

UPDATED HARMONIZED REGION 1 R&D AGENDA 2017-2022



HRRDA





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MESSAGE

I commend the Regional Research, Development and Innovation Committee 1 (RRDIC 1) for their laudable efforts in continuously forwarding Research and Development (R&D) through the updating of the Harmonized Region 1 Research and Development Agenda (HRRDA) 2017-2022. The Regional Development Council (RDC), as the highest policy-making body in the region, has fully embraced the innovations in R&D to realize social and economic progress. That said, the role of R&D is integral in driving economic growth and delivering social gains.



Through the persistent efforts of RRDIC 1 and the participation of various sectors and stakeholders, the formulation of updated HRRDA 2017-2022 that complements national research agendas responds to the current research gaps in the region and invites further support in the advancement of scientific, innovative, and technological research. Ultimately, the development of new knowledge and technologies becomes one of the strongest foundations of resilient growth and progress.

We will continue expediting our technological development capabilities and strengthen our innovation capacity in the region. Together, we continue to fuel innovation and support research that responds to the needs of our people. We are counting on you to join us in this endeavor. Hence, I urge development stakeholders from different sectors and the brilliant minds in the academe to maximize the use of this updated HRRDA 2017-2021. With our concerted efforts, the R&D in the region will continue to expand and innovations that respond to the needs of the people will continue to develop.

MAYOR JUAN CARLO S. MEDINA

RDC 1 Chairperson
Mayor, Vigan City

MESSAGE



The Covid-19 pandemic amplified the role of research and development (R&D) in seeking answers to questions, uncertainties and unknowns. This pandemic posed various challenges not only in the health sector, but to other development sectors as well. Thus, coming up with the R&D agenda that is responsive to the current situation will guide the R&D community to work for needed insights and evidence that will shape policy directions today and tomorrow.

Through the years, we have witnessed the continuing efforts of RRDIC 1 and our partners and major stakeholders in updating the HRRDA attuned to current and emerging challenges, thereby providing clearer direction in responding to various research gaps. We hope that this blueprint for R&D will be cascaded and adopted by academic institutions, government agencies, local government units, non-government organizations, and private institutions with an interest in R&D to ensure that R&D endeavors are aligned to our development efforts.

The RDC will always be keen on ensuring that results of R&D will reach the table of policymakers and decision makers so that R&D results will serve their purpose for evidence-based decision making.

Mabuhay and let us continue to work together towards the realization of our region's and the country's vision of achieving a *matatag, maginhawa at panatag na buhay para sa lahat!*

NESTOR G. RILLON

RDC 1 Vice-Chairperson
Regional Director, NEDA Regional Office 1

FOREWORD



Over the years, research has been a driving force in coming up with solutions to various issues facing regional and national development. The Regional Research, Development, and Innovation Committee (RRDIC) of the Regional Development Council I (RDC 1) has been at the forefront in actively promoting this endeavor and introducing new technologies that greatly benefit the people. Research, as we know it, plays a critical role in decision-making. It is for this reason that the RRDIC actively functions as an institutional mechanism that bridges the gaps and challenges of regional socio-economic development by ensuring that researches, innovations, and other S&T-based projects are relevant, responsive, and aligned to regional development thrusts.

Following the updating of the Ilocos Regional Development Plan (RDP), the HRRDA was updated through a series of sectoral consultation workshops conducted virtually on March 18-19, 2021. The activity was participated in by representatives from regional line agencies (RLAs), local government units (LGUs), state universities and colleges (SUCs), and members of the RRDIC. Participants identified relevant research topics along economic development, governance, social development, infrastructure, and environment and natural resources, to respond to the challenges and strategies contained in the Enhanced Ilocos RDP Midterm Update 2017-2022.

The updating of the HRRDA was also made sure to align with the Harmonized National Research and Development Agenda (HNRDA). Thus, the updated HRRDA is presented based on the research priority themes of the HNRDA namely, basic research, health, agriculture, aquatic and natural resources, industry, energy and emerging technology, and other R&D priority sectors in the region. The research proposals based on the HRRDA topics can be funded by various funding institutions supporting the HNRDA and the Enhanced Ilocos RDP.

With the RDC-1's approval and adoption of the updated HRRDA through RDC Resolution No. 44, s. 2021, it is hoped that research endeavors in the region will be strengthened. Our sincerest thanks to all the men and women who made the updating and approval of this document possible. Despite the limitations we had due to the pandemic, we still completed this. We would be forever grateful for your support in the development efforts of the region, as we continue to move forward to achieve a *matatag, maginhawa at panatag na buhay para sa lahat*.

ARMANDO Q. GANAL

RRDIC 1 Chairperson

Regional Director, DOST Regional Office 1

INTRODUCTION

As a companion plan of the Enhanced Regional Development Plan (RDP) 2017-2022 Midterm Update, the updating of the HRRDA 2017-2022 is highly relevant to ensure that Research and Development (R&D) outputs in the form of technology, innovation, and policy recommendations can address several challenges stated in the regional plan. The Regional Research, Development and Innovation Committee 1 (RRDIC 1), the RDC's support committee on R&D concerns, served as the overall coordinating body which facilitated the preparation of the updated R&D agenda.

A. Guidelines preparation and approval

The RRDIC led the formulation of the guidelines for the updating process which was presented during the 1st Regular RDC 1 Full Council Meeting on February 26, 2020. The RDC 1 Full Council approved the guidelines by virtue of RDC 1 Resolution No. 06, s. 2020. The guidelines specified the two frameworks that directed the updating process.



Figure 1. HRRDA Alignment Framework

Figure 1 shows the alignment of the updated HRRDA to the Enhanced Regional Development Plan Midterm Update and national thrusts and priorities (Philippine Development Plan and Harmonized National R&D Agenda). This is to ensure that the research agenda supports the attainment of the region’s vision and the country’s long-term vision.

The HRRDA will drive the region’s research efforts especially for research institutions receiving funding support from the government.

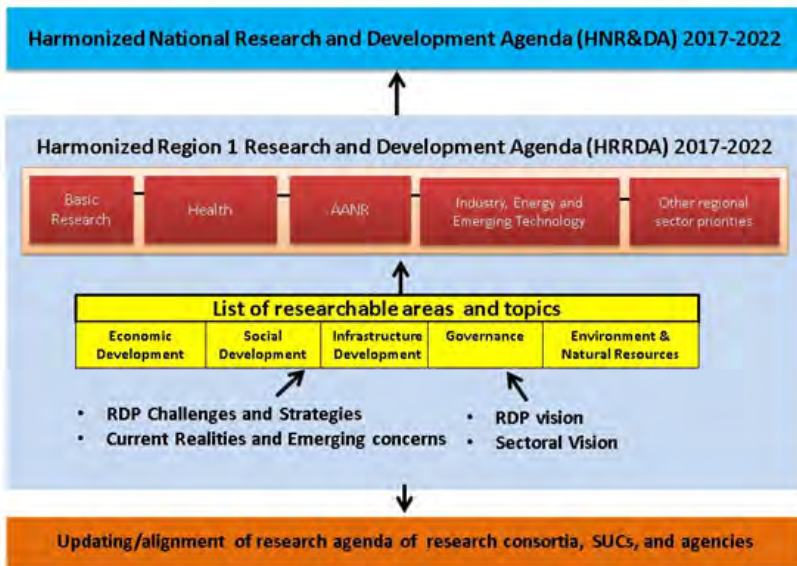


Figure 2. HRRDA Formulation Framework

Figure 2, on the other hand, illustrates how the updated HRRDA was formulated. Researchable areas and topics were identified for the region’s five sectors to address the challenges and strategies in the Enhanced RDP Midterm Update and to respond to the current realities and emerging concerns. These researchable areas and topics were regrouped into priority themes aligned to the Harmonized National R&D Agenda namely, basic research, health, agriculture, aquatic and natural resources, industry, energy and emerging technology, and other R&D priority sectors of the region. The updated HRRDA is expected to influence the formulation or updating of the respective research agendas of various research institutions in the region.

B. Formulation of research topics

As an initial activity, the RRDIC 1 secretariat prepared the HRRDA 2017-2022 Assessment Report which contains the information on the level of awareness of the end-users of the HRRDA, their assessment of the language, design, and its contents. Furthermore, the report also showed how the HRRDA was utilized by the SUCs and RLAs and higher educational institutions (HEIs) in the conduct of their researches and in the formulation of their institutional research agenda. The survey also gathered recommendations and suggested improvements in formulating the updated HRRDA. Specific steps that were undertaken in the updating of the HRRDA were as follows:

B.1. Initial identification of research topics

The RRDIC 1 secretariat, in coordination with the NEDA sector and sub-sector coordinators, conducted a Secretariat's workshop on March 4-5, 2021, and initially identified research topics based on the challenges and strategies in the Enhanced RDP Midterm Update and other emerging concerns needing R&D activities. The initial list was subjected to validation in the Sectoral Workshops.

B.2. Conduct of sectoral workshops

The RRDIC 1 spearheaded the two-day sectoral workshops on March 18-19, via Zoom to validate the initial outputs prepared by the secretariat and SeCom and Sub-sector coordinators and identify additional topics. During the workshop, the following were presented and used as references in coming up with researchable areas and topics:

- 1.) Ambisyon Natin 2040;
- 2.) NHRDA;
- 3.) HRRDA 2017-2022 Assessment Report; and
- 4.) Sectoral challenges and strategies in the RDP.

The participants came from Regional Line Agencies (RLAs), Local Government Units (LGUs), State Universities and Colleges (SUCs), and Private Sector Representatives (PSRs) which are members of the five sector committees of the RDC, namely: Governance, Infrastructure Development, Economic Development, Social Development, and Environment and Natural Resources Sectoral Committees.

B. 3. Processing of outputs from sectoral workshops

The secretariat processed and sanitized the results of the workshops. The research topics were grouped according to the five priority sectors of the RDC. Furthermore, the secretariat checked the alignment of these topics to the priority themes under the HNRDA and identified which will support the following:

- a.) Basic Research;
- b.) Health;
- c.) Agriculture, Aquatic Resources and Natural Resources; and
- d.) Energy, Industry, and Emerging Technology.

Other research topics which will not fall under the four research themes as indicated in the NHRDA were grouped as other research priority sectors and sub-sectors.

C. Endorsement and Approval of the updated HRRDA

The RRDIC 1 secretariat presented the sector components of the HRRDA to the Sectoral Committees (SeComs) for their review and approval. The SeComs were given the authority to add or remove research topics as they deem appropriate. The five SeComs of the RDC 1 approved their respective HRRDA sector components through the following Committee resolutions:

- o Economic Development SeCom Resolution No. 6, s. 2021;
- o Regional Social Development Committee (RSDC) Resolution No. 5, s. 2021;
- o ENR SeCom Resolution No. 3, s. 2021;
- o Infrastructure and Utilities SeCom Resolution No. 6, s. 2021; and
- o Governance SeCom Resolution No. 5, s. 2021.

