Strategy 2030 Operational Plans

Operational Priority 5: Promoting Rural Development and Food Security, 2019–2024
# ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>CPS</td>
<td>country partnership strategy</td>
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<td>DMC</td>
<td>developing member country</td>
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<td>GHG</td>
<td>greenhouse gas</td>
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<tr>
<td>ICT</td>
<td>information and communication technology</td>
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<tr>
<td>IoT</td>
<td>internet of things</td>
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<td>PSOD</td>
<td>private sector operations department</td>
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<td>SMEs</td>
<td>small and medium-sized enterprises</td>
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I. STRATEGIC OPERATIONAL PRIORITIES

A. Overview

1. Although significant progress has been made in meeting food security including nutritional needs, in Asia and the Pacific, hunger and malnutrition persist.¹ The extreme poverty ($1.90/day threshold) has declined from 53% in 1990 to about 9% in 2013 but there are still 326 million people living below the poverty line.² Poverty is inextricably linked to food security. The poor spend more than 50% of their income on food and about one-fifth spend 70% of their income on food.³ An additional 915 million people who live below the $3.20/day threshold are constantly at risk of being pushed back into extreme poverty. Therefore, the number of food-insecure people in Asia and the Pacific region remain high.⁴

2. Intake of safe and nutritious food depends on access (purchasing power), therefore, affects food and nutrition security of low-income people in urban and rural areas. Children are especially vulnerable. Over half of the world’s malnourished children live in Asia and the Pacific region. Malnutrition is multifaceted and affects people of all ages—ranging from severe undernutrition to overweight and obesity—but children bear the most burden. Over 79 million, or 25%, children below the age of five suffer from stunting and 34 million children are wasting, 12 million suffer from acute malnutrition with high risk of death. While stunting has reduced significantly but little improvement has been made in wasting during the past decade.⁵

3. In rural areas, poverty incidence is much higher than that in urban areas and significant rural-urban disparities exist in education and health services as well.⁶ Farmland in most developing member countries (DMCs) is highly fragmented.⁷ Over 80% of food is grown by smallholder farmers who do not get fair returns for their labor and investment. Average age of the farmer in Asia and the Pacific region is about 60 and the young consider farming unattractive. In the rural areas, water supplies are often contaminated and sewage untreated. Misuse of fertilizers and pesticides is contaminating the soil and water resources. In most DMCs, food supplies are unsafe due to (i) contamination of soil and irrigation water, and (ii) dire lack of cold chain to transport and store perishable food. The impact of unsafe food on human health is staggering.⁸

⁶ ADB. 2017. Key Indicators for Asia and the Pacific 2017. Manila. Of the 19 economies with urban–rural disaggregation of poverty data (based on available national household income and expenditures surveys, 2010–2016), the proportion of the population living below the national poverty line is consistently higher in rural areas than in urban areas.
⁸ WHO. Food Safety Fact Sheet accessed at: http://www.who.int/news-room/fact-sheets/detail/food-safety on Nov 11, 2018. Around the world, an estimated 600 million fall ill after eating contaminated food and 420,000 die every year; children under five years of age carry 40% of the foodborne disease burden with 125,000 deaths every year. Diarrheal diseases are the most common illnesses resulting from the consumption of contaminated food, causing 550 million
4. In rural areas, there is limited access to grid or decentralized energy systems, clean water and sanitation, quality education and health services, and digital connectivity. There are limited manufacturing and services job opportunities. Rapid urbanization, fueled by rural-urban migration, is one of the key drivers of continued rural impoverishment—when young and enterprising people do not find gainful opportunities in the rural areas. Urban migration has, to some extent, contributed to reduction in rural poverty as money transfers have raised rural incomes.

5. The operational priority 5 under Strategy 2030 of the Asian Development Bank (ADB) calls for renewing focus on rural development and improving market connectivity by transforming agricultural value-chain links. It focuses on rural roads, market infrastructure, and agri-logistics centers and networks to enable the integration of producers, agribusinesses, and consumers in the national, regional, and global food systems. Reducing post-harvest losses and promoting agricultural value addition will help increase rural incomes and enhance food security in the region. Use of advanced technologies will assist in increasing factor productivity, ensuring sustainable use of land and water resources, enhancing food safety, and improving natural resource management.

