SECTOR ASSESSMENT (SUMMARY): AGRICULTURE AND NATURAL RESOURCES

A. Sector Performance, Problems, and Opportunities

1. Sector importance and growth potential. Although the share of agriculture, natural resources, and environment in total gross domestic product at constant 1985 prices declined from about 20% in 2000–2001 to slightly over 18% in 2007–2009, the sector continues to play an important role in the Philippine economy. The sector is important for inclusive growth, with agriculture being the key driver of the economy in the rural areas where most Filipinos live (but where poverty incidence remains high). Agriculture remains a major source of employment, with about 36% of the total employed population working in the sector. Total agricultural exports reached about $3.9 billion (8% of the total Philippine exports) in 2008, driven largely by vegetables and fruits ($1.10 billion), fixed vegetable oils and fats ($1.04 billion), and fish and fish preparations ($0.64 billion). The crop subsector is dominated by low-value crops such as rice, maize, and coconut despite its potential for diversification to high-value products. The annual value-added growth rate from livestock and poultry declined from 5.2% in 2001–2002 to about 1.5% in 2003–2009, primarily due to the continuing decline in cattle production. As a consequence, the country continues to import substantial volumes of meat products. With its extensive coastline and coastal and oceanic waters, the Philippines ranks 12th among fish-producing countries. The contribution of fisheries in gross value-added in agriculture at constant 1985 prices averaged 21.8% in 2000–2009. The fishery subsector is a net earner of foreign exchange. Forestry contributed only 0.5% of the total gross value-added of the sector in 2000–2009, while annual exports of forestry products represent only 0.1% of total Philippine exports.

2. Rice importation. The production of palay (unmilled rice) increased on average by about 3.9% from 2000 to 2008, but the Philippines continues to import large volumes of rice every year. The inability to meet the demand from increasing rice consumption is attributed to relatively low yield, low cropping intensity, high post-harvest losses, and damage due to floods and typhoons. The average rice yield from all farms has increased from about 2 metric tons per hectare (ha) in the 1980s to about 3.8 metric tons/ha in 2008, but remains lower than in neighboring Association of Southeast Asian Nations (ASEAN) countries and well below the maximum potential of about 7–11 metric tons/ha, depending on the type of seed used. The government’s rice production incentives and marketing policies are conflicting, costly, and generally ineffective.

3. Natural resources degradation. The country’s total land area of 30 million ha is made up of 14.2 million ha of certified alienable and disposable lands, 15 million ha of classified forest land, and 0.8 million ha of unclassified forest lands. Forest cover was estimated in 2003 at about 7.2 million ha, or only 41% of the amount of classified forest land. With an average reforestation rate of just 18,000 ha per year, increasing the density of forest cover remains a concern. Less than 5% of the 25,000 square kilometers (km²) of coral reefs remains in good condition. Mangroves decreased from around 4,500 km² in 1918 to only about 1,380 km² in the 1990s. Lack of alternative livelihoods, inadequate environmental management programs, and lax implementation of environmental laws contribute to the continuing natural resource degradation.

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1 This summary sector assessment is based on ADB. 2010. Agriculture, Natural Resources, and Environment Sector Assessment, Strategy and Roadmap. Manila (9 September).
2 The two poorest groups are fishermen (poverty incidence of about 50%) and farmers (poverty incidence of about 44%).
3 The three crops make up for about 84% of the area planted and harvested. The total area planted and harvested increased from 11.76 million hectares (ha) in 2004 to 12.47 million ha in 2008, an increase of a little over 700,000 ha.
The continuing degradation of forests also contributes to low yields and the low rate of land utilization, as it results in an inadequate water supply during the dry season and exacerbates damage to crops, fisheries, and rural infrastructure as a result of typhoons and increasing flooding during the wet season.\(^4\)

4. **Binding constraints to sector development.** The main binding constraints to the development of the sector are (i) low productivity; (ii) limited connectivity; and (iii) weak resilience. Sector development is further inhibited by inadequate support services such as access to affordable finance, business development services, supply chain enhancements, and extension services. Compounding all these issues are policy, institutional, and governance concerns. A problem tree for the sector is provided on page 5 of this document.

