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LIST OF ACRONYMS ●●●

AIHO	Alliance for Improving Health Outcomes
DOH	Department of Health
DOST	Department of Science and Technology
eLENA	Electronic Library of Evidence on Nutrition Action
EO	Executive Order
FNRI	Food and Nutrition Research Institute
HERDIN	Health Research and Development Information Network
LGUs	Local government units
NCDs	Non-communicable diseases
NRP	National Research Priorities
NPANM	National Plan of Action for Nutrition of Malaysia
NUHRA	National Unified Health Research Agenda
PCHRD	Philippine Council for Health Research and Development
PDP	Philippine Development Plan
PHA	Philippine Health Agenda
PHRR	Philippine Health Research Registry
PPAN	Philippine Plan of Action for Nutrition
SDGs	Sustainable Development Goals
SSA	Sub-Saharan Africa
SUN	Scaling Up Nutrition
SUNRAY	Sustainable Nutrition Research for Africa in the Years to Come
TechCom	Technical Committee
TWG	Technical Working Group
UHC	Universal Health Care
UN	United Nations

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EXECUTIVE SUMMARY •••

The Philippine Plan of Action for Nutrition (PPAN) Research Agenda 2022-2028 is envisioned to contribute to the realization of the goals of the PPAN 2017-2022. Building on the achievements and lessons learned from the National Unified Health Research Agenda (NUHRA) and the Department of Health (DOH) Medium Term Research Agenda, the PPAN Research Agenda 2022-2028 aims to guide policy makers, managers and researchers in addressing the most pressing nutrition concerns of the country. This also hopes to emphasize the role of generating evidence through research on the development of nutrition-specific, -sensitive and -related policies and programs. Furthermore, the research agenda was developed to review existing nutrition-related researches to identify the research gaps and to recommend research priorities that are consistent with the PPAN framework.

The PPAN Research Agenda 2022-2028 was designed to harness coordinated transdisciplinary nutrition research efforts of national and regional government offices of National Nutrition Council and partner agencies/ organizations and institutions: *Commission on Higher Education, Council of Deans and Heads of Nutrition and Dietetics, Department of Agriculture, Department of Health, Department of Social Welfare and Development, Department of Science and Technology – Philippine Council for Health Research and Development, Department of Science and Technology – Food and Nutrition Research Institute, Department of Trade and Industry, Nutrition Dietitians Association of the Philippines, Philippine Coalition of Advocates for Nutrition Security, Inc., Philippine Institute for Development Studies, Polytechnic University of the Philippines, University of the Philippines Manila – College of Public Health, University of the Philippines Los Baños – Institute of Human Nutrition and Food, World Food Programme, World Health Organization and World Vision Development Foundation.*

Developed through a collaborative, realistic, inclusive, and gender- and culturally sensitive approach, the PPAN Research Agenda 2022-2028 outlines nine priority transdisciplinary nutrition thematic areas

Nine priority transdisciplinary nutrition thematic areas:

PHILIPPINE PLAN OF ACTION FOR NUTRITION RESEARCH AGENDA 2022-2028



Determinants of Malnutrition



Nutrition Promotion for Behavior Change



Equity in Nutrition



Food Value Chain



Dietary Supplementation



Nutrition Program, Policy, and Governance



Product and Technology Development



Nutrition Assessment



Organizational Development

PPAN RESEARCH AGENDA SETTING ●●●

This section describes how the PPAN Research Agenda 2022-2028 was developed. It summarizes the framework and the processes done to come up with a collaborative, realistic, issue-based, gender- and culturally sensitive nutrition research agenda that is responsive to the PPAN 2017-2022 target outcomes.

Framework for Nutrition Research Prioritization

In 2016, the Philippine National Health Research System (PNHRS) published the Guidelines for Health Research Prioritization, which provided direction in the development health research agenda at the national and regional levels (PNHRS, 2016). The framework of agenda setting consists of three phases: preparatory, implementation, and post-implementation. The PPAN Research Agenda 2022-2028 applied the prescribed activities for the preparatory and implementation phase of agenda setting. The Kingdon model was adopted to organize gathered data and information from various sources, such as NNC and its member agencies, regional stakeholders, the NNC - Technical Working Group (TWG), and the NNC - Technical Committee (TechCom). This Model is widely used for public policy and agenda setting because it considers the perceptions of the nutrition problems from various lenses, solutions and alternatives proposed by experts and analysts and considers political environment and influence. Moreover, this Model reflects the needs for action highlighted from the conceptual framework of malnutrition.

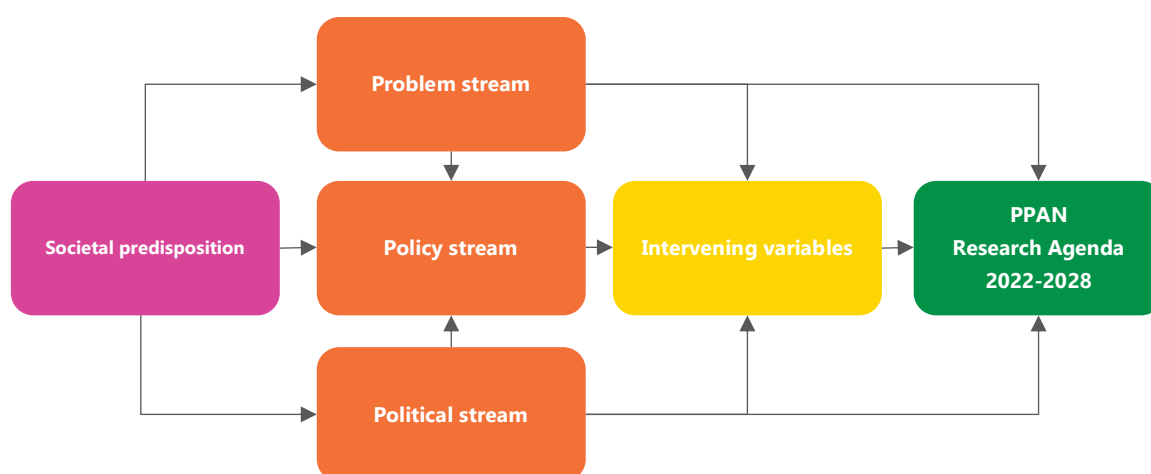


Figure 3. Kingdon Multiple Stream Model (1984) on PPAN Research Agenda Setting.

Process of Nutrition Research Prioritization

The NNC, in collaboration with AIHO, developed the background document that contained the experience of other countries on nutrition research agenda setting and the nutrition research landscape in the Philippines. It also attempted to describe the efforts of various

sectors in addressing nutrition-specific, -sensitive and -supportive research outputs through exhaustive review. This offered descriptive overview of the efforts to generate evidence and close knowledge gap on nutrition towards attainment of the PPAN outcome targets.

One regional and three national consultations including a multi-sectoral consultation were conducted with the TWG, wherein they expressed their agreement on the importance of developing a PPAN Research Agenda to harness efforts of transdisciplinary nutrition research. The consultation began with the presentation of the background document followed by focus group discussions. Each stakeholder identified perceived priority nutrition research needs to be undertaken. The stakeholders also established their criteria and scoring weights to clarify the specific values and principles that would guide the prioritization of research topics (Table 2). The consultation workshops generated 202 research topics with 11 themes.