The RRDIC presented the updated HRRDA 2017-2022 to the RDC Full Council on May 26, 2021, and it was approved through RDC Resolution No. 44, s. 2021.



BASIC RESEARCH

The Science Act of 1958 as amended by RA 3589 defines basic researches as those that result from intellectual curiosity aimed at proving the unknown or it may seek new knowledge required for practical application in the future. Researches in this theme are directed primarily towards developing a new and fuller scientific knowledge or understanding of any subject which may or may not have practical applications. Major categorization of specific topics for Basic Research was based on the groupings of the National Integrated Basic Research Agenda (NIBRA) 2017-2022 of the NHRDA 2017-2022. It contains various topics on different sectors of development.

SUSTAINABLE COMMUNITIES

A. Models and frameworks for enhancing adaptive capacities of vulnerable communities

- Best practices on participatory approach in enforcing relevant ENR laws (local or national)
- Success stories on employment opportunities for women on eNGP
- Studies to support the promulgation of regional policy to regulate payments for ecosystem services.
- Policy studies on strengthening horizontal and vertical inter-agency cooperation for DRR+CCA interventions
- Economic and social issues in post-disaster recovery
- Effectiveness of post-disaster plans
- Implementation of DRRM mechanisms, principles, and approaches in actual emergencies
- Development of an indicator system to measure the level of adaptive capacity and resilience of the ecosystems and the communities
- Assessment on the implementation of the National Greening Program
- Study on natural early warning signs of upcoming disasters

B. Evaluation of adaptive socio-ecological systems in a changing environment

- Identification of ecosystem services covering forests, watersheds, and coastal and marine areas

C. Climate resiliency of highly vulnerable groups

- Assessment of early warning systems of LGUs
- Evaluation on the utilization of DRRM funds and quick response fund of LGUs
- Assessment on the response capacities of institutions to disasters

D. Carrying capacity models of ecosystems

- Carrying capacity studies of ecosystems

E. Soil Science

- Conduct of soil analysis/mapping of polluted lands and identification of possible crops for cultivation



F. Human dimensions research on climate change (drivers, impact, responses, adaptive capacity)

- Study on the factors/causes of the worsening water quality of the region's water systems
- Study on the contribution of informal settlement to the pollution of the river systems

G. Bioremediation studies

- Management and rehabilitation practices of polluted lands

DATA COLLECTION AND ANALYSIS ON SOCIAL PHENOMENA

A. Efficient and effective government structure, systems, and programs

- Perception study on building trust and confidence in the bureaucracy
- Correlation study on the profile and corruption practices of government officials/employees
- Extent of compliance to Ease of Doing Business (EODB)

- Effectiveness of Integrity Management Program (IMP)
- Challenges in the full implementation of web-based filing system
- Effectiveness of Blue Certification Program
- Compliance Studies on the following:
 - Anti-Graft and Corrupt Practices Act
 - Government Procurement Reform Act
 - Code of Conduct and Ethical Standards for Public Officials and Employees (RA 6713)
 - Anti-Money Laundering Act
- Assessment on the effectiveness of the electronic Business Permits and Licensing System eBPLS Program
- Assessment on the adoption of productivity tools (5S, knowledge management, automation, lean management, and ISO certification) of LGUs and RLAs in Region 1
- Assessment of government processes for streamlining
- Profiling of LGUs needing streamlining of their systems and procedures
- Constraints in Philippine Identification System (PhilSys) implementation
- Studies on full devolution of functions because of the Mandanas Ruling
- Assessment on the absorptive capacity of LGUs in delivering their devolved functions
- Assessment of capability development programs for strengthening LGU capacities for integrated planning, investment programming, budgeting, implementation, and monitoring and evaluation
- Policy study on the selection process/guidelines on NGOs/POs/CSOs representation in regional and local development bodies
- Effectiveness of participation of basic and marginalized sectors, women, rural or urban poor organizations, and community-based groups in regional and local development bodies
- Citizen engagement in public finance (planning, budgeting, and M&E)
- Effectiveness of existing transparency initiatives (Full Disclosure Policy, Transparency Seal, PhilGEPS posting, citizen's charters, and submission of SALN) among LGUs and RLAs
- Causes and motivation for fake news circulation
- Implementation status of programs for ICT-enabled government of LGUs and RLAs
- Profiling of RLAs and LGUs on the adoption of e-governance
- Effectiveness of existing complaints system/mechanism (Citizen's Hotline (8888) for incidents of corruption

- The extent of implementation of LGUs and RLAs on Equal Opportunity Principle (EOP) for women, men, and PWDs in civil service
- Case studies on the Effectiveness of PRIME HRM
- Assessment of GAD programs of agencies and LGUs
- Effectiveness of gender mainstreaming policies at the regional and local government offices
- Case studies among RLAs and LGUs on developing, capable, effective, and efficient public servants
- Effectiveness/Functionality of HRD Plans of RLAs and LGUs
- Perception study on building trust and confidence in the response and recovery efforts to emergencies/pandemic
- Study on the effectiveness of SGLG on the performance of LGUs
- Policy evaluation on streamlining the bureaucracy (Rationalization Program)
- The extent of compliance of LGUs in the procurement of office supplies from the Procurement Service of the DBM

INDIGENOUS KNOWLEDGE SYSTEMS AND PRACTICES ON DRR AND CCA

A. DRR response and climate change adaptation

- Photo-ethnography of relief packs distributed during emergencies
- Compliance of LGUs in updating local disaster risk reduction and management (LDRRM) plans for better pandemic preparedness and response
- Best practices of LGUs that can be replicated on maintenance of clean surroundings
- Assessment of Capability development Programs for frontline service delivery of LGUs and RLAs in the new normal
- Evaluation on the utilization of the DRRM fund and quick response fund
- Impact assessment studies on DRR programs

RETRIEVAL AND DOCUMENTATION OF INDIGENOUS TECHNOLOGY IN FILIPINO EXPRESSIVE CULTURE

- Documentation of indigenous knowledge systems and practices (IKSPs) initiatives

- Tracing the emerging identity of the people of Region 1 in the 21st century
- Assessment of tangible and intangible cultural and historical resources
- Ethnography of indigenous peoples in Region 1
- Studies on the generation of cultural data and statistics
- Assessment of local heritage conservation efforts in local cultural and tourism development planning
- Effectiveness of capability development activities in mainstreaming culture and heritage in local development plans
- Policy study to strengthen institutional linkages and mechanisms to facilitate cultural promotion at the sub-national level
- Policy studies on how heritage and culture can be integrated in urban and physical planning and in economic policies
- Challenges in operationalizing culture in local development

EDUCATION

A. K-12 implementation

- Assessment of S&T subjects and STEAM track
- Textual Analysis of S&T subjects and Curricula
- Impact of K-12 free education to private schools
- Effects of the transfer of senior high school public students to private high school
- Effects of the mother tongue-based multilingual education in the performance of learners
- Competencies of public and private junior and senior high school teachers and Effectiveness of teachers' training for K-12

B. Pedagogies of education

- Assessment of compliance to Early Childhood Care and Development (ECCD) standards
- Competencies of ECCD practitioners
- The extent of implementation of early detection of developmental delays and disability, intervention, and referral system
- Assessment of CDC's compliance to ECCD standards
- Level of implementation of BE-LCP in all Schools Divisions in Region 1
- Best practices in LCP implementation

- Preparedness of DepEd teachers on comprehensive sexual education (CSE)
- Assessment of various learning delivery modalities for basic education
- Effectiveness of Learning Action Cells (LACs) in enhancing teacher competencies
- The extent of utilization of findings/recommendations from action and basic researches conducted by Basic Education Research Fund (BERF) grantees (funded researches)

C. Access to universal education

- Impact of BERF as a tool to improve education outcomes
- Assessment of DepEd's advocacy strategies in strengthening stakeholder engagements
- Best practices in Brigada Eskwela Program implementation
- The extent of LGU support to ALS implementation
- Mapping of OSYs
- Assessment of the effectiveness of ALS program
- Constraints in ALS implementation
- Identification of 21st-century skills for millennials
- Effects of social media/ICT in the academic performance of students
- Perceptions on drugs and sex education in the high school curriculum
- Assessment of the integration of education and health practices of IPs in Region 1
- Integration of sex, anti-drug education, and GAD concerns in the education curriculum
- Development and validation of instructional materials for Senior HS

D. Quality of technical vocational education

- Study on effectiveness of online TESDA programs to trainees
- Feasibility of TESDA training related to competencies for Freelance/Platform/Gig Economy (online teaching, virtual assistant, online marketing, and others)
- Assessment of the competency of graduates of technical-vocational courses
- Assessment of preferred training modalities of Out-of-School Youth (OSY) for technical and skills training

- Assessment of preferred training modalities of employed blue-collar workers for technical and skills training
- Case Study of Community-based TESDA Training Beneficiaries

E. Tracer studies

- Self-employment ventures of graduates as an alternative to wage-employment
- Tracer studies on TESDA graduates

F. Access to higher education

- Assessment of various learning delivery modalities
- Review of the availability and accessibility of tertiary and postgraduate scholarship grants
- Review of SUCs contribution to regional development
- Factors affecting the decline of enrollees in agricultural and fishery courses
- Effectiveness of the implementation of CHED scholarship programs
- Utilization of scholarship grants afforded to 4Ps beneficiaries

G. Manpower demand and supply

- Readiness studies and future of work studies related to FIRE
- Assessment of the education and training system in response to FIRE
- Development of a database of industry manpower demand and supply
- Viability of new course offerings related to FIRE

H. Government- Academe-Industry partnership

- Database of industry manpower demand and supply
- Assessment of advocacy strategies in strengthening stakeholder engagements for government-academe-industry partnership
- Assessment of relevance and effectiveness of internships of senior high school students
- School-to-work transition studies
- Survey on the preference of companies in hiring senior high school students
- Feasibility of the Government Internship Program (GIP) to be adopted by government agencies, GOCCs, or other government instrumentalities as a regular program or activity for new graduates

WATER QUALITY, ACCESSIBILITY, AND AVAILABILITY

- Identification of viable irrigable areas in upland areas thru pump irrigation
- Identification of sites for small water impounding projects (SWIP)
- Mapping of all irrigation structures and facilities
- Assessment on the possible expansion of irrigation coverage on irrigable lands
- Identification of possible sites for water supply
- Accessibility of women and children to clean and potable water
- Development of model farms for high-value crops using drip irrigation Technology
- Study on the efficiency of irrigation projects

