



STRATEGIC REVIEW

Food Security and Nutrition in the Philippines

BRAIN TRUST, INC.

Roehlano Briones

Ella Antonio, Celestino Habito, Emma Porio, Danilo Songco

January 2017

Cover photos: WFP/Jacob Maentz; WFP/Anthony Chase Lim; WFP/Philipp Herzog

An independent review commissioned by the World Food Programme (WFP)

(The authors of the review are solely responsible for the contents of the review and the views expressed in it, which cannot be attributed to WFP)

Table of Contents

Table of Contents	ii
List of Abbreviations	iii
List of Figures	vi
List of Tables	vi
List of Boxes	vii
List of Annexes	vii
Executive Summary	1
I. Introduction	6
A. Overview and Objectives	6
B. Conceptualizing the Linkages	7
C. Consultative Process and Report Organization	9
II. Food Security and Nutrition	11
A. Population, Economy and Poverty	11
B. Agriculture and Food Systems	13
C. Poverty, Agriculture and Vulnerability	15
D. Agriculture and the Natural Resource Base	17
E. Nutrition and Human Development	19
F. Hunger and Food Accessibility	25
G. Climate Impacts	29
III. Institutions and Governance	31
A. Political and Organizational Framework	31
B. Development Planning and Sector Plans	34
C. Government Sector Programs	36
D. Private Sector Programs	39
E. International Cooperation	41
F. Sector Budget	43
IV. Gaps and Challenges	45
A. Integrated Planning	45
B. Policy Incoherence	46
C. Food Price Volatility	47
D. Impacts of Climate Change and Other Shocks	48
E. Inadequate and Misplaced Resources	50
F. Organizational Weaknesses	50
G. Lack of timely food security and nutrition data	52
H. Implementation issues - Nutrition	52
I. Implementation issues: food security	54
J. Dispersed Accountability	55
K. Mind-Set and Behaviour	56
V. Roadmap for Attaining SDG 2	56
A. Scenario Analysis	56
B. Recommendations	60
C. Conclusion	70
Annex A	71
The Agricultural Model for Policy Evaluation (AMPLE)	71
Annex B	74
Consultative Process of the Strategic Review	74
Annex C	75
Field Study Notes	75
Annex D	95
Senate and House Bills on Food Security and Nutrition	95
References	97

List of Abbreviations

4Ps	<i>Pantawid Pamilyang Pilipino Program</i>
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AED	Agro-enterprise Development
AFMA	Agriculture and Fisheries Modernization Act
AFMP	Agriculture and Fisheries Modernization Plan
AIFS	ASEAN Integrated Food Security
AMPLE	Agricultural Multimarket Model for Policy Evaluation
APIS	Annual Poverty Indicator Survey
ARB	Agrarian Reform Beneficiary
ARC	Agrarian Reform Community
ARMM	Autonomous Region in Muslim Mindanao
ASAPP	Accelerated and Sustainable Anti-Poverty Program
ASEAN	Association of Southeast Asian Nations
BFAR	Bureau of Fisheries and Aquatic Resources
BHW	Barangay Health Worker
BLT	<i>Busog, Lusog, Talino</i>
BNC	Barangay Nutrition Council
BNS	Barangay Nutrition Scholar
BPAFSN	Barangay Plan of Action for Food Security and Nutrition
BSWM	Bureau of Soils and Water Management
BUB	Bottom-Up Budgeting
CabSec	Cabinet Secretary
CALABARZON	Cavite, Laguna, Batangas, Rizal, and Quezon
CAR	Cordillera Autonomous Region
CARP	Comprehensive Agrarian Reform Program
CBCP	Catholic Bishops Conference of the Philippines
CBMS	Community Based Monitoring System
CCA	Climate Change Adaptation
CCC	Climate Change Commission
CCF	Christian Children's Fund
CCT	Conditional Cash Transfer
CCVI	Climate Change Vulnerability Index
CDED	Community Driven Enterprise Development
CDP	Comprehensive Development Plan
CDRRMC	City Disaster Risk Reduction and Management Council
CHAT	Community Health Action Team
CIHDC	Committee on International Human Development Commitments
CLUP	Comprehensive Land Use Plan
CMAM	Community Based Management of Acute Malnutrition
CNAP	City Nutrition Action Plan
CNC	City Nutrition Council
CPAFSN	City Plan of Action for Food Security and Nutrition
CROWN	Consistent Regional Winner in Nutrition
CRS	Catholic Relief Services
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DA	Department of Agriculture
DAR	Department of Agrarian Reform
DBM	Department of Budget and Management
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG	Department of the Interior and Local Government

DND	Department of National Defense
DOH	Department of Health
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
DRRM	Disaster Risk Reduction and Management
DSSAT	Decision Support System for Agro-technology Transfer
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
ECCD	Early Childhood Care and Development
EHF	Ending Hunger Fund
EMB	Environmental Management Bureau
EO	Executive Order
FAO	Food and Agriculture Organization of the United Nations
FAP	Foreign-Assisted Project
FDS	Family Development Session
FEP	Farmer Entrepreneurship Program
FIES	Family Income and Expenditure Survey
FNRI	Food and Nutrition Research Institute
FPA	Fertilizer and Pest Authority
FSN	Food Security and Nutrition
FSNC	Food Security and Nutrition Council
FSSP	Food Staples Sufficiency Plan
GDP	Gross Domestic Product
GGGI	Global Green Growth Institute
GNI	Gross National Income
HDI	Human Development Index
IB	Inclusive Business
IDA	Iron Deficiency Anaemia
IDP	Internally Displaced Person
IFPRI	International Food Policy Research Institute
IPCC	Intergovernmental Panel on Climate Change
KALAHI-CIDSS	<i>Kapit-Bisig Laban sa Kahirapan</i> - Comprehensive and Integrated Delivery of Social Services
KPI	Key Performance Indicator
LBP	Land Bank of the Philippines
LCE	Local Chief Executive
LFS	Labor Force Survey
LGC	Local Government Code
LGU	Local Government Unit
MAD	Minimum Acceptable Diet
MC	Memorandum Circular
MDG	Millennium Development Goal
MDRRMC	Municipal Disaster Risk Reduction and Management Council
MIMAROPA	Mindoro, Marinduque, Romblon, and Palawan
MPAFSN	Municipal Plan of Action for Food Security and Nutrition
MSME	Micro, Small, and Medium Enterprises
NAMRIA	National Mapping and Resource Information Authority
NAO	Nutrition Action Officer
NAPC	National Antipoverty Commission
NASSA	National Secretariat for Social Action
NC	Nutrition Committee
NCR	National Capital Region
NDRRMC	National Disaster Risk Reduction and Management Council
NEDA	National Economic and Development Authority
NFA	National Food Authority

NGA	National Government Agency
NGO	Non-Government Organization
NIA	National Irrigation Administration
NNC	National Nutrition Council
NNS	National Nutrition Survey
ODA	Official Development Assistance
OECD	Organization for Economic Cooperation and Development
OP	Office of the President
OPT	Operation <i>Timbang</i>
PBD	Program Beneficiaries Development
PCA	Philippine Coconut Authority
PCSD	Philippine Council for Sustainable Development
PCW	Philippine Commission on Women
PD	Presidential Decree
PDP	Philippine Development Plan
PDRRMC	Provincial Disaster Risk Reduction and Management Council
PhilFSIS	Philippine Food Security Information System
PNAP	Philippine National Action Plan
PO	People's Organization
PPAFSN	Philippine Plan of Action for Food Security and Nutrition
PPAN	Philippine Plan of Action for Nutrition
PPP	Public-Private Partnership
PSA	Philippine Statistics Authority
PWD	Person with Disability
QR	Quantitative Restriction
SDG	Sustainable Development Goal
SE	Social Enterprise
SMART	Specific, Measurable, Achievable, Realistic, and Time-Bound
SOCCSKSARGEN	South Cotabato, Cotabato, Sultan Kudarat, Sarangani, General Santos City
SPA-FS	Strategic Plan of Action on Food and Security
SUN	Scaling Up Nutrition
SWS	Social Weather Station
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WASH	Water Supply, Sanitation, and Hygiene
WEF	World Economic Forum
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization
ZHC	Zero Hunger Challenge
ZO	Zoning Ordinance

List of Figures

Figure 1-1: Determinants of Food Security and Nutrition	10
Figure 2-1: Per Capita Income (constant 2010 US\$) and Population (millions), 1990 - 2015	11
Figure 2-2: Population by Age Bracket, Male and Female, Philippines, 2014 and 2050	12
Figure 2-3: Measures of Poverty and Inequality, 1991 - 2015 (%)	12
Figure 2-4: Wages of Farm Workers by Crop, in P/day at constant prices (2000 = 100)	17
Figure 2-5: Areas of Forest and Agricultural Lands, 1970-2010	18
Figure 2-6: Malnutrition Prevalence among Children 0-5 Years Old, 1990-2015 (%)	19
Figure 2-7: Prevalence of Wasting Among Children, 0-10 Years Old, Philippines, 2008-2013 (%)	20
Figure 2-8: Prevalence of Anaemia Among Children, By Age Group, 1998-2013	20
Figure 2-9: Prevalence of Stunting Among Children, 0-10 Years Old, 2008-2013	21
Figure 2-10: Annual Average Hunger Prevalence in Households, 1998-2015 (%)	22
Figure 2-11: Infant and Under Five (U5) Mortality Rate, per 1,000 Livebirths, 1991-2012	23
Figure 2-12: Share of Children Immunized, by Vaccine Type, 1993-2013	24
Figure 3-1: Private Sector Role, Resources, and Strengths in Food Security and Nutrition	34
Figure 3-2: Budgets for Food Security and Nutrition, 2015-2017, P Billions	44
Figure 3-3: Expenditures for FSN Programmes, 2009 - 2016, P, Billions	45
Figure 5-1: Retail Prices of Food Crops, Base Year and Scenario Year, in P/Kg	57
Figure 5-2: Retail Prices of Animal Products, Base Year and Scenario Year, in P/Kg	58
Figure 5-3: Growth in Annual Per Capita Consumption of Food Crops, by Scenario, 2013-2030 (%) ..	58
Figure 5-4: Growth in Per Capita Consumption of Animal Products, by Scenario, 2013-2030 (%)	59
Figure 5-5: Stunting Prevalence for Children 0-5, By Scenario, 2015 and 2030 (%)	59

List of Tables

Table 2-1: Growth in Gross Value Added by Sector, 2001 - 2015 (%)	13
Table 2-2: Self-Sufficiency Ratios of Major Food Products, 1992 - 2014 (%)	14
Table 2-3: Per Capita Availability of Major Food Items, 1990 - 2015 (kg/yr)	14
Table 2-4: Yield Index for Major Crops, Southeast Asia, 2014 (Philippines = 1.00)	15
Table 2-5: Shares in Value of Agricultural Output, Developing Asia and Philippines, %	15
Table 2-6: Poverty by Category, 2012	16
Table 2-7: Prevalence of Undernourishment, 2006 - 2014 (%)	21
Table 2-8: Human Development Index indicators, Philippines, 1980 - 2014	25
Table 2-9: Proportion of Households Experiencing Hunger, by Income Decile, 2007-2014	25
Table 2-10: Household Food Expenditure Shares, 1994 - 2012 (%)	26
Table 2-11: Malnutrition Prevalence Indicators, Children Aged 0-5, by Wealth Quintile, 2013 (%)	27
Table 2-12: Per Capita Consumption of Filipino Households by Socio-Economic Class, 2012 (kg/yr) ..	27
Table 2-13: Indicators of Poverty and Malnutrition, by Region	29
Table 2-14: Projected Changes in Crop Yield Due to Climate Change, 2000-2050 (%)	30
Table 3-1: Organizational Framework for Food Security and Nutrition	32
Table 3-2: Food Security and Nutrition Programmes, 2016	43
Table 4-1: Inflation Rates of Food and Consumer Items, 2004 - 2015 (%)	47
Table 5-1: Base Year and Projected Stunting Rates, Children 0-5, By Scenario (%)	60

List of Boxes

Box 1-1: SDG 2 Statement, Targets, and Means of Implementation	7
Box 2-1: Teenage Pregnancy and Malnutrition	22
Box 3-1: Commodity Development Programs	36
Box 4-1: Conflicts in Mindanao: Origin of Food Insecurity	49
Box 4-2: Obstacles to Ending Hunger and Malnutrition	54
Box 5-1: The Partnership Against Hunger and Poverty (PAHP)	64
Box 5-2: NGOs in Nutrition	66
Box 5-3: Successful Cases of Accountability for Outcomes	67
Box 5-4: Possible Structure and Procedures for Tier 1 of EHF	69

List of Annexes

Annex A: The Agricultural Model for Policy Evaluation (AMPLE)	71
Annex B: Consultative Process of the Strategic Review	74
Annex C: Field Study Notes	75
Annex D: Senate and House Bills on Food Security and Nutrition	95

Executive Summary

Where are we now?

The Philippines is a low middle-income country enjoying rapid economic growth, maintaining a gross domestic product (GDP) growth of 6.2% annually on average since 2010. Despite this sustained economic improvement, hunger remained high especially among those in the first two income deciles, and malnutrition continues to persist and even worsened in recent years. Consequently, the country missed the Millennium Development Goals (MDG) target of halving childhood malnutrition by 2015. Among children 0-5 years, prevalence of stunting has fallen albeit quite slowly since the 1990s, and has disturbingly risen by 3.2 percentage points over the period 2013-2015. More than 3.7 million or 33.4% of the 11.2 million children aged 0-5 years in 2015 are stunted. These children may not have very productive life ahead.

Malnutrition, especially among children, is strongly linked with higher rates of disease and premature death. It also has adverse effects on crucial stages of child development, leading to cognitive and behavioural deficits, learning disability, and ultimately to an uncompetitive workforce. In 2013 the cost of early childhood malnutrition was about P328 billion, or 2.8% of GDP, counting only the impact of added education cost, reduced human capital formation, and excess mortality. Including the additional health burden could push the cost of malnutrition up to 4.4% of GDP.

Hunger and malnutrition relate closely with the state of food security, when “all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” The definition underscores the multi-dimensionality of food security, including the interaction between food systems, nutrition, and health. Unfortunately, food security especially among the poor, has been weakened primarily by restrictive trade policies and low farm productivity and income.

Many Filipinos suffer from lack of food or poor diets, despite rising food availability because of inadequate access to food due to high poverty and low income especially among the rural population that are generally engaged in agriculture. Higher food prices, especially of the food staple rice, relative to the rest of the Southeast Asian region, exacerbate the situation. As income rises or food prices fall, malnutrition declines. Slow growth in the 1990s and 2000s, together with stagnant inequality, had led to a slow decline of poverty, and persistent malnutrition. However, raising incomes is no guarantee to ending hunger and malnutrition. Even among those at the top wealth quintile, malnutrition levels of children remain elevated, i.e. 13-14% for under-5 stunting.

The bulk of Filipinos' food consumption goes to cereals, followed by meat and fish; per capita consumption of vegetables only averages 22 kg/yr, compared to the FAO recommendation of 146 - 182 kg/yr. Moreover, episodes of inadequate diet and ill health may be especially harmful at key stages in the life cycle. A marked increase in stunting among young Filipino children happens from birth up to the age of two years, owing to poor nutritional status of pregnant and lactating mothers, and sub-optimal practices on exclusive breastfeeding and complementary feeding during this age group. Hunger and malnutrition in the Philippines is further compounded by frequent natural disasters, which disproportionately affects already poor and vulnerable populations such as coastal and upland communities, as well as the urban poor. The World Risk Index ranks the Philippines as the second most at-risk country in terms of potential impacts of climate change.

How did we get here?

Policy Incoherence

Restrictive trade policies in rice could well be the underlying reason why levels of malnutrition have been substantially higher in the Philippines. The government's goal of 100% rice self-sufficiency has led to domestic rice prices far exceeding world prices and up to twice the levels paid by consumers in other ASEAN countries. Expensive rice hurts consumers, especially the poor, because rice is a very important food item for Filipinos. It accounts for more than a third (33% in 2012) of the total food expenditure of the bottom quintile; the single biggest source of energy and protein at 34% compared to fish (14%), pork (9%), and poultry (6%); and the biggest contributor to per capita availability of calories at 46% compared to sugar (8%), wheat (7%), and pork (7%).

Unresponsive food system

Trade distortions, inefficient logistics, postharvest losses, and uncompetitive marketing practices, have the cumulative effect of raising food prices, to the grave detriment of poor consumers, while depressing farm incomes. Food price movements have been more volatile, compared to the general price level. Episodes of **rapid food price inflation are implicated in the reversal of nutritional improvements** in recent years. Poor households face greater challenges in boosting diet diversity compared to higher income households; one reason is that fruit and vegetable retail prices have increased the fastest compared to other food items since 2012.

Climate and other shocks

Climate impacts are magnifying the risks and vulnerabilities that already afflict Philippine agriculture and food production as well as the vulnerable and marginalized families and individuals. These impacts are projected to become more pronounced by 2050 and beyond. The displacements of people for extended periods due to conflict, flooding, earthquake and other disastrous events such as fire have become commonplace and impact harder on the poor and vulnerable populations who generally do not have alternatives or the resources to keep them out of crowded evacuation centers that lack food and sanitation and breed diseases. Malnutrition rapidly increases in these areas.



WFP/Anthony Chase Lim

Planning Gap

The Philippine Plan of Action for Nutrition (PPAN) is a well-crafted document that can guide planning at the national and local levels. Unfortunately, **it has not been well translated and integrated in key development plans**: the Philippine Development Plan, sector plans (e.g. agriculture, infrastructure, environment and natural resources, etc.) and local Nutrition Action Plans and Local Comprehensive Development Plans. Thus nutrition often misses out in local programming and budgeting.

Governance and service delivery gaps

Food security and nutrition (FSN) are multi-dimensional phenomena caused by a complex set of interrelated factors. As a consequence, FSN governance structures are confronted with multiple challenges as the various agencies involved strive to achieve meaningful coordination. Unfortunately, the **FSN governance structures are unable to transcend the seemingly inevitable overlap, confusion, and fragmentation of investments/actions across the various actors, both national and local**. Within the nutrition and health delivery system, most frontline workers especially the Barangay Nutrition Scholars (BNS), remain ill-equipped to handle caseloads of households with malnourished children within their communities. These workers labour mostly bereft of tenure, sometimes in difficult environments. Training outcomes often cannot be sustained owing to frequent turnover of workers. Similarly, the existing agricultural extension

system under the jurisdiction of local governments leaves much to be desired, and its responsiveness to the technical and organizational needs of small farmers and fishers has been put into question and needs to be reviewed.

Lack of resources

Relative to the magnitude of the problem, resources for addressing hunger and malnutrition have been inadequate, and much of those that are available so far have not been placed in high-impact programmes. While FSN-related programmes have undoubtedly received massive increases since around 2009, these have been directed primarily at other social objectives, without being translated into significantly improved hunger and malnutrition outcomes. Rather, programmes directed specifically against hunger and malnutrition appear to have been under-funded, both at the national and especially at the local levels. A significant part of funds provided to FSN may have been wasted due to ineffective or stand-alone programmes (e.g. school-based feeding as discussed below).

Implementation gaps

There is no shortage of programs and interventions to address hunger and malnutrition in the country. However, these have been **insufficient to avert hunger and the current public health crisis**. Some direct interventions of government can stand improvements to effectively address issues. For instance, micronutrient fortification is marked by low compliance. In the health care system, key nutrition interventions (e.g. the First 1,000 Days) become just a part of the long list of health promotion and service delivery activities undertaken by frontline workers in health centres and in the community. Large-scale supplementary feeding programs are difficult to sustain without external support, and have unclear impact on the nutritional status of children. Rice subsidies are poorly targeted, with a considerable leakage of benefits to the non-poor.

Weak accountability

Accountability for ending hunger and malnutrition is too **dispersed to make a difference** in practice. A strong push by government to exact accountability is considered likely to increase awareness of the hunger and malnutrition problem and heighten prioritization of solutions. For instance, local officials in areas with stagnant or even worsening indicators in their jurisdictions might be spurred to invest in FSN programs to get better results, while veering from the business as usual approach. Likewise, at the national level, agency heads might be moved to align their sectoral goals if they are made accountable for their contribution to solving the overall problem of worsening hunger and malnutrition.

Where do we want to go?

The Philippines seeks to end hunger and all forms of malnutrition by 2030. This is a commitment that the country made during the adoption of the global 2030 Sustainable Development Agenda, which involves attaining, where applicable, 17 sustainable development goals (SDG) and accompanying 169 targets during the United Nations General Assembly in September 2015. Specifically, SDG No. 2 targets, by 2030, the end of hunger and ensuring access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round; as well as the end of all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons. In practice this will involve approximating developed country outcomes for hunger and malnutrition, i.e. at most 10% stunting and 2% wasting among children aged 0 to 5.

How do we get there?

Analysis of scenarios on stunting among children aged 0-5 (a proxy for malnutrition in general) suggests that, continuing the long-term trends and assuming similar policies, malnutrition will likely decline significantly from current high levels of about 33%, down to about 23% by 2030. However, this lies far

above the target of 10%. Simply pursuing business-as-usual will practically guarantee missing the SDG target.

While increased incomes cannot guarantee SDG 2, it is still important for the Philippines to elevate its income status to reach SDG 2. Income gains over the SDG period can lead to total elimination of hunger and malnutrition but only in conjunction with focused intentions of the country, orchestrated by the state, implemented by the LGUs, and targeted at households and individuals, all with participation of non-state actors. This Review calls this the **public health approach to SDG 2**. This approach consists of a package of strategies that cover the macro, meso and micro levels.

1. Transition to a more open trade policy for rice and other farm products. **Eliminate long-standing rice quantitative restrictions** to pave the way for a more open trade regime. This will entail amendment of Republic Act No. 8178, or the Agricultural Tariffication Act, which provides for control over rice importations in excess of the Minimum Access Volume committed under the WTO. The government must **muster the political will to undertake this long-overdue policy reform** to address the single biggest and most pervasive cause of malnutrition in the country. Government still has the option to protect rice farmers **by setting import tariffs that can be reduced over time** to achieve targeted levels of domestic rice price but avoid wide displacement of high-cost farmers.
2. **Gear up food systems toward food affordability, increased incomes and dietary diversity for poor and food insecure households.** This involves a number of strategies that include, among others: linking small farmers, as suppliers of food, directly to nutrition programs (e.g. supplementary feeding) and nutrition markets (e.g. government hospitals); strengthen value chains and backward and forward linkages; eradicate unfair trade practices and abuse of dominant positions through the application of competition policy under the Competition Act of 2015 (RA 10667); further expand women's participation in the agricultural production and value chain; and adopt "climate-smart" interventions to manage climate-related threats to stability and diversity of food systems. Along with these, promote increased dietary diversity in communities under nutrition-sensitive production systems.



WFP/Jacob Maentz

3. **Expand the role of the private sector in responsive food systems and leveraging social protection and nutrition** to make food more accessible to a larger number of households among disadvantaged groups (e.g., women, children, PWDs and IPs). The private sector (defined in this review to include civil society organizations, private companies and social enterprises) may be incentivized to engage in health care and nutrition services; food production and support to farmers, for both improved livelihoods and diversified diets; food fortification; and promoting technologies for convenient yet nutritious food. Harness **Public-Private Partnerships (PPP)** to especially address the rural infrastructure backlog. Facilitate PPPs through further simplification of requirements and procedures must be a priority. Greater participation of the private sector in the FSN initiatives in local areas as well as stronger representation of both private companies and civil society in the FSN Council would be significant steps toward this expanded role.
4. Ensure that PPAN considers priorities of other sectors and at the same time, **advocate for the integration and consideration of PPAN's priorities in the PDP and other sector plans** especially agriculture, food production, education, health and social protection. Rename **PPAN into Philippine Plan of Action for Food Security and Nutrition (PPAFSN)**. As the development of successor plans is currently on-going, NEDA and NNC must organize a FSN planning committee or a separate coordination planning session. Furthermore, **provide higher degree of attention to the localization of PPAFSN** especially now that there is a new set of local executives.
5. **Elevate and strengthen the NNC into a Food Security and Nutrition Council**, place it under the direct leadership and guidance of the President, and vest it adequate powers and resources to handle the FSN challenge. Strengthen the current secretariat; enhance the capability of its human resources and provide adequate financial resources.
6. **Converge, integrate, and coordinate various actions of agencies and LGUs** with each one making its respective contributions towards achieving SDG 2. A major point of convergence is leveraging social protection, including climate change adaptation, within disaster risk reduction and management, and focusing on the poor, vulnerable and marginalized sectors (especially women and children), and geographically isolated and disadvantaged areas (GIDAs).
7. **Establish a system of accountability based on key performance indicators** for both LGUs and national agencies to achieve better FSN outcomes. Develop an SDG 2 Report card at the local and national levels to monitor progress, inform the accountability system, decision-makers, and the public at large. The Report Card results shall be linked to the award of the Seal of Good Governance.
8. **Leverage public funds to mobilize private sector resources**. Map and monitor for outcomes the major private sector programs and resources for promoting good nutrition and eradication of malnutrition. Disseminate the information to program actors to encourage coordination and partnerships. The government may look at supplementing or complementing successful private sector programs as means to expand its own programs even with limited funds. Consider the **establishment of an End Hunger Fund (EHF) to finance FSN programmes and sustain a campaign for achieving SDG 2**. The EHF could be a single Fund with three tiers, namely: public funds; donor funds; and crowd-sourced funds. Donor funds consist of non-government funds, e.g. corporate foundations, CSOs, social enterprises and international aid organizations. Crowd-sourced funds will be obtained from voluntary contribution of individuals or groups. For this purpose, the government may consider putting up around **P35 billion annually** for the public component of EHF.

I. Introduction

A. Overview and Objectives

The Philippines along with 168 nations of the world renewed their collective commitment to pursue sustainable development through a common, integrated and inclusive agenda in next 15 years. They adopted the 2030 Agenda for Sustainable Development in September 2015 to usher in a new global development era with a common pledge that “no one will be left behind”. The global 2030 Agenda involves the attainment of 17 sustainable development goals (SDG) and 169 targets by 2030.

For the Philippines, this new era is timely as it struggles to address the disconnect between economic development and social and environmental sustainability, which has impeded the attainment of a number of MDGs. The Philippine economy has been growing rapidly in the last six years compared to most countries in Asia. Poverty incidence has fallen from 26.3% in 2009 to 21.6% in 2015. However, it has yet to translate this growth, in a big way, into higher agricultural incomes, better food security and improved child nutrition, among others. To a large extent, the weak appreciation of the inextricable linkages among food security, hunger and malnutrition has led to lack of coordinated action to address them.

This Strategic Review supports the attainment of the second Sustainable Development Goal (SDG 2) of Zero Hunger by 2030 (Box 1-1) and the country’s vision as spelled out in *Ambisyon Natin 2040*, and complements the formulation of the Philippine Development Plan (PDP), 2017 - 2022. It particularly seeks to contribute to a comprehensive and integrated approach towards addressing food insecurity and malnutrition in the country. The Strategic Review is an independent, analytical and consultative exercise with an overall objective of determining actions the Philippines must take to achieve SDG 2 and its accompanying targets by 2030 (Box 1-1). The findings and recommendations of the Review will contribute to national development planning and the engagement of international development partners and financial institutions in the country.

The specific objectives of the Strategic Review are:

1. Establish a joint, comprehensive analysis of the context related to FSN within the targets of SDG 2;
2. Determine the progress that strategies, policies, and programmes aimed at improving FSN have made for women, men, girls and boys and identify key humanitarian and development challenges and gaps in the response, the available resources and the institutional capacity;
3. Provide an overview of the resourcing situation of the FSN sector;
4. Discuss the role of the private sector in achieving food security and improved nutrition;
5. Explore how South-South and triangular cooperation could contribute to achieving zero hunger in the Philippines, and could be used by the Philippines to help other countries make progress towards this goal;
6. Identify the FSN goals or targets established in national plans or agreed in regional frameworks to facilitate progress toward zero hunger;
7. Propose and prioritize actions for the government and its development partners that are required to meet response gaps and accelerate progress toward zero hunger, and provide an overview of how these actions may be implemented and funded.

Box 1-1**SDG 2 Statement, Targets, and Means of Implementation****“End hunger, achieve food security and improved nutrition and promote sustainable agriculture”**

- 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly-managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge.

Furthermore, Agenda 2030 prescribes at least three **means of implementation** to achieve SDG 2, namely:

- 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks to enhance agricultural productive capacity
- 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the Doha Development Round
- 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, to help limit extreme food price volatility.

The **internationally agreed targets** referred to in SDG 2 Target 2.2 are as follows:

- a. 40% reduction in stunting among under-5 children;
- b. 50% reduction of anaemia in women of reproductive age;
- c. 30% reduction in low birth weights;
- d. No increase in childhood overweight;
- e. At least 50% prevalence of exclusive breastfeeding in the first 6 months;
- f. Reduce and maintain childhood wasting to less than 5%.

B. Conceptualizing the Linkages

According to the World Food Summit (1996), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Figure 1-1 attempts to summarize the salient relationships, and serves as framework for this review. **Outcomes** are measured at the household level, indicating its situation relative to nutritional norms, thereby reflecting the integrated nature of food security and nutrition. These outcomes are influenced by the macro, meso (programmatic, institutional level, and

micro (community, household level) contexts shaped by government policies and programs, projects and activities of both government and non-government actors. The household outcomes are determined by their behaviour and capacities in terms of their food intake and general health conditions, which affect the body's ability to translate food intake into adequate nutrition. In turn, food intake is strongly affected by purchasing power determined by food prices and markets, and household incomes. In rural areas, home production (vegetable gardens, livestock, fishing) may be an alternative source of food.

All the foregoing may be affected by shocks, both natural (disasters) and man-made (armed conflict or market volatility). Hence, concern for ending hunger and malnutrition is not limited to the current status of households, but also their **vulnerability** to worsening outcomes. These determinants may be related to various dimensions of food security (FAO, 2008) as follows:

- **Availability** - whether food is physically at-hand, within national borders, as evaluated by domestic production, stocks, and net imports. Nutritional status is determined by accessibility and utilization. Anthropometric measures of a person's nutritional status are: **stunting** - if the ratio of height-to-age falls sufficiently below a norm; **wasting** - when the ratio of weight-to-height falls sufficiently below a norm; and finally, **underweight** when the ratio of weight-to-age is sufficiently below a norm. Other important indicators are calorie intake and micronutrient deficiency (mainly Vitamin A, iron, and iodine).
- **Accessibility** - whether households can actually obtain available food. Food may already be in possession of households via direct production. Other households must acquire food through the markets wherein access depends on purchasing power or food affordability, which is a function of income and food prices, and further influenced by entitlements (e.g., enrolment in a feeding programme), or other wherewithal to purchase food (e.g. transfers).
- **Utilization** - whether households are able to translate food availability and accessibility into an "active and healthy" life, by sufficient intake and assimilation of nutrients.
- **Stability** - involves maintaining availability, accessibility, and utilization of food at all times.

Availability is measured at a more macro-level. While useful, availability alone will not automatically lead to food security at the household level, for which the more relevant indicators are accessibility and utilization. Stability, the opposite of vulnerability, denotes the avoidance of shocks or resilience to shocks. In the Philippine context, utilization decisions are often under the purview of wives and mothers who are largely responsible for food preparation, childcare, and overall household management.

The framework identifies various FSN interventions, which could be at the macro, meso and micro levels, and may be characterized as direct and indirect. The overarching macro policy environment, while indirect in its impact on household outcomes, could well be the most binding constraint to household food security and nutrition. Direct interventions aim to boost intake of food and nutrients, as well as improve household health conditions related to nutrient absorption. These include consumption-based programs, e.g., school feeding, home-based feeding, or other nutritional services (including food preparation campaigns and training, nutrition counselling, etc.); food rationing in periods of emergency; and food fortification. However, direct interventions alone are not sufficient to achieve drastic and sustained reduction of hunger and malnutrition. Also necessary for sustained food security improvement to maintain the gains from direct interventions are indirect interventions. Foremost is the need to address the underlying rice trade policy at the macro level, to achieve a more open rice trade regime and allow domestic rice prices to decline and approach world market levels. At the meso level, indirect interventions include agricultural production and interventions in the agricultural supply chain, as well as broad social protection measures that supportive food accessibility such as cash transfers for food insecure households. At the micro level, indirect interventions relate to overall health improvement. Examples are antenatal care (e.g. nourishment of pregnant women), micronutrient supplementation, safe delivery, improvement of basic sanitation and hygiene (e.g. provision of potable water and sanitary toilets). Targets for SDG 2 thus relate to various indirect measures: farm productivity; access to land; resilient agricultural practices; maintaining ecosystems; genetic diversity, gene banking and access to genetic resources; investment in rural infrastructure; agricultural research and extension; correction of trade distortions; and limiting extreme food price volatility through proper functioning of commodity markets and their derivatives and timely access to market information, including on food reserves.

The targets and the means of implementation for SDG 2 that are enumerated in Box 1-1 will likewise guide this review.

C. Consultative Process and Report Organization

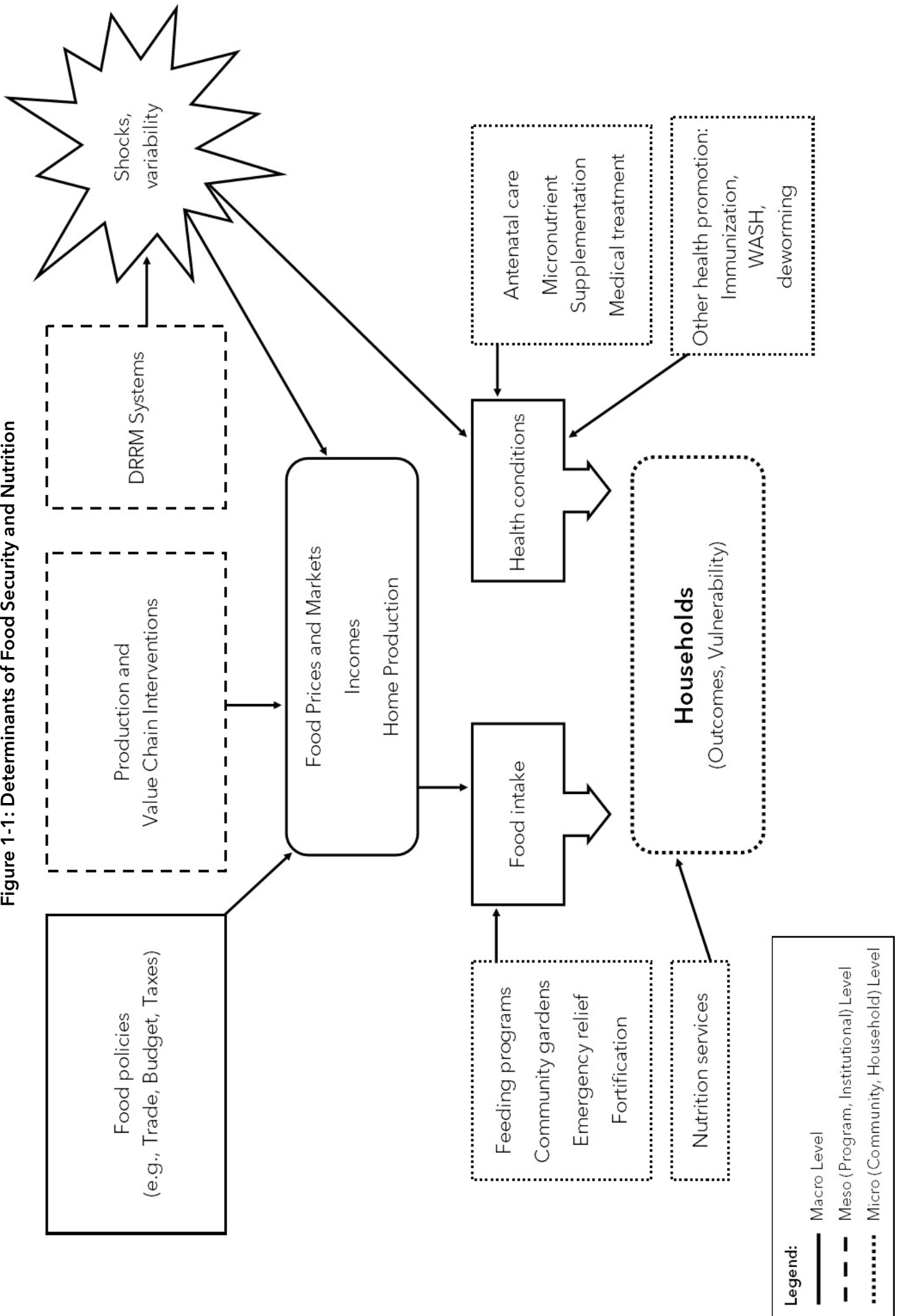
Integral to the FSN Review was an exhaustive consultation process covering numerous stakeholders both within Metro Manila and other locations nationwide. Consultations were held to elicit information, opinions, and feedback on emerging findings and recommendations. At the lynchpin of the consultative process was the **Policy Reference Group** (PRG) composed of experts and key decision-makers: government (Office of the Vice President, NEDA), private sector (Guillermo Luz, Miguel Rene Dominguez), civil society (Philippine Coalition of Advocates for Nutrition Security), international development partners (World Bank, Asian Development Bank, International Rice Research Institute, World Food Programme), subject matter expert (Dr. Cielito Habito), and legislature (Senator Francis Pangilinan). It was convened to review, discuss and validate research findings and recommendations, as well as advocate for key policy and program recommendations. The Review team also conducted **focus group discussions or interviews** with concerned agencies (e.g. National Nutrition Council Secretariat, Department of Agriculture) and LGUs (see Annex C).

A full day **Stakeholders Consultation Meeting** that was participated in by more than 70 representatives of national government, Legislature, LGUs, business, and civil society, was also held to review the initial findings and recommendations of the Review team. In addition, a focus group discussion with reknowned experts was dedicated on climate change issues and their implications to the country's food security over the long-term.

Supporting the review are the study visits to challenged and successful local nutrition cases nationwide covering **three provinces** (Basilan, Camarines Sur, Western Samar), **three cities** (Mandaluyong, Naga, Zamboanga), **two municipalities** (Sta. Margarita and Gandara of Western Samar), **six barangays** (BASECO Compound in Manila; Burabod in Sta. Margarita, Western Samar; Camino Nuevo in Zamboanga City; Carangcang in Maluso, Camarines Sur; Concepcion in Gandara, Westrn Samar; Townsite in Maluso, Basilan), and **a settlement area** (Masepla in Zamboanga City). The experiences and challenges in these sites provided substantial and significant insights that became the major bases of this report's recommendations. The case studies may be found in Annex C.

The rest of this Report is organized as follows: Part 2 presents the FSN Situation Analysis based on the above framework, covering the dimensions of availability, accessibility, utilization, and stability. Part 3 describes the FSN governance structure, programs and interventions. Part 4 identifies gaps and challenges. Part 5 presents scenarios and recommendations for achieving SDG 2.

Figure 1-1: Determinants of Food Security and Nutrition



II. Food Security and Nutrition Situation

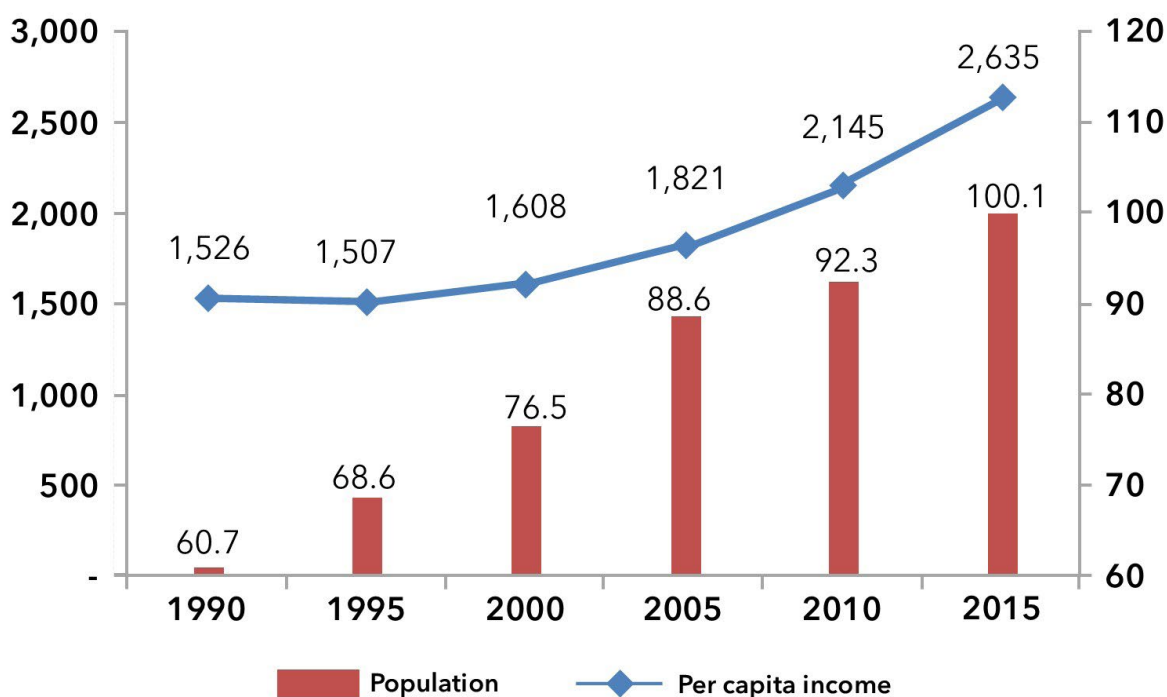
A. Population, Economy, and Poverty

The Philippines now leads the region in economic growth.

Average (per capita) income in the Philippines has reached \$2,635 (in constant 2010 US dollars), having risen by more than 70% over its 1990 level (Figure 2-1). This is above the average lower middle income GDP of \$2,047, but is about one-third of the average upper middle-income country of \$7,528, and about one-fifth the threshold of a high-income country. The increase has been consistent over time except for a decline in the 1990s, owing to economic slowdown brought about by the 1997-98 Asian financial crisis. Economic growth had since accelerated, to 4.2% annually up to 2010, and further to 6.2% thereafter.

The increase in income per person has been maintained even as population has consistently grown, exceeding 100 million persons by 2015, i.e. adding nearly 40 million people to the 1990 level. The average pace of population growth over the period is 2.0% per year but over the past decade, growth slowed down to 1.6%, a pace that is expected to be maintained to 2030. At this pace population will double every 44 years. These trends highlight the urgency of making evidence-based decisions towards addressing concerns/issues on food security and nutrition.

