PHILIPPINE AGRIFOOD SYSTEM TRANSFORMATION PATHWAY

I. INTRODUCTION

The Philippines supports the ambition of the United Nations Food Systems Summit to launch bold actions and solutions that advance healthier, more sustainable, and more equitable food systems, contributing to the achievement of the Sustainable Development Goals (SDGs). Early on, the country enshrined the SDGs—including those related to food systems—within its national development agenda.

Food security and proper nutrition – outcomes of a transformed food system – are central goals of the Philippine Development Plan 2023-2028 which guides development efforts of the Philippine government. Food security and a dynamic food industry are ambitions set out in the plans and programs of the Department of Agriculture under the present administration. These are pillars of the National Nutrition Council's Philippine Plan of Action for Nutrition, while food security is one of the goals of the Philippine Climate Change Action Plan.

Transforming the Philippine food system therefore builds on past and current efforts. Mapping the pathway to transformation starts with existing national and sectoral plans insofar as these relate to the food system, ensuring that transformation moves in sync with ongoing government initiatives and improving the chances of success.

At the same time, the journey can gain added momentum from new insights and solutions that emerge when a food systems lens is applied to persistent challenges such as poverty, hunger, malnutrition, and climate change.

This document draws a pathway for the long-term journey to transform the Philippine food system by identifying the key challenges facing the food system, the goals of a transformed system, and broad strategies by which to realize the goals.

A companion document will translate these strategies into a Plan of Action to Transform the Philippine Food System, setting out programs, activities, and projects (PAPs), and policy reforms and targets.

II. CHALLENGES TO THE PHILIPPINE FOOD SYSTEM

Section II identifies and briefly describes the key challenges confronting the Philippine food system, beginning with food system outcomes and moving through the major system components. There is no attempt to be comprehensive; rather, the aim is to highlight priority challenges that warrant focused action.

FOOD SYSTEM OUTCOMES

Food insecurity. The proportion of the population experiencing moderate to high food insecurity increased from 41 percent in 2019 to 44 percent in 2023 based on survey data capturing conditions and behaviors that reflect constrained access to food.[1]

Triple burden of malnutrition. *Undernutrition* in the form of stunting, wasting, and underweight continues to affect children and adolescents, while pregnant women remain nutritionally at risk and adults and older persons experience chronic energy deficiency. *Micronutrient deficiencies*—particularly in vitamin A, iron, and iodine—persist among vulnerable groups.

At the same time, *overnutrition* is increasingly affecting all population groups. The most pressing emerging nutritional challenge is the rapid rise in overweight and obesity across all age groups.[2]

High poverty among food producers. Latest statistics (2023) indicate that among the basic sectors of Philippine society, poverty incidence remains highest among farmers and fishers, at 27 percent.[3]

FOOD SYSTEM DRIVERS

Food system drivers are the external and internal forces that shape how food systems evolve over time. These include biophysical and environmental conditions, innovation and technology, political and economic dynamics, socio-cultural context, and demographic changes. Drivers influence everything from what food is produced to how it is consumed, and they can act at local, national, or global levels.

Exposed to natural disasters. TThe Philippines ranks first out of 193 countries in the World Risk Report (2025),[4] reflecting its high exposure and vulnerability to natural hazards. Located within the Pacific Ring of Fire and the typhoon belt of the North Pacific Basin, the country is highly prone to earthquakes, volcanic eruptions, tsunamis, and typhoons. These recurring disasters cause frequent damage to food production and supply chains, resulting in income losses for food producers and their households. The repeated financial shocks—combined with limited coping capacity among poorer sectors—constrain access to food and essential services and contribute to the persistence of undernutrition and child stunting.[5]

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[1] https://www.foodsystemsdashboard.org/countries/ph

[2] National Nutrition Council. Philippine Plan of Action for Nutrition 2023-2028. Taguig City, Philippines, 2023.

[3] https://psa.gov.ph/statistics/poverty/node/1684075985

[4] https://weltrisikobericht.de/worldriskreport/

[5] National Nutrition Council. Philippine Plan of Action for Nutrition 2023-2028. Taguig City, Philippines, 2023.

Rapid degradation of the environment and climate change. Degradation of biodiversity, land, and water resources threatens long-term food and nutrition security, while food systems themselves contribute to pollution and climate change. Rising temperatures are expected to reduce crop and livestock yields, and together with ocean acidification, to lower fisheries productivity. Agriculture infrastructures are also at risk from extreme weather events. The biggest decline in yield and production is expected for maize, sugarcane, and rice. The largest decline in per-capita consumption is projected for food corn, rice, sugar, and fruits and vegetables. Crop losses and supply chain disruptions are predicted to cause large price hikes in commodities like corn, rice, and fruits and vegetables. These trends are seen to raise the number of people at risk of hunger by 8 percent in 2030 and 13 percent by 2050.[6]

Vulnerable agricultural lands and fishery areas. Low soil fertility is prevalent in rice and corn areas where vegetables and legumes are planted as alternate crops, with 82 percent of rice areas and and 71 percent of corn areas exhibiting low to moderately low fertility. The demand for food and housing from a growing population threatens existing agricultural land use. In terms of fishery areas, as of 2019, 38 out of the 90 marine culture parks established covering 36,234 hectares are non-operational. Illegal, unreported, and unregulated fishing significantly decrease opportunities for small fisher folk.[7]

Uneven growth and high poverty. Growth in the agriculture and fisheries sector has been spatially and temporally uneven, leaving many smallholder farmers and fisherfolk in persistently poor socioeconomic conditions.[8]

Fragmented and poorly maintained rural infrastructure. Despite progress in recent years, constructed farm-to-market roads cover only about half of the estimated requirement of 131,410 kilometers needed to connect all production areas. Existing roads are often poorly maintained and lack sufficient capacity. The transport of produce is further hampered by mountainous terrain and fragmented inter-island connectivity.[9]

Weak link between R&D and production. The share of research and development programs in the budgets of the Department of Agriculture and the Department of Science and Technology–PCAARRD remains low, with significant potential yet untapped. Constraints include limited permanent positions for scientists and researchers, resulting in fragmented and project-based research arrangements.