5. **Low productivity.** Land productivity in the Philippines is lower than in other countries in the Southeast Asia region. Limited land productivity is a result of many factors such as small farm size; underutilization of land due to water supply issues resulting from watershed degradation; low operational efficiency of existing irrigation systems; a deficit of rural infrastructure, particularly irrigation works, farm-to-market roads, and post-harvest facilities; the high cost of farm inputs; competing uses of agricultural lands; and weak linkages between smallholders or producers and enterprises.\(^5\) The majority of the existing irrigation systems are old and deteriorated due to inappropriate designs, inadequate operation and maintenance budgets, and the lack of funds for timely rehabilitation of facilities damaged by seasonal floods and typhoons. In fisheries, establishment and/or improvement of regional and municipal fish ports and landings, ice plants and cold storage facilities, and marketing support facilities are essential to reducing post-harvest losses.

6. **Limited connectivity (roads and access to information).** Lack of quality rural transport, particularly farm-to-market roads, discourages farmers from increasing production. The total length of farm-to-market roads in the country is estimated at about 124,000 km, of which more than 90% are gravel and earth roads, the majority of which are barely passable during the wet season. Adoption by farmers, particularly smallholders, of new and value-adding technologies has been slow due to the lack of access to information on production technologies. As a consequence, farmers' knowledge of diversified farming technologies is limited, and market linkages remain weak.

7. **Weak resilience.** The sector lacks resilience in a number of aspects. It is highly vulnerable to climate change-related risks such as flood, typhoons, and droughts. The altitude in a large part of the country—the upper river basins (URBs)—is significant, and intense high rainfall events tend to occur in much of the Philippines; these can cause severe erosion, given certain soil, vegetation, and slope conditions (such as those present in the URBs). A number of watersheds in the URBs are under continued threat of deterioration due to unregulated extraction of natural resources and the effects of climate change; this poses a danger to the stability and sustainability of downstream investments and economic activities. Longer dry seasons put an additional burden on water supplies for irrigation and seriously impair agricultural productivity. Smallholders are also affected by market price volatility. While the government sets the support price for *palay*, the actual average farm gate price varies from month to month and is

\(^4\) Environment Assessment (accessible from the list of linked documents in Appendix 2 of country partnership strategy, 2011-2016).

\(^5\) Post-harvest losses have been estimated at 10%–15%, and when combined with the loss of quality, represent a potential loss in value of 25%–50%. The average drying loss is documented at about 5% of national production, which is estimated to be worth about P10 billion. Losses in vegetables are even higher. Post-harvest losses in fisheries are also a major concern.
usually lower than the government support price. The same is true for vegetables. Since vegetables are perishables and the market is fragmented, prices are highly volatile. Small vegetable farmers tend to supply only local traditional wholesale and retail markets, while large farmers are able to realize higher returns by becoming part of more sophisticated supply chains.

8. **Inadequate support services.** The insufficient provision of key support services affects productivity. The devolution of functions to local government units (LGUs)—such as extension, construction and operation and maintenance of farm-to-market roads, small-scale irrigation systems, and other rural infrastructure—remains incomplete due to the technical and financial constraints facing LGUs and incompatible priorities between them and national agencies. Opportunities exist for private sector participation in areas such as certified seed production and distribution, laboratory analysis and certification, market information analysis and dissemination, technology dissemination, and supply chain enhancements. Pricing and delivery arrangements for these services often generate disincentives to private sector involvement. Lack of transparency, cumbersome procedures, and inconsistent application of regulatory functions under the authority of the Department of Agriculture inhibit private sector participation and the development of linkages between smallholders or producers and traders or processors. In addition, the majority of private sector enterprises active in the rural sector are small and financially weak and do not have access to comprehensive business development support, which makes promotion of public–private partnerships difficult. The majority of smallholder groups (such as irrigators’ associations) are weak and nonfunctional, and largely limited to negotiation of production and marketing arrangements with suppliers and traders. Two other critical factors have added to the low productivity: (i) lack of access to credit by farm households and small and medium-sized enterprises; and (ii) inadequate diffusion of agricultural research due to funding shortages and inappropriate implementation arrangements.