Figure 2-1: Per Capita Income (constant 2010 US\$) and Population (millions), 1990 - 2015

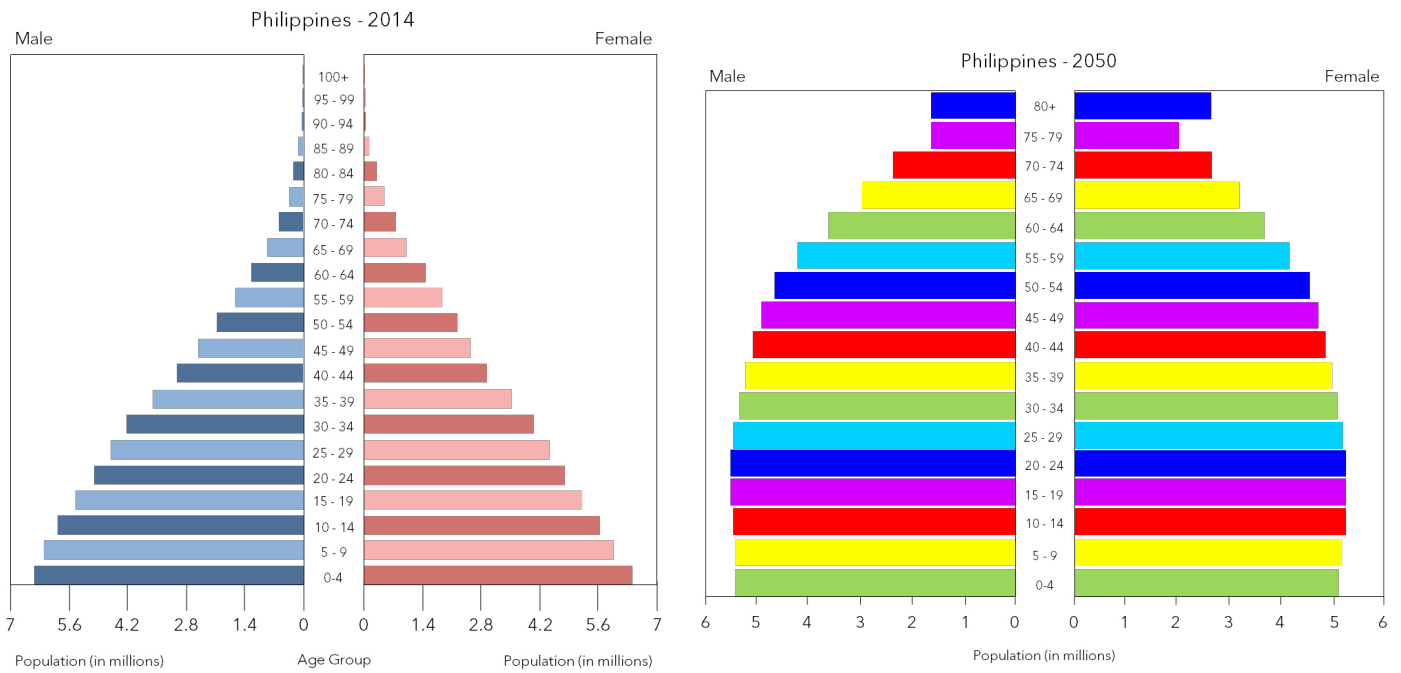


Sources: World Bank (2016) for income; PSA (2016) for population.

The young workforce promises to be an advantage in the coming decades.

The current age structure of the Philippines exhibits a classic “youth bulge” in which an increasing proportion of the population is found in the lower age groups (Figure 2-2). Given the current lower fertility rates of the reproductive population, a “bowed out” population structure is expected by the end of the SDG period (2030) up to 2050. This means that the share of the working age population is largest and skewed towards younger workers (right chart). If this cohort is endowed with high levels of human capital, the potential for a long working life with steadily increasing income can propel sustained and rapid economic growth. The current levels of stunting and underweight must be significantly cut down to realize this potential.

Figure 2-2: Population by Age Bracket, Male and Female, Philippines, 2014 and 2050



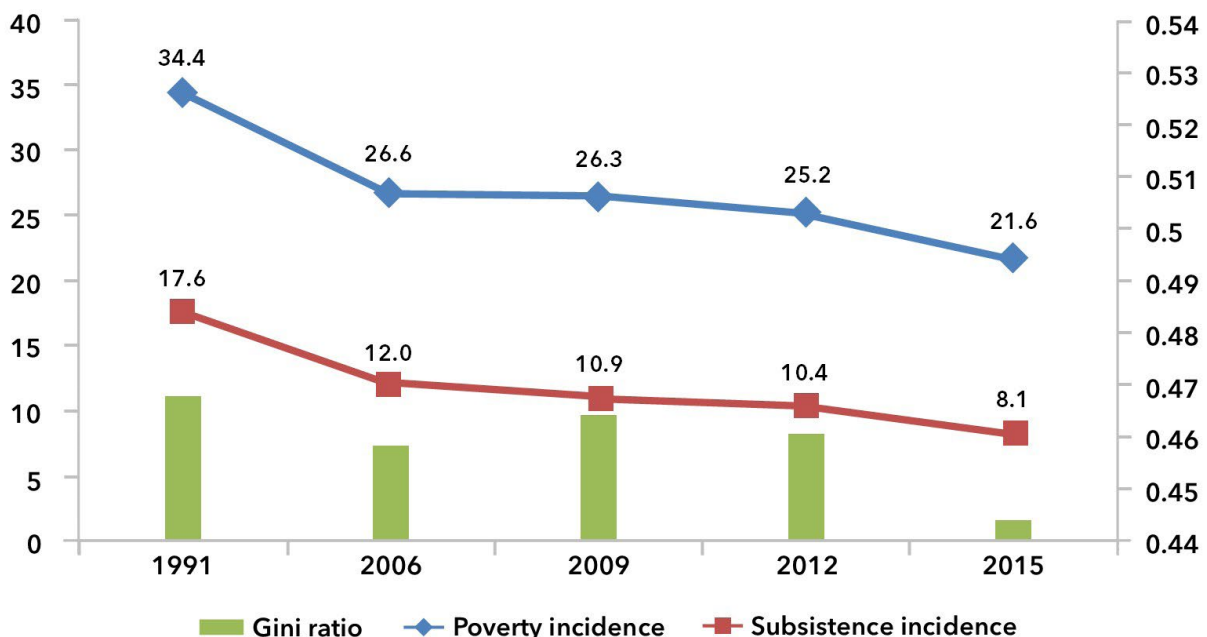
Sources: U.S. Census Bureau, International Data Base

Poverty has declined, albeit slowly, while inequality has hardly changed.

The MDG target of reducing extreme or subsistence poverty by half in 2015 from its 1990 baseline was met before the 2015 deadline (Figure 2-3). However, the country failed to attain the target in terms of national poverty incidence despite a noticeable acceleration in poverty reduction in 2013-15, during a period of rapid economic expansion.

Inequality, as gauged by the Gini ratio, worsened in the mid to late 2000s before falling in 2015, as growth appears to have become more inclusive. Despite rapid economic growth in recent years, the overall picture since the 1990s is a sluggish decline in poverty coupled with a practically stagnant inequality levels. These trends highlight the urgency of making evidence-based decisions towards addressing concerns/issues on food security and nutrition.

Figure 2-3: Measures of Poverty and Inequality, 1991 - 2015 (%)



Sources: PSA (2015); NEDA (2014).

B. Agriculture and Food Systems

Agriculture grew well in the early 2000s, but faltered in recent years.

Growth in agriculture in the early 2000s was relatively fast, exceeding that of Industry and falling just one percentage point below national growth of 4.6% (Table 2-1). However, growth of agricultural output has slowed down markedly since then. Amidst accelerated growth in overall GDP that started in 2012, agriculture registered a dismal average growth averaging only 1.4% annually.

The country grows a wide variety of tropical crops and farmed animals such as livestock, poultry, and fish. Having one of the longest coastlines in the world, its marine fishery is very active. Crops generate about 61% of agricultural GDP. The biggest contributors are paddy rice (22%), coconut (6%), maize (6%), and sugarcane (2%). Livestock and poultry together account for almost a quarter of agricultural GDP, whereas fishery accounts for 14%. In the 2000s, sugarcane, banana, poultry, and fisheries grew above average, while grains grew at an average pace. From 2011 to 2015 though, growth decelerated for paddy rice, livestock, and especially maize resulting mainly from adverse impacts of extreme climatological events, i.e. drought and typhoons. Paddy rice in particular achieved rapid growth from 2010 to 2014 with output approaching 19 million tons; but in 2015, output dropped to 18.15 million tons due to the El Nino phenomenon. The contributions of banana, coconut, and sugarcane contracted in the same period.

Table 2-1: Growth in Gross Value Added by Sector, 2001 - 2015 (%)

	2001-2005	2006-2011	2012-2015
Services	5.6	5.5	6.8
Industry	3.5	4.4	7.6
Agriculture	3.6	2.2	1.4
Paddy rice	3.4	2.8	2.2
Maize	3.4	5.2	1.9
Coconut	2.8	0.4	-0.8
Sugarcane	4.4	8.9	-5.4
Banana	5.1	6.6	-0.2
Other crops	1.5	0.6	2.1
Livestock	2.3	0.9	1.9
Poultry	4.0	2.4	3.7
Activities and Services	5.0	1.5	3.4
Fishery	6.9	2.7	-0.4
Total (Philippines)	4.6	4.7	6.5

Sources: PSA (2015) and PSA Countrystat (2016).

Domestic farm production remains the dominant source of food for the country.

While the Philippines has been a net importer of agricultural products since the late 1980s, domestic production remains the main source of food for the country (Table 2-2). Hence, while imports have risen over time, the rising per capita availability of most food items has also been due to increased domestic production. Meat products and cereals have recorded the lowest self-sufficiency ratios in recent years. Rice imports averaged 1.18 million tons per year in 2010 - 2015 but the amount varies widely from year to year (dropping to as little as 398 thousand tons in 2013). Products in surplus (i.e. exportables) include banana, mango, and coconut.

Table 2-2: Self-Sufficiency Ratios of Major Food Products, 1992 - 2014 (%)

Commodity	1992	1997	2002	2007	2012	2013	2014
Importables							
Beef	88.6	81.7	84.9	79.9	79.8	79.7	75.5
Rice	110.6	91.1	87.9	85.5	91.9	96.8	92.0
Chicken, dressed	100.0	99.8	98.1	95.6	90.8	91.8	87.5
Pork	99.9	99.1	98.1	96.9	93.3	91.7	89.3
Mazie	100.0	93.4	94.0	97.8	98.2	95.6	93.1
Exportables							
Sugarcane	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coconut	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mango	105.5	104.8	103.9	102.6	..	..	..
Pineapple	111.1	109.8	112.2	115.9	..	..	..
Shrimps and prawns	131.9	129.9	155.9	120.7	100.6	195.3	108.0
Banana	128.3	135.0	146.9	141.6	..	..	..

Source: PSA Countrystat (2016).

Food availability has been improving with growth in domestic production...

Table 2-3 shows that availability (production plus net imports) per capita of most major food items has been increasing since 1990. This indicates growing domestic food self-sufficiency, which has been made possible by growing domestic production. The per capita availability of rice, vegetables, and fish had fallen from 2010 -2015 due to the economic slowdown during this period.

Table 2-3: Per Capita Availability of Major Food Items, 1990 - 2015 (kg/yr)

	1990	1995	2000	2005	2010	2015
Paddy rice	108.2	102.5	112.2	132.0	136.4	132.6
Root crops	43.5	40.2	32.3	28.9	31.7	35.0
Fruits	43.5	38.6	34.5	31.3	28.9	26.7
Vegetables	16.5	16.3	17.0	18.8	18.9	18.3
Beef	2.1	2.5	3.0	2.4	2.6	2.7
Pork	13.3	13.9	16.0	16.8	19.2	19.7
Chicken	4.3	5.7	7.1	7.5	10.3	13.6
Fish	16.0	14.2	13.1	16.8	17.5	17.3

Source: PSA Countrystat (2016).

...but agricultural productivity is low and lacks diversification.

Relative to other countries in the region, yields of some major crops in the Philippines tend to be low. Table 2-4 presents the ratio of yields of major crops in Southeast Asia and the yields in the Philippines (i.e. index = 1 for all crops in the Philippines). Rice yield is 28% higher in Indonesia and 44% higher in Vietnam; maize yield is twice as much in Malaysia and 55% higher in Cambodia; coconut yield is 44% higher in Indonesia and 15% higher in Thailand; sugarcane yield is 32% higher in Thailand and 12% higher in Vietnam; and so on. In view of these, the average index for all crops exceeds unity. Exceptions to this are in pineapple where the Philippines is at par with the rest of Southeast Asia, and in sugarcane where Philippines is slightly better on average.

Table 2-4: Yield Index for Major Crops, Southeast Asia, 2014 (Philippines = 1.00)

	Banana	Coconut	Maize	Mango	Pineapple	Palay	Sugarcane
Cambodia	0.22	1.08	1.55	3.01	0.26	0.82	0.38
Indonesia	2.55	1.44	1.66	2.12	2.82	1.28	1.04
Malaysia	0.52	1.61	2.05	1.41	0.87	0.96	0.67
Myanmar	NA	2.53	1.43	1.57	NA	0.97	1.09
Thailand	1.89	1.15	1.43	1.91	0.65	0.76	1.32
Vietnam	0.81	2.35	1.48	2.13	0.41	1.44	1.12
Average	1.20	1.69	1.60	2.02	1.00	1.04	0.94

Source: FAOStat (2016).

Rather than diversify into other crops where incomes could be higher and productivity gains could be greater, the Philippines has continued to focus dominantly on its main traditional crops, namely rice, maize, coconut, and sugarcane. This is seen in the evolution of output shares of various agricultural products in the Philippines compared with the average for developing Asia (Table 2-5). There has been too little movement towards a more diverse food and agricultural system in the Philippines despite the greater profitability of growing high value crops (Briones and Galang, 2013).

Table 2-5: Shares in Value of Agricultural Output, Developing Asia and Philippines, %

	Developing Asia		Philippines	
	1970	2012	1970	2012
Cereals	42	26	25	26
Roots and tubers	7	4	3	2
Sugar crops	3	2	15	6
Oil crops	7	8	13	9
Fruits and vegetables	19	27	22	21
Livestock	13	26	21	35
Others	7	7	1	1

Source: FAOStat (2016).

C. Poverty, Agriculture, and Vulnerability

Poverty in the Philippines is primarily a rural and agricultural phenomenon.

In 2015, agriculture employed 11.3 million people, accounting for 29.2% of all workers. Agricultural workers are predominantly men (74%). There are nearly five million workers categorized as farmer, forestry worker, or fisher; of these, only 17% are women. Census data for 2002 on agricultural operators (persons who take the technical and administrative responsibility of managing a farm holding) indicate that only 11% of agricultural operators are women (PSA, 2009). However they made up the bulk of persons engaged in farm activities (61% of a total of 13.75 million) in 2002, indicating the major contribution of women in food production.

Data from the merging of Family Income and Expenditure Survey (FIES) for 2012, and Labour Force Survey (LFS) for 2013 show that poverty is strongly correlated with rural areas and employment in agriculture (Table 2-6). In 2012, poverty incidence in rural areas was at 35%. This is higher than the national poverty incidence of 24.8% or close to a quarter of the population, and went far beyond the 12.2% in urban areas. Of all the 24.8 million poor in 2012, 78% or 19.3 million are in the rural areas.

By definition, the “visibly underemployed” are those working below forty hours a week while the “underemployed” include the visibly underemployed as well as workers willing to work more but are unable to find additional work. About 34.2% of underemployed are poor and 35.5% of poor workers

are underemployed (compared to 20.9% for the average worker). Even more relevant: poverty among agricultural workers is 44%; and an astounding two-thirds of poor workers are working in agriculture. Plainly, **pro-poor growth entails rising incomes among workers in agriculture.**

The overlap between poverty and agricultural employment is due to an economic structure in which as much as 29% of those employed (11.3 million in 2015) are in agriculture but only 10% of GDP is generated from agriculture. To a large extent, this is because agricultural work tends to be intermittent and seasonal thus about 27.9% of agricultural workers are underemployed and more than one-fifth are visibly underemployed (compared to just one-eighth of total workers). Among agricultural workers, the highest incidence of poverty is observed among workers in coconut, maize, and among farmhands and labourers.

Table 2-6: Poverty by Category, 2012

	Category	% Share in Category	% Share in Category who are Poor	% Share in Category among Poor
Population	Population	100.0	24.8	100
	Rural	55.3	35.0	78.0
	Urban	44.7	12.2	22.0
Labour force (LF)	Labour Force	100.0	23.3	100.0
Workers	Workers	100.0	23.4	100.0
	Underemployed	20.9	34.2	35.5
	Visibly underemployed	11.9	39.5	22.5
	Agriculture workers	30.9	42.2	66.2
	Rice	20.4	30.2	14.5
	Maize	12.6	56.6	16.8
	Coconut	8.8	40.0	8.3
	Vegetables	4.0	35.3	3.4
	Other crops	7.5	44.0	7.8
	Framhands, labourers	28.8	49.6	33.7
	Other subsectors	18.0	36.3	15.5
	Underemployed	27.9	50.0	35.7
	Visibly underemployed	20.4	50.4	25.1

Source: Briones (2016).

Growth in farm labour productivity and wages has been slow...

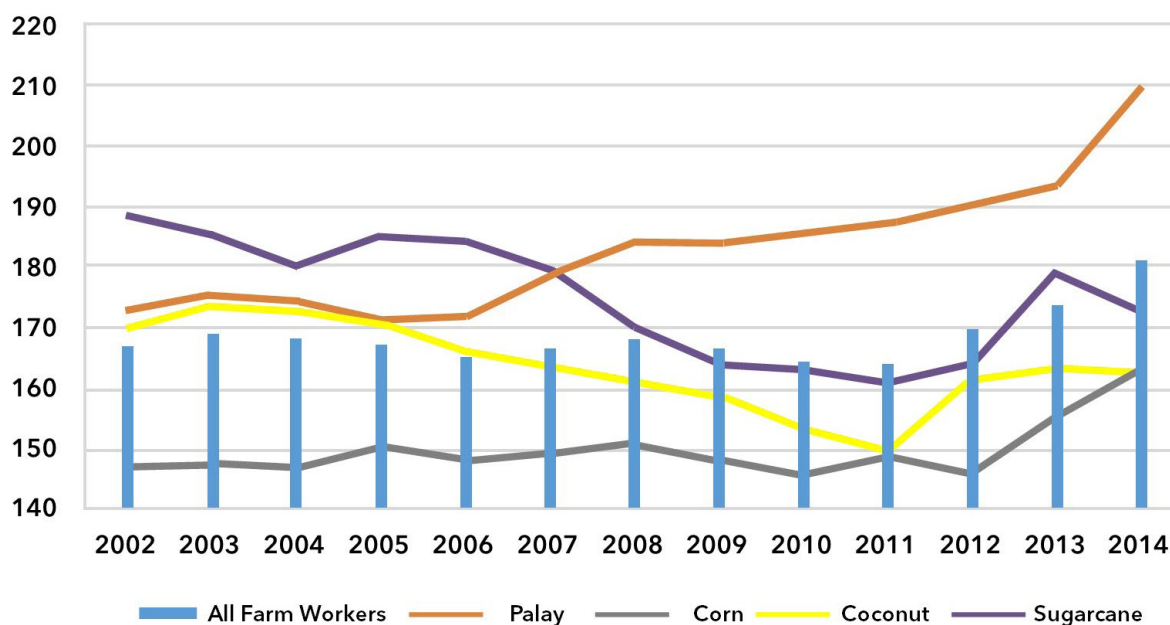
Trends in real agricultural wages point to diminishing opportunities for advancement of farm households. Farm wages have virtually remained stagnant as indicated by their annualized growth of only 0.7% from 2002 to 2014 (Figure 2-4). Stagnant real wages coupled with high underemployment rates is consistent with the considerable quantities of surplus labour in traditional agriculture (Briones and Felipe, 2013). In recent years, wages have been picking up, driven largely by the increasing wages for rice farm workers.

Weak wage growth parallels the stagnation of labour productivity. Agricultural output per worker plummeted to an average of just 0.7% per year in 2009 - 2014 from the relatively brisk 2.5% per year average in 1997 - 2008. Unfortunately, this drop substantially affected women given the marked gender disparities among workers. Agricultural wages paid to women average 10-20% lower than those paid to men, probably owing to the perception that women's tasks (e.g. weeding and gathering) are light and secondary in importance compared to men's tasks (e.g. ploughing, carrying heavy sacks, or operating heavy machineries).

Meanwhile, there are about 2.1 million children engaged in child labour. Of these, 1.4 million are boys and 700,000 are girls. Fifty eight percent of total child labour and 68.6% of the boys in child labour are in

agriculture. (NSO and ILO, 2011).

Figure 2-4: Wages of Farm Workers by Crop, in P/day at constant prices (2000 = 100)



Source of basic data: PSA (2016).

...while farm sizes have been declining.

One limiting factor to raising agricultural household income is farm size, which has been declining. The average farm size was 2.16 hectares in 1991, 2.00 hectares in 2002, and 1.29 hectares in 2012 (PSA, 2015). Increasing demand for land due to rising rural populations has led to the subdivision of private agricultural lands. The government's land reform program has also led to the fragmentation of large landholdings.

D. Agriculture and the Natural Resource Base

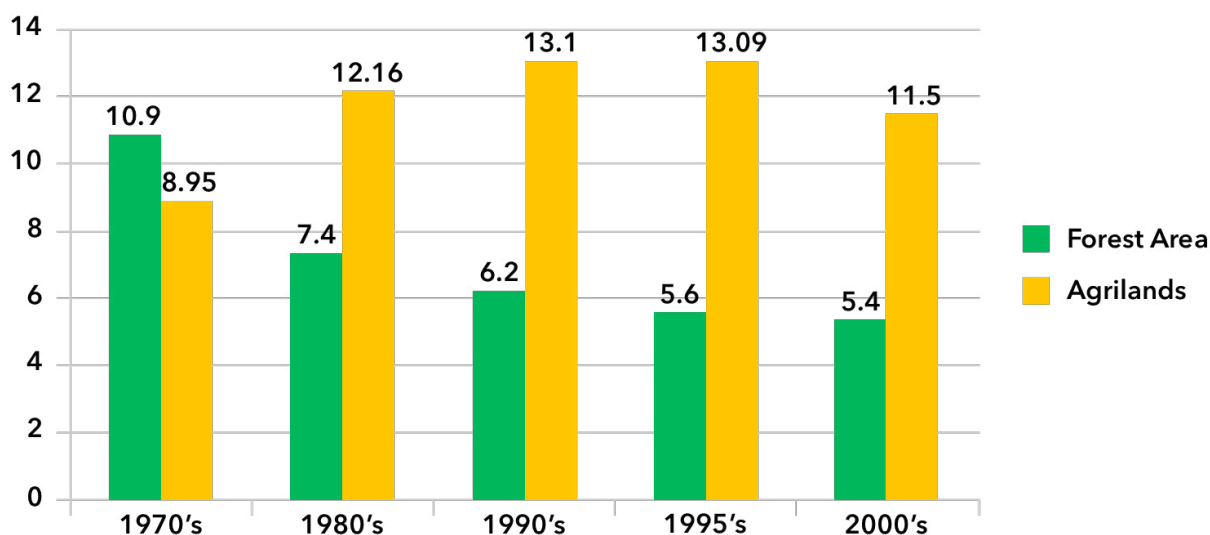
Sustainability of the natural resource base supporting agriculture is under severe threat...

Rising population and average purchasing power have been substantially increasing demands for food, fisheries, forest and other products. The rural population of about 56 million that are mostly mired in poverty and dependent on shifting cultivation have greatly stressed forest resources for agricultural production. According to the Waves Country Report, the main drivers of deforestation and forest degradation are gathering of fuel wood for cooking and charcoal making, slash-and-burn practices, upland agricultural cultivation, and logging. During the Spanish colonial era, there were about 27 million hectares of tropical rain forest in the country. Forest cover had shrunk to 21 million hectares by 1900 (Garrity et al. 1992 cf: Espaldon et al 2015) and further to a low 6.1 million hectares by 1996 (FMB, 1998). In all, about 15 million hectares of forest were lost in just 100 years (Cruz et al. 2011).

Agriculture has been one of the major drivers of forest cover change in the country. Figure 2-5 shows that the expansion of agricultural lands since the 1970s was accompanied by a steep contraction in forestlands. The loss of forest cover due to agriculture bottomed out in the 1990s and has slowed down since then. However, demands for new agricultural commodities such as palm oil, as well as government policies that may encourage the conversion of forests to key industries (e.g. mining) and agricultural lands (similar to the case of state-sponsored settlement schemes of indigenous people in Palawan and Mindanao) (Espaldon et al, 2015), have heightened the risk of further contraction of the remaining forest cover.

Soil erosion (77 million tons/hectare/year) and degradation (81 million tons/hectare/year) are serious concerns because these affect 63-77% of the country's land area. These soil losses are beyond the acceptable limit of 10-12 million tons/hectare/year for developing countries. In 1993, the Bureau of Soils and Water Management (BSWM) indicated that 45% of country's land area is moderately to severely eroded.

Figure 2-5: Areas of Forest and Agricultural Lands, 1970–2010
In million hectares



Source: DENR EMB (2002), cf: Espaldon et al. 2015

Soil degradation is one of the most serious ecological problems besetting agriculture, and a major threat to food security of the country as cited in the Philippine Nutrition Action Plan (PNAP) 2004-2010. It is mainly caused by erosion, which removes the fertile or nutrient-rich topsoil, and by the high use of chemical fertilizers in agriculture (Astorga 1996 cf: Calderon and Rola, 2003). PNAP estimated that about 5.2 million hectares are seriously degraded, resulting in a 30% to 50% reduction in soil productivity (Asio et al. 2009). Shively et al. (2004) believe that hillside erosion and downstream sedimentation are the most vital agricultural perils facing the country because these bring damage from ridge to reef. Sedimentation of rivers and coastal ecosystems like mangroves, seagrasses, and coral reefs would have significant impacts on fishery resources. It also leads to higher maintenance costs of irrigation canals, a vital agricultural facility, thus increased cost of production.

Water resources are also very important to food production but have likewise been under extreme stress. The per capita water availability in the Philippines is second lowest in Southeast Asia. At least nine major urban centers are experiencing various water stresses including water shortages during the dry season and inundation during the rainy season.

The Philippines, classified as a mega biodiversity hotspot, is very rich in **coastal and marine resources** but, as in the other resources, these are also under heavy stress. A single reef can support as many as 3,000 species of marine life. As fishing grounds, they are thought to be 10 to 100 times as productive per unit area as the open sea. About 10% - 15% of total fisheries in the Philippines come from coral reefs but only about 5% of them are still in excellent condition, while 40% are in poor condition. This is due to pollution, upland activities, illegal fishing practices, etc. The gradual disappearance of coral reefs in the Philippines exacerbates the poor socioeconomic and health conditions of populations that depend on fisheries for daily survival.

The National Mapping and Resource Information Authority (NAMRIA) estimated the mangrove areas to be about 400,000–500,000 hectares in 1920. In 2005, only 153,577 hectares in Oriental Mindoro, Quezon, and Palawan remained (Gevaña et al. 2010). Mangrove areas were lost to aquaculture ponds and brackish-water ponds (Primavera 2000). Shrimp aquaculture involves the construction of brackish water grow-out ponds that use both the rich soil and the tidal exchange of lagoon water, which aids plankton growth. Current technology enables the construction of ponds inland of the mangrove areas and mechanically controls the exchange of water. The untreated pond effluent discharged into the estuaries is of environmental concern (Nickerson 1999). This can damage mangrove ecosystems and create a chain of adverse effects, e.g. drop in fish availability and alteration of seabed fauna and flora communities (Fortes 1988), all of which can compromise the sustainability of coastal ecosystems. Hurtado et al. (2001) found that excessive grazing of siganids and sea urchins decreased the yield of algae (*Kappaphycus sp.*) used in

production of carrageenan and seaweed (*Eucheuma sp.*) in Antique.

Lastly, **genetic resources** are key to future growth and resilience of the agricultural sector. However, genetic erosion is known to be occurring in key crops, as well as among livestock and poultry species. Varietal replacement has contributed to the erosion of genetic diversity in rice, maize, mungbean, peanut, tomato, eggplant, cassava, yardlong bean, dowpea, durian, and rambutan. Varietal replacement is accelerating with increasing marketing of commercial hybrids, or cultivation of a single commercially dominant variety (eg. "carabao" variety of mango). Conversion of agricultural lands, as well as natural disasters, have likewise contributed to loss of genetic diversity. Unfortunately, characterization and conservation of genetic resources have not been vigorously pursued by either the public or private sector. The Plant Variety Protection Act of 2002 (RA 9168) confers intellectual property on new varieties, whereas long-existing varieties remain in the public domain. However, even government does not seem to place priority on plant genetic resources. For instance, adequate redundant storage is found only for rice; other key seeds such as banana, mango, sweet potato, Manila hemp, and coconut, medicinal plants, and so on, are poorly duplicated (Altoveros and Borromeo, 2007).

...and climate change is further magnifying these threats.

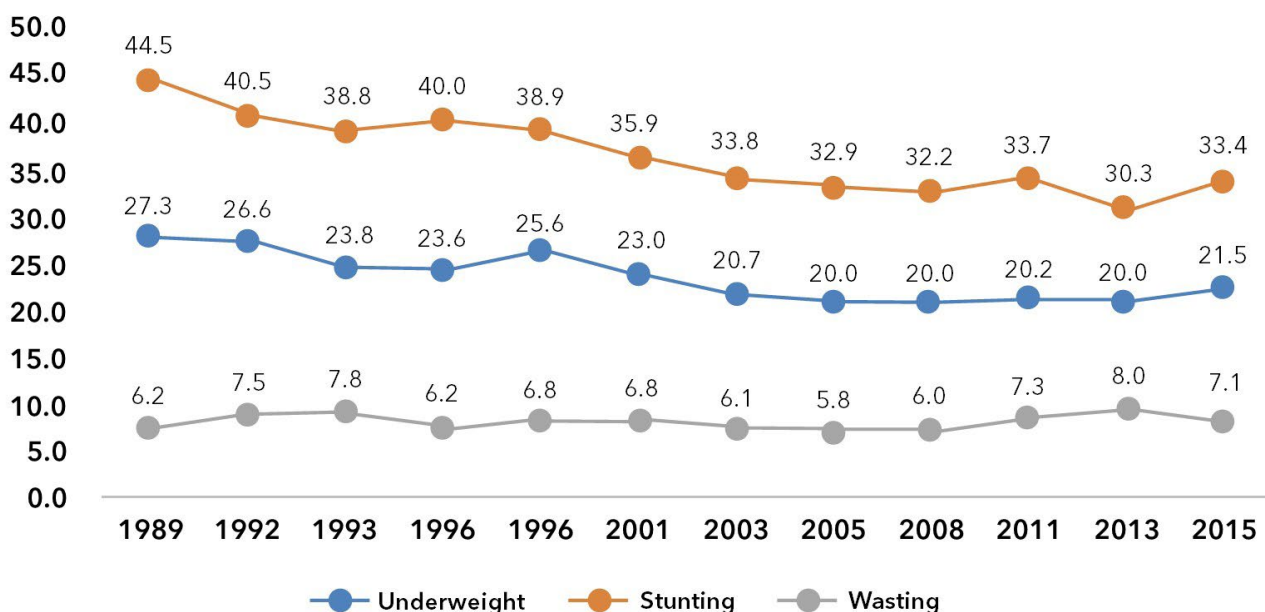
Climate change impacts have amplified all the stressors mentioned above. Altogether, the stresses that generally emanate from the lack of care and protection for the country's natural resources, have led to the deterioration of key environmental and economic services and functions such as biodiversity conservation; water production; power generation; food production; livelihood opportunities, etc. On the other hand, Coxhead and Jayasuriya (2002) noted that agricultural growth eventually takes its toll on the quality of the ecosystems and ecosystem services that the natural resource base provides. Clearly, there is tension between the utilization and protection of natural resources for the purpose of attaining food security and sustainable development and this tension that must be effectively managed.

E. Nutrition and Human Development

Child malnutrition remains high and is worsening.

The MDG targets of halving rates of child malnutrition by 2015 were all missed (Figure 2-6). **Stunting** remains at 13.5 percentage points above the 2015 target. **Wasting** prevalence has essentially remained unchanged through the years, and the 2013 National Nutrition Survey (NNS) showed a slight but alarming uptrend from 7.3% in 2011 to 7.9% in 2013. By 2015, the prevalence of wasting is even higher than its 1989 rate of 6.2%.

Figure 2-6: Malnutrition Prevalence among Children 0-5 Years Old, 1990-2015 (%)



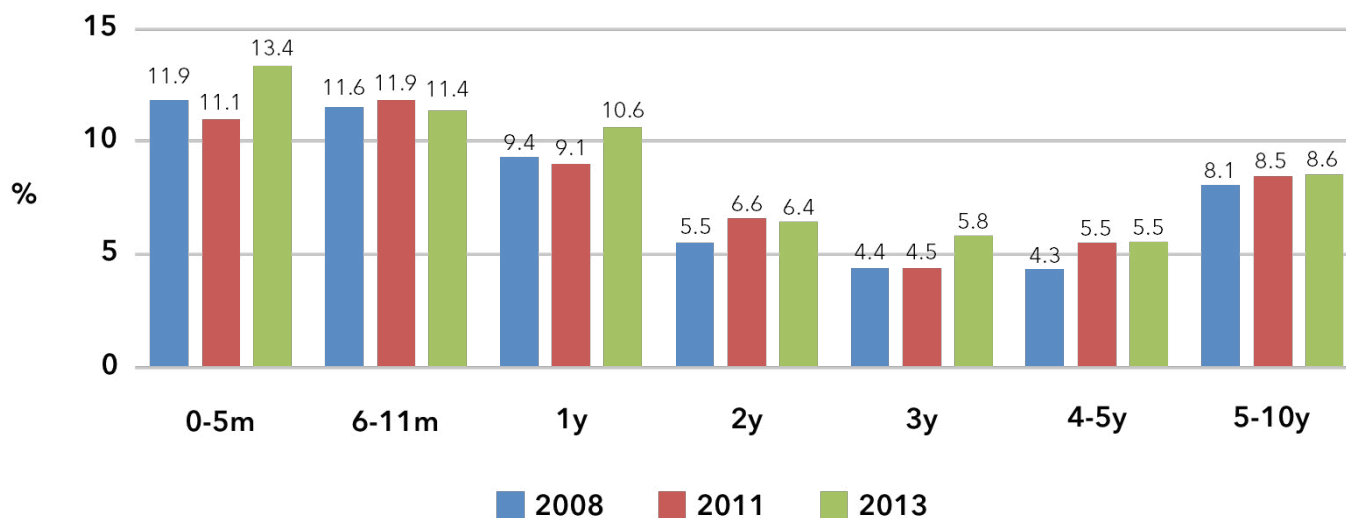
Source: FNRI-DOST (2016).

Overweight prevalence has also emerged as a growing problem, having risen from 1.1% in 1990 to as high as 5.1% in 2013. It dropped to 3.1% in 2016 but such level remains an area of concern. The Philippines is now experiencing the “double burden” of malnutrition or the simultaneous occurrence of high under-nutrition and “over-nutrition” as exhibited by high obesity prevalence among adults and increasingly among children (Kolcic, 2012). Evidence implicates increasing intakes of fats and oils, sugars and syrups, meats and processed meat products, and other cereals and cereal products (including breads and bakery products, noodles, and snack foods made from wheat flour), and declining fruit and vegetable consumption (Pedro, Benavidez, and Barba, 2006).

Children below two years old are most affected by wasting (Figure 2-7). The wasting prevalence in almost all the age groups is well above the 5% acceptable cut-off (WHO 2016). Among pre-school children, the higher rates that are seen in the first two years of life tend to decrease as the children get older, but go up again as they enter school.

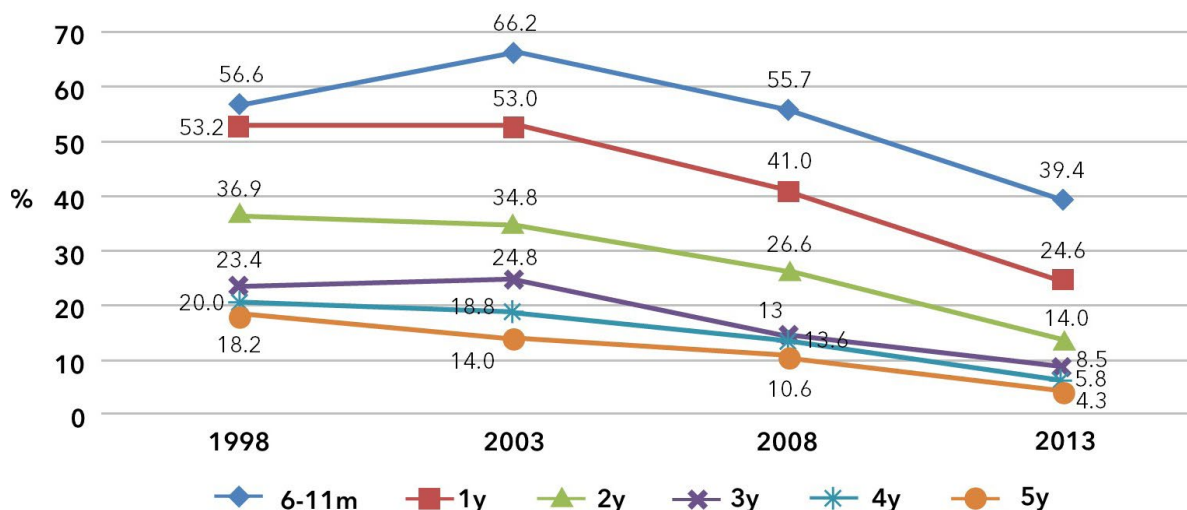
Young children tend to exhibit higher rates of acute nutrient deficiency, while in older children chronic malnutrition is more evident. Among others, iron deficiency anaemia (IDA) compromises the physical and intellectual development of children, especially those below five years old. While there was a notable decrease in anaemia prevalence across all age groups in the past two decades, the IDA levels remained disturbingly high among children below three years old especially among infants in 2013 (Figure 2-8).

Figure 2-7: Prevalence of Wasting Among Children, 0-10 Years Old, Philippines, 2008-2013 (%)

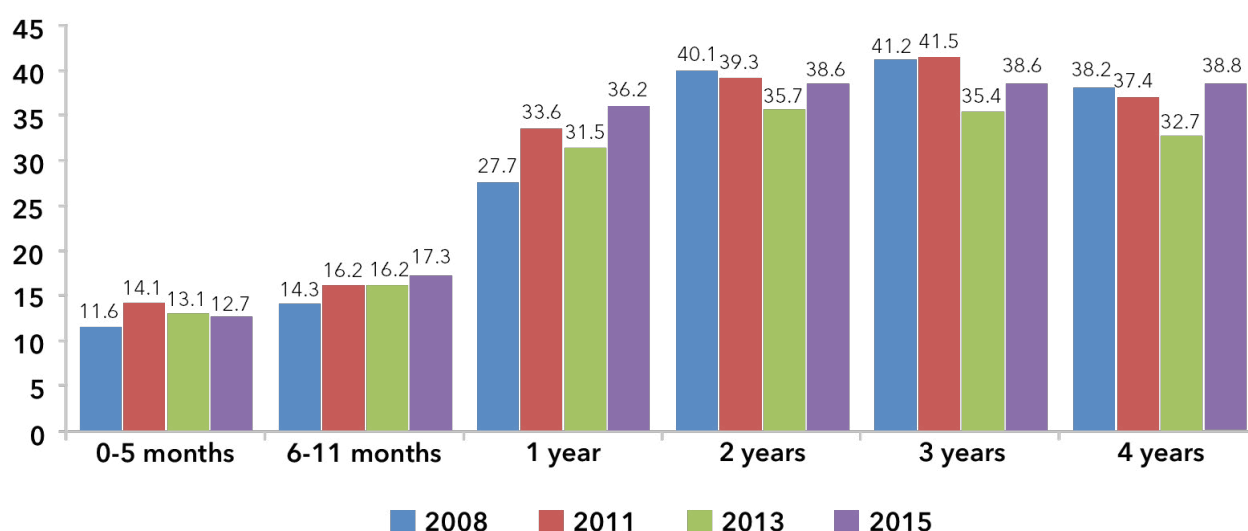


Source: FNRI-DOST (2013)

Figure 2-8. Prevalence of Anaemia Among Children, By Age Group, 1998-2013



Source: FNRI-DOST (2013)

Figure 2-9. Prevalence of Stunting Among Children, 0-10 Years Old, 2008-2013

Source: FNRI - DOST (2013); Herrin (2016) for 2015 figures.

Stunting prevalence has been alarmingly high at double-digit levels across all age groups in the past decade. Notably, stunting drastically increases starting at one year old and bottoms out somewhat at 2-3 years old (Figure 2-9). High stunting rates in older children range between 30 and 34 per cent, which highlights the irreversibility of early age stunting, and the persistence of chronic malnutrition.

Hunger remains a serious concern, despite significant progress since the 1990s.

The Food and Agriculture Organisation (FAO) adopts undernourishment prevalence as an indicator of hunger (Table 2-7). The indicator is based on household consumption surveys (translated to calorie intake relative to a norm). For developed countries, prevalence of undernourishment is estimated at less than 5%, which is the frontier level for this indicator. Brunei, Malaysia, and Singapore are assessed to be within this level. The Philippines remains far from this standard and lags behind Indonesia and Thailand. It compares favourably among its poorer Southeast Asian neighbours (Cambodia, Laos, Myanmar, and Vietnam) but exhibits the slowest decline in prevalence.

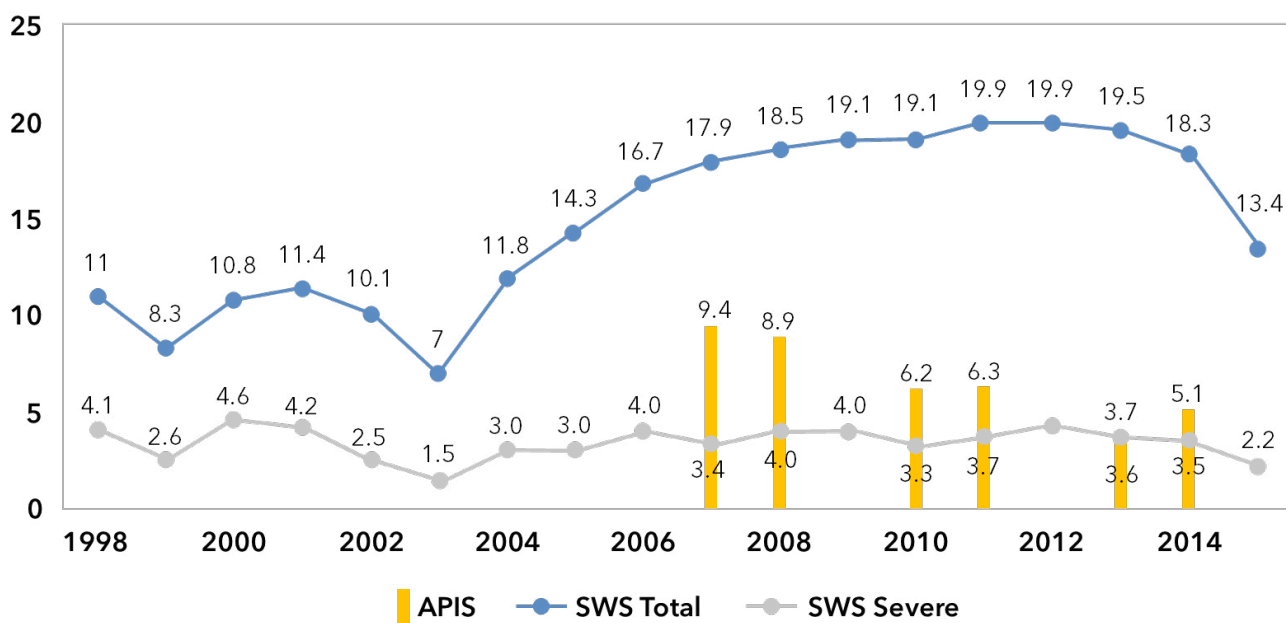
Table 2-7: Prevalence of Undernourishment, 2006 - 2014 (%)

	1990-92	2000-02	2014-16	Decline (%)
Cambodia	32.1	28.5	14.2	-56
Indonesia	19.7	18.1	7.6	-61
Laos	42.8	37.9	18.5	-57
Myanmar	62.6	49.6	14.2	-77
Philippines	26.3	20.3	13.5	-49
Thailand	34.6	18.4	7.4	-79
Vietnam	45.6	25.4	11.0	-76

Source: FAO (2016).

