TRANSACTIONSNASTPHL
ISSN 0115-8848 (print)
ISSN 2815-2042 (online)
https://transactions.nast.ph/

Transactions NAST PHL Vol. 47 (2025)
doi.org/10.57043/transnastphl.2025.5575

Bioscience Innovations: Transforming Enterprise Ecosystems for Wealth Creation

Renato U. Solidum, Jr.

Secretary, Department of Science and Technology

Correspondence:
Renato U. Solidum, Jr.
rusolidum@dost.gov.ph

Citation
Solidum RU Jr. 2025. Bioscience innovations: Transforming enterprise ecosystems for wealth creation. Transactions NAST PHL 47 (2025). doi.org/10.57043/transnastphl.2025.5575

Through the years, the Department of Science and Technology (DOST) has remained steadfast in its commitment to "**providing solutions and opening opportunities**" to improve the lives and livelihoods of Filipinos through science, technology, and innovation. As the country's lead agency in scientific and technological efforts, the DOST strives to ensure that the benefits of scientific progress reach all segments of society, particularly the marginalized, where genuine change is most needed.

This year's Annual Scientific Meeting (ASM) underscores the transformative potential of bioscience in shaping enterprise ecosystems, driving social innovation, and enabling sustainable development. By connecting scientific breakthroughs with community needs, the biosciences can provide relevant, transdisciplinary, and comprehensive solutions that promote community resilience, environmental responsibility, and economic progress. Truly, this gathering aligns with **DOST's four strategic priorities of promoting human well-being, fostering wealth creation, reinforcing wealth protection, and institutionalizing sustainability.** Collectively, these pillars have been our north star in ensuring no community will be left behind.

True to our mantra of "**OneDOST4U: Solutions, Opportunities for All**", our combined efforts have provided a fertile ground for bioscience innovations to flourish in the country. An example is the ***Tuklas Lunas Program***, the Philippine Drug Discovery and Development Program, which taps into the nation's rich biodiversity by investigating indigenous medicinal plants and natural compounds. Currently supporting 29 institutions across the country, the program aims to develop locally derived therapeutic agents and provide leads for the commercialization of new drugs and herbal products (Figure 1)

Transactions NAST PHL Vol. 47 (2025)
doi.org/10.57043/transnastphl.2025.5575

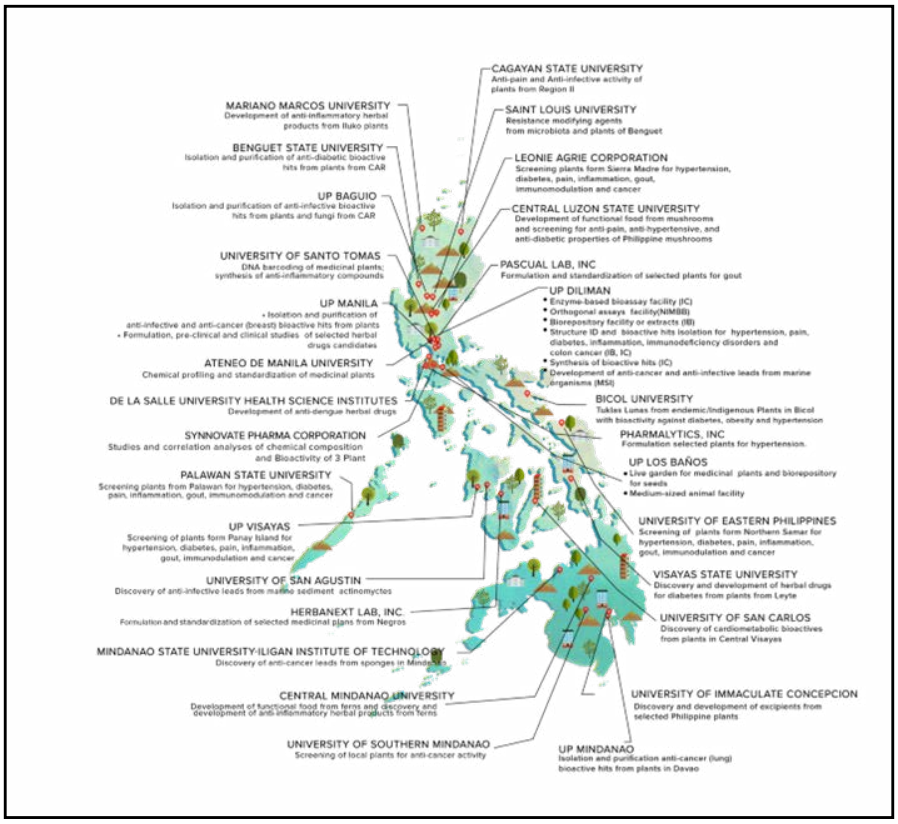

Figure 1. Map of *Tuklas Lunas* Centers. (PCHRD nd)

