

# RESEARCH 2024 AGENDA 2026

**Board Resolution No. 21, s. 2024**

Approved during the 133<sup>rd</sup> Regular Meeting of the TSU  
Board of Regents on March 26, 2024 at the CHED Conference Room



# RESEARCH 2024 **AGENDA** 2026

**TARLAC STATE UNIVERSITY**

FORMER T.C.T. CONVERTED UNDER R.A. 6764 OCTOBER 13, 1989

CONGRESSMAN JOSE V. YAP  
1<sup>ST</sup> DISTRICT, TARLAC



# ■ Introduction

Through the initiative of the Office of the University Research Development, of Tarlac State University (TSU), which is committed to upholding its general function with integrity. This function includes generating, overseeing, coordinating, consolidating, and operationalizing the conduct of research activities aligned with the priority areas of the University. The office function and University targets might be compromised with lapsed priority areas. With the consideration of international, national, regional, and local (current and future) needs, a new research agenda needs to be designed.

In the dynamic landscape of Higher Educational Institutions, taking into account the current realities, situations, trends, and emerging developments at global, national, regional, and sectoral levels, it is imperative that the research outputs produced by the University are responsive to these shifting landscapes. This adaptability is crucial for realizing a shared vision and contributing to establishing sustainable, inclusive, and resilient communities. In this context, the Tarlac State University Research Agenda focuses on producing and translating high-value research that aligns with the University's Vision, Mission, Goals, and Objectives.

This will transform TSU from a teaching university into a research university - a foundation to become a globally recognized institution with translational impact, which will make a difference and benefit humanity.

Furthermore, the Research Agenda is vital in designing research activities for faculty, graduate, and undergraduate students. A well-defined research agenda helps the University identify research priorities by providing a concrete framework for guided decision-making regarding future research activities and undertakings. Therefore, the TSU Research Agenda for the years 2024 to 2026 must anchor in the United Nations' seventeen (17) Sustainable Development Goals, the National Economic Development Authority's AMBISYON 2040, the National Innovation Agenda and Strategy Document (NIASD) 2023-2032, the Philippine Development Plan (PDP) 2023-2028, and the Central Luzon Regional Development Plan 2023-2028. Additionally, it aligns with the Department of Science and Technology Harmonized National Research and Development Agenda (HNRDA) 2022-2028, the National Unified Health Research Agenda (NUHRA) 2023-2028, the Intellectual Property Office of the Philippines' National Intellectual Property Strategy (NIPS) 2020-2025, the Philippine Plan for Gender-Responsive Development 1995-2025, and the Previous Tarlac State University Research Agenda for 2021-2023.





# Methodology

## PHASE 1

### Document Analysis Towards the Identification Of Initial Research Areas

In this phase, the Office of University Research Development, with the designated College Research Coordinators, reviewed relevant documents and identified and consolidated initial priority research areas.

## PHASE 2

### Stakeholder's Consultation

The identified initial priority research areas will be subjected to consultation with various stakeholders from DOST, NEDA, Provincial and Local Government Units, Academic Partners, students, and faculty who will be invited for the consultation of the Research Agenda. This activity will enrich the contents by the collective insights of the academic community and stakeholders.

## PHASE 3

### Data Consolidation, Analysis, and Framework Design

This phase involves applying thematic analysis from Phases 1 and 2 results, with the end goal of developing an updated research agenda framework with new research themes.

## PHASE 4

### Review, Finalization, Approval, and Dissemination of Research Agenda

Lastly, review and finalization of the developed framework and research themes will be done subject to the approval of the Board of Regents. Afterward, it will be appropriately disseminated by the University.





# Documents Involved in the Agenda Setting



Figure 1. The United Nation's 17 Sustainable Development Goals (SDGs)

## United Nations Sustainable Development Goals

In 2015, member states of the United Nations adopted the 2030 Agenda for Sustainable Development. The agenda provides a shared plan for peace, prosperity, people, and the planet. The agenda has seventeen (17) core goals, which are imperative and urgent calls for action by all developed and developing countries. The 17 Sustainable Development Goals recognize the essentiality of ending poverty and any other forms of deprivation through strategies that improve health and education, lessen inequality, and stimulate economic progress – all while preserving our oceans and forests and addressing the impacts of climate change. As a prominent member of the United Nations, the Philippines adopted the principles of sustainable development goals in its social, economic, and environmental programs. In terms of its research and development undertakings, the SDGs serve as the core for its planning, prioritization, and decision-making.

## National Economic Development Agency's AMBISYON 2040, Development Plans, and Innovation Strategy

The National Economic Development Agency's (NEDA) AMBISYON Natin 2040 depicts the Filipino people's collective long-term vision and aspirations for themselves and the country in the next 25 years. It describes the kind of life people want to live, and how they want the country to be by the end of 2040. It has three major pillars: *Malasakit* (enhancing the social fabric), *Pagbabago* (reducing inequality), and *Kaunlaran* (increasing potential growth). AMBISYON Natin 2040 and the three pillars form the foundation for more inclusive growth, a high-trust and resilient society, and a globally competitive knowledge economy.

