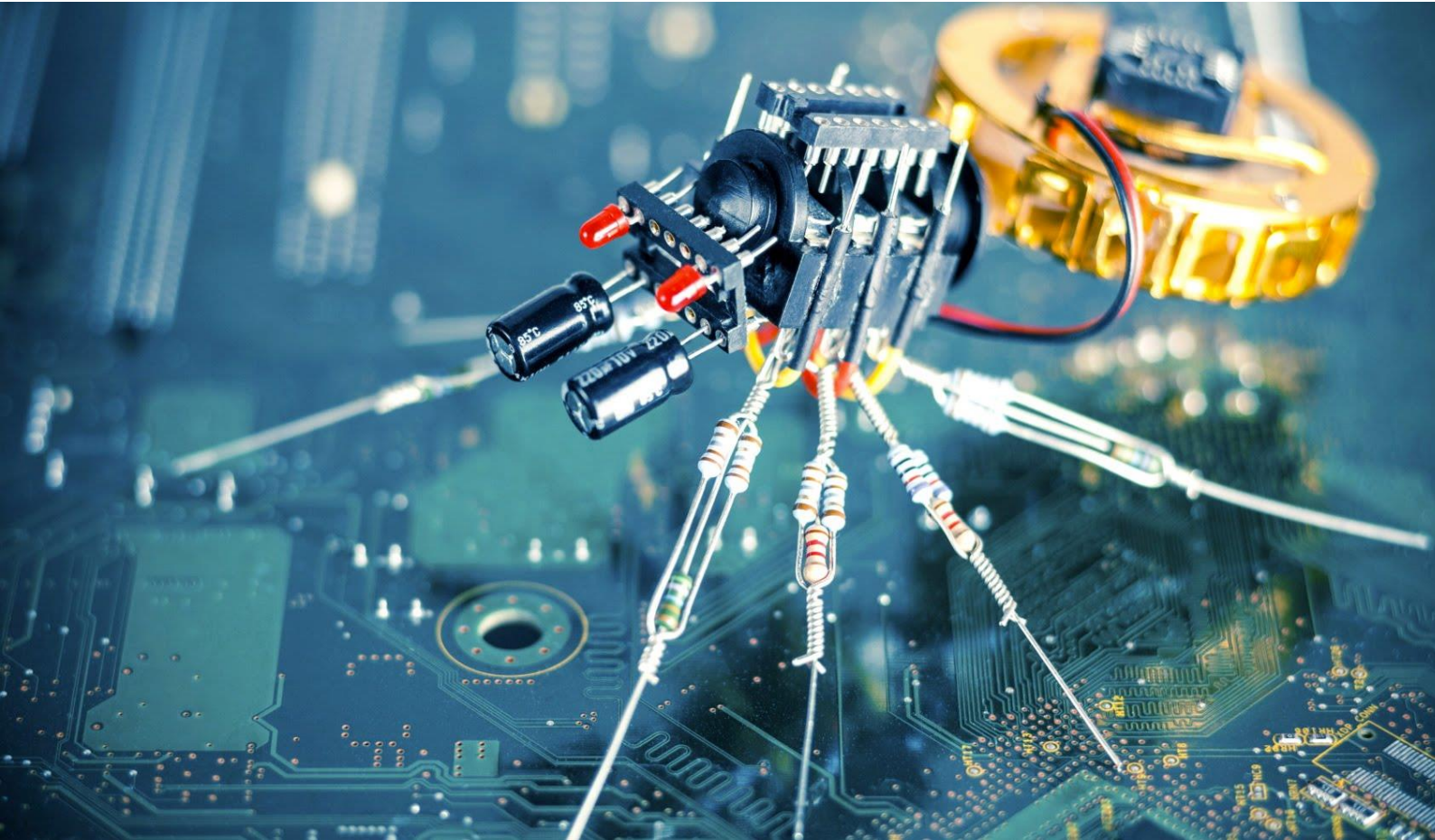
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	<p>This call seeks proposals that address multiple forms of social inequalities, with a view to offering sustainable solutions to achieving equality and justice for all. In responding to the government's Malaysia Madani's policy framework, the solutions and responses must be sustainable, provide implementable strategies and action plans and create transformative knowledge and discourses to the issue of social inequalities.</p>
SPECIFICATION	<p>Scope of Project:</p> <p>Research and Innovation must focus on the comprehensive, trans- and interdisciplinary discourses of problems, research design, engagement with stakeholders and the outcomes of viable solutions to inequality issues. The outcomes must demonstrate long-term applicability, beyond research and academic utility and must have the potential of transforming policy, practice and norms in society towards reducing and eradicating different forms of inequalities.</p>
JUSTIFICATION	<p>Addressing inequalities is a fundamental global, regional, national and university agenda.</p>
EXPECTED OUTCOME	<p>Significant Impact to Stakeholders such as product innovation, added value, cost reduction, quality improvement, income etc.</p> <ol style="list-style-type: none">1. Transdisciplinary new knowledge and discourses including production of localised knowledge2. Innovative and transformative solutions and responses that will have policy impact3. Sustained engagement with key stakeholders to ensure change beyond project period
ESTIMATION COST OF PROJECT	<p>Maximum Ceiling Amount: RM600,000.00</p>
TARGETED STAKEHOLDES	<p>Targeted stakeholders that can benefit from the Outcome/Impact throughout this program</p> <ol style="list-style-type: none">1. Vulnerable/ disadvantaged communities2. Government (federal, state, local)3. Industry4. Civil society (including academia)