9. **Policy, governance, and capacity issues.** Institutional fragmentation weakens planning and service delivery. Unclear and overlapping functions of key government agencies and insufficient planning and results monitoring systems impact on the effectiveness and accountability of service delivery. The three primary departments involved in the sector (the Department of Agriculture, the Department of Agrarian Reform, and the Department of Environment and Natural Resources) include in their organizational structures bureaus, councils, and government-owned and -controlled corporations that handle specific but, to some extent, overlapping activities. In addition, weak governance and changing local-level priorities, due to likely changes in governing officials every 3 years, add to the risks.

**B. Government’s Sector Strategy**

10. **Vision 2011–2016.** The vision of the Philippine government is a “competitive, sustainable and technology-based agriculture and fisheries sector driven by productive and progressive farmers and fishers, supported by efficient value chains, and well-integrated in the domestic and international markets, contributing to inclusive growth and poverty reduction.”\(^6\) Specific sector goals include (i) ensured food security and increased income; (ii) reduction of risks inherent in the sector, including climate change impacts; and (iii) enhanced policy environment and governance.

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C. ADB Sector Experience and Assistance Program

11. From 2003 to 2009, the Asian Development Bank (ADB) approved $112.8 million of project loans and $5.14 million of technical assistance (TA) to the sector, representing about 3% of the loans and grants and 13% of the TA to the country in the period. ADB has three ongoing projects with an aggregate loan amount of $187.8 million aimed at improving the wellbeing of poor and marginalized groups in agrarian reform areas, sustainable management of coastal resources, and increased agriculture productivity and profitability. The 2008 country assistance program evaluation analyzed sector operations implemented during 2003–2007 and found that ADB support contributed to local income improvements and poverty reduction through support for agriculture, rural development, and service improvement. However, delivery of assistance to rural areas was hampered by weaknesses in some project designs and delivery, the absence of uniformly strong and well-coordinated national and decentralized institutions supporting agriculture and rural development, and recurrent funding constraints at the LGU level.

12. Sustainable integrated natural resource use and management. In line with the government’s goals and consistent with ADB’s Strategy 2020 and Operational Plan for Sustainable Food Security in Asia and the Pacific, ADB’s primary objective is to enhance the state of the different ecosystems and natural resources through an integrated cross-sector approach that incorporates economic considerations, especially the improvement of livelihoods of those dependent on these resources, as well as environmental and social considerations that include biodiversity conservation and climate change. Investment priorities will be (i) urban river basins (URB); (ii) major river basins covering large production areas; (iii) highly degraded URBs; and (iv) coastal and marine resources that are highly at risk and influenced by the priority URBs.

13. Rural infrastructure development. The aim is to improve agricultural productivity through the provision of climate-resilient infrastructure in areas where there is potential for sustainable gains in productivity that will lead to increased rural incomes, particularly for smallholders and the poor in provinces and municipalities with high poverty incidence. Eligible infrastructure will include primarily irrigation, farm-to-market roads, and other associated facilities and complementary peripheral or support infrastructure. With respect to irrigation, the priorities will be rehabilitation and improvement of existing, and construction of new small-scale systems.

14. Capacity development. The objective is to strengthen the organizational and networking capacity of national government agencies and LGUs to formulate policies and to plan and implement activities under the support areas, with deeper participation from both beneficiaries and the private sector.

15. Proposed lending and nonlending programs for 2011–2016. In the area of agriculture and natural resources, ADB support will focus on addressing natural resource issues through a multitranche financing facility on natural resources and river basin management. In addition, the Integrated Natural Resource Management Project is now in advanced stages of preparation. To support the lending program, a nonlending program will comprise TA support for multitranche financing facility tranche releases, project preparatory TA, and capacity development TA. A sector results framework is provided on page 6 of this document.

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Problem Tree for Agriculture and Natural Resources

- **National Impacts**: Low contribution to economic growth, modest impact on poverty reduction and limited contribution to enhancement of food security

- **Sector Impacts**: Low primary output volumes and values, modest exports, and high imports

- **Core Sector Problem**: Restricted farmer and enterprise profitability, limited enterprise formation

- **Deficient Outputs**: Land, forest, and biodiversity losses, quantity and quality losses

- **Main Causes**: Underperforming Agriculture and Natural Resources Sector
  - **Low Productivity**: Inadequate access to formal sources or credit, Weak agriculture extension services, Farmers’ own knowledge base low, Weak sector plans
  - **Limited Connectivity**: Deficit of irrigation and post harvest facilities, Low operational efficiency of existing irrigation systems, Weak farmers’ groups, Weak institutions
  - **Weak Resilience**: Inadequate quality farm-to-market roads, Limited access to new technologies and information, Limited technical and financial capacity of local government units