B. ADB Experience and Initiatives

6. ADB has long and varied experience in helping its DMCs improve productivity and sustainability of agriculture, strengthen their natural resources management, and achieve sustainable rural development. In 2009, ADB approved the Operational Plan for Sustainable Food Security in Asia and the Pacific. The plan had a multisector approach that emphasized agriculture productivity, market connectivity, and resilience against economic shocks and climate change impacts. The Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020 further capitalized on the wealth of accumulated agriculture and natural resources knowledge in ADB and refined the earlier plan through improved focus and quality of ADB operations in the sector. The Operational Plan 2015-2020 focuses on four priority areas of activity corresponding to the critical factors that influence the food value chains: (i) increasing productivity and reducing food losses, (ii) improving market connectivity and value chain linkages, (iii) enhancing food safety, quality, and nutrition, and (iv) enhancing management and climate resilience of natural resources.

7. ADB is meeting its $2 billion annual approval target for food security, but classification for rural development support requires further refinement. The success rate of ADB’s agriculture and natural resources portfolio has improved from 59% during 2005–2009 to 79% during 2014–2017. The overall success rate of the portfolio, for 2005 to 2017 period, is 64.5% (at par with ADB average) while that of irrigation was rated at 47%. Key lessons have been learned to improve the performance of irrigation projects including quality at entry and deployment of modern technology tools to monitor the operation and management of the systems. Evaluation methodology of irrigation projects will also be reviewed and improved.

8. The Private Sector Operations Department (PSOD) established an agribusiness investment team in 2015 to increase both the number of direct investments and technical...
expertise. PSOD is supporting the entire food and agribusiness value chain through loans, equity, blended financing, and technical assistance projects. Between 2012 and 2017, direct private sector funding to the sector amounted to $0.7 billion, averaging $116 million for two to three projects per year. PSOD operations are also indirectly contributing to food security through financial intermediaries’ support to farmers and rural small and medium enterprises (SMEs) and through trade and supply chain financing programs.

C. Key Trends, Challenges, and Opportunities in Developing Member Countries

9. **Lagging rural development.** Despite rapid urbanization in the last two decades, about half the population of Asia and Pacific still lives in rural areas. In almost all DMCs, the governments’ development priorities and activities are significantly more focused on urban areas. The quality and access to services—i.e., basic education and health, water and sanitation, roads, and electricity—are lagging far behind in rural areas compared to those in urban areas. This disparity has created economic conditions which put rural areas at major disadvantage and induce young and resourceful people to migrate to urban areas. Due to these disadvantageous economic and infrastructure conditions (i) farm productivity is much lower than the potential, (ii) return on farm labor and investment are much lower compared to those of non-farm enterprises, (iii) private investment in farming and rural enterprises is much lower and does not create critical mass for increased economic activity, (iv) adoption of modern technology is slower, (v) cost of agricultural production is higher, (vi) post-harvest losses are high, and (vii) rural to urban migration is much higher than it would be otherwise. More focused and balanced development in rural areas will reverse these trends and generate significant benefits for the whole society.

10. **Agricultural markets are dysfunctional.** In majority of DMCs agricultural markets fail most of the time. Market is the biggest risk farmers face. Post-harvest losses for perishable produce—i.e., fruits, vegetables, dairy, meat, and fish etc.—range from 20%-40% because proper packing, cooling, storage, and transport facilities barely exist. Private sector investments for these services fall far short of the requirement. Besides, private sector infrastructure for these services is not properly integrated with production centers and markets. The cost of inefficient agricultural marketing is staggering; farmers do not get fair return, consumers pay high prices, the safety of the food is compromised. Poor people suffer disproportionately as they spend more than half of their income on food. Most of the inflation in DMCs is also induced by food prices. Poor suffer again because inflation is the regressive tax. Even in developed countries, modern agriculture and associated infrastructure have prospered because of their governments’ well-thought out policies and regulatory frameworks—under which private sector invested—and adequately financed public goods. DMC governments need to develop appropriate policies and investment frameworks to induce private sector investment to transform their agricultural production and especially marketing systems.

