

# NSF LAB-TO-MARKET MODEL Dethursus for many indees from Laboratory to Market 9. Society

Pathway for moving ideas from Laboratory to Market & Society

National Science Foundation, Sri Lanka Ministry of Education, Science and Technology

## L2M: from Discovery to Delivery

The National Science Foundation (NSF) of Sri Lanka is a statutory body established in 1998 by the Science and Technology Development Act No. 11 of 1994, as the successor to the Natural Resources, Energy & Science Authority of Sri Lanka (NARESA) established in 1981, and the National Science Council (NSC) set up in 1968. The NSF takes the lead role in promoting Science, Technology and Innovation in the country, operating under the purview of the Ministry of Education, Science and Technology. Accordingly, the NSF has provided its dedicated service to the nation for over 56 years since its inception.

The NSF plays a pivotal role in supporting and strengthening the National Research, Development, and Innovation Ecosystem to promote wealth creation and ensure the wellbeing of the citizens of Sri Lanka while ensuring environmental sustainability. To facilitate this, the NSF introduced "NSF Lab to Market" model which provides pathways for researchers, inventors, innovators, technopreneurs, Micro, Small and Medium Enterprises and aspiring entrepreneurs to transition their ideas from the laboratory to the market and society.

When analyzing the gap in research commercialization, several critical elements become apparent. Key issues include the lack of continuation of promising research and insufficient collaboration among industry, universities, and R&D institutions. These gaps often result in less mission-oriented industrial research, stalling the potential impact of innovative discoveries. The NSF Lab to Market model addresses these challenges comprehensively by providing various grant schemes to ensure the continuation of research efforts until the commercialization of findings and innovations. This sustained support is crucial for transforming theoretical research into practical applications.

NSF Lab to Market model facilitates the seamless flow of ideas and expertise among various stakeholders, fostering networking and collaborations, funding mechanisms to support early-stage research and development, grassroots level inventions and innovations, industrial research, initiation of new businesses based on novel technologies and the commercialization of these technologies.

In addition, the NSF model fosters the triple-helix model, which promotes robust collaboration among academia, industry, and the government. This collaborative framework not only bridges the gap between research and market but also enhances the relevance and applicability of academic research. By aligning the goals and resources of these three sectors, the model creates a synergistic environment where innovations can thrive and reach their full potential. Notably, 40% of the NSF research funds are allocated for innovation and entrepreneurship. This allocation promotes translational research and the creation of value-added products, processes, and services via R&D, enabling them to compete in local and international markets.

This holistic approach ensures that innovations are not only developed, but also successfully brought to market, ultimately benefiting the society at large.



Fig 01: Research, Innovation and Enterprise; Wealth Creation through Lab to Market Model

NSF Lab to Market model is supported by twelve different programmes designed to facilitate this process.



Fig 02: NSF Lab to Market Model: Pathway for moving ideas from lab to market and society

Different stakeholders can join this pathway at various stages, ensuring flexibility and inclusivity throughout the innovation process;

- 1. Researchers can begin from basic research (TRL 1) and progress to commercialization stage.
- 2. Researchers and Industry partners can begin from applied research (TRL3) and progress to commercialization stage.
- 3. Inventors/Innovators can begin from product ideas that have commercial potential (TRL 4) and progress to commercialization stage.
- 4. Entrepreneurs can begin from novel technology (TRL8) and progress to commercialization stage.



Fig 03: Pathway for Researchers, Innovators, Entrepreneurs and Industry moving ideas from lab to market

#### L2M: Basic Research Grants

Basic research involves experimental or theoretical work aimed primarily at acquiring new knowledge about the fundamental aspects of phenomena and observable facts, without any specific application or use in mind. In Sri Lanka, there are only 106 researchers per million inhabitants, compared to 256 in South Asia and 7,225 in Singapore. This measure of researcher intensity is crucial as it influences the number of patents filed and contributions to scientific journals. To attract youth to pursue research and encourage them to stay and work in Sri Lanka, grant schemes such as Research Scholarships, Competitive Research Grants, and Post-Doctoral Research Fellowship Programmes have been implemented.

- Competitive Research Grant
- Research Scholarship Grant
- Post-Doctoral Research Fellowship

#### L2M: Mission Oriented Research Grants

Applied research is an original investigation undertaken in order to acquire new knowledge, but it is primarily directed towards specific, practical aims or objectives. NSF supports further research to achieve outputs with commercialization potential from successfully completed NSF-funded research grants.

NSF fosters the Triple-Helix model, which involves partnerships between academia, industry, and government, while also facilitating and stimulating international research collaboration and technical cooperation. As a learning organization, NSF recognizes the importance of promoting transdisciplinary research and contract research.

- Competitive Research Grant
- Gap Filling Research Grant
- Partnerships for SMEs Development
- Transdisciplinary Mission Oriented Research
- Client Funded Contract Research

### L2M: Technology Development Grants

Technology development involves systematic work that draws on knowledge gained from research and practical experience. This process generates additional knowledge aimed at creating new products or processes, or enhancing existing ones.

- Support for Technology Development
- Technology and Innovation support Centre

### L2M: Research based Startup/ Business Grants

NSF invests in early-stage startups that transform scientific discoveries and innovations into products and services with significant commercial and societal impact. Startup grants of NSF, supports startups and small businesses across all areas of science and technology.

- Support for Start-up businesses based on novel Technologies
- Support for Product Development targeting new business Development

## L2M: Commercialization

Research commercialization is the process of bringing a newly developed product or service to the local, national, or global marketplace. This can be achieved either by starting a new business based on new technology (startup) or by transferring the new technology to an existing industry (licensing). The NSF facilitates and supports both methods. NSF also introduces the Research into Practice programme to promote technology transfer.

- Support for Licensing and Commercialization
- Research into Practice Programme

#### Key Review Procedure for Research Support Programmes

Merit review remains central to NSF's mission. Our goal is to fund awards with integrity through a fair, competitive, and transparent process. NSF assesses merit review using reports from independent reviewers and external advisory committees.

Grant applications received by the NSF undergo a rigorous merit review process, focusing on two key criteria: intellectual merit (the potential to advance knowledge) and broader impacts (the potential to benefit society and provide value for money). The NSF supports a wide range of research and innovation, ensuring that R&D outputs progress beyond bench-top trials to technology development and commercialization.



Fig 04: NSF Key Review Procedure K

#### **Director General**

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