



Republic of the Philippines
Department of Education
REGION VII – CENTRAL VISAYAS
Schools Division of Negros Oriental

Barcode/Track Number



852912024115246

Office of the Schools Division Superintendent

21 FEB 2024

DIVISION MEMORANDUM

No. 0145, s. 2024

**RESEARCH PARTNERSHIP: ANNOUNCING THE OFFICIAL RELEASE OF THE
CENTRAL VISAYAS REGIONAL DEVELOPMENT RESEARCH
AGENDA (CV-RDRA) 2023-2024**

To: OIC - Assistant Schools Division Superintendents
Chiefs, SGOD and CID
PSDSs/DICs/District Care Takers
Elementary and Secondary School Heads
Elementary and Secondary Teaching Personnel
Schools Division Research Committee (SDRC)
BERF and SEF Grantees
District & Alternate Research Coordinators
All Others Concerned

1. Enclosed is a copy of Regional Memorandum No. 089, s. 2024 Titled **Research Partnership: Announcing the Official Release of the Central Visayas Regional Development Research Agenda (CV-RDRA) 2023-2024** for the information and guidance of all concerned.
2. Further, the CV-RDRA 2023-2024 can be accessed or downloaded through this link <https://nro7.neda.gov.ph/wp-content/uploads/2024/01/CV-RDRA-2023-2028-Final.pdf>.
3. For questions and/or clarifications, you may contact the SEPS for Planning and Research at (035) 422 8511 or through email at dae.habalo@deped.gov.ph.
4. Immediate and wide dissemination of this Memorandum is desired.


NERI C. OJASTRO EdD, CESO V
Schools Division Superintendent

2/20/24

NCO/ EQA-RVAV /SGOD/REAR/dph
02/20/24



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Republic of the Philippines
Department of Education
REGION VII - CENTRAL VISAYAS

Office of the Regional Director

29 JAN 2024

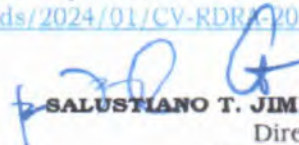
REGIONAL MEMORANDUM

No. **089** s. 2024

RESEARCH PARTNERSHIP: ANNOUNCING THE OFFICIAL RELEASE OF THE CENTRAL VISAYAS REGIONAL DEVELOPMENT RESEARCH AGENDA (CV-RDRA) 2023-2028

To: Schools Division Superintendents
Assistant Schools Division Superintendents
All Others Concerned


1. This Office, through the Policy, Planning, and Research Division (PPRD) announces the official release of the **Central Visayas-Regional Development Research Agenda (CV-RDRA) 2023-2028** as the harmonized and unified research agenda of the Regional Development Council (RDC) which is intended to be used as a reference by all RDRC members who want to be involved in providing studies and recommendations that can be used by the RDC, its committees and network of the private sector and non-government stakeholders for their development policies, projects, and business decisions at the local and regional levels.
2. As per overview, the document highlighted the following key details:
 - a. the RDRA is intended to maximize the capacity of the region's research and development (R&D) manpower to support the implementation of the region's priority development thrusts and facilitate decentralized development;
 - b. the implementation of the RDRA is expected to (1) increase the stock knowledge relevant and applicable to the CV-RDP by providing the evidenced-based findings to generate new or improved perspectives, products, processes, and services, and (2) increase the utilization of the region's research outputs to impact key areas of change in the 2023-2028 Philippine and Regional Development Plans that will redound to realizing the country's longterm vision-the *AmBisyon Natin 2040*; and
 - c. the research agenda is designed as a roadmap for the RDRC so that research topics that will be identified are those that will contribute to the region's sound decision making, policy and practice, and increase the capacity of members to conduct and utilize research.
3. In this connection, the Department of Education Region VII-Central Visayas as one of the government agencies that is an RDRC member shall focus on the strategic framework for improving education and research themes on *pedagogical competence, responsive and sustainable pedagogical practices, teaching and learning, human resource development, education governance, school-community partnerships, and evaluation studies of the basic education sector* among others.
4. In addition, in consonance with DepEd Region VII's Research and Innovation Guidelines, the Regional Office (RO) and Schools Division Offices (SDOs) shall take part in the Advanced R&D, Technology, and Innovation, specifically in strengthening basic research and development and knowledge creation through nurturing a supportive environment for R&D, increasing number of partnerships for R&D development, and mapping the regional innovative and creative ecosystems by increasing financing opportunities for innovation-related programs, activities, and projects.
5. For more details on the basic research agenda and themes, enclosed is CV-RDRA 2023-2028.
6. Also, all of the relevant interested parties may access the said document through this link: <https://nro7.neda.gov.ph/wp-content/uploads/2024/01/CV-RDRA-2023-2028-Final.pdf>.
7. For immediate dissemination.


SALUSTIANO T. JIMENEZ JD, EdD, CESO V
Director IV
Regional Director

STJ/FYA/PPRD/IBDT/smtc



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 DepEd Tayo Region VII

 region7.deped.gov.ph



CENTRAL VISAYAS REGIONAL DEVELOPMENT RESEARCH AGENDA

2023 - 2028



Message



I would like to congratulate the members of the Regional Development Research Council for coming up with the Regional Development Research Agenda (RDRA) 2023-2028, an accompanying document of the Central Visayas Regional Development Plan (CV-RDP) 2023-2028. A series of workshops and consultations were conducted to formulate the RDRA and harmonize it with the CV-RDP. The Central Visayas Regional Development Council passed Resolution No. 49 (s. 2023) approving the RDRA 2023-2028 during its 3rd Quarter Full Council Meeting on September 15, 2023 in Dumaguete City, Negros Oriental.

Thus, I encourage our development partners and stakeholders to use the RDRA as a reference in conducting research studies. Through this document, we hope to promote a more coordinated and collaborative research ecosystem, maximizing every resource there is in the region. I also encourage the RDC Sectoral Committees to use the outputs of the research studies as bases in recommending programs, activities, and projects (PAPs) to be implemented in the region. This will help the region achieve the medium-term targets of the CV-RDP, and the long-term vision embodied in *AmBisyon Natin 2040*.

With the RDRA and the CV-RDP as our guide, let us work together to achieve a Sustainable and Inclusive development, propelled by an Empowering and Technology-driven Economy, with Transparency and Accountability in Central Visayas. *SIETE TA!*

A handwritten signature in black ink, appearing to read 'Erico Aumentado', written over a circular stamp or seal.

GOV. ERICO ARISTOTLE C. AUMENTADO
RDC 7 Chairperson

Preface




The Central Visayas Regional Development Council (RDC 7) approved the Central Visayas Regional Development Plan (CV-RDP) 2023-2028, the main blueprint for the development of Central Visayas, during its First Quarter Full Council Meeting on March 16, 2023.

Anchored on *AmBisyon Natin 2040*, the CV-RDP 2023-2028 aims to reinvigorate job creation and accelerate poverty reduction by steering the economy back on the high growth path which requires an economic and social transformation, not only of the economic sectors at large, but of individuals and families as well.

To complement and strengthen the strategies of the CV-RDP 2023-2028, the Regional Development Research Agenda (RDRA) 2023-2028 was formulated through an iterative process, building upon the strengths and priorities of the Regional Development Research Council (RDRC). With this process, the RDRC members aim to focus their research and development efforts to support the identified strategies in the RDP and produce tangible results to support the decision-making process of the RDC, its committees, and network of private sector and non-government stakeholders in terms of formulating evidence-based policies, designing responsive programs and projects, and creating innovative products, processes and systems.

We hope that the RDRA will be used as a reference by the region's development stakeholders in conducting research to achieve a "*matatag, maginhawa, at panatag na buhay para sa lahat.*"


JENNIFER C. BRETaña, EnP
NEDA 7 Regional Director and RDRC 7 Chair



REPUBLIC OF THE PHILIPPINES

**REGIONAL DEVELOPMENT COUNCIL
CENTRAL VISAYAS REGION**

**EXCERPT FROM THE MINUTES OF MEETING OF THE
CENTRAL VISAYAS REGIONAL DEVELOPMENT COUNCIL
HELD ON 15 SEPTEMBER 2023 IN DUMAGUETE CITY AND
VIA ZOOM VIDEOCONFERENCE**

RDC Resolution No. 49 (S. 2023)

**"APPROVING THE CENTRAL VISAYAS
REGIONAL DEVELOPMENT RESEARCH AGENDA
(CV RDRA) 2023-2028"**

WHEREAS, on 16 March 2023, during its first quarter full council meeting, the Regional Development Council (RDC) 7 approved the Central Visayas Regional Development Plan (CV RDP) 2023-2028, the main blueprint for the development of the region;

WHEREAS, to complement and strengthen the strategies of the CV RDP 2023-2028, the Regional Development Research Agenda (RDRA) 2023-2028 was formulated through an iterative process during a formulation workshop on 06-07 December 2022;

WHEREAS, the RDRA contains two lists of research works, the first of which is the list of studies proposed in the CV RDP, and the second is the list of research projects already being undertaken or planned to be undertaken by the RDRC members based on the research themes identified during the workshop;

WHEREAS, the Regional Development Research Council (RDRC) members aim to focus their research and development efforts and produce tangible results to aid in the decision-making process of the RDC, its sectoral committees, and network of private sector and non-government stakeholders in formulating responsive policies, designing better programs and projects, and creating new products, processes and systems;

WHEREAS, the RDRC, during its second semester meeting on 16 August 2023, passed RDRC Resolution No. 1 (s. 2023), adopting the RDRA and endorsing the same to the RDC Sectoral Committees for their subsequent endorsement to the RDC Full Council;

WHEREAS, the CV RDRA was presented to the RDC Sectoral Committees, notably the research projects proposed by the CV RDP and the research themes under their respective sectors.

- a) The Development Administration Committee, during its 3rd quarter meeting on 22 August 2023, added the research theme "cost-benefit analysis of nature-based solutions".
- b) The Social Development Committee, during its 3rd quarter meeting on 24 August 2023, added the research themes "school-community partnerships" and "evaluation studies of the basic education sector," including but not limited to curricula, guidelines, standards, programs, activities, and projects;
- c) The Infrastructure Development Committee and the Economic Development Committee made no additions to the CV RDRA during their 3rd quarter meetings on 24 August 2023 and 25 August 2023, respectively;

WHEREAS, all four sectoral committees passed their respective resolutions recommending RDC Full Council approval of the CV RDRA 2023-2028.

NOW THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, to approve of the Central Visayas Regional Development Research Agenda (CV RDRA) 2023-2028.

Certified Correct:


DOLORES J. MOLINTAS
RDC Secretary

Attested:


JENNIFER C. BRETANA
RDC Vice Chairperson

Approved:


ERICO ARISTOTLE C. AUMENTADO
RDC Chairperson

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Part I. Introduction

Overview of the CV-RDRA

The RDRA is the harmonized and unified research agenda of the Regional Development Council (RDC). It is intended to be used as a reference by RDRC members who want to be involved in providing studies and recommendations that can be used by the RDC, its committees, and network of private sector and non-government stakeholders for their development policies, projects, and business decisions at the local and regional levels.

The RDRA is intended to maximize the capability of the region's research and development (R&D) manpower to support the implementation of the region's priority development thrusts and facilitate decentralized development.

The implementation of the RDRA is expected to (1) increase the stock of knowledge relevant and applicable to the Central Visayas Regional Development Plan (CV-RDP) by providing the evidence base to generate new or improved perspectives, products, processes, and services; and (2) increase the utilization of the region's research outputs to impact key areas of change in the 2023-2028 Philippine and Regional Development Plans that will redound to realizing the country's long-term vision—the *Ambisyon Natin 2040*.

The research agenda is designed as a roadmap for the RDRC so that research topics that will be identified are those that will contribute to the region's sound decision making, policy and practice, and increase the capacity of members to conduct and utilize research. Comprising the RDRA are research themes identified to be the areas of focus for the next six years based on the RDP and the 8-point Socioeconomic Agenda of the President. The research themes were identified during the RDRA Formulation Workshop on 06-07 December 2022.

Aside from research themes, the RDRA also contains specific studies identified in the CV-RDP. These studies have descriptions and research objectives to guide prospective researchers in pursuing them.

