

PROGRAM IMPACT ASSESSMENT

I. Introduction

1. Together with the Philippine government, Asian Development Bank (ADB) has developed a programmatic policy-based loan (PBL) for the Philippine agricultural sector. This PBL supports a number of key and interlinked policy and institutional measures that will shift the sector's growth trajectory from the present pathway that aims at food self-sufficiency, supporting a few staple crops, to a diversified, competitive, and inclusive agricultural sector. ADB supported the government's sector reform effort with the Grains Sector Development Program (2000–2004). However, the program was cancelled in 2003 because the government could not advance on the reform agenda due to the strong resistance from major stakeholders who advocated for rice self-sufficiency.

II. Macroeconomic Context

2. The Philippines is one of the most dynamic economies in the Asia and Pacific region. It has sustained an average annual gross domestic product (GDP) growth rate of 6.4% between 2010 and 2019. This growth trend is a significant uptick from its average 4.5% growth from 2000–2009. Inflation has been carefully managed and was only 2.5% in 2019. The passage of the Rice Tariffication Law (RTL) in February 2019 helped lower rice prices and contain overall food inflation.

3. Structural transformation of the economy has occurred with agriculture's share of GDP sliding from 13.9% in 2000 down to 8.8% in 2019.¹ Robust services, followed by the industrial sector (especially manufacturing), are taking the lead with GDP shares of 61.0% and 30.2% in 2019 respectively.

4. The COVID-19 pandemic in 2020 has disrupted the economy's growth momentum. Community quarantines to contain the outbreak, particularly in Luzon which accounts for over 70% of GDP, sharply curtailed economic activity. GDP contracted by 0.2% in the first quarter of 2020 as domestic consumption and investment slumped. The unemployment rate rose to a record high of 17.7% in April 2020, while underemployment rate was 18.9%. ADB estimates GDP to contract by 3.8% for the full year, pulling the economy into recession for the first time since the 1990s.² In addition to the decline in domestic demand, the weak external environment sharply cut remittances, tourism receipts and exports, with border restrictions also hampering global supply chains. The Department of Labor and Employment (DOLE) estimates a 30% to 40% decline in remittances in 2020 with about 400,000 overseas Filipino workers expected to be displaced.

5. Prior to the COVID-19 pandemic, prudent fiscal policies have provided fiscal space to the government. Tax reforms raised the tax to GDP ratio from 13.0% in 2015 to 14.5% in 2019. The fiscal deficit averaged only at 2.4% of GDP between 2015–2019. Percentage of debt to GDP was at a record low of 39.6% in 2019.

6. The country's sound macroeconomic fundamentals have provided the government some leeway to support the inadequate health infrastructure financially. Social protection programs will

¹ Philippine Statistics Authority. 2020. <https://psa.gov.ph/national-accounts> (accessed 27 June 2020).

² The Government projects a GDP contraction between 2% to 3.4% in 2020.

also be expanded such as food and cash assistance support for the bottom-income households and for the micro and small enterprises that have been adversely affected by the community quarantine. With both economic stimulus packages as well as social protection programs, the government has laid the groundwork for a quick and strong recovery starting 2021 if the COVID-19 pandemic is brought under control.

III. Sector Assessment

7. The Philippine agriculture sector has been underperforming over the past two decades. The gross value added (GVA) growth rate of the sector has been generally low, averaging at around 2% for the period 1990–2019, and consistently the lowest growth rates among major economic sectors. During this period, the structure of agriculture production has hardly changed dominated by low-value crops such as rice, corn, and coconuts. The rice subsector remains to be the most important economic driver in the agriculture sector. Hence, its transformation would play a pivotal role to putting the agriculture sector on an inclusive growth trajectory. Rice accounts for a constant share of one fifth of the agriculture sector GVA during 1970–2019. Interestingly, the growth rate of the rice subsector during this period mirrors that of the sector GVA growth rate. This reflects that the agriculture sector still remains rice-dominant and the overall sector growth highly depends on the rice subsector performance. Of the 13.5 million ha crop production area, 36% were area harvested for paddy in 2018. In total, more than three fifths of the rural poor work in agriculture, and many of them are engaged in rice farming (World Bank 2018, pp. 58-61).³