Hunger in the Philippines is also measured through the household's experience of episodes of hunger as gathered through a regular (quarterly) survey by the Social Weather Stations (SWS) since the late 1990s. If the episode happens once or a few times, the household experiences moderate hunger; if frequently or always, the household experiences severe hunger. The Annual Poverty Indicator Survey (APIS) asks a similar question so Figure 2-10 plots the results of both surveys. In 2015, an average of 13.4% of Filipino families experienced hunger; of these, 2.2% reported severe hunger according to the SWS results. Hunger has fallen far below its peak level in 2012, where severe hunger was similarly double its 2015 level. However, current rates of hunger remain far above the lowest percentages recorded in 2003.

Figure 2-10: Annual Average Hunger Prevalence in Households, 1998-2015 (%)



Source: SWS (2016); PSA, selected years.

Hunger and malnutrition are particularly serious at the earliest stages of life.

Stunting rises markedly within the 0 - 2 age group, an increase directly linked to the nutritional status of pregnant and lactating mothers and to sub-optimal practices on breastfeeding and complementary feeding. In 2013, as much as a quarter of pregnant women are nutritionally at-risk and anaemic. Majority of those affected are pregnant girls (i.e. less than 20 years old) living in rural areas. In 2014, 23.2% of live births were underweight (PSA and ICF International 2014) likely due to high levels of nutritionally at-risk and anaemic mothers. In the next key stage (months 0-6), the nutrition norm is exclusive breastfeeding. However, only 28.3% of infants in this category were exclusively breastfed, even as this figure had improved over the past ten years (FNRI-DOST 2013).

Maternal and child health has long been the goal of public health programmes in the Philippines, with no single solution possible owing to the many and varied causes of ill health. For example, teenage pregnancy has been implicated in maternal health (Box 2-1).

Box 2-1 Teenage Pregnancy and Malnutrition

Adolescent pregnancy has been increasing in the Philippines. Eight percent of pregnant women in 2003 were teenagers. This proportion increased to 10% in 2008. Pregnant teenagers are especially vulnerable as prevalence of nutritionally-at-risk mothers goes up to 20% for pregnant girls or women aged 20 and below. Girls are physiologically below optimal childbearing age and mostly socially unprepared, and at least 65% of teenage pregnancies is unplanned (Capanzana et al, 2015).

Consultations for this Strategic Review noted the lack of information and appreciation of the serious impacts of teenage pregnancies especially on the nutritional conditions of mothers and their children. The health and nutrition workers in many visited places noted the high incidence of teenage pregnancy, especially in poor rural communities. However, many of them do not seem to know how to deal with the issue because the local chief executives do not give it priority. In certain cases, the LGUs do not have any information about it. In Gandara, Western Samar for instance, the workers informed that they only recently learned from a regional official that the municipality registered very high rates of teenage pregnancy. LGUs are required to collect health data that include teenage pregnancies but these data are not analysed and discussed for implications and required actions with LGU officials.

Interviewees attribute the high rate of teenage pregnancy to out-of-school youth who generally do not have enough productive activities. Many of these boys and girls also do not have proper health/nutrition practices, formal/informal education, and access to reproductive health services. Culture and traditional beliefs and practices are also key factors. The Basilan Health Officer cited arranged marriage between children of Muslim families as the main reason for girl pregnancy in the province. Unfortunately, the practice remains strong and common in poorer upland communities, for which reproductive health services are not readily available. Many Filipinos, regardless of religious and cultural affiliations, tend to believe that unmarried people, especially young women, should not have access to information about reproduction and reproductive health services. Furthermore, there is a stigma for pregnancy out of wedlock, and this compels the parents of young couples to arrange for marriage or live-in arrangements. In the urban areas, many students engage in sex at very early age.

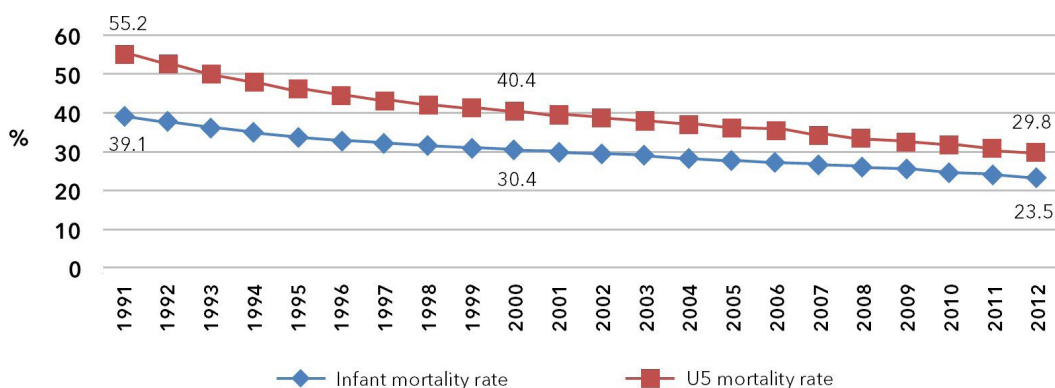
Exclusive breastfeeding was the norm worldwide until the 19th century with the introduction of the feeding bottle. In the Philippines, use of breastmilk substitutes was seen to increase from 45% in 2011 to 49% in 2013. Mothers cite the following reasons for using substitutes: “affordable”, “nutritious”, and (alarmingly) “advised by skilled health professionals.” Experts have pointed to aggressive marketing of breastmilk substitutes as a key factor for the low proportion of mothers that practice exclusive breastfeeding (Sobel 2011).

Complementary feeding practices are also problematic. The Minimum Acceptable Diet (MAD) measures the proportion of children aged 6-23 months who meet the minimum dietary recommendations for both quantity and quality. In 2013, a disturbingly low 6.4% of children met the MAD recommendations (FNRI-DOST 2015). Food consumption studies reported that recommended foods like legumes/pulses and nuts, eggs, and other fruits and vegetables are the food groups least eaten by young Filipino children (Kennedy et al 2007, Daniels et al 2007, FNRI 2013, Wright et al 2015). The consumption of oils and fats, vitamin-A rich fruits and vegetables is also generally low at less than 50% of children.

Health indicators improved since the 1990s but key gaps remain.

Other dimensions of human health (sanitation, vulnerability to contagious disease, etc.) interact strongly with malnutrition. Child mortality has been on the decline: infant and under five mortality per 1,000 livebirths were at 23.5 and 29.8 in 2012, respectively (Figure 2-11). These correspond to a 40% reduction in infant mortality, and 46% reduction in under five mortality since 1991.

Figure 2-11: Infant and Under Five (U5) Mortality Rate, per 1,000 Livebirths, 1991-2012



Source: World Bank as cited in PSA (2015).

Child immunization has likewise improved, with an increase in coverage for six vaccine-preventable diseases for children between 12 and 23 months old (Figure 2-12). The percentage of children 12-23 months old who were vaccinated against tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles increased from 72 per cent in 1993 to 77 per cent in 2013 (PSA and ICF International 2014).

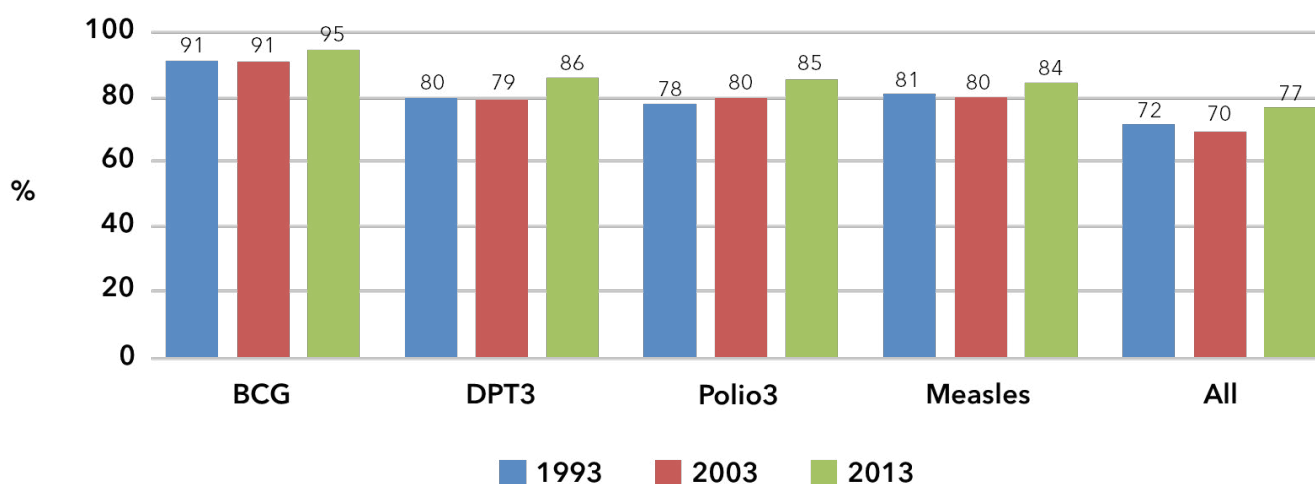
As of 2013, almost all (96%) Filipino households had access to safer sources of drinking water, including

bottled water (36.6%), water directly piped into the place of residence/yard (26.5%), and water from tubewells/boreholes (16.5%). In the same year, Filipino households had access to improved, not shared sanitation facilities (70%), shared facilities (21%), and non-improved facilities (9%) (PSA and ICF International 2014).

Malnutrition among the young has life-long consequences.

Malnutrition, especially among children, leads to other diseases and causes early death. It affects child development at a crucial stage, leading to cognitive and behavioural deficits, retarded learning, and ultimately to lower competitiveness and productivity upon joining the workforce. The flipside to the large youth bulge is that if the youth cohort today suffers irreversible malnutrition outcomes, the long-term competitiveness and productivity of the future workforce may be fatally compromised and the health expenses of households and government could substantially increase. In 2013 the cost of early childhood malnutrition in today's workforce, counting only the impact of added education cost, reduced human capital formation, and excess mortality, was about P328 billion, or 2.8% of GDP. Including the additional health burden may add another P185 billion to the cost of malnutrition, raising its share GDP to 4.4% (Save the Children, 2016).

Figure 2-12: Share of Children Immunized, by Vaccine Type, 1993-2013



Note: "All" pertains to vaccines for tuberculosis, poliomyelitis, diphtheria, tetanus, pertussis and measles.

Source: PSA and ICF International (2014)

Gender equity has been a bright spot for the Philippines.

The Philippines ranks high in the Gender Development Index (0.977) and above average (89th among 155 countries) in Gender Inequality Index (0.420) in 2014 (Aldaba 2015). The 2015 Global Gender Gap report to the World Economic Forum (WEF) indicated that the Philippines ranked 7th out of 145 countries in closing the gender gap in education and health. Moreover, it also scored higher in wage equality and has improved estimated earned income and a larger representation of female professional and technical workers in the region. The WEF reported that the major improvement was seen in the economic participation and opportunity indicator as the country recorded more female legislators, senior officials and managers, and professional and technical workers. Notwithstanding these achievements, a large number of women are mired in poverty and suffer its consequences. As earlier noted, poverty incidence is highest among agricultural workers and 61% (about 74.4M) of those engaged in agricultural activities are women. Moreover, child labour, in which about 35% (700,000) are girls, is highest in the agriculture sector. It is believed that this figure is underestimated because many undocumented girls work in private/domestic spaces where oppressive conditions often exist.

Investment in women's education has been shown to have high multiplier effects on the health and nutrition status of children (Clark, 2010). Thus, addressing the basic and strategic needs (i.e., capability enhancements) of both women and children among lower-income populations will have greater impacts in reducing hunger and malnutrition among children.

The Philippines continues to lag in human development rankings.

UNDP's **Human Development Index** (HDI) measures development in terms of the progress and well-being of people and their lives (Aldaba, 2016) based on: life expectancy, mean years of schooling, and national income per capita. The Philippines HDI improved by 20% between 1980 and 2014 (Table 2-6). Gains have been largest in per capita GNI, though significant improvements have been observed in schooling as well. Nonetheless, the country ranks only 115th out of 188 countries in the 2015 global HDI, well below its comparable ASEAN neighbors.

Table 2-8: Human Development Index indicators, Philippines, 1980 - 2014

	Life Expectancy at Birth	Mean Years of Schooling	GNI Per Capita (2011 PPP\$)	HDI Value
1980	62.2	5.4	4,410	0.557
1985	63.8	6.2	3,487	0.565
1990	65.3	6.6	3,962	0.586
1995	66.1	7.1	4,111	0.698
2000	66.7	7.6	4,994	0.623
2005	67.2	7.9	6,048	0.640
2010	67.7	8.2	7,478	0.654
2011	67.8	8.4	6,853	0.653
2012	67.9	8.5	7,166	0.657
2013	68.1	8.7	7,598	0.664
2014	28.2	8.9	7,915	0.668

Source: Aldaba (2016)

F. Hunger and Food Accessibility

Hunger has fallen across all income groups since 2007.

Table 2-9 presents a breakdown of the APIS hunger indicator by income decile. Except in 2007, hunger rates consistently declined as income decile increased. The rates of hunger among the 9th and 10th deciles were already miniscule by 2014.

Table 2-9: Proportion of Households Experiencing Hunger, by Income Decile, 2007-2014

Decile	2007	2008	2010	2011	2013	2014
1st	20.0	20.3	18.7	21.2	9.4	12.2
2nd	13.7	15.3	12.6	12.5	8.3	10.4
3rd	11.8	12.6	7.5	9.9	6.1	8.5
4th	9.9	10.0	5.9	7.5	4.1	6.9
5th	10.2	9.3	5.5	4.8	3.2	5.2
6th	8.3	7.5	4.3	3.3	2.8	3.2
7th	6.6	5.4	3.1	2.2	1.3	1.4
8th	6.0	4.1	2.8	0.9	1.2	1.9
9th	4.2	2.8	1.3	0.6	0.5	0.6
10	2.9	1.6	0.6	0.3	0.1	0.5

Source: PSA, various years.

Income inequality remains high, however. In 2012, the ratio of the incomes between the highest and lowest income quintiles was nearly seven-fold while the ratio of the median (3rd) quintile to the first is two-fold. Even with rapid income growth among the lowest deciles, catching up to the income levels of the upper deciles could take decades.

The share and nature of household food consumption has been changing.

The share of food consumption in total household expenditure has been declining (Table 2-10). Food consumption outside the home has risen dramatically, doubling its share in the food budget from the mid-1990s to 2012. Within home food expenditure, spending is largest in staples such as cereals (mainly rice), meat, and fish, and lowest or negligible on nutritious items like fruits and vegetables and roots and tubers. The shares of items where spending is highest have been declining, largely due to the increasing share of food expenditure outside the home. This is a matter of concern because greater dependency on food away from home can increase the likelihood for developing unhealthy diets, i.e. those high in saturated fats and sugars and low in nutrient content, thereby worsening the “double burden of malnutrition.”

Table 2-10: Household Food Expenditure Shares, 1994 - 2012 (%)

	1994	1997	2000	2003	2006	2009	2012
Food Consumed at Home	91.0	89.4	88.8	87.5	85.7	85.7	82.5
Cereals, Cereal Preparations	30.3	29.0	27.3	25.3	26.3	28.2	28.0
Roots and Tubers	1.5	1.6	1.4	1.4	1.2	..	..
Fruits and Vegetables	8.8	8.8	10.3	10.0	9.2	8.9	8.6
Meat, Meat Preparations	14.4	15.6	15.8	15.5	14.7	13.6	13.8
Dairy Products and Eggs	7.1	6.8	6.9	7.4	7.2	7.0	6.8
Fish and Marine Products	14.4	13.3	13.3	12.8	12.3	12.0	12.6
Coffee, Cocoa, and Tea	2.7	2.5	2.3	2.3	2.4	2.3	3.0
Non-alcoholic Beverages	2.7	3.2	3.2	3.5	3.1	1.6	3.3
Food NEC	9.0	8.4	8.3	8.8	9.2	8.9	2.3
Food Away from Home	8.8	10.6	11.5	12.5	14.0	14.3	17.5

Source: PSA (2016).

Hunger forces households into debt.

A survey of the 16 poorest provinces finds that 33% of households recall experiencing several days without food within the preceding 12 months (WFP, 2016). To avoid hunger, these households went into debt. About 79% of the households identified borrowing as the main coping mechanism to a food shortage. The most important sources of credit are the retail stores, relatives and neighbours.

Malnutrition is not a problem of the poor alone.

According to FNRI-DOST 2013 data, stunting and underweight decline consistently with rising wealth levels (Table 2-11). However, child wasting did not follow a clear pattern. Worth noting is the alarmingly high stunting and underweight incidence even at the highest wealth quintile. This indicates that economic growth, though critical to reducing hunger and malnutrition in the long run, is unlikely to deliver substantive gains on its own in the short to medium term, or even eliminate the worst forms of malnutrition in the long term. Still, the FNRI data show that across all age groups, majority of the children affected by underweight and stunting are children who come from the poorest families. For wasting, children across all wealth quintiles and in all age groups from birth up to 19 years old show prevalence rates above 5%, with the exception of rural children aged 5-10 years old in the richest quintile.

In all indicators and across quintiles, it is remarkable that urban and rural levels of malnutrition are very similar. Even so, many of the factors leading to malnutrition are more prevalent in the rural areas compared to urban areas. For instance, the use of non-improved toilet facilities is more common in rural compared to urban areas; access to safe drinking water is higher among urban compared to rural households (PSA and ICF International 2014).

Table 2-11: Malnutrition Prevalence Indicators, Children Aged 0-5, by Wealth Quintile, 2013 (%)

	1st	2nd	3rd	4th	5th
Wasting					
Urban	9.3	7.4	9.6	7.9	5.2
Rural	9.6	7.2	6.8	7.6	6.3
Underweight					
Urban	31.5	22.9	20.4	12.9	8.4
Rural	29.3	23.8	17.3	12.7	9.1
Stunting					
Urban	44.2	33.9	29.0	20.8	13.1
Rural	45.0	37.1	27.9	19.5	14.0

Source: FNRI DOST (2013).

Poorer Filipinos have less adequate diets.

One manifestation of the poor diet of the Filipino may be seen in Table 2-12, which echoes the observation of Table 2-10, that consumption, thus expenditure, in vegetables is low compared to spending in cereals, meat and fish. The per capita consumption of vegetables only averaged 22 kg/yr, much lower than the FAO recommended level of 146-182 kg/yr (Batt, 2005). It is interesting to note lower vegetable consumption with lower socio-economic classes. Nearly half of households in the poorest 16 provinces report that carbohydrates account for about 80% of a typical meal. In a given week, about 30% state that their meals are never balanced and only 6% are able to state that their daily meals are balanced (WFP, 2016). Lastly, the prevalence of children not meeting MAD requirements is higher among lower income groups (FNRI-DOST, 2015).

Table 2-12: Per Capita Consumption of Filipino Households by Socio-Economic Class, 2012 (kg/yr)

	All Households	AB: Upper Class	C: Middle Class	D: Lower Class	E: Extremely Lower Class
Cereals	147.2	162.0	158.3	145.9	136.4
Root crops	16.5	12.1	12.0	17.8	19.7
Vegetables	22.4	31.0	28.9	21.9	17.4
Fruit	31.4	43.6	44.6	25.3	20.5
Meat	27.3	47.2	37.7	25.2	15.1
Fish	26.3	30.3	27.9	25.9	23.8
Dairy	0.4	0.5	0.4	0.4	0.3

Source: PSA (2016).

The reasons for lack of variety and low vegetable consumption vary, some of which are behavioral in nature (Batt et al, 2005). Maternal/caregiver feeding beliefs, maternal characteristics (e.g. level of education, knowledge, working status), household size and food security status, and other factors can possibly influence food choices and feeding practices that impact the nutritional status of young children in the country (Ocampo-Guirindola et al 2016). Some Filipinos consider vegetables as a poor man's diet and thus usually opt to purchase meat and meat-based products as a status symbol. Even if convinced of health benefits, some households still opt to consume fewer vegetables as these require more preparation and have short shelf life. Some members of the household (more likely young children) dislike the taste of vegetables. For Basilan coastal communities, the preferred diet consists of fish and rice since these are the ones readily and more cheaply available. Likewise in Gandara, Samar, where vegetable production abounds, households find repeated consumption of the same vegetables monotonous, preferring instead to monetize vegetables they produce and buy less nutrient-dense, processed food commodities like noodles. Moreover, as discussed previously, expenditures on food outside the home has increased, due partly to the proliferation of food service establishments. Among urban-based Filipino families, packaged and instant foods have become popular even as most of these foods are high in calories, fats, sodium, and

food additives, and relatively bereft of nutrients.

Notwithstanding these behavioural considerations, it remains true that diet inadequacy is strongly correlated with poverty. For a poor household, food expenditure accounts for nearly 60% of total expenditure, hence eating foods other than staples, even if nutritious, is hardly an option. This is exacerbated by the high price of the primary food staple rice in the country (i.e., relative to international prices, indicative of what prices could be with a more open rice trade policy), hence crowding out other nutritious foods from the family's affordable diet. This lack of access to nutritious food groups could plausibly explain the low consumption for these foods, and the low proportion of children belonging to the lowest wealth quintiles and living in rural areas who met the MAD. Among the Philippine regions, the lowest figures for MAD (7.2%) are found in ARMM where poverty is high (FNRI 2013). Improving food affordability will greatly facilitate (though not guarantee) better diets for poor households.

Household welfare, nutritional status, and economic structure of Philippines regions vary widely.

Eleven of 17 Philippine regions have poverty incidences higher than the national level. These include all the regions in Visayas and Mindanao and the islands of MIMAROPA and Bicol regions (Table 2-13). The poorest region by far is ARMM with a poverty incidence of 55.8%, followed by Eastern Visayas (45.2%) and SOCCSKSARGEN (44.7%).

Consistent with previous discussions, Table 2-13 shows that the poorest regions also have the highest stunting rates. The exceptions in 2015 are the Davao Region, which exhibits a relatively low stunting rate despite being poor, and CAR, which has an unusually high stunting rate of 37% despite its relatively low (compared to national level) poverty incidence of 23%. Nonetheless, the correlation coefficient between poverty and stunting is high (0.88) so the cases of CAR and Davao deserve a second look. The 3.8 million stunted children in 2015 are mostly found in CALABARZON, NCR and Western Visayas.

Only NCR, CALABARZON, Central Luzon, and Central Visayas, have agriculture employment shares lower than the national average. Poverty incidences in these regions are below the national average in view of their proximity to metropolitan areas (Metro Manila and Metro Cebu) where economic activities are dense and where their populations find employment. The median region has a 38% agricultural employment share. In SOCCSKSARGEN and Eastern Visayas, employment in agriculture accounts for nearly half of total employment. In ARMM, the poorest region, agriculture accounts for over two-thirds of employment.

Aside from income and education, ethnic affiliation and occupation status (e.g. indigenous peoples, upland/non-irrigated subsistent farmers and landless workers) are also factors that heighten vulnerability to hunger and malnutrition. Those in the lower rungs of these groups account for the persistence of poverty, vulnerability and inequality over time. Disasters, both natural and human-induced, exacerbate their situations more than in other groups. Taken together, these factors intensify the effects of climate, economic/market and political shocks to these populations with pre-existing vulnerabilities to hunger and malnutrition.



WFP/Jacob Maentz

Table 2-13: Indicators of Poverty and Malnutrition, by Region

	Poverty incidence 2012 (%)	Prevalence of stunting, 0-5 years (2015)	Number of stunted children (2015)
1. NCR	3.9	25.2	337,579
2. CALABARZON	10.9	27.7	413,866
3. Central Luzon	12.9	22.9	254,969
4. Ilocos Region	18.5	31.5	174,699
5. Cagayan Valley	22.1	28.8	110,765
6. CAR	22.8	36.8	73,526
7. Western Visayas	29.1	39.9	319,120
8. Central Visayas	30.2	37.7	307,293
9. Davao Region	30.7	31.6	184,860
10. MIMAROPA	31.0	40.7	161,986
11. Northern Mindanao	39.5	37.0	189,181
12. Zamboanga Peninsula	40.1	38.1	163,868
13. Caraga	40.3	36.3	122,186
14. Bicol Region	41.1	40.2	296,314
15. SOCCSKSARGEN	44.7	40.2	222,467
16. Eastern Visayas	45.2	42.1	224,519
17. ARMM	55.8	45.0	243,675

Source: PSA (2016); FNRI-DOST (2016).

G. Climate Impacts

The Philippines is among the most vulnerable to climate change impacts.

According to the Waves Country Report, significant warming will occur in the Philippines with the expected mean temperature to rise by 1.5 to 2.6 degree Celsius over the coming 50 years. The World Risk Index ranks the Philippines second most at-risk country in the world, next only to Vanuatu (for comparison, Bangladesh ranks fifth, Cambodia ninth, and Papua New Guinea tenth). Other studies like the 2014 Verisk Maplecroft Climate Change Vulnerability Index (CCVI) has placed the Philippines under “extreme risk” to impacts of climate change over the next 30 years, owing to climate related disasters and sea level rise (GGGI 2015).

Climate change has tremendous impacts on livelihood and socioeconomic conditions of the exposed population, especially to vulnerable and marginalized sectors of Philippine society. Studies on social impacts of climate related disasters showed that livelihood, safety and security, level of food and nutrition security were highly compromised during and after climate related disaster events (GGGI 2016; Pulhin 2016, IPCC AR5 2015). Over the period 1985-2006, infant mortality among females was found to have significantly increased one year after the passage of typhoons, owing to the persistent adverse impacts of typhoons on household assets and incomes, and differential treatment of infant females compared to males (Anttila - Hughes and Hsiang, 2013).

More frequent and stronger climate extremes such as El Niño and La Niña phenomena, and powerful typhoons, are expected in the coming decades. Damage from climate related disasters was estimated at about one percent of GDP (GGGI 2015). The human and property cost of Haiyan were well publicized, but to emphasize, it inflicted production losses of about P10.6 billion and damaged agricultural infrastructure in the tune of P2.0 billion (USDA, 2013).

Warming, changes in rainfall patterns, and sea level rise, impact on food systems and human health in various ways (DOST, 2011):

1. Reduced rainfall and extended dry periods lower water levels in watersheds and reservoirs, thus limit irrigation services and energy production. Lack of water compromises crop productivity.
2. Less water can change forest ecosystems and even cause forest diebacks. Dry periods can lead to more and wider forest fires.
3. During intense rainfall, flooding exacerbate risk to human settlements and infrastructure. Intense typhoons and flooding damage crops, fish cages, livestock pens, etc.
4. Crop yields decline when temperatures exceed threshold values, in some cases resulting in spikelet sterility (as in rice).
5. Fish migrate to cooler and deeper waters, altering the location and size of fishing grounds and possibly increasing the cost and hazard of fishing. Coastal production, such as for seaweed, may be adversely affected.
6. Sea level rise can reduce availability of potable water and worsen saline intrusion that reduces farm production near the coasts.
7. Temperature increases, together with rainfall changes, affect the incidence of pests and diseases of plants, animals, and people.

Thomas, Pradesha, and Perez (2015) systematically analysed yield projections under climate change for Philippine agriculture (Table 2-15) using a crop simulation model, the Decision Support System for Agrotechnology Transfer (DSSAT), which applies climate projections for 2000–2050 on production systems. It was found that yield can (and will) increase under improved technology or more intensive production; however, the increment would have been larger in the absence of climate change. Note that figures in the Table are yield changes **due to climate change**. These changes occur over a 50 year period, thus the annual change is small.

Table 2-14: Projected Changes in Crop Yield Due to Climate Change, 2000–2050 (%)

	Rainfed	Irrigated
Rice	-4.5	0 to -0.4
Maize	-19.3 to -21.6	
Sugarcane	-4.7	-4.3
Banana	-3.7	
Coconut	1.7	

Source: Thomas, Pradesha, and Perez (2015).

To inform this Strategic Review, especially the scenario analysis on the impacts of climate change on food systems and health, the Review Team convened a consultation meeting among experts working in various fields of climate change, i.e. meteorology, agronomy, and climate policy (see Annex B). Following are the key points from the consultation:

1. Climate change poses profound challenges to food production systems and human interaction with the environment.
2. Actual impacts in terms of warming and sea level rise will only become evident by 2050. Impacts of these changes on human settlements, water supplies, agricultural production, and so forth, will also be more clearly observed by then.
3. Warming, sea level rise, and changing climates would still be evolving by 2030. **Attribution to climate change at this time could be ambiguous.** What is clear so far is that climate change will exacerbate already extant threats such as temperature extremes, degradation of coastal resources, depletion of watersheds, and so forth. The level of impacts will depend on preparatory and adaptation actions that will be put in place and the timeframe for such actions.
4. In view of these projections, **efforts and investments towards climate change adaptation (CCA), including protection and proper management of natural resources, should be accorded high priority today.**

In sum, the impacts of climate change on productivity and agricultural areas by 2030 are far from definite; projections such as those posited in Table 2-15 are indicative of what may transpire over the next 14 years.

III. Institutions and Governance

A. Political and Organizational Framework

1. Overview

The Republic of the Philippines has a constitutional multi-party democracy with a government that has three branches: executive, legislative, and judicial. Laws, including annual budget appropriations are enacted by the legislative branch, which is divided into an upper House or Senate (elected nationally) and a lower House of Representatives (elected by district). The President and the Vice-President are elected to six-year terms (the current term began in July 2016), while the members of Congress and local government officials are elected every three years. The President presides over a unitary executive branch that has two tiers: national and local. The national government agencies (NGA) are generally based in Metro Manila and these are extended to 17 regional offices. Most heads of NGAs are appointed members of the Cabinet.

The local government consists of provincial, municipal or city, and barangay (village) levels. At each level, there is an elected local chief executive (LCE), i.e. governor for province, mayor for municipality or city, and captain or chairman for barangay. In line with the Local Government Code (LGC), each LGU has a local council that must prepare development, sector and other plans; pass local ordinances, and approve the annual budget. The country has 81 provinces, 1,490 municipalities, 144 cities and 42,028 *barangays*.

2. National Agencies

The organizational framework for food security and nutrition is summarized in Table 3-1. **Food security** is addressed across a variety of agencies. The Department of Agriculture (DA) implements food policies and production programs. Aside from its support offices, DA's Office of the Secretary supervises several Bureaus covering functional lines namely: animal industry, plant industry, agriculture and fisheries engineering, training, agriculture and fisheries standards, fisheries and aquatic resources, research, and soils and water management. It also supervises a number of attached agencies and corporations, namely:

- Agricultural Credit Policy Council (ACPC)
- Fertilizer and Pesticide Authority (FPA)
- Philippine Fiber Industry and Development Authority (PhilFIDA)
- Philippine Council for Agriculture and Fisheries (PCAF)
- National Meat Inspection Service (NMIS)
- Philippine Carabao Center (PCC)
- Philippine Center for Postharvest Development and Mechanization (PhilMech)
- National Dairy Authority (NDA)
- National Tobacco Administration (NTA)
- Quedan and Rural Credit Guarantee Corporation (QuedanCor)
- Sugar Regulatory Administration (SRA)
- Philippine Fisheries Development Authority (PFDA)

The Department of Agrarian Reform (DAR) leads the implementation of the Comprehensive Agrarian Reform Program (CARP). It redistributes land to agrarian reform beneficiaries (ARBs) and capacitates them by providing the necessary support services to make their lands productive. ARBs are organized into agrarian reform communities (ARCs), which is a barangay or cluster of contiguous barangays within a municipality. ARCs have served as a vehicle to raise productivity and income of ARBs through the provision of integrated area development interventions.

The Department of Environment and Natural Resources (DENR) manages the resource base for agricultural production. Functions are implemented through dedicated bureaus, including: land management; forest management; environmental management; biodiversity management; and research.

Table 3-1: Organizational Framework for Food Security and Nutrition

	National	Local
Nutrition	DOH/NNC, DSWD, DepEd	Local NCs, BNS/BHW
Food security	DA, DAR, DENR, OP	LGU-DA
Social protection	DSWD, DOH, DOLE, DND/NDRRMC, NAPC, PCW	Provincial City/Municipal DSWD, DOH, DOLE, DRRMC

For **nutrition**, the National Nutrition Council (NNC) has been the government's primary policy and coordinating body since its creation in 1974 through Presidential Decree No. 491 ("Nutrition Act of the Philippines). Its mandates are to oversee the implementation of the national hunger mitigation program; formulate national food and nutrition policies and strategies; and coordinate the planning, monitoring, and evaluation of the national nutrition program. The Secretaries of the Department of Health (DOH) and the Department of Agriculture (DA) currently serve as the chairperson and the vice-chairperson, respectively. The members include the Secretaries of Budget and Management, Interior and Local Government, Education, Labor and Employment, Science and Technology, Social Welfare and Development, Trade and Industry, Socio-Economic Planning; as well as three private sector representatives that are appointed by the President to serve for two years. The current private sector representatives are Rural Improvement Clubs of the Philippines, Inc., Philippine Coalition of Advocates for Nutrition, and *Kapisanan ng mga Brodkaster ng Pilipinas*.

The NNC Secretariat, the executive arm of the NNC Governing Board, has three technical divisions - Nutrition Policy and Planning, Nutrition Surveillance, and Nutrition Information and Education. Its mandates include technical support, policy formulation, monitoring and evaluation, advocacy, information dissemination, and nutrition education. These functions are cascaded down to the NNC offices at the regional level, each of which is headed by a Nutrition Program Coordinator.

In addition to NNC, there are other bodies that have coordinative jurisdiction and influence over FSN and SDG#2 as a whole. Being a multi-dimensional cross-cutting goal, SDG 2 invariably becomes the responsibility of numerous bodies created to promote sustainable development and social protection.

The lead agency for **social protection** is the Department of Social Welfare and Development (DSWD). The workers and employment-related protection policies and programs are the responsibilities of the Department of Labour and Employment (DOLE). The National Anti-Poverty Commission (NAPC) is the coordinating and advisory body tasked with implementing the **Social Reform Agenda**, which encompasses social reform, poverty alleviation, and minimum basic needs, including health and nutrition. The Philippine Commission on Women (PCW) is the oversight agency for the promotion, protection, and fulfilment of women's human rights. Both NAPC and PCW are under the Office of the President and report to the Cabinet Secretary. The Cabinet Secretary also oversees the NFA, the state trading agency with mandate to ensure the country's food security in grains (rice and maize), as well as the Philippine Coconut Authority (PCA).

The Climate Change Commission (CCC), formed by law in 2009 to strengthen the country's response to **climate change**, serves as the sole policy-maker on climate matters. It oversees implementation and cooperation measures for Committee of Parties (COP) 21, of which the Philippines is a signatory. The National Disaster Risk Reduction and Management Council (NDRRMC), though not an organic agency, is an inter-agency entity responsible for ensuring the reduction of disaster risks. The Department of National Defence chairs the NDRRMC, and the Department of Interior and Local Government and DSWD, co-chair it.

Finally, the National Economic and Development Authority (NEDA) is in charge of socio-economic planning and coordinates the implementation of **sustainable development (SD) agenda** starting with Agenda 21 and the other outcome documents of SD summits, the MDGs, and now the 2030 Agenda that involves the pursuit of 17 SDGs and 169 targets. The NEDA chairs the Philippine Council for Sustainable Development (PCSD) and the Committee on International Human Development Commitments (CIHDC). There has been

a proposal to establish an SDG Committee that builds on the PCSD and the CIHDC under the NEDA Board to coordinate the implementation of Agenda 2030. The NEDA Secretariat is proposed to serve as the secretariat of the SDG committee.

3. Local Government Units

The Local Government Code of the Philippines of 1991 gave LGUs widespread power, authority, and responsibilities to LGUs in line with the spirit of decentralization and devolution. These powers were provided to enable LGUs to ensure the general welfare of their residents and administrative areas in terms of health and safety, balanced ecology, economic prosperity, peace and order, social justice, among others.

Specifically, provincial and municipal LGUs share in certain functions such as agricultural and fishery extension services, and health and social welfare. However the former is understood to specialize in higher-level and larger-scale services such as on-site research services and facilities (for agricultural extension), projects and rebel returnees and evacuees, as well as disaster relief (for social welfare); and so on. Examples of extensions and on-site research services and facilities on agriculture and fishery are breeding stations and artificial insemination centers; and assistance in the organization of farmers' and fishermen's cooperatives, and transfer of appropriate technology. These are generally managed through their full-time Agricultural Officers that have permanent *plantilla* positions. *Barangay* LGUs provide support agricultural services such as distribution of planting materials and operation of farm produce collection and buying stations.

Health and nutrition services were also devolved to LGUs and the provision of these is through their health offices, which have full staff complement. Among these services are the implementation of programs and projects on maternal and child care, and communicable and non-communicable disease control services; access to secondary and tertiary health services; purchase of medicines, medical supplies, and equipment needed to carry out these services. The *Barangays* are at the forefront of health and nutrition services (e.g. maintenance of *barangay* health center and day-care center) and facilities especially those related to general hygiene and sanitation.

Local nutrition committees are organized at all sub-national levels to manage and coordinate the planning, implementation, monitoring and evaluation of local hunger-mitigation and nutrition action plan as part of the local development plan. The Local Chief Executive serves as the chairperson and representatives of sectors and stakeholders serve as members. By design, these committees provide the mechanism for multi-sectoral dialogue, planning, and action to address local nutrition problems. To provide oversight for the day-to-day implementation of the local nutrition program, the mayor typically appoints a Nutrition Action Officer (NAO) who serves as the focal person for all matters concerning nutrition in the city or municipality. In some LGUs, the Municipal Health Officer is also tasked to cover nutrition matters.

Meanwhile, *barangays* are expected to deploy *Barangay Nutrition Scholars* (BNS), as mandated by PD 1569. BNS are volunteer health workers involved in a wide range of activities that include house-to-house surveys; identification of malnourished children through the *Operation Timbang Plus* (OPT Plus), an annual nationwide weight- and height-taking activity, quarterly growth monitoring, accompanied by counselling and referral; community mobilization; nutrition education; supplementary feeding program management; record-keeping; and assisting with other health activities such as immunization and deworming. As with agriculture and health, frontline social protection services are directly provided by the Provincial and Municipal Social Welfare Departments.

In support of the devolved functions to LGUs, the LGC mandates funding for local governments. Aside from proceeds of the real property tax and other entitlements, local governments are allocated 40% of total national internal revenues (with two-year lag). The individual internal revenue allotment (IRA) depends on the category of LGU (i.e. cities, provinces, municipalities, and *barangays*). Within each category, the allotment is based on population, land area, and a proportion under equal sharing. In turn, LGUs are expected to allocate at least 20% of the annual IRA for development projects.

4. Private Sector

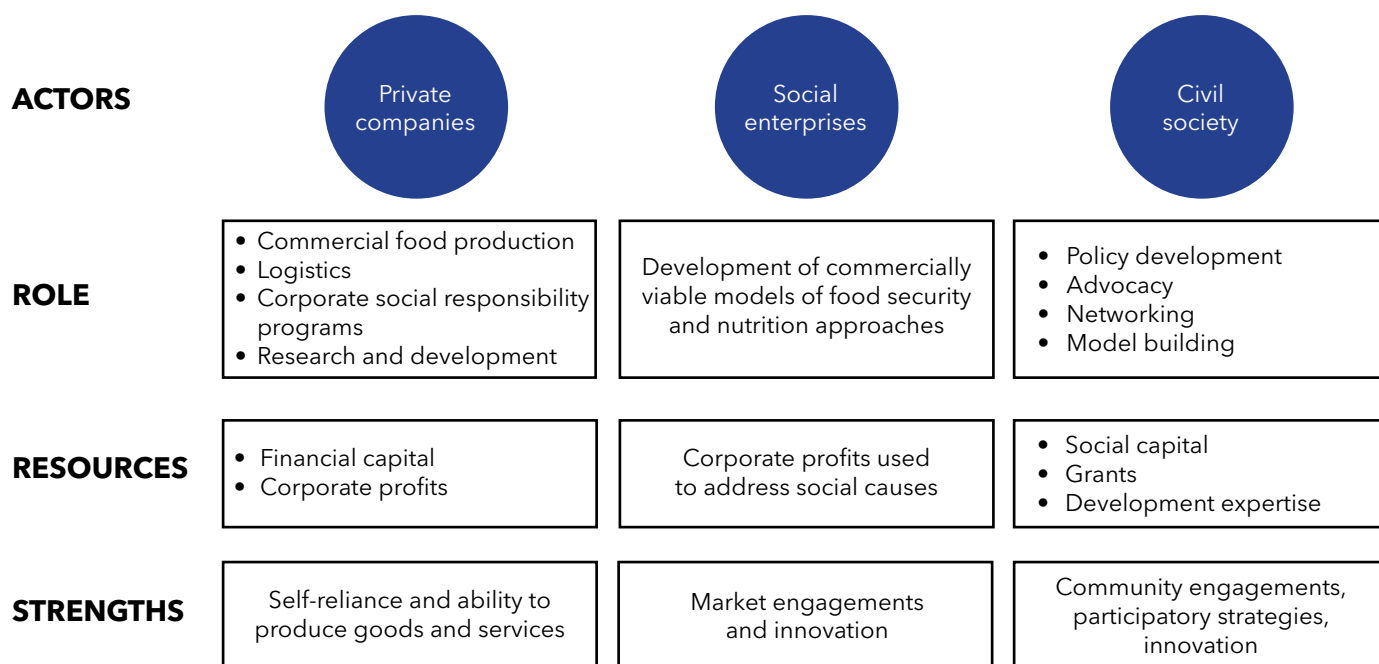
This Review broadly defines private sector as all non-state actors that may generally be grouped as private companies (micro, small, medium and large), civil society organizations, and social enterprises. These three actors form a spectrum that ranges from the more self-reliant (private companies) to the more subsidy-needy (civil society). Figure 3-1 provides a framework for the private sector roles and participation in FSN.

Private companies are made up of food producers and service providers in food production. Their products and services make up the value chain of any food product: inputs supply; food production (planting, growing and harvesting); transformation/processing into more valuable products; packaging; transport and delivery to commercial outlets and, eventually, to end consumers. Private companies are the engines of food production because these are responsible for the full range of processes needed to produce and deliver food to the consumers.

At the other end of the spectrum is civil society, which is made up of non-governmental organizations (NGOs) and people’s organizations (POs). The POs and masses of unorganized farmers are directly involved in food production, processing, and marketing. Ironically, they make up the bulk of the poor and malnourished in the country. NGOs play the role of organizer, capacity builder and market intermediary for people’s organizations and unorganized farmers. Because they feel the difficulties of PO’s, NGOs play the roles of developing programs and advocating for policies that would empower the small producers and increase their incomes.

Social enterprises assume and combine the social objectives of civil society with the profit-making competency of private companies. Social enterprises have emerged as part of the rise of market-based approaches to solving social problems worldwide. Locally, a multitude of social enterprises have emerged with innovative ways of addressing a variety of social issues while making profit.