RDRA 2023-2028 Strategy Framework

The RDRA strategy framework is aligned with the strategy framework of the CV-RDP. Hence, the strategy framework of the CV-RDP, as shown in Figure 1, is also the RDRA framework. Each chapter of the RDRA has corresponding specific studies as identified by the CV-RDP and research themes identified during the series of workshops conducted for the RDRA.

The Central Visayas RDP 2023-2028 takes off from the national agenda in the Philippine Development Plan (PDP) 2023-2028. It is also guided by the 8-point socioeconomic agenda of the President. The RDP reflects the socioeconomic agenda and strategic priorities of Region 7 in support of the PDP's overall goal of job creation, poverty reduction, and social and economic transformation.

The RDP strategies are organized according to the following objectives: (1) develop and protect capabilities of individuals and families, (2) transform production sectors to generate more quality jobs and produce competitive products, and (3) foster an enabling environment that promotes a prosperous, inclusive, and resilient society.

Figure 1. Strategy Framework CV RDP 2023-2028



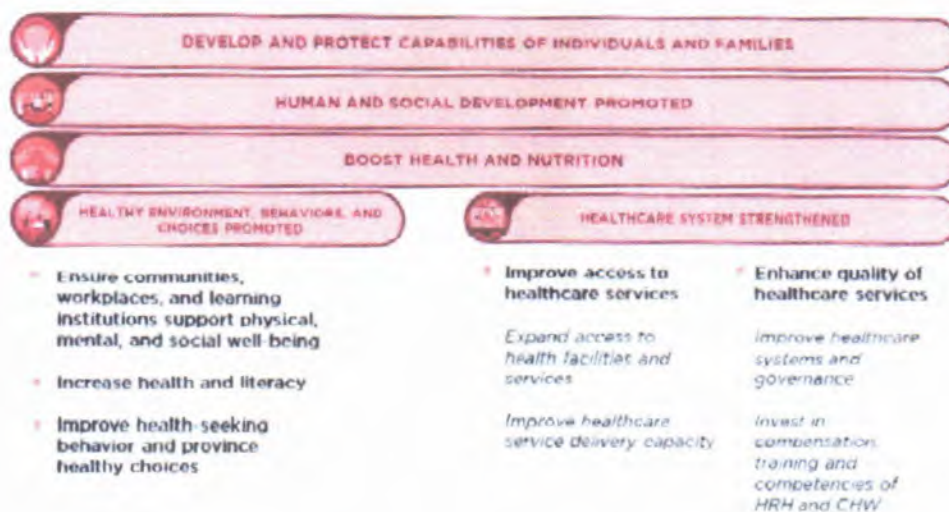
PART II. Research Agenda 2023-2028

Chapter 4.1: Boost Health and Nutrition

Strategy Framework

Central Visayas aims to boost health and nutrition to promote human and social development. A holistic approach to health will be adopted that includes strengthening healthcare systems and service delivery, boosting health infrastructure, and promoting healthier lifestyle.

Figure 2: Strategy Framework Boost Health and Nutrition



Research Themes

Healthcare Management. Studies under this theme aim to promote improved access to quality hospitals and healthcare services, and provide advanced healthcare facilities. Research may generally align with areas that promote Universal Health Care, or “*Kalusugan Pangkalahatan*.” These may include healthcare financial management and financial risk reduction, improved access to quality hospitals and health care services, staff management, data management, patient security, and infrastructure support systems, among others. Policy research on health subsidies and taxation may also be undertaken.

Aligned with this research theme is the program area on **digital and frontier health technologies**—one of the 2023-2028 health research and development agenda of the DOST. This program area aims to address the need for efficient, equitable, and affordable healthcare system and patient

management through evidenced-based policy making and innovative healthcare interventions via research and development of tools utilizing artificial intelligence and new fields of information and communication technologies in digital health. Priority areas include artificial intelligence in healthcare empowered data analytics, and healthcare applications, and assessment and development of ICT-enabled health delivery services.

Medical Care. The focus of the research is centered upon patient care. Its main target is addressing the proper steps to manage illness and providing medical solutions for the physical and mental well-being of the patient including pre- and post-treatment care should it be required. Development of medicines using indigenous products with application of contemporary development breakthroughs is also encouraged.

Aligned to this research theme are the two program areas of the DOST's Health Research and Development Agenda 2023-2028: [drug discovery and development](#) and [diagnostics](#).

The drug discovery and development program area envisions producing world-class medicines derived from the Philippine biodiversity, leveraging on local expertise. It also involves the development of standardized herbal drugs and discovery of new drug candidates from local terrestrial and marine sources for development up to the clinical stage. Drugs will be developed for infectious diseases and non-communicable diseases.

The diagnostics program focuses on the development of rapid, cost-effective, and minimally invasive diagnostic kits/devices/tools/tests for early detection and monitoring of communicable/infectious diseases, non-communicable diseases, and neglected tropical diseases in the Philippines, by utilizing existing and/or novel techniques or technologies. Priority diseases include communicable diseases (respiratory diseases, HIV, hepatitis, neglected tropical diseases), and non-communicable diseases (cancer, diabetes, cardiovascular diseases). This research area also includes research advancements for early detection and/or monitoring of communicable diseases and substance abuse, development of tools/tests for detection of Leptospirosis, rabies and soil-transmitted helminthiasis, and diagnostics.

Infectious Diseases Management. This research theme looks into establishing control measures such as standard precautions in combination with the ability to identify the causative agent, and control any unknown disease before it spreads. The research may also include strengthening the capabilities of healthcare workers to curb the transmission of infectious diseases by way of instigating hand hygiene, respiratory etiquette, and the using of personal protective equipment as the three methods of infection control.

One of the program areas of the DOST's Health Research and Development Agenda 2023-2028 that can be aligned to this research theme is the [re-emerging and emerging diseases](#). This program

aims to utilize research to develop local technology platforms, therapeutics, surveillance, control and management protocols against re-emerging and emerging diseases. Priority areas include novel therapeutics and drug delivery systems, epidemiological research, preventive interventions (vaccine, and other modalities), and early warning, patient support and biosecurity, bio-preparedness systems/platforms against emerging and re-emerging diseases, including pandemic and endemic responses.

Health Promotion and Health Care Innovation. The focus of this area is to promote studies on health, empowering people to help build the ideal health care system, especially for the vulnerable populations (aged, children, persons with disabilities, etc.). The research may include technological advancement for the management of diseases, health services delivery, and care, as well as discovery and development of medical drugs and herbal products.

Mental Wellness and Resilience. The focus of the research is to promote studies on mental health and shall involve responses of physicians, medical students and other health workers to unforeseen stressors in the workplace. The research may include mental health issues, coping mechanisms, and interventions.

Mental Health is also one of the program areas of the 2023-2028 health research and development agenda of the DOST which supports research on quality, effective, and culture- appropriate mental health R&D innovations. Priority areas include social determinants for health, inventory and evaluation of mental health interventions, standardization of mental health services, ICT for mental health, diagnostics and Omics technology for mental health, and evaluation and development of treatments for mental illnesses and neurologic disorders.

Health Sufficiency and Resiliency/ Telehealth Services. This covers research that provide data and solutions to emerging and re-emerging diseases, offers alternative health initiatives for disease control and management, promotes wellness and prevention of disease, and evaluates existing policies on health, with special attention to the marginalized sectors of society and vulnerable populations. Anchored by the theory of distributive justice, the goal is to ensure that access to health is not only focused on a particular group of individuals, not even the least well off, but rather each and everyone in the community regardless of the socioeconomic status—ensuring that health is sufficient for all. The research also includes establishing preparatory activities and recovery plans that can strongly withstand crises with consideration to the community's vulnerability.

Health Sufficiency is one of the six issue-based agenda in the National Integrated Basic Research Agenda (NIBRA). For 2022-2028, areas for research include fundamental studies on potential sources of natural products from rare environments and endemic species and basic veterinary studies.

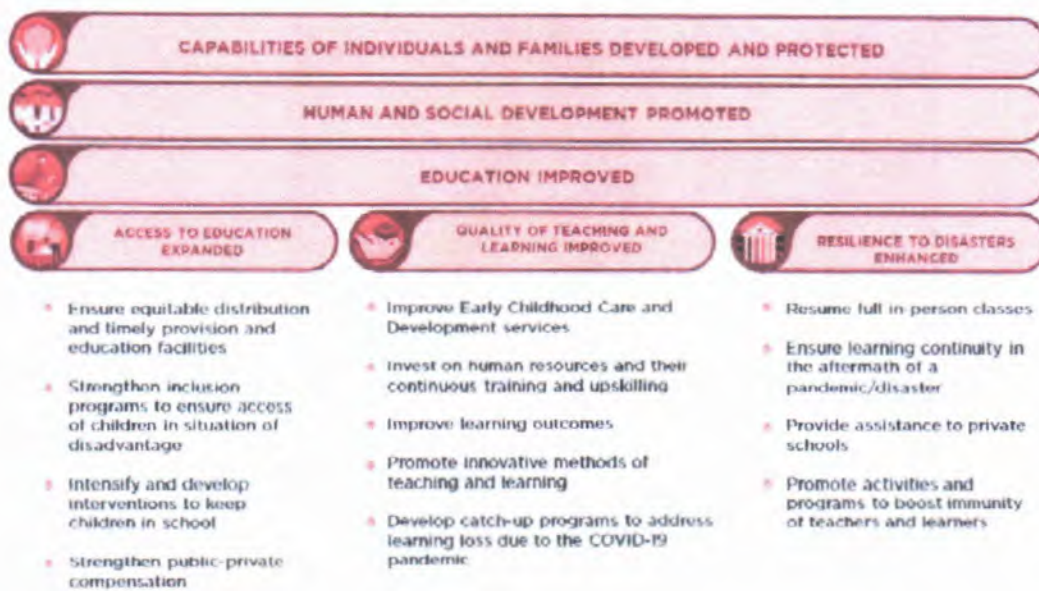
Nutrition and Food Safety. This is one of the program areas of the 2023-2028 health research and development agenda of the DOST which aims to address the improvement of the Filipinos' health through research-based solutions for proper nutrition and safe food. Priority areas include nutrition (malnutrition and infectious diseases, pre-pregnancy and perinatal nutrition for women above age 35, intervention studies on GIDA communities, nutritional assessment of individuals with physical and mental/intellectual disabilities, personalized diets through nutrigenomics and eating disorders, prevalence and efficacy of fad diets), and food safety dietary exposure assessment of selected chemical hazards and microbiological hazards/pathogens in food, tech-enabled traceability, smarter tools and approaches for prevention and outbreak response, R&D to foster, support and strengthen food safety culture and on food safety and security, use of omics technologies for food safety, studies on predictive microbiology and intervention technologies to identify mitigation steps to reduce contamination during food production and processing and on the mechanism of foodborne pathogens).

Chapter 4.2: Improve Education

Strategy Framework

Improving education is key to promoting human capital and social development. Towards this end, the government will work hand in hand with the private sector and other stakeholders to achieve the outcomes of wider access to quality education, improved quality of teaching and learning, and enhanced resilience of the sector to disasters.

Figure 3: Strategy Framework Improve Education



Research Themes

Pedagogical Competence. This area is about improving instructional competence through innovative teaching and learning practices. The fundamental research may focus on remediation programs, flexible instructional materials, and telemedicine, among others, to bridge the gap between theory and practice and produce graduates with skills that address emerging societal issues.

Responsive and Sustainable Pedagogical Practices. This includes research that explores the establishment of flexible and effective modes of learning including but not limited to alternative and digital learning systems, while pursuing accessible and affordable education without compromising the needs neither of the teacher nor the learner. The research may involve

promoting Global Citizenship Education (GCED), e.g. inclusivity, cultural relevance, and respect for diversity, Education for Sustainable Development (ESD), and Design Thinking.

Teaching and Learning. This is one of the research themes of the DepEd's Basic Education Research Agenda that seeks to ensure that learning outcomes are achieved by maximizing the competencies of teachers and potentials of all types of learners. This theme thus covers the actors, activities, and fundamental aspects of teaching and learning in various contexts. Specifically, the Research Agenda looks into the strategies, best practices, and facilitating and hindering factors relative to five sub-themes, namely: instruction, curriculum, learners, assessment, and learning outcomes.

Human Resource Development. This is one of the research themes of the DepEd's Basic Education Research Agenda that involves various strategies developed to nurture the vast human capital involved in delivering basic education. Research questions will delve into three subthemes: (1) teaching and non-teaching qualifications and hiring; (2) career development; and (3) employee welfare.