SOCIAL DIMENSIONS OF HEALTH

A. Herbal and folkloric medicine

- Herbal and folkloric medicine
- Identification of medicinal/herbal plants as alternative medicine
- Potential uses of herbs for disease prevention, use of natural/traditional practices for disease prevention for emerging and re-emerging diseases

B. Health of vulnerable People

- Studies on the mental health of adolescents
- Assessment of current health facilities that cater to maternal and children's health need
- Case study of maternal sepsis in Region 1
- Study on the leading cause of mortality and morbidity among children ages 0-5 in Region 1
- Study on the experiences and involvement of health-serving NGOs and professional organizations towards maternal and children's health
- Analysis of parents behavior on the selection of food served to children in the household
- Analysis of the content and health components of feeding programs handled by volunteers in the region

- Determinants of health-seeking behavior of hypertensive patients
- Determinants of health-seeking behavior of patients with diseases belonging to top causes of morbidity and mortality diseases
- Determinants of health-seeking behavior of smokers
- Factors affecting the high incidence of child mortality and non-improvement in maternal health
- Support systems for pregnant mothers in GIDA/IP areas
- Health of Indigenous Peoples, Senior Citizens, Mothers, LGBT, and PWD
- The extent of acceptance of family planning in GIDAs
- Development of affordable health and nutrition products and services for maternal and children's health

C. Health governance

- Assessment of ratio of women/children to pediatrician and OB-GYN
- Assessment of ratio of barangay nutrition scholars (BNS) to children population
- Assessment on the fast turn-over of BNS
- Assessment of health care delivery system strategies for the First 1000 days
- Survey of medical students in Region 1 planning to specialize in dentistry, dietetics, pediatrics, OB-GYN, and sanitary engineering degrees
- Survey of senior high school students to identify possible entrants to dentistry and sanitary engineering degrees
- Rapid appraisal assessment on specialized degrees
- Assessing the ratio of cardiologists to population
- Needs assessment of oncologists and interventional radiologists in the region
- Linkages study on private volunteer health organizations and NGOs with health-vulnerable barangays
- Study on the experiences and involvement of health-serving NGOs and professional organizations towards mitigation or eradication of the following:
 - Malnutrition
 - Vector-borne diseases
 - Communicable respiratory diseases
 - Lifestyle diseases
 - Leading diseases for mortality and morbidity
 - HIV-AIDS

- Study on the experiences and involvement of health-serving NGOs and professional organizations towards the promotion of contraceptive use
- Study on the experiences and involvement of health-serving NGOs and professional organizations towards health infrastructure development
- Effect of health-related Corporate Social Responsibility (CSR) programs in Region 1 health development outcomes:
 - Malnutrition
 - Vector-borne diseases
 - Communicable respiratory diseases
 - Lifestyle diseases
 - Leading diseases for mortality and morbidity
 - HIV-AIDS
- The extent of multi-sector collaboration or partnerships in nutrition and health
- Identification of necessary and appropriate nutritional interventions at the LGU level
- Needs assessment of the supply of anti-hypertensive and anti-lipidemic drugs in RHUs
- Perception study on possible designs for gender-responsive and age-sensitive health center
- Study on the ratio of barangay/city health centers to population
- Study on the accessibility of rural health units in LGUs
- Study of equipment and supply adequacy of rural/city health units
- Social costs and benefits analysis for new health center
- Accessibility of barangay health centers in LGUs
- A phenomenological study of barangay health workers
- Study on direct and indirect costs to earn Dentistry, Dietetics, and Sanitary Engineering degrees in Region 1
- Study on the location and number of primary health centers linked to the PHIC network
- Analysis of profile/specialization/training of health care workers in the region
- Best practices and experiences of LGU health care workers with /without private practice
- Study on the hospital bed-to-physician and hospital bed-to-nurses ratio across hospitals
- Study on job satisfaction of health care workers in public health facilities
- Study on the experiences and involvement of health-serving NGOs and professional organizations towards health care workers training

- Assessment of health-related Corporate Social Responsibility (CSR) programs in Region 1 in line with health care workers' capabilities
- Assessment of PHIC services and UHC implementation
- Determinants of availing PHIC benefits by the direct contributors
- Assessment of Perceptions of PHIC Information Materials by the Indirect Contributors
- Mapping out of NGO partners on health-related activities
- Mapping of cases of hypertension and teenage pregnancy
- Impact of the different health programs in Region 1
- Compilation/mapping of LGU localized laws/ordinances related to health
- Documentation of best practices of LGUs along inter-local health zone in health service delivery
- Culture sensitivity of health workers in service delivery among IPs
- IP traditional beliefs in health vs. standards
- Profiling of barangay health workers as a basis for continuing education program
- Assessment of LGUs support in the enhancement of the capabilities of health social workers

D. Health financing

- Impact and coverage analysis of PhilHealth prenatal and newborn packages
- Assessment of LGU funding for the management of hypertensive patients
- Assessment of LGU funding for the mitigation of the rise of Malaria cases
- Assessment of the utilization of TB and Malaria PHIC packages
- Assessment of the utilization of hypertension-related and Z-package (Coronary Artery Bypass Graft) PHIC packages
- Cost of illness studies
- Assessment of the availability of anti-cancer drugs and treatments in the region
- Assessment of the utilization of Z-package (cancer) PHIC packages
- Assessment of the utilization and sufficiency of outpatient HIV-AIDS Package of PHIC
- Trend analysis of capital outlays towards the construction of cancer centers and purchase of cancer-related diagnostic and treatment equipment
- Trend analysis of capital outlays towards the purchase of HIV diagnostic equipment
- Cost of management of acute diseases in non-hospital settings

- Assessment of the utilization and sufficiency of voluntary surgical contraception procedures package of PHIC
- Trend analysis of LGU-level expenditures in the provision of reproductive health services
- Study on Earmarked No Balance Billing (NBB) beds to population ratio of PHIC accredited infirmaries and hospitals
- Trend analysis of DOH and LGU investments for the construction of new health centers and hospitals
- Level of satisfaction of private hospitals to the PHIC's accreditation, payments, and processes
- Trend analysis of the Personnel Services (PS) expenditures of DOH-retained hospitals and devolved public hospitals and infirmaries
- Study on the implementation of No Balance Billing and case-rate packages
- Level of pocket expenditures and its determinants in public and private hospitals
- Assessment of criteria for prioritization of individuals to be assisted by health-serving NGOs and professional organizations
- Analysis of utilization of COVID-19 Packages of PHIC
- Trend analysis of the value and coverage of contributions of LGUs and other sponsors for indirect contributors to PHIC
- Review of the cost of hospital expenses vis-à-vis-the current socioeconomic status of Region 1
- The extent of PHIC utilization of women of reproductive age enrolled as 4Ps beneficiaries

E. Infectious diseases and sexually transmitted infection

- A case study of public hospital and non-hospital based TB DOTS centers
- Determinants of health-seeking behavior of tuberculosis patients
- Assessment of health information dissemination campaign in combatting TB
- Needs assessment of the supply of TB drugs in Rural Health Units (RHUs)
- Assessment of the ratio of TB-DOTS detailed positions to TB patients
- Availability of reagents and equipment to test TB in a laboratory setting
- Assessment of LGU funding for the mitigation, treatment, and care of TB Patients
- A case study of People Living with HIV (PLHIV) and their families
- Needs assessment of medical practitioners with training on primary care for adult patients with HIV Infections

- Study on the availability and reliability of rapid HIV-AIDS tests
- Study on the availability and consumption of contraceptives from public and private purchase points
- Factors affecting health-seeking behavior of high HIV/AIDS cases in Region 1
- Effectiveness of Local AIDS Council
- Causative factors of increasing cases of pre-teen and teen pregnancy in Region 1

F. Social determinants of population health

- Determinants of the use of modern contraceptives
- Adolescent mental health
- Analysis of the regional fertility trends
- Mapping of CSO partners in the implementation of RPRH Law
- Perception of and barriers to effective family planning promotion
- Analysis of issues and uptake related to the use of family planning tools
- Socioeconomic determinants of fertility in the region
- Effectiveness of IEC materials on adolescent health programs
- Accessibility and functionality of adolescent health facilities
- Adolescent mental health
- Effect of reproductive health Corporate Social Responsibility (CSR) programs to Region 1 health outcomes
- Survey of medical practitioners' willingness to prescribe modern contraceptives
- Male involvement in RPRH programs
- Factors affecting life expectancy and the survival of old age population
- Mapping and demographic analysis of the concentration of young population in the region
- Contraceptive self-reliance of LGUs
- Study on the effectiveness of teen pregnancy prevention programs
- The extent of acceptance of family planning in GIDAs
- Studies on the effectiveness of the RPRH Law





HEALTH

Researches in this theme contain topics on health science and technology. The categorization of specific topics was based on the groupings of the Health R&D Agenda as contained in the NHRDA 2017-2022. It contains topics on drug discovery and development, diagnostics, functional foods, ICT for health, molecular technology, development of biomedical devices, nutrition and food safety, and DRR&CCA for health.

A. Drug discovery and development

- Development of standardized herbal drugs
- Discovery of new drugs for communicable and non-communicable diseases
- Development of biomedical devices
- Development of ICT-enabled medical devices, software, and services

B. Diagnostics

- Early detection, diagnosis, and management of infectious diseases and non-communicable diseases including mental health

C. Functional foods

- Development of Simplified Iodine Detection Test for Salt
- Fortification techniques for milled rice and other commodities
- Malunggay-fortified pastries

D. ICT for health

- Development of ICT for health care system

E. Molecular technology

- Studies on molecular biological techniques

F. Hospital equipment and biomedical devices

- Development of biomedical devices to facilitate early detection of cancer, diabetes, COPD, COVID-19, and other diseases

G. DRR&CCA –Health

- Health consequences of climate change
- Documentation of best practices in malaria control in Region 1
- Assessment of health information dissemination campaign in combatting malaria
- Availability of anti-malarial drugs at the LGU level
- Availability of reagents and equipment to test malaria in a laboratory setting
- Lived experiences of health care workers in the pandemic
- Case study of epidemiologists and physicians with an epidemiological background
- Effects of climate change on the health and wellness of mother-children in Region 1
- Identification of commonly used household products with hazardous chemicals and development of alternatives

H. Nutrition and food safety

- Assessment of nutrition promotion in child development centers
- Effectiveness of micronutrient supplementation for pregnant and lactating women, low birth weight infants, and micronutrient powder (MNP) supplementation of children 6-23 months old
- Effect of iron-fortified rice among pregnant women, food-insecure households and GIDAs
- Development of clinical pathways as an intervention to malnutrition
- Mapping of the prevalence of malnourished children in the region
- Assessment of children's dietary intake in poverty-stricken areas
- Effectiveness of medical missions and supplemental feeding programs
- Assessment of LGU support to fight malnutrition in children
- Policy study on the effective delivery of nutrition programs
- Factors affecting high obesity among children in Region 1



AGRICULTURE, AQUATIC, AND NATURAL RESOURCES



Researches in this theme contain research priorities for agriculture, aquatic and the environment sector. The categorization of specific topics was based on the groupings of the agriculture, aquatic, and natural resources R&D Agenda as contained in the NHRDA 2017-2022. It contains topics on promoting and improving agricultural and fishery sector productivity, efficiency, and competitiveness. For the environment sector, topics include valuation studies, environmental management, resource and ecosystems assessment, monitoring sustainable development, and development of strategies for climate change resilient environment, among others.