Figure 3-1. Private Sector Role, Resources, and Strengths in Food Security and Nutrition



B. Development Planning and Sector Plans

The country has numerous plans and strategies covering various sectors, administrative levels, geographical areas, time frames, etc. The most relevant plans for this Strategic Review are the Philippine Development Plan (PDP), Agriculture and Fisheries Modernization Plan (AFMP), and the Philippine Plan of Action for Nutrition (PPAN). Both cover a six-year period coinciding with the term of the President; hence their respective successors for the period 2017-2022 are currently being developed. Planning in the Philippines theoretically employs an inter-active bottom-up-and top-down approach. The top-down part consists of

the President's Priority Agenda serving as guide for PDP preparation and the PDP being used to fine-tune regional and sector plans. The bottom-up part involves local plans being consolidated into municipal, provincial and regional plans, which then serve as inputs to the PDP.

The PDP is the primary document that spells out national development policies, strategies and targets. PDP 2011 - 2016 used the MDGs as the development framework and target setting platform. Since the adoption of the 2030 Agenda in September 2015, the SDGs (see Box 1-1) have succeeded the MDGs, and these are now the development and target-setting frameworks for the currently evolving PDP for 2016 - 2022, which seeks to lay down the foundation for the attainment of the national vision as embodied in *Ambisyon Natin*. This vision has three pillars, namely: enhancing the social fabric (*malasakit*); reducing inequality (*pagbabago*); and increasing growth potential (*patuloy na pag-unlad*).

The PDP is translated into regional development plans, which draw inputs from local government plans. The 10-Year Comprehensive Land Use Plans, which must now integrate climate adaptation and disaster risks, its accompanying Zoning Ordinance (ZO) and 3-Year Comprehensive Development Plans (CDP) are key elements of food security and nutrition governance at the local level. These will also be guided by the SDGs both by the PDP and the people's aspirations. Meanwhile, sector plans, in this case AFMP and the PPAN, input into the PDP formulation and get refined based on the adopted PDP. Once finalized, the plans must then be translated and implemented at the local levels.

The overarching goals of the agriculture sector under the PDP, 2011-2016 are food security and increased farm incomes. The AFMP, 2011 - 2017 spells out the strategies for these goals and established the programs that would operationalize the strategies. As the lead implementing agency for AFMP, DA's major final outputs (MFOs) were all based on the priority strategies of AFMP. This meant that the line items of DA's annual budget appropriations were all following the AFMP key strategies during the period. These MFOs are: infrastructure support, research and development (R&D) and extension, regulatory services, and policy and planning. Under the AFMP, subsector plans are also promulgated as guidance for the national commodity programmes for rice, maize (including cassava), high value crops, and livestock and poultry. Other commodity programs are being implemented in other on-going programs such as the Coconut Development Program of the Philippine Coconut Authority (PCA), an attached agency of DA and the Block Farm Program (see discussion on CARP below) of the Sugar Regulatory Administration.

For nutrition, PPAN provides the guidance for actions and interventions to all stakeholders at all levels. The successor PPAN is still being developed but many of the following strategies in PPAN 2011-2016 are likely to be sustained but improved and expanded.

1. Infant and young child feeding practices;
2. Community-based management of acute malnutrition;
3. Nutrition services in antenatal care;
4. Nutrition services in school and the alternative learning system;
5. Interventions to increase supply and consumption of micronutrients;
6. Increased food supply at the community level and economic access to available food supply;
7. Promotion of healthy lifestyles;
8. Various enabling strategies: media campaign, WASH, monitoring and evaluation, capacity building, health insurance, reproductive health, coordination and integration, R&D.

In support of the PPAN localization, DILG Memorandum Circular 2012-89 was issued to, among others, encourage LGUs to translate PPAN into specific programs, projects and activities, and ensure their funding; organize/strengthen local nutrition committees; designate a nutrition action officer and provide him/her with adequate office and staff support; and formulate, implement, monitor and evaluate local nutrition action plans.

C. Government Sector Programs

The government has a long list of programs that promote food security and nutrition and related programs on social protection, disaster risk reduction and agrarian reform. Discussed below are just a few of the major programs that directly support food security and nutrition.

Food security

Food Staples Sufficiency Program (FSSP), 2011-2016 is a major strategy of the AFMP for improving the productivity and competitiveness of key agricultural commodities. The FSSP was launched to provide guidance to achieving national sufficiency among food staples and increasing their competitiveness to external markets. The FSSP covers many commodities, the strategies for some of them are provided in Box 3-1 for reference. For rice, the DA adopted self-sufficiency first by 2017, now extended to 2019. The key strategy for this is the expansion of rice production through increases in yields and planted area. Other support strategies include:

- Develop and maintain irrigation systems;
- Promote early/advanced planting and ratooning;
- Increase access to quality seeds and adopt integrated crop management practices;
- Support the management of rainfed lowland ecosystem and upland rice ecosystem;
- R&D for new varieties and crop management;
- Enhance effectiveness and strengthen delivery of extension services;
- Promote the mechanization of on-farm and postharvest operations;
- Support climate adaptation through, e.g. early warning systems, buffer-stocking of seeds;
- Provide incentives, e.g. price support, trade policy, focus NFA functions to buffer stocking and domestic procurement, and expand access to affordable credit and crop insurance;
- Manage food staples consumption: diversify food choices, reduce food waste, and encourage consumption of brown (unpolished) rice.

Comprehensive Agrarian Reform Program (CARP) aims to increase access of farm tenants and landless agricultural workers to productive opportunities by providing them ownership of 3 hectares of agricultural land from excess lands of government and private landowners. DAR adopted the Agrarian Reform Community (ARC) Development Strategy to focus on priority agrarian reform areas to maximize resource allocation, complementation, and mobilization for greater efficiency and impact. An ARC is a barangay or cluster of contiguous barangays where majority of the CARP-covered lands have been awarded to a critical mass of ARBs. ARCs serve as means to raise productivity and income of ARBs through the provision of integrated area development interventions. As of December 2016, DAR has launched and confirmed 2,210 ARCs the other hand, some 4.7 million hectares of lands had been awarded to 2.78 million agrarian reform beneficiaries (ARBs). Together with the distribution of alienable and disposable lands in the public domain, redistribution has now covered 92% of the estimated CARP scope of about 7.9 million hectares (de los Reyes, 2016). While the remaining 621,000 hectares is still sizable, inequitable land distribution can no longer be convincingly posited as a limiting factor to agricultural development.

Box 3-1 Commodity Development Programs

Maize (including cassava)

- White maize seed distribution and exchange subsidy, standards development and promotion;
- Support to cassava production and postharvest through provision of better variety seed pieces;
- Promotion of organic farming and biological control of pests;
- Pilot farm mechanization and tractor pool program;
- Input provision as rehabilitation assistance for farmers affected by calamities;
- Irrigation development;
- Postharvest development services: provision of facilities, aflatoxin prevention, and monitoring;

- Market development services: marketing tie ups, contract growing, and market and price information;
- Extension support, education, and training services;
- R&D, aimed at integrated soil management, and farmer's participatory technology;

High value crops

- Infrastructure support, mainly through private partnerships and cost-sharing schemes;
- R&D encompassing the value chain, training, extension, and communication support;
- Agribusiness market development services;
- Development and enforcement of regulations on quality and safety standards in target markets;
- Production support, e.g. planting materials, farm equipment, and rehabilitation of biocontrol plants.

Coconut

- Support for planting and replanting, salt and organic fertilization, and PCA seed farms upgrading;
- Support sustainable livelihood and farming systems through, e.g. intercropping, product processing;
- R&D towards varietal improvement, crop protection, and farm management;
- Extension and training in coconut production and processing and oil palm development;
- Development of markets, such as investment and trade promotion, production clustering of farmers and entrepreneurs, and market matching;
- Quarantine, management of tree cutting, and Vitamin A fortification of cooking oil;
Establishment of a Coconut Farmers' Registry system

Livestock and poultry

- Upgrade abattoirs, dressing plants, and breeding centers; reduce postharvest losses; manage wastes; and facilitate establishment of standardized market systems;
- R&D to improve animal health, dairy production, production, marketing and processing;
- Train farmers, cooperatives, and LGU technicians, in livestock and poultry production and management;
- Genetic improvement based on R&D, dissemination of improved breeds, contract breeding arrangements, and establishment of cattle, buffalo, and small ruminant and nucleus and multiplier centers nationwide;
- A Philippine Native Animal Development Program to profile indigenous livestock and poultry genetic resources, and propagate native animals through breeding and selection;
- Eradicate and control animal diseases through, e.g. surveillance, vaccination, quarantine, information;
- Market development and milk feeding program (for dairy producers) for improved child nutrition.

Fisheries

- Improving the postharvest handling of fishery products;
Provision of livelihood to fishers;
- Harnessing science at every level of the fisheries value chain, from production, postharvest and marketing;
- Extension activities e.g. trainers' training on post-production technologies and manufacturing practices;
- Intensify surveillance activities, monitor residues, promote good aquaculture practices, GMP, adhere to food quality and safety standards; promote environment-friendly technologies, and protect/rehabilitate marine resources

Another major component of CARP is Program Beneficiaries Development/Technical Advisory Services (PBD/TASS), which is carried out through specific programs and projects funded by government and foreign funding agencies. Recent examples of FAPs are (de los Reyes, 2016) the following:

1. Agrarian Reform Infrastructure Support Project Phase III (ARISP III) provided basic support services to 136 Agrarian Reform Communities (ARCs) nationwide (JICA);
2. Second Agrarian Reform Communities Project (ARCP II) provided support services to ARCs and non-ARCs in Southern Philippines (ADB and OPEC Fund for International Development);
3. Mindanao Sustainable Agrarian and Agriculture Development (MINSAAD) Project supported selected

marginalized areas (12 settlements) in Mindanao, building on lessons from MSAAD Project Phase I (JICA).

4. Convergence on Value Chain Enhancement for Rural Growth and Empowerment (Project ConVERGE) provides complementary support services to ARBs and other smallholder farmers in 11 ARC clusters across 11 provinces in Regions IX, X and CARAGA (International Fund for Agricultural Development).

During the Aquino administration, DAR implemented several major projects, one of which is the ARC Connectivity and Enterprise Support (ARCESS), which strengthened farmers' organizations in ARCs by providing common service facilities, service delivery, and rural infrastructure. The common service facilities though provided as grant, exacted user fees to pay for their operations and maintenance. CSOs, private institutions, and public institutions, helped to improve the capacity of farmers' organizations to undertake agri-business activities, provided the technical services for these facilities. Other project components included access to credit and crop insurance and provision of rural infrastructure (irrigation, postharvest facilities, local roads).

Nutrition

The pursuit of good nutrition went as far back as post-war independence when nutrition-related agencies and programs were formulated. However, it was only in 1974 when the Philippine Nutrition Program was formulated to coordinate the various nutrition interventions. Under the program, target groups and monitoring were stated more systematically when consistent data series were collected with the National Nutrition Survey beginning in 1978: and improvements in nutritional status targeted the following: infants and pre-schoolers (0-6 years); school children (7-14 years); pregnant women and lactating mothers, and those affected by micronutrient deficiencies (Vitamin A, iron, and iodine). The Program adopted four main interventions schemes: food production, food assistance, health protection, and nutrition information and education, respectively led by: Ministry of Food and Agriculture; Ministry of Social Welfare and Development; Ministry of Health; and Ministry of Education (Quisumbing, 1986). Variations of this main theme evolved in the subsequent Philippine Nutrition Programs. After devolution, the NNC implemented nutrition programs with partner stakeholders, especially LGUs. Other nutrition programs initiated by development institutions are listed under the section on International Cooperation below. PPAN, 2016-2022 is looking at implementing the following programs during the current plan period:

Nutrition-specific programs - those planned and designed for nutritional outcomes:

1. Supplemental feeding programs, e.g. DepEd's School-based Feeding Program, and DSWD's daycare-based Supplementary Feeding Programs
2. Philippine Integrated Management of Acute Malnutrition
3. National Dietary Supplementation Program
4. National Nutrition Education for Behavior Change Program
5. Micronutrient Supplementation
6. Mandated Food Fortification
7. Nutrition on Emergencies
8. Lifestyle Program
9. First 1000 days program

NNC has bannered the concept and promoted the program by making the First 1000 Days the theme of the Nutrition Month (July) in 2016 for which activities were held nationwide.

Nutrition-Sensitive Programs - planned not for nutritional objectives but tweaked to produce nutritional outcomes. These include, among others, farm to market roads, school/barangay gardening, family development sessions, mainstreaming of nutrition in livelihood programs, etc. These are usually implemented by other relevant agencies.

Nutrition Supportive Programs consist of enabling programs such as mobilization of LGUs for nutritional outcomes, and policy development for food and nutrition

Social Protection

Social protection programs seek to reduce poverty and vulnerability to risks and enhance the social status and rights of marginalized people. The DSWD is the lead agency for social protection but works closely with various agencies and stakeholders. Following are some major programs in this category:

Pantawid Pamilyang Pilipino Program (4Ps) is the biggest antipoverty and social protection program of the government to date. It is a conditional cash transfer program being implemented by the DSWD. The government transfers the following cash amounts monthly:

- P500 per household for health;
- P500 per child (maximum of three children per household).

But subject to following conditions that the beneficiaries must meet:

- With children 6 - 18 years old: enrolled in school or alternative learning system and maintain at least 85% attendance;
- With children 3-5 years old: attending daycare/preschool, with at least 85% attendance;
- With children 0-5 years: obtain regular preventive check-ups, growth monitoring, vaccines;
- With pregnant women: obtain pre-natal care; attended by skilled/professional health worker during childbirth; mothers receive post-natal care following DOH protocol after giving birth;
- With children 6-14 years old: receive de-worming pills twice a year;
- Parents: attend monthly Family Development Session.

Kapit-Bisig Laban sa Kahirapan - Comprehensive and Integrated Delivery of Social Services (KALAHI-CIDSS) is the country's banner program for community-driven development also being implemented by the DSWD. It provides grants to barangays for direct implementation of projects, which had previously been identified and prioritized by participating communities themselves.

Accelerated and Sustainable Anti-Poverty Program (ASAPP) was recently unveiled by the DSWD in response to the slow progress in poverty reduction due to limited livelihood opportunities and business expansion and high in-migration of low-skilled labour. It targets high poverty incidence areas including Cebu, Pangasinan, Camarines Sur, Negros Occidental, Leyte, Davao del Sur, Sulu, Quezon, Iloilo, and Zamboanga del Sur.

D. Private Sector Programs

The private sector, inclusive of small farmers, fishers, and other small producers, is responsible for most food production in the country. Big companies such as San Miguel Corporation, Nestle, Unilever, are responsible for the supply of commercial food products, but majority of food producers are micro and small enterprises, including small farmers, fishers, and other rural enterprises. There are about 5,000 registered food-manufacturing establishments in the country, accounting for 25% of the total manufacturing sector. Most (90%) are small and medium enterprises, with the remaining 10% being comprised of large establishments producing about 90 per cent of the output. Most small and medium food manufacturers are family-owned and are managed as single proprietorships, but are registered as corporations with family members (Chavez, 2006).

Private sector approaches to FSN promotion

The most common private sector approach to deliver social benefits to needy beneficiaries is corporate social responsibility (CSR), which involves the payment of expenses for programs that would help achieve a social, economic or environmental goal. CSR in FSN is almost always directed at feeding undernourished children. Understandably, large companies are more endowed and capable to practice CSR but they also often look for partners to implement the programs in their behalf. Despite not having enough resources to undertake CSR programs, many MSMEs have critical links and roles to play in the value chain of food security and nutrition.

Beyond CSR, models that seek to integrate business activity with social orientation are **inclusive businesses** (IB) and **social enterprises**. The **IB approach** involves the provision of goods, services, and livelihoods on a commercially viable basis, either at scale or scalable level, to people at the base of the pyramid by making them part of the value chain of companies' core business as suppliers, distributors, retailers, or customers. The advantages of IB are scale and sustainability. IB activities are able to scale by gaining access to private sector resources. IB activities are sustainable as the underlying value proposition keeps companies, partners, and consumers within the investment-production-consumption loop.

Social enterprises, on the other hand, engage in commercial activity and follow bottom-line principles, but prioritize a broader mission such as supply and promotion of healthy food, maximizing benefits for farmer-clients, and so forth. Various types of organizations may fall under this category, including cooperatives, for-profit companies, and foundations. Unfortunately, many social enterprises existing in the country today are not profitable, mainly due to operational issues that include: lack of business management competency, inadequate financing, and absence of technology to improve product/service. Nonetheless, social enterprises have the potential to develop FSN programs that have a business model. While many still survive on grants, a good number have successfully employed traditional business practices and have reached the commercial viability stage and covered a large number of beneficiaries.

Non-governmental organizations, unlike private companies, are reliant on external funding or from donor agencies and government to sustain their programs. The enormous capacities and expertise of NGOs in developing innovative public policies and programs for the benefit of small producers is the result of all the investments on them by different grant-making institutions in the past several decades. There is a very long history of NGO work and advocacy for the improvement of the plight of poor farmers and fishers in the Philippines. Networks of NGOs have emerged, many of which have been effective in pushing for policies and legislation for the economic and social well-being of small producers. Many NGOs work with the small producers in developing models that increase their productivity and incomes. A good number of these are faith-based organizations with a strong social mission.

Private sector participation in FSN promotion

Private sector participation in promoting FSN has been growing. The following programs, initiatives and experiences are notable:

Busog, Lusog, Talino (BLT) program is a CSR program of **Jollibee Foods Corporation**, which primarily provides lunch to 40 of the most undernourished children in a school for 120 days. Since it was launched in 2007, BLT has fed over 142,000 pupils nationwide. The BLT program also trains the parents of pupils on nutritious food preparation and home budgeting. It engages local stakeholders in program implementation to make it sustainable even beyond Jollibee's assistance. It is currently being implemented in 1,500 schools all over the country.

Nestle Philippines has been practicing IB since the 1960's. It has been helping coffee farmers in different parts of the country by imparting know-how on crops production improvement. Skilled members of the company regularly visit the farmers to impress upon them the importance of good plantation management, and help improve their methods in growing coffee, among others. As a result, the farmers realize better yields and higher income. Nestle' and the Philippine coffee industry benefit from the higher yields as well through the increased supply of coffee.

Kabalikat sa Kabuhayan program Harbest, in cooperation with SM Foundation, help small farmers produce the right volume and quality of vegetables that they sell to SM Supermarkets. Since 2006, Harbest and SM Foundation have trained 13,000 farmers all over the country. Harbest and East West Seeds provide quality seeds and direct on-farm technical assistance to small farmers. These two agriculture-focused companies that technical assistance in improving the quality and quantity of vegetables produced by small farmers. They recognize the importance of small producers in the value chain; hence they developed programs to help improve farmers' productivity. East-West Seeds also has a vegetable gardening program in public schools where students are taught certain values such as efficient food production, industriousness,

cooperation with others and good nutrition.

Social Enterprises

There are a few but increasing examples of emerging social enterprises that are engaged in the production of healthy food. One is **Bayani Brew** It produces proudly Filipino agri-based beverages and advocates for the use of healthy indigenous ingredients sourced directly from farmers. **Hamlet Foods** produces natural meat products that are free from artificial food additives, taste enhancers and preservatives, and whose meat inputs come from poor hog raising families. **Good Food Community** promotes Community-Shared Agriculture, which calls for pledges or subscription to support farmers for a fixed period, enabling them the security of a stable demand despite market and environmental risks. In return, the subscriber is given a basket of fresh, organic, seasonal shares of the harvest every week for that period. **Sustainable Growth for Rural Venture, Inc.** organizes farmers to plant high yielding perennial cassava that serves both as staple food and cash crop for selling directly to San Miguel Corp. **Global Organic and Wellness Corp** engages in marketing and distribution of organic agricultural products produced by small farmers to supermarkets and other commercial outlets. **Soro-soro Ibaba Development Cooperative (SIDC)** is one of the biggest and most successful social enterprise. It is a cooperative with almost twenty thousand members, mostly small farmers. Members are engaged in hog raising, corn farming, and related agricultural activities. From just P11,000 investment in the 1970s, it now has nearly P4 billion worth of assets. Thus, unlike NGOs, social enterprises exhibit the potential to become self-sustaining vehicles like private companies.

Farmer Entrepreneurship Program (FEP) is the partnership platform of the **Catholic Relief Services (CRS)**, a faith-based organization, and Jollibee Foods Corporation. Under FEP, the farmers in Nueva Ecija successfully organized themselves to supply onions in bulk directly to Jollibee, eliminating the middlemen and increasing farmers' incomes in the process. CRS and Jollibee are now expanding the FEP to 10 other provinces. **PinoyME Foundation** is assisting the DSWD (through funds provided by the Japan Social Development Fund - World Bank) in connecting more than 5,000 poor families in six municipalities to the valuechain through the Community-Driven Enterprise Development (CDED) pilot project. The CRS has pioneered as well Agro-enterprise Development (AED), which seeks to free farmers from the disadvantageous marketing system in agriculture. It trains farmers to create scale in production so they can sell directly to institutional buyers, thereby capturing more value from the marketing chain.

HAPAG-ASA Program is a leading example of an NGO actively addressing malnutrition. HAPAG-ASA is a joint undertaking of the Assisi Development Foundation, Inc., *Pondo ng Pinoy* Community Foundation, Feed the Children Philippines, CBCP-NASSA Caritas Filipinas Foundation, Feed My Starving Children and Risen Saviour Missions. The program feeds 6 months to 12 years old undernourished children, underweight pregnant and lactating women once a day, 5 days a week for 6 months using specially produced ready-to-cook nutritious meals. The program is primarily implemented through the Catholic Church with more than 30 dioceses nationwide and with the participation of LGUs. The program has fed 830,035 children from 2005 to 2011.

E. International Cooperation

The Philippines has committed to achieve the SDGs through cooperation or partnership with development and financial institutions and other countries. It has also been participating in international initiatives related to attaining SDG 2 as shown below. All these demonstrate international cooperation, which is an essence of SDG 17 (*Strengthen Means of Implementation and Global Partnerships*). SDG 17 also calls on developed countries to fulfil their commitment to contribute 0.7% of their gross national income to official development assistance (ODA); and on developing countries to ensure that ODA resources are effectively utilized for national priorities such as food security and nutrition. The Philippines has been taking this seriously, having put in place mechanisms for improving ODA utilization and impacts.

Association of Southeast Asian Nations (ASEAN) is the closest and best-organized platform for international cooperation in attaining SDG 2. The Philippines has a long-standing commitment to the ASEAN cooperation

being one of its five founding members. The ASEAN Integrated Food Security (AIFS) Framework and its accompanying Strategic Plan of Action on Food and Security (SPA-FS) for 2015-2020 systematizes the organization's approach to food security. With support from various donors for aspects of the SPA-FS, the Framework exemplifies the leading example of triangular cooperation in FSN. One of their priorities is the development of an integrated new area of cooperation on food security and nutrition and increased investments in agriculture. For 2015-2020, the priority commodities are rice, maize, soybean, sugar and cassava. Component 5 of the AIFS, referred to as "nutrition-enhancing agriculture development," is directed towards nutrition information; policies, institutional and governance mechanisms; strengthening of nutrition-enhancing agriculture; and capacity building for implementation, monitoring and evaluation. In support of these, ASEAN in cooperation with UNICEF, WHO and EU, has published The Regional Report on Nutrition Security in ASEAN.

United Nations agencies and programs (e.g. UNICEF, FAO, WFP) have established programs on or related to food security and nutrition in the country. These are also the national support mechanisms for attaining the SDGs. In addition, the country participated in international programs that complement and support national programs. The most prominent among these are:

- **Scaling up Nutrition (SUN) Movement** was established in 2010 as a collective global effort to improve nutrition, it has gained traction and support from the UN system, governments, civil society, donors, businesses, and academe worldwide. The Philippines joined the Movement in May 2014 and has committed to contribute to the achievement of the global targets that were established in the 2012 World Health Assembly. UNICEF Philippines Representative currently chairs the UN's Scaling Up Nutrition Network in the country.
- **Zero Hunger Challenge** (ZHC) was launched by United Nations Secretary-General Ban Ki-moon in 2012 (UN 2016). It aims to end hunger, eliminate all forms of malnutrition, and build inclusive and sustainable food systems by 2030 (UN 2016). The lead government agencies for ZHC in the Philippines are the Departments of Agriculture, Health, Education, Science and Technology, and Social Welfare and Development.



First 1000 Days was established as a non-profit organization in 2010 in light of the compelling scientific evidence that nutrition had a long-term impact on the future health and development of both children and societies. The U.S. Government, the Government of Ireland, the Bill & Melinda Gates Foundation, several non-profit organizations, and the UN system are all supporting it. As mentioned previously, the First 1000 Days is now an official government program. Starting this year, UNICEF is assisting the government's delivery of **Early Childhood Care and Development Intervention Package for the First 1,000 Days**, a priority project to address stunting by focusing on maternal and young child nutrition, health, early child education and social services. Ten provinces were identified as priority: Pangasinan, Quezon, Camarines Sur, Iloilo, Negros Occidental, Cebu, Leyte, Zamboanga del Sur, Davao del Sur, and Sulu.

Philippine Rural Development Project (PRDP) of the **World Bank** is designed to establish a platform for a modern, climate-smart and market-oriented agri-fishery sector. PRDP involves LGUs and the private sector as partners in providing infrastructure, technology, and information, to boost rural incomes, and widen access to DA services. World Bank is also supporting food security and increased food production by strengthening irrigation sector institutions through the **Participatory Irrigation Development Project (PIDP)**. In addition, two projects that are related to improving access to renewable energy, and social welfare development and reform commenced in the first half of 2016.

The **Asian Development Bank** recently approved projects that are focused on areas pertaining to food access and utilization, such as infrastructure development (i.e. water, public transportation), education support, local government transparency and accountability, community driven development, livelihood and technical and vocational training, investment strengthening, disaster recovery and preparedness, social protection, and rural enterprise and employment development, among others. There currently are no projects directly related to food availability/agricultural productivity.

F. Sector Budget

The Philippines has committed to achieve the SDGs through cooperation or partnership with development and financial institutions and other countries. It has also been participating in international initiatives related to attaining SDG 2 as shown below. All these demonstrate international cooperation, which is an essence of SDG 17 (Strengthen Means of Implementation and Global Partnerships). SDG 17 also calls on developed countries to fulfil their commitment to contribute 0.7% of their gross national income to official development assistance (ODA); and on developing countries to ensure that ODA resources are effectively utilized for national priorities such as food security and nutrition. The Philippines has been taking this seriously, having put in place mechanisms for improving ODA utilization and impacts.

Table 3-2: Food Security and Nutrition Programmes, 2016

Rice-Specific	Sector Development and Institutional Support
Food Staples Sufficiency Plan	Institutional Capacity Building Program
High-Value Products from Rice and its Environment	Enterprise Development Program
Intensified Rice-Based Agri-Bio Systems	Research for Development
Future Rice	Farming without Fossil Energy
Balikatan Sagip Patubig Program	Agriculture and Nutrition Linkages
Genetic Improvement Program	Accelerated Hunger-Mitigation Program (AHMP)
Financing, Credit, and Insurance	Gulayan sa Paaralan
Agro-Industry Modernization Credit & Financing Program	Milk Feeding Program
Cooperative Banks Agri-Lending Program (AMCFP-CBAP)	Feeding Program
Agro-Microfinance Program (under AMCFP)	School-Based Feeding Program
Agrarian Production Credit Program	Supplemental Feeding Program
Credit Assistance Program for Beneficiaries Development	Nutrition Information/Education and Other Support Programs
Agriculture Fisheries Financing Program (under AMCFP)	Nutriskwela Community Radio Network Program
Registry of Basic Sectors - Agriculture Insurance Program	Nutrition Month
Meat and Dairy	Food and Nutrition Surveillance System (MELLPI, OPT, IPC, EWS)
Herd Build Up	Barangay Nutrition Scholar Program
Dairy Business Enhancement	School Health and Nutrition
Climate Change Adaptation	Closely-Related Programs
Weather Adverse Rice Areas Program	Pantawid Pamilyang Pilipino Program
Coping with Climate Change	Kalahi-CIDSS
Addressing the Impacts of Climate Change in Agriculture	Child Development Centers

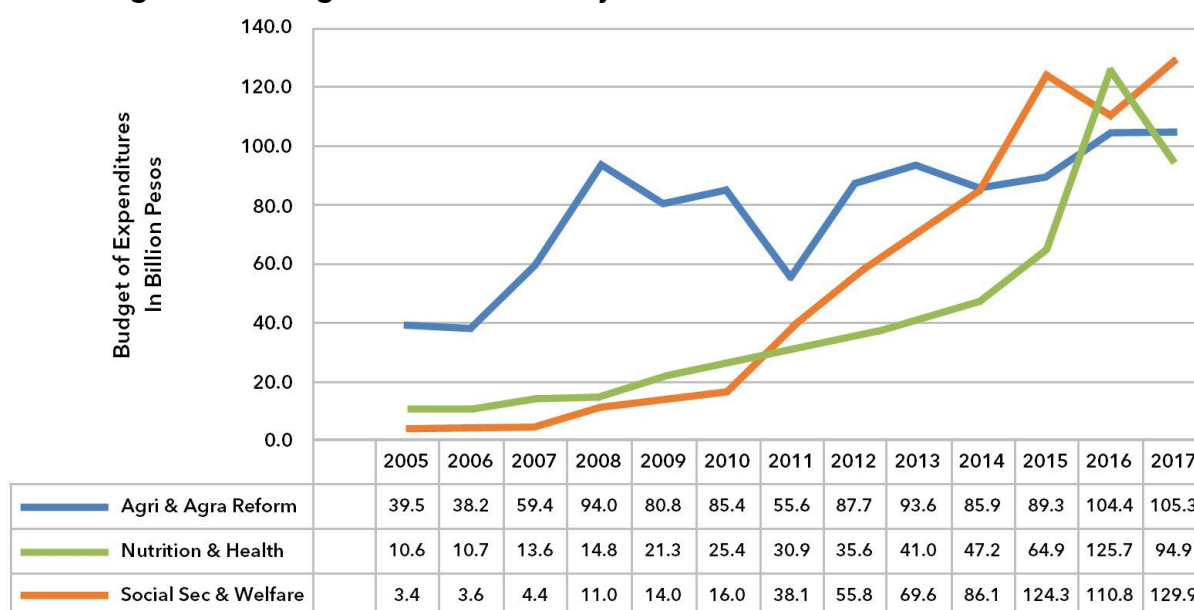
Source: General Appropriations Act, 2016

All programs presented so far do not include sector programs that indirectly support FSN such as farm-to-market roads and other relevant infrastructure facilities and agro-industry programs of the Department of Trade and Industry. Also not included in the list are the numerous local programs since these are not readily obtainable. The Naga City case study (Annex 3) provides an idea of programs implemented by the City Population and Nutrition Office. Expenditures on FSN programs are subject to problems of definition and high degree of aggregation in the expenditure data. Thus, this review uses a loose concept of FSN-related expenditures and only took into account expenditures of the national government since expenditures of LGUs are too lumped together for a meaningful breakdown. Both the budget expenditures and the list of

programs provided above largely account only for the programs of agencies directly dealing with FSN.

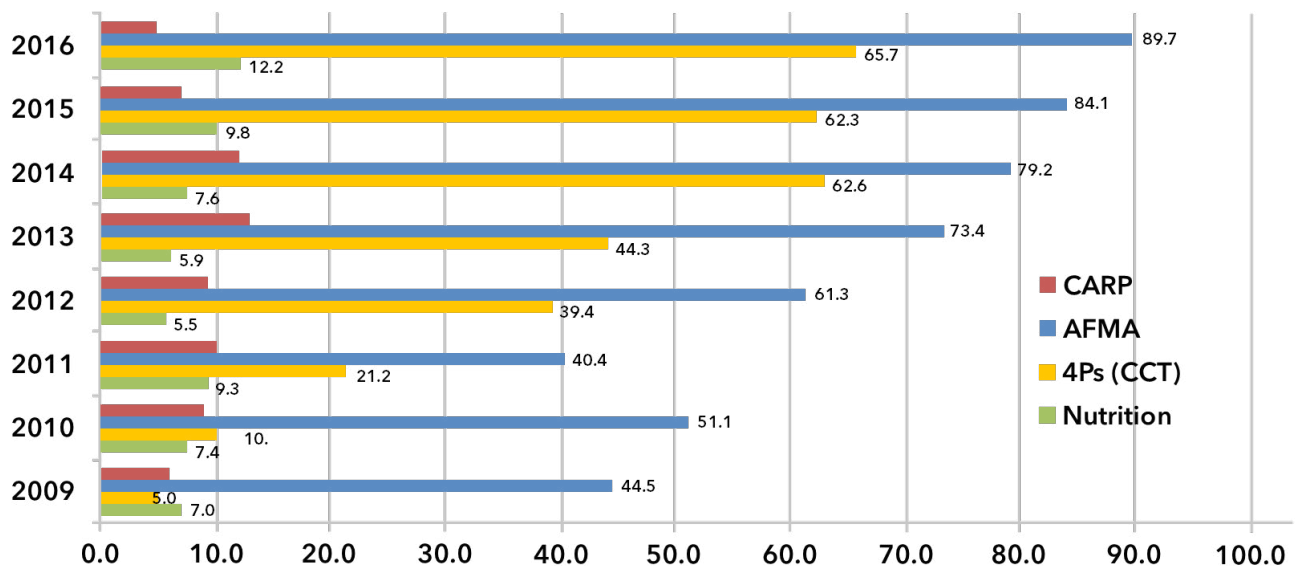
FSN-related expenditures have been rising across the board, for health, agriculture, and social protection (Figure 3-2). The 2017 national budget for FSN is estimated to amount to P336.3 billion (0.25% of GDP). This amount represents relevant expenditure programs for FSN-related government agencies and support bodies. Agriculture and Agrarian Reform accounts for 31.3% and has been growing by an average of 11.3% in the last 15 years. This robust growth is largely driven by concerns over food security and self-sufficiency following the rice crisis of 2008. Also increasing fairly rapidly is health expenditures, led by national government spending after 2009 following the passage of the 'Sin Tax' Law. Health accounts for 28.4% of total expenditures, and is mainly composed of DOH nutrition-related expenditures. The budget went on a steep climb from 2014-2015 but dove in 2016 and 2017 due to the 25.1% decline in expenditure program of the DOH. The largest increases, averaging 37.7% from 2001-2015, by far have been for social protection expenditures due to the conditional cash transfers (*Pantawid Pamilyang Pilipino Program*, or the 4Ps), and community-driven development (KALAHI-CIDSS) programs of DSWD. Social protection accounts for 40.3%, the biggest share in total FSN budget.

Figure 3-2: Budgets for Food Security and Nutrition, 2015-2017, P Billions



Source: Budget Expenditures and Source of Financing (data for 2017 is proposed)

Alternatively FSN-related spending can be disaggregated by programme. Food security is mainly addressed through the AFMP of DA and agencies related to or supervised by it (e.g. Agriculture Credit Policy Council and National Irrigation Authority) and the Land Acquisition & Distribution and Agrarian Justice Delivery of the Comprehensive Agrarian Reform Program (CARP) being implemented by DAR. These two major programs amounted to P94.7 billion in 2016, with the AFMP accounting for 94.7% or P89.7 billion (Figure 3-3). Expenditures for CARP shrank by an average of 26% since 2013. On the other hand, AFMP expenditures have been growing by 18.4% since 2012 after the drastic drop of 21% in 2011. For Nutrition, some P12.2 billion was allocated in 2016. The big expenditure items are the School Health and Nutrition Services (P4.9 billion) and the School Feeding Program of DepEd (P4.3 billion).

Figure 3-3: Expenditures for FSN Programmes, 2009 - 2016, P, Billions

Source: General Appropriations Acts, 2009-2016

IV. Gaps and Challenges

Discussion in the previous section indicates that there is no shortage of well-intentioned initiatives towards improving food security and nutrition in the country. However these initiatives seem to be inadequate to significantly elevate the level of food security and avert the public health crisis seen today. The following identified gaps and challenges could provide insights on how to fine tune FSN plans and policies and design appropriate programs and initiatives. These are arranged according to the levels (i.e. macro, meso, and micro) of the review framework.

A. Integrated Planning

PPAN seems to have covered most, if not all, key elements of nutrition-specific strategies and programs that if it is implemented to the letter, the likelihood of bringing down malnutrition is high. However, it seems to have fallen short of considering and integrating key nutrition-sensitive strategies and programs such as those related to rice trade, agricultural productivity and resilience. Perhaps this is because PPAN is at the sidelines of the planning process and gets lost in translation. PPAN's priorities are almost always missing in the key plans at national and local levels. One reason is that nutrition is generally seen and treated as solely a health matter. Thus, for PPAN to be mainstreamed in the PDP, it must first get integrated in the Health Sector Plan. Unfortunately, the health sector covers a very wide area and has numerous priorities, with nutrition being just one of them. As a result, only a small component of PPAN gets considered into the Health Sector Plan. Meanwhile, the health sector is also just one of the many priorities in the PDP so not all it has find a place in the PDP. In PDP, 2010-2016, the few elements taken from PPAN are buried inside the Social Development Chapter, as part of the Subsector Outcome (Health and Nutrition) and within the Sector Outcome: Human Capabilities Improved. Meanwhile, the agriculture, social welfare, health and other relevant sector planning processes move in parallel such that coordination and integration among these plans barely happen. The NNC, which is part of the health sector planning process, is unable to input or coordinate with other sectors. Actually, the Nutrition Council is mandated to be the integrating and coordinating mechanism for planning and programming but since there are other planning mechanisms and processes where agency representatives widely vary, meaningful integration does not actually happen.

Furthermore, the concerns of FSN extend well beyond agriculture and health. It also has macro-economic, infrastructure, environmental, and other concerns as this review shows. Planning for FSN, therefore, cannot be confined within the social sector.

PPAN has also not been well translated into local nutrition action plans and integrated into local Comprehensive Development Plans. It misses out in local programming and budgeting despite the DILG Memorandum Circular 2012-89 as earlier described. Some LGUs feel inadequate in localizing and integrating PPAN or FSN with their other priority concerns, which generally cover infrastructure and economic development. There is a need for more involved guidance and learning in policy and program integration using NNCs guidelines on local nutrition planning.

B. Policy Incoherence

Restrictive trade policies in rice motivated by the government's goal of 100% rice self-sufficiency has led to domestic rice prices far exceeding world prices and up to twice the levels paid by consumers in other ASEAN countries. This could well be the underlying reason why levels of malnutrition have been substantially higher in the Philippines, in comparison to its ASEAN neighbors (see, for example, Balisacan, 2001; Habito, 2016). This was the message of Konishi, van der Brink and Chua (2014) who said that the "far above world market prices of rice hurt consumers, especially the poor. Because rice is such an important consumption item for the poor, it is one of the reasons why poverty in the Philippines is stubbornly high. Related to the high price of rice: our child malnutrition rates are a tragedy..."

Since the 1970s, the Philippines has been operating within a highly-distorted trade regime for agriculture (David, 2003). In particular, importation of grain was subject to a statutory monopoly under the National Food Authority (NFA), a state trading enterprise charged with food security in grains. In 1995, the Philippines acceded to the World Trade Organization (WTO), thereby accepting disciplines on subsidies, tariffs, and non-tariff barriers, including removal of quantitative restrictions (QRs) and converting the same into equivalent tariffs. However, the Philippines requested and obtained special treatment for rice, allowing it to maintain import QRs under NFA up to 2005. The special treatment was subsequently extended to 2012, and extended yet another time to 2017 when WTO provided another waiver.

In the meantime, government has continued to pursue an age-old policy of rice self-sufficiency in spite of long standing observations that this policy makes no economic sense in view of the high domestic production cost/price against the low prices in major rice exporting countries (Moya et al, 2016). Large importers such as the Philippines simply do not have the endowment of highly suitable land able to grow rice at low cost (e.g., in the Mekong River delta plains) in relation to their population size, in comparison with large rice exporters (Dawe, 2014). Simply achieving production targets to achieve the target per capita availability of rice completely ignores considerations of rice affordability. In fact, the self-sufficiency policy led government to set low import QRs, which in turn has driven a wide wedge between domestic and international rice prices. In 2013, rice prices spiked due to the combination of declining domestic stocks and miscalculation of the expected harvests in 2013-2014 (Briones and Galang, 2014). The same policy regime has led to subsequent bouts of price volatility in 2014.

Rice is the single biggest source of energy and protein intake for Filipinos (FAO, 2016). In 2013, the biggest contributors to per capita availability of calories are rice (46%), sugar (8%), wheat (7%), and pork (7%). For protein, the biggest contributors are rice (34%), fish (14%), pork (9%), and poultry (6%). Furthermore, rice accounts for more than a third (33% in 2012) of the total food expenditure of the bottom quintile (Briones, 2016). Therefore, high rice prices are particularly burdensome for the poor and the steady increase in price of rice since 2008 is a major concern that must be addressed. The statistical analysis ran by the Review Team to see the impact of food price on stunting prevalence of children (aged 0-5) at the regional level bears this out (see Part 5 and Annex A of this report for details).

Inconsistent policies that fail to converge around outcomes. The various sectoral agencies related to food security are focused on respective sectoral concerns, without coherently addressing key outcomes. For example, DA is intently focused on availability, especially of the key staple, but does not coordinate with other sectors (e.g. health) towards key outcomes (stunting). That is, the national agricultural policy and budgets have been skewed in favour of self-sufficiency in rice rather than on access to sufficient, safe and nutritious food that meet dietary needs. Self-sufficiency leads to a policy of high paddy prices for farmers,

which compels government to tighten quantitative restrictions (QRs) on imports in support of self-sufficiency. This leads to elevated retail prices and undermines household access to the staple food, an unfortunate inconsistency in the country's food policy. The inconsistency is even more alarming considering the robust statistical link from medium term rice prices and child malnutrition. In particular, a 1% increase in the three-year average of rice prices in a region leads to a 0.6 % increase in the 0-5 child stunting prevalence (see Annex A).

C. Food Price Volatility

Volatile food prices undermine food stability, accessibility and affordability, and raise risks to food producers and consumers. Since the mid-2000s, price inflation of food items has generally exceeded that of the general price level, which has been largely restrained within the monetary authority's inflation targets (Table 4-1).

Table 4-1: Inflation Rates of Food and Consumer Items, 2004 - 2015 (%)

	2004-07	2008-11	2012-15	2004-15
CPI	4.9	5.2	2.9	4.3
Cereals:				
Regular milled rice	5.7	9.4	4.6	6.6
Maize grits, white	8.1	12.4	-0.3	6.7
Meat:				
Beef	7.3	5.1	1.8	4.7
Pork	6.7	5.8	2.4	5.0
Chicken, dressed	6.3	3.3	1.8	3.8
Fish	6.1	6.4	3.6	5.4
Others:				
Rootcrops	6.0	6.8	3.6	5.5
Beans and legumes	4.5	7.2	2.8	4.8
Vegetables	3.1	6.3	6.8	5.4
Fruits	4.4	6.8	7.0	6.1

Source: PSA (2016).

Food price movements have also been more volatile, compared to the general price level. Episodes of rapid **food price inflation are implicated in the reversal of nutritional improvements** in recent years (see, for example, World Bank, 2012). Poor households face greater challenges in boosting diet diversity compared to higher income households for several reasons, one of which is that fruit and vegetable retail prices have increased the fastest compared to other food items since 2012. Also, poor households generally do not have access to refrigeration, thus cannot store fresh nutritious foods longer. In many cases, both spouses go to work, limiting time available to prepare nutritious food.

Rising price of a food item is normally favourable to the farmer-producer of that item. However, when food prices spike, then return to normal levels – often in an unpredictable fashion – farmers are usually unable to make timely planting and input decisions to take advantage of such high prices. In short, market volatility further compounds the already daunting risks accompanying agricultural production in the Philippines and the farmers, usually the poor, bear the adverse impacts.