More fundamentally, R&D remains largely researcher-driven rather than demand-driven, with limited strategic targeting of sector needs. As a result, uptake of mature technologies is weak, many innovations lag behind private-sector advances, and scaling up remains constrained.[10]

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[6] World Bank. *Philippines Country Climate and Development Report 2022*

[7] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

[8] https://psa.gov.ph/statistics/poverty/node/1684075985

[9] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

[10] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

Globalization and trade adversely affect small producers. Globalization and external market forces pose significant challenges to the Philippine food system, particularly through the influx of subsidized agrifood imports that undermine the competitiveness of local producers. Agricultural subsidies in developed countries distort global markets,[11] and undercut local prices[12]. As a result, small-scale Filipino farmers struggle to compete, leading to marginalization, land loss, and in some cases exit from the sector, with production shifting toward larger agribusinesses.

FOOD SUPPLY CHAINS

The food supply chain encompasses all the stages involved in producing, processing, distributing, and marketing food. It begins with agricultural production and moves through post-harvest handling, storage, processing, packaging, transportation, and retail. Efficient and inclusive supply chains are critical for ensuring food availability, quality, and affordability. They also provide livelihoods for millions of primary producers, food processors, and sellers.

High cost of farm inputs. This is cited as one of the most critical agri-fishery issues.[13] Farm input costs have sharply increased in recent years due to global fertilizer/fuel prices, logistics, weather events, and external policies. These rising costs have directly impacted farmers—elevating production expenses, suppressing profits, and contributing to rising food prices. In 2024 alone, fertilizer prices rose from around ₱1,901 per sack in early 2024 to ₱3,700—a nearly 95 percent increase in just a year. Global demand, export bans by India & China, raw materials prices, and logistics are behind these hikes.[14]

Slow irrigation development. Only 1.7 million hectares or 57 percent of the 3 million potential irrigable areas has been irrigated. Irrigation development has been slow due to the long gestation period of large irrigation systems, while construction of small-scale systems has been limited and existing facilities need rehabilitation or restoration.[15]

Low farm mechanization. The level of farm mechanization has improved over the years (2.7 horsepower per hectare (hp/ha) in 2022) but lags behind Japan (18.9 in 2011), Korea (9.4 in 2011), and China (7.6 in 2015). It is at par with Vietnam (2.8 in 2016), Thailand (2.5 in 2015), Bangladesh (2.5 in 2015), and Malaysia (2.4 in 2015), higher than Cambodia (1.8 in 2013), Indonesia (1.7 in 2019), and Laos (0.4 in 2016). Labor displacement and high

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[11] focusweb.org

[12] iatp.org

[13] Post-activity Report on the National Strategic Planning Workshop (NSPW) with Local Government Unit (LGU) agriculturists, June 2 to 6, 2025.

[14] fpa.da.gov.ph

[15] Department of Agriculture. National Agriculture and Fisheries Modernization and Industrialization Plan: Transforming the Philippine Food System Together. NAFMIP 2011-2020

upfront cost cause farmers to hesitate to invest in modern farming and fishing technologies.[16]

Limited credit and insurance. Producers are inhibited from utilizing appropriate types of inputs, farm equipment, and facilities that will expand production and spur entrepreneurial activities due to lack of capital. In 2015, 39 percent of small farmer and fisher borrowers did not access formal credit due to lack of technical capacity to develop viable project proposals, lack of or poor credit track record, absence of acceptable collateral, and limited information about available loan products. On the supply side, banks and other financial institutions hesitate to provide formal credit owing to high default risk, limited market, and lack of information on demand. In terms of insurance, limited capital constrains the PCIC to limit insurance mainly to safeguard lenders from default.

Weak extension services. Weak extension service slows down the delivery and adoption of farm practices and technologies that are applicable to a specific area and responsive to the needs of farmers and fisher folk. The weakness can be attributed to inadequate operational funds and lack of human resources of local governments.

Low yields, high losses for fruits and vegetables. Since the 2010s, cereals yield has caught up with the Southeast Asian average, probably making yield improvements less of a priority now. Vegetable yields have been stagnant in the last 30 years (0.9MT/ha in 2023). It now lags behind those of neighboring countries (1.0MT/ha), and is just half the world average (1.9MT/ha). Like its Southeast Asian neighbors, the country faces high post-harvest losses reaching 14.51 percent for rice, 6.4 percent for yellow corn, 31.61 percent for onion, 26.47 percent for mangoes, and 14.33 percent for cavendish banana.[17] Post-harvest losses for fisheries are in the range of 20 to 40 percent of gross output according to BFAR data.[18] Losses in cereals (corn, rice and other grains) and pulse are below world and regional averages, while losses in fruits (12 percent) and vegetable (8 percent) are above acceptable thresholds defined by FAO.[19]

Together, these losses translate into lower producer incomes, higher consumer prices, and reduced system efficiency.

Lack of infrastructure and cold chain facilities. Food losses are especially high for perishable foods such as fruits and vegetables in countries with tropical climates, where means of storage and transport (refrigeration) are inadequate, supply chains fragmented, goods are mishandled throughout the distribution stage, and typhoons are frequent.[20] [21]Cold storage capacity in the country is estimated at 400,000 tons equivalent to 37 cubic meters

[16] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

[17] https://www.foodsystemsdashboard.org/countries/ph

[18] Department of Agriculture. National Agriculture and Fisheries Modernization and Industrialization Plan: Transforming the Philippine Food System Together. NAFMIP 2011-2020

[19] https://www.foodsystemsdashboard.org/countries/ph

[20] https://www.foodsystemsdashboard.org/countries/ph

[21] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

(cbm) per thousand residents, a far cry from those of North America and Western Europe (200 cbm), China (132 cbm) and Vietnam (116 cbm). [22]

Limited processing and value adding. Research indicates that primary food producers—particularly smallholder farmers and fisherfolk—engage minimally in processing and value-adding activities. This limitation restricts their income potential and hinders integration into more profitable agricultural value chains. Limited access to processing facilities and technology, insufficient knowledge and skills in food processing, limited access to credit and financial services, and fragmented land holdings restrict primary producers' ability to invest in modern food processing equipment and facilities.