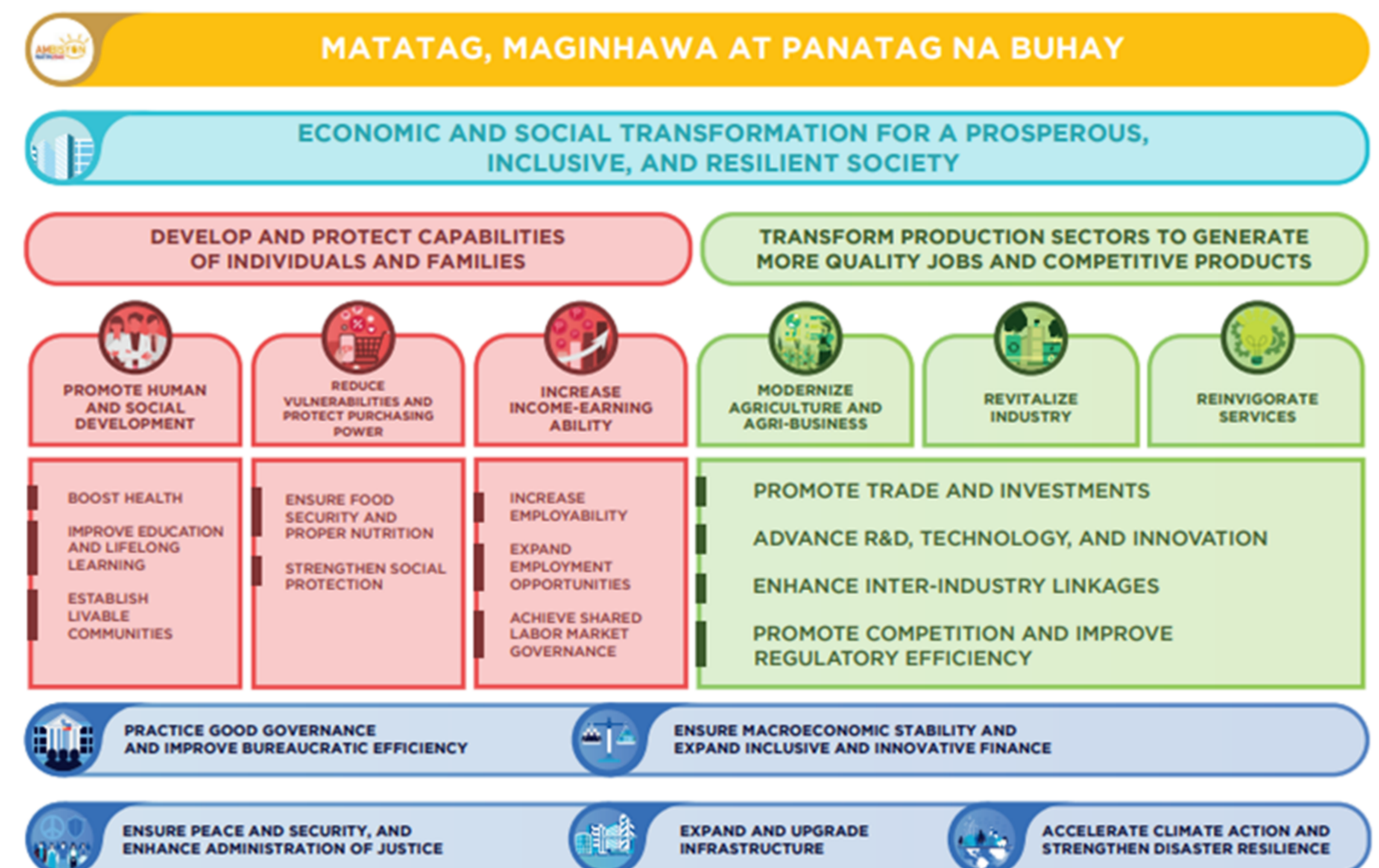


Figure 2. Alignment of Philippine Development Plan to AMBISYON 2040



## Documents Involved in the Agenda Setting

Moreover, the Philippine and Central Luzon Development Plan provides a comprehensive roadmap containing actionable policies, programs, and legislative priorities that will enable us to reach the desired development outcomes. The Plan calls for deep and fundamental transformations in all sectors—social, economic, institutional, and environmental—as we aim to reinvigorate job creation and accelerate poverty reduction toward a prosperous, inclusive, and resilient society aligned with the AMBISYON Natin 2040.