Poor households have physical access to food, but food prices limit their actual access. The study of WFP (2016) showed that even the poorest households have access to food through various sources: 58% access through a nearby small retail shop; 52% obtain food from their own gardens or backyards, 47% purchase from wet markets; 17% consume from own harvest; and only 16% buy from a grocery shop. Some households consume part of their own poultry (12%) or livestock (11%). However, the terms of exchange

or food prices have become an impediment. For instance, the logistical cost of bringing food to village retailers increases prices and limits the supply and demand for such food. By implication, high rice prices, largely due to restrictive rice trade policy as earlier discussed, are major impediments to maintaining good nutrition.

D. Impacts of Climate Change and Other Shocks

Climate impacts are magnifying the risks and vulnerabilities that already afflict Philippine agriculture and food production as well as the marginalized families and individuals. These impacts are projected to become more pronounced by 2050 and beyond.

Annual climate in the country traditionally had predictable seasonal patterns: the monsoon season from June to around October (depending on location) when typhoons are most frequent; and the dry season from November to May. Harvests, especially those of rice, are typically timed around the close of each season (March to May; September to November). In between harvests are lean seasons where income and stored food from previous harvest must tide over a farm-dependent household. However, the traditional agricultural clockwork has been upset by unpredictable weather patterns in recent years. Rains and typhoons now come almost any time of the year, destroying much of planted crops. The lean season has become longer in certain areas, and incomes and stored food are inadequate to tide households over. Expectedly, these areas have a high prevalence of malnutrition as observed in Gandara municipality in Western Samar where farms are rainfed, hence fallow during the dry season. Child weight data in a typical rural village in Gandara recorded a notable worsening of acute malnutrition among young children during the lean season.

Reyes et al (2016) found a statistically significant and positive effect of increased rainfall on an index of food security at the household level. The link is primarily through the positive effect on farm incomes. However, at extreme ranges of rainfall, the observed effect is reversed - food security improves when rainfall declines. Also, extreme temperature episodes lead to higher vulnerability to malnutrition, especially among households dependent on agriculture. The recent El Niño episode underscored the vulnerability of agriculture to drought as crop production dropped by a massive 6.8% in the first half of 2016 alone (PSA, 2016). Unfortunately, reduction in rainfall is expected in many parts of the country from March to May, and greater rainfall during the monsoon season of June to August, and September to November. Preliminary estimates of Manila Observatory (2016) indicate that in the large agricultural areas of the country - namely Cagayan Valley, the Central Luzon Rice Bowl, Western and Central Visayas, and Mindanao except Caraga region - annual rainfall could drop by about 2% or more owing to the recent El Niño phenomenon. The combined long dry spell and damage from Typhoon Lando was especially painful for crop farming as it suffered a 1.95% contraction in 2015. Rice paddy and maize were worst hit registering production contractions of 3.8% and 6.0%, respectively. The drought persisted until the first half of 2016, when crop production fell by another 6.8% (PSA, 2015, 2016).

Recalling the views of the climate experts that the Strategic Team consulted, it is clear that climate change will exacerbate already extant threats (e.g. temperature extremes, degradation of coastal resources, depletion of watersheds) and the level of impacts will depend on the preparatory and adaptation actions that will be put in place and the timeframe for such actions. The question now is how well and timely the country is preparing for this eventuality.

Shocks and variability are highlighted in the conceptual framework of the Strategic Review as sources of food insecurity. These usually arise from conflict, market volatility, and environmental variability. The displacements of people for extended periods due to conflict, flooding, earthquake and other disastrous events such as fire have become commonplace in the Philippines. The poor and vulnerable populations are the ones that are directly affected, as these generally do not have alternatives or the resources to keep them out of crowded evacuation centers that lack food and sanitation, and in turn breed diseases and cause malnutrition.

Mindanao has had the most number of displaced populations. IPCInfo (2013) reports that conflicts alone led to the displacement of more than 170,000 persons between January and October 2013 in Mindanao. This far exceeded the number of persons (100,000) displaced due to the massive destruction wrought by Typhoon Bopha. Box 4-1 discusses some Mindanao conflicts in more detail.

Box 4-1

Conflicts in Mindanao: Origin of Food Insecurity

The **Zamboanga City Crisis** presents a case of conflict that quickly escalated into a large-scale food emergency and malnutrition. On September 9, 2013, armed men of the Moro National Liberation Front (MNLF) invaded Zamboanga City to raise the flag of the Bangsamoro Republik and assert self-proclaimed independence. The siege was met by a strong response from local police and military, thus the conflict raged until 28 September 2013 when the MNLF forces finally withdrew. It left 14 of 98 barangays of the city devastated, 10,000 destroyed houses, and about 118,810 displaced civilians. The government set up 33 evacuation centers and provided relief services. The DSWD alone initially allocated about P3.89 billion for early relief and rehabilitation. The management of the IDPs, relief and recovery were eventually turned over to the Zamboanga City Government. Despite receiving considerable external assistance, the City Government was overwhelmed by the sheer number of affected people, which substantially grew as even unaffected people or the relatives of the IDPs from other unaffected areas were lured to stay in refugee camps by free food, medicines, shelter and services. Crowding and lack of water and sanitation facilities led to disease outbreaks and high levels of malnutrition.

In December 2013, three months after the crisis, 61,000 persons were still displaced. Of these 23,000 were living in 10 evacuation centers. A nutrition screening done at the time showed Global Acute Malnutrition (GAM) among children at 9.14%. Nearly a year after the crisis (August 2014), GAM increased to 13.2% and stunting was recorded at 47.7% of children. Stunting prevalence was slightly higher among girls (48.5%) compared to boys (46.9%).

At the time of the Review Team visit (October 2016), only the Masepla settlement area remained as temporary shelter for 1,257 families that still have not returned to their original villages. By this time, the number of IDPs was already manageable and the local government, with assistance from NGOs, was better organized. The rates of malnutrition and other health problems have been brought down to low levels.

The Zamboanga City crisis and its aftermath highlight the risk of a sudden derailment in pursuing a goal such as zero hunger, even in relatively affluent and unlikely areas such as an intermediate city. It also emphasizes the need for a disaster (whether human-induced or natural) risk reduction management plan and system to minimize the costs to life, limb and property. The massive displacement of people alone could cost the local and national governments dearly.

Conflict or lack of peace and order, even only perceived, could also affect an area over a long-term period. Such perception could discourage investments and make people feel insecure. This is the case in Basilan Province where investors are wary to invest for fear of becoming victims of kidnapping or extortion or be caught in armed skirmishes between the military and rebels. These skirmishes have also displaced people some of whom are still in evacuation areas. The lack of security and investments have kept the province poor despite its rich potentials. Food production in Basilan is limited and its malnutrition level is high.

Still related to changing climate, the risk and variability endemic to agriculture have been worsening food insecurity of farm households. For instance, the dreaded Panama disease is threatening large banana growing areas and thousands of smallholders serving as suppliers to large banana exporters. This fungal wilt cannot be eradicated by the usual set of pesticides and soil fumigants, and must be dealt with using more drastic disease containment and quarantine measures (Ploetz and Churchill, 2011). Similarly, the coconut scale insect infestation ("cocolisap") has wreaked havoc on livelihoods of tens of thousands of coconut farmers around the country. In Basilan where coconut is a P2.2 billion industry, the "cocolisap" virus affected more than 2 million coconut trees. Unfortunately, the national government took some time to arrest the disease, leading to much hardship for coconut farmers.

E. Inadequate and Misplaced Resources

Relative to the magnitude of the problem, resources for addressing hunger and malnutrition have been inadequate, and those that are available so far have not been placed in high-impact programmes. While FSN-related programmes have undoubtedly received massive increases since around 2009, these have been directed primarily at other social objectives, without being translated into significantly improved hunger and malnutrition outcomes. Rather, programmes directed specifically against hunger and malnutrition appear to have been under-funded, both at the national and especially at the local levels. The latter is compounded by the mismatch between local revenue sources and the expenditure assignments under the LGC, causing deficiencies in delivery of economic and social services (Manasan, 2006). Finally, a significant part of funds provided to FSN may have been wasted due to ineffective or stand-alone programmes (e.g. school-based feeding as discussed below).

Furthermore, resources put into FSN are seen as expense items at the present time rather than an investment in human resources, productivity and future prosperity, which could multiply a thousand fold. The Review Team calculated the equivalent value of the benefit from increased earnings of the future work force based on the estimates of Save the Children (2016) of losses on earnings of the work force at current stunting level. The calculation process is as follows:

- By decadal age group (15-24, 25-34, etc.), calculate total population and estimated reduction in income due to malnutrition, in pesos;
- Compute the average reduction in income per person, and apply to the affected cohort;
- Obtain the present value of lost incomes (assume a discount rate of 6%)
- Find the annuity equivalent of this present value, applied over the working age of the affected cohort.

The computed total loss is P102,591,238 million. This informs that the country could lose much more if losses in productivity and GDP were to be considered as well. This further informs that an investment of about P100 billion a year to eradicate malnutrition would mean neutralizing anticipated losses and earning much more income and benefits for the Filipino people.

F. Organizational Weaknesses

Statistics show that the current ***FSN governance structures and leadership are unable to bring about meaningful results***. FSN are multi-dimensional phenomena caused by a complex set of interrelated factors. As a consequence, FSN governance structures are confronted with multiple challenges as the different agencies involved strive to achieve meaningful coordination. Unfortunately, the FSN governance structures are unable to transcend the inevitable overlap, confusion, and fragmentation of investments and actions across the various actors, both national and local. Agriculture and food production structures are numerous and complex. These have been the subject of studies and proposals for reorganization such as the merger of DA, DAR and DENR. In 2014, the Administration of President Benigno Aquino III created the Office of Presidential Assistant for Food Security and Agricultural Modernization to supervise four DA agencies: The National Food Authority (NFA), National Irrigation Administration (NIA), Philippine Coconut Authority (PCA) and the Fertilizer and Pest Authority (FPA). Although the DA was made up of 40 agencies, the NFA, NIA, PCA and FPA combined, accounted for 75% of the DA's total budget (Herrera 2016). This move was aimed at focusing resources toward achieving the goals outlined in the Philippine Development Plan (PDP) 2011-2016, through the function of the National Convergence Initiative (Herrera 2016). Unfortunately, this unit did not stick and no longer exists because it was not permanent and it effectively decimated the legally-organized DA. It was also meant to address a specific issue within the Aquino Cabinet. This shows that the effectiveness of DA (perhaps in partnership with DTI) as the food security governance structure highly depends on policies and priorities of the prevailing administration.

The governance structure that actually connects food and nutrition is the NNC, which was aptly created as a multi-sector and multi-stakeholder coordinating body. However, its ability to perform its mandate and push its agenda forward has been hampered by its leadership issue and lack of authority and influence. Upon founding, NNC was placed under the Office of the President (OP); in 1980, chairmanship was

moved to DA; then upon its reorganization under EO 234, chairmanship and supervision was moved to DSWD in July 1987. However within a month, chairmanship was returned to DA. In 2005, EO 472 shifted chairmanship to the DOH.

The **fickle-minded shifts in leadership** sends the message that there is lack of appreciation of the role and purpose of NNC, which also translates to the limited understanding of the integrated concept of food security and nutrition and their attendant issues. DOH's chairmanship and supervision of the NNC also sends the messages that nutrition is given priority and delinked from food security. There is also the notion that perhaps because the council's name only refers to nutrition, nutrition is largely a health matter. This conceptual weakness and the messages it delivers have limited the effectiveness of NNC and its secretariat as evidenced by the continuing high level of hunger and malnutrition in the country despite the many programs and initiatives they have been implementing. Lodging a multi-dimensional concern under a sector-specific body that has the same level of authority as the other agencies it is supposed to coordinate is also a key point of weakness.

One excellent feature of the NNC is the membership of three private sector groups to ensure coordination and cooperation between public and private sectors. These groups are chosen according to the criteria: (a) nationwide coverage; (b) with programs that are consistent with national nutrition programs; and (c) targets priority groups of the national nutrition plan/program. While an in-depth assessment of the effectiveness of private sector participation in NNC is beyond this Review, the current hunger and malnutrition level vis-a-vis the numerous efforts NNC has put in, suggests that the private sector role and membership have not also been maximized, despite efforts of advocacy groups such as FoodFirst Information and Action Network (FIAN).

A critical review of the PPAN 2011-2016 has highlighted **weak LGU mobilization for nutrition programs** as a major challenge to achieving better nutritional outcomes (NNC 2014). Many local nutrition committees are either not functional or have superficial agenda. There are committees that only meet once a year to discuss the program of the Nutrition Month instead of why malnutrition is high or why food is expensive in their jurisdiction and how these issues may be addressed. This goes back to the low appreciation of FSN by the LCE. Conversely, a key characteristic of multi-awarded LGUs is the awareness of the issues and the leadership and commitment of the LCE in FSN matters.

The FSN service delivery mechanism is profoundly impaired. The agricultural extension system under the jurisdiction and resources of local governments has been inadequate to meet the technical and organizational needs of small farmers and fishers. Lack of human and financial resources is the usual issue cited. However, there are more serious issues such as the lack of support mechanisms for the devolved extension services to LGUs. There is also the contradiction on the assignment of extension services to municipal fishers, which the LGC gave to the LGUs but the Fisheries Code of 1998 gave to DA through the Bureau of Fisheries and Aquatic Resources (BFAR). These have been long-standing issues that have adversely impacted productivity and food security, but these have remained unresolved as these involve revision of laws.

In the nutrition and health delivery system, frontline workers, especially the BNS and BHW are likewise ill equipped to handle caseloads of households with malnourished children within their communities. NNC has been addressing the matter through the Barangay Nutrition Scholar Program, which is a human resource development program involving recruitment improvement, training, and incentives, among others. However, the program is sorely inadequate because according to NNC, there are only about 19,527 BNSs deployed in 16,177 barangays within 593 municipalities. The current number of BNS is way below the mandated deployment of one BNS per barangay under Presidential Decree No. 1569. As earlier mentioned, the country has 42,028 barangays and 1,490 municipalities, indicating that the current number of BNS is not even half of what is required. Note further that only about a quarter of municipalities have barangays with BNS. The situation is actually worse than presented because in fact, there are barangays, especially those in urban areas, which need more than one BNS due to their large populations. Thus, the number of BNS the country actually needs is much more than the number of barangays, and the high level of malnutrition could largely be traced to the absence of qualified service delivery in many areas.

It is worth noting that cities that have substantially cut their malnutrition levels have high numbers of capable and dedicated BNS. For instance, Naga City trained 350 persons as BNS even if it only has 28 barangays, hence even if not all those trained are deployed, Naga has a good level of BNS reserves. The results are clear: from a very high underweight prevalence of three quarters of pre-school children in 1990, prevalence was down to a very low 3.1% in 2015.

Lack of security of tenure and inadequate incentives for FSN service providers. Recruitment of good people to serve as BNS and BHW is a function of job tenure, remuneration and incentives. A BNS is a volunteer that only receives a transportation allowance from NNC and an additional allowance from the LGU, which ranges from P50.00 (poor barangays/municipalities) to P3,000 (rich cities) per month. Some incentives are provided; the most significant of which is the second-grade civil service eligibility to those who have completed two years of satisfactory service. A BNS also serves at the pleasure of the incumbent, making his/her job highly unstable. Some newly-elected officials appoint relatives or favoured personnel who may not have the training, competence and institutional memory. This practice lowers the quality of BNS service. Despite these challenges, many BNS are found idealistic and service-oriented, and a good number often make do with whatever is given them. However, many could not support a family with the existing allowance package and it is not uncommon to see them move to better options.

G. Lack of timely food security and nutrition data

Shocks to food accessibility and nutritional status can transpire at a rapid pace - however the food security and nutrition monitoring system of the country may not be updated, reliable, or complete, enough to properly alert and guide the food security and nutrition planning and implementation. The main source of data on nutritional status for the country is the NNS, which is conducted by FNRI only every five years (from 1978 onward). The monitoring of child weight at the barangay level is undertaken quarterly through the OPT and annually through the OPT Plus. However there are serious issues related to reliability of the figures generated. For instance, the Barangay Nutrition Scholars (BNS) may not be adequately trained or the barangay not adequately equipped (many barangays/schools use bathroom scales rather than the more accurate Salter scales). Hence disparities between disaggregated NNS figures and aggregated OPT Plus figures abound during NNS years.

H. Implementation issues - Nutrition

The NNC (2014) evaluation report on PPAN observes that **enforcement and other implementation issues have undermined the effectiveness of direct measures.** Among others:

- Micronutrient fortification is marked by low compliance, with no coordinating body to oversee enforcement.
- Nutrition education activities are on-going but hardly seem to make a difference in how households actually practice home food preparation. Difficulties can be traced to gaps in knowledge and consistent application of nutritionally-sound food choices and eating practices by mothers and caregivers.
- Interventions to address the first 1,000 days are largely mainstreamed under the health service delivery system. Nutrition interventions become just a part of the long list of health promotion and service delivery activities undertaken by frontline workers in health centers and in the community.
- Large-scale supplementary feeding programs implemented by LGUs are anchored on day care centres and schools, and are difficult to sustain without external support. There is not enough evidence to show that these feeding programs significantly improve the nutritional status of children.

The case of school-based feeding illustrates the implementation problem of direct interventions. The DepEd School-Based Feeding Program provides a free meal to pupils for a cycle of 100 to 120 days. However, only 70% of children verified as wasted at the start of a cycle attained normal status by the end of cycle. Ten percent verified as normal at the start of a cycle worsened to wasted status by end of cycle. Of a group of pupils who had transitioned from severely wasted to normal over a cycle, 52% were founded to be wasted one year after the program. It appears the cycle was too short to fully address

child malnutrition. Moreover, interventions must be introduced (not necessarily by DepEd) to capacitate families in addressing nutritional needs of children (Albert, Abunda, and Angeles-Agdeppa, 2016).

Missed opportunity in 4Ps. The 4Ps constitutes the largest single program for poverty alleviation in the country. However, stunting, underweight, and severely underweight status of children 0-5 are unchanged among 4Ps households even if the program significantly reduced severe stunting (Kandpal et al, 2016). This represents a missed opportunity for leveraging the biggest social protection program in the country to impact on the biggest public health crisis in the country.

Low priority for nutrition at the local level, despite the mandate of LGUs to deliver frontline services. The numbers bear this out: only 6% of 1,643 towns and cities have consistent nutrition programme performance in the last five years. The nutritional priorities of the remaining 94% are unclear. While there are some high-performing LGUs who have been recognized by the NNC for successfully implementing community nutrition programs, a good number of local nutrition committees across the country are dormant or non-functional (NNC, 2014). Box 4-2 describes all too common cases of neglect among LGUs in the Philippines, which could be due to factors such as inadequate information and appreciation of the implications of malnutrition, low capability to localize and implement PPAN, and lack of resources.



Box 4-2

Obstacles to Ending Hunger and Malnutrition

Basilan Province exemplifies the case in which lack of focus characterizes FSN programmes at the provincial level. This is not to downplay its engagement in many nutrition-related activities: there are 179 health care centers all over the province and there is a regular feeding program in these centers. The provincial government also distributes vegetable seeds to all municipalities every year and the Municipal Agriculture Officers are supposed to monitor the utilization of these seeds.

However, provincial officers admit that there is no provincial plan for food security and nutrition. The Provincial Nutrition Action Officer, who reports to the Provincial Health Officer, notes that the nutrition programme of Basilan is focused on raising awareness on proper nutrition, but lacks systematic approaches and resources to address the problem of malnutrition. Essentially the provincial nutrition council has yet to convene in a meaningful manner.

The malaise can cascade down to the municipal level, as in the case of **Gandara, Samar**. The Municipal Nutrition Council meets only once a year to plan and implement the activities of the Nutrition Month. The meeting usually focuses on nutrition activities and there have been no attempts to examine or analyze the OPT data and how to improve nutrition or eradicate malnutrition. There is little coordination and information dissemination to the different offices/agencies (e.g., agriculture, health, procurement and accounting) that are related to the health and nutrition issues. While the mayor is supportive, leadership seems lacking in program implementation.

Of the 69 barangays, only 41 have BNS and only about half of them are functional (e.g., submit OPT reports). They have meager honoraria (only P50 - P200), which are highly variable across barangays. Thus, turnover of BNS volunteers is high. There is no "job stability"; the BNS and BHW are replaced with those "preferred" by newly elected officials. Some registered BHWs or trained BNS hesitate to render services because some barangay captains only give honoraria to their own appointees. Many BHWs (4-5 per barangay) are over 60 years old. Thus, the need for young volunteers who are willing to be trained in the computational and nutritional assessment of the OPT operations is high. Despite being trained, many BHWs are unable to generate OPT data for lack of necessary equipment (weighing scales, height boards). In the absence of Salter scales, some health workers use bathroom scales. Only 10 barangays have height boards and these were donated by Plan International.

Many BNS do not "process" the OPT data or understand the implications/meaning of the data they submit. Hence they do not find their situation alarming. The gravity of Gandara's malnutrition situation became known to them only when a Sangguniang Barangay member fed back the information received from a regional workshop in Tacloban City.

practices;

I. Implementation issues: Food security

Even in the absence of shocks, deeper problems of the agriculture sector contribute to high production cost, deficiency in supply of affordable food, and low farm incomes. Since the private sector is the primary producer of food in the country, the price of food is a function of the production cost of these private entities. Unlike in developed countries where the government heavily subsidizes private food producers in order to keep food prices low, in the Philippines, food companies absorb the cost of food production and pass on the burden of the inefficiency of the agriculture sector to consumers.

In general, agricultural services to support small farmers are weak and inadequate. **Formal credit reaches only 53% of small farmers** - which is still a huge improvement over the 26% outreach recorded in 199-92; this however implies that 47% of small farmers and fishers are unable to access formal credit and must resort either to self-finance, or borrow money at usurious rates from informal moneylenders and traders (Corpuz, 2016; ACPC, 2011). **Irrigation services are also inefficient**, owing to low funding for

maintenance, operations, and repairs, and poor management of supplying watersheds (Inocencio et al, 2015).

Investments in R&D has been sorely lacking: the AFMA states a benchmark of 1% of agricultural GVA (2 years lagged); current rates of spending are just half of that, despite gains made since 2011. Research is concentrated on the traditional crops (i.e. rice, coconut, sugarcane), but is severely lacking for high value commodities such as banana and rubber. The agricultural system is too oriented towards projects with short-term gains rather than those that lead to long-term productivity growth for which R&D investment is essential (Briones, 2016).

Inefficiencies ex-farm – Postharvest handling tends to be substandard, resulting in high postharvest losses. In rice the estimated postharvest loss of rice is 15%, owing to high losses from inefficient drying and milling. The proportions can go higher for highly perishable commodities such as fruit and vegetables, where estimates range from 19 to 29% (Manalili, Yaptenco, and Manilay, 2015). An important constraint is **lack of a system of grades and standards** for agricultural commodities. Even for organized supply chains, such as contract growing schemes, small farmers often struggle to reach quality and delivery standards imposed by downstream processors/exporters (Briones, 2015).

Logistics is a key function in this process because the efficiency by which food products are packed and transported affects the price of food. Thus, while the government provides the major infrastructure used in food production, particularly transportation and delivery, the way by which food is transported using these infrastructure makes a big difference. For instance, the elite capture of the shipping lanes has made the prices of food in the country very uncompetitive. For decades, it was cheaper for private companies to import agricultural products rather than to transport them from Mindanao. Unless government invests in rural infrastructure, food prices will continue to be high. Furthermore, small farmers bear the cost of and are penalized by these inefficiencies in the agriculture sector. Since they remain poor and unable to mobilize capital to increase their production, they fall prey to small and big-time traders who take advantage of their weakness by providing them credit during planting season and buy their products at a low price as payment for their debt. Thus, there is an elite capture of the agriculture trade.

Poor logistics, unreliability of farm production (whether in terms of quantity and quality), and weaknesses in the manufacturing sector hinder the development of forward and backward linkages between farm and nonfarm activities. Without these linkages, development of agriculture in itself remains stunted, unable to realize its full potential within the context of expanding value chains (Briones and Galang, 2013).

Program leakage. On the consumption side, price subsidy on rice has consistently captured a substantial slice of government spending on social protection. However up to 71% of the subsidy goes to the non-poor, and may thereby be classified as program leakage. The reason for this anomaly is that NFA rice distribution points have not been deliberately targeted to the poorest areas, preferring rather to distribute rice in key urban centres such as Metro Manila (Manasan, 2010).

J. Dispersed Accountability

Accountability for ending hunger and malnutrition is too dispersed to make a difference. There seems to be no sign of alarm/urgency among the frontline agencies and service providers on the acuteness of the health and nutrition situation of 0-5 children and the debilitating impacts to future human capital, productivity and security. **Low appreciation of the serious implications of malnutrition** has led to its **low priority especially in resource allocation.** In turn, lack of priority may be traced to difficulty or lack of accountability of government to exact compliance with existing laws. For instance, both Presidential Decree 1569 (Strengthening Barangay Nutrition Program) and DILG's MC 2012-89 vest upon LCEs the responsibility to create and operate nutrition committees and undertake nutrition programs but these did not provide incentives for compliance or sanctions for non-compliance. LCEs remain indifferent to persistent or even worsening hunger and malnutrition because of limited appreciation of their implications in their jurisdictions, as well as the **absence of adverse consequences for inaction.** After all, FSN is something not readily seen and felt, hence could not impact on the decision of the electorate compared to hard

infrastructure.

Similarly, at the national level, agency heads may be pre-occupied with more sector-specific goals, while ignoring key food security and nutrition indicators. An important example is the ardent pursuit of self-sufficiency targets by DA, which appears oblivious to worsening indicators of childhood stunting in the meantime.

Ultimately, in a democracy, this may be attributed to an electorate with poor appreciation of the seriousness of hunger and malnutrition as social problems, and the potential for collective action to address these problems. Hence, elected representatives feel little demand to vigorously pursue solutions and allocate resources towards ending hunger and malnutrition.

K. Mind-Set and Behaviour

Challenges discussed above are underpinned by mind-set and behaviour. Examples already cited in the discussion are (a) the misconception that eating traditional food like vegetables and root crops is not “cool” and that eating foreign menus and fast food items (e.g., hamburgers, French fries, wheat bread) is a status symbol; (b) the view that resources for FSN are expenses, not investments; and (c) FSN is a health matter. Many Filipinos have become health-conscious and are eating correctly lately. This trend must be encouraged but doing so would be a great challenge with the proliferation of fast food establishments offering ‘unhealthy’ foods. The overall improvement of diets, for both poor and non-poor households, is essential to address the double burden of malnutrition.

V. Roadmap for Attaining SDG 2

A. Scenario Analysis

As background for the action agenda towards attaining SDG 2, it is deemed necessary to understand the likelihood of the country achieving SDG 2 through scenario analysis using a partial and general equilibrium models to determine food security outcomes based on consumption responses of households to price and income changes over the long term.

At the global level, long-term projections must incorporate rate rising global demand due to population growth; growth of per capita incomes worldwide, especially in developing countries; as well as supply prospects for agriculture, especially as informed by projected impacts of climate change. Since the 1960s, growth in per capita consumption worldwide averaged 2.2% per year. The latest set of estimates from FAO and OECD to 2050 (FAO-OECD, 2012) finds that this growth cannot be sustained.

Global population is expected to hit 9.15 billion - 70% above baseline levels - while per capita incomes will be higher by 80% per cent on average. Demand for agricultural products will continue to grow, but at a slower rate of 1.1% per year. Undernourishment both as a share in total and in absolute numbers will decline to just 4 per cent or 318 million respectively, by 2050. However the pace of decline is too slow to reach the SDG target by 2030. A recent scenario analysis incorporating climate change impact is by IFPRI (2014). The analysis finds that global cereal prices by 2050 will be higher than baseline prices (2010) by 64 - 66% for rice, 65 - 73% for wheat, and as high as 78 - 92% for maize. In developing countries the number of malnourished children is expected to decline by 22.6 to 23.3%, while the number of people at risk of hunger will increase by 9.8 to 11.4%.

The scenario analysis for the Philippines uses the **A**gricultural **M**odel for **P**oLicy **E**valuation (AMPLE), a numerical supply and demand model for evaluating scenarios for agriculture. It had been applied for

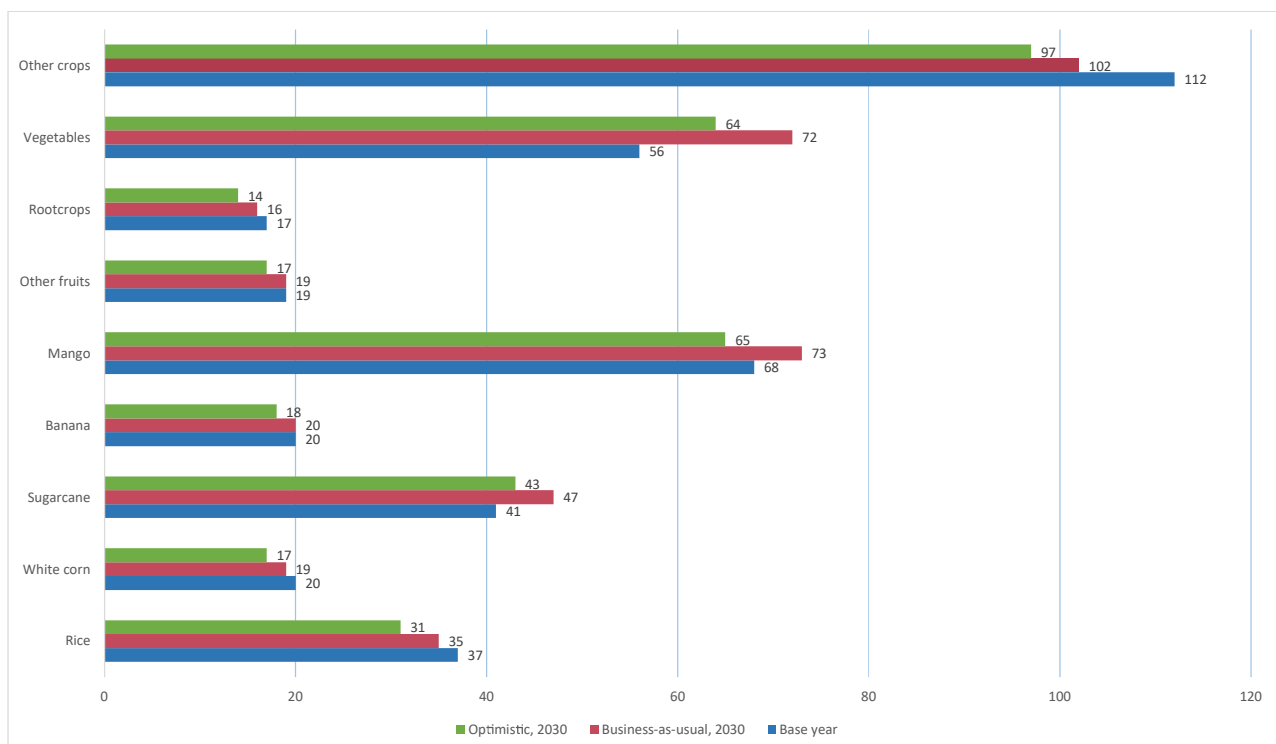


assessing productivity growth from 2010 to 2020 (Briones, 2013a), food security from 2010 to 2040 (Briones, 2013b), and trade liberalization scenarios from 2010 to 2020 (Briones, 2013c). It is a multi-market partial equilibrium model providing a comprehensive representation of Philippine agriculture. It is able to represent impacts of the prospects and challenges facing agriculture, such as population growth, increased demand from consumers and world markets, changes in productivity, availability of agricultural land, and global market integration. AMPLE covers 11 crops, three livestock and poultry products, and four aquatic products, for a total of 18 commodities. Annex A describes the features of the model in greater detail. For this Strategic Review, the AMPLE was extended to incorporate childhood stunting as a key malnutrition indicator, as suggested by Herrin (2015). Baseline and alternative scenarios for food security and nutrition are compared to SDG targets.

A literal interpretation of SDG 2 implies targeting zero prevalence of malnutrition indicators. In practice, however, this is unlikely to be achieved; even countries at the frontier of FSN performance post non-zero malnutrition indicators. In 2015, IFPRI (2016) data show that Germany posted the lowest stunting prevalence at 1.3 per cent; the 5th lowest prevalence was 2.5 per cent; and the 30th ranked country, Tuvalu, posted 10%. Turkey, China, and Saudi Arabia are within the 9% range. The Philippines currently has 2.28 million stunted children. A 40% reduction by 2030 (per internationally-agreed target) would still mean 1.4 million stunted children or a prevalence rate of 20.3%. Thus, this Review proposes more realistic **targets of 10% stunting prevalence and 2% wasting prevalence** among children aged 0-5 by 2030. Following are the results of the simulations:

Retail prices are projected to **decline** under business-as-usual for rice, maize, and root crops (Figure 5-1). For these products, despite the trend of modest productivity growth, supply growth outpaces demand growth.

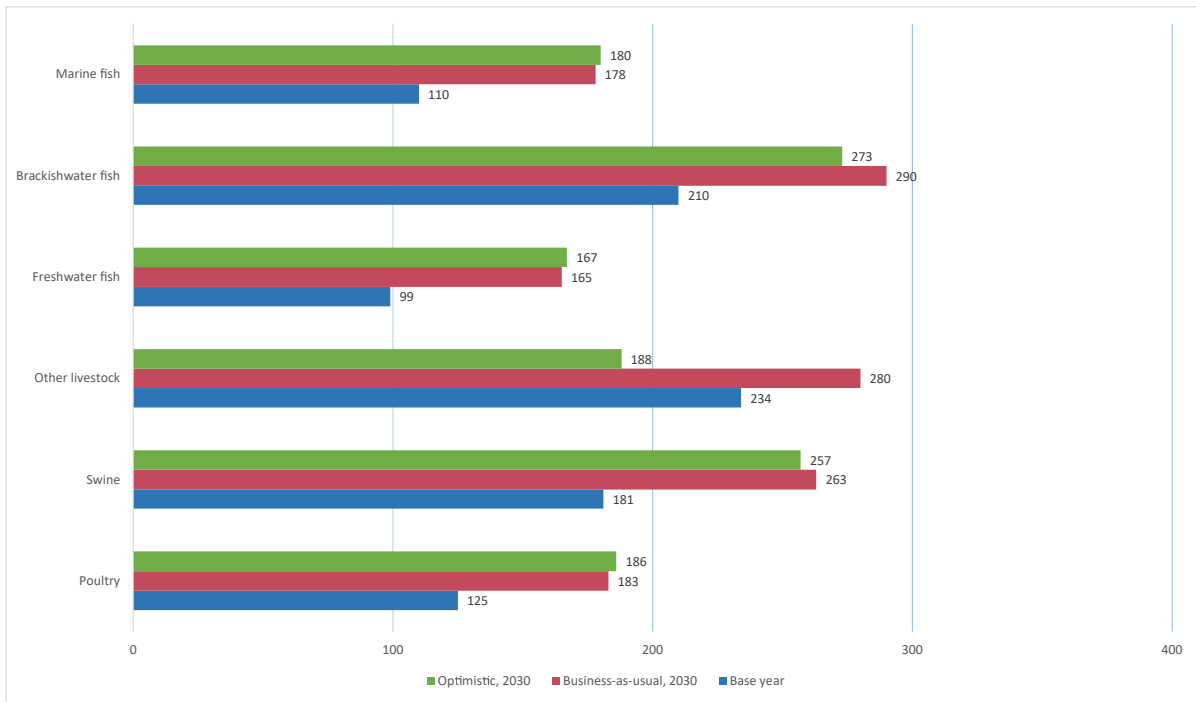
Figure 5-1: Retail Prices of Food Crops, Base Year and Scenario Year, in P/Kg



Source: AMPLE simulation.

The decline is sharper under the optimistic scenario (Figure 5-2). In the case of rice, retail prices are projected to fall by about 16% in real terms. However, retail prices for the other food products, are projected to increase under business-as-usual. The largest increases are for animal products, as well as for vegetables.

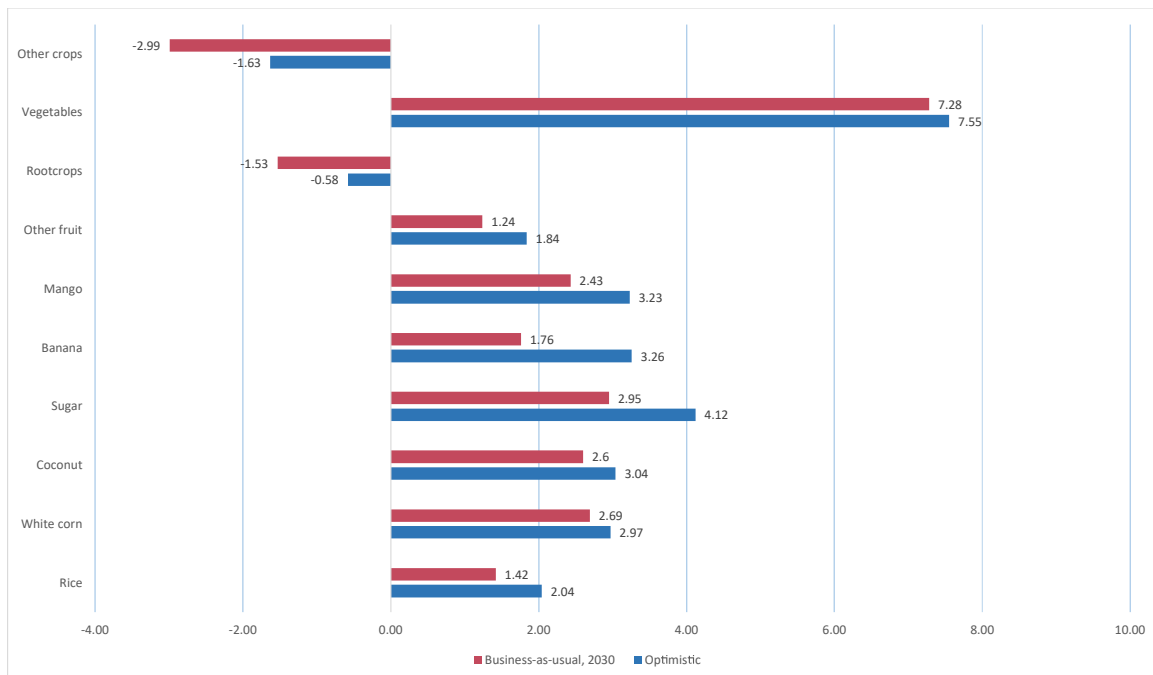
Figure 5-2: Retail Prices of Animal Products, Base Year and Scenario Year, in P/Kg



Source: AMPLE simulation.

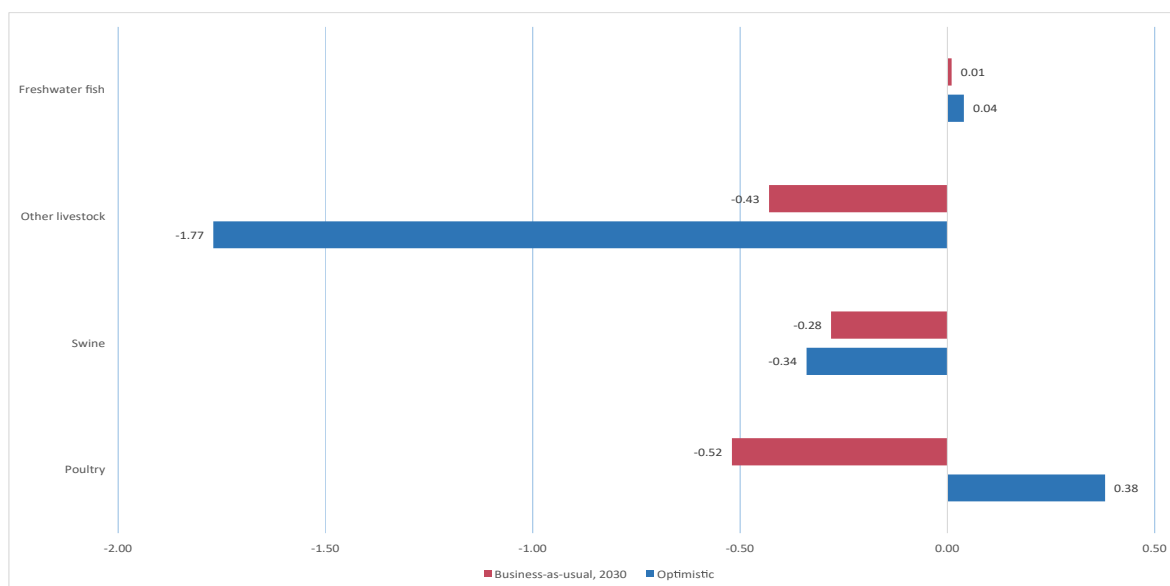
Projections for *per capita consumption* are presented in Figure 5-3 and 5-4. Notwithstanding the increases in price for sugarcane, fruits, and vegetables, per capita consumption for all food crops (except root crops) increase under business-as-usual, with the largest increases for vegetables and sugar. Note that incomes consistently increase under this scenario, hence increased purchasing power leads to greater demand for normal goods. On the other hand, per capita consumption of animal products will tend to fall (except for brackishwater fish); in this case even for normal goods. Rising relative scarcity of these products (as shown to rising prices) lead to reduced demand per household, notwithstanding the increased purchasing power.

Figure 5-3: Growth in Annual Per Capita Consumption of Food Crops, by Scenario, 2013-2030 (%)



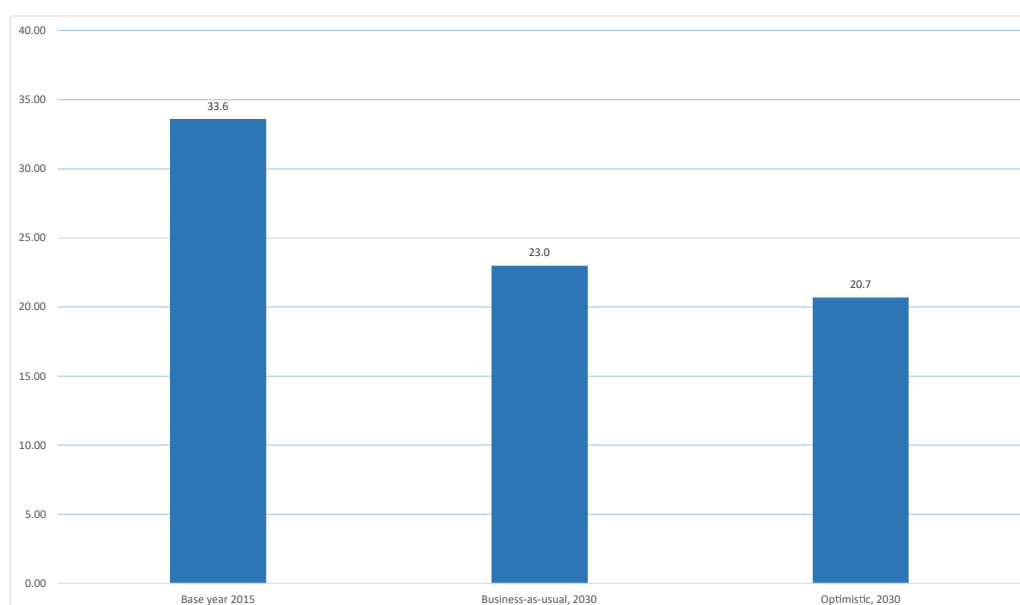
Source: AMPLE simulation.