AGRICULTURE

A. Post harvest handling, processing and product development

- Prolonging the shelf-life of food and non-food products for priority agri-fishery products
- Development of new designs, construction protocols, post storage facilities, machines, tools, and equipment for fishery production, processing, and marketing
- Development of market linkage strategies for agri-fishery products to specific market niches
- Product development and processing of agri-fishery and its by-products
- Product development and processing of priority crops and other high-value products of Region 1 and its by-products
- Development of quality packaging materials
- Development of intermediate food products and ingredients from local raw materials
- Product development including shelf-life and packaging materials for SMEs in animal product processing
- Development of technology for pulping agricultural wastes and evaluation of other fibrous agricultural crops for pulp production
- Development of innovative food products
- Improvement of existing local food products and by-products

B. Production of good quality seeds and planting materials

- Adoption of rapid propagation techniques of quality planting materials for priority crops
- Development of rapid detection techniques for emerging diseases on planting materials

C. Varietal improvement and selection

- Development of crop varieties with enhanced resistance to major pest and diseases

D. Breed development and genetic improvement

- Purification and multiplication of native animals
- Genetic conservation and improvement of existing quality breeds for small and large ruminants, free-range chicken, and native pigs
- Assessment and development of techniques and protocols in improving the health of small and large ruminants, free-range chicken and native pigs, and food safety

E. Nutrition and feed system

- Development of feeds and feeding practices for small and large ruminants, free-range chicken, and native pigs for improved productivity
- Survey and documentation of existing indigenous food products from native animals

F. Vaccines, biologics and diagnostics

- Documentation and analysis of emerging diseases of livestock and poultry

FISHERIES AND AQUACULTURE

A. Management of fisheries

- Biological assessment of various aquatic ecosystems
- Oceanographic/Limnological Studies
- Strengthening fisherfolks involvement in managing resource
- Development of climate-resilient technologies for fishery production
- Fisheries vulnerability assessment
- Assessment of the adoption and practice of organic agriculture and agrifishery in Region 1

B. New cultivable species for culture

- Stock assessment of freshwater and marine organisms in Region 1 (municipal and provincial disaggregation)

C. Development /Refinement of cultural system

- Development of remote sensing technologies for improved fishing
- Fishing technology assessment and development
- Development of regional information system for aquaculture

D. Cultural management practices

- Improvement of cultural management practices and conservation and sustainable utilization of traditional crop varieties
- Season-long monitoring of emerging insect pests (population) and diseases
- Development of dynamic weather cropping calendars and localizing the PAGASA weather forecast
- Analysis of integrated farming system for crops
- Inventory and mapping of AFF resources in Region 1
- Integrated crop management
- Vulnerability assessment of crops
- Generation of GIS-based maps of different ecosystems reflecting fertility, productivity, and resources
- Soil rejuvenation techniques through the application of organic fertilizer and other organic materials
- Development of robotics as a tool for increasing agricultural production

SOCIO-ECONOMICS AND POLICY RESEARCH

- Design and production of new and low-cost technologies to improve the productivity of farmers, fisherfolk, and MSMEs
- Packaging and commercialization of mature and appropriate technologies
- Assessment of Techno Transfer Act of 2009
- Study on strengthening collaborative mechanisms in technology transfer and technology business incubation
- Attitudes and perceptions of farmers and fisherfolks on low-cost technology adoption
- Level of adoption of GMP and GAP in Agribusiness
- Identification of training to capacitate farmers on product development

- Development of climate-resilient technologies to improve the productivity of farmers and fisherfolks
- Assessment of DA and SUCs training and extension services for the AFF sector
- Analysis of the factors affecting employment in the AFF sector
- Analysis of factors affecting the attitudes and motivations of the youth in taking up AFF-related courses
- Development of IT support systems for the AFF sector
- Assessment of strategies of crop insurance providers in reaching its stakeholders
- Assessment of farmers and fisherfolks acceptability to existing crop insurance
- Policy review on effectiveness of the rural credit delivery system
- Attitudes and perceptions of farmers and fisherfolks on credit/insurance availment
- Assessment of loan availment of farmers/fisherfolk from financing institutions
- Identification and evaluation of land use patterns to ensure the rational and sustainable use of land in the region
- Assessment of the CLUP implementation of LGUs
- The extent of land conversion (Agri to non-Agri) in the region
- Supply chain analysis and quality assessment of livestock and poultry
- Impact assessment of banner programs in Region I for small and large ruminants, free-range chicken, and native pigs
- Role of women in the Agrifishery Sector
- Competitiveness of agri-products
- Assessment of the effectiveness of agency programs in advocating technologies among farmers, fisherfolk, and MSMEs
- Value chain analysis and competitiveness study of strategic priority commodities and HVCs of Region 1
- Impact, and policy studies of the fishing industry in the region
- Assessment of the distribution/market links for agricultural products
- Development of market support systems for developed agri-fishery products
- Competitiveness of fishery products
- Assessment of LGU PPAs in promoting the AFF
- Assessment of the level of development of farmers and fisherfolks' organization
- Inventory of LGU-accredited farmers and fisherfolk organizations and problems encountered in the accreditation
- Assessment and identification of TESDA training programs for agri-tourism opportunities

- The extent of implementation of clustering approach in agro-enterprise development
- Enhancing entrepreneurial capabilities of rural enterprises for agri-industrialization
- Feasibility of the provision of community seed banking for various crops as a form of risk-mitigating measure
- Varietal screening of priority crops/cash crops for adaptation to climate change
- Adaptation technology to drought or climate change and controlling soil erosion
- Development of new technologies in farming and fishery sector responsive to continuing and emerging problems including climate change
- Risk-taking abilities of farmers/fisherfolks for a business venture
- Policy review on existing policies on housing, resettlement, and land development
- Policy guidelines on enforcing and monitoring existing treatment technologies employed in the treatment, storage, and disposal (TSD) facilities of hospitals
- Studies on the practice of reduce, reuse, and recycle programs
- Assessment of communication strategies to heighten awareness on green products, jobs, and services
- Assessment of initiatives in developing green spaces and green building strategies in LGUs and agencies
- Effectiveness of foreshore area management and development plan of provinces
- Compliance to Green Jobs Act (Republic Act No. 10771)
- Factors affecting compliance to Clean Air Act and related laws
- Factors affecting compliance to Clean Water Act and related laws
- Effectiveness of Smoke Emission Testing Centers
- Factors affecting compliance to Section 16 of RA 9003 (Ecological Solid Waste Management Act of 2000)
- Policy review, formulation, amendment, and harmonization of environmental laws and regulations
- Policy guidelines on the inventory/management of reclamation and accreted lands

FORESTRY, NATURAL RESOURCES, AND ENVIRONMENT

A. Marine environmental management

- Identification of additional marine protected areas (MPAs) and development of sustainable management strategies

B. Environmental valuation

- Economic valuation and cost-benefit analyses of ecosystems

C. Enhancing sustainable development thru life scape-landscape approach

- Evaluation and assessment of potential eco-tourism sites

D. Resource and ecosystems assessment and monitoring

- Development of modern and analytical instruments for water quality
- Assessment of the condition of the region's water supply and sanitation
- Study on the impact of saltwater intrusion to vegetation including coping and mitigation measures
- Technology development for monitoring of air quality
- Study on the toxicity and pH variability of coastal waters

E. Sustainable watershed management and utilization

- Development of cost effective desalination technologies for alternative water supply

F. Sustainable utilization, conservation, and management of biodiversity

- Development of sustainable management practices for forest plantation
- Study on extent of intrusion/encroachment on environmentally-critical areas.

G. Development of strategies for climate change resilient environment

- Urban regeneration capacities of cities to improve community resiliency
- Pedestrianization and walkability studies
- Effectiveness of communication strategies in promoting environmental public health awareness
- Social cost of coal power plants and modern agricultural practices

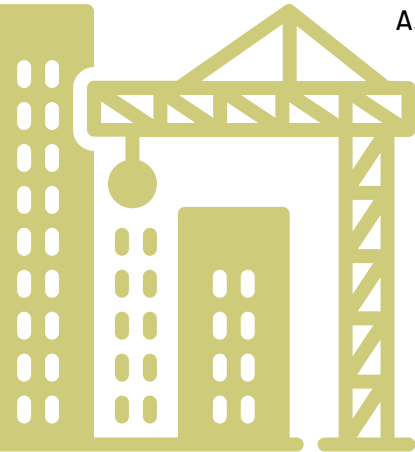
H. Management and rehabilitation or problem, degraded and polluted agricultural soils

- New alternative technologies in water treatment
- Alternative technologies in solid waste management

ENERGY, INDUSTRY, AND EMERGING TECHNOLOGY



Researches in this theme contain research priorities in industry competitiveness particularly for micro, small and medium enterprises (MSMEs) to aid in countryside development. Researches on waste utilization, value-addition of traditional products and efficient manufacturing processes, countryside development innovations, new construction materials and techniques, air and water pollution control and management, renewable energy systems and bioenergy technologies, and topics for competitive industries were included in this section. The categorization of specific topics was based on the groupings of the Energy, Industry and Emerging Technology R&D Agenda as contained in the NHRDA 2017-2022.