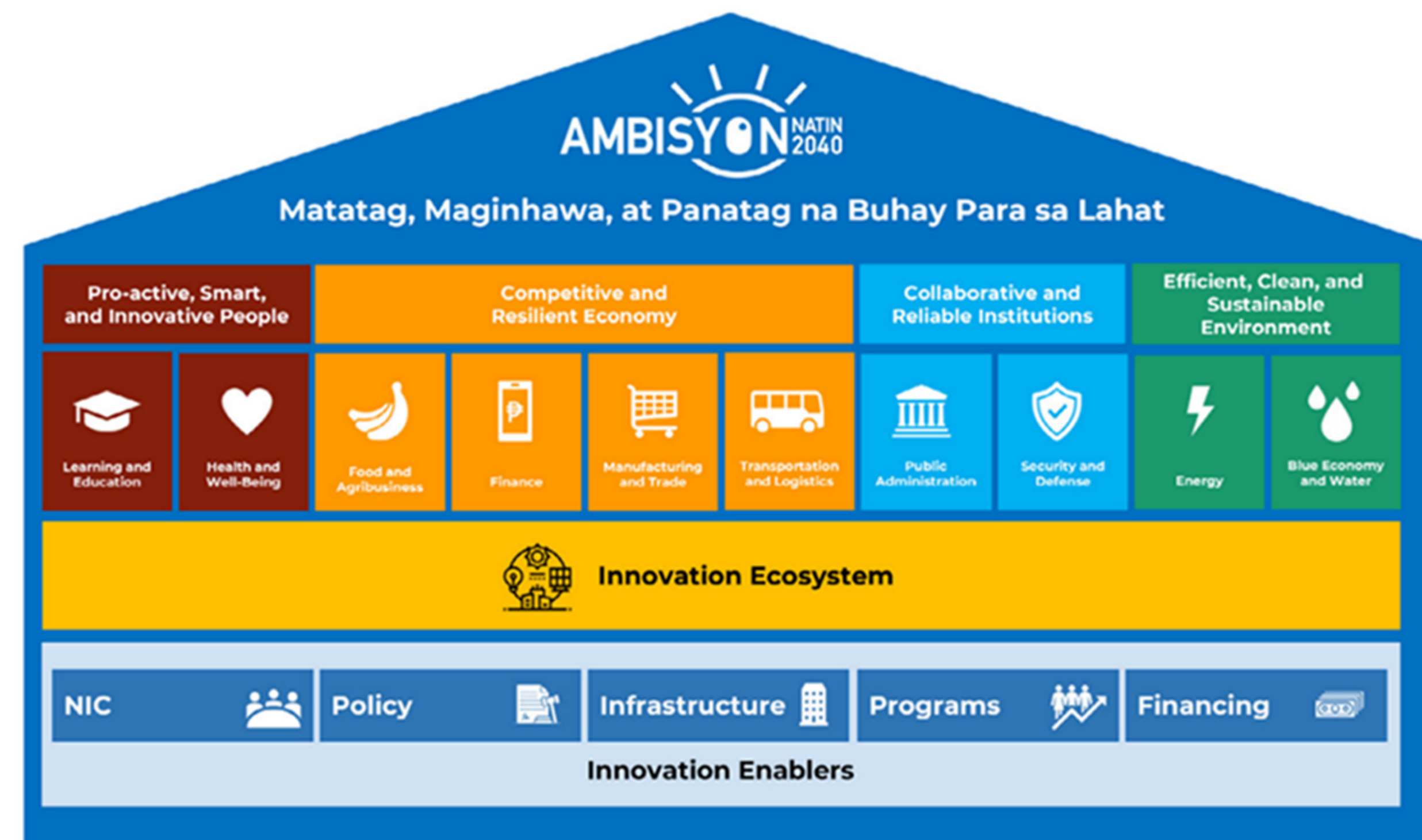


Figure 3. Alignment of National Innovation Strategy to AMBISYON 2040

In addition, the national innovation agenda subscribes also to the AMBISYON Natin 2040. Amid various challenges – present and future, both anticipated and unanticipated – the key to achieving the goal is to transform the country into a Smart and Innovative Philippines. This involves having (a) proactive, intelligent, and innovative people, (b) a competitive and resilient economy, (c) collaborative and reliable institutions, and (d) an efficient, clean, and sustainable environment.

TSU upholds and supports the goals of the AMBISYON Natin 2040. The University believed that it is through research and development that Filipinos can attain a more comfortable and progressive life.

## Department of Science and Technology Harmonized National Research and Development Agenda (HNRDA) 2022 2028

The Department of Science and Technology (DOST), as mandated by law to provide central direction, leadership, and coordination of the scientific and technological efforts in the country, spearheaded the updating of the HNRDA through its agencies, the National Research Council of the Philippines (NRCP), Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD), Philippine Council for Health Research and Development (PCHRD), Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD), and the Office of the Undersecretary for Scientific and Technical Services – Disaster Risk Reduction and Climate Change Unit, in cooperation with stakeholders in their respective sectors.

The DOST, in consultation with government and private research and development institutions, the academe, industry, and other concerned agencies, prepared and updated the HNRDA 2022- 2028 to direct and ensure anew that results of science, technology, and innovation endeavors are geared towards and are utilized in areas of maximum economic and social benefit for the people. It will also serve as a guide in prioritizing research programs and projects funded in the next five years.