Increases in per capita consumption tend to be larger for the optimistic scenario compared to business-as-usual while projected declines tend to be smaller (e.g. root crops). In fact in the case of poultry, per capita consumption will actually increase, contrary to the business-as-usual projection.

Figure 5-4: Growth in Per Capita Consumption of Animal Products, by Scenario, 2013-2030 (%)

Source: AMPLE simulation.

The **results for childhood stunting** are summarized in Figure 5-5. Under the business-as-usual scenario, stunting declines due to higher per capita consumption (including of vegetables). The long-term trend since 1990 of declining childhood stunting will be sustained to 2030, as household incomes continue to rise and most food prices fall. While this seems to contradict the observed increase in stunting from 2013 to 2015, the assessment should be tempered by the fact that this is a temporary setback, which may have been aggravated by idiosyncratic shocks such as disasters and food price inflation in 2013-2015. Nonetheless, the prevalence of stunting is nowhere near zero levels as envisioned under SDG 2.

Figure 5-5: Stunting Prevalence for Children 0-5, By Scenario, 2015 and 2030 (%)

Source: AMPLE simulation.

Meanwhile, for the optimistic scenario, stunting prevalence ends up lower, and significantly so (by 2.3 percentage points). Movements along long-term trends will be somewhat more pronounced as income growth and productivity improvements accelerate, and contraction in agricultural area is avoided. However, the difference is far too small to achieve the SDG 2 target.

The projections for malnutrition can be disaggregated by region (Table 5-2). In general, the regions with highest stunting rates in the base year post the largest reductions under business-as-usual, i.e. 12-13 percentage points decline for Bicol, the Visayas, Zamboanga and SOCCSKSARGEN. The reductions are larger, by 1.6 to 3.0 percentage points, under the optimistic scenario. However even in the latter case, childhood stunting still lies far above the target of under 10% stunting prevalence by 2030. The region that most closely approximates this is NCR, which will still be five percentage points above target even under the optimistic scenario.)

Table 5-1: Base Year and Projected Stunting Rates, Children 0-5, By Scenario (%)

	Base year	Business-as-Usual, 2030	Optimistic, 2030
NCR	25.2	16.7	14.9
CAR	36.8	25.3	22.8
Region I. Ilocos Region	31.5	21.3	19.1
Region II. Cagayan Region	28.8	19.7	17.7
Region III. Central Luzon	22.9	15.5	13.9
Region IV-A. CALABARZON	27.7	19.1	17.2
Region IV-B. MIMAROPA	40.7	27.9	25.1
Region V. Bicol Region	40.2	27.3	24.6
Region VI. Western Visayas	39.9	27.1	24.4
Region VII. Central Visayas	37.7	25.5	22.9
Region VIII. Eastern Visayas	42.1	28.8	25.9
Region IX. Zamboanga Peninsula	38.1	25.9	23.4
Region X. Northern Mindanao	37.0	25.2	22.7
Region XI. Davao Region	31.6	21.5	19.4
Region XII. SOCCSKSARGEN	40.2	26.6	23.8
Caraga	36.3	24.8	22.3
ARMM	45.0	30.9	27.9

In **conclusion**, the scenario analysis implies that sustaining productivity growth in agriculture, and maintaining rapid growth in per capita incomes would greatly benefit the country through improved food security and nutrition. However, these favourable economic outcomes are far from sufficient. There is a compelling need to achieve a radical break from past trends and relationships, i.e. scaling up public health investments to combat hunger and malnutrition, together with measures to dramatically improve efficiency and effectiveness of these investments.

B. Recommendations

The insights from stakeholders in the field as well as the results of the scenario analysis indicate that simply pursuing business-as-usual, or maintaining current systems and structures, will guarantee missing the SDG2 targets in 2030. Eliminating hunger and malnutrition requires the focused attention of the country, orchestrated by the policies and programs of the state, implemented by the LGUs, and targeted at households and individuals, all with participation of non-state actors. We call this **the public health approach** to SDG2, where public health is defined as the “science and art of promoting and protecting health and well-being, preventing ill-health and prolonging life through the organised efforts of society (Faculty of Public Health, 2016).”

1. Strengthen food security and nutrition planning.

The NNC (both Council and Secretariat) must strengthen its planning capability and processes to guarantee the formulation of a coherent and integrated FSN plan. As it is in the process of PPAN updating already, NNC must take guidance from SMART (Specific Measurable, Achievable, Realistic, and Time bound) goal setting, if it has not done so yet. While “SMART” is a widely acknowledged standard for planning, it was found that many countries have difficulty applying this standard to nutrition planning (IFPRI, 2016). It must ensure that PPAN considers priorities of other sectors and at the same time, advocate for the integration and consideration of PPAN’s priorities in the PDP and other sector plans and programs, particularly in agriculture, food production, education, health and social protection. As it does, NNC must **take care that PPAN and these sector plans are internally consistent, mutually reinforcing towards FSN targets and outcomes, and maximizing the convergence approach**. It is recommended that **NEDA and NNC organize a FSN planning committee or at least a separate coordination planning session**.

Localization of PPAN must be given higher degree of attention especially now that there is a new set of local executives. Localization already has a legal basis and a useful guide; it only needs some push such as in terms of raising awareness and appreciation of severity and impacts of malnutrition, hands-on guidance, and peer learning.

National and sector planning for 2017-2022 are currently on-going. It is timely to close the gaps in coordination and integration in planning.



WFP/Veejay Villafranca

2. Transition to a more open trade policy for rice and other farm products.

Eliminate long-standing rice QRs to pave the way for a more open trade regime. After three waivers granted by the WTO in 1995, 2005 and 2012, the country is obliged to eliminate quantitative restrictions on rice imports by the middle of 2017. This will entail amendment of Republic Act No. 8178, or the Agricultural Tariffication Act, which provides for control over rice importations in excess of the Minimum Access Volume committed under the WTO. While the Cabinet, particularly the Economic Cluster, has reportedly reached the decision to proceed with the elimination of rice QRs, the Department of Agriculture remains publicly opposed to the move.

The government must muster the political will to undertake this long-overdue policy reform, which will address possibly the single biggest and most pervasive cause of malnutrition in the country, and lead to more affordable prices of rice, especially for the poor. Government still has the option to protect rice farmers by **setting import tariffs** to achieve targeted levels of domestic rice price that will avoid wide displacement of high-cost farmers. Such **import tariffs may be reduced over time** as government improves

productivity and competitiveness of the sector, so that domestic rice prices eventually approach prevailing international price levels.

3. Upgrade NNC into an empowered Food Security and Nutrition Council (FSNC)

An empowered FSNC is necessary to achieve broader integration and strengthened coordination with attendant authority, and ensure cooperation across concerned agencies. Bold institutional reforms are needed in accordance with the urgency of the malnutrition problem, viz.:

- Elevate and strengthen the NNC into a FSNC to highlight the multi-dimensionality of the hunger and malnutrition problem, and the need for integrated approaches.
- Expand, tighten and **rename PPAN into Philippine Plan of Action for Food Security and Nutrition (PPAFSN)**.
- **Place the FSNC under the direct leadership and guidance of the President** and vest it adequate powers and resources to handle the FSN challenge. Global best practice indicates chairing by the Head of Government (President or Prime Minister). Leadership alternatives are the Vice-President, or a Cabinet Secretary with oversight function (e.g., Secretary of Socioeconomic Planning) or explicit *primus inter pares* status with regard to SDG 2 performance oversight and monitoring. **Strengthen the current secretariat; enhance the capability of its human resources and provide adequate financial resources.**
- Replicate FSNC at the various local levels with chairmanship vested in the respective local chief executive. Hire under competitive rules and procedures, provide secured tenures, and vest with *primus inter pares* authority a local Food Security and Nutrition Action Officer (formerly NAO). Professionalize and secure the tenures of appropriate number of BNS and caseload workers.

Qualified and professional personnel with plantilla or regular staff positions will ensure better and more stable local service delivery and provide safeguards against political patronage. Professionalization entails creation of permanent positions, rationalization of benefits and incentives commensurate to full-time engagement, standardization of qualifications, and delineation of roles towards effective teamwork among the barangay health worker, midwife, nutrition scholar, and even day care worker. The need for professionalization is heightened by the reality that most BHWs and BNSs are marginalized women (i.e. do not have high occupational and income status).

While above reforms may be implemented through executive orders, more permanent changes will require legislation towards an empowered FSNC and the upgrading of employment status and pay structure of the BNS. Bills being processed in Congresses (see Annex D) are addressing this matter. For instance, Senate Bill 712 and House Bill 256 (16th Congress), as well as HB 61, 256, 1645, and SB 111 and 712, propose the establishment of a Commission on Right to Adequate Food (CRAF) that would have similar administrative powers as in the proposed FSNC but would have legal powers that are mainly programmatic in nature. The FSNC could be the transition mechanism, which seems necessary at this time to avoid a political minefield and maintain focus on attaining SDG 2 while ensuring synergies with the other SDGs, such as SDG 1 (No poverty), SDG 3 (Good health), and SDG 5 (Gender equality). Legislation of programs and funding towards ending hunger and malnutrition are most welcome; however given that these bills have been pending for several years now, the more practical and actionable approach will be to undertake institutional reforms and programmatic interventions within the Executive branch, while securing support from Congress for corresponding funds from the annual budget.

4. Integrate actions of the various sector agencies and LGUs towards achieving SDG 2.

Achieving scaled-up nutrition involves making explicit the contributions of each sector to nutrition improvement (SUN Country Report, 2014). SMART planning points the way to achieve this, by **identifying key performance indicators (KPIs)**, which are crucial to implementing the accountability mechanism and achieving convergence. A major point of convergence is leveraging social protection, including disaster response and rehabilitation. For instance, the Family Development Sessions (FDSs) of the 4Ps should be designed to impart, on a systematic and results-oriented basis, preparation of nutritious food, greater

dietary diversity, and promotion of exclusive breastfeeding for the first six months and appropriate complementary feeding practices.

In view of climate change, climate change adaptation – ***disaster risk reduction and management (CCA – DRRM) strategies must integrate protection of food security and malnutrition*** in all stages, i.e. risk reduction, response, rehabilitation, and recovery. For instance, households vulnerable to or already displaced by conflict or disaster, or those in the recovery and rehabilitation phase, must be enrolled in the caseload of barangay health and nutrition workers. The rehabilitation phase in particular should not be neglected, owing to persistence in livelihood impact of the typhoon, disproportionately falling on female infant children. In view of the threats posed by climate-related events to food access and affordability, convergent interventions from agencies responsible for social protection, disaster management, environmental resources, and food production, are critical for attaining food security.

As agricultural livelihood especially prone to climate shocks, the government has been aggressively expanding agricultural insurance based on 100% premium subsidy. Certainly expanding insurance for agriculture is the appropriate direction, though careful review along the lines indicated in Reyes et al (2015), viz: proper structuring of insurance cover and premium; streamlining of the procedure for claims processing; and careful beneficiary selection and design of the premium payment towards financial sustainability.

Another opportunity for convergence is Gender and Development (GAD) budgeting. Mandatory GAD spending is an excellent social protection policy but the programs need to be expanded and monitored to ensure that resources are actually spent for the practical and strategic needs of women, especially during economic shocks and disasters. For example, the ***GAD budget could be used as leverage for tapping the disaster risk and reduction resources*** lodged with the LGUs DRRM Council as well as the social welfare and development budget for livelihood, employment assistance, etc. in disaster areas.

LGUs must integrate SDG 2 into Local Development Plans to ensure ending hunger and malnutrition in each locality on or before 2030, by close monitoring and evaluation of outcomes, implementation of nutrition programs and projects, and budgeting accordingly.

5. Gear up food systems toward food affordability, increased incomes and dietary diversity for poor and food insecure households.

A responsive food system is one that promotes food security through production and marketing arrangements that promote consumption of nutritious food, and makes farming commercially viable for farmers so that they can be more encouraged to increase productivity, gain better incomes from farming and be able to afford adequate and nutritious food. A quick “win” for establishing a responsive food system – and one that exemplifies as well the convergence strategy – is to ***link small farmers, as suppliers of food, directly to nutrition programs, most notably supplementary feeding, and nutrition markets, e.g. government hospitals and other facilities***. This follows the model of Brazil in bringing convergence between agriculture, food security, and nutrition. A local pilot scheme, the Partnership Against Hunger and Poverty (Box 5-1), demonstrates that this model can be replicated successfully in the Philippine setting. Such an arrangement will be greatly facilitated by the ***amendment of the procurement law to recognize the participation of small farmers in government food programs***.

Responsive food systems involve far more than linking farmers to public procurement. Generally ***sustainable food systems require connections among private sector actors***, involving the formation of backward and forward linkages to inputs, processing, logistics, and marketing. Linkages are facilitated by reduced costs throughout the system, increased farm productivity, logistical efficiencies, and control of postharvest losses. Unfair trade practices and abuse of dominant positions can be addressed by vigorous ***application of competition policy under the Competition Act of 2015*** (RA 10667), together with ***encouragement and further expansion of women’s participation in the agricultural value chain***, i.e. as food producers, processors, and traders.

Box 5-1 The Partnership Against Hunger and Poverty (PAHP)

PAHP started to be implemented in 2014 through the alignment of programs of DSWD on hunger mitigation, DA on food self-sufficiency, and DAR on poverty alleviation among agrarian reform communities (ARCs). The PAHP primarily aims to enhance food security and increase farm incomes by improving small farm productivity and ensuring markets for products; and to improve nutrition by ensuring continuous supply of cheaper and nutritive food items to the community especially to children in day care centers. It is thus designed to connect the supply and demand sides, i.e. channeling farm products towards the communities and government users such as day care centers and hospitals. The partnerships are primarily among families of preschoolers, farmers, fisherfolks and ARCs, as well as with FAO for technical assistance to improve agriculture and fisheries production and natural resource management; WFP for rehabilitation support of undernourished children and production skills enhancement; and the Government of Brazil, which shares Brazil's experience from its successful Zero Hunger Program.

One of PAHP's pilot areas is the 3rd District of Camarines Sur, which covers Naga city, where some successes have been noted in terms of higher farm yields and sales as well as more stable supply of vegetables for feeding in day care centers. While start-up challenges as well as the impacts of El Niño limited PAHP's successes, it has progressed relatively quickly and attained most of its objectives. This has been largely due to the full support of the abovementioned program partners, the LGUs, the private sector (e.g. Shell Foundation) and local champions and shepherds (e.g. then Congresswoman Ma. Leonor Robredo in Naga City). An area of success is PAHP's expansion of its coverage beyond the pilot areas and the broader set of farmer organizations (i.e. beyond ARCs and ARBs) that are now part of the program.

Integral to the creation of responsive food systems is *managing climate-related threats to stability and diversity of food systems*. This will require "climate-smart" interventions such as watershed management, water-saving technologies, development of drought-resilient varieties, and timely weather information transmitted to and interpreted for farmers.

Lastly, the government must *adopt food policies oriented towards gaining access to lower food prices in the world market (e.g. liberalized rice importation)*. Along with this, *provide safety nets* for farm households that are vulnerable to possible dislocation (e.g. rice farmers in marginal lands) (Briones and Tolin, 2015). Government can play a more meaningful role in food security by responding to supply and price shocks using buffer stocks of the key staple (rice), and other foodstuffs.

6. Achieve responsive food systems, leverage social protection, and incentivize private sector engagement in FSN.

The private sector can play a key role in achieving SDG 2 through *increased investments in more efficient food production and distribution* that can lead to increased availability and affordability of food. For both responsive food systems and social protection, the role of the private sector should be reconfigured towards expanding participation and engagement in the development and implementation of the PPAFSN. The government must study and *consider incentives to achieve this desired meaningful engagement*. Among others, the private sector as defined in this review, can engage in i) efficient commercial food production for more affordable food, improved livelihoods and diversified diets; ii) health care and nutrition services; and iii) food processing, fortification, marketing, and promoting technologies for convenient yet nutritious food. Since consumption of food commodities is expected to increase under the optimistic scenario, commercial food production needs to be ramped up in an efficient way to meet this rising demand. An area worth looking at is the local production of the nutrition-packed Ready-to-Use Therapeutic Food (RUTF) for severely malnourished. These are imported because the cost of producing these locally is uncompetitive. A known pharmaceutical company is exploring the commercial production of RUTFs. If this becomes successful, there may evolve a market for nutrition-related products in the future.

Further to possible incentives, **the investment environment must be improved** through, among others: i) improvement of infrastructure in agriculture to aid in increasing productivity in food production, ii) improvements in logistics infrastructure to make transportation of food more economical, and iii) promotion of the production of nutritious food.

Public-private partnerships (PPP) must be harnessed to address the rural infrastructure backlog. The DA has already identified priority agriculture infrastructure projects that will be constructed through PPP arrangements (Alcala, 2010). These projects include: Establishment of Cold Chain Systems Covering Strategic Areas in the Philippines, Establishment of Grains Centrals with Bulk Handling Facility, Logistics Support on the Agri-Fishery Products Supply Chain, and Irrigation Projects (with Hydro-Power Component), among others. **Facilitation of PPPs through further simplification of requirements and procedures must be a priority.**



Remove bottlenecks to efficient transportation and logistical operations through the pursuit of the Philippines Multimodal Transportation and Logistics Roadmap in cooperation with the private sector and pursue identified projects through PPP arrangements.

Promote the production of nutritious food. Republic Act No. 10611 (Strengthening the Philippine Food Safety Regulatory System in 2013) may probably be expanded to also encourage and regulate the contents of food. As earlier pointed out, Kolc'ic (2012) tags the Philippines as suffering from the double burden of malnutrition and over-nutrition. Measures need to be taken to **encourage the private sector to produce more nutritious food** to counteract the increasing popularity of foods considered unhealthy or detrimental to health. The proposal of the Department of Finance to levy taxes on foods high in sugar and unhealthy snack foods¹ might be a good approach to address malnutrition. At the very least, **this proposal must be studied vis-à-vis the costs of malnutrition to personal, social and economic development.**

NNC must document and publicize key lessons from successful experiences of the private sector to encourage wider participation in FSN work and provide references for designing FSN programs and projects. An example of NGO work in a very poor barangay is provided in Box 5-2.

Over all, the Review Team gathered the following lessons from the field:

- Continuing education or orientation especially for community members, local chief executives and mothers.
- Values, spiritual and leadership formation, which are key elements in most NGO programs; and applying these values in internally-developed and managed community projects such as establishing financing and credit facilities (e.g. World Vision work in Baseco).
- Tapping local community enablers and champions (community leaders) especially among women/mothers. In particular, the government health workers such as the BNS and BHW are often based in the community and are overwhelmingly female.
- Incorporation of local knowledge, including community traditions in food production and distribution, as basis for site-specific, social-group specific program design.

¹ <https://business.inquirer.net/214212/new-tax-to-cover-junk-food-soft-drinks>

Box 5-2 NGOs in Nutrition

Barangay Townsite is the poblacion or town center of Maluso, a predominantly Christian town in a Muslim province. The barangay has 5,000 residents. In the 1990s, the Christian Children's Fund (CCF) started a nutrition program in the barangay, which consisted of a feeding program and nutrition education for families. CCF organized a Community Health Action Team (CHAT) that consists of trained volunteers who propagated the barangay nutrition program. Fast forward 20 years later, the Barangay Captain, who was one of the staff members of CCF in the barangay, has sustained the program that his NGO started. The barangay now has three BHWs and one BNS who comprise the CHAT, which has carried on the functions of the CHAT that was established by CCF in Bgy. Townsite.

The barangay has a fully functional Barangay Nutrition Council (BNC), which plans the village's nutrition program and oversees the work of the CHAT. The BNS documents the progress of program implementation and reports these to the BNC. The BNC is headed by the Municipal Health Officer so its programs are part of the Municipal Development Plan.

The BNC, through the CHAT, actively pursues Operation Timbang Plus and closely monitors weight and nutrition conditions of children, especially the identified malnourished or underweight children. In conjunction with this is a regular feeding program where identified underweight and stunted children are provided nutritious food and given food supplements. CCF's vegetable garden has also been maintained by the barangay. Since it has been managed for more than 20 years, the project is now producing an abundant amount of vegetables for the residents of the barangay. The CHAT continues to provide nutrition education at the household level. As expected, the residents continue to practice the nutrition planning that has been propagated in their village in the last two decades.

Because of all of these accomplishments, Bgy. Townsite has received several awards of recognition. There is a section of the barangay hall that houses all the awards that it has received. Bgy. Townsite is the 'odd one out' in the province of Basilan. Despite the nutrition challenges it still faces, mainly due to limited resources, it is in itself an island of good nutrition governance that can teach the whole province a lot of valuable lessons in nutrition planning and management. It is a ray of hope in an island of near desperation.

Civil society organizations may assist government in facilitating and improving private sector participation as part of their work and advocacy to promote better food security and nutrition. While NGOs are already helping government, for instance through their representation in NNC, the area for assistance and cooperation remains wide. One of the NGO in NNC is the Philippine Coalition of Advocates for Nutrition Security, Inc. (PhilCAN), an advocacy network for nutrition security that was founded by 10 local and international NGOs working in the country. PhilCAN is at the forefront of advocacy for nutrition security and has increased attention of stakeholders on agricultural production. It participated in this Strategic Review through the Policy Reference Group. PhilCAN could engage the corporate sector in the Philippines in **starting a local version of the Access to Nutrition Index (ATNI) as means to objectively assess and improve the contributions of the private sector in addressing the nutrition challenges**. ATNI aims to encourage private companies to increase access to health-promoting products and also to responsibly exercise their influence on consumers' choices and behavior. A Philippine ATNI would benchmark the efforts of local food manufacturing companies to produce nutritious food. This benchmark could encourage improvements in production, more participation in the industry, and promote public and commercial images that could expand trust from consumers resulting in higher profits. ATNI was established in 2013 by the Access to Nutrition Foundation (ATNF), an independent non-profit organization dedicated to improving private sector participation in promoting nutrition globally.²

NGOs must be supported in agro-enterprise development (AED), which seeks to free farmers from the disadvantageous marketing system in agriculture. The approach, pioneered by Catholic Relief Services trains small farmers to create scale in production and marketing so that they can sell their products directly

to institutional buyers and capture more value from the value chain. AED is already practiced in at least 58 provinces by government agencies, big companies and civil society organizations (Jimena, 2016). AED holds a lot of promise in linking small farmers to the value chain which, in the process, can make these chains more efficient and inclusive and could result in better food prices, increased incomes for small farmers, decrease in rural poverty, and improvements in local economies. *The support could be in the form of incentives and technical and financial resources.*

7. Establish accountability mechanisms at the national and local levels.

Establish key performance indicators (KPIs) and a system of rewards for their achievements and penalties for deviations. Monitoring for accountability (see cases in Box 5-3) can be anchored on an enhanced OPT Plus system, an annual nationwide activity coordinated by the NNC that measures preschool children's weights and heights in each barangay. Enhancing the OPT requires the availability of proper equipment, standardized and accurate measurements, the establishment of more efficient reporting tools, validation of baseline indicators and metrics, ensuring consistency between OPT and the National Nutrition Survey (NNS), and well-trained BNS and other health workers. Through monitoring, the LGU becomes accountable both for households of special concern (e.g. with children who are clinically stunted or wasted), as well as overall trends in food security and nutrition.

Furthermore, data capture should be expanded to include other important household characteristics e.g. whether the family is dependent on farming or fishing, enrolled in 4Ps or livelihood programs, etc., to anticipate their special needs (i.e. lean agricultural season, incidence of drought), or feedback on the efficacy of on-going interventions. The data must be analysed and presented in a coherent manner to the local chief executive for proper guidance towards decision-making. This should go beyond the usual report of trends over time.

Develop an SDG 2 report card at the local and national levels using the OPT Plus, NNS, and related indicators, e.g. the CBMS, APIS, etc. This is a tool to monitor progress of implementation and inform the accountability system and the public at large. Also, *link the Report Card to the grant of Seal of Good Governance on human development outcomes.* At the national level this involves integrating key performance indicators for FSN into regular performance evaluation systems (e.g. the Performance-Based Incentive System). Box 5-3 presents cases that demonstrate the dramatic changes made possible by accountability mechanisms that are anchored on M&E systems.

Box 5-3 Successful Cases of Accountability for Outcomes

In the early 2000s, **Mandaluyong City** ranked second to the highest in malnutrition prevalence among Metro Manila's 16 cities. Currently, its malnutrition prevalence is down to 0.86%, making it the best nutrition performer in NCR. In 2015, it received the Consistent Regional Winner in Nutrition (CROWN) award for exemplary performance in nutrition program management and service delivery.

Alarmed by the poor nutrition performance of the city in 2001, the CNAO mobilized the Mandaluyong City Nutrition Committee, with the Mayor as Chairperson, to ensure the improvement of nutrition condition especially of the city's most needy and vulnerable constituents. It includes partners and stakeholders from civil society and the private sector like Liga sa Barangay, Ciara Marie Foundation or the Mandaluyong Breast Patrol, Soroptimist International and so many others. Tri-partite partnerships, then, were part of the convergence of policies, programs and service delivery for health and nutrition. The MCNC is heavily supported by the other programs and development initiatives of the city.

The City Nutrition and Action Plan has become the bible of the health and nutrition personnel, stakeholders and volunteers of the city government and all its 27 barangays, which also developed

¹ ATNF, <https://www.accesstonutrition.org/>

their own Barangay Nutrition Action Plans. Following an integrated life-cycle approach, the city implemented a set of programs/initiatives that include, among others: Breastfeeding Patrol Group; ERPATS (fathers) for Breastfeeding; Garantisadong Pambuntis Plus (Guaranteed Safe Pregnancy Plus); Batang Ina-Ang Munting Anghel sa Mandaluyong (Child Mother, Little Angel in Mandaluyong); Oplan Dagdag Timbang; Infant and Child Feeding Program (Balik Sigla,, Nutricake, Kusinero Festival, Busog Lusog Caravan and Veggie Caravan sa Eskwelahan); Manda-Run and I Run for Nutrition; Kap's Amazing Talent; Family Big Day; and Millennium Baby Project. Documentation, reporting and assessment of program activities are integral to the daily routine of FSN programmes. Data sets/information bases (e.g., CBMS, monthly/quarterly monitoring reports) are often discussed and reflected by program managers, service providers and volunteers. The lessons and reflections from these discussions are used to revise and improve the delivery of their programs.

Malnutrition was more the norm than exception in **Naga City** in the 1980s. More than three quarters (about 9,200) of pre-school children were underweight in 1990, about 56.8% of these were severely underweight while 5.1% were overweight. By 1995, the number of underweight children was dramatically cut by about a third and the number of pre-school children with normal weight ballooned to 63.7% of total. The nutritional status of children in Naga City steadily improved since then that by 2005, the proportion of underweight pre-school children went down to single-digit level. By 2009, the proportion has gone below 5%, a level maintained to the present. In 2015, the combined underweight totaled 909 children or a low 3.1% of total.

Planning is based on knowledge generated through close monitoring and evaluation of nutrition records, results of CBMS census, and close consultation with stakeholders. Based on its CNAP, the City formulated nutrition programmes that cater to each actor and section of the nutrition value chain from conception to parenthood. Among these are: Home and Community Food Production; Partnership Against Hunger Program; Pre-Marriage Counseling and One-on-One Counseling on Nutrition and Family Planning; Nutrition Essential Maternal and Child Health Services; Breastfeeding program; Food Assistance that includes, among others, Infant and Young Child Feeding in schools and day care centers; Nutri-Nanay that rehabilitates malnourished pregnant women; Nutri-Ataman that cares for severely malnourished children; Nutri-Dunong feeds wasted and severely wasted children with special kind of Nutri-Mix; Food fortification and micronutrient supplementation for both mother and child; Nutrition Education for all members in the family; Livelihood Program that includes assistance in financing, product development, marketing, etc.; Enabling programs, e.g. manpower development, planning workshops, annual evaluation of nutrition programs, monitoring the functionality of BNCs, maintenance and strengthening of the CNC, etc.

Stakeholders are always encouraged to participate in the programs. For instance, the Naga City Public Market Stallholders' Federation is managing the lactation station at the People's Mall. The federation's trained market stall owners man the station, assist in breastfeeding, and counsel mothers on breastfeeding and other mothering issues. Other examples are the Metro Naga Chamber of Commerce and Industry and Naga City Doctors Association, which provide support in terms of participation and contributions to nutrition programs.

8. Mobilize and leverage resource from all sources

Leverage public funds to mobilize private sector resources. The private sector as defined in this review mobilizes and utilizes substantial resources for promoting good nutrition and eradication of malnutrition. The NNC should **map and monitor for outcomes the major private sector programs** and disseminate outputs of these activities to program actors to encourage coordination and partnerships. **The government may look at supplementing or complementing successful private sector programs** as means to expand its own programs even with limited funds.

Establish an End Hunger Fund (EHF) that ensures stable financing for FSN programs and sustains a campaign for achieving SDG 2.

The quest to end hunger entails resources. Considering the gravity of the problem and the tall order of SDG 2, drastic measures become necessary. This proposal aims to *effectively mobilize and efficiently utilize resources for FSN and run a sustained campaign to raise awareness and encourage action* for improving FSN, all towards getting closer to the attainment of SDG 2 targets. As starting point for review and fine-tuning by concerned authorities, the following initial sketch of the structure and operational scheme are proposed.

- The EHF will be a single Fund with three tiers according to fund source: Tier 1 - public funds, Tier 2 - donor funds, and Tier 3 - crowd funds. It is a time-bound Fund cum Campaign that has the main objective of attaining, even surpassing some, SDG 2 targets. The SDG implementation is running on its second year and the EHF establishment could take a year or so (but perhaps initial projects may be funded through existing programs and allocations).
- EHF can fund interventions identified in the BPAFSN, MPAFSN, or CPAFSN such as:
 - Feeding programs (including CMAM); purchase of fortified foods
 - Capacity building (trainings and certification) for Midwives, BNS and BHW
 - First 1,000 Days activities
 - Water Supply, Sanitation, and Hygiene promotion (WASH), e.g. potable water systems and toilets, which are “low hanging fruits” for health and nutrition
 - Livelihood programs aimed at food insecure households
 - Value chain interventions promoting nutrition-sensitive agriculture

There could also be a negative list (e.g. similar to one drawn up for open menu programs such as KALAHI-CIDSS) that may include: road construction into protected areas; purchase or compensation of land; lending of project funds; and recurrent expenditures such as salaries and construction or repair of government facilities.

- **Tier 1** consists of public funds that are dedicated to LGUs of needy (usually 3rd to 6th class) municipalities to strengthen their frontline service delivery in nutrition, agriculture, welfare, and disaster management. It would allow LGUs the flexibility to design and organize their hunger and malnutrition campaigns within a menu of options on an area or community-specific basis. This will avoid the tendency towards top-down, one-size-fits-all programming, and incentivize bottom-up FSN planning. Tier 1 involves the competitive access of a block grant from public funds, a scheme that already has legal precedent in the Bottom-up Budgeting mechanism. It could run four 3-year cycles from 2018 (the realistic start-up year) to 2029 (the penultimate year of the SDGs). The initial estimate (Box 5-4) of the size the block fund is P35 billion/year. See details of possible structure and procedures of Tier 1 in Box 5-4.

Box 5-4 **Possible Structure and Procedures for Tier 1 of EHF**

- Possible priority criteria: more than 5% prevalence of 0-5 child wasting; or 0-5 stunting prevalence above 20%; or have high number of households identified as vulnerable to malnutrition due to poverty, conflict, or disaster. Once qualified, the LGUs must prepare proposals based on the menu of allowable projects and submit proposals for review.
- LGUs with funded projects will be accountable for household level outcomes indicated in the proposals as part of the SDG Report Card. The national government (NNC) will publish the achievements use these in assessment for the award of Seal of Good Local Governance. The performance indicators for expenditures could be along these lines (for study): Number of children 0-2 with stunting reduced by 20%, and 0-5 wasting to below 2%, within one cycle of implementation. Number of 0-2 children with stunting reduced by another 20%, and maintaining 0-5 wasting to below 2%, over two cycles of implementation. Achieving under 10% stunting prevalence and under 2% wasting on the final cycle.

C. Conclusion

Hunger and malnutrition are arguably the most serious and yet preventable public health emergency of our time. Allowing the problem to fester so long has led to the tragedy of a lost generation of children condemned to lifelong disadvantages from past chronic malnutrition. The country cannot afford to continue on this path, and miss the golden opportunity of its looming “demographic sweet spot” by consigning a substantial portion of the next generation of working-age Filipinos to mediocrity and low productivity. Clearly, the solutions involve a sustained collective effort of all stakeholders working in a network of alliances and partnerships around the common goal of ending hunger in the Philippines, especially among poor, vulnerable and marginalized communities. It is hoped that this Review has helped point out the key lessons, approaches and strategies towards ensuring that this lost generation will be the last.

Annex A

The Agricultural Model for Policy Evaluation (AMPLE)

The AMPLE is a multi-market partial equilibrium model providing a comprehensive representation of Philippine agriculture. It is able to represent impact of the various prospects and challenges facing agriculture, such as population growth, increased demand from consumers and world markets, changes in productivity, availability of agricultural land, and global market integration. The agricultural goods in AMPLE are shown in the Table below. AMPLE covers 11 crops, three livestock and poultry products, and four aquatic products, for a total of 18 commodities. Paddy rice is divided into two production systems, namely rainfed and irrigated; Freshwater fish as well as Marine fish are likewise divided into two production systems, namely capture and aquaculture. Each of the goods is converted into a final form for use on the demand side. AMPLE projections include for each commodity: production, consumption, imports, exports, and prices, at the producer, wholesale, and retail level. Prices are in real terms at base year levels (2013 = 100). World prices however are exogenous to the model.

Commodities in the AMPLE

		Primary form/system	Final form
Crops	1.	Paddy rice (Rainfed, irrigated)	Milled rice
	2.	White maize	White maize
	3.	Yellow maize	Yellow maize
	4.	Coconut	Copra
	5.	Sugarcane	Raw sugar
	6.	Root crops	Root crops
	7.	Banana	Banana
	8.	Mango	Mango
	9.	Other fruits	Other fruits
	10.	Vegetables	Vegetables
	11.	Other crops	Other crops
Livestock and poultry	12.	Swine	Pork
	13.	Poultry	Poultry meat
	14.	Other livestock and dairy	Other meat and dairy
Aquatic products	15.	Freshwater fish (Capture, Aquaculture)	Freshwater fish
	16.	Brackishwater fish	Brackishwater fish
	17.	Seaweed	Processed seaweed
	18.	Marine fish (Capture, Aquaculture)	Marine fish

A particular concern in making projections over the long run is climate change. Climate change impacts can be incorporated into AMPLE in a limited way using the trend rate of productivity growth in each of the 18 primary commodities, together with the trend rate of change in aggregate agricultural area.

For this Strategic Review, the AMPLE was extended by incorporating a nutrition sub-module with child stunting as the indicator. Stunting is a broad spectrum condition, prevention of which entails a holistic and sustained approach to prenatal and child health and dietary intake, and is therefore adopted as focal point for food security and nutrition. To obtain the nutrition sub-module, statistical analysis was done to relate childhood stunting indicators to per capita income and food prices, by region. Projections on per capita GDP and prices were applied by region on the sub-module to generate projections on childhood stunting rate. Estimates are available by region, but can be aggregated up to the national level.

A severe limitation of the analysis unfortunately is that it is unable to quantify the impact of direct interventions on hunger and malnutrition; thus only the effects of changes in household purchasing power (i.e. changes in prices and incomes) are incorporated. Moreover, it is highly aggregative, with no specification of supply-demand interactions below the national level. Nonetheless, the results will perhaps remain useful for understanding the likely trends in malnutrition to 2030, as well as the remaining challenge for direct

interventions to bridge the gap, if any, between likely and intended malnutrition targets.

The **business-as-usual scenario** represents the most likely case when current trends continue and the current policy and programme environment is maintained. GDP growth is set at its long term average (rather than the high levels achieved in the past six years). Conservative assumptions are posited for productivity growth and agricultural land availability in view of resource degradation and climate change (see Chapter 2).

The **optimistic scenario** adopts the structure of relationships between malnutrition and proximate variables (income and prices). However it posits more optimistic futures: GDP growth is projected to sustain its recent performance; investments are made to counteract climate change and resource degradation, accelerating productivity growth and land availability relative to the baseline. Food security policy is reformed to reflect food affordability.

More specifically the business-as-usual scenario involves the following assumptions:

- GDP growth is 3.8% per year to 2030 (the average growth rate from 1990 to 2009);
- Population is assumed to grow based on PSA projections;
- Growth in agricultural area is zero until 2017, then contracts at 1% per year until 2030;
- Trend productivity growth among crops is 1% per year; the exception is coconut which suffers a 1% productivity drop in 2013-2015 due to disease and drought;
- Trend productivity growth in livestock production is the same as crops until 2020; from 2021 onward, growth will be zero for poultry and aquaculture, and slightly negative (-0.5%) for capture fisheries and swine - the latter suffering from disease burden under climate change;
- World prices move based on trends adopted in Briones (2016);
- Tariff and non-tariff barriers remain unchanged.

Meanwhile the optimistic scenario involves the following changes from business-as-usual:

- GDP growth is 6.3% per year to 2030 - this is closer to the growth average of 2010 to 2015, as well as the Ambisyon 2040 forecast;
- Agricultural area harvested neither expands nor contracts over the projection period;
- Trend productivity growth in crops, poultry, and aquaculture accelerates to 1.5% per year from 2017 onward
- The government abandons the rice QR and converts to tariffs in conformity with WTO commitments.

A data set was compiled as a regional panel involving:

- Stunting rates of children 0-5 (stuntrate): www.philfsis.psa.gov.ph
- Per capita GDP (grdp): from PSA (2016)
- Prices of major food commodities: rice, banana, eggplant, chicken, beef, pork, milkfish, tilapia, and roundscad (respectively: rice, ban, eggpl, chick, beef, pork, bangus, tila, gg): from PSA (2016)
- Year

We ran a fixed effects regression in logs for all variables except year, for the period 2000 - 2013 (in years when stunting rates are available at the regional level). The result is as follows:

```

Fixed-effects (within) regression      Number of obs      =      110
Group variable: regn                  Number of groups   =       17

R-sq:  within = 0.4473                  Obs per group: min =       4
      between = 0.3436                               avg =      6.5
      overall  = 0.3466                               max =       7

                                          F(11, 82)         =      6.03
corr(u_i, Xb) = -0.0595                 Prob > F          =      0.0000
    
```

lnstuntrate	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
year	.0122783	.0072028	1.70	0.092	-.0020503	.0266069
lngrdp	-.0376979	.0670598	-0.56	0.576	-.1711012	.0957054
lnrice	.5964695	.2507936	2.38	0.020	.0975611	1.095378
lnban	.0720112	.0884297	0.81	0.418	-.1039036	.247926
lneggpl	.2620484	.1781472	1.47	0.145	-.0923432	.6164399
lnchick	.1475295	.3967558	0.37	0.711	-.6417443	.9368032
lnbeef	.1366035	.2621192	0.52	0.604	-.3848351	.6580421
lnpork	-.8750416	.409021	-2.14	0.035	-1.688715	-.0613685
lnbangus	.5778695	.2626538	2.20	0.031	.0553675	1.100372
lnтила	-.1778403	.1342797	-1.32	0.189	-.4449655	.0892848
lngg	-.4210034	.1921634	-2.19	0.031	-.8032777	-.0387291
_cons	-20.90817	14.92448	-1.40	0.165	-50.59772	8.781379
sigma_u	.15419197					
sigma_e	.08985955					
rho	.74647526	(fraction of variance due to u_i)				

```

F test that all u_i=0:      F(16, 82) =      10.39      Prob > F = 0.0000
    
```

Both log price of rice and price of milkfish have the expected positive coefficient. The regression though leaves much to be desired: per capita GDP has a negative coefficient, which is also consistent with expectation; however the coefficient is not statistically significant. Similarly, log price of pork and roundscad have a negative coefficient: stunting rate increase when price of pork and roundscad are lower. The regression seems to be capturing the effect of omitted variables, i.e. in regions where swine and roundscad are locally abundant (respectively, urbanized regions where swine raising is widespread, or more deprived regions with large fishing communities), children tend to be better nourished. The regression is therefore preliminary, but already provides some disturbing evidence linking declining affordability of the key staple to child malnutrition in the Philippines.

Annex B

Consultative Process of the Strategic Review

Policy Reference Group

The Policy Reference Group (PRG), composed of experts and key decision-makers from government, private sector, civil society, international development partners, subject matter experts, and legislature which has been convened, is tasked to review, discuss and validate research findings and recommendations. It is also envisioned to be a key mechanism for policy advocacy.

The PRG Members are as follows:

Government	1. Ma. Leonor G. Robredo, Vice President and Chair of the PRG
	2. Ernesto Pernia, Secretary, Socio-economic Planning
	3. Francis Panglilinan, Senator
Private sector	4. Miguel Rene Dominguez, Alson's Agriculture
	5. Guillermo Luz, Makati Business Club/National Competitiveness Council
NGO	6. Kathrine Yee and Dyan Aimee Rodriguez, Convenors of the Philippine Coalition of Advocates for Nutrition Security (PhilCAN)
Donor agencies	7. Mahfuzuddin Ahmed, Advisor, Asian Development Bank
	8. Pablo Acosta, Senior Economist, World Bank
	9. Bruce Totentino, Deputy Director General, International Rice Research Institute
Academe/Media	10. Cielito F. Habito, Professor, Ateneo de Manila University/Columnist, Philippine Daily Inquirer

Stakeholders' Consultation

On September 9, 2016 a Stakeholder's Consultation Meeting was conducted to solicit feedback on the Strategic Review's preliminary findings and tentative recommendations on how best to achieve food security and eradicate malnutrition. Over 80 participants representing different sectors including national government agencies, local government units, civil society organizations, professional groups, the academe, the legislature, and UN institutions, were gathered at the New World Hotel in Makati City during the event.

Field Case Studies

FGDs were conducted in six different locations throughout the country to generate knowledge and data on key factors and drivers that lead to food security and good and bad nutrition at the regional, provincial, city/municipal, and even household levels. The FGDs were mostly participated by representatives from the local agriculture, health and nutrition, and social development offices as well as local residents who are the recipients of government FSN programs. The sites visited are presented in depth in Annex C.

Climate Change Experts' Consultation. In order to factor in the impacts of changing climate scenarios in food production, agricultural practices, and food security in general, insights were gathered from a panel of climate change experts including:

1. Dr. Rosa T. Perez, Senior Research Fellow at the Manila Observatory, and 2007 Nobel Peace Prize Co-winner
2. Dr. Lucille Elna P. de Guzman, University Researcher at the University of the Philippines - Los Banos
3. Rio Marasigan, Information Officer at DOST-Project NOAH (Nationwide Operational Assessment of Hazards)
4. Jose Maria Lorenzo Tan
5. Ben Malayang, III

Annex C

Field Study Notes

1. Metro Manila: BASECO Compound ¹

Baseco is located in South Harbor, Port Area, City of Manila, on an area around 52 ha, hosting a population of 51,000 in 2010. Initially settled by fisherfolk from Visayas, Baseco or Bataan Shipyard and Engineering Company, was then increasingly occupied by relatives of caretakers and the stay-in guards of the shipping companies. Informal settlement demolitions in Quezon City and other parts of Metro Manila between 1990 and 1993 accelerated the growth of the barangay as it became the government's relocation site for informal settlers. High population density, inadequate sanitation, and lack of decent livelihoods, has made the slum area a hotspot of poverty, disease, and malnutrition. The situation was exacerbated by a fire in 2010 that destroyed 3,500 homes.