Table 2. Criteria for Research Prioritization¹

Criteria	Guide Questions	Weight
Urgency of need	<ul style="list-style-type: none"> Results urgently needed by decision makers, implementers, and health care providers 	25
Feasibility	<ul style="list-style-type: none"> How complex is the research? Are there adequate resources to do the study? 	20
Applicability of results or recommendations	<ul style="list-style-type: none"> How would the findings be used to improve health? Likelihood of the recommendations will be adopted. Available resources for implementing the recommendations. 	20
Relevance	<ul style="list-style-type: none"> How large is the problem? Who is affected? Severity of the problem. Potential for spread. Who considers this a problem? Burden to the health system. Economic impact of the problem. 	15
Political acceptability	<ul style="list-style-type: none"> Supported by local and national program managers/leaders? 	5
Ethical acceptability	<ul style="list-style-type: none"> Acceptability of the research to those who will be studied. Informed consent obtained from subjects. Results to be shared with those who will be studied. 	10

Criteria	Guide Questions	Weight
Avoidance of duplication	<ul style="list-style-type: none"> Has this question or problem been researched before? Are there any interventions that have effectively addressed this problem? Any major questions that deserve further research? 	5

¹ Criteria are used to focus the discussion on research priority setting while considering the important dimensions of public health benefit, feasibility and cost.

A validation workshop was then conducted with the TechCom where the background document and the output of the regional and national consultations were presented to the plenary. The TechCom provided their comments and suggested to further exhaust retrieval and review of nutrition research outputs of the member agencies of NNC. A final round of consultation workshop was conducted with the TWG, where the plenary further refined the research agenda by factoring in the legal mandates of each member institutions of NNC. These series of consultations and workshop generated 202 research topics and nine priority nutrition research themes.

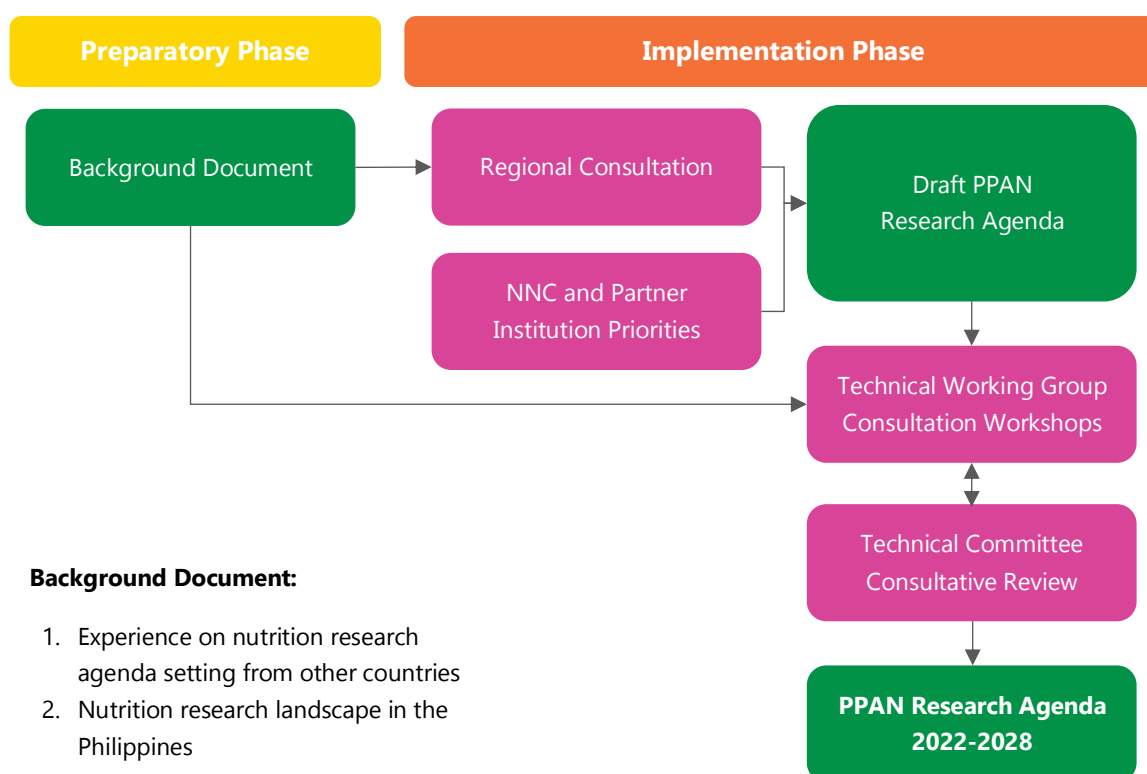


Figure 4. Flow Chart on the Development of PPAN Research Agenda 2022 – 2028.

Guide in Management of the PPAN Research Agenda 2022-2028

The PPAN research agenda management will be led by the National Nutrition Council Secretariat in cooperation with members of Technical Working Group on Nutrition Research and NNC Technical Committee. Below are the key steps in the implementation of the plan:

Step 1. Obtain high-level support

Embarking on the implementation of the PPAN Research Agenda appropriate government support and mandate are required. The tasks of initiating the process of implementation through dissemination among NNC member agencies is required to strengthen political and institutional commitments of various agencies.

Step 2. Identify key partners

Because the plan originated from different sectors with the goal of improving nutrition in the Philippines, the key to a successful implementation is to involve all those government agencies that have influence and responsibility for nutrition. This helps ensure cooperation and collaboration. The key action point when key actors within the government and other development partners is to conduct strategic planning session to identify the following:

- a. What are the necessary mechanisms to undertake efficiently implement the PPAN Research Agenda?
- b. What are the resources needed to implement the plan?
- c. Who among the partners will do the nutrition research and development activities?
- d. When will the agenda be evaluated?

Step 3. Monitoring and evaluation of the agenda

Monitoring and evaluation are essential steps to undertake to ensure a responsive research agenda. The implementation of the plan the National Nutrition Council adopted the guidelines for evaluation of research agenda uptake used by Philippine National Health Research System (PNHRS) in monitoring research outputs. Below are the indicators on research output monitoring and evaluation:

1. Number of new publications – contribution to the general body of knowledge through scientific publications;
2. Number of new patents – tangible measure of innovation;
3. Number of new products – commercial value of the research outputs;
4. Number of new people services – increase on the scientific workforce working on nutrition;
5. Number of new partnerships – facilities, universities and government institutions that will enable increase research outputs;

6. Number of new policies – adopted science-based guidelines for nutrition policy development, and;
7. Number of new researches utilized for nutrition and nutrition-related policies and programs – researches used for the enhancement of health and nutrition policies and programs to improve their effectiveness and efficiency.