Education Governance. This is one of the research themes of the DepEd's Basic Education Research Agenda that covers planning, finance, program management, transparency and accountability, and evaluation. This underscores DepEd's commitment to ensure that its structure, systems, and processes contribute to the achievement of basic education outcomes.

School-Community Partnerships. This area seeks to explore the various modes of effective school-community partnerships to enhance the attainment of learning outcomes by students.

Evaluation Studies of the Basic Education Sector. This research area seeks to explore and understand the root causes of the persistent problems of the basic education sector. Studies in this area shall include policy recommendations to directly address these persistent issues.

Studies Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to improve education.

<p>Research title/topic Improving the socio-economic welfare of Child Development Workers (CDWs)</p>	<p>Research objective</p> <p>Propose policy recommendations to improve the socio-economic welfare of Child Development Workers (CDWs).</p>
<p>Rationale</p> <p>Early childhood care and development services need to be improved. Child Development Workers (CDWs) are crucial in the delivery of these services. However, CDWs are difficult to hire due to lack of security of tenure, low wage, and difficulty working conditions.</p>	

<p>Research title/ topic Review of the K-12 program</p>	<p>Research objective</p> <p>Systematically reduce the number of learning areas to focus on foundation skills, literacy and numeracy programs, while Reading, Science and Technology, and Mathematics programs will be revitalized.</p>
<p>Rationale</p> <p>In order to improve learning outcomes, curriculum, instruction, and assessment need to be aligned with current and emerging industry and global standards. The enhanced K-12 program should be able to produce graduates who are readily employable, better-equipped with critical thinking and problem-solving skills, and imbued with the skills and capacities needed to be productive and active citizens of the country.</p>	

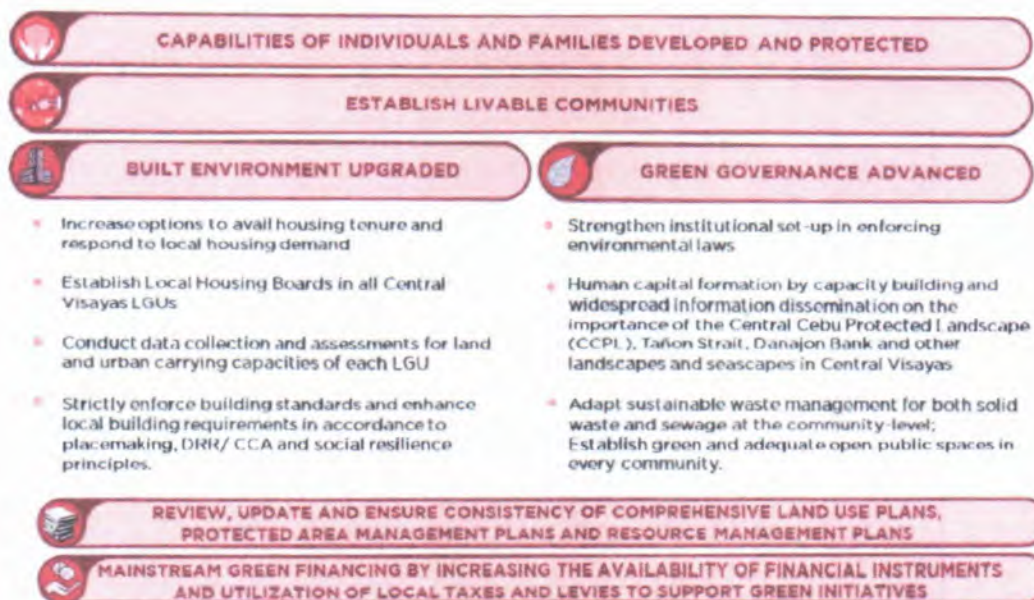
<p>Research title/ topic Review of the mother tongue-based Multilingual Education policy</p>	<p>Research objective</p> <p>Assess the effectiveness of the mother tongue-based multilingual education policy in achieving learning outcomes.</p>
<p>Rationale</p> <p>There is currently no study to assess the effectiveness of the mother-tongue based Multilingual Education Policy. Amid the prevailing clamor to improve the English proficiency of students, there is a need to assess the current mother-tongue based education.</p>	

Chapter 4.3: Establish Livable Communities

Strategy Framework

In order to enhance livability of communities in Central Visayas, the region shall upgrade the built environment and advance green governance. These two outcomes shall be supported by sustained efforts to strengthen planning and green financing.

Figure 4: Strategy Framework Establish Livable Communities



Research Themes

Effective and Sustainable Transport Systems. Research work in this area may entail designing effective systems that enable the efficient, appropriate, rapid, sustainable, and reliable inter-island transport for everyone, including the availability and ease in transporting goods from the farms/source to market. This also includes designing a transport system, whether land-based or sea-based, that utilizes clean energy sources for operation and applied research and technology transfer to further the knowledge in the field of transportation and to solve transportation problems (i.e, strategies to decongest traffic, traffic/road signage, lighting and surveillance, road construction materials and processes, etc.).

Migration studies to identify factors in the massive development of slums and informal settlements, especially in Metro Cebu, may also be explored.

Studies, projects, or initiatives will focus on developing new green technologies to reduce mass transport costs and conserve the environment; feasibility of mass transport system; creation of 'pocket' areas which are self-sufficient and sustainable (i.e. locating schools, work areas, health facility, entertainment facilities in a certain area to reduce the need to move/travel for school, work or leisure); use of biofuel, methane, hydrogen, solar PV battery system, and other clean energy sources for the operation of transport vehicles.

Sustainable and Livable Communities. This research theme entails promoting green and sustainable practices for rural and urban communities while preserving biodiversity and the environment. This may include pollution studies (e.g., macro and microplastics) in marine resource areas to influence the development of environmental conservation policies to enhance fish stocks and develop the blue economy.

Sustainable Communities is one of the six issue-based agenda in the National Integrated Basic Research Agenda (NIBRA). For 2022-2028, areas for research include vulnerable ecosystems (lakes, rivers, wetlands, seas, and oceans), greening mined out areas in the Philippines (GMAP), risk communication studies for disaster management, and biodiversity and ecosystem studies. Importantly, evaluation studies on the effectiveness of in-situ or ex-situ housing and resettlement projects can be conducted to inform future policies and projects.

Community-driven development (CDD) approaches to public housing and resettlement programs can be explored to include various modes of housing financing, such as housing microfinancing, that will make housing more affordable for low-income and informal settler families that are exponentially growing in the region, especially in Metro Cebu.

Creating Public Spaces. This research theme will investigate the promotion green and open public spaces for public use or recreational functions, such as parks, plazas and street spaces. Studies, projects or initiatives include the assessment of existing parks for possible enhancement, identification of new areas where additional green and open public spaces will be established, inventory of existing lands and their conditions, developing policies and design for open space, constructing effective and efficient transport network to promote healthy lifestyle and increase public access to the physical and mental health of green spaces. These studies, projects or initiatives can be fully implemented within the plan period; however, an impact evaluation shall be conducted to measure its contribution to the overall goal of establishing sustainable and livable communities.

Carrying Capacity. Studies under this theme will determine the limit of an area's resources to preserve them for future generations. The focus of research will be on data collection and

assessments to set the baselines, thresholds and targets of land and urban carrying capacities. These include land cover, resource use, environmental impact, infrastructure services, economic, fiscal and tourism capacity. Study results can be used in updating comprehensive land use plans (CLUPs), policy development, and support in decision-making, particularly in formulating the necessary local regulations and standards that can control urban growth, prevent the exacerbation of existing issues on urban degradation, and unequal access to livelihood and production.

Studies Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to establish livable communities.

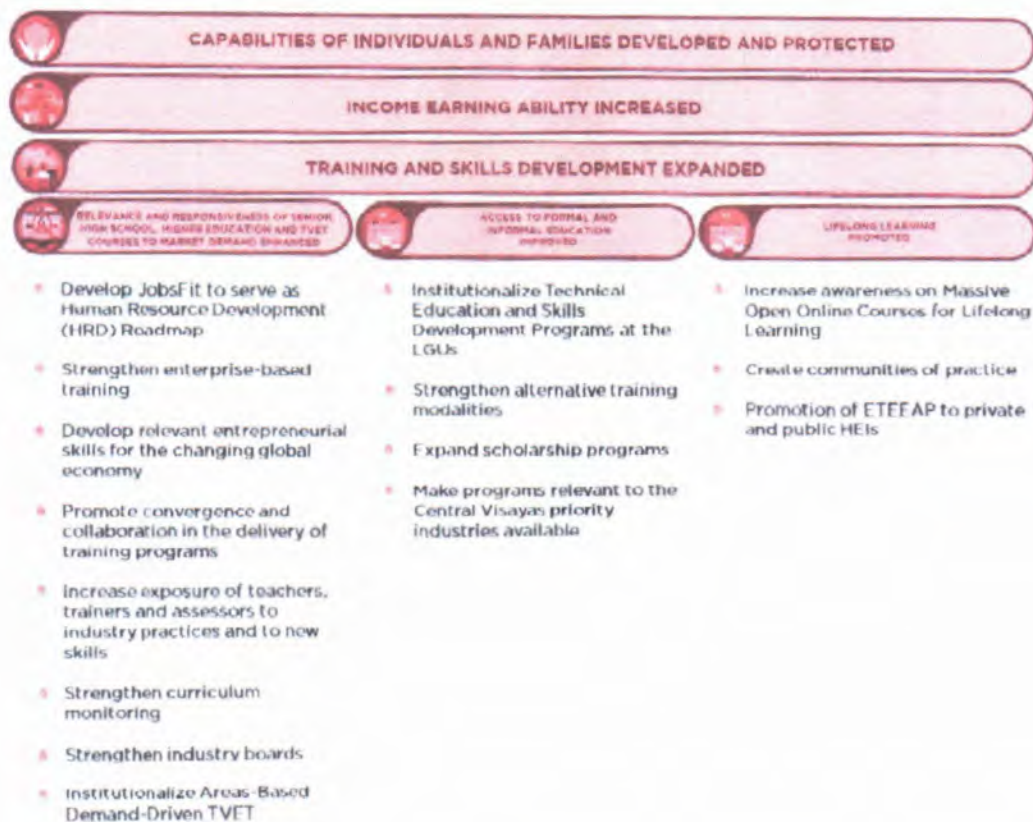
<p>Research title/ topics Data collection and assessment of various land and urban carrying capacities</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Gather data that will be used as baseline targets for CLUPs and in reviewing and updating local building ordinances to prevent issues on urban degradation, unequal access to livelihood and production, and urban sprawl 2. Determine land and urban carrying capacity of critical urban areas
<p>Rationale This can be used by LGUs in establishing the baseline targets for their respective Comprehensive Land Use Plans (CLUPs). The data collected and gathered will also be used by office of the building official in reviewing and updating local building ordinances that will prevent the exacerbation of issues on urban degradation, unequal access to livelihood and production, and urban sprawl.</p>	

Chapter 5.1: Expand Training and Skills Development

Strategy Framework

Central Visayas aims to expand training and skills development of its human resources to boost their income earning ability. To do so, the region shall pursue programs, activities, projects, and policies that will contribute to the realization of the following outcomes: (a) enhancement of the relevance and responsiveness of education and training courses to market demand; (b) improvement of the accessibility of the population to formal/informal education and training programs; and (c) advancement of lifelong learning.

Figure 5: Strategy Framework Expand Training and Skills Development



Research Themes

Upskilling (and Upscaling). This theme is improving the employability of individuals and enhancing the environment and natural resources to sustain jobs. Studies, projects or initiatives will focus on enhancing one's technical skills and produce a highly competitive labor force which

its many forms, its impact on people's lives, and the importance of human capital investment by examining the social and economic returns, taking account its cost. This also involves studies addressing the need to enhance knowledge and skills to be able to fully participate and contribute to a knowledge-based economy with consideration on one's access to lifelong learning; knowing how skills are sought, obtained, used and rewarded in the labor market; and understanding how firms acquire, use and lose human capital.

Jobs and Skills Matching. Studies under this theme will explore ensuring that the supply and demand side in the labor market achieves balance. Studies, projects, or initiatives include assessing individual skills, skill use measures, and anticipation of skills which can be explored from the following: quantitative employment projections by sector and occupation or forecasting; qualitative methods, including focus group discussions, expert interviews, foresights and scenario development; surveys among employers (establishments or enterprises); tracer studies of school/training graduates; and transition surveys from school to work.