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CALL 7



TOPIC:

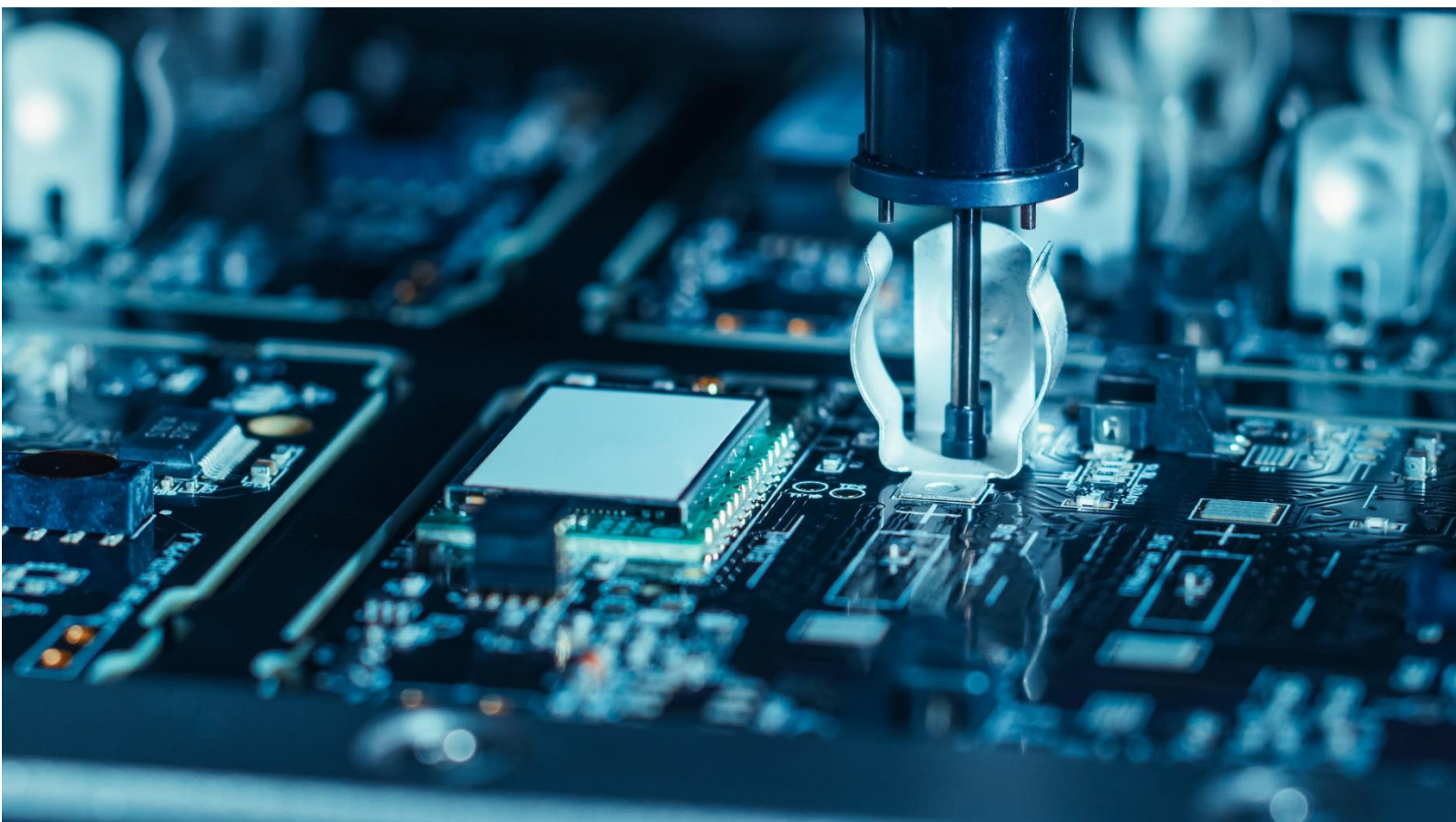
**Early Preparations in Managing Toxic Waste from
Used Solar Panels**