PPAN RESEARCH AGENDA 2022-2028 PRIORITIES

The PPAN Research Agenda 2022-2028 composes of nine research priorities, each of which has corresponding descriptions and research areas that aim to guide the generation of research on nutrition in the country. Anchored in from the current nutrition research landscape, health research and development agenda, national plans, and international plan this research agenda aims to generate knowledge and develop innovative solutions on key nutrition areas, namely, 1) stunting, 2) wasting, 3) micronutrient deficiency, 4) overweight and obesity, 5) pregnant women, 6) birth weight, 7) breastfeeding, 8) minimum acceptable diet, and 9) energy requirement. This section presents the priorities and their specific research areas.

PHILIPPINE PLAN OF ACTION FOR NUTRITION RESEARCH AGENDA 2022-2028



Determinants of Malnutrition



Nutrition Promotion for Behavior Change



Equity in Nutrition



Food Value Chain



Dietary Supplementation



Nutrition Program, Policy, and Governance



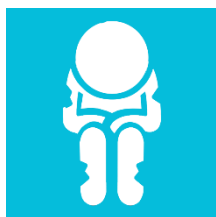
Product and Technology Development



Nutrition Assessment



Organizational Development



Determinants of Malnutrition

To produce evidence towards prevention and control of undernutrition, overnutrition and hidden hunger

Philippines is suffering from the triple burden of malnutrition – undernutrition, hidden hunger or lack of essential nutrients and overnutrition. Stunting remains a significant public health concern in the country and is seen as one of the hindrances to human development. The prevalence of obesity from year 2015 to 2018 was observed among young adults. However, to sustainably address these nutritional problems require in-depth and continuing understanding of the determinants of the various forms of malnutrition.

Overnutrition | Basic, applied, and social science research studies on the determinants of overweight and obesity.

Undernutrition | Basic, applied, and social science research studies on the determinants of wasting and stunting.

Hidden Hunger | Basic, applied, and social science research studies on the determinants of lack of essential nutrients.



Nutrition Promotion for Behavior Change

To produce evidence towards effective nutrition promotion strategies and interventions

Good nutrition starts in households and depends in individual behavior particularly of mothers, fathers, siblings, older family members and caregivers. Thus, poor nutritional status can be addressed by improving the behavior of these people. The community also influences the nutrition status of the individual. Therefore, health care providers, teachers, leaders, private sectors and policymakers may directly or indirectly affect the decisions of the people in care and feeding practices, household food security and environment and health care services.

Breastfeeding | Research to understand factors affecting breastfeeding practices and beliefs and appropriate breastfeeding programs, policy, and services.

Nutrition counselling | Research to understand healthy food choices among adults and adolescents.



Equity in Nutrition

To produce evidence to enable the nutrition sector to respond to the food and nutrition needs of and develop innovative solutions for vulnerable populations and marginalized sectors of society

According to the World Health Organization, equity is the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically. In other countries, wide inequalities in malnutrition affect various population groups, whether by socioeconomic status, ethnic or geographical area and other important social determinants. Therefore, it is necessary to identify the social determinants that support or sustain barriers in the equitable access to nutritional interventions. Early identification of barriers access is an aspect of implementation that requires greater attention, from both research and policy formulation.

Gender | Research to understand health risks among men and women for the provision of gender-sensitive nutrition services across life stages.

Geographically isolated and disadvantaged areas | Researches on factors affecting nutrition services and practices in geographically isolated and disadvantaged areas.

Gerontology studies | Research to map the nutritional needs and appropriate health programs, policy, and services of the aged population groups.

HIV, AIDS and other STIs | Nutritional studies to promote healthy dietary choices, and address barriers.

Nutritionally at-risk population | Researches to document the knowledge, skills, and practices of indigenous populations to empower and create culturally sensitive nutrition policies and services; Research on nutrition of people deprived of liberty, people with disability, people using drugs and urban poor.



Food Value Chain

To produce evidence to ensure disaster resilient food supply and value chain to ensure nutritional needs

Value chains play an important role in the determination of food availability, quality and accessibility. High quality diets from food value chain is a promising solution to address the consequences of nutrition transition in the nutritional situation of the country.

Biodiversity studies | Research on terrestrial and marine potential food sources.

Food supply chain studies | Research on factors affecting sustainable food supply and consumption; and on disaster risk reduction management and climate change adaptation strategies in nutrition.



Dietary Supplementation

To produce evidence to ensure nutritional needs of women and their children, as well as nutritionally-at-risk population groups

Nutritional requirement of normal population is insufficient to sustain the needs of vulnerable groups. To be able to ensure the adequate food and nutrient consumption of pregnant and lactating women, infants, children, women in reproductive age, elderly and refugees and displaced person, food fortification and supplementation are the major interventions to address their nutritional concerns. Despite of positive changes on the prevalence of micronutrient deficiencies in the Philippines, the vulnerable groups are still suffering from this type of malnutrition.

Fortification | Impact studies of food fortification, especially on biofortification of crops, flour, rice, salt, and staple foods.

Micronutrient supplementation | Impact studies of micronutrient supplementation, especially on iron, folic acid, iodine, Vitamin A, Vitamin E, and Zinc.

Macronutrient supplementation | Impact studies of macronutrient supplementation, such as supplementary feeding, balanced energy and protein supplementation, and high-protein supplementary food for the management of moderate acute malnutrition.



Nutrition Program, Policy, Governance

To produce evidence towards efficient, effective, innovative, and culturally acceptable nutrition-specific and -sensitive programs and projects

The most important factor to eradicate poverty and promote development is the good governance. Nutrition programs and policies are tools toward the country's progress to good nutrition. Hence, all partners from stakeholders, organizations, agencies, and institutions should promote, facilitate, and compliment the policy efforts to help achieve a strong government which can provide a healthy, profitable, equitable and sustainable food and nutrition system.

Nutrition governance | Studies to strengthen evidence-based nutrition policy formulation, enforcement, and evaluation in the context of changing sociopolitical paradigms, such as decentralization, globalization, and market economy.

Nutrition policies | Studies on trans-fat, high salt, sugar-sweetened beverages, and genetically modified organisms for future nutrition policy formulation.

Nutrition information systems | Research on translating nutrition data to information and knowledge and integrating in the system for data analytics —standardization, utilization, management, and communication for effective nutrition service.

Nutrition workforce | Research on workforce (competency, skill mix, workload indicators, and staffing needs) and knowledge, skills, and practices affecting nutrition targets.



Product and Technology Development

To create novel solutions on existing and emerging nutrition challenges through technology development and innovations

Due to the vast changes and transition brought by globalization and urbanization, nutrition and food science technology are facing challenges in providing good nutrition for the people. Climate change, energy and water shortage, environment pollutants, shifting global population demographics, food safety and growing diseases contribute to the stress on the food and nutrition system. Researches on use of technology to aid in monitoring and prevention of nutrition-related diseases, as well as to develop new food products or alternative system delivery mechanism to address the existing problem in food and nutrition systems are essential to explore possible solutions in challenges in food and nutrition security.

Diagnostics | Development of diagnostic tests and devices for early detection and monitoring of nutritional conditions and risk to diseases.

Nutrigenomics technologies | Generation of new knowledge about nutrition using genomics, proteomics, transcriptomics, and metabolomics.

Functional foods | Research on food supplements and functional food development; and on commercialization, safety, regulation, and impact assessment of functional foods and food supplements.