Low compliance with product standards. Poor compliance with quality standards has led to cases of rejections of food exports at the border of importing countries due to the presence of mycotoxins, banned additives, bacteria and other contaminants, non-compliant labeling, adulteration, or missing documentary requirements.[23]

Insufficient market information. Inadequate supply projections and market information by farmers often lead to overproduction, resulting in a significant drop in prices, adversely affecting farmers' incomes. Vegetable farmers experienced losses of up to 13% due to poor handling and lack of market information, which affected their ability to meet quality standards.[24] Small-scale farmers often face difficulties accessing profitable markets due to limited information on market demand and prices, leading them to sell their produce at lower prices.

A study by the National Fisheries Research and Development Institute (NFRDI) found that fluctuations in market supply and demand led to postharvest losses, particularly for sardines, due to oversupply and subsequent price drops.[25] Fish farmers often contend with low prices due to limited market options and inadequate support facilities, such as cold storage and processing plants, which are crucial for maintaining product quality and accessing distant markets

FOOD **ENVIRONMENT**

The food environment refers to the physical, economic, political, and socio-cultural surroundings in which people acquire and consume food. It shapes food choices and dietary patterns through factors such as food availability, affordability, marketing, labeling, and consumer preferences. A healthy food environment is key to promoting nutritious diets and

[22] Department of Agriculture. *Para Sa Masaganang Bagong Pilipinas 2024-2028*

[23] Department of Agriculture. National Agriculture and Fisheries Modernization and Industrialization Plan: Transforming the Philippine Food System Together. NAFMIP 2011-2020

[24] Department of Agriculture. National Agriculture and Fisheries Modernization and Industrialization Plan: Transforming the Philippine Food System Together. NAFMIP 2011-2020

[25] https://www.nfrdi.da.gov.ph/tpjf/vol29_2/research-article-tadifa-2922020A0019

reducing the burden of malnutrition. Policies in this area can help shift consumption patterns toward more sustainable and healthful outcomes.

Inadequate food intake, poor quality diets. Inadequate food intake and poor diet quality are immediate causes of child malnutrition. The 2021 National Nutrition Survey (NNS) showed that most school children failed to meet their recommended energy and protein intake. Insufficient consumption of essential micronutrients is also prevalent. Stunted children under five were likely to have not been breastfed or received adequate and diverse complementary foods.[26]

While household diets include more cereals than is necessary in a healthy diet, vegetables, fruits, and fats and oil significantly fall short of recommended amounts. Diets reflect the food supply situation: dietary energy in the food supply (or dietary energy supply) – the number of kilocalories per person per day that is available in a country's food supply – indicates cereal supply meets the energy (caloric) needs of the population. But the available supply of pulses, eggs, and meat do not.[27]

An indicator of nutritional quality is dietary diversity, the number of different foods (or food groups) consumed over a given period. The country scores rather badly in measures of dietary diversity. In a scale of 0-100, the higher the better, the country scores 22.5 in the Shannon Diversity of the Food Supply Index, 5.7 in the Modified Functional Attribute Diversity Index, and 3.3 in the Food Production Diversity Index.[28]

High cost of healthy diet, low food affordability.

The cost of food is high by a number of measures. The cost of an energy sufficient diet is 1.3 PPP/capita/day in 2021 compared with 1.2 for Southeast Asia and 0.9 for the world. The cost of a nutrient adequate diet accounts for 41% of total food expenditure per capita per day. The ratio of cost of a healthy diet is 60% of the total food expenditure. The same is 3 times the cost of sufficient energy from starchy staples (a low-cost food group).[29] The high cost of food is compounded by recent bouts of supply-side inflation.

Close to half (48%) of Filipinos cannot afford a healthy diet (2022).[30] A healthy diet is considered unaffordable when its cost exceeds 52 percent of income per capita per day (the average share of income spent on food in low-income countries).

While the high cost of food is often attributed to supply-side factors, in urban areas, the nominal cost of healthy food reflects not just production costs but the premium placed on convenience. In cities, the cost of nutrient-rich, perishable foods is significantly driven by

[26] National Nutrition Council. Philippine Plan of Action for Nutrition 2023-2028. Taguig City, Philippines, 2023.

[27] https://www.foodsystemsdashboard.org/countries/ph

[28] Golloso-Gubat MJ, Felix AdR, Tandang NA, Acuin CCS, Gordoncillo PU and Duante CA (2024) *Sustainability of the Philippine food system*. Front. Sustain. Food Syst. 8:1278891. doi: 10.3389/fsufs.2024.1278891

[29] https://www.foodsystemsdashboard.org/countries/ph

[30] https://www.foodsystemsdashboard.org/countries/ph

factors like cold chain logistics, packaging, marketing, and retail mark-ups that cater to urban consumers' demands for convenience and ready-to-eat or processed foods.

Low cost and aggressive marketing of unhealthy food. Companies use aggressive marketing tactics, including celebrity endorsements, social media influencers, and vivid branding to promote unhealthy food, particularly to children and adolescents. Television and online advertisements normalize frequent consumption of fast food and sugary snacks. Research highlights that the affordable pricing of unhealthy food creates a strong incentive for consumers, especially in lower-income communities. Low-cost production and distribution strategies mean that these foods are often more accessible than healthier alternatives. This has been linked to increasing dietary patterns that favor high-calorie, nutrient-poor options.