Resiliency Towards Work. This theme includes studies on developing the adaptive capacity to respond to challenges and risks at work and being able to better cope with these risks. Studies, projects, or initiatives may include those related to increasing work engagement, job satisfaction, and organizational commitment. An environmental scanning research from the situation and labor market landscape can also be explored, as well as the assessment of the skills of workers when it comes to adaptability, technology know-how, creativity and innovation, critical thinking, emotional intelligence, and leadership skills necessary to survive and thrive.

Study Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to increase income-earning ability.

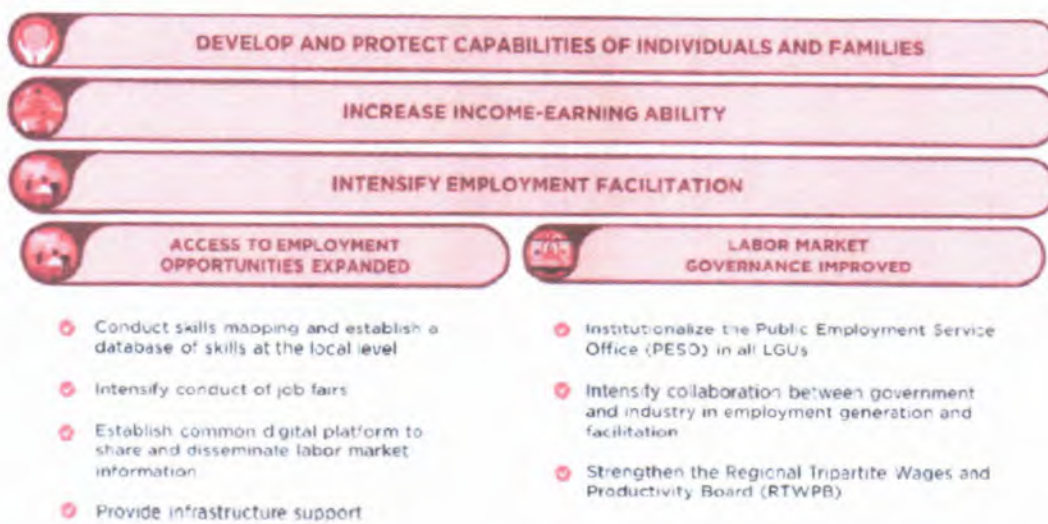
<p>Research title/ topics Assess the effectiveness of the outcome-based education for higher education and competency-based education for K-12</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Strengthen curriculum monitoring of HEIs and Senior High Schools on outcomes-based education 2. Develop appropriate policy, based on the results of the study, to ensure effective delivery of higher education and basic education.
<p>Rationale The RDP highlighted the importance of strengthening curriculum monitoring by HEIs and senior high schools to ensure proper implementation. The study's findings will be used as basis for CHED and DepEd to adjust programs standards and guidelines in higher education and basic education.</p>	

Chapter 5.2: Intensify Employment Facilitation

Strategy Framework

Central Visayas aims to intensify employment facilitation to boost their income earning ability. To do so, the region shall pursue programs, activities, projects, and policies that will contribute to realize (a) the expansion of access to employment opportunities, and (b) improvement of labor market governance.

Figure 6: Strategy Framework Intensify Employment Facilitation



Research Themes

Increasing Employability. This area of research looks into ensuring that the education and training provided by the academe and training institutions are aligned with industry needs to mitigate unemployment and displacement of available labor force. The projects, programs, and/or initiatives may include the provision of in-service or professional modular programs using blended modality designed to upskill and/or retool employees for Industry 4.0. Alternative models of education and training can be explored to reach the grassroots of society. New programs can be proposed, or existing programs can be assessed for improvement, to assist the displaced or unemployed labor force.

Human Capital Investment. This theme includes studies on allocating the necessary financial resources to build and add value to an individual's skills and competences such that the quality of work is improved. Studies, projects, and initiatives may include understanding human capital in

can be done through provision of skills training and in-service or professional modular programs using blended modality, establishment of alternative learning institutions and methods to reach beneficiaries at the barangay level and matching of local resources and skills with those of the requirements of the industry. Both quantitative and qualitative methods will be used. An impact evaluation study may be conducted to measure its contribution to the overall goal of creating more jobs in the region.

Lifelong Learning. The focus of this research is on personal and professional development through self-initiated education. Studies, projects, or initiatives include assessment and inventory of courses and programs that can be availed of from various massive open online courses (MOOCs); learners' awareness and appreciation of the MOOCs and other self-initiated education; assessment and evaluation of the Expanded Tertiary Education Equivalency and Accreditation Program (ETEEAP), its contribution and effectiveness and acceptance by private and public Higher Education Institutions.

Technical and Vocational Skills Development (TVSD). This area shall look into improving the competitiveness of individuals by developing their technical and vocational skills. This can be done by acquiring knowledge, competencies, know-how and attitudes demanded by industries. Studies, projects, or initiatives will focus on seeking innovative and alternative financing schemes for technical and vocational skills development; ways to engage the private sector to stimulate employment and address mismatch; rethinking pedagogy and teaching in TVSD to match with national and regional needs; and identify government mechanisms to create an enabling environment for TVSD. These studies, projects or initiatives can be fully implemented within the plan period. However, an impact evaluation shall be conducted to measure its contribution to expanding training and skills development.

Acquiring New Skills. Studies under this theme will look into updating teachers, trainers and assessors on the latest industry practices and technologies used. Studies include policy development to promote the adoption of industry immersion programs and developing a pool of qualified trainers/ instructors for emerging skills. Industry immersion shall help exposing them to actual workplace situations and provide them with practical learnings.

change and disasters), modern technology and innovative approaches to farming and fishing to improve food production and ensure sustainability of food supply. Both quantitative and qualitative methods will be used. These studies, projects or initiatives can be fully implemented within the plan period and an impact evaluation study may be conducted to measure its contribution to the overall goal of ensuring food security in the region.

Food Accessibility. Studies under this theme will investigate the ability and capability of families (regardless of income status) to always obtain nutritious food, whenever and wherever possible. Studies, projects, or initiatives to improve food access shall include the improvement of supply chain activities through continued implementation of farm-to market roads (FMRs), efficiency of logistics and food distribution systems, and regulating government processes to ensure affordability of basic commodities. Both quantitative and qualitative methods will be used. These studies, projects or initiatives can be fully implemented within the plan period and an impact evaluation study may be conducted to measure its contribution to the overall goal of ensuring food security in the region.

Food Utilization. This refers to the proper biological use of food requiring diet providing sufficient energy and essential nutrients, potable water, adequate sanitation, food storage and processing, according to the Food and Agriculture Organization of the United Nations. Studies, projects, or initiatives shall be aimed at minimizing wastage through optimum process utilization and value adding of food products to achieve maximum value. Impact evaluation studies may be conducted within the plan period to measure the result.

Food Security and Nutrition. This theme will involve studies on having food supply that meets the food consumption needs and dietary requirements of every individual in the region. This includes research that addresses local food demand, ensures efficiency of transport of food from farm to market, develops food innovation and technology utilizing food surplus, improves food business and economic sustainability, and assures safety of raw and processed food products produced by MSMEs. Both quantitative and qualitative methods will be used. Impact evaluation studies of fully implemented projects and interventions may be conducted to measure its contribution to the overall goal of ensuring food security in the region.

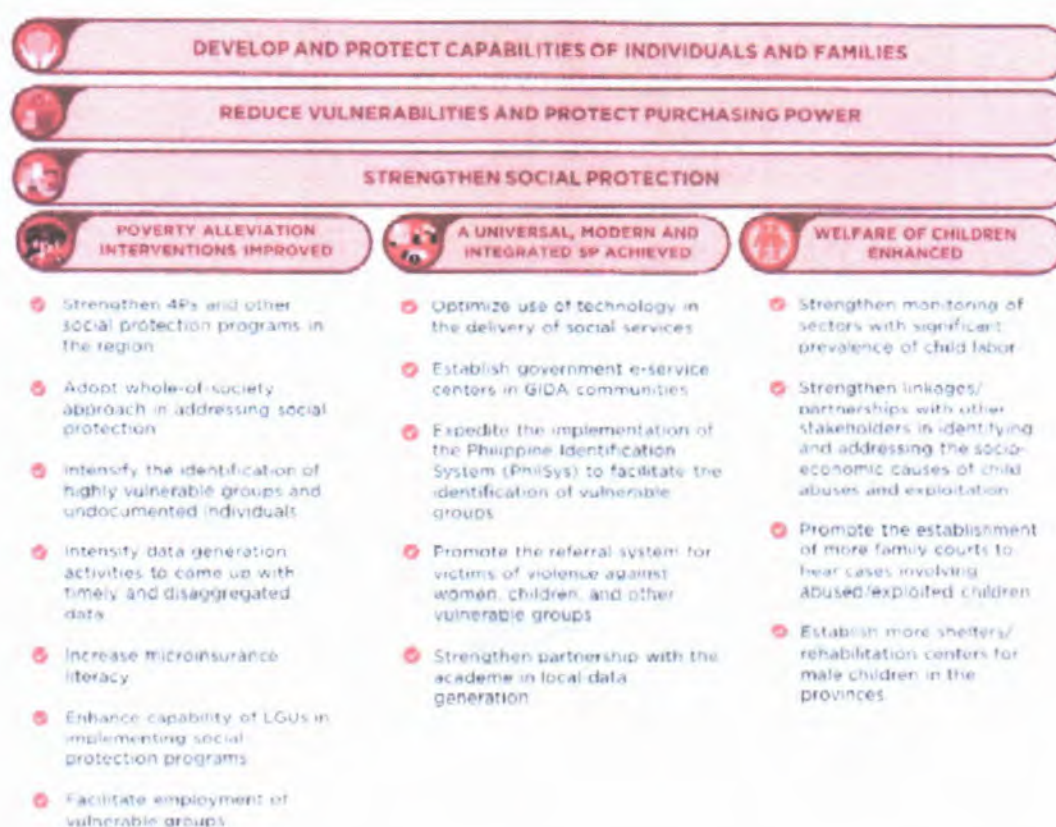
Food and Nutrition Security is also one of the six issue-based agenda in the National Integrated Basic Research Agenda (NIBRA). For 2022-2028, areas for research include: taxonomic studies of flora and fauna as food sources, food safety of raw and processed products of micro, small and medium enterprises (MSMEs), and halal studies.

Chapter 6.2: Strengthen Social Protection

Strategy Framework

Central to the region's thrust of reducing inequality in opportunities is building the socioeconomic resilience of the population, especially the poor and marginalized. This entails the implementation of a rationalized and integrated social protection system that will reduce their vulnerabilities and increase their adaptive capacities so they can improve their well-being, move out of poverty, and become productive members of society.

