



# Report on INGSA-Asia Grassroots Science Advice Promotion 2023 Workshop

## Innovation from the Ground Up:

Empowering Communities through Grassroots Innovation in  
Malaysia

20 June 2024

Universiti Malaya

Prepared by:

**Assoc. Prof. Dr. Ng Boon Kwee**

Department of Science and Technology Studies

Faculty of Science, Universiti Malaya

Email: [bkng@um.edu.my](mailto:bkng@um.edu.my)

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# Background



## **Innovation from the Ground Up: Empowering Communities through Grassroots Innovation in Malaysia**

20 June 2024, Universiti Malaya, Kuala Lumpur, Malaysia.

Our current comprehension of the concept of grassroots innovation (GRIs) remains ambiguous. On many occasions, the term 'grassroots innovations' is used interchangeably with other community-led and bottom-up initiatives such as social innovation, inclusive innovation, and innovation at the bottom of the pyramid (BoP).

Although these concepts and variants of innovations share some similarities, it is important to note that there are differences in terms of scale and the specific geographic and localised social contexts in which these innovations are fostered and operated. For policymakers and decision-makers at the forefront of introducing policy interventions to motivate and direct these bottom-up initiatives, an accurate and in-depth understanding of the nature of these innovations is crucial. This ensures that the policies and strategic thrusts formulated are appropriate and practically valid.

Based on the general understanding of GRIs as a bottom-up initiative seeking (incremental) innovative solutions developed and implemented by local communities themselves, this science advisory workshop, with the support of the INGSA-ASIA Grassroots Science Advice Promotion Awards 2023, was held to provide stakeholders with a clear understanding of GRIs emerging from local communities. It also aimed to create a collaborative platform for local grassroots innovators to share the nature of their motivations, local practices, issues and challenges, and future plans.

This workshop is co-organised by the Department of Science and Technology Studies, Faculty of Science, Universiti Malaya, and Institut Masa Depan Malaysia (MASA). It is also in conjunction with the celebration of the 65th Anniversary of the establishment of the Faculty of Science, Universiti Malaya.



# Objectives

The objectives of this science advise workshop are to:

- a) Clarify the concept and nature of GRIs and its roles in nation's inclusive development agenda.
- b) Provide a collaborative platform for policymakers, agencies, scholars, grassroots innovators and other stakeholders to engage in meaningful discussions and exchange ideas about pressing issues in GRIs.
- c) Facilitate the preparation of policy brief to promote and promote the development and scaling up of GRIs.



From the right, Mr. Azril Mohd Amin (CEO of MASA), Prof. Ts. Dr. Tan Wee Hoe (Chair of INGSA-Asia), and Assoc. Prof. Dr. Ng Boon Kwee (Head, Department of Science and Technology Studies, Universiti Malaya)

# Opening Remarks



**Prof. Ts. Dr. Tan Wee Hoe**  
Chair of INGSA-Asia

**“We can meet in the middle on grassroots related issues where the scientists and media need to collaborate and work together to promote this science innovations through grassroots communities.”**

Malaysians possess remarkable ideas. Nonetheless, these ideas are often kept within their homes or local communities and there is lack a platform to present and develop these innovations. Therefore, increased exposure and supports from the Ministry of Science, Technology and Innovation (MOSTI) and Yayasan Inovasi Malaysia (YIM) are essential to bring these ideas to the forefront.

We witnessed there is a significant gap between the generation and promotion of grassroots innovations (GRIs) in Malaysia, contrasting with examples from farmers in Indonesia, Thailand, and Vietnam who benefit from substantial government support. Education plays a crucial role in exposing scientific innovations to a broader audience, irrespective of race, and transforming Malaysian ideas into marketable solutions. Enhanced collaboration within the global south is needed to empower communities through GRIs.

Parents should educate their children on the importance of science and its practical applications, such as using smokeless charcoal to reduce transboundary haze. Scientists and media professionals need to work together to promote scientific innovations within grassroots communities, ensuring these valuable ideas are recognised and developed.

# Introduction to GRIs



**Assoc. Prof. Dr. Ng Boon Kwee**  
Head, Department of Science and Technology Studies,  
Faculty of Science, Universiti Malaya

**“GRIs is a niche-based symbiotic network of mostly like-minded people, NGOs and informal community groups to provide customised and incremental solutions to localised problems.”**

Grassroots innovations (GRIs) focus on localising solutions for community-specific problems through a niche-based network of like-minded individuals, NGOs, and informal community groups. These informal, community-led innovations respect ethical and professional values, recognising local traditional knowledge holders and innovators. They are deeply rooted in the community, laden with cultural values, and adopt a socio-technical paradigm that integrates social and technical aspects.

Like other community-based development initiatives, GRIs engage and facilitate the participation of various actors and intermediaries in protected spaces. GRIs adopt a socio-technical paradigm and favour appropriate technology—low-cost, low-tech solutions tailored to local needs. They involve a diverse range of actors in protected spaces, promoting collaboration and shared learning.