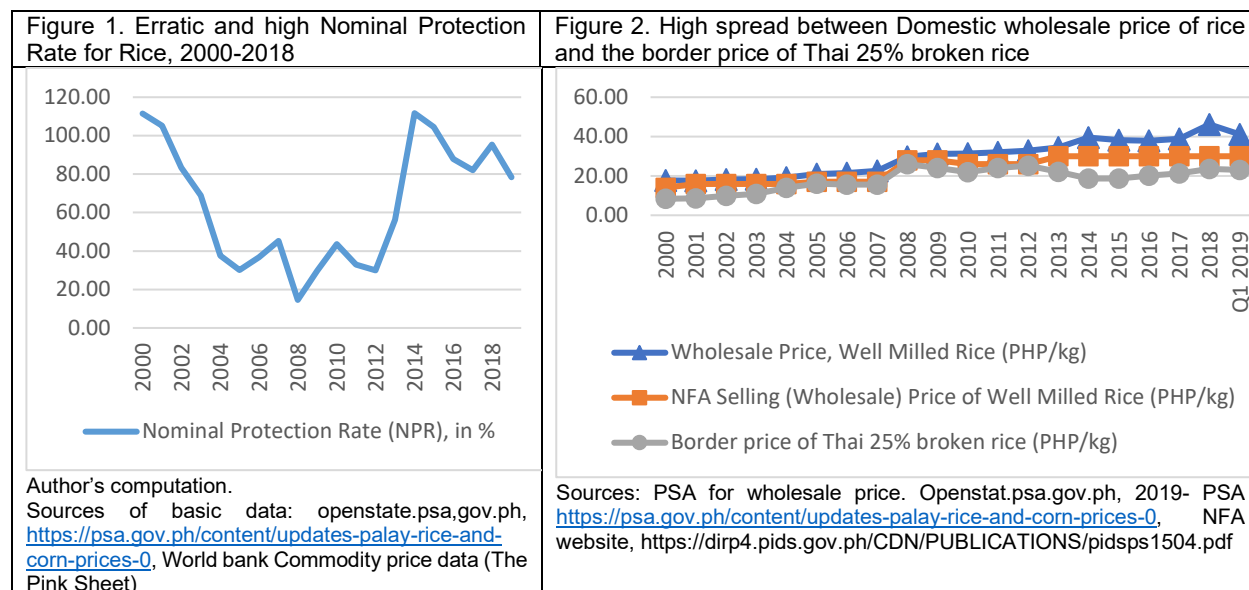
8. The sluggish growth and poor poverty reduction accomplishment of the agriculture sector is due in large measure to its being uncompetitive as demonstrated by its low productivity and value-addition, coupled with weak resilience to climate change. Other major factors that have contributed to its being uncompetitive are: (i) policy and regulatory impediments to international and domestic trade of agriculture products, (ii) uncertain rural land ownership and restrictions on rural land transfer, (iii) uncoordinated water resources management, and (iv) limited public financing and provision of agriculture extension services to farmers, including female farmers. More importantly, the protection of domestic rice subsector in line the rice self-sufficiency goal has weakened the agriculture sector's capacity to become competitive, diversified, climate resilient and responsive to the changing domestic and international food demands. Lack of food diversity and weak government coordination in tackling food and nutrition security have also limited the human capital growth and contributed to high poverty incidence and poor nutrition status, particularly in rural areas.

9. The cornerstone of the Philippine agriculture sector strategy since the 1960's has been the attainment of rice self-sufficiency. Past government administrations espoused rice-centric agriculture strategy by (i) implementing well-funded rice targeted programs at the expense of other high potential export-earning commodities like coconut and tropical fruits, and (ii) enforcing policy and trade barriers to achieve rice self-sufficiency. A suite of legislative measures such as the creation of the National Food Authority (NFA) deepened the government's control of the domestic rice market. The state-owned NFA performed both regulatory and proprietary functions in the markets of rice and corn. For rice, it ensured that the rice paddy prices received by farmers provided reasonable income levels ("buy high" policy), while at the same time rice consumers were accorded affordable rice prices ("sell low" policy). Its "buy high-sell low" policy was sustained

³ World Bank. 2018. Philippines Economic Update, October 2018: Staying in the Course Amid Global Uncertainty. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/30564> License: CC BY 3.0 IGO.

through quantitative restrictions and the NFA's monopsony role in the external trading of rice through its function of issuing import permits. The NFA's presence in the domestic rice market was encompassing, intervening in supply chain activities from production, processing, wholesale and retail marketing, and external trade. NFA's liabilities amounted to ₱169.7 billion in 2017, or 1.1% of GDP.⁴

10. As a result, the nominal protection rate⁵ of rice stood at 95% in 2018. (Figure 1). Implicit tariffs for rice have been high, as indicated by the wedge between the domestic wholesale price of rice and the border price of Thai (25% broken) rice (Figure 2). Protection comes at the substantial expense of domestic rice consumers.