Figure 8: Strategy Framework Strengthen Social Protection



Research Themes

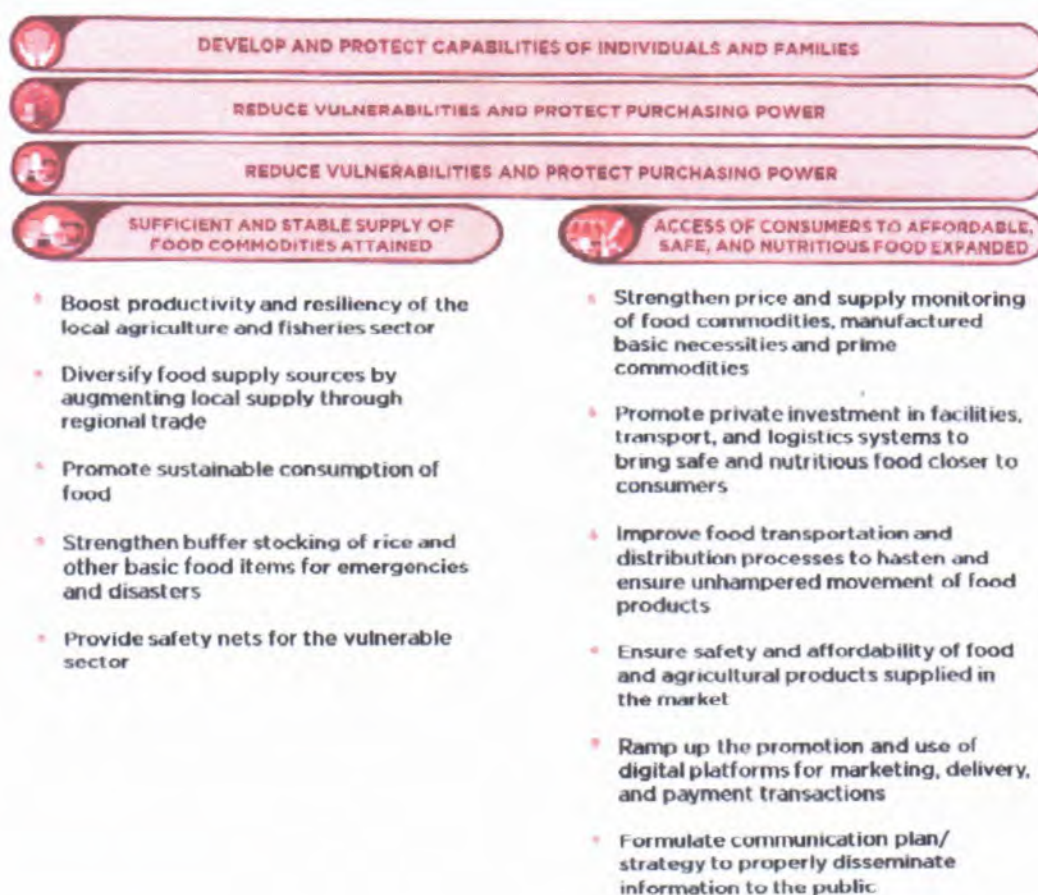
Social Protection. Studies under this research theme will look into creating a more improved and strengthened system of aid for social issues to reduce inequalities, ranging from the necessities such as employment, healthcare, and livelihood to domestic violence, child labor, mental health, among others. Studies, projects, or initiatives shall include those that will explore ways and provide

Chapter 6.1: Ensure Food Security

Strategy Framework

To ensure food security of Filipino families and their members in Central Visayas, concerted efforts of the government, private sector, and other stakeholders will be geared towards (a) attaining sufficient and stable supply of food commodities, and (b) expanding access of consumers to affordable, safe, and nutritious food.

Figure 7: Strategy Framework Ensure Food Security



Research Themes

Food Availability. This research theme covers studies on having sufficient food products that are nutritious, safe to eat and affordable for every household in the region. The studies, projects, or initiatives shall involve the development of new knowledge (inputs that are resilient to climate

Studies Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to reduce vulnerabilities and protect purchasing power.

<p>Research title/ topic</p> <p>Developing a technology that will allow monitoring of production directly from the primary producers</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Determine the strength of each municipality, city and province when it comes to food production and ways to augment local supply 2. Promote regional trade within and outside Central Visayas and at the same time ensuring the region's food security 3. Develop technology that will allow real time monitoring of production directly from the primary producers
<p>Rationale</p> <p>One of the strategies identified in the RDP is diversifying food supply sources by augmenting local supply and regional trade. This study will help develop the appropriate technology that promotes regional trade building from the strength of each province, city, municipality in Central Visayas for production.</p>	

<p>Research title/ topic</p> <p>Developing technologies that will increase the nutritional content and prolong the shelf life of food products</p>	<p>Research objective</p> <p>Develop technologies that address the issue of food waste at the household and establishment levels.</p>
<p>Rationale</p> <p>This will help address the growing concern on food waste and eventually promote sustainable consumption of food products.</p>	

recommendations to help the vulnerable individuals cope with any form of crises that may arise, providing equitable access to health care and government assistance for all sectors of society, intensifying social welfare mechanisms, and promoting values among the next generation.

Referral Management System. This research theme encourages studies that look into ensuring an effective and facilitative referral system that will help the victims of violence (women, children, other vulnerable groups). Studies, projects, or initiatives may include enhancing communication between victims and provider, and improving the necessary skills, upgrading tools, and equipment and facilities. Studies that will assess and evaluate the existing policies, procedures and processes will also be promoted. This will include identifying the current and desired state; plotting the desired future course; creating a new standardized process; and exploring a technologically abled referral system.

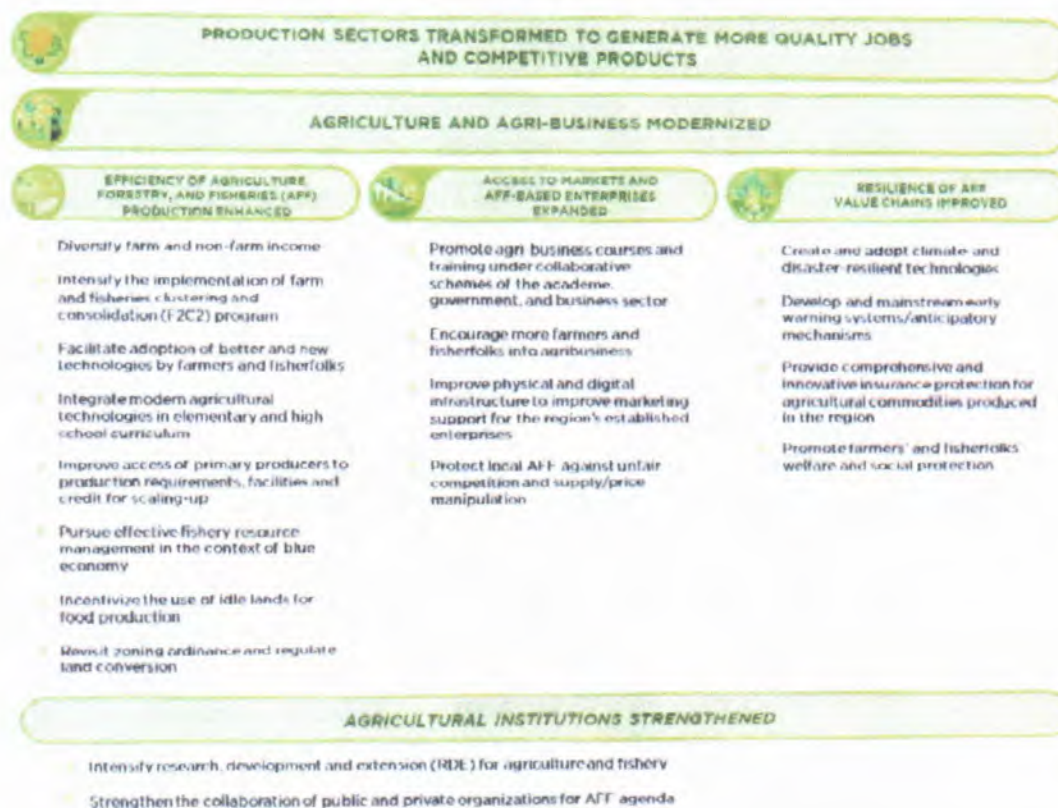
Social Policy. This concerns how the region responds to challenges in order to meet human needs for security, education, work, health and wellbeing, among others. Areas that can be looked into under this theme include developing policies that will help in addressing child poverty and vulnerability amongst families, employment, and discrimination issues. Another area includes administration of social service programs that have significant impact on the lives and outcomes of individuals and communities. Possible research questions may be along the lines of “what benefits the people” and “do the parameters change from one society to another?”

Chapter 7: Modernize Agriculture and Agribusiness

Strategy Framework

The plan pursues a whole-of society approach in modernizing agriculture and agribusiness, emphasizing the crucial role of both the government and private sector in enhancing the efficiency of production, expanding access to markets and enterprises, and improving the resilience of the value chain of the sector. This will be complemented with strategies to strengthen agricultural institutions that enable the modernization of the country's agriculture and agribusiness.

Figure 9: Strategy Framework Modernize Agriculture and Agribusiness



Research Themes

Higher Value Food Products. This refers to food products that the local agriculture sector can move up the value chain by developing and producing innovative high value-added food products.

Good Agricultural Practices. Studies under this research theme will explore applicable environment-friendly technologies to maximize yield with lesser costs and with minimal damage

to the environment. Studies, projects, or initiatives may include those that promote good agricultural practices among thriving agricultural communities that can be replicated in other communities. This will also include studies on the establishment of agro-tourism programs to address displaced tourism workers due to a pandemic or an equivalent unforeseen event, and the adoption of smart, green, and science and technology-based agriculture.

Sustainable Production Systems. This research theme encourages studies to promote the greening of enterprise, workplace practices and the labor market.

The following are the priority agenda of the Harmonized National Research and Development Agenda in Agriculture, Aquatic and Natural Resources (HNRDA-AANR) for 2022-2028:

Crops - This theme focuses on crop productivity and efficiency, sustainable production systems, and efficient product value chain to increase production to satisfy the increasing needs for food and demand of industries. The following R&D topics will be encouraged: germplasm evaluation, conservation, utilization and management; varietal improvement and selection; production of certified good quality seeds and planting materials; cultural management practices; crop production systems; postharvest, primary processing and product development; and decision support systems.

Livestock - This theme aims to increase the productivity and profitability of livestock food systems by improving livestock species using new and emerging techniques, promoting animal health, developing new products for improved livelihood opportunities, and developing support systems for information-based decision making. This includes breed development and genetic improvement; reproductive biotechniques for priority livestock species; nutrition, feeds and feeding system; conservation and improvement of native animals; vaccine, biologics and diagnostics development; food quality and safety assurance; disease control and anti-microbial resistance management; production and management decision support systems; product development and processing; and emerging technologies on breeding techniques.

Aquatic - This theme aims to improve the productivity and profitability of aquatic species through efficient and sustainable aquaculture practices. This includes application of genomics in the study of diseases of aquatic species and fish resistance to climate change, molecular phylogenetics, population genetics; physiological and ecological studies of aquatic species; new species for culture; culture systems (broodstock management, hatchery, nursery, grow-out); fish health, disease diagnostics and disease management; nutrition, feeds and feeding system; postharvest handling, processing and new product development; mechanization and automated systems for feeding, water and culture management, and post production; and production and management decision support systems.

Studies Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to modernize agriculture and agribusiness.

<p>Research title/ topic Development of vaccines to control livestock and poultry diseases</p>	<p>Research objective Develop new vaccines to protect livestock and poultry from existing and emerging diseases.</p>
<p>Rationale Presence of diseases affecting AFF value chain- RDP highlighted the importance of ensuring resiliency in AFF value chains.</p>	

<p>Research title/ topic Climate resilient approaches for agriculture</p>	<p>Research objective Develop farming techniques to make crops resilient to unpredictable and more intense weather events due to climate change.</p>
<p>Rationale Climate change has made natural disasters, such as typhoons, more intense and weather patterns have become more unpredictable, as observed by farmers. This poses a challenge to the agriculture sector, as shocks in weather have often destroyed crops.</p>	

<p>Research title/ topic Commercialization of safe, nutritious, medicinal or therapeutic and well-packaged agri-food products</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Develop food technologies to commercialize nutritious agri-food products. 2. Develop traditional medicines from local medicinal plants.
<p>Rationale Apart from producing and selling fresh agricultural produce, there are opportunities to add value to processed agri-food and help increase the incomes of farmers and agribusiness cooperatives, especially for export.</p>	

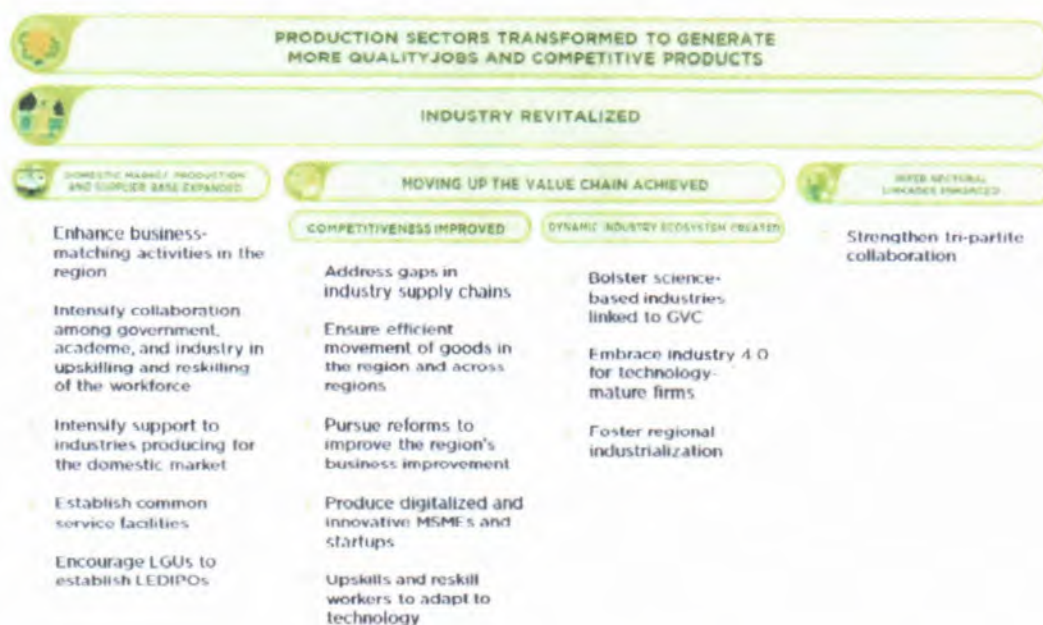
<p>Research title/ topic Development of processed agri-food production with improved nutritional content and longer shelf-life</p>	<p>Research objective Develop technologies that increase the shelf life of agri-foods while retaining their nutritional value.</p>
<p>Rationale With an increasing share of food being imported from outside the country, there is a significant gap between local food production and local food demand.</p>	

Chapter 8: Revitalize Industry

Strategy Framework

To generate more quality jobs and competitive products, the industry sector will be revitalized through expanding the domestic market and supplier base, moving up the value chain and enhancing linkages across sectors. Moving up the value chain can be achieved by improving the competitiveness of industries and by creating a dynamic industry ecosystem.