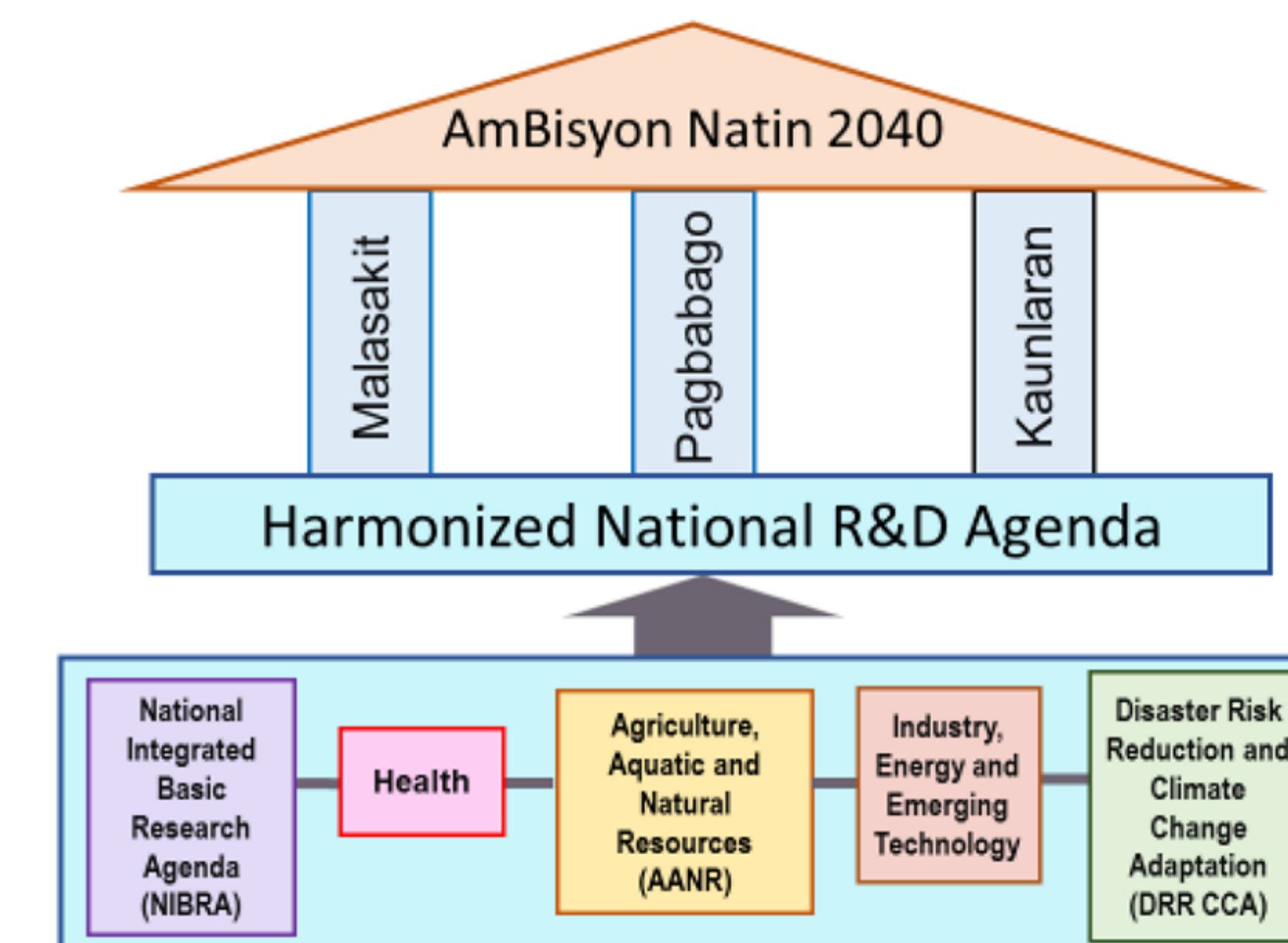


Figure 4. The Harmonized Research Agenda as pillar of support to AMBISYON 2040



## Documents Involved in the Agenda Setting

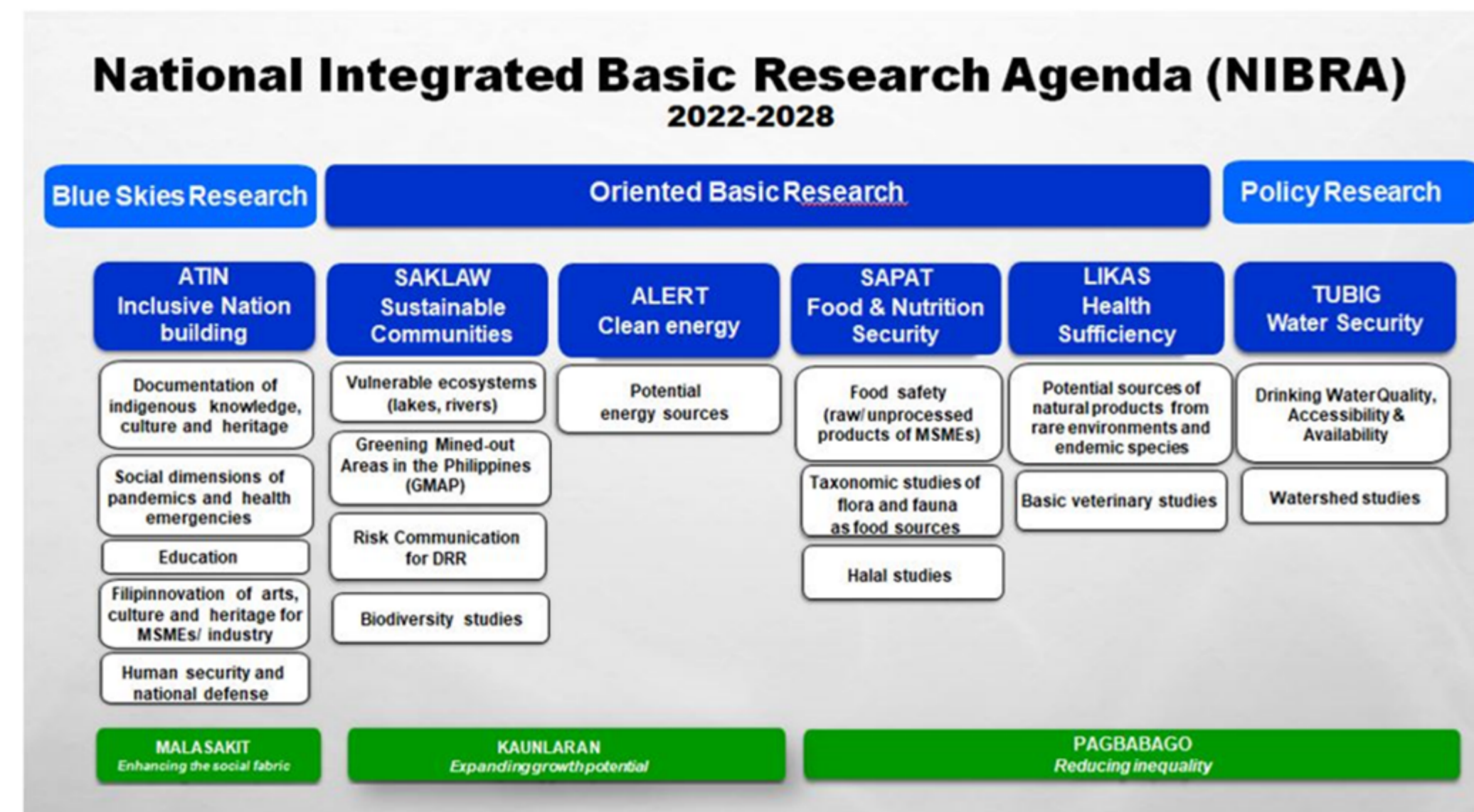


Figure 5. National Integrated Basic Research Agenda for 2022 - 2028

### National Unified Health Research Agenda

The National Unified Health Research Agenda (NUHRA) provides a concrete guide on the country's health research and development efforts, given the recent developments in the local health economy. The Tarlac State University recognizes the importance of health-related research in promoting public health. For this reason, the university adopted the different priority programs under the NUHRA to become one of the bases for crafting its research agenda.

### Intellectual Property of the Philippines' National Intellectual Property Strategy Document

A balanced, efficient, and effective IP system enhances our global competitiveness, adds value to innovation, and promotes creativity. It provides many other positive impacts on other areas for national development, which also merits emphasis: it promotes the preservation of cultures, empowers women and underrepresented minorities, and helps in advancing mankind in its primary goals of achieving zero hunger, climate change resilience, quality education for all, and good health and well-being—all this by keeping the wheels of innovation and creativity in motion.

### Philippine Plan for Gender-Responsive Development

The Philippine Plan for Gender-Responsive Development (PPGD) rests on a vision of development that is equitable, sustainable, free from violence, respectful of human rights, participatory, and empowering. The PPGD puts greater emphasis on women as a disadvantaged group.

The Tarlac State University is always on the frontline of supporting and empowering the rights of women and persons with disability. Hence, the PPGD and the policies and guidelines are embedded in CHED Memo No.1 s. 2015 was the basis for crafting the University's research agenda, particularly on gender and development studies.