NICHE AREAS	1. Advanced Materials Technologies 2. Electrical And Electronics Industries
TOPIC	<p>Early Preparations in Managing Toxic Waste from Used Solar Panels</p> <p>Description: This project aims to identify and create early stage technology for the disposal of toxic waste from used solar panels. It will also propose a guideline in disposing the panels, and identify ways in minimising the impact of such waste towards planetary wellbeing.</p> <p>Phases of the Project:</p> <p>Needs Assessment Phase:</p> <p>Researchers from variuos disciplines including CGSS, materials, chemical and electrical engineering for example would collaborate with the University's solar energy concessionaries to explore the possibility of an early prototype or plant that employs procedures in handling used solar panels.</p> <p>Prototype Demonstration Phase:</p> <p>A small prototype demonstrating the feasibility of the approach should be demonstrated.</p>
PROBLEM STATEMENT	<p>Solar is one of the best renewable energy options towards mitigating climate change. The technology is ubiquitous and would continue to play an important role for the foreseeable future. This said, those panels installed as early as five years ago would lose their efficiency and would be deemed obsolete, hence need replacement. At present, we know that disposing solar panels is non-trivial following the toxic nature of the materials used. In our aim to continue maintaining planetary wellbeing, a guideline in disposing obsolete solar panels, and the technology that would allow us to do so with minimal detrimental impact to our planet are both pertinent and timely.</p>

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SPECIFICATION	Scope Project: This work requires a collaboration between those involved in policymaking, estimations of costs of disposing solar panels, environmental costs should these panels be disposed in a manner that introduces unwanted materials and residue that would pose a threat to biodiversity or soil health for example, engineers in introducing potential processes in addressing the waste management issue, and practitioners such as solar panel installers, or manufacturers, and perhaps relevant NGOs and SMEs.	
JUSTIFICATION	USM carries the APEX Agenda and mitigating climate change is one of our key commitments.	
EXPECTED OUTCOME	<ol style="list-style-type: none">1. A guideline in disposing obsolete solar panels2. A prototype process in extracting toxic waste and disposing unwanted materials that form the solar panels3. Implementation of the guidelines and prototype by a collaborating industry	
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00	
TARGETED STAKEHOLDES	Targeted stakeholders that can benefit from the Outcome/Impact throughout this program <ol style="list-style-type: none">1. Solar manufacturers and installers	
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CALL 8