A. New construction materials and techniques

- Life cycle analysis of concrete and asphalt used in road pavements
- Development of asphalt pavement from plastics
- Development of engineering design and technologies for critical infrastructure projects considering disaster resilience and gender responsiveness
- Viability of structures preventing coastal erosion
- Alternative building design and technologies for disaster resilient structures

B. Air pollution control and management

- Development of environment-friendly vehicles
- Feasibility study on the use of electric PUVs
- Development of environment-friendly vehicles

C. Competitive industries: ICT, electronics and semiconductor

- Study on alternative modes of data transmission technologies
- Development of better and reliable ICT facilities in the New Normal

D. Environment and water pollution control

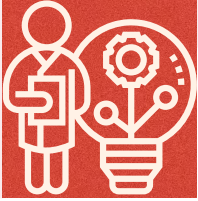
- Development of cost-efficient wastewater technologies

E. Renewable energy systems and bioenergy technologies

- Review of renewable energy sources in the region
- Design model and procedures for ocean renewable energy
- Studies on cost-competitive indigenous/alternative biofuel sources

F. Countryside development innovations

- Viability of R&D facilities for infrastructure-related projects



OTHER R&D PRIORITY SECTORS AND SUB-SECTORS

This section presents other research topics that did not fall in the major categorization of Basic Research, Health, Agriculture, Aquatic and Natural Resources, and Energy, Industry, and Emerging Technology. The topics are grouped according to the five priority sectors of the RDC namely, economic development, governance, infrastructure and utilities, environment, and natural resources and social development.

ECONOMIC DEVELOPMENT

A. Macroeconomy

- Time-series analysis of food-related inflation
- Usage of online-based finance platforms among the Youth sector
- Leveraging financial technology for private enterprises and MSMEs
- An analysis of microfinance loans and borrowing across agricultural and rural households
- Experiences of households and entrepreneurs tapping microlending channels
- Development of database containing the portfolio of available insurance and microfinance loan opportunities and their specific requirements and qualification
- The default rate of micro-borrowers and investors
- Narratives of *paluwagan* and its members
- Trust of locals to financial institutions
- Development of crowd-sourced software for use of local financial institutions
- Time series analysis of cybercrimes in the region and its possible determinants
- Attitude and capabilities of households and rural communities towards financial digitalization
- Development of software for virtual Know-Your-Client (KYC) activities of small financial institution

- Case studies of key cooperatives' products, services, and ownership
- Case studies of liquidity management practices of regulated entities
- Time series analysis of the non-performing assets and loans of banks
- Analysis of the region's formal banking sector, management of cash-flow activities and their effects on commercial and rural banks' liquidity Risk
- Case Studies on MFIs Lending and deposit practices
- Comparison of locally-imposed taxes, business registration, and franchise fees
- Impact analysis of the transition period for the implementation of Mandanas Ruling
- Case study of LGU-initiated PPPs
- Share of social services to the total and current expenditures of LGUs through time
- Utilization of Special Education Fund from real estate taxes
- Source and appropriation of COVID-related expenditures of LGUs
- Feasibility study of PPP as a funding mechanism to build social infrastructure
- Feasibility study of alternative value-adding mechanisms to tobacco exports
- Assessment of marketable products from Region 1 for export
- Identification of products and services where the Region has comparative advantage vis-a-vis other regions
- Food innovation and improvement in the shelf life of food products from Region 1
- Case studies of exporters in the region
- Export capacity analysis
- Food-product value chain analysis
- Efficiency analysis of TradeNet
- Perceptions and experiences of importers and exporters with customs and port authorities
- GRDP and its impact to poverty reduction in Region 1
- Market matching and linkage of farmers/fisherfolks products

B. Science, technology, and innovation

- Assessment of the capacity of SUCs in developing Technology Business Incubator (TBI) program
- Developing incentives for the private sector to invest in STIs



- Study on the agencies' ROI on R&D-related investments
- Assessment of SUC/HEI-published researches
- Development of database containing researches conducted in the region and technologies ready for adoption
- Assessment of the Balik Scientist program
- Feasibility studies on the establishment of food innovation centers
- Studies on assessing ways to strengthen research on infectious, emerging, and re-emerging diseases
- Impact of publicly funded R&D centers to regional and community development
- Identification of STI-related knowledge gaps
- Assessment of R&D HR and their capabilities
- Assessment of existing linkages and programs promoting tripartite collaboration
- Inventory of research capacities in the various fields and sciences and identification of constraints and interventions to strengthen research capacities
- S&T as a tool in advancing business enterprises and cooperatives
- Effectiveness of different programs on incentivizing start-up SMEs
- Impact studies on utilized technologies

C. Tourism and Industry

- Digitization of business-application process
- Impact of the pandemic to market access and promotion of local products and services in the tourism industry
- Best practices in the management of data on tourist arrival for possible adoption in Region 1
- Challenges faced by potential agritourism farms
- Constraints on the accreditation of agritourism enterprise/sites; (expand to other tourism establishments)
- Documenting best practices of tourism establishments in implementing the updated health and safety protocols under the New Normal as contained in the DOT Memo Circular No. 2020-002
- Documentation of best practices in agritourism in Region 1



- Identification of new trends in the tourism industry
- Status and prospects of agritourism in Region 1
- Efficiency and effectiveness of Trade Fairs (Local and International) in enhancing the competitiveness of SMEs
- Best industry regulatory practices to ensure the openness of markets
- Level of adoption of good manufacturing practices (GMP) and HACCP in the region
- Determine the enabling support services to improve the business climate in the region
- Assessment of processes in business registration/permits
- Policy formulation for alternative collaterals for borrowers to simplify the requirements for loan purposes
- Study on the compliance of LGUs to RA 9593 or the Tourism Act of 2009 which requires that the tourism development plans should integrate zoning and land-use imperatives that encourage sustainable tourism development
- The extent of compliance of food manufacturers to LTO-FDA accreditation
- Value chain analysis and competitiveness study of emerging industries
- Feasibility of establishing economic zones in the agro-industrial sector for export
- Identification of emerging industries suitable in the region.
- Feasibility of ship-building industry in Region 1
- Feasibility of the development of ports (identification of coastal areas feasible for the development of ports)
- Impact of the TPLEX extension to the construction subsector and region's economy
- Impact of COVID-19 on the manufacturing subsector (significant factors contributory to the growth/decline in the manufacturing sector in COVID-19 times)
- Challenges faced in the manufacturing subsector
- Labor supply analysis in the service sector to meet the demands of emerging industries
- Challenges, opportunities, and best practices in the services subsector (e.g financial sub-sector)
- Impact assessment of DTI PPAs on SMEs assistance
- Feasibility studies of the investment priority areas of LGUs
- Effects of COVID-19 to investment priorities (specifically to investment areas before, during, and post-pandemic)
- Effectiveness/ impact assessment of SETUP and GIA
- Enrolment strategies in grants-in-aid program

- Benefit analysis on the impact of SEZs in the locality and regional economy
- Feasibility of establishing economic zones particularly for agro-industrial for export
- Perceptions and Factors in the implementation of coop projects
- Assessment of the impact of cooperatives on rural development
- Assessment of the utilization and feedback of target beneficiaries of Shared Service Facility (SSF) for program improvement
- Best practices in the BMBE, SSF, and Negosyo Centers implementation
- Impact of COVID-19 to the attainment of the region's vision on becoming the Tourism Hub in Northern PH by 2022
- Impact evaluation of the DOT-DPWH convergence projects
- Assessment of Region 1's performance in achieving its vision to be the agribusiness hub in Northern Philippines
- Contribution of cooperatives in regional development
- Effectiveness of multi-cooperatives as business enterprise managers

INFRASTRUCTURE AND UTILITIES

A. Road quality, access and safety, and traffic management

- Assessment of road safety policies
- Impact of road improvements to road safety
- Impact evaluation of DOT-DTI access road projects (ROLL IT)
- Viability of bicycle lanes
- Design models for new and modern public transport (tram/monorail, cable car) conducive to women, children, and older people
- Design models for upgrading seaports in Region 1
- Design models for upgrading of airports in Region 1
- Assessment of the design of public and private vehicles in response to emerging diseases
- Impact assessment of by-pass roads, TPLEX
- Impact assessment of coastal roads
- Viability of extending the North-South Railway Project to Region 1
- The extent of implementation of Philippine Contractors Accreditation Board regulations
- Impact evaluation of DOT-DPWH Convergence Tourism Access Road projects
- Factors affecting the decline of ship calls in the region and its effect on the region's productivity

- Viability of other airports in the region for commercial operation
- Status of implementation of DPWH DO 73 s. 2014
- Factors affecting the implementation of road projects
- Economic viability of extending the expressway to Ilocos Norte

B. Affordable energy

- Feasibility of net-metering for offices, establishments, and households

C. Reliability and modernization of social infrastructures

- Development of an integrated database of education infrastructures
- Design model for health-related facilities such as hospitals, testing laboratories, and quarantine facilities
- Gender sensitivity of public spaces
- Effectiveness of Health Facilities Enhancement Program (HFEP)
- Evaluation of the compliance of school infrastructures and facilities in the region to GAD, child-friendly school, and IPED requirements
- Documentation of preservation efforts on DepEd Gabaldon buildings' structural and cultural integrity
- Impact Assessment of the PSIP I & II Program

D. Improving infrastructure for communication and information access

- Factors affecting the delayed implementation of infra-projects under the National Broadband Plan
- Constraints in the implementation of the Integrated Government Philippines (iGovPhil) Program

E. Productive infrastructure sector and disaster resilient structures

- Survey of critical infrastructure security
- Constraints in the development and implementation of PPPs in the region
- The capacity of LGUs to undertake PPP infra projects
- Study on the factors affecting shortage of manpower in the construction industry
- Motivational factors of manpower in the construction industry
- Study on improving construction labor productivity
- Improving bottlenecks in administrative systems and procedures
- Implementation bottlenecks of Infrastructure projects among SUCs
- Constraints in implementation of project contracts and enforcement of penalties on violation

GOVERNANCE



A. Development administration

Fiscal administration

- Documentation of best practices in tax and revenue collection
- Documentation of cases/stories on delinquent taxpayers
- Policy review to improve tax collection system (point of sale, cashless transactions)

Justice administration

- Constraints in the creation of provincial and regional justice zones
- Constraints in the creation of special courts under RTCs
- Effectiveness of services of small claims courts
- Policy review on hiring and appointment process of prosecutors and other justice personnel
- Policy review of the current organizational structure of DOJ/RSPD Region 1 and M/RTC
- Accessibility of PAO services to the poor and marginalized sector
- Effectiveness of conciliation and mediation services
- Status of implementation of SC-issued Community Legal Aid Service Rule
- Common health and sanitation issues in jail and prison facilities
- Feasibility of halfway house program for PDLs
- Integration of GAD requirements in rehabilitation facilities
- Assessment of LGU support programs for employment facilitation for pardonees, parolees, and probationers
- Effectiveness of Enhanced Justice on Wheels program
- Constraints in the establishment of e-court system in the region
- Study on the effectiveness of society integration programs for offenders
- Study on the best practices in barangay complaint mechanism