Several bioscience projects have also been spearheaded by the DOST **Industrial Technology Development Institute (ITDI)** that address critical challenges in health, agriculture, and environmental management. These ITDI projects include the development of rapid diagnostic tool for African Swine Fever, identification of potential antiviral agents from Philippine medicinal plants, and design of vaccine candidates against pathogenic swine viruses which are important contributions in strengthening the capacity of our local hog raising industry in containing disease outbreaks, thus mitigating economic losses and ensuring food security.

In another related development, the passage of the **Virology Institute of the Philippines (VIP) Act** in Congress is another landmark achievement aimed at strengthening the country's capacity in preparing against future pandemics. To be placed under the DOST, the Virology Institute will house state-of-the-art facilities for virology research covering human, animal, and plant health. By developing advanced diagnostics, vaccines, and therapeutics, the VIP can bolster our agricultural and healthcare industries, which are also currently dependent on foreign laboratories and imported vaccines. Essentially, this is another strategic investment that will create new opportunities not only for the protection of our well-being but also support technology transfer, innovation, and, ultimately, wealth creation.

In recent years, the DOST has also **established innovation hubs for tropical fibers and wood, spearheaded by the Philippine Textile Research Institute** and the Forest Products Research and Development Institute, respectively (Figure 2). Our efforts in this field involve the development of sustainable processing methods to produce high-quality textiles and eco-friendly products from native and indigenous materials. These innovations also support local manufacturing, improve rural competitiveness, and provide employment opportunities.

Transactions NAST PHL Vol. 47 (2025)
doi.org/10.57043/transnastphl.2025.5575

Figure 2. Launching of the First Natural Textile Fiber Innovation Hub in Mindanao. (Mendoza CAV 2024)

We also have regional initiatives aimed at harnessing bioscience technologies for public health, agriculture, and environmental management. Our **Niche Centers for Research and Development in the Regions, or NICERS**, not only decentralize bioscience research by bolstering regional capacities, but also foster innovation aligned with local resources and challenges (Figure 3). Our current NICERS focus on various indigenous and commercially important aquatic and terrestrial plant and animal species, including livestock. On the other hand, the **Collaborative Research and Development to Leverage the Philippine Economy, or CRADLE** program, facilitates partnerships between academic institutions, research organizations, and private companies. Some of the projects under this collaboration promote the translation of bioscience research to marketable applications. At present, the DOST has supported 15 NICER centers and 39 CRADLE projects throughout the country.

An emerging facet of these bioscience initiatives of the DOST is the **strengthening of enterprise ecosystems**. Recognizing the importance of an interconnected network of organizations that work together to create and deliver value in specific industries or markets, the DOST has also moved to train its scholars and regional offices on the foundations of entrepreneurship. Our banner program, namely the **Small Enterprise Technology Upgrading Program or SETUP**, has supported micro-, small-, and medium enterprises in availing technical training, assistance, and appropriate technologies. The recently launched **Program PROPEL** helps scientists and entrepreneurs move their innovations from the laboratory to the marketplace. Designed to fast-track the commercialization process, the program will effectively facilitate a pipeline for developing viable and market-ready products.