TOPIC:

**Strengthening Electrical and Electronic
Industry**

NICHE AREAS	Electrical And Electronics Industries
TOPIC	<p>Strengthening Electrical and Electronic Industry</p> <p>The electronic and electrical (E&E) industries in Malaysia held a significant and strategic position in the country's economy. Malaysia had established itself as one of the leading E&E manufacturing hubs in the Asia-Pacific region, and the sector played a pivotal role in the nation's industrial and economic development. Nonetheless, the country needs to maintain competitiveness and sustainability in a rapidly evolving global landscape of the industries. USM is expected to play a key role in advancing various sectors within the E&E industries. These sectors encompass (but not limited to) semiconductor manufacturing, electronic components production, telecommunications equipment, industrial electronics, automotive electronics, aerospace and defense electronics, medical electronics, optoelectronics, renewable energy electronics (solar cells, batteries etc) and robotics. This call is to foster collaborative, trans-disciplinary research that will provide solution for the science and technology challenges faced by E & E industries.</p>
PROBLEM STATEMENT	<p>The programme seeks proposals to address various challenges and provide solutions within the E&E industries. Several challenges include:</p> <p>Emerging Technologies: submissions in fields such as environmental monitoring, lightweight energy devices, 3D printing/additive manufacturing, artificial intelligence (AI) & machine learning, flexible electronics, and neuromorphic computing. These emerging technologies demand creative solutions to address industry-specific challenges and needs..</p> <p>Emerging Design: Proposals related to emerging design aspects, encompassing materials design, advanced characterization techniques, and integrated circuit design tailored for specific devices. Solving design challenges is crucial for improving product performance.</p> <p>Emerging Materials: Proposal focusing on emerging materials, especially for nanoelectronic, optoelectronic, and energy applications. Developing novel materials is essential to enhance the</p>

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	<p>capabilities of electronic components and systems.</p> <p>Manpower and Talent Shortage: Proposals which recognizes the increasing demand for skilled manpower and talent with technology know-how in the E&E industries. It seeks innovative solutions in education and knowledge generation to address this gap by providing opportunities for reskilling and upskilling existing talents to meet industry-specific skill requirements.</p>
SPECIFICATION	Research and innovation must be done across disciplines leading to prototype development.
JUSTIFICATION	To ensure USM's relevance in the electronic and electrical (E&E) sectors in Penang and contribute to the development of skilled workers.
EXPECTED OUTCOME	<p>Technological Advancements: The program is expected to yield significant technological advancements in various E&E sectors, leading to the development of cutting-edge products and systems.</p> <p>Innovative Solutions: Proposals funded by the program should result in innovative solutions to address industry-specific challenges, enhancing the competitiveness of E&E industries.</p> <p>Workforce Development: By focusing on education and knowledge generation, the program aims to contribute to the development of a skilled workforce with the expertise needed for the E&E industries.</p> <p>Reskilled and Upskilled Talent Pool: The program seeks to reskill and upskill existing talents, creating a pool of workers with updated skills and capabilities to meet industry demands.</p> <p>Industry-Relevant Research: Research projects supported by the program are expected to generate knowledge and insights that directly benefit the E&E industries.</p> <p>Enhanced Collaboration: The program is likely to foster collaboration between academia and industry, strengthening ties and knowledge sharing.</p>
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00
TARGETED STAKEHOLDES	Semiconductor industry, Aerospace Industry, Automotive Industry, Energy Industry, Agriculture Industry, Medical & Health Industry and other industries E & E

KERTAS PANGGILAN KERJA (CALLS FOR PROPOSALS)**PERMOHONAN SKIM GERAN UNIVERSITI PENYELIDIKAN TRANSDISIPLINARI (RUTrans) 2023**

APPLICATION	Application Method	The application for the Transdisciplinary Research University Grant Scheme (RUTrans) 2023 can be accessed at <u>www.research.usm.my</u>
	Closing Date	31 January 2024
	Application Guideline	Applicants should refer to the Guidelines for the Transdisciplinary Research University Grant Scheme 2023 at <u>www.research.usm.my</u> before being submitted to RCMO.