Frequent calamities and lack of household coping mechanisms. Availability and affordability issues are compounded by frequent crises and calamities and inability to cope.[31] Children in households visited by calamities such as drought, typhoons, fire, and endemics are more likely to be stunted, but households with access to coping mechanisms – emergency loans or support from relatives – are less likely to harbor a stunted child. Food shortage, food prices hikes, shortage of medicine and similar shocks to the household raise the likelihood of having stunted children.

Insufficient nutrition knowledge, unhealthy consumption patterns. A limited understanding of children's nutritional status contributes to high prevalence of malnutrition. Perceptions of mothers on children's nutritional status shape both their beliefs and practices.[32]

Food waste by food establishments and households. Studies estimate that an average Filipino household wastes around 50–100 grams of food per day.[33, 34] This may seem small individually, but when scaled nationally, it amounts to over 160,000 metric tons annually (based on population estimates). Restaurants and food service establishments are found to waste up to 20–30% of prepared food. Buffet-style and fast food outlets tend to generate more waste due to overproduction and portion sizes.

Many factors contribute to the situation, including over-purchasing and improper meal planning by households, lack of awareness about food storage and preservation, and leftovers often discarded instead of reused. In the case of restaurants food waste can be traced back to over-preparation of food to meet demand surges, inaccurate demand forecasting, customer plate waste (due to large portions or food unfamiliarity), lack of standard procedures for handling surplus food.

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[31] National Nutrition Council. Philippine Plan of Action for Nutrition 2023-2028. Taguig City, Philippines, 2023.

[32] National Nutrition Council. Philippine Plan of Action for Nutrition 2023-2028. Taguig City, Philippines, 2023.

[33] https://www.dost.gov.ph/knowledge-resources/news/78-2023-news/3097-rice-vegetables-and-meat-the-top-3-most-wasted-foods-among-filipino-households.html#

[34] https://www.unep.org/resources/report/unep-food-waste-index-report-2021

III. WHAT WE CAN DO

This section reflects goals, objectives, and strategies enunciated in national and sectoral plans within the Philippine government (see references) (with a few proposals thrown in for discussion). There is need for systemic, integrated solutions to address challenges surfaced by a food system view (e.g. lack of diversity in the food supply and in household diets, role of frequent disasters in sustaining high levels of child malnutrition, high cost of food and low affordability of healthy diets vis-a-vis the aim of ensuring fair returns for primary producers).

Action Tracks:

- ❖ Invest in productive and efficient food supply chains
- ❖ Ensure fair returns for all stakeholders in the value chain
- ❖ Advance resilient agrifood system
- ❖ Foster investment and innovation
- ❖ Shift to healthy diets for all

<u>Track 1</u>: Invest in productive and efficient food supply chains

Track 1 transforms the food system by promoting modern farming techniques, and investing in post-harvest facilities and logistics systems. These investments are essential to sustain previous gains in crop yields, ensuring that yield gains are not lost during processing, storage, distribution, and marketing. Track 1 seeks to translate improved domestic productive capacity and efficiency of food supply chains to improved food availability and access for communities and households.

With Action Track 1, communities are envisioned to secure reliable food supply from productive, efficient farms—connected by adequate farm-to-market roads, equipped with modern technologies and facilities, supported by robust extension services, and linked to accessible markets and storage. More producers will have access to drying and milling facilities; vegetable and fruit producers and fishers will have access to modern storage facilities linked to bigger markets. Consumers in areas dependent on food supply from outside their localities shall be assured of reliable food supply through improved logistics and distribution networks linked to production areas.

- **Mechanize and modernize agri-fishery production systems**

  The national government is implementing a comprehensive strategy to mechanize and modernize the agri-fishery production systems. Key actions include harmonizing

the planning and mapping of critical mechanization and infrastructure investments to ensure coordinated and efficient resource deployment.

To boost productivity, production-related equipment, machinery, and facilities are being distributed to farming and fishing communities, accompanied by the dissemination of good agricultural practices. Fishers are being provided with disaster-resilient fishing boats and appropriate fishing gears, along with technical assistance in designing and constructing fiberglass reinforced plastic (FRP) boats to enhance both efficiency and safety.

The nationwide registration of municipal fishing boats and fishing gears through the BoatR program is also being fast-tracked to formalize and support small-scale fishers. The strategy further promotes the adoption of science-based and climate-resilient technologies and diversifies the skills of farmers and fishers.

Agri-fisheries machinery and equipment service centers are being established to provide mechanization services, equipment repairs, maintenance training, and after-sales support. Encouraging the clustering and consolidation of production, processing, and marketing activities as community business enterprises is central to this effort, enabling the pooling of assets, labor, and resources for greater economies of scale. Finally, initiatives to raise the knowledge and skills of farmers and fishers aim to empower them to adopt modern technologies while proactively addressing potential labor displacement arising from mechanization.

- **Develop and improve post-harvest systems and infrastructure**

  The strategy to develop and improve post-harvest systems and infrastructure is designed to address bottlenecks in the value chain while enhancing the efficiency, profitability, and sustainability of agri-fishery enterprises.

  Central to this approach is the investment in agro-processing facilities within Strategic Agriculture and Fisheries Development Zones (SAFDZ), enabling the conversion of raw agricultural and fishery products into semi-processed and finished goods that command higher market value. Additionally, the construction of critical facilities such as dryers, silos, warehouses, rice mills, and corn mills, along with the provision of handling equipment like boom trucks and forklifts in key production areas, ensures smoother, more reliable post-harvest operations.

  To complement these physical investments, there is a concerted effort to intensify research and development, as well as the commercialization of location-specific, appropriate technologies that can significantly improve post-harvest handling and

processing. This includes technologies that extend shelf-life, reduce post-harvest losses, and create value-added products.

The strategy emphasizes capacity building for recipients of these facilities, equipping them with the skills and knowledge needed to maintain and optimize their operations. By involving stakeholders directly and ensuring widespread adoption of new technologies and practices, the approach aims to translate infrastructure investments into tangible benefits for farmers, fishers, and rural communities—higher incomes, reduced waste, and a more resilient food system.