Figure 10: Strategy Framework Revitalize Industry



Research Themes

Sustainable Materials. This refers to the use of materials that have a positive impact on the environment. Studies, projects, or initiatives include exploring the development of eco-friendly products primarily sourced from the region. Research will also be conducted using waste from one process as an input to another process and create a circular economy.

New Technology Transfer. MSMEs will be able to commercialize outputs of research, including new technologies, and take advantage of economies of scale. Innovation Technology Support Offices (ITSOs), Technology Business Incubators, and Accelerators are enabling agents that provide MSMEs the platform to utilize research products to increase their productivity, innovate their processes, products, and services, increase their incomes, and graduate into large enterprises

that generate jobs. The government can boost this job-generating process by supporting producers of research outputs, covering both public and private HEIs.

Technology Transfer is part of the priority agenda of the Harmonized National Research and Development Agenda in Agriculture, Aquatic and Natural Resources (HNRDA-AANR) for 2022-2028 which aims to enhance technology transfer systems to address perceived gaps between technology generation and adoption, ensuring that products of R&D reach their intended users while promoting resilience and entrepreneurship. This includes improvement of traditional extension modalities for the efficient transfer of technologies to end-users; upscaling and outscaling of agricultural technology transfer and commercialization through various modalities; and leveraging technologies for building resilience and supporting economic recovery.

Business Enabling Environment. This theme includes studies on developing an environment that enables firms to emerge, survive and grow leading to increased investment, job creation, and business growth in the region. Studies, projects, or initiatives include policy development towards making an enabling environment for creating more industry players in the region. Focus will be on revisiting existing laws, regulations, international trade agreements and public infrastructure that either facilitate or hinder the movement of a product or service along its value chain, and providing policy recommendations for consideration by policymakers and decision-makers in the region.

Industry 4.0. This refers to the rise of digital industrial technology that allows human labor to work alongside machines in new, highly productive ways. The focus is to engage in studies, projects, or initiatives that can lead to better policymaking, more sustainable business models, new jobs and income opportunities. The following applications and areas will also be explored: optimization of logistics and supply chains; autonomous equipment and vehicles; additive manufacturing (3D printing); Internet of Things and the cloud; and robots and artificial intelligence (AI) in terms of how these technologies could impact business operations; finding the right talent and knowledge; and documenting success stories for businesses taking advantage of technology in ensuring smooth business operations.

Advancement of the Creative Industries. This research theme covers research that determine the existing conditions, and develop strategies to support and advance the creative industries. Researchers may refer to the Making Design Count Survey of the Design Center of the Philippines as a reference for any proposed research under this theme. Aside from qualitative studies, quantitative studies are also encouraged in support of the upcoming establishment of the satellite account for the creative industries at the regional level.

Study Proposed in the CV-RDP

These are the studies proposed by the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to revitalize industry.

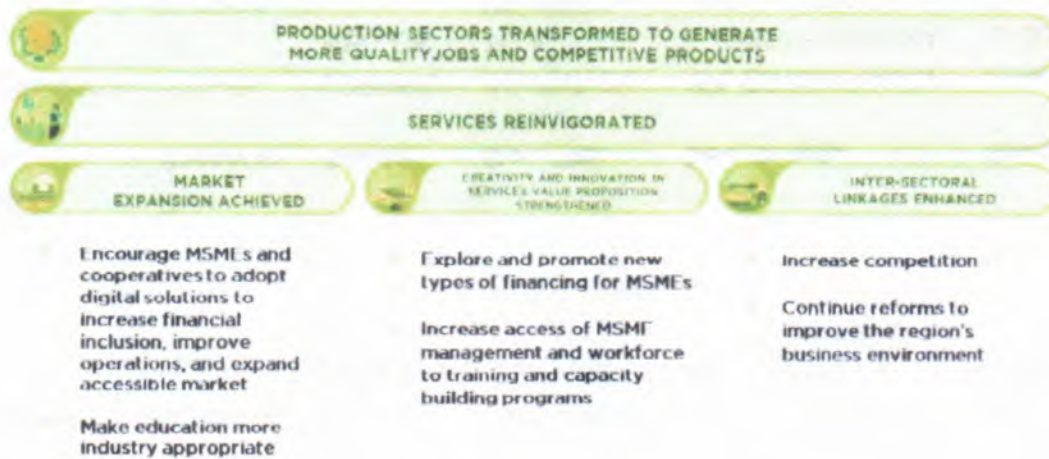
Research title/ topic Online work including existing and proposed laws relevant to online work and study	Research objective Propose policy recommendations to improve the regulatory environment for online work and study.
Rationale The region will strengthen its support to online workers/ freelancers and others in the gig economy, hence the focus on studies that look into the welfare of online workers and the challenges faced	

Chapter 9: Reinvigorate Services

Strategy Framework

The Central Visayas region aims to reinvigorate services in the region by expanding markets, strengthening value proposition in creativity and innovation, and enhancing inter-sectoral linkages.

Figure 11: Strategy Framework Reinvigorate Services



Research Theme

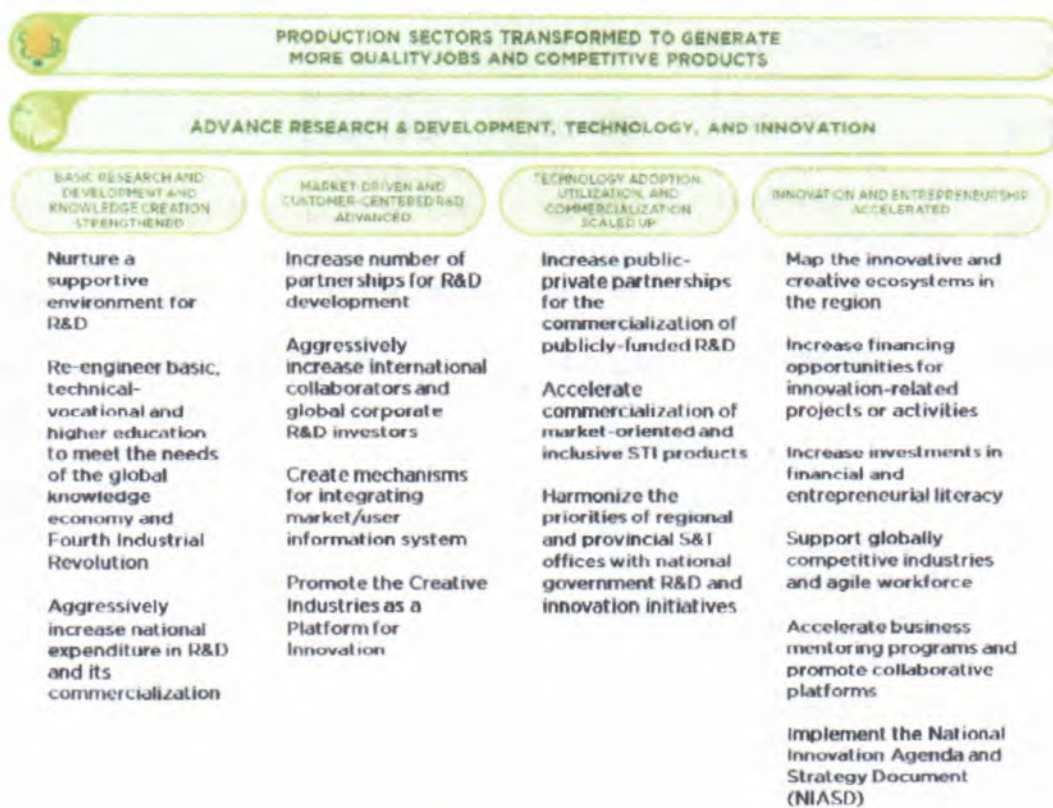
Entrepreneurship. This involves honing and scaffolding the entrepreneurial capacity of stakeholders/ beneficiaries. This can include studies, projects, or initiatives on emerging creative industries (technology, gaming, creative/arts), bridging courses to upskill, and address the needs and gap. Studies, projects, or initiatives may also focus on the promotion of technology business incubators, start-ups, and spin-offs, including provision of government support through innovation programs and the use of technology (e.g., mobile apps) programs for agriculture and aquaculture to enhance productivity and increase market competitiveness. Both quantitative and qualitative methods will be used. Impact evaluation studies may be conducted to measure these initiatives' contribution to the goal of creating more quality jobs in the region.

Chapter 10: Advance R&D, Technology, and Innovation

Strategy Framework

The region will need to take an active part in the country's multi-pronged approach to massively utilize R&D, technology, and innovation in propelling the region and the country to high middle-income status. Part of the medium-term goal of economic transformation is to transform the production sectors to generate more quality jobs and competitive products.

Figure 12- Strategy Framework Advance R&D Technology and Innovation



Research Themes

R&D and Innovation in Strategic Areas. This involves basic research that seeks new knowledge required for application purposes that aim for the development of solutions and management related to food, water, health, renewable and clean energy, and disaster management to wit:

- a. Agricultural RDI - develop agricultural technologies to enhance food production, availability, and accessibility, including unmanned aerial vehicles (UAVs) and remote sensors for farm production monitoring;
- b. Aquatic RDI - develop sustainable farming technologies for fish, crustacean, seaweeds, and other priority marine products;
- c. New materials - model (computational), synthesize, and develop new materials for advanced applications (e.g., soft matter, ceramics, semiconductors); Discovery and development of new drugs and herbal products; Innovative manufacturing technologies for building and construction materials;
- d. Environmental protection and conservation - model (computational), synthesize, and develop new materials for advanced applications (e.g., soft matter, ceramics, semiconductors, etc.); discovery and development of new drugs and herbal products; innovative manufacturing technologies for building and construction materials.

Studies, projects or initiatives can also include waste valorization, which means creating new, and useful high-value products from waste materials, and transportation technology or development of autonomous and unmanned vehicles/vessels for reduction of transport costs.

Data Analytics. This refers to the utilization of available data to optimize processes. The projects, programs, and/or initiatives may involve the efficient collection and processing of data in a centralized repository from the different economic sectors towards sound decision and production of live-improving products. Research may also explore the use of big data analytics and bibliometrics for sound decision-making and policy formulation (e.g., information science, computational math and physics).

Biomedical. Studies under this theme aim to maximize the utilization of locally available raw materials for medical use. Studies, projects or initiatives will focus on the development of new products for biomedical applications, and production of biomedical devices that address emerging diseases and formulating policies to facilitate local and indigenous medical research. This will be applied research in the areas of Biomedical Engineering and Healthcare Technologies, specifically the development, design and production of prosthesis, assistive devices/technologies, hospital equipment, ICT in health, and/or other related fields.