Nutraceuticals | Research on bioactive compounds; and on commercialization, safety, regulation, and impact assessment.



Nutrition Assessment

To produce evidence on nutritional status for alternative solutions

Nutritional status can be affected primarily by the intake of food and utilization of nutrients. Properly assessed individual is essential to provide appropriate nutrition programs and interventions to address nutrition problems in the country. DOST-FNRI is responsible in providing baseline data on assessing the nutritional status and situation in the Philippines through National Nutrition Survey (NNS). The baseline data from the survey can be a reference in identifying the different factors affecting the nutritional status of the people. Also, this should be used to formulate new nutrition interventions, alternative mechanism to monitor nutritional status, and/ or enhance the existing nutrition policies and programs.

Anthropometric assessment | Research studies on anthropometric measurements of various population and evaluative study on health trends in various population groups.

Biochemical assessment | Research studies on nutrient and metabolites and the nutritional status of various population groups.

Clinical assessment | Research studies on clinical signs and symptoms indicating specific nutrient deficiency among children and nutritionally-at-risk population groups (e.g., TB, HIV, AIDS, STIs and SAM).

Dietary assessment | Research studies on intakes of nutrient from food among adolescents, adults, breastfeeding women, and elderly population groups.



Organizational Development

To produce evidence towards proactive and responsive nutrition sector

Organizational development uses theory to analyze organizational issues and plans. The goal of organizational development in public health is to provide intervention to improve the effectiveness and increase the capacity of the organization to manage change towards improved health and nutrition situation in the community.

Organization capability | Studies to improve technical expertise of national government agencies as stewards of nutrition sector.

Management and business process | Studies to enhance efficiency and effectiveness of national government agencies as stewards of nutrition sector.

ANNEX A. Roadmap Template¹•••

The PPAN Research Agenda aims to provide a clear set of research agenda for the new PPAN can help ensure in evidenced-based formulation of policies, strategies, and technical guidance in operational implementation of the PPAN.

Progress and Future Plans/ Activities of PPAN Research Agenda:

1. Formulation and finalization of PPAN Research Agenda 2022-2028
2. Formulation and finalization of Strategic Plan for PPAN Research Agenda 2022-2028
3. Nutrition Research Forum for information dissemination of the PPAN Research Agenda 2022-2028
4. Conduct of Researches based on the PPAN Research Agenda 2022-2028
5. Updating of the PPAN Research Agenda 2022-2028 and annual accomplishment report

Roadmap Template for PPAN Research Agenda 2020-2028

Research Topic Area	Expected Outputs ²	Description ²	Year ²							Agency/ies and Funding Agency/ies ²
			2022	2023	2024	2025	2026	2027	2028	
A. Determinants of Malnutrition 1. Overnutrition 2. Undernutrition										
B. Nutrition Promotion for Behavior Change 1. Breastfeeding 2. Nutrition Counselling										

Research Topic Area	Expected Outputs ²	Description ²	Year ²							Agency/ies and Funding Agency/ies ²
			2022	2023	2024	2025	2026	2027	2028	
C. Equity in Nutrition 1. Gender 2. Geographically isolated and disadvantaged areas 3. Gerontology studies 4. HIV, AIDS and other STIs 5. Nutritionally at-risk population										
D. Food Value Chain 1. Biodiversity studies 2. Food supply chain studies										
E. Dietary Supplementation 1. Fortification 2. Micronutrient supplementation 3. Macronutrient supplementation										

Research Topic Area	Expected Outputs ²	Description ²	Year ²							Agency/ies and Funding Agency/ies ²
			2022	2023	2024	2025	2026	2027	2028	
F. Nutrition Program, Policy, Governance 1. Nutrition governance 2. Nutrition policies 3. Nutrition information systems 4. Nutrition workforce										
G. Product and Technology Development 1. Diagnostics 2. Nutrigenomics technologies 3. Functional foods 4. Nutraceuticals										
H. Nutrition Assessment 1. Anthropometric assessment 2. Biochemical assessment 3. Clinical assessment 4. Dietary assessment										

Research Topic Area	Expected Outputs ²	Description ²	Year ²							Agency/ies and Funding Agency/ies ²
			2022	2023	2024	2025	2026	2027	2028	
I. Organizational Development 1. Organization capability 2. Management and business process										

¹To be validated and finalized for Strategic Plan of Research Agenda

²To be identified and finalized during the workshop for the Strategic Plan of Research Agenda

Enabling activities – identification of activities to address the identified weaknesses/ threats and further strengthens the strengths and maximize opportunities in SWOT exercise (part of workshop in Strategic Planning)

ANNEX B. National and Regional Stakeholders •••

Name	Position / Affiliation
ABELLA, Ellen Ruth	Nutrition Officer IV
ARCINUE, Edzell	Nutrition Officer III
ASPELI, Maybelle	Administrative Officer III
BALLAD, John Nestor	Nutrition Officer II
BASALONG, Bella	Nutrition Officer III
BERNABE, Marie	Administrative Officer V
BLANCO, Ma. Eileen	Regional Nutrition Program Coordinator
CAMARINES, Serapio D. Jr.	Administrative Officer V
CANETE, Jennibeth	Provincial Nutrition Coordinator, Early Childhood Care and Development in the First 1000 Days
CARBON, Mirasol	Administrative Aide III
CARREON, Ma. Leslie Angelie	Administrative Officer II
DE VILLA, Agrifina	Administrative Officer V
DOTOLLO, Catalino Jr.	Regional Nutrition Program Coordinator
EKONG, Nimfa	OIC, Regional Nutrition Program Coordinator
FEDERIZO, Mila	Nutrition Program Coordinator
FERNANDEZ, Gladys Mae	Nutrition Program Coordinator
FERNANDEZ, Chona	Chief Administrative Officer
FLORES, Annalita Mae	Nutrition Officer III
GAWA, Hygeia Ceres Catalina	Nutrition Officer V, Chief NSD
GATAN, Kendall Pilgrim	Nutrition Officer III
ENTERIA, Marilou	Nutrition Officer IV
LONZAGA, Maria Gisela	Regional Nutrition Program Coordinator
LAQUIHON, Retsebeth	Nutrition Officer III
LIDASAN, Hannah Farinah	Nutrition Officer III
LLACUNA, Jose Jr.	Regional Director, Department of Health; OIC-RNPC
MANGLICMOT, Armando	Nutrition Officer II
MISSION, Parolita	Regional Nutrition Program Coordinator
PAPEY, Rita	Regional Nutrition Program Coordinator
QUIAMBAO, Vilma	Accountant III
RODRIGUEZ, Lorna	Administrative Assistant III
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SANTIAGO, Carina	Regional Nutrition Program Coordinator
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TABABA, Princess Christine	Nutrition Officer II
TAD-Y, Nona	Regional Nutrition Program Coordinator
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UNGSON, Maria Teresa	Regional Nutrition Program Coordinator
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VARGAS, Leah Vina	Nutrition Officer III
VEGA, Maria Lourdes	Nutrition Officer V, Chief, NPPD
VELASCO, Joyce	Nutrition Officer III

ANNEX C. Participating Institutions ●●●

Commission on Higher Education

Council of Deans and Heads of Nutrition and Dietetics

Department of Agriculture

Department of Health

Department of Social Welfare and Development

Department of Science and Technology – Philippine Council for Health Research and Development

Department of Science and Technology – Food and Nutrition Research Institute

Department of Trade and Industry

Institute of Human Nutrition and Food

National Nutrition Council

Nutrition Dietitians Association of the Philippines

Philippine Coalition of Advocates for Nutrition Security, Inc.