From the thematic areas derived from various documents, alongside realities, situations, trends, and emerging developments that redirect to the new TSU research direction, it is expected that high-value research outputs will be produced encompassing the 6Ps (product, publication, patent, policy, people services, places, and partnership), and 2Is (socio-economic impact), considering gender-sensitive and ethical research practices as shown in

### Summary of the Documents Involved in the Agenda Setting

- ✓ United Nations Sustainable Development Goals
- ✓ National Economic Development Agency's AMBISYON 2040, Development Plans, and Innovation Strategy
- ✓ Department of Science and Technology Harmonized National Research and Development Agenda (HNRDA) 2022-2028
- ✓ National Unified Health Research Agenda
- ✓ Intellectual Property Office of the Philippines' National Intellectual Property Strategy Document
- ✓ Philippine Plan for Gender-Responsive Development



# Approved University Research Framework

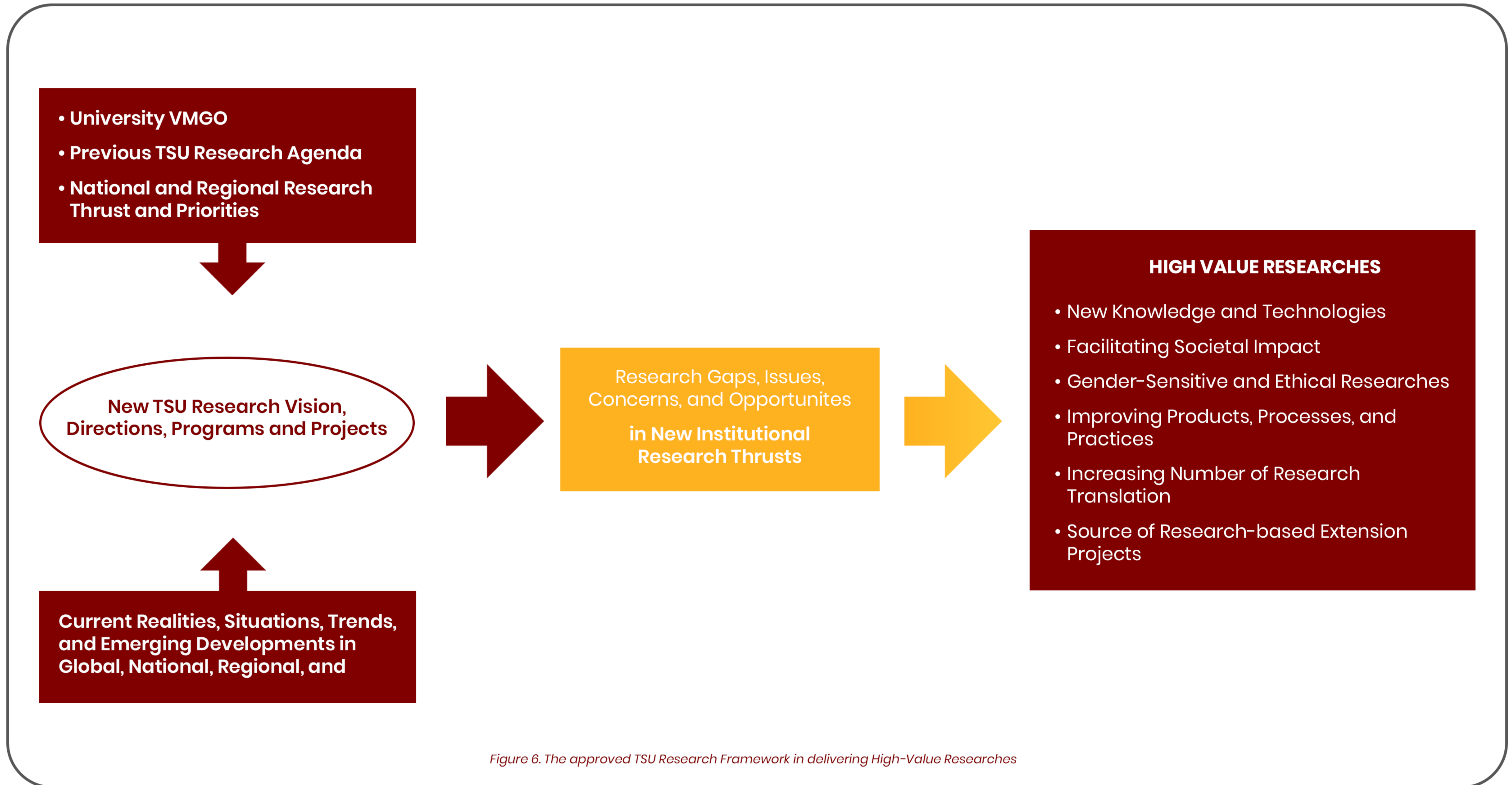


Figure 6. The approved TSU Research Framework in delivering High-Value Researches





# Approved University Research Agenda



Figure 7. The approved Research Agenda of Tarlac State University for 2024-2026

## Engineering, Innovations, and Technologies

This research area delves into a broad spectrum of disciplines, ranging from engineering domains to transformative innovations and emerging technologies to address the challenges.

## Sustainable, Inclusive, and Resilient Communities

This thematic research area serves as a catalyst for positive change with a comprehensive, interdisciplinary, and forward-thinking domain that aims to address the complex challenges faced by societies in 21st-century community building.

## Cross-Cutting Concerns

This area aims to develop integrated solutions that address the immediate challenges at hand and contribute to a more resilient, adaptable, and interconnected global society. It constitutes a dynamic and interdisciplinary field that addresses complex challenges. In this domain, it strives to understand, analyze, and develop innovative solutions for issues that intersect various sectors and domains.

## Responsive Health System

This thematic area envisions transformative changes in healthcare systems, aiming to create a responsive, patient-centric, and technology-driven approach to health. It is dedicated to pioneering transformative approaches in health delivery and management that adapt to the evolving needs of individuals, communities, and societies.