Biomedical Devices Engineering for Health is also one of the program areas of the 2023-2028 health research and development agenda of the DOST that aims to address the need for research on improvisation and local development of reliable, safe, and affordable biomedical devices, for supportive and therapeutic care, for local health service provision, and for international markets. Priority areas include technology-assisted surgical innovations for patient safety, innovations in local implants development, devices for postoperative/rehabilitative/assistive care, devices for

health emergency preparedness and response, devices in support of Universal Health Care, and tissue engineering.

Artificial Intelligence and Machine Learning. Artificial Intelligence involves enabling computers and robots to behave that imitate and surpass human capabilities, while Machine Learning is a type of artificial intelligence that uses algorithms to gain insights and distinguish patterns from large datasets over time to progressively make better decisions. The region's research agents are encouraged to explore this frontier area to increase productivity, contribute to economic activity, and modernize social services delivery.

Chapter 11: Promote Trade and Investments

Strategy Framework

Central Visayas will promote trade and investments to strengthen the region's role in the global value chain and increase investments sustainably.

Figure 13: Strategy Framework Promote Trade and Investments



Research Themes

Strengthening Market Competition. This research theme encourages studies on enhancing market competition and reducing barriers to entry and limits to entrepreneurs. The studies, projects, or initiatives may include the conduct of baseline studies to know the region's stance in competitiveness and competitive advantage, ways to encourage more investors and market players, and measures that improve ease and lower the cost of doing business.

Export Competitiveness. Studies under this theme will investigate how export products will be able to compete in the international market thereby bringing in profit for the country. Topics that may be explored include the region's products being exported and how they fare in the international market; practices of neighboring countries as regards export activities and how competitiveness is achieved and/or sustained; and investments in technology.

Trade and Investments. Studies in this area will look into generating appropriate trade and investment policies for the country, allowing it to fully reap the benefits of globalization and be able to attain inclusive growth and development. Topics that may be explored include the following: international trade in goods and services including trade policies, bilateral and regional free trade agreements (FTAs) as well as multilateral trading arrangements, trade facilitation

measures, and foreign direct investment (FDI) policies. Other areas include the role of infrastructure in Philippine trade and the link between international trade and the development of financial markets; the role of FDIs in the country in terms of 1) identifying the macroeconomic determinants of FDIs into the Philippines; (2) establishing the role of institutions on Philippine business environment, (3) linking infrastructure development and FDIs in the Philippines and the significance of PPPs in attracting FDIs; and (4) examining the spillover effects of FDIs on Philippine firms.

Chapter 12 Rejuvenate Tourism

Executive Summary

The RDP considers a whole-of-society approach in rejuvenating the tourism industry, one of the region's major economic growth drivers. Both the government and the private sector play crucial roles in facilitating connectivity, enhancing convenience in tourism experience, and ensuring equality in tourism development.

Figure 12-1 Strategic Development Framework



12.1 Introduction

Tourism Revival and Resilience. Tourism revival and resilience refers to the ability of the tourism and hospitality industries to recover from setbacks, adapt to changing circumstances, and continue to thrive despite challenges. This is particularly essential in the aftermath of major crises such as natural disasters, pandemics, economic downturns, or geopolitical instability that can severely disrupt the tourism industry. This also includes the changes brought about by technological advancement and integration of business organizations that result in new business models that may take away revenue opportunities for traditional business operators.

Possible research topics include impact evaluation of holiday economics, development of new tourism industry models revolving around quality of life (such as creative industries, Halal food, revitalization of cultural and historical sites), and determining strategies to mitigate the negative impacts of disruptions to the tourism industry.

Chapter 11 Promote Financial Inclusion and Improve Public Financial Management

Research Emphasis 1

Central Visayas aims to promote financial inclusion to enable more people to participate in the economy. In parallel with this goal, the region also aims to improve public financial management.

Figure 11.1: *Central Visayas' Financial Inclusion and Improving Public Financial Management*



Research Emphasis 2

Sound Fiscal Management. This research theme includes studies on optimizing the available fiscal resources by promoting sound and enhanced fiscal management systems towards providing quality of life for every Filipino. The studies, projects, or initiatives may include employing or adopting effective methods and strategies to achieve the organizations financial objectives and digitalization of government processes and procedures with ways to operationalize the ease of doing business.

New Technology Access for the Marginalized. Studies under this theme will look into ensuring the availability and accessibility of technology for the marginalized sectors. The studies, projects or initiatives may include developing new and emerging, affordable or free technologies suited for the indigenous, vulnerable and marginalized population to fix and address systemic issues prevalent in the marginalized society, allow them to preserve their culture, integrate into the mainstream society, and earn a decent living. These technologies will also be developed for Micro, Small, and Medium Enterprises (MSMEs), along with some other ways to bring them into the digital arena and help them thrive in the digital world. Both qualitative and quantitative methods will be used. Government interventions will be needed to test the effectiveness of the developed technologies during its implementation.

Chapter 14. Expand and Upgrade Infrastructure

Executive Summary

The overarching goal of the infrastructure sector is to expand and upgrade key infrastructure and facilities to support increased growth and development.

Expand and Upgrade Infrastructure: Objectives and Expected Infrastructure



Executive Summary

Transportation and Logistics. This theme entails studies on the provision of appropriate, rapid and efficient transportation system that is affordable, energy-efficient and environment-friendly. The studies, projects, or initiatives will explore the development of new green technologies to reduce mass transport costs and conserve the environment. Studies, projects, or initiatives will also include applied research and technology transfer to hasten the knowledge in the field of transportation to solve transport-related problems (traffic congestion, road signage, lighting and surveillance, road construction materials and processes).

Energy Security. Studies under this theme look into the provision of sufficient, stable, and affordable energy to the household and business sector. Studies, projects, or initiatives shall produce policy recommendations focused on developing new materials and technologies to

explore alternative energy sources (like renewable energy sources) other than coal, diesel, hydropower, geothermal or wind to reduce energy cost and the need to import fuel and, at the same time, conserve the environment. The policy recommendations can be used by the government for appropriate actions, including regulating some government processes and testing the effectiveness of developed technologies. Additionally, studies, projects, or initiatives shall produce policy recommendations that support the creation of a Regional Energy Plan (REP) for Central Visayas. Energy projects include the development of the power infrastructure or the grid, distributed renewable energy (RE) generation, energy efficiency and conservation, the downstream oil industry, and others relevant to energy generation, distribution, and utilization. Studies and projects may also be on the following areas: realizing 100% electrification, especially in off-grid areas; an analysis of the region's electric power infrastructure to enable distributed RE; increasing energy efficiency in the built environment; increasing the uptake of energy-efficient equipment and appliances; energy resilience during disasters; battery energy storage for variable RE; e-vehicle charging infrastructure; building LGU capacity in local energy planning, implementation, and monitoring; and, incorporation of energy plans and projects into the CIUP, LCCAP, and other plans of LGUs.

Digital Connectivity. This research theme includes studies that look into ensuring the availability of a fast, efficient and reliable internet infrastructure. The studies, projects, or initiatives may include the development of software, machine learning, Internet of Things (IoT), computer network technologies, security solutions, and mobile applications to enhance digital connectivity, data security, and increase productivity in industry, manufacturing and other sectors in the region thereby creating more jobs. Government interventions will be needed to test the effectiveness of the developed software and applications during its implementation.

Impacts of Reclamation. Studies under this theme will investigate the impacts of infrastructure projects that involve reclamation, notably the cumulative impacts of reclamation to the surrounding environment and the impacted body of water.

Research Proposals under CVRDP

These are the studies proposed in the Central Visayas Regional Development Plan (RDP) 2023-2028. Specifically, most proposals for this sector are feasibility studies of infrastructure projects.

<p>Research title/ topic Mass Rapid Transit, Central Line (Consolacion to Talisay)</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Establish the travel time reduction 2. Establish the emissions reduction
<p>Rationale The proposed Cebu Urban Mass Rapid Transit from Consolacion to Talisay, Cebu (Central Line) is included in the 194 Infrastructure Flagship Projects (IFPs) of the government. However, prior to implementing this PhP77 billion project, a feasibility is necessary to weigh its benefits and losses. Likewise, feasibility studies support the CVRDP strategy of Enhancing Planning, Programming, and Asset Management in Infrastructure.</p>	
<p>Research title/ topics Traffic management in Tagbilaran City, Bohol</p>	<p>Research objective Identify strategic interventions to pursue seamless traffic flow</p>
<p>Rationale One of the overarching strategies of the CVRDP is to foster an enabling environment in the region characterized by better connectivity. Among these action plans to achieve better connectivity is the conduct of a Traffic Management Study in Tagbilaran City, Bohol, as highlighted in the Bohol PDPFP 2016-2028. The study will be conducted along J. A. Clarin Street and along the roads around Rizal Park fronting the Old Capitol Building, Saint Joseph Cathedral, and major streets within the vicinity.</p>	
<p>Research title/ topic New port with reclamation in Tubigon, Bohol</p>	<p>Research objective Quantify economic benefits due to seamless port connectivity with Eastern Visayas</p>
<p>Rationale The proposed port with reclamation component in Tubigon, Bohol is contained in the Comprehensive Development Plan (CDP) and Comprehensive Land Use Plan (CLUP) 2011-2020 of the Municipality of Tubigon. The initiative is aligned with Bohol's PDPFP which designates the northwestern corridor of Bohol as the "Northwestern Industrial Zone". At the regional level, the proposal is also supportive of the CVRDP of decentralized concentration, especially developing an industrial and commercial mixed-use zone.</p>	

<p>Research title/ topic Integrated electronic traffic light and control system in Dumaguete City, Negros Oriental</p>	<p>Research objective</p> <p>Identify strategic locations and mechanism of the traffic lights within Metro Dumaguete</p>
<p>Rationale</p> <p>The CVRDP highlighted Dumaguete City as one of the two regional centers in the region. Hence, the implementation of an integrated electronic traffic light and control system is mandatory to prepare the city to its future development. This project is supportive of the CVRDP strategy of increasing LGU investment in local roads.</p>	

<p>Research title/ topic Mananga Dam II Project, Cebu</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Weigh the cost (relocation of families) and benefits (increase potable water supply and irrigation supply) of the project. 2. Determine the reduction of flood risk of flooding
<p>Rationale</p> <p>The proposed project is a part of the Roadmap Study for Sustainable Urban Development in Metro Cebu.</p> <p>Initially, in 1991, Electrowatt Engineering Services Ltd. conducted the first feasibility study for the proposed project. This study received approval and endorsement from the RDC to the Local Water Utilities Administration (LWUA) and other international funding sources in the same year. However, due to a lack of funding counterpart from the GOP, the planned funding from foreign sources did not materialize.</p> <p>In 1996, the MCWD, on behalf of the GOP, received an unsolicited proposal for the project from Johan Holding Berhad. However, issues on government guarantees prevented the project from moving forward for the second time. Subsequently, in 2001, a second feasibility study was carried out, but it didn't progress into an actual project. In 2015, the RDC again endorsed the need for a feasibility study by JICA. Unfortunately, no official response was received from JICA.</p> <p>In 2019, the Central Cebu River Basins Management Council passed Resolution No. 1 (Series of 2019), endorsing the preparation of a feasibility study for the construction of the Mananga Dam II project to be funded by DPWH to the RDC.</p> <p>Based on the abovementioned facts, there is an urgent need to conduct a feasibility study to update the details of the project like the number of affected households, the economic and financial rate of returns, cost estimates, among others. This project is also supportive of the CVRDP strategy of upgrading investments in the development of other water resources like surface water.</p>	

<p>Research title/ topic Status of Internet Access, Network Coverage, and Internet Speed in Central Visayas</p>	<p>Research objective</p> <p>Provide recommendations on the needed policies and projects to improve internet access outside metropolitan areas</p>
<p>Rationale</p> <p>The CVRDP highlighted the need to expand and advance access to digital infrastructure to address the issues on slow connectivity coupled with high monthly subscription cost which is the highest compared to other regions with around PhP1500 per month.</p> <p>The conduct of the study on the status of internet access, network coverage, and internet speed in Central Visayas will provide recommendations on the needed policies and projects.</p>	