Competitiveness and globalization

- Policy review of investment priorities of LGUs critical to the supply of essential goods, and construction and rehabilitation of health facilities
- Policy review on data collection and indicators for CMCI
- Effectiveness of Bagwis Program
- Review on the formulation and implementation Business Continuity Plan
- Implementation status of Region 1 Strategic Investment Promotion Plan
- Compliances of SMEs to Philippine National Standards (PNS) for consumer protection and trade
- Identifying locational factors of medium and large industries in Region 1
- Policy review on legislations and policies that restrict or lessen competition
- Identification of constraints in the non-implementation of Local Investment and Incentives Code (LIIC)
- Policy study on the formulation and implementation of investments code with a longer validity period
- Competitiveness of priority industries (agribusiness and tourism) in the region

B. Peace, order, and public safety

Law enforcement, human and information security

- Status of implementation of the Internal Peace and Security Plan (IPSP)
- Best practices of insurgency-free provinces like Pangasinan and La Union
- Effectiveness of Payapa at Masaganang Pamayanan (PAMANA) Program
- Effectiveness of Barangay Peacekeeping Action Teams (BPATs) in maintaining peace and order at the barangay level
- Effectiveness of halfway houses in social, medical, psychiatric, educational, and other similar services to the returnees
- Assessment of LGU support programs for employment facilitation for former rebels
- Mainstreaming of peace education programs and activities in LGU and barangay development plans
- Women representation in Lupon Tagapamayapa of conflict-affected barangays

- Challenges of women and children in conflict-affected areas
- Assessment of humanitarian programs and activities in conflict-affected areas
- Assessment of the existing convergence mechanisms implemented in conflict-affected areas
- Policy review on possible convergence mechanisms for effective implementation of socio-economic programs and other interventions in conflict-affected areas
- Assessment of the programs and projects to protect fishing activities within the country's exclusive economic zone (EEZ)
- Effectiveness of AFP Modernization and Capability Upgrade Program and PCG Modernization Program
- Best practices of PNP and community Partnerships in curbing criminalities
- Effectiveness of security measures against cybercrimes
- Effectiveness of BPATs in terms of combatting internal security threats
- Assessment of the capability of the PNP or AFP against terrorist groups
- Assessment of Crime Victimization Survey and crime statistics
- Assessment of the implementation of PDEA's war on drugs
- Effectiveness of the Barangay Drug Clearing as an anti-illegal drug campaign
- Effectiveness of the Preventive Education and Communications Involvement Services (PECIS) activities in disseminating PDEAs projects and programs
- Effectiveness of coordination protocols between the PNP and the barangay security personnel
- Assessment of the coordination and protocols of uniform personnel during emergencies
- Challenges in fire protection services
- Assessment of the BFP firefighting capabilities
- GAD issues during a natural and human-induced disaster
- Compliance of law enforcement agencies to international human rights standards
- Best practices in LGU traffic law enforcement
- Understanding and mapping of vehicular incidents
- Development of a database of OFs for monitoring and accounting
- Assessment of communication strategies to educate the public on human and drug trafficking
- Development of online and mobile application platforms for quick response in times of emergencies

- Assessment on the effectiveness of cooperative mechanisms between the migrant-serving agencies and OF organizations
- Assessment on the effectiveness of cooperative linkages with international humanitarian assistance organizations for OF and OFW welfare
- Evaluation of integration programs for offenders to society and former rebels
- Factors affecting the presence of insurgency
- Extent and effectiveness of partnership among law enforcement entities, LCEs, CSOs, and community in peace and order
- Effectiveness of training facilities and training provided to incoming police officers
- Evaluation of programs for violence against women and children
- Effectiveness of anti-drug campaign strategies
- Development of new technologies and processes to aid law enforcement
- Capacity assessment on DRRM systems and procedures including functional security efforts in disasters
- Determining constraints and factors affecting information security
- Development of security protocols for information security

C. Culture

DRR+CCA in culture

- Development of design models for retrofitting of vulnerable cultural assets
- Vulnerability study of tangible cultural assets

Cultural promotion, education, and assimilation

- Assessment of values education program in basic, technical, vocational, and higher education systems
- Viability of offering courses related to creative industries
- Labor market situation for creative economy
- Studies on feasible and alternative modalities in showcasing cultural and creative events
- Impact of quad media (broadcast, TV, print, blogs/travel writing) in the promotion of culture
- Impact of MTB-MLE/IPED/Muslim education in the promotion of cultural education
- Assessment of the capability of IPED teachers
- Effectiveness of cultural activities in the promotion of culture
- Effect of the implementation of the Values Restoration Program (VRP)

Culture for regional development



- Policy review on coordination mechanisms for Free, Prior and Informed Consent (FPIC) project implementation
- Impact of cultural cooperation agreements on socioeconomic development
- Policy study on the establishment of a regional office to coordinate culture and culture-relevant activities and initiatives
- Policy reviews in the integration of heritage management in the Land Use Plans of LGUs
- Compliance of LGUs to RA 10066 or the Heritage Law
- The functionality of Local Culture and Arts Councils (LCACs)
- The extent of participation of IPs Mandatory Representatives in the development process and the assessment of LGU initiatives
- Assessment of the integration of cultural perspective (prayer room) and GAD requirements in building designs

SOCIAL DEVELOPMENT



A. Employment, decent work, and labor rights

- Study on the effectiveness of job fairs in matching prospective employees to employers
- Impact of Public Employment Service Offices (PESO) on employment and underemployment
- Study on the effectiveness of PESO in Matching Prospective Employees to Employers
- Study on the efforts of the LGUs in institutionalizing employment facilitation in view of the Mandanas Ruling
- Accessibility of PESO services to vulnerable groups (youth and women among others)
- Assessment of employment opportunities for senior high school graduates
- Best practices of Micro, Small, and Medium Enterprises (MSMEs) and multi-national companies in complying with labor laws and of laws concerning women

- Trade unionism practices in Region 1
- Effectiveness of labor-management committees (LMCs) and grievance machinery (GM) in maintaining industrial peace (compliance to labor laws)
- Studies on compliance to occupational health and safety protocols/standards in workplaces
- Effectiveness of family welfare programs of companies in the region
- Assessment of equal opportunity principle for single mothers seeking employment
- Lived experiences of working mothers
- Phenomenological experiences of freelancers towards increased protection of labor and social rights
- Perceptions of the general public to freelancers/home-based workers and online sellers
- Practices and observations of labor groups towards gender justice in the workplace

B. Overseas employment and migration

- Case analysis of OF women's experiences and corresponding program development aimed at addressing their needs
- Factors affecting reporting and responding capabilities of OFs and consuls in cases of workplace abuse
- Assessment of the effectiveness of the established One-Stop Service Center for OFWs (OSSCO) in the region
- Feasibility of an online regional assistance center in Region 1
- Development of a database system of accredited NGOs where concerned individuals can send their requests for assistance.
- Training-needs assessment of OFs in line with IMD;
- Assessment of bilateral & multilateral agreements directed to the education and skills enhancement of OFs
- Assessment of reach of social protection programs for OFs and their families
- Assessment of bilateral and multilateral agreements directed to the social protection of OFs
- Impact assessment and best practices of the current measures that protect OFs against human and drug trafficking
- Assessment on existing laws and policies of countries-of-destination relevant to the protection and welfare of OFs who are victims of human and drug trafficking



- Effectiveness of the migrant desk offices established in the LGUs
- Analysis of the trend of legal and consular cases lodge under assistance-to-nationals services
- Assessment and possible integration of existing laws and policies relevant to ATN concerns of OFs
- Analysis of the quality of life before and after overseas employment
- Development of monitoring strategies in line with socioeconomic and political conditions of OFs
- Assessment of the programs of Philippine Foreign Service Posts in monitoring socioeconomic and political conditions of OFs
- Experience in the ASSIST WELL Program of OWWA in the region.
- Assessment of the reintegration programs for undocumented OF workers returning to the region i.e. LDAP, BPBH, SPIMS
- Gaps assessment and integration strategies of OFs in local development
- Impact analysis of social reintegration programs of OFWs in the local community setting
- Assessment of best practices in the existing programs of Philippine Foreign Service Posts relevant to national participation of OFs
- Best practices of FSPs in encouraging inclusivity of OFs to national issues
- Profiling, perceived needs, and analysis of the driving forces of migrants and migrations in the Region
- Development of migration-responsive local government frameworks
- Impact assessment of LDAP and SPIMS of beneficiaries
- Assessment of best practices in the Balik Pinas, Balik Hanapbuhay Program
- Assessment of the current employability skills of OFWs
- Assessing the initiatives of OF dependents in livelihood activities using remittances
- Best practices of MOFYA awardees
- Incentives system for returning OFs venturing in agribusiness
- Survey of returning OFWs acquired skills and knowledge
- Assessment of the Balik Scientist Program
- Assessment of the effectiveness of existing laws and policies focused on the welfare and eventual repatriation of distressed OFs
- Identification of 'bottleneck' areas in assistance-to-nationals programs of Regional Line Agencies
- Perception and experiences of migrants on the opportunities and threats of regional settlement

C. Social protection services at the local level

- Development of drum-based household garden technology
- Cost-benefit study of LGU and NGA funded feeding programs
- Lived experiences of Cash for Work (CFW) beneficiaries;
- Analysis of expenditure patterns of CFW beneficiaries
- Integrative policy analysis of the extent and possible redundancies in the social protection code
- Analysis of the social protection programs of various agencies specifically on livelihood assistance to marginalized/disadvantaged
- Assessment of Region 1-specific vulnerabilities and mapping of most vulnerable LGUs
- Efficiency analysis of the current funding mechanisms in social protection programs
- Analysis of food resource availability and its price stability in highly urbanized areas
- Analysis of food access of households in areas with high poverty level
- Effectiveness of feeding programs provided in schools and in the community
- Assessment and comparison of GMO and non-GMO practices for small scale planting
- Challenges met and benefits reaped from the RA 11037 implementation
- Food safety knowledge, attitudes, and practices of beneficiaries of social protection programs
- Effect of Cash-for-work programs to the work-seeking intentions of social protection beneficiaries
- Assessment of the level of awareness to social protection code of social protection beneficiaries
- Developing a database system that integrates various social protection registrations
- Survey on the implementation of safeguards, development interventions, funding mechanisms, and safety nets for social protection beneficiaries
- Comparative study of micronutrient content of food among the poorest areas in the region
- Micro-econometric analysis of the eating behavior of poverty-stricken areas
- Documentation of local small-scale planting for consumption practices of communities
- Policy improvement of LGU vegetable garden initiatives