- **Develop efficient logistics systems for both input and production output**

  Investing in a modern and efficient logistics network strengthens the entire food supply chain—from input delivery to production output distribution – by reducing logistics and transportation costs while minimizing losses during transport of highly perishable foods, resulting in lower food prices. Recognizing that the high cost and logistical challenges in transporting highly perishable foods—especially from upland areas comprising 15 million hectares of agricultural land—contribute to higher food prices, the strategy prioritizes investments in modern transport networks.

  Measures include providing incentives to truckers—such as exemptions from truck bans and pass-thru fees, easier checkpoint passage, and dedicated Food Lane routes in major cities—to ensure timely delivery of agricultural goods. Farm-to-market roads are being expanded and rehabilitated, while irrigation canal systems are being leveraged as transport channels to move farm produce. Upgrading key supply chain components—including trading centers, livestock auction markets, fish ports, landing centers, and cold storage facilities—complements these efforts.

  To empower producers and community-based enterprises, financial grants (like the Enhanced Kadiwa Financial Grant) are provided to strengthen their role as reliable suppliers and operators of food retail stores. Under the Food Mobilization Program, hauling trucks and refrigerated vans are being provided, with further investments in additional vehicles underway. The revival of the Agricultural Tramline System aims to ease logistics for highland vegetable transport, ensuring more efficient movement of goods from mountainous areas to urban markets.

  These efforts are further supported by collaboration with the DPWH and DoTr in crafting the National Transportation Master Plan, which envisions the construction and expansion of seaports and the development of cold chain infrastructure nationwide. Ultimately, this approach seeks to reduce logistics costs, minimize transport losses, and lower food prices—while ensuring that even small islands and remote areas have access to fresh, safe, and affordable food.

<u>Track 2</u>: Ensure fair returns for all stakeholders in the value chain

Track 2 ensures that the economic gains from more productive and efficient food supply chains redound to the benefit of all food producers in the chain. A resilient and equitable food system must ensure that economic gains are fairly distributed across all actors in the food value chain. Strengthening value chains through improved processing, packaging, and marketing should directly translate to higher incomes, decent livelihoods, and broader social inclusion for all producers. Food prices at the retail level must ensure cost recovery and decent income for producers of rice and other grains, fish, meat, vegetables, fruit, and other agrifoods.

This track seeks to instill awareness among consumers that access to safe and nutritious food hinges on the quality of life and socioeconomic resilience of food producers and providers, the sustainability of their livelihoods, and the enabling environment shaped by science-based policies and equitable support systems.

With Track 2, the standard of living of farmers and fishers is expected to improve—reflected in lower rural poverty—through diversified income streams driven by their expanded participation in value-adding activities. Women and youth are increasingly engaged in enterprises such as vegetable and fruit powdering and fish processing, including bottling and canning.

- **Establish strong partnerships with farmers, fishers, private sector and other stakeholders.**

  Strong partnerships with farmers, fishers, the private sector, and other stakeholders are being strengthened to build a more inclusive and resilient agri-fishery sector. These partnerships are sustained and institutionalized through participatory and consultative planning, budgeting, and monitoring processes, ensuring that priorities remain aligned with on-the-ground realities and sector needs.

  Strengthening convergence among government agencies and local government units (LGUs) further enhances coordination and resource pooling for targeted interventions. Platforms such as the PCAF National Sectoral Committees and the Province-led Agriculture and Fisheries Extension Systems (PAFES) are being promoted as convergence mechanisms to coordinate actions, pool resources, and amplify the reach of support programs. Feedback mechanisms and participatory project monitoring are being improved to foster transparency and accountability, while energizing partnerships with local governments ensures that grassroots voices are heard and acted upon.

Province-level partnerships are being motivated by focusing the efforts of the PCAF and PAFES on concrete outcomes, such as enterprise development, food production and processing, and technology adoption. In addition, partnerships are being expanded to include market linkage programs, branding initiatives, and entrepreneurship development services that strengthen producers' access to local and international markets, thereby ensuring fair returns and resilience for farmers and fisherfolks. These initiatives aim to create a collaborative environment where diverse actors work together, leveraging their unique strengths to achieve shared goals and drive inclusive agricultural transformation.

- **Expand and deepen local and international market access.**

  Efforts are underway to expand and deepen both local and international market access for Filipino agricultural and fishery products. Programs such as the *Sagip Sak*a Act are being implemented and scaled up to directly link farmers and fisherfolk with institutional buyers and private markets, creating stable demand and more reliable income streams. These linkages strengthen the participation of small producers in formal markets and reduce their reliance on exploitative trading arrangements.

  To support broader market access, investments in infrastructure, logistics, and marketing are being strengthened to connect producers to wider domestic and export markets. Market assistance services—including entrepreneurship development, market research, business networking, and export readiness support—are being provided to help producers and enterprises better understand market requirements, negotiate commercial arrangements, and respond to evolving consumer preferences. Product promotion and branding efforts are being intensified to expand market reach and position Philippine agri-fishery products competitively in both domestic and international markets.

  Organizational and institutional capacity for market and export development is also being strengthened to ensure sustained engagement with higher-value and international markets. This includes leveraging the expertise and presence of agricultural attachés in key markets to identify opportunities, strengthen trade relationships, and facilitate market entry. Support is being extended to assist exporters in complying with quality, safety, and traceability standards, as well as in meeting volume, packaging, and shipping requirements. The development of value-added products is being promoted to reduce exposure to global price volatility and enhance returns for producers.

Collectively, these measures aim to build a vibrant and competitive marketplace that expands opportunities for small-scale farmers and fishers, strengthens resilience

across the value chain, and contributes to a more sustainable and inclusive agrifood system.