CALL 9



TOPIC:

Enculturating Local Wisdom towards Achieving Aspiration of Malaysia MADANI (Sustainability, Prosperity, Innovation, Respect, Trust and Compassion)

NICHE AREAS	1. Culture, Tourism and Heritage 2. Poverty and Population 3. Environmental Sustainability 4. Social Wellbeing
TOPIC	Enculturating Local Wisdom towards Achieving Aspiration of Malaysia MADANI (Sustainability, Prosperity, Innovation, Respect, Trust and Compassion)
INTRODUCTION	<p>LOCAL KNOWLEDGE</p> <p>Local knowledge/local wisdom refers to knowledge and expertise which originate from local and indigenous cultures that have developed over time. Its practices have been absorbed naturally and effortlessly into the local communities. The study on Local knowledge/local wisdom is aimed at enabling social transformation through a paradigm shift that forefronts local epistemology.</p> <p>Local knowledge/local wisdom constitutes the realm of the Arts, History, Literature, Oceans and Rivers, Religion/Spiritual Realm, Traditional Medicine, Business and Trade, Education, Traditional Customs, Culture and Practice, Construction, The Rural Community, Shipping and Trading, Forestry and Agriculture, Water. These realms demonstrate the inclusivity of research categories in the fields of arts, social sciences, engineering and medicine.</p> <p>In the emerging global knowledge economy, a country's ability to build and mobilize knowledge capital is as essential to sustainable development as the availability of physical and financial capital. The basic component of any country's knowledge system is its Local knowledge/local wisdom. This encompasses the skills, experience and insights of people, applied to maintain or improve their livelihood.</p> <p>This RUTrans grant requires the applicants to relate to the fundamental understanding of local knowledge/local wisdom, USM APEX mission and vision, Sustainable Development Goals and Malaysia MADANI in order to produce research outcomes that are in line with the local knowledge aspiration.</p>

USM APEX VISION & MISSION

Transforming Higher Education for a Sustainable Tomorrow.

USM is a pioneering, trans-disciplinary research-intensive university that empowers future talents and enables the bottom billions to transform their socio-economic well-being. For the grant application the applicants should consider one or more of these APEX thrusts to achieve the APEX vision and mission.

USM APEX THRUSTS

- Knowledge
- The future
- Uniqueness
- Sustainability
- Universality
- Humanity
- Sacrifice
- Change
- Wellness

THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

USM is able to fully implement a future that is sustainable by utilising higher education as the platform to reach out towards humankind as a whole while extending firm support to major international goals such as the Millennium Development Goals, Education for All, Education for Sustainable Development and any other agenda in the future. The applicants should consider one or more of these SDG goals in relating to USM APEX vision and mission.

- | | |
|---|------------|
| i. Water | (SDG : 06) |
| ii. Forestry and Agriculture | (SDG : 15) |
| iii. Shipping and Trading | (SDG : 08) |
| iv. The Rural Community | (SDG : 11) |
| v. Construction | (SDG : 15) |
| vi. Traditional Customs, Culture and Practice | (SDG : 11) |
| vii. Education | (SDG : 04) |
| viii. Business and Trade | (SDG : 08) |