IV. Rationale for Reform

11. In February 2019, the Philippine Congress passed Republic Law 11203, or the RTL, which removed the quantitative restrictions (QRs) on rice imports and replaced it with a simple tariff system. This law is a game changer as it lifted the major policy impediment in rice trade in line with the rice self-sufficiency centric strategy.

12. The restrictive trade policy comes with significant economic and societal costs:

- i. Shielding rice farmers from foreign competition artificially raised the profitability of domestic rice production. This diverted scarce non-tradable agriculture resources, (e.g. land and water) away from more productive ventures of which the country has a comparative advantage (e.g., mango, banana, pineapples). Guaranteed high farmgate rice prices have dissuaded rice farmers from diversifying into more high-valued and income generating agriculture activities.
- ii. Economic costs also arose from both the price intervention and the quantitative restriction policies of NFA. Every \$1 spent on NFA rice consumption subsidy meant

⁴ Government of the Philippines, Development Budget Coordination Committee. 2019. *Fiscal Risks Statement 2020*. <https://www.treasury.gov.ph/wp-content/uploads/2019/08/FY-2020-Fiscal-Risks-Statement.pdf>. Manila.

⁵ Nominal protection rate for agriculture is defined as the protection (measured in terms of the range of tariff and nontariff measures) accorded to agriculture relative to non-agriculture sectors.

an expended cost of \$2.21.⁶ This is a conservative estimate as it excludes potential leakages to the economy, such as the costs of rent-seeking activities, reduced government revenues, high bureaucratic costs, and costs from inducing price uncertainties (Jha and Mehta, 2008). In 2008, at the height of rice price increase, the economic cost of supporting the NFA budget was equivalent to at least 2.5% of GDP.

- iii. Policies were non-inclusive. Jha and Mehta (2008) concluded that only 25% of the poor benefitted from the sell-low rice program, while 75% were excluded. Only about half of those who bought NFA rice came from the poor bracket.
- iv. Expensive rice because of the quantitative restrictions hurts all consumers of rice, especially the bottom 20% income quintile. Rice spending accounts for one fifth of the total food expenditure of low-income households. Rice is the single biggest source of energy and protein, accounting for about 50% of calorie intake of Filipinos on average. This percentage is much higher for the poor as rice is the most economical means to meet their calorie requirements. Higher rice prices thus pose a disproportionately heavier burden on lower income households. State-induced high rice prices leave less money available for food with more nutritious value (vitamins, amino acids, minerals) than rice. It thus contributes to increasing “hidden hunger” (lack of micronutrient nutrition), which has both immediate and long-term substantial social costs (Briones, et al, 2018 report).
- v. Artificially determined rice prices above the international rice price have slackened the pace of structural transformation. As rice is a major food item of wage workers, high rice prices increase their cost of living, reduce their disposable income, and put an upward pressure on non-agriculture wages. This discourages industrial and service entrepreneurs from hiring more and reskilling labor, eventually which can erode the competitiveness of labor-intensive industrial and services activities.

13. RTL implementation has recently commenced. For it to be an efficient and effective transformational reform measure, it will need to lay the foundation for a competitive, diversified, resilient, and inclusive agriculture sector. RTL’s implementation, especially during the start-up years from 2019 to 2022, will need to be supported by targeted policy, regulatory, and institutional measures. These measures need to focus on strengthening and deepening the agricultural trade policy and regulatory framework; providing public services that are pivotal in making the rice farms competitive and resilient; and complementing the competitive-based reforms with social protection measures for rice farmers and the rural poor to mitigate the adverse income effects of the RTL.

V. Program and Policy Formulation

14. The proposed programmatic approach and policy-based loan for subprogram 1 to the Philippines is in support of laying the foundation in putting the country’s rice subsector in particular, and the agriculture sector in general on a competitive, diversified, resilient, and inclusive trajectory. The program will comprise of two subprograms (SP) – SP1 from 2018 to 2022 and SP2 from 2022 to 2025. The aim of the first subprogram are two-fold: (i) increase the competitiveness of the rice subsector and subsequently influence the competitiveness of the

⁶ Jha, S, Mehta, A. 2008. *Effectiveness of Public Spending: The Case of Rice Subsidies in the Philippines*. ADB Working Paper. No. 138. December.

agriculture sector and (ii) alleviate the welfare losses of rice farmers who will be adversely affected during the initial years of RTL implementation. It will also ensure social protection measures to safeguard the welfare of rural families who comprise more than half of the country's total poor.