- **Encourage and support the development of priority commodity-based industries**

  The development of priority commodity-based industries—such as rice, corn, high-value crops, fisheries, livestock, and fiber—is being promoted through targeted and coordinated investments in postharvest facilities, processing infrastructure, mechanization, and cold-chain logistics. These efforts are complemented by market and commodity studies, the facilitation of agribusiness partnerships, and the strengthening of linkages with private firms, cooperatives, and investor networks to expand domestic and export markets. Support is also being extended for the establishment and growth of value-adding enterprises at the community and provincial levels, including initiatives in processing, packaging, and product innovation that enhance competitiveness and generate new revenue opportunities.

  Central to this strategy is actively encouraging farmers, fishers, and processors to organize into industry associations and commodity councils—such as the Commodity Industry Roadmap Development Teams (CIR-RDTs) and National Banner Program Committees—where they engage with DA, technical experts, and the private sector to co-create industry roadmaps, align priorities, and jointly address constraints like standards, productivity, and market access. Women and youth are particularly being encouraged to participate in agribusiness ventures such as vegetable fruit powdering, fish processing, bottling, and canning, ensuring inclusivity and intergenerational engagement in enterprise development.

  Clustering and association-based models aim to professionalize stakeholder engagement, secure economies of scale, and ensure that interventions—from R&D and infrastructure to marketing and export promotion—are demand-driven and effective. Alongside this, cooperative and enterprise development is being promoted to diversify income streams for farming and fishing households, thereby strengthening rural economies and reducing vulnerability to market shocks.

<u>Track 3</u>: Advance resilient agrifood system

Track 3 gives central prominence to resilience in all aspects of the agrifood system. At the level of external drivers, the focus is on sustainable land and water resources use, climate change adaptation, investment in climate smart infrastructure, incentives for improving

levels of adoption by barangays and LGUs and integrating climate resilience into food systems planning, policies and investment frameworks.

Resilience of food supply chains is strengthened through anticipatory actions such as early warning systems, climate-resilient crop varieties, adaptive farming techniques, and adoption of nature-based solutions such as agroforestry and ecosystem-based adaptation. In terms of the food environment, food availability and access are protected by integrating disaster risk reduction and response with food systems planning, and improving access to financial instruments to protect small farmers and fishers from the impacts of natural hazards and climate change.

With Action Track 3, food-producing communities are expected to engage in organic farming for home and community food supply, use planting calendars to support year-round production, and foster the emergence of local seed growers and the maintenance of seed banks. The designation of local farm technicians (LFTs) to assist in upgrading farm practices is a key feature of this effort, alongside focused measures to reduce food waste at household, farm, and market levels.

- **Promote sustainable land and water management**

  Promoting sustainable land and water management is integral to meeting the growing demand for food while preserving the resource base for future generations. It guides planning and policymaking at both national and local levels, the design of large- and small-scale infrastructure, the development of new production technologies, the protection and regeneration of the resource base, and the upgrading of skills and values among food producers and consumers.

  Part of this strategy is the advocacy for integrating Strategic Agriculture and Fisheries Development Zones (SAFDZ) into local Comprehensive Land Use Plans (CLUP), which will enable local governments to spatially identify and optimize areas suitable for crops, livestock, and aquaculture production.

  Expansion areas for rice and corn production in Ilocos, Bicol, and Northern Mindanao are also being identified through SAFDZ mapping to ensure strategic and sustainable land use. Significant investments continue to be made in constructing and rehabilitating both large-scale and small-scale irrigation systems to optimize water use. Soil health, as a foundational element of sustainable production, is being prioritized through the institutionalization of a national soil monitoring and rejuvenation program, the deployment of mobile soil laboratories, and the development of soil health indicators manuals.

The Adaptive Balanced Fertilization Strategy (ABFS) is being promoted to encourage efficient fertilizer use and nutrient recycling, ultimately fostering healthier soils and more resilient farming systems. By combining strategic planning, technology adoption, and resource regeneration, this comprehensive approach empowers farmers and communities to be stewards of the land and water resources that sustain agricultural productivity and food security.

- **Encourage diversified and resilient farming systems**

  This strategy actively encourages diversified and resilient farming systems as a strategic response to the challenges of climate variability, market fluctuations, and resource constraints. This approach seeks to maximize yield per hectare by integrating multiple farming enterprises—such as crops, livestock, and poultry—within a single farming system, thereby reducing overall production costs and increasing income streams for farming households. In coconut-producing areas, for example,

  Community-Based Farm Enterprises Development initiatives are promoting the intercropping of cacao and coffee with coconut palms, alongside the raising of small livestock and poultry. This integrated approach not only optimizes the use of land and other farm resources but also enhances the ecological sustainability and economic resilience of farming communities.

  By fostering such diversified farming systems, the Department aims to build the adaptive capacity of Filipino farmers, reduce their vulnerability to shocks, and improve their overall livelihoods and well-being.

- **Strengthen emergency readiness**

  Emergency readiness is being prioritized as an integral component of a resilient food system. To ensure food security during crises, buffer stocking of rice and other essential food items, as well as key production inputs, is being strengthened to provide immediate relief and minimize disruptions to the food supply chain.

  In response to the threat posed by transboundary pests and diseases, efforts are being intensified to enforce biosecurity measures and establish border control facilities that safeguard local agriculture. Upgrades to integrated laboratories are enhancing national capacity for rapid pest and disease detection and response.

  Technical and research capacity to prevent and respond to outbreaks is also being strengthened through Research for Development and Extension initiatives. To

address climate-related challenges such as flooding, investments in resilient canal systems and waterways are being pursued to support food production and transport. Collectively, these measures aim to equip the country with the infrastructure, knowledge, and systems needed to manage emergencies and ensure continuity of food supply.

Track 4: Foster investment and innovation

Track 4 creates an enabling environment for agrifood system transformation by addressing key policy areas, including the role of the Department of Agriculture, investment financing, the mobilization of research and development, digitalization, and good governance to maximize sector potential.

Critical investments are directed toward developing a new generation of farmers and enterprises that are technologically prepared to apply modern farming techniques, digitally connected to providers of technology and financial support, and capable of participating in competitive agrifood markets. The emergence of commercial agrifood enterprises that allow broad participation of producers is a central objective.