Transactions NAST PHL Vol. 47 (2025)
doi.org/10.57043/transnastphl.2025.5575

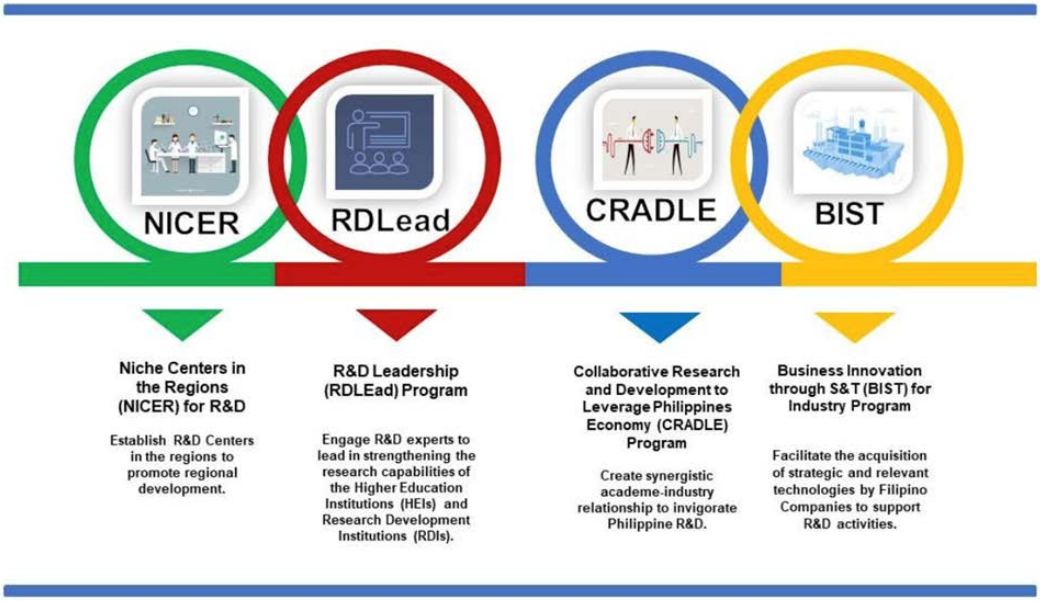

Figure 3. Four components of the DOST Science for Change Program. (DOST 2020)

Overall, DOST's multifaceted approach not only propels scientific progress but also acts as a catalyst for wealth creation. Our approach presents various opportunities that support value addition, economic diversification, and local industry empowerment. In the process, the creation of novel and high-value products can ignite new industry niches, drive revenue streams, and attract investment opportunities. We also work on integrating modern technology to enhance the competitiveness of local producers for the domestic and, eventually, the international market.

Let me emphasize that at the core of all of these initiatives is our unwavering commitment to strategic science, technology, and innovation for countryside development. By empowering local communities through bioscience, we are not only promoting better health and sustainable resource management but also transforming the traditional rural landscape into a hub of enterprise innovation and economic opportunity. This integrated approach will ensure that our scientific breakthroughs will create ripples of change, enhance livelihoods, uplift communities, and reinforce our nation's competitive edge on the global stage.

With this, allow me to extend my gratitude to the esteemed Filipino scientists and experts from the public and private sectors who will impart their knowledge and research during this highly anticipated scientific meeting.

As we explore the dynamic potential of bioscience innovations in transforming enterprise ecosystems, I invite everyone to reaffirm and join our collective resolve to harness bioscience innovations for long-term societal progress and economic prosperity by building solid linkages among the government, the academe, scientific institutions, community stakeholders, and the private sector.

Together, we can build a future where STI and community empowerment converge to create sustainable wealth for all Filipinos. **Together, we can harness the power of bioscience innovations to uplift Filipinos towards a *Bagong Pilipinas* (New Philippines).**

Thank you for your dedication, and I look forward to the insightful discussions and the Academy's recommendations.

Maraming salamat po at maka-Agham na araw lahat.

(Thank you and a have a science-oriented day to all).

xxx

Transactions NAST PHL Vol. 47 (2025)
doi.org/10.57043/transnastphl.2025.5575

About the author

Dr. Renato Solidum is a geologist who has served in various capacities at the Philippine Institute of Volcanology and Seismology (PHIVOLCS) and the Department of Science and Technology (DOST). He has a BS degree in Geology from UP Diliman and MS and PhD degrees in Earth Sciences from the University of Illinois at Chicago and Scripps Institution of Oceanography, respectively. He was appointed as DOST Secretary in 2022. He is the recipient of several awards for his contributions to disaster reduction and government service such as: The Presidential Lingkod Bayan Award, Civil Service Commission; Professional of the Year in the Field of Geology, Professional Regulatory Commission; and the Presidential Career Executive Service Award, Career Executive Service Board.

Acknowledgements

Photo credits:

PCHRD. Nd. DOST Philippine Council for Health Research and Development. Tuklas Lunas Centers. https://www.pchrd.dost.gov.ph/funded-projects/tuklas-lunas-centers/; accessed September 25, 2025.

Mendoza CAV. 2024. The First Natural Textile Fiber Innovation Hub in Mindanao is Officially Launched!. https://ptri.dost.gov.ph/9-transparency-seal/531-the-first-natural-textile-fiber-innovation-hub-in-mindanao-is-officially-launched; accessed on September 25, 2025.

DOST Department of Science and Technology. 2020. DOST Science for Change Program. https://www.dost.gov.ph/9-programs-and-projects/1811-dost-science-for-change-program.html; accessed 25 September 2025.