	<p>ix. Traditional Medicine (SDG : 03)</p> <p>x. Religion/Spiritual Realm (SDG : 11)</p> <p>xi. Oceans and Rivers (SDG : 06 /14)</p> <p>xii. Literature (SDG : 04)</p> <p>xiii. History (SDG : 04)</p> <p>xiv. The Arts (SDG : 11)</p> <p>MALAYSIA MADANI</p> <p>In responding to the government's call of Malaysia MADANI, the applicants must seriously consider the realms of the Local Knowledge, the USM APEX thrusts, the SDG goals in their applications.</p> <p>MADANI is an Arabic term that means "civil" or civilised, often associated with concepts of civic participation and public engagement. Malaysia MADANI is an acronym that reflects the government's integrated and holistic efforts at humanising all policies and their implementation. This call aims to catalyse collaborative research activities and advances in local knowledge/ local wisdom (Sustainability, Prosperity, Innovation, Respect, Trust and Compassion).</p> <p>We call for proposals on providing solutions based on local knowledge/Local wisdom to give impact to communities under Malaysia's MADANI concepts. The solutions must be based on any categories under Local wisdom listed above. The enculturation of the local wisdom challenge is to gather important and pertinent knowledge in factors by real-time technological, environmental or societal enablers.</p>
PROBLEM STATEMENT	<p>Today, many local knowledge/local wisdom systems are at risk of becoming extinct. This is because globally natural environment are rapidly changing, and there are fastpaced economic, political and cultural changes. Practices vanish, when they are inappropriate, in the face of new challenges or because they adapt too slowly. However, many practices disappear because of the intrusion of foreign problems. The tragedy of the impending disappearance of local knowledge is most obvious to those who have developed and make their living from it. This grant highlights in finding the solutions to the issues that appear in the current situations. The solutions should come in the forms of combining</p>

KERTAS PANGGILAN KERJA (CALLS FOR PROPOSALS)**PERMOHONAN SKIM GERAN UNIVERSITI PENYELIDIKAN TRANSDISIPLINARI (RUTrans) 2023**

	many aspects of practices in the understanding of the local knowledge, APEX Thrusts, SDG Goals in the enhancement of the Malaysia MADANI.
SPECIFICATION	Scope Project: Research must focus on the novel relationship between the local knowledge/ local wisdom and the impacts to contemporary communities. Research must focus on how the epistemology of local knowledge able to connect and link with other disciplines to add value for the betterment of bottom billion communities.
JUSTIFICATION	Grant applicants must justify the undertaking of the research and the benefits that it could produce for the betterment of the groups concerned as per APEX Agendas, SDG Goals and Malaysia MADANI.
EXPECTED OUTCOME	<p>The research outcomes must be able to prove the research methods employed either qualitatively, quantitatively, or mixed mode in connecting all the concerning issues and measuring the success stories relatively. The outcomes must be able to demonstrate:</p> <ul style="list-style-type: none">• Balanced quality of life based on Malaysia's unique local knowledge/local wisdom• Economic, social and environmental sustainability through knowledge culture and diversity of views championed by local knowledge/local wisdom.• Renewal and empowerment of human capital through local knowledge/local wisdom to embody human creativity.• Mutual respect towards richness of local traditions, celebrating diversity and differences in worldviews.• To encourage hope for a better future through mutual trust amongst diverse groups.• To be compassionate towards all living things through empowering humanitarian act.
ESTIMATION COST OF PROJECT	Maximum Ceiling Amount: RM600,000.00

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TARGETED STAKEHOLDERS	Targeted stakeholders that can benefit from the Outcome/Impact throughout this program 1. Rural communities 2. Urban poors 3. Underprivileged (Single mothers/farmer/old people/urban poor/fisherman) 4. Any other identified groups	
APPLICATION	Application Method	The application for the Transdisciplinary Research University Grant Scheme (RUTrans) 2023 can be accessed at <u>www.research.usm.my</u>
	Closing Date	31 January 2024
	Application Guideline	Applicants should refer the Guidelines for the Transdisciplinary Research University Grant Scheme 2023 at <u>www.research.usm.my</u> before being submitted to RCMO.