A number of NGOs have been working with the Baseco community and LGUs to address education, health, and nutrition needs of its members. The City government has an on-going housing and resettlement project. In 2012, Caritas provided a six month supplementary feeding programme targeting 724 malnourished children. Due to the proliferation of external assistance to the community, the Barangay has instituted an inter-agency group to coordinate the activities of the various NGOs, charitable organizations, and government actors.

Due to its urban setting, livelihood opportunities abound, though income is quite low. Low skilled jobs are available in the Port Area and nearby communities, in various odd jobs (stevedoring, vending, pedicab driving, etc.); many housewives are preoccupied with peeling garlic for traders located in the nearby Divisoria, one of the largest wholesale-retail markets in the country. To further address livelihood needs, one NGO has targeted women for a community-based savings initiative, in which members deposit small amounts of cash on periodic basis into a locked box, which is then collectively managed to finance loans from within the group.

Nonetheless, a barangay health worker notes that malnutrition persists in the community. Much of it is due to lack of knowledge and prioritization of good nutrition at the home; some mothers may neglect to prepare meals, let alone nutritious meals, to children, providing snack money instead, which tends to be spend on junk food. There is a community garden programme, where households collectively manage and harvest vegetables from a small lot (about 100 sq. m.) owned by the barangay. However, the plot is certainly too small to address the vegetable requirements of the barangay.

Sanitation is also a concern especially in the portion of the compound along the shoreline, where water is not available; households are widely known to simply dump human and other waste into Manila Bay. The health workers, together with community volunteers, many of whom are mobilized under the 4Ps, engaged in counselling, follow-up, and monitoring, but the sheer number of families is overwhelming. There are no dedicated BNS, and nutrition tends to be subsumed within the overall health programme.

Field Study Site: **BASECO Compound, Manila**
 Venue/s: (1) World Vision-Philippines BASECO Satellite Office;
 (2) BASECO Barangay Hall
 Date: August 10, 2016
 Activities: (1) Focus Group Discussion
 (2) Community Vegetable Garden Visitation
 Participants: Editha Castillo -- Barangay Kagawad (former BHW)
 Loidafe Payre -- World Vision Affiliate

¹ Background from: <https://cosca-dlsu-wts.wikispaces.com/Brgy+649+Zone+68+BASECO+Port+Area,+Manila>.

Sylvia Garlan -- Resident / Volunteer-Leader
 Elizabeth Banaoag -- Resident / Volunteer-Leader
 Jina Espinosa -- Resident
 Eliza Gonzales -- Resident
 Esterlita Balawag -- Resident
 Josalyn Ansano -- Resident
 Angelita Ubusan -- Resident
 Joy Estanislao -- Resident
 Belle Ramos -- Resident
 Josefina Cabaltera -- Resident

2. Mandaluyong City

Context. Mandaluyong City is one of the 16 cities comprising Metro Manila, with population of 350,528 and a population density of 297 persons per hectare. It has 58,421 households living in 27 barangays, with 11 % unemployment rate. While the city's economy is growing at a fast rate, it is also home to Welfareville, one of the biggest informal settlements in the metropolis. The Welfareville community is the site of two major government institutions, the National Mental Hospital and the Women's Correctional, and home to about 25,000 families producing about 55,000 voters. The community is organized according to blocks and also home to many community-based organizations (CBOs) with interlocking partnerships with civil society, private sector and national/local government agencies. Because the informal settlements are highly organized and closely connected to the different local government offices and private institutions, mobilization and delivery of food and nutrition services is quite efficient and effective (Porio and Lao 2014).

In 2006, Mandaluyong City had a poverty incidence of 6.1 % but the LGU was able to reduce it to 1.8% in 2009.² In 2015, the NNC gave Mandaluyong City the CROWN for exemplary performance in nutrition program management and service delivery. Other special awards received by the included "Best in Barangay Nutrition Program Implementation", "Best in Infant and Young Child Feeding (IYCF) Initiatives", "Best in Program Effectiveness and Best in LGU investment in Nutrition Program", and Outstanding Barangay Scholar Award. The city has been garnering these awards since 2010.

The city's high FSN achievement is a far cry from the early 2000s, when it was ranked second to the highest in malnutrition prevalence among the metropolis's 16 cities. Currently, the malnutrition prevalence of the city is down to .86%. The following factors were responsible for this achievement.

Winning the CROWN: organizing for effectiveness. Alarmed by the poor nutrition performance of the city, the CNAO mobilized the Mandaluyong City Nutrition Committee (MCNC) to: 1) formulate food and nutrition policies, strategies, programs and projects based on the Philippine Plan of Action for Nutrition (PPAN); 2) coordinate the planning, implementation, monitoring and evaluation of integrated local food and nutrition program; and 3) coordinate between and among local government officials and concerned agencies, public-private bodies for resource generation and assistance. Chaired by the local chief executive (LCE), the MCNC's main function was to ensure the improvement of nutrition especially on the most needy and vulnerable constituents in the depressed areas and informal settlements. The MNC is heavily supported by the other program and development initiatives of the city.

The CNAP as convergence framework. Anchored on the annual PPAN targets, the City Nutrition and Action Plan (CNAP) was unveiled by the local chief executive himself alongside all the health and nutrition personnel before the whole assembly of heads/staff of other city agencies and barangay councils. The City Nutrition Office, under the City Health Office, was given a regular plantilla position, dedicated to the achievement of CNAP goals. The functions of the different members of the Nutrition Committee were clearly delineated according to planning and policy, administration, operations, monitoring and evaluation. Thus, accountability of the different core groups was clearly embedded in the functioning of the Nutrition Committee.

² 2006 and 2009 Municipal and City Level Poverty Estimates, NSCB 2013; <http://www.nscb.gov.ph>.

Of prime importance here is the mayor's leadership in championing the city's achievement of nutrition program targets alongside other development targets. By doing so, the mayor "positioned" the health and nutrition targets within an ecosystem of excellent governance systems designed to produce high overall performance achievements for the city.

The CNAP became the bible of the health and nutrition personnel, stakeholders and volunteers from the city down to all 27 barangays, each with their own Barangay Nutrition Action Plan (BNAP). Following an integrated life-cycle approach, the following are the key component activities: 1) Breastfeeding Patrol Group, 2) ERPATS (fathers) for Breastfeeding, 3) Garantisadong Pambuntis Plus (Guaranteed Safe Pregnancy Plus, 4) Batang Ina-Ang Munting Anghel sa Mandaluyong (Child Mother, Little Angel in Mandaluyong) Project, 5) Oplan Dagdag Timbang (OPT), 6) Infant and Child Feeding Program (Balik Sigla, Nutricake, Kusinero Festival, Busog Lusog Caravan and Veggie Caravan sa Eskwelahan, 7) Manda-Run and I Run for Nutrition (Takbo Para sa Kalusugan) and 8) Kap's Amazing Talent, 9) Family Big Day, 10) Millennium Baby Project, etc. As seen from these innovations, the delivery of these programs are closely coordinated so that their multiplier effects are much higher.

The Nutrition Committee includes partners and stakeholders from civil society and the private sector like *Liga sa Barangay*, Ciara Marie Foundation or the Mandaluyong Breast Patrol, Soroptimist International and so many others. Tri-partite partnerships, then, were part of the convergence of policies, programs and service delivery for health and nutrition.

Integrated service delivery. Each program was implemented in an integrated, convergent manner, such that each strategy incrementally builds on the other strategies. For example, to achieve almost 100 percent breastfeeding practice, mothers were organized alongside the fathers (ERPATS) to provide support; the elderly, to influence their children and in-laws, young, teenage mothers, etc. In the same manner that the drive for "vegetable gardens" to provide fresh produce in the table was simultaneously pursued in the school, home and community. Organization and mobilization of the community and relevant stakeholders assured support and sustainability of an integrated health and nutrition programs.

All of the above programs are integrated vertically (from municipal down to the barangay and back) and horizontally (within and across sectors and communities) through the different health and nutrition committees. Goal-setting, implementation, regular monitoring, assessment and reporting of the program outputs and outcomes are regularly done in all 27 barangays down to the smallest purok or sitio. Every program activity is documented, reported and presented to the program managers and implementers cum beneficiaries. Their regular meetings and assessments become the site of mini-program reviews and learning of lessons both by beneficiaries and program leaders.

Other key elements of FSN programmes:

- Monitoring and Evaluation - documentation, reporting and assessment of their program activities are integral to the daily routine of FSN programmes. Data sets/information bases (e.g., CBMS, monthly/quarterly monitoring reports) are often discussed and reflected by both program managers, service providers and volunteers. These learnings and reflections are used to revise and improve the delivery of their programs.
- Capability-Building and Professionalization of Service Providers - systematic and regular training of frontline service providers professionalized front liners like BHWs, BNs and other volunteer groups and increased their competences. Complemented with proper incentive structures (increased honoraria, regular team building sessions, recognition days, performance awards, etc.), these led to the development of strong social capital (bonding, linking and bridging) and trust networks among the service providers, managers and leaders.
- FSN Programs becoming source of identity, pride and cultural revival - a positive unintended results of the organization/mobilization of the different sectors in the communities was the emergence of strong identity and pride of place among the residents. This can be seen in the

slogans appearing in banners of FSN activities: “proud to be Manda”, “the first 1000 Manda days”, “the Manda run” for a healthy city, etc. This can also be seen in how they have adapted and localized the programs with catchy campaign slogans and program names (ERPATS for fathers’ group; Batang-Ina, Munting Anghel (Child-Mother, Little Angel) for teenage mothers) or Isang Libo Araw sa Batang WOW (1,000 Days for a WOW Child) and so forth. According to the BHWs, BNS and volunteers, these program campaigns speak to their hearts and make them want to work harder to achieve the program goals!

Conclusion. To summarize: fighting hunger and reducing the malnutrition level to less than one percent (.86), were due to: leadership and political will, a systematic plan of action and targeted program goals, outputs and outcomes (with an embedded program monitoring and evaluation) with the commensurate budget and dedicated structure and personnel.

Today, the MNC has one singular goal: to achieve zero malnutrition among children in Mandaluyong City. This kind of single-minded leadership and commitment is needed to end hunger in 2030.

Field Study Site: **Mandaluyong City**
 Venue/s: Mandaluyong City Health Office
 Date: August 26, 2016
 Activities: Focus Group Discussion
 Participants: Maria Teresita Belo -- City Nutritionist
 Christine Albana -- City Nutritionist
 Melanie Yu -- Barangay Health Worker
 Grace Tamayo -- Barangay Nutrition Scholar
 Arlene Mampal -- City Social Welfare and Development Office
 Dhoreen Bisnar -- City Social Welfare and Development Office

3. Camarines Sur: Naga City

The FSN Situation -- Then and Now. Naga became a city in 1948. However, its economy remained sluggish and extreme poverty persisted in the next five decades. This is primarily because the key elements for sustained growth and development were elusive during the period in the whole Bicol Region where Naga City belongs. Bicol was consistently one of the poorest in the country. Poverty incidence was 60.5 in 1985 and improved a bit to 55.4 in 2000 (FIES, 1985-2000). Apart from slow economic development, the region suffered from insurgency and disasters brought about by typhoons, floods and volcanic eruptions. In 2007, self-rated poverty in Naga was 62% for women and 58% for men (Ateneo, 2007).

By 2012, however, the Small Area Poverty Estimates placed the poverty incidence in Naga City at 15.7%, the lowest in Camarines Sur and second to Daet (11.4%) as lowest in the Bicol region (PSA, 2014). It is now 100% urban with population of 196,003 based on 2015 population census.

Being at the heart of Bicol, Naga City has been serving as the trade, financial, educational and religious center to its neighboring municipalities and the region as a whole. Its agriculture sector has not been very significant and most of its food requirements are being imported from neighboring municipalities and other places as far as Manila.

Malnutrition was more the norm than exception in the city in the 1980s. More than three quarters (about 9,200) of pre-school children were underweight in 1990 (Annex Figure 1). By 1995, the number of underweight children was dramatically cut by about a third and the number of pre-school children with normal weight ballooned to 63.7% of total. The nutritional status of children in Naga City steadily improved since then that by 2005, the proportion of underweight pre-school children went down to single-digit level.³ By 2009, the proportion has gone below 5%, a level maintained to the present. In 2015, the combined underweight totaled 909 children or a low weight totaled 909 children or a low 3.1% of total. Of these, only 168 children (0.57%) were wasted or severely underweight or stunted (there is no clear count of stunted children).

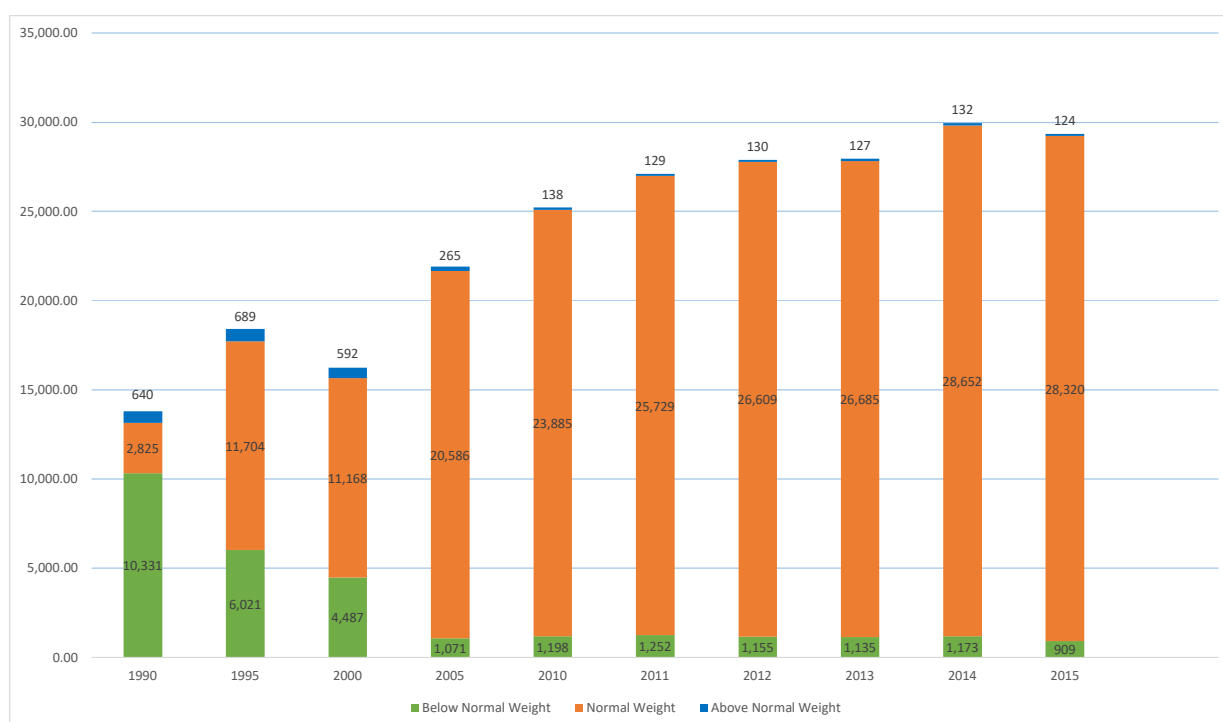
The outstanding performance of Naga City in significantly bringing down malnutrition in the 1990s is well-

known and duly recognized. Naga City became the first recipient of **Nutrition Honor Award (Hall of Fame Award)** conferred by NNC in 1998. This was after receiving the **CROWN Award** in four consecutive years (1994-1997); **Certificate of Merit** for being the **Consistent Nutrition Honor Awardee** for 3 consecutive years (1998-2000); **Hall of Fame Maintenance Award** for Nutrition in 2013; **Pabasa sa Nutrisyon Hall of Fame Award** in 2013; **Top Outstanding Barangay Nutrition Committee in Region V** in 2013 (Barangays Carolina and Tabuco); and **Outstanding Barangay Nutrition Scholar** (Marilou Jimenez of Carolina). In view of these, the city has become a learning center on nutrition for many local and international LGUs.

How did Naga City get to its Current FSN Situation? City officials attribute the improvements to the city's FSN situation to the visionary, deliberate and innovative governance instilled by then Mayor Jesse Robredo⁴ and continued on, even improved by his successor, Mayor John Bongat, with support from then Congresswoman and now Vice President Ma. Leonor Robredo. The following are key initiatives that were put in place:

Strong cooperation with neighboring municipalities. Mayor Robredo had the foresight to establish a cooperative mechanism, the Metro Naga Development Council, between Naga City and its neighbors much earlier on (1993). He recognized that the development of Naga City would largely depend on the growth and development of its neighbors and vice-versa. The Mayors and peoples of the member municipalities recognized this as well and the fact that each member has a specific role to play given respective endowments, location and context. It was clear then that Naga City's major role would be to provide economic, social, logistical and religious services to its neighbors, while the agricultural neighboring municipalities would generally play the role of producing food, raw materials and finished products for the Metro and beyond. In its 23 years of existence, the MNDC has become the cooperative mechanism for sharing resources and investment promotion.⁵

Annex Figure 1: Nutritional Status of Pre-School Children in Naga City, 1990-2015



Source: Naga City Population

³ The national re-categorization of nutritional status in 2003 led to a big increase in the number of children with normal weight or big decrease in number of underweight children. While this indicates data inconsistency, the improvements in nutrition status in Naga City were palpable and sustained to this day.

⁴ Jesse Robredo served as Mayor of Naga City in 1988-1997 and 2000-2009.

⁵ http://naga.gov.ph/mndc/About_MN.htm.

Establishment of dedicated institutional mechanisms for nutrition. Veering away from the usual nutrition offices that are lodged under the supervision of the local Health Office (as in the NNC at the national level), Mayor Robredo established a full department for the purpose - the City Population and Nutrition Office (CPNO), the first and likely only one of its kind. The CPNO has 14 full-time staff complement and a dedicated budget, which was about P13 million in 2016. Its key functions include planning, program implementation, capacity building and monitoring of nutrition situation in the city. It serves as the technical and secretariat support to the **City Nutrition Committee (CNC)**. Being a dedicated office, the CPNO is able to focus on its tasks and mandates. As a full department, it is able to closely coordinate and directly work with other departments within the LGU.

Naga City also has a well-working CNC that meets regularly and provides guidance to the CPNO. The CNC is chaired by the Mayor and composed of the Councilor responsible for population and nutrition (co-chairperson), the Treasurer, and the city offices for health agriculture, education, employment, budget, non-government representatives, etc.

The Naga CNC has an analog in 27 barangays, the Barangay Nutrition Committee (BNC) that also consists of both barangay officials and stakeholders. It meets quarterly and undertakes nutrition programs, usually in the Barangay Nutrition Centers. The CPNO closely supervises the Barangay Nutrition Scholars that work closely with other volunteers in the barangays.

Formulation and implementation of a coherent and knowledge-based City Nutrition Action Plan (CNAP). These plans are based on knowledge generated through close monitoring and evaluation of nutrition records, results of Community-Based Monitoring System (CBMS) census, and close consultation with stakeholders.

Design and implementation of effective programmes. Based on the CNAP, the City formulated nutrition programmes that cater to each actor and section of the nutrition value chain from conception to parenthood. Among these are the following:

- Home and Community Food Production that includes home and school gardening, distribution of seeds and livestock, provision of farm implements, etc.
- Partnership Against Hunger Program that improves farm productivity and incomes while ensuring stable supply of nutritive food materials to feeding centers and the city population in general.
- Pre-Marriage Counseling and One-on-One Counseling on Nutrition and Family Planning
- Nutrition Essential Maternal and Child Health Services that include pre-natal and post-partum medical check up, nutrition and micronutrient supplementation; deworming, dental care, improvements in measurement devices (e.g. replacement of bath scales with Detecto scales in all barangays)
- Breastfeeding program that encourages mothers to breastfeed their child for at least six months. To encourage pure breastfeeding, the city issued an ordinance that requires all establishments, whether government or private, to have a breastfeeding corner. In support of this, it bans bottlefeeding. In addition, fathers have been encouraged and guided to support respective wives in breastfeeding.
- Food Assistance that includes, among others



- Infant and Young Child Feeding in schools and day care centers
- Nutri-Nanay that rehabilitates malnourished pregnant women.
- Nutri-Ataman that cares for severely malnourished children
- Nutri-Dunong feeds wasted and severely wasted children with special kind of Nutri-Mix.

- Food fortification, which includes Nutri-Mix preparation in its own Nutri-Mix Processing Center.
- Micronutrient supplementation for both mother and child
- Nutrition Education for all members in the family such as:
 - o Pabasa sa Nurtisyon for mothers with malnourished child
 - o Buntis Congress venue for peer learning
 - o One on one counseling for pregnant and lactating women
 - o Parent effectiveness service and Family health class
 - o Integration of nutrition education in the curriculum
 - o Development and distribution of IEC materials
 - o Teen Pregnancy Summit - provides the venue for pregnant teen-agers to support and learn from each other.
- Livelihood Program that includes livelihood assistance in terms of financing, product development, marketing, etc.
- Enabling programs such as manpower development, planning workshops, annual evaluation of nutrition programs, monitoring the functionality of BNCs, maintenance and strengthening of the CNC, etc.

Effective monitoring and evaluation (M&E) system. As earlier indicated, the CBMS has been instrumental in developing the city nutrition action plan and programs. According to city officials, having understood the disappointing results of the city's first CBMS, Mayor Robredo was moved to establish the CPNO and implement various nutrition programs. The M&E system was improved over time and the results are reported openly to the public and used to design new programs as deemed necessary.

CITY NUTRITION COMMITTEE CHART OF ACCOMPLISHMENTS

January to December 2015

OBJECTIVE: To eradicate malnutrition in the 27 Barangays of Naga City

BIRY COVERED	TARGET CLIENTELE	ANNUAL TARGET	ACCOMPLISHMENT				TOTAL	% ACCOMP.
			1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.		
27 Brgys.	0-11 months	2,690	2,421	2,392	2,412	2,523	31,792	100%
27 Brgys.	12-59 months	21,328	19,501	19,501	19,501	19,501	19,501	100%
27 Brgys.	Wasted & Severely wasted SC Infants	3,326	3,326	3,326	3,326	3,326	3,326	100%
27 Brgys.	Wasted & Severely wasted PSC	10,000	10,000	10,000	10,000	10,000	10,000	100%
27 Brgys.	Wasted & Severely wasted 0-11 years old	3,529	3,529	3,529	3,529	3,529	3,529	100%
27 Brgys.	New pregnancies & Non-lactating	350	350	350	350	350	350	100%
27 Brgys.	Non-Adapted Children	100	100	100	100	100	100	100%
27 Brgys.	and one identified Severely Undernourished & PSC	184	496	496	496	496	1,872	100%
27 Brgys.	Non-lactating	350	350	350	350	350	350	100%
27 Brgys.	0-23 months	2,990	2,990	2,990	2,990	2,990	2,990	100%
27 Brgys.	Households	31,696	31,696	31,696	31,696	31,696	31,696	100%
27 Brgys.	Households (Private)	1428	1428	1428	1428	1428	1428	100%
27 Brgys.	Households (Public & Private)	148	148	148	148	148	148	100%
27 Brgys.	Food Establishment (Rest. & Canteen)	7	7	7	7	7	7	100%
27 Brgys.	Hotel	148	148	148	148	148	148	100%
27 Brgys.	School	235	235	235	235	235	235	100%
27 Brgys.	Establishment / Groceries	48	111	111	111	111	111	100%
27 Brgys.	School	148	148	148	148	148	148	100%
27 Brgys.	Public	148	148	148	148	148	148	100%
27 Brgys.	Private	148	148	148	148	148	148	100%
27 Brgys.	Bar	148	148	148	148	148	148	100%
27 Brgys.	Bar	148	148	148	148	148	148	100%
27 Brgys.	Bar	148	148	148	148	148	148	100%

PROGRAM/PROJECTS	AGENCY	BEST COVERED	TARGET CLIENTELE	ANNUAL TARGET	%
1. Nutrition in Essential Material & Child	CPNO	27 Brgys.	Program Women	1,200	1,198
2. Program women with at least 4 children	CPNO	27 Brgys.	Program Women	3,200	1,198
3. Program women given doses of micronutrient TTD (Iron)	CPNO	27 Brgys.	Program Women	1,200	1,198
4. Program women given iron with Folic acid	CPNO	27 Brgys.	Program Women	1,200	1,198
5. Program women with at least 2 grandchild	CPNO	27 Brgys.	Program Women	1,200	1,198
6. Program women given courses on safe child feeding	CPNO	27 Brgys.	Program Women	1,200	1,198
7. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
8. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
9. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
10. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
11. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
12. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
13. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
14. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
15. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
16. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
17. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
18. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
19. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
20. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
21. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
22. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
23. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
24. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
25. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
26. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198
27. Program women given courses on appropriate parenting	CPNO	27 Brgys.	Program Women	1,200	1,198

Trained and well-paid service providers. The CPNO relies heavily on Barangay Nutrition Scholars (BNS), Barangay Health Workers (BHW), Barangay Counselors and Parent Leaders (volunteer coordinators of 4Ps) in implementing its nutrition programs. The BNS is responsible for weighing and measuring the height of children usually with help from BHWs. Barangay Counselors and Parent Leaders are volunteers that guide mothers and children and help implement nutrition programs such as supplemental feeding, breastfeeding and Oplan Timbang (weighing). The CPNO trained 350 volunteers to ensure that the delivery of needed services at the barangay level is effective and efficient. It has also paid higher honoraria to these volunteers.

Active stakeholder participation in program implementation. Stakeholders are always encouraged to participate in the programs. For instance, the Naga City Public Market Stallholders' Federation is managing the lactation station at the People's Mall. The federation's trained market stall owners man the station, assist in breastfeeding, and counsel mothers on breastfeeding and other mothering issues. Other examples are the Metro Naga Chamber of Commerce and Industry and Naga City Doctors Association, which provide support in terms of participation and contributions to the city's nutrition programs.

The Way Forward. All the necessary elements for fighting hunger and malnutrition are in place in Naga City: an effective institutional mechanism, a coherent action plan, a set of responsive programs, an effective M&E and reporting system, active stakeholder participation, and committed service providers. Underpinning all these elements is **inspired and inspiring leadership**. Others may call this **political will**, but this is too abstract a word to describe what Naga City's leaders have. This kind of leadership is not readily available in many parts of the country but the case of Naga City could show that political will is not the responsibility of the leaders alone, but also of the people that must serve as inspiration and provide support to the leader through participation, action and commitment.

There is no other way forward for Naga City. It is determined to attain **zero hunger and malnutrition**. By the looks of it, the city will succeed in doing so in the next year or two. Beyond this, it will merely enjoy the honor of being the first LGU to attain this elusive goal, and continue to serve as a fitting model for other LGUs within and beyond the shores of the Philippines.

Field Study Site:	Naga City, Camarines Sur
Venue/s:	City Population and Nutrition Office
Date:	August 24, 2016
Activities:	Focus Group Discussion
Participants:	Teresita del Castillo -- City Nutrition Action Officer Raquel Buere -- City Nutritionist Evangeline Manalo -- City Social Welfare and Development Office Jaime Francisco -- City Public Employment Service Office Wilfredo Prilles -- City Planning and Development Officer Maria Edna Bongalota -- City Agriculture Office Maria Charon Aycardo -- Naga City Government Annalin Giray -- Barangay Nutrition Scholar

Partnership Against Hunger and Poverty (PAHP): 3rd District of Camarines Sur

PAHP is a government convergence program to fight hunger and poverty through partnerships. It started to be implemented in 2014 through the alignment of programs of DSWD on hunger mitigation, DA on food self-sufficiency, and DAR on poverty alleviation among agrarian reform communities. The partnerships are primarily with farmers, fisherfolks and agrarian reform communities, as well as with FAO for technical assistance to improve agriculture and fisheries production and natural resource management; WFP for support for rehabilitation of undernourished children and production skills enhancement; and Government of Brazil, which shares Brazil's experience from its successful Zero Hunger Program.⁶ The PAHP primarily aims to enhance food security and increase farm incomes by improving small farm productivity and ensuring markets for products; and to improve nutrition by ensuring continuous supply of cheaper and nutritive food items to the community especially to children in day care centers. It is thus designed to connect the supply and demand sides, i.e. channeling farm products towards the communities and government users such as day care centers and hospitals.



Carangcang farmers showing their organic rice thresher

⁶ Cruz, Lawrence, "Partnership Against Hunger and Poverty (PAHP): Fighting Hunger Through Partnerships." Powerpoint presentation, March 24, 2015. <http://asianfarmers.org/wp-content/uploads/2015/06/Partnership-Against-Hunger-and-Poverty-PAHP-Lawrence-Cruz.pdf>

One of PAHP's pilot areas is the 3rd District of Camarines Sur, which covers Naga city, where some successes have been noted in terms of higher farm yields and sales as well as more stable supply of vegetable for feeding in day care centers. While start-up challenges as well as the impacts of El Nino limited PAHP's successes, it has progressed relatively fast and attained its objectives due to the full support of the above-mentioned program partners, the LGUs, private sector (e.g. Shell Foundation) and then Congresswoman Ma. Leonor Robredo who has shepherded the program personally until now as Vice President and through a dedicated program management office that she established.

A success area is PAHP's expansion of coverage beyond the pilot areas. Readiness in terms of organization and commitment of farmers is a precondition to participation in the program. Since some agrarian reform beneficiary organizations (ARBOs) are not quite ready yet and the Vice President wants to cover as many farmers and communities, the PAHP office included the more ready but non-ARBO Carangcang Magarao Farmers Association (CMFA), a network member of MASIPAG.⁷ The CFMA is a people's organization registered in both the Securities and Exchange Commission (2006) and DOLE (2009). To date, it has 22 members, each one organically farming less than a hectare. Its members have been planting a half-hectare organic garden the Bayanihan (communal) way. When asked why they have chosen to do organic vegetable farming despite it being more laborious,

the farmers said that they are prepared to do a bit more work "to ensure that their children and family eat healthy and safe food since no one else would do this for the children except the parents."



Brain Trust, Inc.

Organic black rice is pressure packed and sold at P60/kilo.

Field Study Site: **Barangay Carangcang, Magarao, Camarines Sur (PAHP Project Site)**

Venue/s: (1) Fausto Residence, Magarao
(2) PAHP Office, Naga City

Date: August 25, 2016

Activities: (1) Focus Group Discussion
(2) Farming Equipment Inspection
(3) Day Care Center Visitation

Participants: Zerlaine Fornoles -- PAHP Coordinator; OVP-Naga City
Aaron Del Valle -- PAHP; OVP-Naga City
Edgar Madrid -- DA Regional Field Officer
Manuel Fausto -- MASIPAG Organic Farmer's Association Officer
Alberto Rojo -- MASIPAG Organic Farmer's Association Member
Diosdado Godoy -- MASIPAG Organic Farmer's Association Member
Ricardo Godoy -- MASIPAG Organic Farmer's Association Member
Pablo San Andres -- MASIPAG Organic Farmer's Association Member
Reynaldo Estolano -- MASIPAG Organic Farmer's Association Member
Leonida Fausto -- MASIPAG Organic Farmer's Association Member
Zenaida San Andres -- MASIPAG Organic Farmer's Association Member
Maria Elena Balingasa -- MASIPAG Organic Farmer's Association Member

⁷ MASIPAG stands for Magsasaka at Sientipiko Para sa Pagunlad ng Agrikultura or Farmer-Scientist Partnership for Development. www.masipag.org

4. Basilan Province

Overview. Basilan is one of the provinces under the ARMM that holds much promise. Despite being notorious as the lair of the dreaded terrorist Abu Sayyaf Group (ASG), Basilan is rich in natural resources. Basilan City was the 4th largest city in the country (after Davao, Puerto Princesa and Zamboanga) during the 50s and the 60s and was then classified as a first class city. The province had a long history of economic progress starting from the turn of the 20th century owing to multinational investments in rubber, sugar, coconut/copra and other crops.⁸

In spite of its reputation, Basilan province still has a thriving rubber industry and abundant marine resources. No wonder, despite belonging to the poorest region in the country, this island province in the Sulu Sea has the lowest poverty incidence in the region. Its poverty incidence in the first semester 2015 is 30.7% while Lanao del Sur, the poorest province in ARMM, is 70%.⁹ It has one the narrowest gap between the rich and poor in the country (ranking third in the country and faring better than the provinces of Pampanga, Bulacan, Nueva Ecija, Tarlac, Cavite and Batangas).¹⁰

Basilan is also rich in energy resource. The island of Omosmarata in Tuburan (now Mohammad Ajul) is among only 15 sites in the Philippines with commercially viable ocean thermal energy potential. According to the Philippines Department of Energy, the potential capacity for this resource is estimated to be 265 million megawatts. The Basilan Strait is listed among only eight sites in the country with commercially viable ocean tidal energy potential. Ironically, Basilan currently suffers from a chronic electric power deficiency because investors are wary of the security situation in the province. This also explains why its significant mineral deposits (iron ore, gold, manganese, copper and coal) remain unexplored.

Food security and nutrition situation. Like most underdeveloped areas of the country, agriculture is the main source of economic livelihood in Basilan. Its major products include coconut (primarily copra), rubber, coffee, black pepper, and African palm oil. Other crops are paddy rice, maize, cacao and cassava.

Coconut is a Php 2.2 billion industry in Basilan. Unfortunately, more than 2 million coconut trees were affected by the "cocolisap" virus. It took the national government a long time to cure the disease in the province so a lot of coconut farmers suffered. While Basilan is the country's third largest producer of rubber (accounting for 11.42% of total production),¹¹ the global price of rubber has declined in recent years and this has severely affected the income of workers involved in this industry.

Being a resource rich island, Basilan has the potential to be food secure. It has ample production of rice, maize, and mungbeans. It is the country's 3rd largest producer of cassava (accounting for 10.23% of national production) and has sufficient production of sweet potato.¹² It is rich in marine life which makes it a supplemental source of tuna of the overfished General Santos tuna industry as well as Zamboanga's source for its canned sardines. Its rice, however, is mostly imported from Vietnam. As a matter of fact, it is a transshipment point of imported (smuggled) rice.¹³

Thus, it comes as a surprise that 35.1% of children between 0 - 5 years in Basilan are stunted. This is nearly at par with Maguindanao's 34.2% although still lower than the 43.7% and Lanao del Sur and Sulu's 41%. Fortunately, only 11.9% of children from 0 - 5 years old are underweight. Lanao del Sur has 24.2% underweight children while Tawi-tawi has 26%.

Governance challenge. First term Gov. Hadjiman Salliman (a former Congressman) provides an explanation

⁸ Wikipedia <https://en.wikipedia.org/wiki/Basilan>

⁹ Philippine Statistics Authority <chrome-extension://gbkeegbaaiigmenfmjflcdgdpimamgkj/views/app.html>. Accessed 18 October 2016.

¹⁰ Wikipedia <https://en.wikipedia.org/wiki/Basilan>

¹¹ Philippines Statistics Authority. MAJOR CROPS STATISTICS OF THE PHILIPPINES, 2010-2014. <https://psa.gov.ph/sites/default/files/MajorCrops10-14.pdf>

¹² Ibid

¹³ Interview with Gov. Hadjiman Salliman, Sept. 9, 2016

to this situation. First, security remains the biggest problem of the province. Investors are wary to invest for fear of becoming victims of kidnapping or extortion by the ASG. Thus, despite its rich potentials, Basilan remains economically depressed. The military operations against the ASG in recent years has resulted in displacement of people from their domicile. Up to now, there are still a good number of evacuees or “bakwits” living in refugee areas. This has affected food production.

Secondly, governance is a serious problem in the province. The newly-elected governor says he came into what is nearly a rundown provincial capitol. There were no provincial plans and his senior officials leave so much to be desired. He is the first to admit that the province has no food security and nutrition plan. Needless to say, Basilan is cash poor. It is totally dependent on the subsidy of national government and earns very little local income. As he transitions into his new responsibility, Gov. Salliman begins to realize the enormity of the challenge he is facing. He is appealing for help in addressing the multitude of problems that the province need to urgently address. His first priority is instituting good governance to pave the way for much-needed reforms.

This predicament was validated by the focus group discussion that was held among heads of provincial departments (agriculture, health, planning, among others). Everyone was aware of the problems in the area of food security and nutrition. Some of them placed the blame on poor eating habits of the population. Others claim irresponsibility on the part of parents who do not feed their children properly.

There are 179 health care centers all over the province and there is regular feeding program in these centers. The provincial government also distributes vegetable seeds to all municipalities every year and the Municipal Agriculture Officers are supposed to monitor the utilization of these seeds. Culturally, however, they claim that Basileños are not vegetable eaters. They acknowledge that there is a need for an awareness campaign on proper nutrition and they want the Barangay Health Workers to do the counselling.

They are one in admitting that there is no provincial plan for food security and nutrition. The Nutrition Officer under the PHO notes that their program is focused on raising awareness on proper nutrition; however, the province does not have the programs and the resources to address the malnutrition problem.

With a combination of a festering peace and security problem, poor governance, lack of resources and lack of awareness of and capability for food security and nutrition planning, Basilan is doomed to continue suffering its fate. The governor faces an enormous task in trying to reverse the situation.

An island of good nutrition governance: Barangay Townsite, Maluso. Amidst this vast plain of nutritional tragedy, Bgy. Townsite in the municipality of Maluso is a breath of fresh air. Maluso is one of the 11 municipalities of Basilan. Townsite is one of the 20 barangays in this 4th class municipality of 40,600 people. The municipality is notorious because it has been the venue of a number of attacks by the ASG.

Bgy. Townsite is the poblacion or town center of Maluso, a predominantly Christian town in a Muslim province. The barangay has 5,000 residents. In the 90s, the Christian Children’s Fund (CCF) started a nutrition program in the barangay which consists of a feeding program and nutrition education for families. CCF also organized a CHAT, which are trained volunteers who would propagate the barangay nutrition program. Also part of this program is the establishment of a vegetable garden which would be the source of vegetables that were used for the feeding program as well as for distribution to families in need of food.

Fast forward 20 years later, the Barangay Captain, who was one of the staff members of CCF in the barangay, has sustained the program that his NGO started. The barangay has 3 BHWs and 1 BNS who comprise the CHAT which has carried on the functions of the CHAT that was established by CCF in Bgy. Townsite.

The barangay has a fully functional Barangay Nutrition Council (BNC) which plans the village’s nutrition program and oversees the work of the CHAT. The BNS documents the progress of program implementation and reports these to the BNC. The BNC is headed by the Municipal Health Officer so its programs are part of the Municipal Development Plan.

Part of the program is an OPT, where the weight of known malnourished children are monitored. In conjunction with this is a regular feeding program where identified underweight and stunted children are provided nutritious food and administered with food supplements. Sad to say, the incidence of stunting is still in the high 30%. Apparently, the persistent peace and order problem of the municipality has taken its toll on the health of its children. Nevertheless, the administration of focused interventions on malnourished children is expected to reverse this situation. Each member of the team is assigned a particular zone in the village and is responsible for monitoring the condition of identified nutrition challenged children. The CHAT claims that there are already palpable improvements in the nutrition figures as a result of the concerted efforts of the barangay.

CF's vegetable garden has also been maintained by the barangay. Since it has been managed for more than 20 years, the project is now producing abundance of vegetables for the residents of the barangay. Fish and seafood also abound as Maluso is a coastal town. The town is the biggest source of fish in the province. Thus, the village is food secure. In addition, the CHAT continues to provide nutrition education at the household level. Expectedly, the residents continue to practice the nutrition planning that has been propagated in their village in the last 2 decades.

The other main feature of health management in the barangay is the presence of a health center. The center operates 24/7 and services the whole town of Maluso. It has dedicated midwives that are always available to provide health services including pre-natal care to pregnant mothers. A doctor visits the center every Monday and Wednesday. The municipal government provides supplements to pregnant mothers. The center holds lectures on breast feeding and convenes a summit of pregnant mothers annually. It is fully capable of delivering babies at any given time.

Because of all of these accomplishments, Bgy. Townsite has received several awards of recognition. There is a section of the barangay hall that houses all the awards that it has received.

Bgy. Townsite is the odd one out in the province of Basilan. It is in itself an island of good nutrition governance that can teach the whole province a lot of valuable lessons in nutrition planning and management. It is a ray of hope in an island of desperation.

Field Study Site:	Maluso, Basilan
Venue/s:	Maluso Main Health Center
Date:	September 6, 2016
Activities:	Focus Group Discussion
Participants:	Hanie Bud -- Maluso Mayor Lea Ramos -- Community Health Action Team (CHAT) Member Monica Cogo -- Barangay Health Worker / CHAT Member Mercedita Longcob -- Rural Health Midwife Ariel Castillo -- Barangay Captain Julito Alia -- Barangay Kagawad Maurina Albani -- Nutrition Coordinator / Rural Health Midwife Mudzna Salihuddin -- Rural Health Midwife Jinnathz Camlian -- Public Health Nurse Zenaida Diong -- Barangay Health Worker / Barangay Nutrition Scholar Nulkaisa Alidain -- Provincial Chief Administrative Officer Anwary Akalun -- Provincial Social Welfare and Development Office Hussin Patriomonio -- Provincial Agriculturist Consolacion Martin -- Maluso Municipal Social Welfare and Development Office Alpiya Mamong -- Provincial Planning and Development Office Jojo Camlian -- Senior Executive Assistant Rhoda Delgado -- Public Health Office Emma Dagatan -- Maluso Municipal Agriculturist Nadzwa Sabandal -- Public Health Office

5. Zamboanga City

Overview. Zamboanga City is located in the southern tip of the Zamboanga Peninsula in Western Mindanao. It has a population of 0.86 million (2015), with a distinctive culture marking it the “Latin city in Asia”. The City is based on services, with an emerging BPO sector; agriculture is a major employer in the rural barangays of the city, together with fishing. The City is also known for its sardine factories.

Nutrition programme and accomplishments. The City has been a consistent Green Banner Awardee for nutrition for three consecutive years. The nutrition programme is being spearheaded by the City Health Office (CHO), which regularly convenes the City Nutrition Council, to form a coherent platform of health and nutrition. As part of its health and nutrition program, it has spearheaded the numerous initiatives, among which are the following:

- Supplemental feeding programmes in day care centres and schools;
- Distribution of Semaroz, a nutrient-dense, low-cost food pack composed of sesame, rice, and mungbean
- City Monitoring of Acute Malnutrition - using the OPT and health monitoring system, the City identifies children with MAM and SAM, for immediate intervention
- Feeding Preggy - a programme for monitoring nutrition of pregnant women to ensure adequate nutrition levels of the mother and newborn infants
- Baby Buntis - a programme to encourage savings of pregnant women to provide access to facility-based childbirth
- Bahay Kubo and Gulayan sa Paaralan - a programme that promotes vegetable gardens at homes and schools, spearheaded by the City Agricultural Office

The CHO has also mobilized Community Health Action Teams (CHATs) for community-based health and nutrition counselling and monitoring. BNSs are provided allowances by the City of P1,000 a month. Some barangays of the City provide more emoluments, depending on income and priority; the allowance can go as high as P3,000 a month (e.g. in Sta Maria). Even CHT Navigators receive a modest P250 allowance a month from DOH (although this funding has recently been terminated).

Owing to concerted efforts, in 2015 the prevalence of underweight children has been lowered to 3.4%, from 4% in 2010. Improvement in wasting is even more striking: in 2012 wasting prevalence of 0-6 yrs children was 10.75%; by 2014 the prevalence was reduced to 6.29%. Severe wasting went down from 4.65% to 2% over the same period. The share of exclusively breastfed children aged 0-6 months is now at 89%.