- Impact analysis of health programs of LGUs in educational attainment in basic education and in poverty reduction
- The relationship among healthy food programs, education, and poverty
- Qualitative analysis of the efficiency of cash-for-work programs
- Relationship between poverty and cash-for-work initiatives
- Assessment of the integration of the international social protection frameworks in the crafting of social protection code
- Assessment of consultation strategy towards the development of social protection code
- Narratives of peoples deemed as vulnerable by government and Non-Government Organizations
- Discourse analysis of development as interpreted and reinterpreted by women and children
- Profile of senior citizens in GIDA and their possible role in community development initiatives
- Integration of the expanded senior citizens' laws and policies in the crafting of social protection code
- Priority-needs assessment of senior citizens in poverty-stricken areas
- Factors affecting people's attitude towards entrepreneurship, financial literacy programs, and social protection programs in Geographically Disadvantaged Areas (GIDAs).
- Analysis of the role of social capital towards the establishment of MSME
- Survey on the challenges met and opportunities learned in the implementation of KC-NCCDP
- Cost-benefit study of KALAHI-CIDSS funded Programs
- Assessment of safeguards, development interventions, funding mechanisms, and safety nets included in and reaped through various senior citizens programs.
- Development of financial vulnerability index of men and women in the MSMEs
- Survey on Region 1's MSME employee profile
- Development of GAD sensitive MSME-related programs
- Lived experiences of women in MSME
- Assessment of the implementation of RA 10524 in Region 1
- Best practices in hygiene, sanitation, and protocols of MSMEs
- Integration of GAD in the formulation of social protection code
- Analysis of the extent of child labor and the definitions of such in the informal sector.
- Perception of Ilocano household on child labor, specific to tobacco growing households and agriculture

- Lived experiences of children in residential welfare institutions
- Lived experiences of VAWC victims in residential welfare institutions
- Lived experiences of senior citizens and abandoned elderly in residential welfare institutions
- Perception study on the integrity of SSS as a social safety net
- Impact evaluation of supplementary feeding program
- Impact evaluation of educational assistance under the SLP
- Impact study of SLP, 4Ps, KC-NCDDP, social pension for indigent senior citizens, AICS, ESCAP, CFW, and other social protection programs
- Effects of inflation to Pantawid Program beneficiaries
- Effects of inflation on the adequacy of cash grants/social pension/cost of a feeding program
- Capacity assessment of the social welfare system at the local level
- Mapping the vulnerable sectors in the region

D. DRR for social protection

- Assessment of best practices and gaps in the efficiency of relief operations during disasters
- Assessment of food safety and sanitation practices during emergencies
- Assessment of best practices in logistics during emergencies
- Lived experiences of farmers in communities facing typhoons
- Development of publicly available, disaster-resilient, and cost-effective house design
- Development of Rapid Analysis Toolkit to identify pre-disaster and disaster relief needs
- The benefit utilization of senior citizens of PhilHealth packages in select key private and public hospitals
- Discourse analysis of development as interpreted and reinterpreted by women and children in farming communities
- Assessment of strategies aimed at the reduction of VAWC among the senior population
- Assessment of strategies aimed at addressing the neglect and abuses committed by families of senior citizens
- Identification of senior citizen-specific food and essentials basket of goods
- Lived experiences of PWDs in accessing social services
- Impact evaluation of SAP towards farmers and fisherfolks
- Lived experiences of senior citizens in the midst of the pandemic
- Bottom-Up-Budgeting (BUB) as an approach to disaster response

- Bottom-Up-Budgeting (BUB) as an approach to disaster response
- Indigenous knowledge and practices on DRRM
- Policy alternatives in protecting poor and near-poor during disasters
- Identification of region-specific bag of relief needed in the midst of disasters
- Exploration of targeting strategies aimed to provide additional assistance to select agriculture sector human resources affected by the pandemic
- Comparative analysis of lived experiences of SAP and non-SAP beneficiaries in farming communities facing typhoons
- Capital formation in terms of home construction of SAP beneficiaries
- Vulnerability analysis of SAP beneficiaries to weather and other related shocks
- Perceptions of SAP and non-SAP beneficiaries with the sufficiency and utility of SAP
- Study on the effectiveness of DRRM programs for the poor/marginalized/vulnerable group

E. Housing delivery at the local level

- Ethnography of notions of land ownership, transfer and control
- Development of easy-to-understand guide on titling process
- Development of low-cost sustainable housing unit designs
- Best Practices of LGUs in the resettlement of informal settlers
- Case study of urban area growth in select cities in Region 1
- Development of cost-effective and disaster-resilient medium-rise housing designs
- Practices and experiences of MPDCs in mainstreaming local shelter planning in CLUPs
- Development of compact modalities to establish gardens for families
- Best practices of LGUs in resource generation and land banking for the homeless
- Codification of manual of activities for temporary and permanent resettlement sites
- Development of publicly available, disaster-resilient, and cost-effective housing designs
- Social costs and benefits of in-city housing resettlement projects
- Feasibility study of housing-related microloans specifically focused on socialized housing projects.
- Assessment of the institutional capacity of LGUs to implement housing programs

- Study on housing programs for internally displaced individuals, vagrants, sama-bajaus, and street families at the local level
- Policy review on the effects of the 18% slope restriction (under PD 705) on housing delivery

F. Housing finance

- Development of an online system to match home builders and homebuyers
- Effectiveness of NHAs' Resettlement Assistance Program (RAP) for the IPs
- Effectiveness of NHA's Resettlement Assistance Program for LGUs

FUND SOURCES

Researchers interested to develop research proposals based on the Updated HRRDA 2017-2022 can submit their proposals to the following funding institutions. For further clarifications on requirements and process of fund access, please contact the concerned agency in their indicated contact details.

FUNDING AGENCY	RESEARCH TOPICS FOR FUNDING CONSIDERATION (as included in the updated HRRDA 2017-2022)	AGENCY HEAD/ CONTACT PERSONS	CONTACT DETAILS
1. Commission on Higher Education (CHED)	Higher education studies (see specific topics in Basic Research Theme – Pedagogies of Philippine Education System)	Dr. Rogelio T. Galera Regional Director	Phone: 072-242-5017 Email: chedrol@ched.gov.ph
2. Department of Health (DOH)	Health studies (see specific topics in Basic Research and Health Research Themes)	Dr. Valeriano V. Lopez Regional Director	Phone: 072-607-6413 Email: https://ro1.doh.gov.ph/
3. Region 1 Health Research and Development Consortium (R1HRDC)	Health studies (see specific topics in Basic Research and Health Research Themes)	Ms. Ana Gay Ranga R1HRDC Secretariat c/o MMMHMC, Batac City, Ilocos Norte	Phone: 077-658-8121 Email: anagavranqa@rocketmail.com
4. National Research Council of the Philippines (NRCP)	Basic researches covering various sectors (see specific topics in Basic Research Theme)	Research and Development Management Division (RDMD)	Phone: +63 837 6142/02-837-0409 Email: nrcpinfo@yahoo.com Website: nrcp.dost.gov.ph
5. Philippine Council for Health Research and Development (PCHRD)	Health studies (see specific topics in Basic Research and Health Research Themes)	Research and Development Management Division (RDMD)	Phone: 02-837-7537 Email: info_pchrd@pchrd.dost.gov.ph Website: www.pchrd.dost.gov.ph

FUNDING SOURCES

FUNDING AGENCY	RESEARCH TOPICS FOR FUNDING CONSIDERATION (as included in the updated HRRDA 2017-2022)	AGENCY HEAD/ CONTACT PERSONS	CONTACT DETAILS
6. Philippine Council for Industry Energy and Emerging Technology Research and Development (PCIEERD)	Studies that support competitiveness of industries, energy sector, and development of technologies for cleaner environment and emerging technologies (see specific topics in Basic Research and Industry, Energy and Emerging Technology Research Themes)	Research Information & Technology Transfer Division (RITDD)	Trunk Line: 837-2071 to 82 Loc. 2102, 2109 Website: http://pcieerd.dost.gov.ph
7. Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD)	Agriculture, fishery studies and environment and natural resources studies (see specific topics in Basic Research and Agriculture Aquatic and Natural Resources Research Themes)	Forestry and Environment Research Division (FERD)	VoIP Trunklines: 049-536 0014; 536 1956; 536 2305 Email: pcaarrd@pcaarrd.dost.gov.ph
		Inland Aquatic Resources Research Division (IARRD)	
		Livestock Research Division (LRD)	
		Marine Resources Research Division (MRRD)	
		Socio-Economics Research Division (SERD)	
		Crops Research Division (CRD)	
8. Department of Agriculture – Bureau of Agricultural Research (DA-BAR)	Agriculture, fishery studies and environment and natural resources studies (see specific topics in Basic Research and Agriculture Aquatic and Natural Resources Research Themes)	Research Program Development Division or Research Coordination Division.	Phone: (02) 928-8624/8505 Telefax: (02) 920-0219 Email: rdd@bar.gov.ph or rcd@bar.gov.ph

LIST OF ACRONYMS

4PS	Pantawid Pamilyang Pilipino Program
AFF	Agriculture, Forestry, and Fisheries
AFP	Armed Forces of the Philippines
AICS	Assistance to Individuals in Crisis Situation
ALS	Alternative Learning System
ARMRD	Agricultural Resources Management Research Division
Assist WELL	Assist in Welfare, Employment, Legal, Livelihood
ATN	Assistance to Nationals
BE-LCP	Basic Education - Learning Continuity Plan
BERF	Basic Education Research Fund
BFP	Bureau of Fire Protection
BMBE	Barangay Micro Business Enterprise
BNS	Barangay Nutrition Scholars
BPAT	Barangay Peacekeeping Action Teams
BPBH	Balik Pinas, Balik Hanapbuhay
BUB	Bottom-Up-Budgeting
CFW	Cash for Work
CHED	Commission on Higher Education
CLUP	Comprehensive Land Use Plan
CMCI	Cities and Municipalities Competitiveness Index
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease of 2019
CRD	Crops Research Division
CSE	Comprehensive Sexual Education
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DA	Department of Agriculture
DA-BAR	Department of Agriculture-Bureau of Agricultural Research
DBM	Department of Budget and Management
DEPED	Department of Education
DOH	Department of Health
DOJ	Department of Justice
DOST	Department of Science and Technology
DOT	Department of Tourism
DPWH	Department of Public Works and Highways
DRR	Disaster Risk Reduction
DRR+CCA	Disaster Risk Reduction and Climate Change Adaptation
DRRM	Disaster Risk Reduction and Management
DTI	Department of Trade and Industry
EBPLS	electronic Business Permits and Licensing System