15. The proposed policy and institutional reforms focus on three areas: (i) agricultural trade policy and regulatory framework, (ii) public services and finance to the agriculture sector, and (iii) social protection to rural families. For subprogram 1, the emphasis of the reform areas 1 and 2 are to strengthen the competitiveness of rice farms, and to lay the foundations for the development of diversified and resilient agriculture sector. Specifically, reform area 1 will strengthen the RTL trade implementation protocols, ensure that NFA's role is streamlined to buffer stock management, administrative procedures on the importation of agricultural products are streamlined, and the TradeNet technology portal is operationalized consistent with the ASEAN Single Window.

16. Reform area 2 is a composite of targeted policy and institutional measures that will improve the allocation and use of non-tradable factors of production, principally land and water; and strengthen the efficient and effective use, allocation, distribution and management of the Rice Competitiveness Enhancement Fund (RCEF). The integral part of the RCEF is to ensure that the target beneficiaries are rice farmers through the regular verification and updating of the Registry System for Basic Sectors of Agriculture (RSBSA). The last measure in reform area 2 deals with developing agro-industrial entrepreneurs who can serve as links to the end markets of the farmers' produce.

17. Reform area 3 focuses on the potential losers of the RTL, i.e., uncompetitive rice farmers, and poor rural households in general who may not have been reached by the current social protection measures. RTL will benefit rice consumers including the rural poor but will negatively impact rice farmers. Social protection measures serve as a buffer to rice farmers and will help rice farmers to adjust to this new trade regime without drastically impoverishing them. The social protection measures in the rural areas will be strengthened and their outreach broadened as majority of the poor reside in the rural areas. These are integral features of the competitive agriculture pathway.

VI. Transmission Mechanism

18. Subprogram 1 lays the foundation for competitive and inclusive growth of the agriculture sector by removing market distortions, reallocating factor resources such as land and water, improving competition between and among players, and creating right price signals for both buyers and sellers. This proposed PBL also addresses the underinvestment of the public sector for (i) productivity and market enhancing measures, and (ii) social protection measures to safeguard inclusiveness of the economic growth.

19. The transmission mechanisms leading to the development of competitive markets and bringing about the desirable impacts are:

- i. Facilitating the development of external trade and markets of agricultural commodities will be achieved through : (i) the passage and implementation of the RTL and its rules and regulations (ii) a redefined role of the NFA as a buffer stock agency, (iii) the adoption of administrative protocols for streamlining the non-tariff measures for vital agriculture food products, and (iv) development and utilization of TradeNet, as a National Single Window to be connected with ASEAN Single Window. This will increase purchasing power to spend on more nutritional

food, better child education, and other means to improve their well-beings.⁷ The increased rice import as a result of RTL in 2019 has helped the Philippines to stock sufficient rice, which enabled the country to ensure sufficient rice in the domestic market at affordable prices, even under the ongoing unprecedented COVID-19 pandemic.

- ii. Development of a rural land market has been hampered by the protracted implementation of the agrarian reform program. This has discouraged investments in agriculture land. The proposed PBL pushes for the implementing guidelines and speedy implementation of the Agriculture Free Patent Reform Act. This Act retroactively removes the restrictions on the sale and transfer of this type of agriculture lands. This will encourage a market-determined pricing of land, and more efficient use and allocation of rural land and incentivize investments.
- iii. Efficient water management will arise from the consolidation and rationalization of more than 30 water-related bodies, and in the case for irrigation, at least 13 agencies are involved in irrigation water governance.⁸ This will address competing water uses and will put priority on more environmentally sustainable management especially of critical water basins nationwide. This public good service is essential, especially for irrigation water which constitute about 80% of water use in the country and is invested mainly to increasing area harvested for rice. Coupled with RTL implementation, planning and decision-making on the use and allocation of irrigation water through a rationalized water department in the context of competing uses and projected effects of climate change will produce societal economic gains to more market-based rice subsector and the agriculture economy, as illustrated in the next section. The key challenge will be the coordination of these multifarious agencies.

20. Under Reform Area 2, the PBL further aims to strengthen the delivery function of public goods in investing in targeted productivity- and market-enhancing measures and providing safety net provisions. The government has generally under-invested in agriculture, while simultaneously overfunding the rice sub-sector. The transmission mechanism will be through the protocols and procedures that will efficaciously use, allocate, manage, and monitor the RCEF and its outcomes. While RCEF will address the competitiveness of rice farmers, it will also alleviate the income losses of rice farming resulting from the RTL implementation by enabling them to have access to vital inputs and updated extension services and technologies that will make them more productive and profitable.