Philippine Institute for Development Studies

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University of the Philippines – Los Baños

World Food Programme

World Health Organization

World Vision Development Foundation

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ANNEX F. Research Agenda Background Document

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BACKGROUND ●●●

Nutrition is the cornerstone of health and development. Globally, malnutrition is one of the greatest health and development challenges. Global estimates have shown that 815 million people are chronically undernourished; 1.9 billion adults are overweight or obese; 266 million women of reproductive age are affected by iron-deficiency anemia; 151 million stunted, 38 million overweight, and 3.1 million deaths are undernourished children under 5 years of age.

In the Philippines, high levels of stunting and wasting among children under five years of age have been observed, with levels that have remained unchanged over the years. In 2015, 3.8 million of children under five years of age were considered stunted, while 800 thousand were considered wasted. Hunger and food insecurity were also huge problems with 68.3% of Filipino households not meeting their caloric requirements (NNC, 2017; FNRI, 2015).

While numerous interventions have been identified and implemented, malnutrition remains as a major public health problem of the country. Numerous agencies and organizations have been conducting researches to understand nutrition-related problems. These researches were utilized to develop evidence-based policies and programs, and better implementation of nutrition services.

To address the multifaceted challenges in nutrition, the National Nutrition Council (NNC) led the development of the Philippine Plan of Action for Nutrition (PPAN), the country's blueprint for nutrition. The PPAN is a six-year plan which consists of 12 programs and 46 projects that could be undertaken by member agencies of the NNC, other national government agencies, local government units (LGUs), non-government organizations, academic institutions, and development partners.

In addition to this initiative, NNC recognized the importance of evidence-informed decision making through a transdisciplinary nutrition research. In this regard, NNC, in partnership with the Alliance for Improving Health Outcomes (AIHO), Inc., developed the PPAN Research Agenda 2022-2028. This initiative aims to generate timely and relevant researches to provide evidences in addressing the key nutrition challenges of every Filipino, namely, stunting, wasting, micronutrient deficiency, overweight and obesity, nutrition of pregnant women, low birth weight, breastfeeding, minimum acceptable diet, and minimum energy requirement. Ultimately, the research agenda envisions to harmonize transdisciplinary nutrition research developed through a collaborative, realistic, inclusive, and gender- and culturally sensitive approach. Moreover, the results of the researches will be disseminated through research forum, nutrition research bulletin, journals and indexing.

POLICY CONTEXT ●●●

This section provides brief descriptions of government agencies who spearheaded the development of the PPAN Research Agenda 2022-2028. It contains the legal mandates of the NNC, the Department of Health (DOH), and the Department of Science and Technology (DOST) Philippine Council for Health Research and Development (PCHRD) and Food and Nutrition Research Institute (FNRI).

National Nutrition Council

The NNC was created by Presidential Decree 491 of 1974 as the country's highest policymaking and coordinating body on nutrition. The NNC Governing Board is the collegial body chaired by the Secretary of Health. The Board is composed of ten government organizations, namely, DOH, Department of Agriculture, Department of Interior and Local Government, Department of Education, Department of Social Welfare and Development, Department of Trade and Industry, Department of Labor and Employment, DOST, Department of Budget and Management, and National Economic and Development Authority, each represented by their secretaries. Three representatives from the private sector, appointed by the President for a two-year term, are also included in the Board the NNC is mandated to:

1. Formulate national food and nutrition policies and strategies;
2. Coordinate planning, monitoring, and evaluation of the national nutrition program;
3. Coordinate the release of funds, loans, and grants from government organizations and nongovernment organizations;
4. Call on any department, bureau, office, agency, and other instrumentalities of the government for assistance in the form of personnel, facilities, and resources as the need arises;
5. Creation of the Salt Iodization Advisory Board aims to formulate policies, plan and coordinate the implementation salt iodization program (as mandated by Republic Act 8172 of 1995);
6. Review and recommend levels and vehicles for fortification (as mandated by Republic Act 8976);
7. Prioritize hunger and malnutrition (as mandated by Executive Order 472 of 2006); and
8. Oversight of the Accelerated Hunger-Mitigation Program (as mandated by Executive Order 616 of 2007).

Department of Health

The DOH is the over-all technical authority on health and its major mandate is to provide national policy direction and develop national plans, technical standards, and guidelines on health. It is also the regulator of all health services and products, and provider of special or tertiary health care services and technical assistance to other health providers, specially to LGUs. With other health providers and stakeholders, the DOH shall pursue and assure the following:

1. Promotion of the health and well-being for every Filipino;
2. Prevention and control of diseases among population at risk;
3. Protection of individuals, families, and communities exposed to health hazards & risks; and
4. Treatment, management, and rehabilitation of individuals affected by diseases and disability.

Department of Science and Technology

The DOST was created by Executive Order (EO) No. 128 of 1987 as the lead agency mandated to provide central direction, leadership, and coordination of scientific and technological efforts, and to ensure that the results therefrom are geared and utilized in areas of maximum economic and social benefits for the people.

Philippine Council for Health Research and Development

The PCHRD is one of the five councils of DOST mandated to formulate strategies, policies, plans, programs, and projects for science and technology development; for programming and allocation of government external funds for research and development; for monitoring of research and development projects; and for the generation of external funds.

Food and Nutrition Research Institute

The FNRI is one of the nine institutes of DOST mandated to provide evidence-based researches on nutrition. Based on EO 128 of 1987, it has the following functions:

1. Undertake research that defines the citizenry's nutritional status, with reference particularly to the malnutrition problem, its causes and effects, and identify alternative solutions to them;
2. Develop and recommend policy options, strategies, programs and projects, which address the malnutrition problem for implementation by the appropriate agencies; and
3. Disseminate research findings and recommendations to relevant end-users.

NATIONAL AND INTERNATIONAL AGENDA •••

This section provides brief descriptions of various documents reviewed for the development of the PPAN Research Agenda 2022-2028. These documents served as guided towards the development of a transdisciplinary nutrition research agenda that is responsive on the multifaceted challenges in nutrition.

National Plans and Agenda

Philippine Development Plan 2017-2022

This is the first medium-term development plan geared towards attaining the *AmBisyon Natin* 2040 vision of a *matatag, maginhawa and panatag na buhay* for all Filipinos. To attain this, the Philippine Development Plan (PDP) laid down a solid foundation for a more inclusive growth, a high-trust society, and a globally competitive economy. The PDP contains strategies that fall under three pillars of “*Malasakit*” (enhancing the social fabric), “*Pagbabago*” (inequality-reducing transformation), and “*Patuloy na Pag-unlad*” (increasing growth potential of the economy). Under the pillar of “*Pagbabago*” is Chapter 10 of the Plan, “Accelerating Human Capital Development”, wherein health strategies are outlined (NEDA, 2017).