ECCD	Early Childhood Care and Development
EEZ	Exclusive Economic Zone
ENR	Environment and Natural Resources
EODB	Ease of Doing Business
EOP	Equal Opportunity Principle
ESCAP	Emergency Shelter Cash Assistance Project
FERD	Forestry and Environment Research Division
FIRe	Fourth Industrial Revolution
FPIC	Free, Prior and Informed Consent
FSP	Foreign Service Posts
GAD	Gender and Development
GAP	Good Agricultural Practices
GIA	Grants-in-Aid
GIDA	Geographically Isolated and Disadvantaged Areas
GIP	Government Internship Program
GIS	Geographic Information System
GM	Grievance machinery
GMO	Genetically Modified Organisms
GMP	Good Manufacturing Practices
GOCC	Government-owned and Controlled Corporation
HACCP	Hazard Analysis and Critical Control Point
HEI	Higher Education Institution
HFEP	Health Facilities Enhancement Program
HIV-AIDS	Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome
HNRDA	Harmonized National Research and Development Agenda
HR	Human Resource
HRRDA	Harmonized Region 1 Research and Development Agenda
HVC	High Value Crops
IARRD	Inland Aquatic Resources Research Division
ICT	Information and Communications Technology
IKSP	Indigenous Knowledge Systems and Practices
IMD	International Migration and Development
IMP	Integrity Management Program
IP	Indigenous Peoples
IPED	Indigenous Peoples Education
IPSP	Internal Peace and Security Plan
ISO	International Organization for Standardization
IT	Information Technology
KALAHI-CIDSS	Kapit-Bisig Laban sa Kahirapan-Comprehensive and Integrated Delivery of Social Services

KC-NCCDP	Kapit-Bisig Laban sa Kahirapan- Comprehensive and Integrated Delivery of Social Services - National Community- Driven Development Program
KYC	Know-Your-Client
LAC	Learning Action Cells
LCAC	Local Culture and Arts Councils
LCE	Local Chief Executive
LCP	Learning Continuity Plan
LDAP	Livelihood Development Assistance Program
LDRRM	Local Disaster Risk Reduction and Management
LGBT	Lesbian, Gay, Bisexual, Transgender and Queer
LGU	Local Government Units
LIIC	Local Investment and Incentives Code
LMC	Labor Management Committee
LRD	Livestock Research Division
FDA-LTO	Food and Drug Administration-License to Operate
M&E	Monitoring and Evaluation
MFI	Microfinance Institution
MMMHMC	Mariano Marcos Memorial Hospital & Medical Center
MNP	Micronutrient Powder
MOFYA	Most Outstanding Family of the Year Awards
MPA	Marine Protected Areas
MPDC	Municipal Planning and Development Coordinator
MRRD	Marine Resources Research Division
MSME	Micro, Small and Medium Enterprises
MTB-MLE	Mother Tongue Based-Multilingual Education
MTC	Municipal Trial Court
NBB	No Balance Billing
NEDA	National Economic and Development Authority
NGA	National Government Agency
NGO	Non-governmental Organization
NHA	National Housing Authority
NRCP	National Research Council of the Philippines
OB-GYN	Obstetrician-Gynecologist
OF	Overseas Filipino
OFW	Overseas Filipino Worker
OSSCO	One-Stop Service Center for OFWs
OSY	Out of School Youth
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAMANA	Payapa at Masaganang Pamayanan
PAO	Public Attorneys Office

PCAARRD	Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development
PCG	Philippine Coast Guard
PCHRD	Philippine Council for Health Research and Development
PCIEERD	Philippine Council for Industry, Energy, and Emerging Technology Research and Development
PDEA	Philippine Drug Enforcement Agency
PDL	Person Deprived of Liberty
PECIS	Preventive Education and Communications Involvement Services
PESO	Public Employment Service Offices
PHIC	Philippine Health Insurance Corporation
PHILSYS	Philippine Identification System
PLHIV	Person Living with Human Immunodeficiency Virus
PNP	Philippine National Police
PNS	Philippine National Standards
PO	Private Organization
PPA	Programs, Projects, and Activities
PPP	Public Private Partnership
PRIME HRM	Program to Institutionalize Meritocracy and Excellence in Human Resource Management
PSIP	Public Private Partnership for School Infrastructure Project
PUV	Public Utility Vehicle
PWD	Person with Disability
R&D	Research and Development
R1HRDC	Region 1 Health Research and Development Consortium
RAP	Resettlement Assistance Program
RDC	Regional Development Council
RDMD	Research and Development Management Division
RDP	Regional Development Plan
RHU	Rural Health Unit
RITDD	Research Information and Technology Transfer Division
RLA	Regional Line Agencies
RPRH	Responsible Parenthood and Reproductive Health
RRDIC	Regional Research, Development and Innovation Committee
RSPO	Regional State Prosecution Office
RTC	Regional Trial Court
SALN	Statement of Assets, Liabilities, and Net Worth
SAP	Social Amelioration Program
SC	Supreme Court
SERD	Socio-economic Research Division
SETUP	Small Enterprise Technology Upgrading Program
SGLG	Seal of Good Local Governance

SLP	Sustainable Livelihood Program
SME	Small and Medium Enterprises
SPIMS	Sa 'Pinas, Ikaw ang Ma'am/Sir
SSF	Shared Service Facility
SSS	Social Security System
STEAM	Science, Technology, Engineering, Agriculture and Mathematics
STI	Science, Technology, and Innovation
SUC	State Universities and Colleges
SWIP	Small water impounding projects
TB DOTS	Tuberculosis-Directly Observed Treatment Strategy
TBI	Technology Business Incubator
TESDA	Technical Education and Skills Development Authority
TPLEX	Tarlac-Pangasinan-La Union Expressway
VAWC	Violence Against Women & their Children
VRP	Values Restoration Program

UPDATED HRRDA 2017-2020 SECRETARIAT

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Chairperson

Department of Science and Technology Regional Office 1

Co-chairperson

PSR - Governance

Members:

- Commission on Higher Education (CHED)
- National Economic and Development Authority (NEDA)
- Mariano Marcos State University (MMSU)
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- Ilocos Sur Polytechnic State College (ISPSC)
- University of Northern Philippines (UNP)
- North Luzon Philippines State College (NLPSC)
- Northwestern University (NWU)
- Saint Louis College (SLC)
- University of the Philippines Marine Science Institute- Bolinao Marine Laboratory (UPMSI-BML)
- Philippine Association for Graduate Education (PAGE)
- Ilocos Agriculture and Resources Research and Development Consortium (ILARRDEC)
- Region 1 Health Research and Development Consortium (R1HRDC)
- Ilocos Consortium for Industry, Energy and Emerging Technology Research and Development (ICIEERD)
- Governance SeCom c/o Department of the Interior and Local Government (DILG)
- Infrastructure SeCom c/o Department of Public Works and Highways (DPWH)
- Economic Devt SeCom c/o Department of Agriculture (DA)
- Environment SeCom c/o Department of Environment and Natural Resources (DENR)
- Social Dev't SeCom c/o Department of Education (DepED)
- PSR - Governance

APPROVAL AND ADOPTION OF THE UPDATED HRRDA 2017-2022



REGIONAL DEVELOPMENT COUNCIL – ILOCOS REGION

NEDA REGIONAL OFFICE 1

EXCERPT FROM THE MINUTES OF THE SECOND REGIONAL DEVELOPMENT
COUNCIL 1 (RDC-1) FULL COUNCIL MEETING FOR CY 2021
HELD ON 26 MAY 2021 VIA ZOOM

RDC-1 RESOLUTION NO. 44, s. 2021

**APPROVING AND ADOPTING THE UPDATED HARMONIZED REGION 1
RESEARCH AND DEVELOPMENT AGENDA (HRRDA) CY 2017-2022**

WHEREAS, the Regional Research, Development and Innovation Committee 1 (RRDIC 1) of the Regional Development Council 1 (RDC 1) spearheaded the formulation of the Harmonized Region 1 Research and Development Agenda (HRRDA) 2017-2022 in CY 2017 to serve as blueprint for research and development (R&D efforts) in the region;

WHEREAS, the HRRDA serves as a companion plan of the Regional Development Plan (RDP) 2017-2022 that contains the research priorities of the region under five sectors, namely: 1) economic development, 2) social development, 3) environment and natural resources, 4) infrastructure, and 5) governance;

WHEREAS, the HRRDA needs to be updated following the updating and enhancement of the RDP in 2020 to ensure its relevance to regional and national thrusts and priorities and considering current and emerging concerns such as the ongoing pandemic and the new normal;

WHEREAS, the RRDIC 1 conducted a Sectoral Consultation Workshop on March 18-19, 2021 and identified relevant research topics to respond to the challenges and strategies contained in the Enhanced Ilocos RDP Midterm Update 2017-2022;

WHEREAS, regional line agencies (RLAs), local government units (LGUs) and State Universities and Colleges (SUCs), and members of the RRDIC participated in the workshop;

WHEREAS, the researchable areas and topics support the R&D needs of the Enhanced RDP Midterm Update 2017-2022;

WHEREAS, the researchable areas and topics were also aligned to the following R&D priority themes of the National Harmonized Research and Development Agenda (NHRDA):

- Agriculture, Aquatic and Natural Resources (AANR);
- Health;
- Industry Energy and Emerging Technology (IEET); and
- National Basic R&D;

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REGIONAL DEVELOPMENT COUNCIL – ILOCOS REGION

NEDA REGIONAL OFFICE 1

WHEREAS, the Sectoral Committees (SeComs) of the RDC-1 approved their respective sector components of the HRRDA during their Second Quarter CY 2021 meetings and endorsed them to the RDC-1 through the following resolutions:


Economic Development SeCom Resolution No. 6, s 2021;
Regional Social Development Committee Resolution No. 5, s. 2021;
Environment Natural Resources SeCom Resolution No. 3, s. 2021;
Infrastructure SeCom Resolution No. 6, s. 2021; and
Governance SeCom Resolution No. 5, 2021;

NOW, THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED, to approve and adopt the Updated Harmonized Region 1 Research and Development Agenda (HRRDA) CY 2017-2022:


RESOLVED FURTHER, to provide copies of the resolution to the State Universities and Colleges, higher educational institutions, DOST research consortia, and members of the RDC-1 and RRDIC 1 for their information;

APPROVED, this 26th day of May 2021 in a virtual meeting conducted via Zoom.

CERTIFIED TRUE AND CORRECT:


IRENEA B. UBUNGEN
Secretary, RDC-1
(Asst. Regional Director, NEDA 1)

CONCURRED BY:


JUAN CARLO S. MEDINA
RDC-1 Chairman
(Mayor, Vigan City, Ilocos Sur)

For queries on the updated HRRDA 2017-2022, please contact our focal person at (072) 888 5510 and look for Ms. Ma. Cristina G. Carino of the Development Research, Communication, and Advocacy Division.





For other concerns, do not hesitate to email us at nro1@neda.gov.ph.

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Updated Harmonized Region 1 R&D agenda 2017-2022

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NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY REGIONAL OFFICE 1

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