21. Reform area 3 involves the social protection measures for affected rice farmers through cash transfers and the rural poor for effective access to safety nets. The transmission mechanism will be the development of transparent, accountable, and participatory-based safety net coupled with effective good governance measures. This will be coupled with appropriate protocols and guidelines on the identification of the rural poor, and the efficient and effective delivery of these

⁷ See Table 1 for the economic and welfare impact of the RTL

⁸ Rola (2019, *Strengthening Institutional Links for Irrigation Water Governance*, PIDS Policy Notes. No. 2019-09. July) showed that at least 13 agencies are involved in the planning, decision-making for competing uses, implementation, financing, and oversight of irrigation investments and policies. Without effective coordination of these national agencies on irrigation matters, the core of the public service function on ensuring effective and efficient provision and delivery of irrigation water, this will have an adverse impact on the economic efficiency, inclusiveness, and sustainability of the implementation of irrigation investments as laid out in the NIA irrigation master plan, and the flood risk master plans of the Department of Public Works and Highways in strategic river basins (identification and sustainability of river basins are the roles of the Department of Environment and Natural Resources).

safety nets. It is envisaged that the impact of these measures will be a more inclusive growth through reduced malnutrition, and rural poverty incidence and improved welfare of rice farmers.

VII. Program Benefits

22. The program benefits of the PBL are demonstrated in the comprehensive study conducted by the International Food Policy Research Institute (IFPRI) for the Philippine National Economic Development Authority (NEDA) in 2019.⁹ This study examined the Philippine rice trade liberalization reform and its ex-ante impacts on the rice subsector, agriculture sector, and the economy. The study employed a combination of bio-physical and economic models.¹⁰ It studied the welfare impacts for 2025 and 2040 applying three scenarios: status quo (or quantitative restrictions), 35% tariffs, and 50% tariffs. It embedded climate change findings and future world price trends for 62 commodities (39 crops including rice, 6 livestock, and 17 processed food products) to provide a more realistic assessment of the RTL.¹¹ This comprehensive study provides substantial evidence-based analysis of the potential program benefits of the three main policy reform agenda of the PBL, namely: (i) agriculture trade policy and regulatory framework, (ii) public services and finance to the agriculture sector, and (iii) social protection to rural families.

23. First, RTL implementation will benefit domestic poor rice consumers¹², as lifting the QRs will increase the availability of and access to more affordable rice. The country's rice imports will increase substantially by 2025 and 2040. This will push down domestic prices of rice by as much as 26% and will decrease food inflation while increasing the per capita rice consumption (Table 1). A 26% reduction in rice prices will pull down domestic rice production by as much as 9.7%. By 2040, the overall welfare impact of the RTL is projected to be a net economic surplus of \$20.98 billion. This includes a negative producer surplus of \$29.73 billion, which will be offset significantly by a positive consumer surplus of \$50.71 billion.

Table 1: Economic and Welfare Impact of the RTL, under climate change, 2025 and 2040

Indicators	Unit	2015 value	2025			2040		
			QR	35% tariff	% change	QR	35% tariff	% change
World price	US\$/mt	362	409	412	0.64	469	472	0.70
Net imports	00 mt	3,313	1,633	3,968	143	1,080	3,831	255
Import share of demand	%	10.1	11.1	25.1		6.4	21.1	
Per capita consumption	Kg/yr	116	113	120	6.3	110	117	6.2

⁹ Perez, N and Pradesha, A. 2019. *Philippine Rice Trade Liberalization – Impacts on Agriculture and the Economy, and Alternative Policy Actions*. NEDA-IFPRI Policy Studies. 1 June. The longer version of this comprehensive study was presented at a policy forum organized by NEDA on 14 June 2019 at the Astoria Plaza, Pasig City, Philippines.

¹⁰ For the bio-physical models, these included climate, technology, water, and production models. In the economic models, the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) was applied, working on Computable General Equilibrium (CGE) models for global and Philippine-calibrated multi-market food models to develop the Philippine- Dynamic CGE model.

¹¹ Republic Act 11203, 2019. *An Act liberalizing the importation, exportation, and trading of rice lifting for the purpose the quantitative restrictions on rice and for other purposes*. Philippine Official Gazette. February.

¹² In 2015, the poverty incidence was 22.2% of the total number of families; this overlaps roughly with the bottom 20% of the income quintile (Briones 2019, *Welfare Impacts of Rice Tariffication*, PIDS Discussion Paper Series No. 2019-16, December). They spend about 20% of their income on rice. These rice consumers who will benefit from the RTL implementation include “most of the consumers (which comprise half of the population in 2015), rural consumers not primarily producing rice, including production of corn, coconut, sugarcane, and fisherfolk” (Briones 2019).