- **Deficient Outputs**: Highly degraded natural resources, Highly vulnerable to climate change related risks, Inefficient supply chain, Weak institutions, Lack of alternative livelihoods for upland communities
### Sector Results Framework (Agriculture and Natural Resources Sector, 2011–2016)

<table>
<thead>
<tr>
<th>Country Sector Outcomes</th>
<th>Country Sector Outputs</th>
<th>ADB Sector Operations</th>
<th>Main Outputs Expected from ADB Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved food security</td>
<td>Increased average crop yields for rice, maize, and banana (rice from 3.6 tons/ha in 2010 to 4.9 tons/ha by 2016, maize from 2.6 tons/ha in 2010 to 3.3 tons/ha in 2016, and banana from 20 tons/ha in 2010 to 25 tons/ha in 2016)</td>
<td>Irrigation facilities improved and/or constructed</td>
<td>Planned key activity areas</td>
</tr>
<tr>
<td></td>
<td>Farm-to-market roads improved and/or constructed</td>
<td>Mangrove areas and forest cover expanded</td>
<td>Pipeline projects</td>
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<td></td>
<td>Improved capacity of national agencies, local government units, and community organizations to manage natural resources and river basins</td>
<td>1,000 staff of national agencies and local government units trained in planning and management of natural resources by 2016</td>
<td>Pipeline projects</td>
</tr>
<tr>
<td>Improved conservation, protection, and rehabilitation of natural resources</td>
<td>Land degradation hot spots placed under sustainable land management practices increased from 53 million ha in 2010 to 63 million ha in 2016</td>
<td>Forest cover increased by 180,000 hectares by 2016</td>
<td>PPTA: Natural Resources and River Basin Management Project (2014: $1.0 million)</td>
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<tr>
<td></td>
<td>Improved capacity of national agencies, local government units, and community organizations to manage natural resources and river basins</td>
<td>500 farmers’ groups and community organizations in the project areas organized and strengthened</td>
<td>CDTA: Climate Resilience and Green Growth in Critical Watersheds (formerly Capacity Building for Low-Carbon Climate-Resilience Options) (2013: $2.0 million)</td>
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<td></td>
<td>Capacity Development for Local Government Units in Natural Resources and River Basin Management (2015: $3.0 million)</td>
</tr>
</tbody>
</table>

**Planned key activity areas**
- Sustainable integrated natural resource use and management (forest, coastal) and ecosystem biodiversity; rural infrastructure development; institutional capacity development
- Integrated Natural Resources and Environmental Management Project (2012 standby: $100 million)
- Natural Resources and River Basin Management Project (2015 standby: $150 million)
- PPTA: Natural Resources and River Basin Management Project (2014: $1.0 million)
- CDTA: Climate Resilience and Green Growth in Critical Watersheds (formerly Capacity Building for Low-Carbon Climate-Resilience Options) (2013: $2.0 million)
- Capacity Development for Local Government Units in Natural Resources and River Basin Management (2015: $3.0 million)

**Ongoing projects**
- Agrarian Reform Communities Project II (2007: $70 million)
- Integrated Coastal Resources Management
- 500 farmers’ groups and community organizations in the project areas organized and strengthened
<table>
<thead>
<tr>
<th>Country Sector Outcomes with ADB Contribution</th>
<th>Country Sector Outputs with ADB Contribution</th>
<th>Indicators with Incremental Targets</th>
<th>Planned and Ongoing ADB Interventions</th>
<th>Main Outputs Expected from ADB Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector Outcomes with ADB Contribution</td>
<td>Sector Outputs with ADB Contribution</td>
<td>Indicators with Targets and Baselines</td>
<td>Project (2008: $33.8 million)</td>
<td>25% of total beneficiaries are women</td>
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<td>Decentralized Framework for Sustainable Natural Resources and Rural Infrastructure Management TA (2010: $1.3 million)</td>
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</tbody>
</table>

CDTA = capacity development technical assistance, ha = hectare, km = kilometer, PPTA = project preparatory technical assistance, TA = technical assistance.