Philippine Health Agenda 2016-2022

Administrative Order No. 2016-0038, also known as The Philippine Health Agenda (PHA) 2016-2022, provides the grounds for policies, plans, and programs to champion universal health care (UHC) in the Philippines with the thrust, “Boosting Universal Health Care via FOURmula One Plus”. The PHA presents three guarantees: 1) services for both the well and the sick; 2) functional networks of health facilities; and 3) financial freedom when accessing services. Spearheaded by the DOH, the PHA mobilizes all DOH branches and units, DOH hospitals, private and public health providers, LGUs, and other organizations and agencies to achieve goals, such as equitable health outcomes, health promotion, and health-related financial risk protection. It also includes strategies to develop evidence-based nutrition research as a vital factor in bringing these goals to a reality (DOH, 2016).

Philippine Plan of Action for Nutrition 2017-2022

The PPAN is the country’s response to the double burden of malnutrition. Nutrition is one of the fundamental considerations in the pursuit of inclusive growth in macroeconomic policy, industry, agriculture, infrastructure, governance, peace and security, and environment and natural resources (NNC, 2016). Thus, the PPAN 2017-2022 provides the guiding framework for the PDP in improving the nutrition status of the Filipinos.

National Research Agenda

National Unified Health Research Agenda 2017-2022. The National Unified Health Research Agenda (NUHRA) presents the health research priorities, which address the health needs of the population vis-à-vis the health sector's goal for UHC, determined by the country's stakeholders. The agenda is a platform to advocate for local, national, and international support. Nutrition is considered as one of the country's health research priorities under the thematic area "Research to Enhance and Extend Healthy Lives" in its latest iteration for 2017-2022. This research area aims to produce evidence towards the prevention of disease, restoration of well-being and reduction of disease burden. Specifically, it was identified that the focus of research on nutrition are nutrition across all life stages, nutritional assessment and monitoring, development of interventions, evaluations of nutrition programs and interventions, and promotion of food security, quality and safety.

DOH Medium Term Research Agenda 2017-2022. The DOH Philippine Medium-Term Research Agenda highlights the health policy and systems research areas where evidence is most needed to realize the three PHA guarantees. In this agenda, nutrition is considered a priority under the thematic area of establishing need, which focuses and describes the status quo and provides detailed characterization of issues/problems that requires attention. Specifically, the agenda proposes that studies on nutrition should be on deepening the current understanding on disease burden and risk factors, including both medical and social risk factors.

DOST Harmonized National Research and Development Agenda 2017-2022. Aligned with *AmBisyon Natin 2040*, this document provides central direction, leadership, and coordination of the scientific and technological efforts in the country. It is divided into five sectors, namely, Basic Research; Agriculture, Aquatic, and Natural Resources; Health; Industry, Energy, and Emerging Technologies; and Disaster Risk Reduction and Climate Change Adaptation. Specifically, the agenda proposes that studies on nutrition should be on nutrition and food security.

International Plans and Agenda

ASEAN Post-2015 Health Development Agenda 2016-2020. In 2018, ASEAN Leaders adopted the ASEAN Vision 2020 of outward looking, living in peace, stability, and prosperity, bonded together in partnership in dynamic development and in a community of caring societies. The ASEAN Vision 2020 leads the development of ASEAN Post-2015 Health Development Agenda, which envisions a healthy, caring and sustainable ASEAN community. Cluster 1 of this agenda is on the promotion of healthy lifestyle, which aims (i) to achieve maximal health potential of ASEAN Community through promoting healthy lifestyle, and (ii) to ensure health lives and promote wellbeing for all at all ages by 2020. To achieve this, the agenda reaffirms the promotion of good nutrition and healthy diet as a priority.

Sustainable Development Goals 2030. In 2016, the United Nations (UN) officially set into motion 17 new goals and targets to continue pursuing universal growth and progress—the Sustainable Development Goals (SDGs). The new SDGs serve as a global policy agenda and enlists the cooperation of all member states as a commitment to human rights and inclusive, sustainable development, picking up from where the Millennium Development Goals closed.

UN Global Nutrition Agenda: Scaling Up Nutrition. In the UN Global Nutrition Agenda Post-2015: Scaling Up Nutrition (SUN), the UN renewed its commitment to address malnutrition in all forms, under- and overnutrition. It recognizes malnutrition as a global health problem that requires multisectoral actions. The SUN is an initiative to harmonize efforts of the global, international, and national level agencies to reverse the growing double burden of malnutrition. The expected outcomes of the SUN are 1) nutrition in all policies, 2) adequate support systems and evidences, and 3) quality nutrition-specific and nutrition-sensitive programs implemented.

BENCHMARKING NUTRITION RESEARCH ●●●

This section attempts to provide an overview as to why it is fundamental to develop the PPAN Research Agenda 2022-2028. It describes the efforts of other countries to develop nutrition research agenda, as well as the Philippines nutrition research landscape.

International Experiences on Nutrition Research Agenda Setting

While numerous interventions have been identified and implemented, malnutrition remains a major public health problem. Development of effective policies and programs will result to efficient service delivery in order to address issues and reach goals on nutrition. The utilization of research outputs is recommended for evidence-based policy development, evidence-informed decision making, and effective implementation.

Electronic Library of Evidence on Nutrition Actions. The World Health Organization (WHO) has been gathering existing guidelines on effective nutrition interventions through the electronic Library of Evidence on Nutrition Actions (eLENA) since 2011. Through eLENA, decision-makers are given access to the latest nutrition guidelines, recommendations, and scientific evidence that can help countries in creating appropriate interventions to address nutritional issues. In this regard, researches conducted in the country should aim to contribute to evidence-informed nutrition policies and guidelines, similar to policies and guidelines found in eLENA.

The Action Plan to Reduce the Double Burden of Malnutrition in the Western Pacific Region 2015-2020. This action plan includes evidence-informed policies and practices as a guiding principle for implementation. While global policies and standards have been set, country-specific research is encouraged, taking into consideration cultural practices and belief systems in order to come up with interventions for sustained community-level programs. This document presents current global, regional, and local practices on the uptake of research for the establishment of effective policies and programs, which helped guide the development of the PPAN Research Agenda 2017-2028.

Numerous agencies and organizations have been conducting researches to understand nutrition-related problems that the population has been facing. Such researches should be easily accessible and applicable to influence public policy changes. A prioritized nutrition science research agenda developed through an inclusive and consultative process can help guide researchers in focusing their research on addressing leading gaps and issues.

Sackler Institute for Nutrition Science Global Research Agenda for Nutrition Science. In collaboration with academic and non-profit researchers and the WHO, the Sackler Institute for Nutrition Science identified the following topic areas on which to concentrate future research:

1. Environmental and societal trends affecting food and nutrition among vulnerable groups. The topic area focuses on researches that will describe the complex

interactions among environmental and societal trends and nutrition, such as population distribution, climate change, processed foods, and increasing rates of overweight and obesity, and nutrition related NCDs.