The City though is not without malnutrition challenge. Ten villages have been identified as malnutrition hotspots, with underweight prevalence ranging from 8.6% to 13.9%; these are far-flung villages with inadequate barangay resources for consistent service delivery.¹⁶ Also of concern in the recent past was the problem of curbing malnutrition among IDPs in the aftermath of the Zamboanga City seige (see below).

Meeting the challenge of conflict: the Zamboanga City crisis. The recent Zamboanga City siege presents a case of conflict quickly escalating into a large-scale food crisis. On 12 August 2013, Nur Misuari, head of the rebel group Moro National Liberation Front (MNLF), declared independence for the Bangsamoro state. On 9 September, armed MNLF forces invaded Zamboanga City, but were met by a strong response from local policy and the military. The conflict raged until 28 September when the crisis was officially declared over with the withdrawal of MNLF forces from Zamboanga. 167 rebels had been killed and 247 wounded; on the government side, 23 personnel (military and policy) were killed while 181 were wounded. An estimated 118,810 civilians were affected and displaced by the conflict; 10,000 houses were destroyed. Of Zamboanga City's 98 barangays, 14 were affected, of which six were coastal barangays devastated by the seige. which were basically The government set up 33 evacuation centres (ECs); the DSWD alone allocated initially the amount of 3.89 billion for early relief and rehabilitation of affected civilians.

¹⁶ <http://www.sunstar.com.ph/zamboanga/local-news/2015/11/21/10-zamboanga-city-villages-marks-high-malnutrition-442822>

After crisis, management of IDP relief and recovery was turned over to the Zamboanga City Government. Despite receiving considerable external assistance, the City Government was overwhelmed by the sheer numbers of persons to be cared for. Reports of disease outbreak and malnutrition were common the first few months after the crisis. Three months after the crisis (December 2013), 61,000 persons were still displaced, of which 23,000 were living in 10 ECs. A nutrition screening done at the time showed Global Acute Malnutrition (GAM) among children at 9.14%. Nearly a year after the crisis (August 2014), GAM was measured at 13.2% among children; stunting rates were 47.7%, with slightly higher prevalence among girls (48.5%) compared to boys (46.9%).

At the time of the field visit (October 2016), only the Masepla settlement area remained as temporary shelter for 1,257 families who still hadn't returned to their original villages. By this time the numbers of IDPs was already manageable. Rates of malnutrition as well as other health problems were now at low levels.

Community health and nutrition workers provided counselling, monitoring and other services. There was much less support by way of livelihood; residents typically found employment in nearby villages or even in the City proper to obtain cash income. The most prominently livelihood activity for food security was a conditional cash transfer, with maintenance of a home garden was a conditionality. Given limited space, vegetables were planted in makeshift pots in near the home. Unfortunately at the time of the visit, most vegetables had wilted owing to lack of water supply to Masepla.

To date, community health workers are employed by an NGO with external funding. The NGO though claimed that the local government was gearing up to take over these functions once external funding ended. The transition may take time though as the alternative site for relocation was still being firmed up and planning for permanent shelters still in process.

The Zamboanga City crisis and its aftermath highlights the problem of achieving zero hunger even for a relatively affluent area, such as an intermediate City, if disaster, whether man-made or natural, were to strike and displace massive numbers of people. It is imperative that disaster planning and preparation target zero avoidable mortality and disease in evacuation centers, and disaster areas.

Field Study Site:	Zamboanga City
Venue/s:	Zamboanga City Health Office
Date:	September 7, 2016
Activities:	Focus Group Discussion
Participants:	Proserfina Lazo -- City Health Office Adriel Torralba - ACF/IRDT Gem Camille Tumarao -- ACF / IRDT Khadzmar Cabucao -- Office of the City Planning and Development Coordinator Maria Angela Mallari -- Office of the City Planning and Development Coordinator Maria Lorna Bautista -- Office of the City Agriculturist Rodel Agbulos -- City Health Office Maria Christine Lim -- City Health Office

6. Western Samar

Overview. In 2015, Eastern Visayas recorded the second highest poverty-stricken region (Source: PSA, FIES). Meanwhile, the Anti-Poverty Commission (NAPC), identified **Western Samar** as the 10th poorest province in the Philippines, with a poverty incidence of 46% (PSA, FIES). Often visited by typhoons, this province was one of the most affected areas by super typhoon Yolanda in 2013, which damaged most of the infrastructure, agricultural crops and other livelihood bases of the residents. The province mainly relies on farming and fishing to sustain their basic needs. Persistence of poverty in the region has been attributed to a combination of factors, namely, high population growth, low productivity, low employment opportunity, poor infrastructure, frequent disasters, corruption and lacking access to basic services. Since the 1990s, political rule in the province has been dominated by one (1) family.

To examine more close the context of food and nutrition security in the province, two municipalities of Sta.

Margarita and Gandara were given special focus for this case study. In the two selected In 2006, Sta. Margarita had a 42 % poverty incidence and only reduced by 1 point in 2009 (41 %); meanwhile, Gandara had a poverty incidence of 37.9 in 2006 which increased to 43.8 in 2009. Thus, both Gandara and Sta. Margarita have been implementing KALAHI-CIDDS and the 4Ps of the Department of Social Welfare and Development (DSWD).

The Case of Sta. Margarita

Food security and nutrition situation. Sta. Margarita, Samar was listed in 2014 as one of the top municipalities nationwide, with high (28 %) prevalence of underweight (OPT data) among children 5 years old and below. Alarmed, the mayor of this coastal town mobilized their health personnel/system and related agencies and successfully brought it down to 22% in 2016. What led to this decline in malnutrition?

Local officials admit it is difficult to improve their malnutrition situation because of the low income class (4th class) of their municipality and the low standard of living of the population. Many undernourished children come from marginalized and large families (5-7 children), low and/or unstable sources of livelihood and no access to potable water and sanitation facilities.

Sta. Margarita has 36 barangays, with 14 coastal barangays while the remaining and 22 are in the uplands. Most barangays were generally accessible by “habal-habal” or upland motorcycle, except two barangays that are accessible only by foot. Ironically, the BNS/BHWs who need training and are unable to perform their duties mainly come from these upland barangays, in part, explaining the low (62%) OPT coverage rates.

Despite its proximity to the provincial capital of Calbayog, most of the barangays do not have irrigation nor access to basic services, especially potable water and sanitation services. While some coastal barangays have access to water and sanitation facilities, it has pockets of informal settlements with no toilets because they do not have security of tenure. Lot owners do not allow informal settlers to install anything that use cement as this can be used for land claims under the land reform law.

The health staff of Sta. Margarita are aware that malnutrition is a multi-dimensional issue and not just due to lack of food. The municipal health officer explained that the following factors contribute to persistent malnutrition in their town: 1) large family size, early pregnancy, short intervals between deliveries (poor birth spacing); 2) misinformation regarding nutrition (e.g. a common belief that taking vitamins will be enough for good nutrition/improve appetite of children) and poor dietary practices; 3) lack of compliance to other health programs such as deworming (there is high prevalence of soil-transmitted helminths) and immunization; 4) poor environmental sanitation (open defecation was estimated to be around 40-50%) and lack of access to safe water and sanitary toilets is still around 50-60%. Lack of access to balanced dietary food sources is critically also related to inadequate sources of livelihood among residents. Efforts to produce food at the household level through gardening have not been very successful because of negative attitudes.

Several civil society organizations (e.g., NGOs like PLAN International have been here for 16 years) have given assistance like feeding programs and sanitation (toilet bowl distribution) but the benefits seem temporary, and some residents have become dependent on the external sources of support. The MHO acknowledged that the solution for malnutrition is difficult to achieve. For example, teenage pregnancy, despite the aggressive advocacy efforts of the LGU's health staff, continues to be highly prevalent. This issue is important as teenage mothers, often have malnourished children.

Governance. The Municipal Nutrition Council (MNC) in Sta Margarita meets every quarter while the Local Health Board also meets regularly, and to a certain extent includes issues related to malnutrition in its agenda. They have expanded the membership of the Board to include government agencies like the DSWD, DA, PNP (for child abuse and protection issues) and CSOs/NGOs like Plan. This allowed networking and convergence of the stakeholders' initiatives and resources. For example, DSWD-CCT's family development sessions became a venue to increasing awareness as well as monitoring the health and nutrition profiles of the children-beneficiaries.

The expanded Board became a venue for assessing, monitoring, evaluating the situation and more importantly, a decision-making body for health and nutrition action. The municipality's holistic and convergent approach to health and nutrition for the past two years, reduced their malnutrition prevalence from 28% to 22%.

But according to the members of the Local Health board, the following challenges remain: 1) lack of cooperation among barangay officials and residents alike, 2) lack of awareness of health and nutrition situation among the officials/sectors and families concerned, and more significantly, 3) the seeming acceptance or the lack of alarm at the gravity of the problem.

Programs and policies implemented by the LGU. With the assumption of the mayor in 2013, the municipality has been doing supplemental feeding programs (including "Pabasa sa Nutrisyon") which slightly lowered their malnutrition prevalence. They also implemented other programs like training of MHWS and BNS (including a 10-day training on Infant and Young Child Feeding for all BHWs and BNSs). But, the benefits of children's supplemental feeding is not sustained because they do not have enough or eat nutrient-dense food in their homes.

Currently, Sta. Margarita has 156 BHWs, of whom 8 are unregistered while 6 midwives serve the municipality. Community Health Team (CHT) volunteers are also present in the LGU, but there is a plan to phase out CHTs because of 'overlapping functions' being done already by BHWs.

They have also tried improving access to safe water. But out of the 36, only 12 barangays have good access to water while only 4 barangays have level 3 access (piped) and the rest have either level 2 or level 1 water supply. Overall, about 40% of the municipality still do not have access to safe water. While water treatment options are available (e.g. chlorination, boiling, simple filtration) the MHO expressed frustration at residents' non-compliant practices.

Latrines from LGU/DOH (with some assistance from Plan) have been distributed to improve access to sanitation facilities and improve hygienic practices among residents. But a number of implementation obstacles emerged: 1) poor households did not install the provided toilet bowls because they had no means to buy concrete, 2) the informal settlers were refused by property owners to construct "concreted" structures.

Access to basic services and sanitation facilities play a critical role in the stunting and wasting of children (Chambers and Medezza 2014). The coastal barangay of Burabod, has a high percentage of malnourished children living in informal settlements and congested housing conditions with no access to toilet and other sanitation facilities nor space/yard suitable for home gardens. But the "child-friendly barangay" winner, Sulsogon, also a coastal barangay has a malnutrition prevalence of 16 % or half the national prevalence rate and much lower than their municipality (22%). The barangay officials believed they have achieved this because they: 1) recognize the important work of the BNS and BHWs, so they prioritized the latter's training and honoraria increases over the officials', 3) invested in the health and nutrition activities and programs, and 4) compelled structure owners to have sanitation facilities (especially toilet) installed through a barangay ordinance. These, alongside other converging initiatives in agriculture, infrastructure, health and nutrition allowed them to become the most child friendly barangay in the region.

To summarize, the reduction of malnutrition prevalence in Sta. Margarita is likely due to the following factors: 1) Awareness of the malnutrition situation (OPT results) alarmed the mayor and other officials galvanized them to act simultaneously; 2) LGU constituted, expanded and empowered the local health board and implemented health and nutrition programs to address the high prevalence of underweight; 3) revised the annual municipal health plan, especially nutrition, 4) increased training and capability building of health workers, and more importantly, 5) allocated a budget to implement the programs. The barangays' health planning and budgeting to support the municipal health and nutrition programs were also crucial, especially the availability of counterpart funds for supplemental feeding and additional honorarium for volunteer health workers.

Field Study Site:	Sta. Margarita, Samar
Venue/s:	Sta. Margarita Legislative Hall
Date:	October 12, 2016
Activities:	Focus Group Discussion
Participants:	Gemma Zosa -- Mayor Alexis Orena -- Municipal Planning and Development Office Marietta Vordeflor -- Municipal Social Welfare and Development Office Merlyn Capitulo -- Municipal Social Welfare and Development Office Milagros Copada -- Municipal Agriculturist Elsa Manloloyo -- Administrative Officer Nestor Cailo -- Municipal Health Office Ely Astilio -- Barangay Health Worker

The Case of Gandara, Samar

Food security and nutrition situation. Like Sta. Margarita, Gandara is also a typhoon-prone area. Although classified as a second class coastal municipality, it has a 29% prevalence rate of underweight children (0-5). There are 69 barangays in Gandara, 45 of which are located in the uplands. Accessibility was cited as a problem, where some of barangays cannot even be reached by “habal-habal” motorcycles and take around 4-5 hours on foot. The municipality is mainly an agricultural area, with 80% of the areas being rainfed, and only 20% fully irrigated. Schistosomiasis or snail fever is still endemic in the area. The mayor mentioned that two of his barangay captains died from this disease while a number of local officials have been tested positive of this fatally chronic infection.

According to the mayor, majority of the barangay captains live in the lowlands and just go to their respective barangays occasionally to hold a barangay council session, if at all. Eighteen of these barangays are classified as GIDAs. Most of these barangays are sparsely populated with less than 1,000 residents distributed across wide distances, making service delivery to these residents quite difficult. Other than the isolation of these places, some informants suggested that aside from the isolation and poverty of these places, conflicts among “dynastic” political families, some supporting their own private armies, complicate the governance of the place, including that of food and nutrition security.

Of the 69 barangays, only 41 have BNSs, but of this number, only about half are functional (i.e., submit OPT reports). They have minimal honoraria (ranging P50 - P200) and the amount of monetary allowances received by the BNS is highly variable across barangay. Consequently, a high turnover of BNS volunteers was cited as a problem. Just like BHWs, their “job stability” is very low as they are often replaced by those “preferred” by the newly elected officials. Moreover, most of the BHWs (about 4-5 per barangay) are over 60 years old, thus, the need for better-trained young volunteers who can meet the expectations and rigors of the job. Some registered BHWs or trained BNS hesitate to render services because some barangay captains only give honoraria to their own appointees.

Just like in Sta. Margarita, some NGOs/private foundations (e.g., PLAN International, Zuellig Foundation) are present in the municipality. In terms of health programmes, Zuellig have helped in training the health personnel, especially midwives and BHWs on maternal health services.

The Municipal Nutrition Council (MNC) meets only once a year to plan and implement the activities of the July Nutrition month. The meeting usually focus on nutrition activities and no attempts to examine/analyze the OPT data and how to improve it. There is also a lack of coordination and information dissemination to the different offices/agencies (e.g., agriculture, health, procurement and accounting) that are related to the health and nutrition issues. While the mayor is supportive, there seem to be lack of strong leadership of those (e.g., MNC, MHO) in-charged of program implementation.

FSN Programme Challenges. Although all BHWs/Day Care Workers have attended the one-month IYCF training, not all of them are able to submit data on the annual OPT because they lack the necessary equipment (weighing scales, height boards). Some health workers still use bathroom scales despite the

unreliability of the results obtained from these instruments because these are portable, and the required Salter scales are unavailable. Meanwhile only 10 barangays have height boards, donated by Plan International.

With regards to the collection and use of OPT data, much time is spent on data collection (if collected at all) and in manually filling up forms for submission to the provincial health office. At the local level, there appears to be little or no awareness of the results of the annual OPT survey and the extent of malnutrition in the municipality. It was only when one of the LGU staff attended a workshop in Tacloban where their OPT data was presented when awareness was raised about the extent of the malnutrition problem. This highlights a crucial gap in the feedback mechanisms within and among local staff.

While breastfeeding among mothers appears to be well-accepted and commonly practiced, the BHWs/BNS expressed their difficulty in achieving 100% exclusive breastfeeding with proper supplemental feeding.

Since the start of 2016, 41 cases of teenage pregnancies have been reported (as of September), the youngest mother being 13 years old. They reported they have the highest incidence in the region.

While agriculture is the main source of livelihood, there is a perception that farming families do not have diversity (mostly rice and dried fish) in their diets. They prefer to sell their produce (rice, tubers, vegetables) for cash in the weekend market to buy dried fish and other household necessities. The Municipal Agriculture Office (MAO) technicians offer programs like "Plant Now, Pay Later" for locally grown, kalinayan rice, seed program for 4Ps beneficiaries and crop insurance schemes. But MAO head complained of low subscription to these programs, especially among the poor. They believed that that food security or availability of diverse food sources (rice, vegetables, rootcrops/tubers, legumes, fish) is not a problem but the demand or consumption of them is the challenge.

Leadership and Support for Health and Nutrition: Barangay Concepcion. Barangay Concepcion is one of the high-performing barangays in Gandara, Western Samar because it has less than 20 percent underweight prevalence (compared to the municipality's 29 percent). The barangay captain and his council have taken health and nutrition issues are taken seriously. This can be seen in the barangay hall where the following information are displayed prominently: 1) socio-economic profile (population, nutrition, health and sanitation status, 2) geo-physical and ecological risk map, 3) pictures of the barangay officials, alongside those of BHWs, BNs, and community health teams (CHT), and 4) barangay resolutions/circulars. In these walls, both leaders and health personnel and volunteers can monitor the health and nutrition performance of the barangay residents.

The officials of Barangay Concepcion are highly supportive of BHWs, CHT and BNS because their presence have made the positive difference to health and nutrition situation (eg., responsible for malnourished cases, follow up difficult/recalcitrant families, etc.). Compared to other barangays, the barangay council here have provided amply for the honoraria to CHTs, BHWs and BNS.

The barangay council had also integrated the health and nutrition issues into their planning and budgeting of other programs (e.g., GAD budget, Livelihood, DRRM, Kabataang barangay or youth development or sports, etc.). Thus, in stark comparison to their municipality, the barangay is able to implement their programs, especially health and nutrition in convergent ways.

The nutritional status is regularly monitored by BHWs working in tandem with the BNS. Children are usually gathered by purok in a common area where they are weighed (e.g. 188 children, 0 to 71 months old). They have established a schedule for weighing for each purok, using Salter Scales and height boards supplied by their NGO partner, Plan Int'l. A few years ago, almost half of the 300 households did not have toilets/latrines but Plan Int'l. distributed about 147 latrines, so only those very few of those poor households do not have it. Their main water supply are deep wells and considered sufficient but about 10 percent of the households do not have sufficient access to potable water.

When asked about the cause of severely underweight children in their village, the BWS/BNS offered the

following reasons: 1) poor households access to food and malnutrition, heightened during lean seasons/in between harvests (“tag-gutom”/hunger periods); 2) families’ do not make effort to plant vegetables; 3) some malnourished mothers have also poor care-giving behavior; 4) large family size (6-8 children); 5) hesitance of some parents to practice family planning (covered in family development sessions) because of fear of side effects, 6) lack of alternative livelihoods (“may ibang pagkaka-abalahan”) during these periods and 7) food beliefs based on religion, some on folk beliefs, peer influence that do not support good health and nutrition.

While the main source of livelihood is agriculture, they need other sources of income during lean seasons, i.e., in between planting and/or harvest seasons. Incidence of malnourishment often occur during this period. Most of the young mothers often have malnourished children. While acceptance of breast-feeding is widespread, achieving 100 percent exclusive breastfeeding has been difficult. The mothers practice complementary feeding (mostly “lugaw” and Cerelac) and mothers supposedly follow good IYCF practices (e.g. correct food choices and frequency of feedings per day) but it is difficult to ascertain their impacts. The barangay has supplementary feeding being given in Daycare Centers (120 days). But when they go home, especially during lean sessions, gains are not sustained. As in the poblacion, they also cited teenage pregnancy as a problem.

Summary and Conclusion. To summarize, the reduction of malnutrition prevalence in Sta. Margarita (especially in the child-friendly Barangay Sulsogon) and in Concepcion, Gandara are due to the following factors: 1) awareness of their food security and nutrition situation which galvanized the municipality’s and barangay’s leadership to mobilize their resources, 2) organized a dedicated structure and commensurate personnel/human resources to reduce malnutrition prevalence, 3) convergence of program resources and delivery of services, 4) dedicated leadership, 5) convergent governance structures and processes with a strong focus on reducing the malnutrition prevalence.

To increase the multiplier effect of the above health and nutrition programs, other programs that can increase the supply and demand (i.e., consumption at the household level) of nutrient-dense foods, health, nutrition and sanitation services should be supported. Investments in barangay infrastructure (both hard and soft) that will increase local food production (agriculture, environment), WASH, should be given high priority. More significantly, the livelihood bases of the poor households have to be supported as well.

These two cases show that leadership and governance are central factors in mobilizing institutional, human and financial resources of the local government alongside those of the community and civil society.

Meanwhile the persistence of malnutrition prevalence in Gandara and in the low-performing barangay of Burabod, Sta. Margarita can be attributed to seeming lack of awareness of the gravity of the problem among the local officials, especially those in health and nutrition. They just collect the data and submit it to the region. Having not processed nor examined it closely. The CNAO, BNS and BHWS in these places said that they did not even see the overall data set that they collected. They had no idea of the overall malnutrition patterns in their community. Consequently, they could not be alarmed and thus, the lack of pro-active programs to reduce the malnutrition prevalence. Thus, the CNAO leadership and barangay leadership did not have a solid program of action to remedy the situation. But more importantly, the MNC could be seen as dysfunctional. They only meet during Nutrition Month to plan for some activities. Lack of leadership and dysfunctionality of the governance structures and processes seem to be highly associated with high poverty incidence of the place and high prevalence in malnutrition.

Field Study Site: **Gandara, Samar**
 Venue/s: Gandara Municipal Hall
 Date: October 11, 2016
 Activities: Focus Group Discussion (Municipal Offices)
 Focus Group Discussion (Barangay Concepcion)
 Participants: Judith Asis -- Municipal Social Welfare and Development Office
 Rolina Oliva -- Municipal Nutrition Action Officer
 Leonida Yulo -- Barangay Nutrition Scholar
 Adelfa Gabejan -- Municipal Agriculturist

Teresita Gantala -- Barangay Health Worker
Roque Malobolo -- Municipal Agriculture Office
Antonio Cinco -- Brgy. Conception Resident
Luzviminda Vasquez -- Brgy. Conception Resident
Murlita Lubusan -- Brgy. Conception Resident
Rutchele Cajurao -- Brgy. Conception Resident
Luzviminda Aliman -- Brgy. Conception Resident
Natividad Aliman -- Brgy. Conception Resident
Marife Eguin -- Brgy. Conception Resident
Rosenda Castillo -- Brgy. Conception Resident
Liesel Sabandal -- Brgy. Conception Resident
Fe Cinco -- Brgy. Conception Resident
Nelia Ygrubay -- Brgy. Conception Resident

Annex D

Senate and House Bills on Food Security and Nutrition

No.	Author	Description	Status
Food Security			
SB712	Aquino IV, Paolo Benigno	An Act Providing a Framework for the Right to Adequate Food	Pending in Committee (8/10/2016)
SB111	Pimentel, Aquilino	An Act Providing a Framework for the Right to Adequate Food	Pending in Committee (8/1/2016)
SB694	Aquino IV, Paolo Benigno	An Act Creating a System of Food Purchase Supporting Local Production and a Program of Distribution Addressing the Nutritional Needs of Children	Pending in Committee (12/13/2016)
SB869	Poe, Grace L.	An Act Promoting Urban Farming to Address Food Security Concerns and Livelihood Opportunities and Appropriating Funds for the Purpose	Pending in the Committee (8/15/2016)
SB983	Pangilinan, Francis N.	An Act Promoting Integrated Urban Agriculture & Vertical Farming to Address Food Security Concerns and Provide Livelihood Opportunities, Appropriating Funds Therefor & for Other Purposes	Pending in Committee (8/16/2016)
HB1715	Biazon, Rozzano Rufino	An act establishing a strategic food security rice reserve and for other purposes	Pending in Committee since 2016-08-02
HB2818	Suansing, Estrellita	An act promoting integrated urban agricultural development in metropolitan areas nationwide to address food security concerns and appropriating funds therefor	Pending in Committee since 2016-08-17
HB2841	Baguilat Jr., Teddy Brawner	An act establishing a strategic food security rice reserve and for other purposes	Pending in Committee since 2016-08-17
	Roque, Harry Jr. L.	An act providing a framework for the right to adequate food	Pending in Committee
HB 1645 ¹	Villarica, Linabelle R.	An act providing a framework for the right to adequate food, establishing for the purpose a Commission on the Right to Adequate Food, and appropriating funds therefore	Pending in Committee
HB 3938 ¹	Bag-ao, Arlene 'Kaka' J.	An act providing a framework for the right to adequate food, and for other purposes	Pending in Committee
SB 53 ¹	Pangilinan, Francis N.	An act to establish a strategic food security rice reserve and for other purposes	
SB 111 ¹	Pimentel III, Aquilino Aquino IV, Paolo Benigno	An act providing a framework for the right to adequate food	
Nutrition			
SB023	Honasan II, Gregorio B.	An Act Providing Free Food for Children in Public Schools and Day Care Centers From Products of Farmers Purchased by the Government (aka "School Feeding Purchased From Poor")	Consolidated in the Committee Report (12/13/2016)
SB053	Pangilinan, Francis	An Act Establishing a Strategic Food Security Rice Reserve and for Other Purposes	Pending in Committee (7/26/2016)
SB160	Poe, Grace L.	An Act Instituting a Free Nutri-Meals Program to Children Enrolled in All Elementary Schools Including Kindergarten and High Schools in the K-12 Public Education Sector, Providing Framework	Consolidated/ Substituted in the Committee Report (12/13/2016)

No.	Author	Description	Status
SB 831	Recto, Ralph G.	An Act to Guarantee the Health and Nutrition of Children, Protecting Them From Malnutrition by Establishing a Comprehensive Childrens Health and Nutrition Program, Providing Funds Therefor	Pending in Committee (8/15/2016)
SB1028	Pangilinan, Francis N.	An Act Creating a System of Food Distribution for Addressing the Nutritional Needs of the People Providing for its Procurement Process and Appropriating Funds Therefor and for Other Purposes	Pending in Committee (8/17/2016)
SB1257	Legarda, Loren B.	An Act to Protect Filipino Pregnant and Lactating Mothers, Infants, and Young Children During the First 1000 Days of Life and Appropriating Funds Therefor	Pending in Committee (12/5/2016)
SB1279	Honasan, Zubiri, Sotto, Aquino, Poe, Legarda	An Act to Protect Filipino Pregnant and Lactating Mothers, Infants, and Young Children During the First 1000 Days of Life and Appropriating Funds Therefor	Pending Second Reading
HB0247	Bordado, Gabriel	An act creating a system of food distribution for addressing the nutritional needs of the people providing for its procurement process and appropriating funds therefor and for other purposes	Pending in Committee since 2016-07-26
HB0767/ HB3419	Aglipay-Villar, Emmeline, Banal, Jorge	An act creating a system of food distribution for addressing the nutritional needs of the people providing for its procurement process and appropriating funds therefor and for other purposes	Pending in Committee
SB 204 ¹	Gatchalian, Sherwin	An act establishing the Philippine basic education, nutrition, and performance acceleration program, appropriating funds therefor, and for other purposes	Pending in Committee
SB 220 ¹	Sotto III, Vicente	An act instituting school nourishment and dietary program to public elementary school students providing funds therefor, and for other purposes	Pending in Committee
SB 416 ¹	Legarda, Loren B.	An act providing for a mandatory nationwide child nutrition program in all public elementary schools and barangay day care centers, providing funds therefor, and for other purposes	Pending in Committee
SB 831 ¹	Recto, Ralph G.	An act to guarantee the health and nutrition of children, protecting them from malnutrition by establishing a comprehensive children's health and nutrition program, providing funds therefor, and for other purposes	Pending in Committee
SB 1028	Pangilinan, Francis N.	An act creating a system of food distribution for addressing the nutritional needs of the people providing for its procurement process and appropriating funds therefor and for other purposes	Pending in Committee
Institutions/Reorganization			
SB1072/ HB1978	Ejercito, Joseph Victor, Suansing, Estrellita, Suansing, Horacio	An Act to Strengthen and Reorient the Mandate of the National Food Authority in Order to Ensure Food Sufficiency, for That Purpose Rationalizing its Functions, and for Other Purposes	Pending in Committee (8/30/2016)
SB421	Legarda, Loren B.	An Act Reorganizing the National Food Authority Into the National Strategic Food Reserve Corporation and Redefining its Powers, Appropriating Funds Therefor and for Other Purposes	Pending in Committee (8/8/2016)
HB1102	Castelo, Winston	An act creating the office of national food security and appropriating 20 billion pesos therefor from the funds of PAGCOR and PCSO	Pending in Committee
HB4361	Espino, Amado Jr.	An act providing for a framework for food security establishing for the purpose a food security authority and appropriating funds therefor	Pending in Committee since 2016-11-21
SB 383	Legarda, Loren B.	An act creating the position of Barangay Nutrition Worker in every barangay, appropriating funds therefor, and amending for the purpose PD 1569	Pending in Committee

References

- Albert, J., A. Tabunda, J. Angeles-Agdeppa (2016). What is the impact of DepEd's school-based feeding program? Policy Note No. 2016-10. PIDS, Quezon City, Philippines.
- Aldaba, Fernando (2016). The Philippines: Human Development Index Ranking, presented during the Regional Launch of the 2015 Human Development Index Ranking, The Peninsula Manila, Makati City, Philippines, 18 January 2016.
- Alexandros, N., and J. Bruinsma (2012). World agriculture towards 2030/2-050: the 2012 revision. ESA Working Paper No. 12-03. FAO, Rome.
- Altoveros, N., and T. Borromeo. 2007. The State of Plant Genetic Resources for Food and Agriculture in the Philippines. DA, Quezon City.
- Antonio, Ella (2016). Readiness for Sustainable Development Goals: Republic of the Philippines. Paper prepared for the Institute for Global Environmental Studies of Japan for inclusion in a publication covering several Asian countries, April.
- Anttila-Hughes, J., and S. Hsiang. 2013. Destruction, Disinvestment, and Death: Economic and Human Losses Following Environmental Disaster.
- ASEAN Secretariat (2015). ASEAN Integrated Food Security Framework and Strategic Plan of Action on Food Security In the ASEAN Region (SPA-FS) 2015-2020.
- Asian Development Bank (2013). Gender Equality in the Labor Market in the Philippines. Mandaluyong City, Philippines.
- Ateneo de Naga University and Ateneo de Manila University. "2007 Baseline Socio-Economic Situation of Naga City." <http://www.adnu.edu.ph/Centers/SSRC/socio-eco/SE-Naga.pdf>
- Baldoz, R. (2013). Social Protection Floor for Vulnerable Workers.
- Balisacan, Arsenio (2001). "Poverty in the Philippines: An Update and Reexamination." *Philippine Review of Economics* 38(1):16-51.
- Batt, P., S. Concepcion, K. Dagupen, C. Lizada, R. Murray-Prior (2007). The Vegetable Industry in the Philippines. Small Research and Development Activity. Australian Centre for International Agricultural Research, Canberra.
- Briones, R. (2015). Scenarios and Options for Productivity Growth in Philippine Agriculture: An Application of the Agricultural Multi-market Model for Policy Evaluation (AMPLE). SEARCA Monograph Series on Productivity Growth in Philippine Agriculture. SEARCA, DA - BAR, and PhilRice: Los Banos, Laguna, Philippines.
- Briones, R. (2016). Growing Inclusive Businesses in the Philippines: The Role of Government Policies and Programs. Discussion Paper Series No. 2016-06. PIDS, Quezon City.
- Briones, R. 2016. Consumption of Food Away from Home and the Dynamics of Asian Rice Consumption: Case of the Philippines. Paper presented at the FAO RAP, 23-24 November, Bangkok.
- Briones, R., and I. Galang. 2013. Urgent: A road map for agro-industrial development in the Philippines. Policy Notes No. 2013-06. PIDS, Quezon City.

Briones, R., and I. Galang. 2014. *Bakit Nagmahal ang Bigas Noong 2013? At Bakit Mahal pa rin? The Continuing Saga of Rice Self-Sufficiency in the Philippines*. Policy Notes No. 2014-08. PIDS, Quezon City.

Briones, R., and J. Felipe, 2013. *Agriculture and structural transformation in developing Asia: Review and outlook*. Economics Research Department Working Paper No 363. Mandaluyong City: ADB.

Briones, R., and L. Tolin (2016). *Options for supporting rice farmers under a post-QR regime: review and assessment*. Discussion Paper Series No. 2015-46. PIDS, Quezon City, Philippines.

Cabral, E. (2008). *Social Protection Programs of the Government, presentation on Challenges and Responses, presented in the Forum on Shocks, Traps and Nets: Pressing Needs and Present Seeds of Social Protection, 15 April 2013*.

Capanzana, M., D. Aguila, C. Javier, T. Mendoza, V. Santos-Abalos (2015). *Adolescent pregnancy and the first 1000 days (the Philippine Situation)*. *Asia Pacific Journal of Clinical Nutrition* 24(4):759 - 766.

Chambers, R. and G.v. Medearazza (2014). *Reframing Undernutrition: Faecally-Transmitted Infections and the 5 As*. IDS Working Paper. 14(450): October.

Clark, H. 2010. *Women's Economic Empowerment for Sustainable Development in Rural Areas*. <http://www.undp.org/content/undp/en/home/presscenter/speeches/2016/03/18/helen-clark-keynote-speech-on-women-s-economic-empowerment-for-sustainable-development-in-rural-areas.html>

De los Reyes, V. 2016. *The End of Term Report of the Secretary of Agrarian Reform, 2011 - 2016*. DAR, Quezon City.

Faculty of Public Health (2016). *What is Public Health?* http://www.fph.org.uk/what_is_public_health. Accessed 30 September 2016.

FAO (2015). *State of Food Insecurity in the World 2015*. FAO: Rome.

FAO (2016). *FAOStat*. FAO, Rome. <http://faostat.fao.org>.

FAO, 2016. *FAOStat*.

FNRI-DOST (2013) *2nd National Nutrition Summit: 8th National Nutrition Survey (NNS)*. FNRI-DOST, Taguig City, Philippines.

FNRI-DOST (2016). *The first 1000 days ni baby pahalagahan para sa malusog na kinabukasan! Presentation for 2016 Nutrition Month*. FNRI-DOST, Taguig City, Philippines.

Habito, Cielito F. (2016), "Misplaced fears on rice QRs," *No Free Lunch Op-ed column, Philippine Daily Inquirer*, October 21.

Herrin, A. 2016. *Putting Prevention of Childhood Stunting into the Forefront of the Nutrition Agenda: A Nutrition Sector Review*. Discussion Paper Series No. 2016-21. PIDS, Quezon City, Philippines.

IFPRI (2016). *Global Nutrition Report 2016 From Promise to Impact: Ending Malnutrition by 2030*. IFPRI, Washington, D.C.

IPCInfo (2013). *IPC Food Security and Nutrition Analysis for Mindanao, Philippines*.

Juguan, J., P. Zambrano, M. Flores, 2014. *Summary Findings of the Nutrition and IYCF Survey in internally displaced households*

- Kandpal, E. H., Alderman, J., Friedman, D., Filmer, J., Onishi, and J. Avalos (2016). A conditional cash transfer program in the Philippines reduces severe stunting. *Journal of Nutrition*. Doi: 103945/j.116.233684.
- Kolčič, I. (2012). Double burden of malnutrition: A silent driver of double burden of disease in low- and middle-income countries. *Journal of Global Health* 2(2): 020303.
- Manalili, N., K. Yaptenco, and A. Manilay. 2015. Rapid appraisal of the postharvest facilities projects in the Philippines. Discussion Paper Series No. 2015-31. PIDS, Quezon City.
- Manasan, R. (2010) Reforming social protection policy: responding to the global financial crisis and beyond. Research Paper Series No. 2010-01. PIDS, Quezon City.
- Manasan, R. 2005. Local Public Finance in the Philippines: Lessons in Autonomy and Accountability. *Philippine Journal of Development* 32(2): 31-102.
- Motoo Konishi, Rogier van den Brink and Karl Kendrick Chua, 2014, "Creating More and Better Jobs: We Can Work It Out," Presentation to the Third Arangkada Philippines Anniversary Forum, Makati Shangri-La Hotel, February 26.
- Moya, P., F. Bordey, J. Beltran, R. Manalili, C. Launio, A. Mataia, A. Litonjua, D. Dawe. 2016. Costs of Rice Production. In: Bordey, F., Moya, P., Beltran, J. and Dawe, D. 2016. Competitiveness of Philippine Rice in Asia. Philippine Rice Research Institute, Nueva Ecija, Philippines.
- NDRRMC (2015). Situational Report re Emergency Management for the Displaced Persons Resulting from the Armed Conflict In Zamboanga City and Basilan Province. http://www.ndrrmc.gov.ph/attachments/article/2655/Emergency_Management_for_the_Displaced_Person_Resulting_from_Armed_Conflict_in_Zamboanga_City_and_Basilan_Province_as_of_25SEP2013_0800H.pdf. Accessed 11 November 2016.
- NEDA (2010). Philippine Development Plan, 2010-2016. www.neda.gov.ph
- NEDA and UNDP (2014) Fifth Progress Report: Millennium Development Goals http://www.neda.gov.ph/wp-content/uploads/2014/08/PH-5TH-MDG-PROGRESS-REPORT_Nov-4-ver.pdf [accessed 25 May 2016]
- NNC (2012). *Philippine Plan of Action for Nutrition (PPAN) 2011-2016*, Manila.
- NNC (2014). Repositioning nutrition in Philippine development: mid-term update of the Philippine Plan of Action for Nutrition 2011-2016, Manila.
- NNC (2016). First 1000 days ni baby pahalagahan para sa malusog na kinabukasan. Presentation for the 2016 Nutrition Month. NNC, Manila.
- NSCB. 2006 and 2009 Municipal and City Level Poverty Estimates. <http://www.nscb.gov.ph>
- NSO & ILO-IPEC, 2011 Survey on Children (SOC), Final Results. <https://psa.gov.ph/content/estimated-number-working-children-5-17-years-old-who-worked-during-past-week-was-33-million>.
- OCHA (2014). Philippines: Zamboanga and Basilan Emergency. Situation Report No. 14 (as of December 2013). OCHA Manila.
- PAGASA - DOST (2011). Responding to climate change: Philippine climate projections, February. Report funded under the MDGF-1656 "Strengthening the Philippines Institutional Capacity to Adapt to Climate Change."
- Pedro, M. R. Benavides, and C. Barba (2006). Dietary changes and their health implications in the Philippines. In: *The double burden of malnutrition: Case studies from six developing countries*. FAO Food

and Nutrition Paper 84. FAO, Rome.

Ploetz, R.C. and Churchill, A.C.L.. 2011. Fusarium wilt: the banana disease that refuses to go away. In: Van den Bergh, I., Smith, M., Swennen, R. and Hermanto, C. (eds.). Proceedings of International ISHS-ProMusa Symposium on Global Perspectives on Asian Challenges, Guangzhou, China, 14-18/09/2009. Acta Horticulturae 897. ISHS, Leuven, Belgium.

Porio, and Lao (2014). A Social and political-Economic assessment of an Urban community in Metro Manila: The Case of Welfareville. Presentation of the research report submitted to the World Bank at the Institute of Philippine Culture, Ateneo de Manila University, Oct 20.

Porio, E. (2016). Asian Prosperity and Social Inequality: Reflections on Social-Ecological Transitions and Governance of Cities in Global-Regional Systems: Alternative Futures for Democracy and Cities in Asia, W. Boike, C. Wungaeo and S. Wungaeo, eds., Palgrave Publications (Berlin).

Porio, E. et al, (2016), Housing and Informal Settlements chapter in Urban Climate Change Research Network Assessment , Cynthia Rosenweig, et al., (eds.), Urban Climate Change Research Network, Earth Institute, Columbia University and Cambridge University Press.

PSA (2014). "2012 Small Area Poverty Estimates" December 30. www.psa.gov.ph.

PSA (2015). "Family Income and Expenditures Survey," 1985-2015.

PSA (2015). Selected food security indicators: Philippines 1990-2013, Manila

PSA (2016). Performance of Philippine Agriculture: April - June, 2016.

PSA and ICF International (2014). *Philippines National Demographic and Health Survey 2013*, Manila, Philippines and Rockville, Maryland, USA.

PSA. 2006 and 2009 Municipal and City Level Poverty Estimates. <http://www.nscb.gov.ph>

PSA. 2009. Women in Agriculture. Gender Fact Sheet No. 09-01. PSA, Quezon City.

PSA. 2015. Special Report - Highlights of the 2012 Census Of Agriculture (2012 CA).

Quisumbing, A. (1986). Issues in Philippine Food and Nutrition Policy. Development Research News 4(2) March-April. PIDS, Quezon City.

Reyes, C., J. Bancolita, N. Leyso, and S. Calubayan (2016). Impacts of Climate Change on Household Food Security in the Philippines. Report for CBMS - FAO.

Reyes, C., C. Mina, R. Gloria, and S. Mercado (2015). Review of the Design and Implementation of the Agricultural Insurance Programs of the Philippine Crop Insurance Corporation (PCIC). Discussion Paper Series No. 2015-07. PIDS, Quezon City.

Rosegrant, M., J. Koo, N. Cenacchi, C. Ringler, R. Robertson, M. Fisher, C. Cox, K. Garrett, N. Perez, and P. Sabbagh (2014). Food Security in a World of Natural Resource Scarcity: The Role of Agricultural Technologies. IFPRI, Washington, D.C.

Rosegrant, M., N. Perez, A. Pradesha, and T. Thomas (2015). The economywide impacts of climate change on Philippine agriculture. Project Policy Note 1 (September). IFPRI, Washington, D.C.

Save the Children (2016). Cost of Hunger: Philippines. The Economic Impact of Child Undernutrition on Education and Productivity. M. Lebanan, J. Antipolo. Save the Children Philippines, Manila.

Sobel, H., A. Iellamo, R. Raya, A. Padilla, J-M. Olivea, S. Nyunt-U (2011). Is unimpeded marketing for breast milk substitutes responsible for the decline in breastfeeding in the Philippines? An exploratory survey and focus group analysis. *Social Science and Medicine* 73:1445 - 1448.

SWS (2016) 'Hunger falls to 11.7% of families; moderate hunger 8.9%, severe hunger 2.8% ', *Fourth Quarter 2015 Social Weather Survey* [online], available: <https://www.sws.org.ph/pr20160113.htm> [accessed 16 May 2016].

Thomas, T., A. Pradesha, and N. Perez (2015). Agricultural growth and climate resilience in the Philippines: Subnational impacts of selected investment strategies and policies. Project Policy Note No. 2 (September). IFPRI, Washington, D.C.

UN (2016) Zero hunger challenge: pathways to zero hunger - transforming our food systems to transform our world, United Nations.

UNDP (2012). Strengthening Social Protection Components and Strategies in the Philippines: A Compilation of Social Protection Think Papers Department of Social Welfare and Development.

UNICEF (2015) *Child poverty in the Philippines*, Manila, Philippines: United Nations Children's Fund.

United Nations General Assembly (2015). Transforming Our World: The 2030 Sustainable Development Agenda. United Nations summit for the adoption of the post-2015 development agenda. UN, New York, USA.

USDA, 2013. Typhoon Haiyan Damage Summary. GAIN Report. USDA, Washington D.C.

WAVES (2015). Philippines Country Report. Global Partnership for Wealth Accounting and Valuation of Ecosystem Services.

WFP (2016). Survey on Food Security and Nutrition in the Poorest Provinces. Presentation slides. WFP Country Office, Taguig, Philippines.

WHO (2016) 'Global database on child health and malnutrition', [online], available: <http://www.who.int/nutgrowthdb/about/introduction/en/index2.html> [accessed 20 May 2016].

World Bank (2016). World Development Indicators. www.data.worldbank.org.

STRATEGIC REVIEW

Food Security and Nutrition in the Philippines

January 2017