<p>Research title/ topic Wastewater treatment facility in Panglao, Bohol</p>	<p>Research objective</p> <p>Determine the needed capacity of the treatment plant</p>
<p>Rationale</p> <p>The proposed project is included in the Bohol PDPFP 2016-2028. Likewise, the conduct of a feasibility study of the project was endorsed by the Bohol Provincial Development Council to the RDC and JICA for funding.</p> <p>The proposal is also aligned with the National Sewerage and Septage Management Program of the government.</p> <p>Moreover, the implementation of this project is supportive of the CVRDP strategy of Upgrading and expanding water and sanitation infrastructure.</p>	

<p>Research title/ topic Water impounding dam in Carlaon City, Negros Oriental</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Weigh the cost (relocation of families) and benefits (increase potable water supply of the project; reduce risk of flooding; increase irrigation supply, etc.) of the project 2. Identify the most suitable type of solution
<p>Rationale</p> <p>Carlaon City's potential to be the vegetable basket of Negros Oriental remains untapped. Despite its advantageous climate and fertile soil, the city has yet to fully realize its capabilities due to the absence of crucial water infrastructure, specifically a water impounding dam designed for agricultural and commercial purposes. The proposed project is estimated at PhP161 million. It is also supportive of the CVRDP strategy of Upgrading and expanding water and sanitation infrastructure.</p>	

<p>Research title/ topic The potential of scaling-up the installation of solar roof system</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. Identify government programs (subsidies, loan financing, incentives) to encourage residential units to install solar roof system 2. Assess the reduction in energy demand per region/province/unit household
<p>Rationale Scaling-up the installation of solar roof system is just one of the several interventions in addressing energy crisis. The Department of Energy's Net Metering Program promotes this strategy as highlighted in the Renewable Energy Act of 2008. Likewise, this solution is aligned with the CVRDP strategy of supporting measures that lower the cost of electricity and is consistent with the CVRDP strategy of employing nature-based solutions to mitigate Climate Change Adaptation -Disaster Risk Reduction (CCA-DRR). However, further studies may be conducted to promote and/or encourage residential units to install solar roofs through government subsidies and easy access to loan financing.</p>	

<p>Research title/ topic Adoption of rainwater collection and greywater recycling systems</p>	<p>Research objectives</p> <ol style="list-style-type: none"> 1. To identify strategic locations of the rainwater collector 2. To assess the reduction of flood water
<p>Rationale This is consistent with the CVRDP strategy of employing nature-based solutions to mitigate Climate Change Adaptation -Disaster Risk Reduction (CCA-DRR). Moreover, a detailed study must be conducted to locate the best possible location of the rainwater collector. For instance, the cities of Cebu and Mandau included this solution as one of their priority actions to address flooding.</p>	

Chapter 35: Ensure Peace and Security, and Enhance Administration of Justice

Strategy Overview

The enhanced administration of justice is part of the overall goal of providing an enabling environment for the social and economic development strategies to take root.

Figure 13: Strategy Overview: Ensure Peace and Security and Enhance Administration of Justice



Knowledge Themes

Expand Systems for Responding to Crimes and Emergencies. Studies under this theme look into upgrading disaster and crime response protocols by using advanced technologies. The applied research may include developing communication models, remote sensing, and other risk management tools and devices. In the case of basic research, government participation may be involved, like data analysis on the increased visibility of police and other law enforcement offices.

Cluster 10: Practice Good Governance and Improve Bureaucratic Efficiency

The Central Visayas region aims to sustain good local governance, address competitiveness of LGUs, and maximize mechanisms for citizens' meaningful participation in development direction-setting and decision making

Cluster 10 Strategy Focuses on 3 Areas and Commitment to Improve Performance Efficiency



Institutional Arrangement and Management. This research theme includes studies on promoting sound and enhanced institutional management systems and standardized processes through digitalization for ease of doing business. The studies, projects, or initiatives may include the adoption of paperless operations with the use of technology, e.g., Cloud/Client, social media, Web-Scale IT, Personal Cloud, Smart Machines, Web Applications, Software-Defined Anything, Internet of Things, Internet of Everything, Cloud Computing, Hybrid Cloud, IT as Service Broker, Mobile Device Diversity & Management, and Mobile Apps and Application. Plans and programs will be laid out to aid the organization's operation.

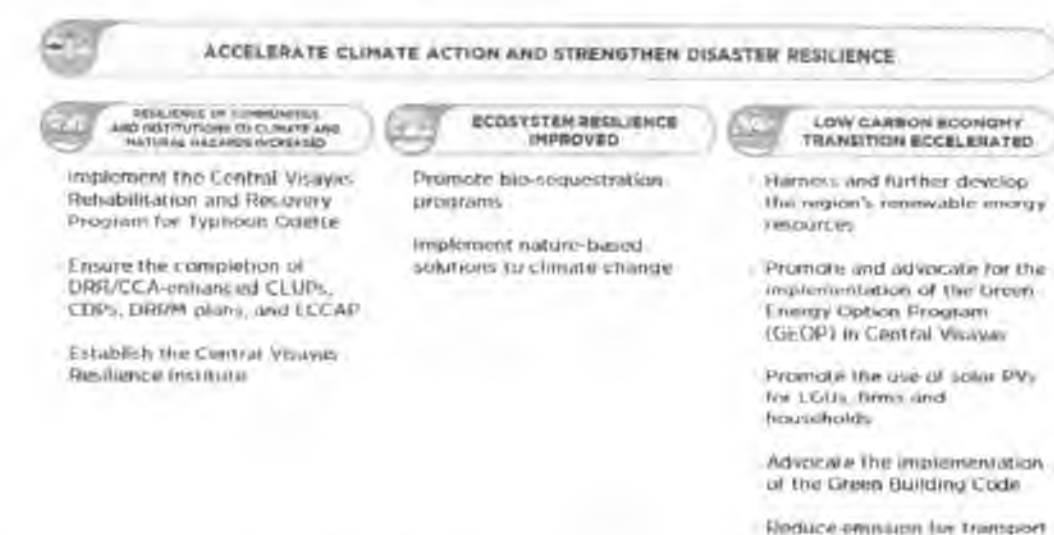
Advancement of Government Digital Transformation. Studies under this theme will investigate the adoption of the use of digital technologies to promote good governance, enhance processes for ease of doing business, promoting financial literacy, maximize revenues and expand value-producing opportunities. The studies, projects, or initiatives may include those that addresses the fear of technology among marginalized sectors of society, findings ways to establish connectivity in areas outside the urban capital to disperse businesses or industries and setup system for digital

payment, online processing of documents, and efficient business transactions. Studies, projects or initiatives may also include exploring the digitalization of data for real-time access of information with data analytics. Government interventions will be needed to test the effectiveness of the implementation. Research work may also focus on harnessing digital technology for increased transparency, accountability, and participation in government processes.

Introduction

With climate change becoming an inevitable threat to socioeconomic development, the Central Visayas region aims to accelerate climate action and strengthen disaster resilience by employing proactive strategies to mitigate the expected adverse impacts of the changing climate.

Figure 17.1. Strategic Approaches to Accelerate Climate Action and Strengthen Disaster Resilience



Renewable Energy

Renewable Energy. Studies under this research theme will investigate optimizing the available natural resources to produce energy that is cost-efficient, reliable and clean, and affordable to household, business sector and other users. Studies, projects, or initiatives may include the development of new materials and technologies for renewable or alternative energy to reduce cost and conserve the environment. Basic research will be used to explore new types of biomasses, alternative fuels and energy sources, their applicability and viability, with the goal of bringing down costs and reducing the factors contributory to the worsening impact of climate change.

Climate Power is one of the six issue-based agenda in the National Integrated Basic Research Agenda (NIBRA). For 2022-2028, the areas for research involve alternative energy studies, such as resource assessment of potential sources of clean and renewable energy and identification and characterization of clean and renewable sources of energy (wind, solar, biofuels, hydro).

Environmental Conservation. Studies involve the development of environmentally friendly and sustainable utilization of resources. Studies, projects, or initiatives will focus on enhancing monitoring mechanisms and devising controlling mechanisms that aim to conserve and preserve the environment. This also includes research/studies on biodiversity and resource mapping; flood risk mitigation; pollution control; reduction, reusing, and recycling (upcycling) of wastes; alternative uses of waste as input to other products/processes; and impact studies on institutional programs and initiatives. Studies on sustainable utilization, enhancement, and accounting of the environment and natural resources for improved ecosystem services will also be explored.

Water Security. This research area will help mitigate foreseen water shortage due to natural and human activities that render water undrinkable, unavailable and inaccessible. New processes, methodologies, cutting-edge science and technology (S&T)-based approaches will be explored. Studies in this area aim to: 1) develop solutions for the detection and management of water quality for drinking water resulting from chemical, biological, and human activities, 2) determine better water management strategies for household use, 3) identify alternative and/or new sources of potable water, including environmentally-sound desalination practices, and 4) provide policy recommendations. This is one of the six issue-based agenda in the National Integrated Basic Research Agenda (NIBRA). For 2022-2028, the areas for research include watershed studies and water quality, accessibility and availability.

Marine Habitat Establishment, Restoration/Rehabilitation and Biodiversity Conservation. Studies under this research theme will involve mitigating loss of biodiversity due mainly to loss of marine habitats resulting from anthropogenic factors (siltation from denuded forests and dredging for reclamation projects, chemical pollution from industries and households, overfishing, etc.) through various intervention tools. Studies, projects, or initiatives will focus on seaweed bed establishment using species that are annuals or perennials that could provide ecosystem services to the marine ecosystem. This includes the brown seaweed *Sargassum* which can be introduced into barren grounds using hatchery-bred seedlings and planted on artificial substrates (e.g. concrete materials or rocks). Other restoration activities using other methods and techniques may also be explored.

Cost-Benefit Analysis of Nature-Based Solutions. Studies will undertake the cost-benefit analysis of these solutions to assess if the high initial capital cost of nature-based solutions is justifiable over its life span.

This is the proposed study in the Central Visayas Regional Development Plan (CV-RDP) 2023-2028 to accelerate climate action and strengthen disaster resilience.

Research title/ topics Development of practical technologies and solutions, including models and demonstrations of regenerative lifestyle in line with the principles of circular economy and sustainable consumption and production	Research objective Develop practical solutions that support sustainable consumption and production, while responsive to local needs and habits.
Rationale Sustainable consumption and production have yet to be mainstreamed in the everyday lives of people, especially in a country that contributes significantly to both microplastics and macroplastics pollution.	

An online system will be established that would provide information on how far research themes contained in the RDRA have already been developed into a research proposal and/or how far these have been funded, and the status of research implementation, dissemination, and utilization.

Specifically, the online research portal aims to:

- a. determine the utilization of RDRA and its status of implementation;
- b. determine the status of dissemination and utilization of the completed research studies undertaken by the research institutions according to the RDRA;
- c. enable research institutions to encode timely updates to the status of research studies undertaken; and
- d. generate reports faster and in real time.

The following information are requested from the institutions for each research topic listed in the online portal:

- a. Title of the study, project, or initiative
- b. Author
- c. Timeline of implementation
- d. Abstract /Objective
- e. Proposed beneficiaries
- f. Funding institution where the proposal will be submitted

Two months before each reporting period (during RDRC meeting), the institutions will be requested to provide updates as part of the monitoring of RDRA, to be encoded into the online database for each undertaken research study, as applicable:

- a. For the on-going studies, projects, or initiatives as listed in the database, provide the status of implementation: **complete, not started, ongoing;**
- b. For the proposed studies, projects, or initiatives as listed in the database, provide the status of research proposal: **submitted to funding agency, on-going conceptualization, in the pipeline for submission (proposal ready);** and
- c. For the studies, projects or initiatives with complete implementation status, provide information as to the status of utilization: **policies formulated, product prototype developed, product patented, facilities established, or published only.**

As applicable, the following information will also be requested:

- i. Year published
- ii. Name of the publication journal where the completed study was published or the specific user to whom the study result was disseminated
- iii. Details of the policies formulated or amended, product prototype developed, patented product and established facilities
- iv. URL where the full study will be hosted once completed and available (the files will be hosted by the research institution conducting the research)

The online portal will generate a report and provide information on the:

- a. number of research study categorized into the status of implementation- completed or ongoing, not started yet; and
- b. number of completed research study according to its status of utilization - published only, policies formulated or amended, product prototype developed, product patented, or facilities established.

The RDRC Secretariat will send a notice to the RDRC member-institutions as a reminder to provide updates on the status of the studies, projects, or initiatives.