2. Unresolved issues of nutrition in the lifecycle. The topic area focuses on understanding the interplay between mother and child, with a linkage to the wider themes of women's health in general.
3. Delivery of intervention and operational gaps. The topic area focuses on the need to assess and support the delivery capacity for nutrition interventions in addition to the cost-effectiveness of delivery conduits.

As with all research agenda, these identified topic areas only serve as starting points to fill research gaps with the end goal of turning new knowledge into practice and policy. As such, the Sackler Institute has outlined the research-to-policy cycle, which includes the design, implementation, and evaluation of intervention and policies, as shown in **Figure 1**. This cycle engages nutrition science stakeholders, including researchers, funders, implementation specialists, and policymakers for a coordinated and transdisciplinary effort in nutrition studies, guided by the developed research agenda.

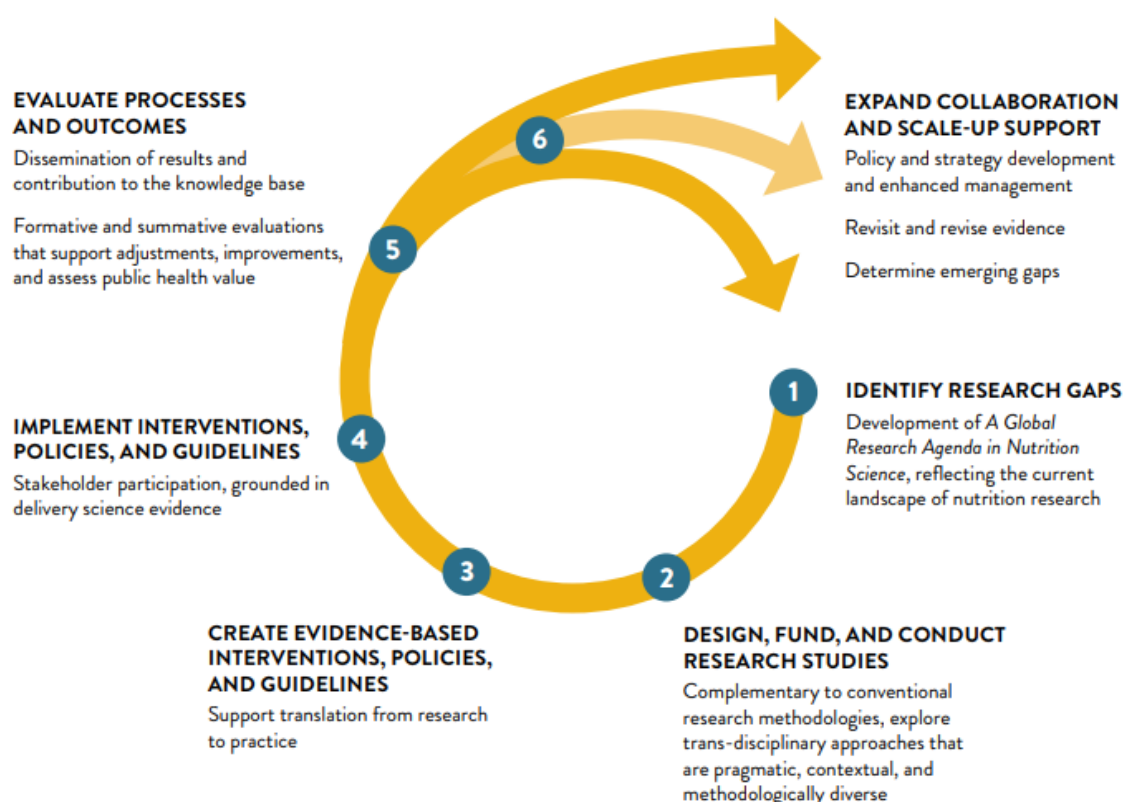


Figure 1. The existing research cycle of nutrition science.

Sustainable Nutrition research for Africa in the Years to come. Similarly, a consultative approach was also used to identify priorities for research themes and actions for nutrition in sub-Saharan Africa (SSA) through the Sustainable Nutrition Research for Africa in the Years to come (SUNRAY) project. The SUNRAY project included a review of existing nutrition research, perceptions, and priorities among stakeholders and a priority setting workshop with researchers and policymakers from the government and academe of every country. Ultimately,

the SUNRAY project also recognizes the need to hold policy makers accountable for incorporating research into policy. The identified priority areas are as follows:

1. Develop effective community-based interventions to improve nutritional status;
2. Evaluate behavioral strategies of population groups to improve nutritional status, and;
3. Review food security interventions to improve nutrition.

Nutrition Research Priorities in Malaysia 2016-2020. To highlight an experience from the ASEAN Region, the Nutrition Research Priorities in Malaysia (NRP) (2016-2020) aimed to highlight important nutrition research gaps and identify issues that warrant further research, especially in the context of Malaysia. The NRP was identified based on national needs as indicated by their National Plan of Action for Nutrition of Malaysia (NPANM) III (2016-2025). The NRP has identified seven research priority areas:

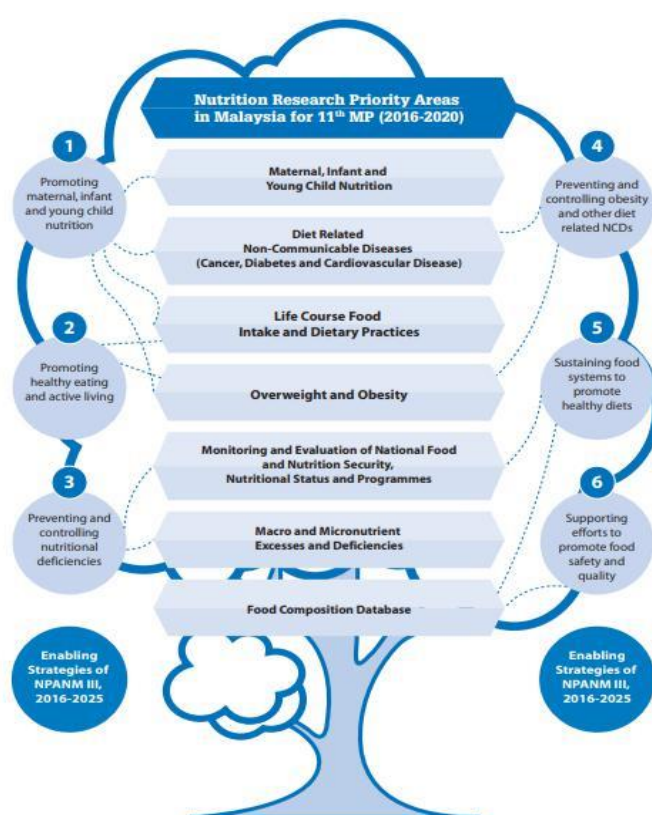


Figure 2. Nutrition Research Priorities in Malaysia 2016-2020.

Nutrition Research Landscape in the Philippines

As discussed previously, the topic of nutrition has been included in existing national research agenda in the Philippines. Building on this effort, the NNC identified the need of a transdisciplinary nutrition research to address the following targets identified in PPAN 2017-2022:

Outcome targets

1. To reduce levels of stunting and wasting;
2. To reduce micronutrient deficiencies below public health significance;
3. No increase in overweight and obesity among children, and;
4. To reduce overweight and obesity among adolescents and adults.