Under Track 4, farmers are expected to become more conscious of their credit standing with financial institutions, with greater access to production loans based on sound credit records and more responsive insurance schemes. At the same time, commodity-based industries are positioned for local and international market expansion through diverse public–private partnership arrangements, including commercial ventures, partnerships between local governments and producer groups, and agri-fishery cooperatives engaged in enterprise development through forward linkages.

- **Improve policy and regulatory systems**

  The strategy aims to strengthen policy and regulatory systems to create a more efficient, transparent, and responsive agricultural governance framework. Regulatory processes are being streamlined to reduce bureaucratic delays and enhance overall effectiveness.

  Clear and open communication with stakeholders is being promoted to foster transparency in enforcement and provide compliance assistance, enabling food producers and other actors to better navigate regulatory requirements. Participatory engagement supports the integration of science-based data and evidence into policymaking processes, ensuring that sectoral perspectives are systematically considered.

Existing policy measures related to regulatory functions are being reviewed to address overlaps, clarify roles and responsibilities, and improve efficiency and effectiveness. These reforms contribute to an enabling environment that encourages investment and supports agrifood system development.

Upgrading national and regional laboratories strengthens the scientific and technical basis for regulation and quality assurance. In addition, closer alignment between planning and operations is being pursued through two-way feedback mechanisms that allow for timely adjustments and improved responsiveness to sector needs.

- **Mobilize financing and reduce risks**

Mobilizing financing and reducing risks are critical to empowering the agri-fishery sector and supporting sustainable growth. Measures are being implemented to ensure that credit programs are tailored to the specific needs of farmers and fishers, including the provision of interest subsidies to make borrowing more affordable. Application processes for financial assistance are being streamlined and simplified to improve accessibility and encourage uptake.

Incentives to attract greater private sector investment—complementing public resources and fostering innovation—are being strengthened. Financial instruments are being developed to subsidize loan interest and establish robust insurance packages that reduce the risks associated with agricultural investments. Blended financing mechanisms are being promoted to mobilize private capital for technology, innovation, and productive investments while sharing risks across the agriculture value chain.

The adoption of index- and weather-based insurance schemes is being advanced to provide timely and reliable coverage against climate-related and other production risks. Public awareness initiatives are expanding knowledge of available credit and insurance programs, enabling producers to make informed financial decisions.

Successful innovations, such as parametric insurance for the dairy industry and the *Sikat Saka* program, are being sustained and scaled up to reach more small food producers. Collectively, these efforts aim to build a more resilient agri-fishery sector that can withstand shocks while capitalizing on growth opportunities.

- **Enhance research for development and extension (R4DE) to optimize sector potential**

Research for Development and Extension (R4DE) is being strengthened as a core strategy to unlock the full potential of the agri-fishery sector. This includes increased investment in targeted, demand-driven research aimed at improving the production of higher value-added goods and services, reducing dependence on foreign technologies, and strengthening the capacity of domestic firms and producers to innovate and capture economic value.

Capacity-building programs, led by the Agricultural Training Institute (ATI), are equipping producers and Agricultural Extension Workers with the skills needed to adopt improved and climate-resilient technologies through a range of extension delivery modalities. Commodity-based system planning supports diversification, income enhancement, and improved access to financial support, while extension services are being modernized through information, education, and communication materials delivered via distance learning, multimedia, and digital platforms.

Collaboration with the University of the Philippines Los Baños has revitalized technical expertise within the sector and led to the development of the One Research for Development and Extension Agenda and Programs (One R4DEAP). This unified framework aligns research and extension efforts across the Department, harmonizes R4DE projects, and strengthens the link between innovation, field application, and sector outcomes in support of food and nutrition security.

To reinforce extension at the local level, deployment of extension workers is being intensified to strengthen adaptive capacity in farming and fishing communities. Frontline extension workers engage directly with producers to provide tailored technical guidance and facilitate the adoption of improved practices and technologies. Knowledge transfer is further supported through techno-demo farms, farmer field schools, training-of-trainers programs, seminars, and workshops that promote community-based learning, resilience, and productivity.

Strengthening linkages among research institutions, local governments, and private sector actors remains a priority to ensure that research outputs respond to field realities and that innovations are effectively scaled and sustained across the agrifood system.

- **Drive digital transformation**

Digital transformation is a cornerstone of modernizing the agri-fishery sector. To enable planners and decision-makers to craft data-driven strategies, Geographic

Information System and beneficiary databases are being leveraged to support mapping, analysis, and evidence-based decision-making.

Robust systems for monitoring program benefits are being strengthened to ensure equitable access to and distribution of resources. Monitoring and reporting processes are being streamlined across platforms to provide real-time, transparent insights into program performance and to enhance accountability.

A key element of this transformation is the establishment of the Unified Comprehensive Administrative Systems, which digitize and modernize internal processes to improve efficiency and responsiveness. In parallel, a centralized data repository is being developed to link research institutions and consolidate critical information, strengthening collaboration and innovation across the sector.

To sustain these efforts, investments are being made to upgrade ICT infrastructure, strengthen cybersecurity, modernize network architecture, and ensure access to up-to-date ICT equipment—laying a strong digital foundation for a more resilient, responsive, and inclusive agrifood system.

Track 5: Shift to healthy diets for all

Track 5 strengthens the link between food production and balanced nutrition, while promoting greater appreciation of food producers and providers. Beyond ensuring adequate supply and affordable prices of safe and nutritious food, transforming consumer choices toward healthy diets represents a critical last mile in achieving zero hunger and zero malnutrition. Sustained efforts to raise consumer awareness and improve nutrition knowledge are essential to empower individuals and communities to adopt appropriate dietary practices.