Consumer price	US\$/mt	895	1,011	750	-26	1,171	870	-26
Producer price	US\$/mt	688	777	577	-26	901	669	-26
Welfare Impact at 35% tariff rate:	US\$ million							
• Producer surplus							-29,728	
• Consumer surplus							50,714	
• Economic surplus							20,985	

Source: Perez, N., Pradesha, A. 2019. Tables 1 and 4.

24. Second, rice farmers will bear the brunt of declining rice prices, forcing them to adjust under this new trade regime. Immediate impact will be the changes on the rice production structure. By 2025, area harvested for rice (both for irrigated and rainfed) are projected to be reduced by around 7.2% (Table2). When compared to a QR scenario, domestic rice production will decrease by 9.7% in 2025 and will continue to decline further by 9.8% in 2040. With climate change, the combined crop-yield and world price effects will result to further shrinkage of staple crop production by roughly 1% by 2025. Only export crops are projected to have an increase in production by 2025. Unless public interventions are forthcoming that would assist rice farmers to cope with the new trade regime through improved productivity measures, rice yield is projected to decline to 2.76 mt/ha (relative to 2.84 mt/ha in a QR scenario) by 2025 rising to 3.23 mt/ha (QR environment will have a yield of 3.32 mt/ha) by 2040. As expected, the decreasing trends for area harvested, production, and yield will be more significant in rainfed areas.

Table 2: Projected Area harvested, Production, and Yield Trends for Philippine Rice for Different Trade Regimes, 2025, 2040

Indicators	Units	2025			2040		
		QR	35% tariff	% change	QR	35% tariff	% change
Area Harvested	000 ha	4,752	4,410	-7.2	3,386	3,163	-7.3
• Irrigated		3,285	3,072	-6.5	3,386	3,163	-6.6
• Rainfed		1,467	1,338	-8.8	1,506	1,372	-8.9
Production	000 mt	13,501	12,187	-9.7	16,254	14,658	-9.8
Yield	mt/ha	2.84	2.76	-2.7	3.32	3.23	-2.7
• Irrigated		3.16	3.07	-2.7	3.73	3.62	-2.9
• Rainfed		2.13	2.06	-2.9	2.41	2.34	-2.9

Source: Perez, N., Pradesha, A. 2019. Table 1.

25. Having a leaner rice production structure will free up scarce factor resources (such as land, water, labor, working capital) for more productive and profitable agriculture activities. Major crops whose production is projected to increase due to rice trade liberalization will include corn, oilseed crops and coconut, fruits and vegetables, sugarcane, and pulses. By 2040, rice liberalization will result in a negative growth in rice production and a positive growth in export-oriented crop production, even under climate change scenarios. The highest positive growth will be in Luzon (10.7%), followed by Mindanao (8.9%), and Visayas (6.1%). The IFPRI study also showed that land rents will be positive mainly in Mindanao under a 35% rice import tariff, reflecting the potential boost for export-earning commodity production.

26. Another positive gain of the PBL will be the opportunity to develop an efficient rice import substituting industry. Under the RTL, the government generates revenues from the shift to a

purely tariff system. The IFPRI study projected the potential rice tariff revenues to be on the uptrend, rising from \$572 million in 2025 to \$640 million in 2040 (Table3). Revenues generated will be put into the RCEF that will invest in rice farmers hit the hardest by the RTL. RCEF is currently earmarked for input expenditures divided as follows: 50% for agriculture machinery, 30% for inbred seeds, 10% for credit and 10% for agriculture extension services. Beyond the ₱10 billion, the incremental funds can be used for farmer financial assistance, Philippine Crop Insurance, crop diversification, and land titling. Key interventions are measures for efficient use and management of land and water resources; public financing of vital inputs (farm machinery, seeds, and extension services through access of the rice tariff revenues; and farmers and fisheries enterprise development that encourage diversification to export-potential commodities.

Table 3: Projected Rice Tariff Receipts at equilibrium import volume, Philippines (2025 and 2040)

Year	World prices (US\$/mt)	Import volume (000 mt)	35% Tariff receipts (US\$M)
2025	412	3,968	572
2040	477	3,381	640

Source: Perez, N., Pradesha, A. 2019. Table 5.

27. Key factors of production for rice production are land and water. The implementation of the Agriculture Free Patent, which is part of the PBL's reform agenda 2 will provide a pilot case for the development of a market-based agriculture land. This law will complement the gains from the reform agenda 2 on development of farmers and fisherfolk enterprise development as freeing agriculture free patent lands to other uses such as establishment of agribusiness ventures in these lands can stimulate effective link of agriculture production with their industrial and service related supply chains.