## Food Production, Safety, and Security

This area addresses the multifaceted challenges associated with feeding a growing global population while ensuring the safety, sustainability, and security of the food supply. This field explores innovative solutions that span the entire food production and distribution chain, integrating advancements in technology, agriculture, and policy to create resilient and secure food systems.



# Approved University Research Agenda 2024-2026

## Agenda Alignment

International Alignment	National Alignment	Regional Alignment	Institutional Research Agenda	Priority Areas
<p><b>SDG 9</b> (Industry, Innovation and Infrastructure)</p> <p><b>SDG 7</b> (Affordable and Clean Energy)</p>	<p><b>Philippine Development Plan 2023 – 2028</b> (Sectoral Plan: Advance Research &amp; Development, Technology, and Innovation)</p> <p><b>Department of Science and Technology – Harmonized National Research and Development Agenda (DOST-HNRDA)</b> (Industry, Energy, and Emerging Technology)</p> <p><b>National Intellectual Property Strategy (NIPS) 2020 – 2025</b> (Promote Innovation and Utilization/Commercialization of IP Assets)</p>	<p><b>Central Luzon Regional Development Plan 2023 – 2028</b> (Sectoral Plan: Advance Research &amp; Development, Technology, and Innovation)</p>	<p>Engineering, Innovations, and Technologies</p>	<ol style="list-style-type: none"> <li>1. Big Data, Data Mining, and Data Analytics</li> <li>2. ICT Innovations</li> <li>3. Industry 4.0</li> <li>4. Augmented and Virtual Realities</li> <li>5. Machine Learning and Artificial Intelligence</li> <li>6. Cryptography and Cybersecurity</li> <li>7. Internet of Things</li> <li>8. Intelligent Transportation Systems</li> <li>9. Geographical Information System</li> <li>10. Robotics</li> <li>11. Controls and Sensors</li> <li>12. Green Architecture and Engineering</li> <li>13. Renewable Energy</li> <li>14. Process Digitalization</li> <li>15. Design of Infrastructure</li> <li>16. Structural Software Simulation</li> </ol>



# Approved University Research Agenda 2024-2026

## Agenda Alignment

International Alignment	National Alignment	Regional Alignment	Institutional Research Agenda	Priority Areas
<p><b>SDG 4</b> (Quality Education)</p> <p><b>SDG 8</b> (Decent Work and Economic Growth)</p> <p><b>SDG 11</b> (Sustainable Cities and Communities)</p>	<p><b>Philippine Development Plan 2023 – 2028</b>                      (Sectoral Plan: (1) Promote Human and Social Development, (2) Improve Education and Lifelong Learning, (3) Reduce Vulnerabilities and Protect Purchasing Power, (4) Increase Income-earning Ability, (5) Revitalize Industry, and (6) Reinvigorate Services)</p> <p><b>Department of Science and Technology – Harmonized National Research and Development Agenda (DOST-HNRDA)</b>                      (National Integrated Basic Research (2022 – 2028))</p> <p><b>National Intellectual Property Strategy (NIPS) 2020 – 2025</b>                      (Support Sectoral Advancement Through the Use of the IP System)</p> <p><b>National Innovation Agenda and Strategy Document (NIASD) 2023 – 2032</b>                      ((1) Pro-active, Smart, and Innovative People, (2) Competitive and Resilient Economy)</p>	<p><b>Central Luzon Regional Development Plan 2023 – 2028</b>                      (Sectoral Plan: (1) Promote Human and Social Development, (2) Improve Education and Lifelong Learning, (3) Reduce Vulnerabilities and Protect Purchasing Power, (4) Increase Income-earning Ability, (5) Revitalize Industry, and (6) Reinvigorate Services)</p>	<p>Sustainable, Inclusive, and Resilient Communities</p>	<ol style="list-style-type: none"> <li>1. Indigenous People and its Communities</li> <li>2. Language and Linguistics</li> <li>3. Innovation in Curriculum and Pedagogy</li> <li>4. Teacher Quality Enhancement</li> <li>5. Health, Wellness, and Sports</li> <li>6. People Empowerment and Social Advocacy</li> <li>7. Socio-Economic Analysis and Policy</li> <li>8. Policy Research and Governance</li> <li>9. Delivery of Social Services</li> <li>10. Human Behaviors</li> <li>11. Digitalization of Government Processes</li> <li>12. Entrepreneurship Development and Technopreneurship Innovation</li> <li>13. Economic Advancement</li> <li>14. Financial Inclusion</li> <li>15. Product Development and Customer Behavior Analysis</li> <li>16. Structural Software Simulation</li> <li>17. Emerging Trends and Roles in Accounting Information System</li> <li>18. Hospitality Services</li> <li>19. Advanced Business Strategy Formulation</li> </ol>



# Approved University Research Agenda 2024-2026

## Agenda Alignment

International Alignment	National Alignment	Regional Alignment	Institutional Research Agenda	Priority Areas
<p><b>SDG 5</b> (Gender Equality)</p> <p><b>SDG 13</b> (Climate Action)</p> <p><b>SDG 15</b> (Life on Land)</p>	<p><b>Philippine Development Plan 2023 – 2028</b>                      (Sectoral Plan: (1) Accelerate Climate Action and Strengthen Disaster Resilience, (2) Ensure Peace and Security, and Enhance Administration of Justice, (3) Strengthen Social Protection, (4) Promote Trade and Investments, and (5) Establish Livable Communities)</p> <p><b>Department of Science and Technology – Harmonized National Research and Development Agenda (DOST-HNRDA)</b>                      ((1) National Integrated Basic Research (2022 – 2028), and (2) Disaster Risk Reduction and Climate Change)</p>	<p><b>Central Luzon Regional Development Plan 2023 – 2028</b>                      (Sectoral Plan: (1) Accelerate Climate Action and Strengthen Disaster Resilience, (2) Ensure Peace and Security, and Enhance Administration of Justice, (3) Strengthen Social Protection, (4) Promote Trade and Investments, and (5) Establish Livable Communities)</p>	<p>Cross-Cutting Concerns</p>	<ol style="list-style-type: none"> <li>1. Disaster Risk Reduction</li> <li>2. Climate Change Adaptation and Mitigation</li> <li>3. Disaster and Emergency Preparedness</li> <li>4. Environmental Management and Protection</li> <li>5. Biodiversity Assessment</li> <li>6. Hazard Vulnerability and Risk Assessment</li> <li>7. Solid Waste Management and Infrastructure</li> <li>8. Air and Water Quality</li> <li>9. Gender-Based Violence</li> <li>10. Gender Sensitivity Studies</li> <li>11. Work Equity and Equality</li> <li>12. Role of Media in Development</li> <li>13. Land-use and Agricultural Land Preservation</li> <li>14. Crime Prevention and Public Safety</li> <li>15. Law Enforcement and Security Administration</li> <li>16. Criminal Justice System</li> <li>17. Sustainable Tourism Promotion</li> </ol>