The persistent prevalence of malnutrition and micronutrient deficiencies among vulnerable groups, alongside the alarming rise in overweight and obesity across all age groups, underscores the need for a combination of targeted and broad-based interventions. These include improving access to and preference for healthy diets among vulnerable and low-income populations, complemented by nationwide campaigns and policy measures that promote nutritious food choices. Through Track 5, the agriculture and fisheries sector plays a central role in advancing the national agenda for zero hunger and zero malnutrition.

- **Expand access to nutritious food**

  To ensure access to nutritious food for all, efforts are being undertaken to expand the availability of locally sourced, healthy options. This includes providing guidance on appropriate crop mixes tailored to diverse nutritional needs and local growing conditions. Support is being extended for the establishment and maintenance of

school, home, and community gardens, which provide fresh produce while also serving as platforms for education and livelihood development.

Parents are being encouraged to play an active role in school feeding programs, strengthening community engagement and improving child nutrition. To further reinforce these efforts, government procurement of local farm produce is being scaled up through the Sagip Saka Act, ensuring stable markets for smallholder farmers while expanding access to nutritious, locally grown food for all Filipinos.

- **Promote health food choices**

  Efforts to promote healthier food choices and improved nutrition are being aligned with national nutrition goals and ongoing multisectoral initiatives. These efforts include providing production support for nutritious crops and commodities, helping ensure that farmers have the resources and knowledge needed to produce food that responds to the population's dietary needs.

  Improved access to healthy food is being supported through KADIWA stores, which offer fresh produce and other nutritious items at affordable prices. To address the specific nutritional needs of vulnerable groups, initiatives such as school vegetable gardening and milk feeding programs are being supported, directly benefiting children, pregnant women, and senior citizens. Nutrition education is further reinforced through the promotion of *Pinggang Pinoy*—the Filipino Food Plate—as a practical guide to balanced meals, supported by information and education materials to encourage healthier food choices at the household level.

IV. HOW WE WILL DO IT

In embarking on the transformation of the Philippine food system, it is essential to acknowledge several underlying contextual realities that will guide the implementation of strategies and the design of programs and projects. These are not merely assumptions but grounded truths that shape our pathway to change:

- **The DA cannot perform its role in food security alone.** Achieving a resilient and sustainable food system requires a broad platform of cooperation—engaging national agencies, local governments, private sector institutions, business groups, communities, and individuals who contribute to and depend on the food system.

- **Transformation is a process with varying timelines.** Results will emerge at different stages. This underscores the need to prioritize deliverables carefully, balancing immediate actions with longer-term goals to ensure sustained progress.

- **Incentives for participants are as important as system outputs.** Creating an enabling policy environment means offering the right combination of incentives and disincentives to support the diverse actors in the food system. While markets provide natural incentives, market failures and gaps must be addressed to ensure equitable and sustainable outcomes.

- **A sustainable food system must be politically resilient and increasingly self-reliant.** Although government leadership is critical, true transformation requires a shift towards a system that is driven by the private sector and stakeholders, can withstand political cycles, and does not rely excessively on government interventions. This encourages the adoption of effective practices, correction of past inefficiencies, and the enhancement of systems that deliver long-term progress aligned with national development priorities.

- **Zero hunger and zero malnutrition are non-negotiable, measurable local goals.** These global objectives must translate into local outcomes that are regularly tracked and improved, reinforcing the urgency and accountability of our transformation agenda.

These considerations will shape the objective criteria for selecting or designing programs and projects, serving as a starting point for translating this pathway into a concrete plan of action.

An underlying principle observed in laying out these transformative pathways is the importance of drawing lessons from past programs and recognizing the effectiveness of models from both past and ongoing initiatives.

Internal pathways are essential in connecting plans to target areas and expected outcomes. For instance:

- The DA can establish responsive and agile teams that can quickly provide technical support and facilitate replication of effective models and practices where there is strong local progress and readiness.
- These teams can also facilitate the exchange and adoption of good practices, supporting the scaling up of successful initiatives and addressing emerging challenges in various communities.
- Additionally, specialized teams can be mobilized to coordinate financial and risk management support by working with appropriate agencies and stakeholders to ensure tailored solutions meet local needs and enhance the overall resilience of the sector.

Cross-agency pathways will facilitate collaboration across government agencies to complement the work of inter-agency committees. Such joint teams will be capacitated to tap into existing service packages and programs of other agencies—such as establishing shared service facilities (DTI) or deploying mobile laboratories (DOST) in SAFDZ areas. These cross-agency pathways address challenges when inter-agency committees are overstretched or represented by delegates who may not have the mandate to pursue or coordinate follow-up actions.

Engagement pathways aim to deepen and broaden participation and commitment to area-based results. These pathways recognize that building the buy-in of the broadest possible constituency is essential for sustainability. This extends the DA's reach beyond its formal regional structure, engaging provinces, municipalities, cities, and barangays directly.

A key part of this engagement is the deployment of Agricultural Extension Workers (AEWs) at the grassroots level, down to the municipal local government unit (MLGU). The DA is intensifying its extension support efforts by:

- Assigning AEWs to local communities to provide technical assistance and practical guidance to farmers and fishers on the ground.
- Implementing training-of-trainers programs to ensure that AEWs are equipped with the latest agricultural and fisheries knowledge and practices.
- Establishing techno-demo farms and conducting farmer field schools to strengthen technology adoption and practical skills.
- Developing participatory monitoring and replication frameworks that enable clusters of LGUs to learn from one another's experiences and accelerate the adoption of effective practices.

Through these pathways—internal, cross-agency, and engagement—the DA seeks to build a robust, participatory, and adaptive system that delivers tangible results and sustains transformation at all levels of the food system.

Considerations for prioritizing strategies, programs, activities, and projects include:

1. Potential for maximum impact on poverty reduction
2. Enhancement of incomes for farmers and fishers
3. Contributions to increased production that supports balanced nutrition
4. Measures to reduce reliance on imports
5. Promotion of cost-effective approaches
6. Proven feasibility and practicality of implementation
7. Availability of technical expertise and the readiness of implementing units to absorb and effectively utilize the proposed interventions

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