28. Related to improving the competitiveness of the domestic rice subsector, the IFPRI study examined three policy measures that will enhance the average rice yields from 2020 to 2040: (i) increase investments in agriculture research, development and extension (RDE) to increase the average yield by 15% ; (ii) expand irrigation area by 10%; and (iii) combine investments in RDE and irrigation. The key IFPRI finding is that with the combined investments in RDE and irrigation and tariff rate is pegged at 35%, result in an improvement of the competitiveness of the rice subsector compared to a situation wherein only a 35% tariff rate intervention was implemented. The major results that have a bearing on the program's benefits of the proposed combined investments of RDE and irrigation in a 35% tariff rate scenario are:

- Increase in production and yield relative to a QR scenario by 2025 and 2040,
- Result to a producer surplus of \$7.3 billion (partly offsetting the losses accruing from a decline in producer price), a consumer surplus of \$1.9 billion, or a total of economic surplus of \$8.7 billion,
- Contribute ₱68 billion to agriculture's GDP; and
- Generate ₱180 billion total welfare gains (comprising ₱141.3 billion for private consumption, ₱1.9 billion on investments, and ₱36.8 billion for government consumption).
- RDE and irrigation investments including institutional management will also benefit urban household groups (₱176 billion) and improve the household welfare of Luzon based residents (₱130 billion), and only minimally the households in Visayas (₱18 billion), and Mindanao (₱12 billion).

29. Lastly, there is a welfare gain to be harnessed from the RTL implementation focusing on social protection of the displaced rice farmers and the disadvantaged rural families. In the immediate term, after the implementation of the RTL, the IFPRI study also recommended more

targeted measures to assist rice farmers in coping with the new trade regime. These include unconditional cash transfers and easy access to finance. Under Reform Area 3, the PBL also provides measures for institutionalizing basic services to the rural poor, particularly access to the national feeding program and the 4Ps. The enhanced availability of and access to affordable rice will reduce the degree of malnutrition and chronic hunger in the country by 2.8% and 15.4% by 2025 and by 2040, respectively. The overall welfare effect of a 35% rice tariffication in the Philippines ranges from \$21 billion (IMPACT model) to \$56.7 billion (Phil-DCGE model) by 2040 (Table 4).

Table 4: Welfare effects of rice tariffication in the Philippines by tariff rate, 2020–2040

Tariff Scenario	Welfare measure, IMPACT			Welfare measure, Phil-DCGE	
	Producer Surplus	Consumer Surplus	Economic Surplus	Absorption change, 2040	Absorption change, 2020-2040
Reference: CC/QR	US\$ million				
0% tariff rate	-47,452	92,564	45,112	2,803	71,123
35% tariff rate	-28,728	50,714	20,985	2,217	56,720
50% tariff rate	-21,005	34,203	13,198	1,963	48,771

Source: IFPRI-NEDA, 2019.

VIII. Challenges and Costs

30. There are four major challenges that will have an impact on the efficient and effective delivery of the desired policy, regulatory, and institutional reforms as outlined in the PBL. These challenges are: (i) risk aversion of farmers to change their production and income structure; protracted rice farmers' income losses due to their weak and delayed response to expanding their income opportunities in agriculture and non-agriculture; (ii) market concentration at the midstream sections of the rice and food supply chains; (iii) the sector's vulnerability to climate change brought about by increasing occurrence of extreme weather events; and (iv) COVID-19 and its implications on the food supply.

31. Implementation of the RTL has resulted to the continued decline of rice farmers' income. PBL policy actions provide income transfer measures, such as the unconditional cash incomes and productivity-enhancing measures that will increase farmer's productivity and production and provide credit in rice production. However, majority of rice farmers are risk averse to changing their production and income structure. In this regard, the PBL's policy action on the extension assistance will play an important role in changing the farmers' mindsets of reforming their production and income structure. Extension services needed to attract novel approaches for income generating activities may include (i) showcasing good agricultural practices and model farms through farmer field schools, and (ii) pilot testing a suite of marketing contract and e-commerce arrangements. Subsidized credit support through SURE AID should encourage more diverse cropping and agro-based activities. Moreover, innovative Department of Agriculture (DA)-local government unit-agribusiness coordination will have to be explored to ensure provision and delivery of extension RDE for diversified and competitive food production and value chain systems. The Farmers and Fisherfolk Enterprise Development councils to be initiated by the DA under the agriculture modernization program can also play an instrumental role in becoming the platform for dialogues with multi agri-related enterprises and associations. The envisaged Rice Industry Roadmap will be key in providing the operational strategy for diversification in rice lands that will move out of rice production.