The importance of policy and governance for GRIs is multifaceted, and emphasising empowerment and inclusivity by ensuring innovation benefits all societal segments. Effective policies enable GRIs to address local challenges in ways that align with broader environmental goals. Such policies help preserve and promote local knowledge by integrating traditional wisdom with modern innovation. GRIs represent a holistic approach to innovation, where the blending of traditional knowledge and modern technology creates sustainable and relevant solutions. By fostering community engagement and supporting a wide range of stakeholders, GRIs can achieve meaningful and lasting impact.



# GRIs Landscape of Malaysia



**Nur Fadzlina Mahamad Razi**  
Manager,  
Yayasan Inovasi Malaysia (YIM)

**“Yayasan Inovasi Malaysia (YIM) emphasizes social innovation as a strategic agenda, reducing dependency on the government by empowering communities to develop their own solutions.”**

YIM’s initiatives focus on enhancing GRIs through social innovation and impact investment, and leveraging Science, Technology, and Innovation (STI) for community benefit. They promote community ownership and engagement by involving locals in the innovation process, thus building local capacities and ensuring solutions are practical and inclusive.

GRIs in developing countries such as Malaysia face significant economic, institutional, technological, social, cultural, and market barriers. Economically, they struggle with limited financial resources, lack of access to credit, and high costs of inputs and materials. Institutionally, they encounter weak support from governments, bureaucratic hurdles, and limited access to training and capacity building. Technological barriers include inadequate infrastructure, low technological literacy, and restricted access to modern technologies. Market barriers encompass small and fragmented markets, lack of market access, and competition with established players. GRIs often lack the managerial and entrepreneurial skills necessary to navigate these complex challenges.

Under the leadership of YIM, the government-initiated efforts are made available to provide financial inclusion by developing microfinance and community-based funding mechanisms to support innovators with the necessary financial resources. Capacity building is also a priority, with investments in education, training, and mentorship programs to build the skills and knowledge necessary for innovation. Infrastructure development to support the development and dissemination of GRIs.

# IP Protection of GRIs



**Muhammad Irfan Mustaqim**  
Founder & CEO,  
Patentsworth International Sdn Bhd

**“Innovators have to change their mindset to globalize the product and pull everyone on the same level in order to achieve it.”**

Intellectual Property (IP) functions as both a sword and shield, delineating rights and preventing infringement, but it must be carefully managed to avoid legal conflicts. IP protection components include patents, trademarks, industrial designs, trade secrets, plant variety protection, layout designs of integrated circuits, geographical indications, and copyrights. Each has limitations, necessitating careful selection based on the product.

GRIs aim to create easily implementable and replicable technologies for community benefit, often on a small scale with distinct categories and rubrics. IP protection is crucial for commercialisation, licensing, and expanding programming, but the high cost remains a significant barrier. Patents are often more suitable for GRIs than trade secrets, as they ensure broader protection and commercialisation potential. Effective IP strategies require thorough documentation to ensure continuity and mitigate infringement risks.

The main challenge lies in securing funding and changing the innovators' mindset to globalise their products. It is essential to have mechanisms in place to check for infringement of products and ideas. Recognising and categorising GRIs versus non-GRIs is also vital. An innovation emerges from a community setting, it often remains within that local bubble. IP strategies must include comprehensive documentation of the innovation to ensure continuity and mitigate risks of infringement. Proper IP protection lays the foundation for increased revenue through commercialisation, licensing, sponsored research, and expanded programming, creating a sustainable ecosystem for grassroots innovations.

# Sharing Session by Grassroots Innovator



**Marham Dollah Kanan**  
**Grassroots Innovator**

**“Driven by innovation to benefit and simplify lives.”**

Marham Dollah Kanan, from Sabak Bernam in Selangor, was formerly employed at Proton, where he honed his innovation skills during his tenure. After leaving Proton in 1996, he started his own company, initially experiencing limited success.

Marham then focused on participating in and winning various prestigious innovation competitions. Among his notable inventions are a battery-powered tricycle wheelchair and a low-cost motor for disabled individuals using trolley wheels. He has secured a patent for a forklift and has created over 50 innovative products.

Throughout his innovation journey, Marham faced several challenges. In Malaysia, workshops typically focus on motorbike and car repairs, so his customised motor workshop faced scepticism from the community despite the high demand, especially for customised motorbikes for disabled individuals.

Marham's motivation stems from his desire to create innovations that benefit and ease others' lives. He struggled with finding inspiration and ideas, requiring consistent effort and diligence. He frequently turned to social media for ideas, particularly videos from Thailand and India, but found it challenging to create unique products due to the abundance of existing innovative ideas. Despite these hurdles, Marham remained dedicated to his mission, driven by the impact his innovations could have on improving people's lives.



# The Way Forwards



Based on the outcomes from the workshop, here are the salient points for moving forward:

- 1) **Promote empowerment and inclusivity** – Ensure that innovation is inclusive, leveraging the creativity of all societal segments for equitable development.
- 2) **Foster sustainable development** – Address local challenges sustainably, aligning with broader environmental goals.
- 3) **Ensure preservation and promotion of local knowledge** – Enhance cultural heritage by integrating traditional wisdom with modern innovation for effective local solutions.
- 4) **Increase competencies by overcoming barriers** – Develop microfinance and community-based funding, invest in education and mentorship, as well as create platform connecting innovators with resources.
- 5) **Leverage on STI drivers** – Empower communities with practical solutions that enhance societal well-being and foster sustainable development.
- 6) **Increase IP Awareness** – Educate innovators on IP protection to secure their products and innovations legally.
- 7) **Mainstream awareness and recognition** – Provide recognition and encouragement to spur further innovation and development.
- 8) **Promote youth engagement** – Increase the participation of youth and create local content for skills adaptation and knowledge sharing.