Sub-outcome or intermediate outcome targets

1. To reduce the proportion of nutritionally-at-risk pregnant women;
2. To reduce the prevalence of low birthweight;
3. To increase the prevalence of exclusive breastfeeding among infants 5 months old;
4. To increase the percentage of children 6-23 months meeting the minimum acceptable diet; and,
5. To increase the proportion of households with diets that meet the energy requirements.

From these targets, nine focus areas can be identified: 1) stunting, 2) wasting, 3) micronutrient deficiency, 4) overweight and obesity, 5) pregnant women, 6) birth weight, 7) breastfeeding, 8) minimum acceptable diet, and 9) energy requirement. In order to present an idea of what researches are currently existing in literature, researches on nutrition in the Philippines published from 2013 to 2018 were scoped from the PubMed, Philippine Health Research Registry (PHRR), and Health Research and Development Information Network (HERDIN), and other government agencies research archives. A total of 335 researches were scoped and categorized according to the nine focus areas identified. The categorization of studies was based on the study objectives. It is important to note that researches may have more address one or more targets of the PPAN.

Table 1 shows that 59% of nutrition researches conducted from 2013-2018 have addressed PPAN outcome and sub-outcome targets. The 59% is attributed to researches on stunting (7%), wasting (6%), micronutrient deficiency (7%), overweight (5%), pregnant women (8%), birth weight (7%), breastfeeding (8%), minimum acceptable diet (6%), and energy requirement (5%). The other 41% of the researches scoped have been focused on baseline anthropometric surveys, functional foods, basic and applied nutrition researches, and nutrition program and policy evaluations (41%).

Table 1. Nutrition Researches based on PPAN Targets.

PPAN Targets	Number of researches	%
Stunting	38	7%
Wasting	31	6%
Micronutrient deficiency	39	7%
Overweight	27	5%
Pregnant women	45	8%
Birth weight	41	7%
Breastfeeding	43	8%
Minimum acceptable diet	36	6%
Energy requirement	26	5%
Others (i.e. baseline anthropometric surveys, functional foods, basic and applied nutrition researches, and nutrition program and policy evaluations)	230	41%

Although the PPAN outcome and sub-outcome targets comprised of 59%, there are relatively low numbers of nutrition research projects conducted on each of the nine focus areas of PPAN. As such, the importance of generating of timely, responsive, and relevant nutrition researches is highlighted.

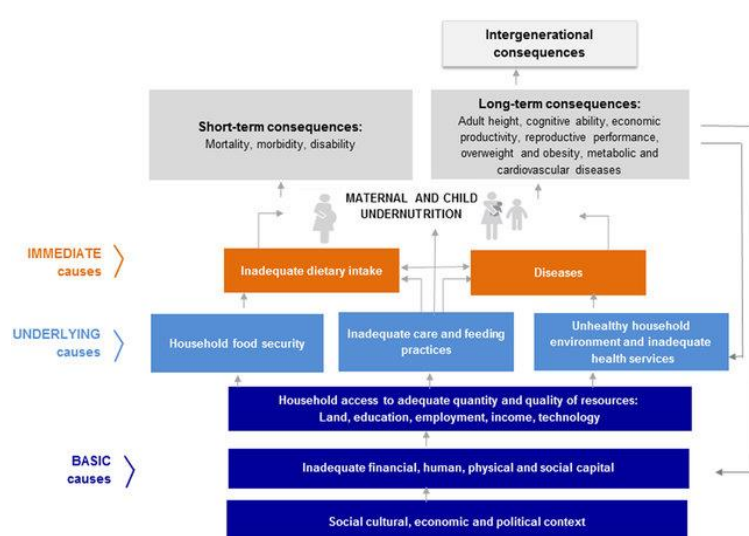


Figure 3. Conceptual Framework of Malnutrition (UNICEF, 2014).

The development of the research agenda on nutrition is based on the lens that challenges to achieve nutrition targets needs to consider broader systemic level of issues and the community, household and individual levels. **Figure 3** highlights that interventions is essential from a multi-sectoral and multi-dimensional perspective, moving from macro to micro-levels of focus. Building on this framework, the development of the nutrition research agenda underscores multifaceted challenges and opportunities.

Guide in Management of the PPAN Research Agenda 2022-2028

The PPAN research agenda management will be led by the National Nutrition Council Secretariat in cooperation with members of Technical Working Group on Nutrition Research and NNC Technical Committee. Below are the key steps in the implementation of the plan:

Step 1. Obtain high-level support

Embarking on the implementation of the PPAN Research Agenda appropriate government support and mandate are required. The tasks of initiating the process of implementation through dissemination among NNC member agencies is required to strengthen political and institutional commitments of various agencies.

Step 2. Identify key partners

Because the plan originated from different sectors with the goal of improving nutrition in the Philippines, the key to a successful implementation is to involve all those government agencies that have influence and responsibility for nutrition. This helps ensure cooperation and collaboration. The key action point when key actors within the government and other development partners is to conduct strategic planning session to identify the following:

- a. What are the necessary mechanisms to undertake efficiently implement the PPAN Research Agenda?
- b. What are the resources needed to implement the plan?
- c. Who among the partners will do the nutrition research and development activities?
- d. When will the agenda be evaluated?

Step 3. Monitoring and evaluation of the agenda

Monitoring and evaluation are essential steps to undertake to ensure a responsive research agenda. The implementation of the plan the National Nutrition Council adopted the guidelines for evaluation of research agenda uptake used by Philippine National Health Research System (PNHRS) in monitoring research outputs. Below are the indicators on research output monitoring and evaluation:

1. Number of new publications – contribution to the general body of knowledge through scientific publications;
2. Number of new patents – tangible measure of innovation;
3. Number of new products – commercial value of the research outputs;
4. Number of new people services – increase on the scientific workforce working on nutrition;
5. Number of new partnerships – facilities, universities and government institutions that will enable increase research outputs.
6. Number of new policies – adopted science-based guidelines for nutrition policy development; and,

7. Number of new researches utilized for nutrition and nutrition-related policies and programs – researches used for the enhancement of health and nutrition policies and programs to improve their effectiveness and efficiency.

PPAN RESEARCH AGENDA 2022-2028 PRIORITIES

The PPAN Research Agenda 2022-2028 composes of nine research priorities, each of which has corresponding descriptions and research areas that aim to guide the generation of research on nutrition in the country. Anchored in from the current nutrition research landscape, health research and development agenda, national plans and international plan this research agenda aims to generate knowledge and develop innovative solutions on key nutrition areas, namely, 1) stunting, 2) wasting, 3) micronutrient deficiency, 4) overweight and obesity, 5) pregnant women, 6) birth weight, 7) breastfeeding, 8) minimum acceptable diet, and 9) energy requirement. This section presents the priorities and their specific research areas.



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PHILIPPINE PLAN OF ACTION FOR NUTRITION RESEARCH AGENDA 2022-2028