# Approved University Research Agenda 2024-2026

## Agenda Alignment

International Alignment	National Alignment	Regional Alignment	Institutional Research Agenda	Priority Areas
<p><b>SDG 3</b> (Good Health and Well-Being)</p>	<p><b>Philippine Development Plan 2023 – 2028</b> (Sectoral Plan: (1) Boost Health, (2) Establish Livable Communities, (3) Advance Research &amp; Development, Technology, and Innovation, and (4) Reinvigorate Services)</p> <p><b>Department of Science and Technology – Harmonized National Research and Development Agenda (DOST-HNRDA)</b> (Health)</p> <p><b>National Unified Health Research Agenda (NUHRA) 2023 – 2028</b></p> <p><b>National Innovation Agenda and Strategy Document (NIASD) 2023 – 2032</b> (Pro-active, Smart, and Innovative People)</p>	<p><b>Central Luzon Regional Development Plan 2023 – 2028</b> (Sectoral Plan: (1) Boost Health, (2) Establish Livable Communities, (3) Advance Research &amp; Development, Technology, and Innovation, and (4) Reinvigorate Services)</p>	<p>Responsive Health System</p>	<ol style="list-style-type: none"> <li>1. Ethnobotanical and Natural Products</li> <li>2. Biomedical Devices Engineering and Frontiers in Health Technologies</li> <li>3. Mental Health</li> <li>4. Reproductive Health</li> <li>5. Health of Indigenous Cultural Communities</li> <li>6. Health Equity and Inclusion</li> <li>7. ICT for Health</li> <li>8. Health Promotion, Communication, and Education</li> <li>9. Health Literacy</li> <li>10. Healthy Governance</li> <li>11. Healthy Settings</li> <li>12. Maternal, Newborn, and Child Health</li> <li>13. Innovative Approaches in Health Promotion and Education</li> <li>14. Environmental Health and Sanitation</li> <li>15. One Health (Human Health, Animal Health, Environmental Health, and Plant Health)</li> </ol>



# Approved University Research Agenda 2024-2026

## Agenda Alignment

International Alignment	National Alignment	Regional Alignment	Institutional Research Agenda	Priority Areas
<p><b>SDG 1</b> (No Poverty)</p> <p><b>SDG 2</b> (Zero Hunger)</p>	<p><b>Philippine Development Plan 2023 – 2028</b> (Sectoral Plan: (1) Ensure Food Security and Proper Nutrition, (2) Modernize Agriculture and Agribusiness, and (3) Promote Human and Social Development)</p> <p><b>Department of Science and Technology – Harmonized National Research and Development Agenda (DOST-HNRDA)</b> (Agriculture, Aquatic, and Natural Resources)</p> <p><b>National Intellectual Property Strategy (NIPS) 2020 – 2025</b> (Promote Innovation and Utilization/Commercialization of IP Assets)</p> <p><b>National Innovation Agenda and Strategy Document (NIASD) 2023 – 2032</b> (Competitive and Resilient Economy)</p>	<p><b>Central Luzon Regional Development Plan 2023 – 2028</b> (Sectoral Plan: (1) Ensure Food Security and Proper Nutrition, (2) Modernize Agriculture and Agribusiness, and (3) Promote Human and Social Development)</p>	<p>Food Production, Safety, and Security</p>	<ol style="list-style-type: none"> <li>1. Functional Food</li> <li>2. Nutrition and Food Safety</li> <li>3. Dietary Status Assessments</li> <li>4. Market Assessment</li> <li>5. Food Technology and Development</li> <li>6. Agricultural Postharvest Technology Development</li> <li>7. Nutrition and Food Quality</li> <li>8. Food Availability and Accessibility</li> <li>9. Food Handling and Processing</li> <li>10. Standardization and Local Food Products and Processes</li> <li>11. Technologies for Smart Agriculture and Farming</li> <li>12. Agri-Food and Agribusiness System Development and Upscaling</li> </ol>



# University Board of Regents



**HON. RONALD L. ADAMAT**

*Commissioner, Commission on Higher Education*



**HON. ARNOLD E. VELASCO**

*President, Tarlac State University*



**HON. FRANCIS G. ESCUDERO**

*Chairman, Senate Committee on Education  
Represented by Atty. Lindley dela Cruz Santillan*



**HON. MARK O. GO**

*Chairman, Committee on Higher and Technical  
Education House of Representatives  
Represented by Hon. Norman Dennis T. Go*