32. The most immediate, and probably the most pressing challenge affecting not only the agriculture sector, but the national economy is the spread of COVID-19. The quarantine measures have resulted in a stoppage of economic, social and all types of gatherings that have dire economic, social, and political costs. The projected cost is a deep dive of the country's GDP. ADB estimates a 3.8% contraction in GDP in 2020. The Philippine government also projected a contraction between 2.0% and 3.4%. Because of the sound macroeconomic fundamentals, the government, however, has fiscal and monetary space to implement a nationwide health infrastructure that is dedicated to addressing the COVID-19 cases, and rolling out economic stimulus packages.

33. Ensuring food security for all households through minimal economic exchanges and substantial government support is an equally important concern. However, the country's agriculture sector is encountering difficulty in playing its food security role. Similarly, agriculture trade has also slowed down, and governments are going back to export restrictions to protect their national food supply. These have intensified the global supply logistics constraints. These will jeopardize the availability of and access to affordable rice and food in the near future. Reversals of government policies are also unfolding. The DA has increased the procurement budget of the NFA and steps are being deliberated for government rice imports. Such hasty reactions on trade reforms may be debilitating to the agriculture economy in the immediate and medium term. There will be a need for more vigilant monitoring even from the ADB side that such policy reversals are not instituted. The RCEF for 2020 of ₱10 billion may not be forthcoming considering the reduced regional trade. Whatever will be generated should be secured mainly to assist the rice farmers to become productive and to diversify. The NFA's role in pandemic scenario will need to be focused on buffer stock management, except that it needs to take into account not just natural calamities but also health concerns that have impact of food security. Lastly, the funds that will be generated by government will need to earmark additional budget for the DA. The present breakdown on the use of the safety funds does not include agriculture, highlighting again the urban bias mentality of the government.

IX. Effects of Reform

34. The main effect of the PBL is increased agricultural competitiveness and inclusiveness. This will be achieved through strategically selected policy and institutional reforms that focus on agriculture trade policy and regulatory framework, public services and finance to the agriculture sector, and social protection to rural families. The intention of these interventions is to (i) lay the foundations for competitive markets to develop; (ii) institute good governance in the provision, delivery, and management of public goods; and (iii) provide short-term financial assistance for affected rice farmers and institute safety net programs for rural families. These include RCEF bred seeds, extension and credit, efficient and effective provision and delivery of social protection measures to partly offset the loss in real income due to the RTL. Further, implementation of fixed tariff rates for rice imports will benefit rice consumers, especially the poor who spend a larger proportion on this staple, from access to affordable rice

35. For the PBL, a database will be established at the DA, which will build on the data that are starting to be gathered for the RCEF's M&E, rice trade, and the RSBSA. Key indicators for improved competitiveness will be two-pronged: the first indicator will be on measurements of total factor productivity that will identify the contribution of key factors of production by crop planted (including information on land, labor, machinery, other inputs and water). Part of the analysis will look at yield growths, and productivity of key inputs such as labor and irrigation water. The total factor productivity analysis will examine the efficiency and technology contributions to yield

growth. The experience of Thailand and Viet Nam, which have built robust agriculture economies, is the rising total factor productivity whereby economic efficiency outweigh the technical efficiency index. Productivity on labor and capital will also be computed, and the expected results, as in the case of Thailand and Viet Nam, are increasing labor and machinery productivity, with the latter showing a faster rate of growth than labor productivity. For the design and monitoring framework, labor productivity has been selected to reflect both rice and diversified farming.

36. The second indicator for improved agriculture competitiveness will focus on the external trade aspect. On the governance side, the ease of doing business (specifically for the import of rice, and the export/import of other important food commodities) will be tracked. Impacting positively on the ease of trade transactions is the reduced number of required documentations, forms, and processes as well as fewer days to complete the import/export of agriculture transactions. The ease of doing trade business will increase the volume and value of foreign exchange revenues from net exports (export minus imports), which are expected to be on the uptrend as less government interference will ensue the PBL policy actions and will attract more trade.

37. The third indicator will focus on inclusiveness. Essentially, the social protection measures for rice farmers and the poor rural households in general will improve the purchasing power that is available to them, and this will be translated in terms of lower poverty incidence. The RSBSA and the updated Listahanan survey of the Department of Social Welfare and Development (DSWD) will be the major information sources of the actual beneficiaries for the social protection measures. The first analysis will look at the percent of total funds distributed for these purposes to indicate the efficiency in delivery; outreach will in turn, provides an indication of the proportion of those who benefitted. The ultimate measure will be the impact on the poverty incidence in by agriculture occupation (expect poverty incidence of rice farmer households would decline), gender and income. The expectation is that poor rural households benefitted from both the social protection measure and the decreased rice price (implying positive impact on their purchasing power).