### Participates



#### Speakers:

Assoc. Prof. Dr. Ng Boon Kwee (Universiti Malaya)  
Nur Fadzlina Mahamad Razi (Yayasan Inovasi Malaysia)  
Irfan Awang Mustaqim (Patentworth International Sdn Bhd)  
Marham bin Dollah Kanan (Innovator)

#### Participants:

Prof. Ts. Dr. Tan Wee Hoe (Chair of INGSAs-Asia)  
Azril Mohd Amin (CEO, Institut Masa Depan Malaysia, MASA)  
Aina Natasha Kamrol Hisham (Yayasan Inovasi Malaysia)  
Lili Fariza Ariffin (Institut Masa Depan Malaysia, MASA)  
Liwani Che Long (Institut Masa Depan Malaysia, MASA)  
Maisarah Zulkefli (Unit Peneraju Agenda Bumiputera, TERAJU)  
Maryam Zulkafly (Institut Masa Depan Malaysia, MASA)  
Mohd Noor Musa (Institut Masa Depan Malaysia, MASA)  
Muhamad Azzizul Haqaim bin Abd Manan (Ministry of Entrepreneur and Cooperative Development)  
Muhammad Amirul Alman bin Md. Nasir (Ministry of Entrepreneur and Cooperative Development)  
Muhammad Fadzil Anif (Institut Masa Depan Malaysia, MASA)  
Nor Haswani Binti Kamis (Ministry of Science, Technology and Innovation)  
Norasmawati Binti Selamat (Institut Sosial Malaysia)  
Nur Ayu Hayati Binti Saufi (Institut Sosial Malaysia)  
Nur Zalikhaa' Zainal Abidin (Institut Masa Depan Malaysia, MASA)  
Razana Nawawi (Malaysian Research Accelerator for Technology & Innovation)  
Sarmila Muthukrishnan (Universiti Malaya)  
Siti Sarah Samsul Bahari (Yayasan Inovasi Malaysia)  
Syamsul Khoir Bin Md Ridzuan (SUK Selangor)  
Ummi Hasanah Binti Zaidon (Unit Peneraju Agenda Bumiputera, TERAJU)

## Appendix 2

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### Cost and Expenditure

| Category                               | Items   | TOTAL (RM) |
|--|---|------------|
| Supplies & Materials                   | Food and beverages  | 1,350.00   |
|  | Certificate of participation  | 167.40     |
| Professional Services & Other Services | Honorarium payment to guest speakers:<br>– Yayasan Inovasi Malaysia – RM500<br>– Patentworth International – RM500<br>– Innovator – RM600 | 1,600.00   |
| Rental                                 | Rental for Anggerik Meeting Room, IAS   | 400.00     |
| TOTAL                                  |   | 3,517.40   |

Appendix 3

Programme



*Workshop on:*

**Innovation from the Ground Up:  
Empowering Communities through Grassroots  
Innovation in Malaysia**

JUNE  
**20**  
2024

**Bilik Mesyuarat Anggerik**

Level 3, Block D, Institute for Advanced Studies (IAS)  
Universiti Malaya

9.00 am - 4.00 pm

This workshop aims to foster understanding of grassroots innovations among stakeholders and offer a platform for local innovators to share their motivations, practices, challenges, and future aspirations.

Co-organised by:



Funded by:



In conjunction with:



# Programme

20.6.2024 • 9AM TO 4.00PM



- 8.45am – 9.00am ► Registration
- 9.00am – 9.30am ► Opening and Welcoming Address  
Session 1 – Introduction to GRIs
- 9.30am – 11.00am ► Session 2 – GRIs Landscape of Malaysia
- 11.00am – 11.15am ► Break
- 11.15am – 12.45pm ► Session 3 – IP Protection of GRIs
- 12.45pm – 2.00pm ► Lunch
- 2.00pm – 3.30pm ► Session 4 – Sharing Session by Grassroots Innovator
- 3.30pm – 4.00pm ► The Way Forwards  
Closing

*Welcoming address by*

**Professor Ts. Dr. Tan Wee Hoe**  
Chair of the International Network for  
Governmental Science Advice (INGSA) - Asia



# Speakers



**Assoc. Prof. Dr. Ng Boon Kwee**  
Head, Dept of Science and  
Technology Studies,  
Universiti Malaya



**Mr. Irfan Awang**  
Founder & CEO, Patentsworth  
International Sdn Bhd



**Puan Nur Fadzlina Mahamad Razi**  
Manager, Yayasan Inovasi  
Malaysia (YIM)



**Encik Marham bin Dollah Kanan**  
Innovator, Recipient of MaGRIs  
Grant