**HON. JULIUS CAESAR V. SICAT**

*Director, Department of Science and Technology  
Region III*



**HON. NERRISA T. ESGUERRA**

*Regional Director, National Economic and  
Development Authority Region III*



**HON. REYNALDO L. CATACUTAN**

*Representative, TSU Alumni*



**HON. WINIFREDO L. LUIS**

*President, TSU Faculty Union*



**HON. CHERIE LYN F. ONIA**

*President, TSU Non-Academic Staff Association*



**HON. CHARLES TEREZ E.  
FERNANDEZ**

*President, TSU Supreme Student Council*



**HON. CHRISTINE ANNE CORAZON  
A. LAMORENA**

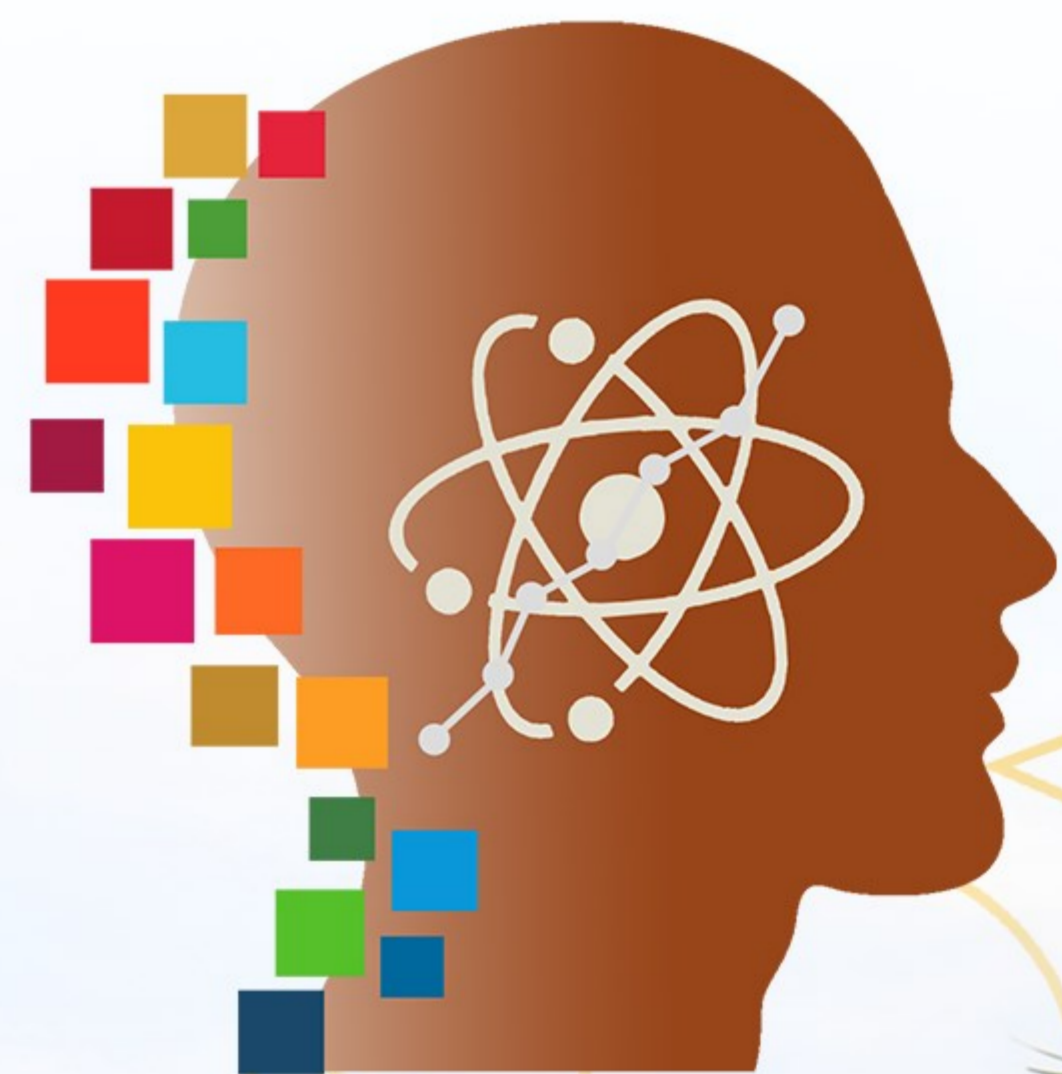
*Representative, Private Sector*



**HON. FIDEL S. FELICIANO**

*Representative, Private Sector*

# Office of University Research Development



**DR. ROBERT V. MARCOS**  
Director

**PROF. MARIA SHEILA G. MEDINA**  
Assistant Director

**MS. MARY ROSE B. JOYA**  
Administrative Aide IV

## *Research Publication and Information Communications Unit*

**PROF. MARIA SHEILA G. MEDINA**  
Unit Head

**MR. PRINCE JAMINN A. SOBERANO**  
Science Research Specialist I

**MR. BREN NOAH M. NIETO**  
Technical Staff

## *Research Management and Capacity-Building Unit*

**MS. ANGEL MIKAELA Z. NOVEDA**  
Unit Head

**MR. CARL TRISTAN D. PALMA**  
Research Assistant

**MS. KIMBERLY D. ARELLANO**  
Technical Staff

## *Data Analytics Unit*

**MR. ROMMEL G. GADIA**  
Unit Head

**MR. ROWELL A. SAGUIBO**  
Science Research Specialist I

**MS. CRISELDA A. FLORES**  
Technical Staff

## *Analytical and Testing Laboratory*

**MR. JAIDRIEL MEG G. CABANDING**  
Unit Head

**MR. ROMAN RAFAEL B. MANUCDOC**  
Science Research Specialist I

**MR. ELISHA JAMES T. TADENA**  
Science Research Specialist I

**MR. XYRIS GERARD A. FERNANDEZ**  
Science Research Specialist I

**MS. FAIRY MAE R. DELA CRUZ**  
Science Research Specialist I

## *Impact Assessment Unit*

**MS. REMAR A. SALVADOR**  
Unit Head



# RESEARCH 2024 **AGENDA** 2026

*Design and Layout by*

**Bren Noah M. Nieto**  
Technical Staff, OURD



**TARLAC STATE UNIVERSITY**

FORMER T.C.T. CONVERTED UNDER R.A. 6764 OCTOBER 13, 1989

CONGRESSMAN **JOSE V. YAP**

1ST DISTRICT, TARLAC



**OFFICE OF UNIVERSITY RESEARCH DEVELOPMENT**

RED Building, TSU Villa Lucinda Campus, Brgy. Binauganan, Tarlac City, Tarlac

(045) 606-8190 ■ [research@tsu.edu.ph](mailto:research@tsu.edu.ph) ■ [www.uro.tsu.ph](http://www.uro.tsu.ph)