11. **Smallholder farms are mostly unprofitable.** Over 80% of the food in Asia and the Pacific is produced by smallholder farms who till 1-2 hectares farms. A great majority of these farmers are now nearing retirement age; average age is 60. A great majority of them are subsistence farmers. In general, smallholder farmers’ access to modern inputs, financing, and worst of all to markets is quite limited. Despite some mechanization, mostly with tractors and threshers, farming remains labor intensive and a back-breaking drudgery. Therefore, young people consider farming unattractive. The farm consolidation and mechanization that took place in the developed countries—during their economic transformation over the last 60-70 years—has not happened in Asia and the Pacific. Unless governments provide incentives through policy, regulatory, and financial systems, smallholder farming will not become profitable and productive. The food systems will remain largely inefficient and the whole society worse off.
12. **Women’s empowerment in agriculture.** The female share of agriculture labor is 40%–50% and increasing. This growing feminization of agriculture is attributed to substantial migration of men to urban areas or overseas for employment. Women farmers tend to have less access than men to productive assets, opportunities, and technology. Given the same access as men, women could potentially increase farm yields by 20%–30% and reduce the number of hungry people in the world by 12%–17%. Substantial migration of men to urban areas or overseas for employment is also a direct positive correlation between increased agricultural investment and achieving gender equality. Moreover, populations across the region are aging, and it is often the older generation and younger females who remain in rural areas and engage in farming. This demographic shift provides both opportunities and substantial social, economic, and cultural challenges. Therefore, improving women’s equal access to productive assets, education, technology, and financing would be key to promoting efficient farming.

13. **Climate change impacts on agriculture.** Projections to 2050 for Asia and the Pacific show that with rising temperatures, crop yields may decline significantly. In addition, the prices of rice, wheat, and soybeans are projected to increase by 10%–50%. Consequently, without significant increases in food production above present trends, declines in caloric availability and an increase in child malnutrition by up to 20% are anticipated. The increasing frequency and intensity of extreme weather events are also expected to have more serious and enduring consequences for agriculture. Agriculture in Asia and the Pacific accounts for 37% of world agriculture greenhouse gas emissions, primarily from crop cultivation, raising livestock, land-use changes, and deforestation. Closing the yield gap between actual and potential will offset some yield loss from climate change in the future. Adopting climate-smart agricultural practices and technologies will be key to meet these impending challenges.

14. **Environmental degradation.** About 80% of fresh water in Asia and the Pacific is withdrawn for irrigation. But irrigation efficiencies remain low, on average, around 37%. Fresh water scarcity is compounded by rapid depletion of groundwater aquifers due to unregulated abstraction and increased competition for scarce water between agriculture and other users. In South Asia, about 43% of total agricultural land is degraded, with 31 million hectares already highly degraded, resulting in severe production and income losses. Forest degradation, land and water pollution, soil nutrient degradation, and soil salinization create a widening gap between the demand for natural resources for food production and the environment’s ability to provide and to replenish those resources. Maintaining the natural capital is a crucial goal for all DMCs. Soil and water pollution—caused by misuse of fertilizers and pesticides and release of untreated

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15 For example, irrigated rice is projected to decline 14%–20%; wheat, 32%–44%; and soybeans, 9%–18%.
industrial and sewage water in fresh water streams—not only degrades land-based production systems but also degrades marine resources when pollution is carried to oceans. The “dead zone” in the Gulf of Mexico, created by run off from the U.S. Midwest farms, is well studied example of devastating impact of agriculture on marine resources. The extent of similar problems in Asia and the Pacific are currently not known because of the lack of field studies and reliable data.

15. This operational plan provides guidance for ADB in assisting its DMCs to improve rural development and food security. It also complements and supports the operational plans of other strategic priority areas to
   (i) address remaining poverty, and reduce inequalities;
   (ii) accelerate progress in gender equality;
   (iii) build climate change and disaster risk resilience, and enhance environmental sustainability;
   (iv) strengthen governance and institutional capacity; and
   (v) foster regional cooperation; and other sector frameworks of water, finance, education, health, transport, and energy groups.

II. OPERATIONAL APPROACHES

A. Strategic Priorities

16. All priorities from the previous plans of 2009 and 2015 will remain the focus under this plan as well. But there are three additional features that will provide impetus to the sector development. Renewed but special focus on rural development is key to spur economic growth and create quality jobs in rural areas. Even if 15%-20% of the young people are incentivized to remain in rural areas, it will significantly decelerate urban migration; cities in Asia and the Pacific are already highly overcrowded. The second feature is to introduce transformative interventions in agricultural value chains by spurring development of wholesale market infrastructure in public-private partnerships to improve farmer profits and help stabilize food prices. The third feature is to strengthen food security by ensuring irrigation sustainability by improving operation and maintenance of systems by deploying modern technologies, introducing transformative interventions in farm consolidation and mechanization to induce youth to take up farming, and improve malnutrition with focused interventions. This operational plan has three main pillars (i) rural development, modern agricultural value chains, and food security.

17. Rural development. ADB operations will focus on improving access to services, attracting private sector investments, and generating jobs in rural areas. These can be achieved by
   (i) strengthening rural–urban connectivity;
   (ii) providing reliable power supply, including off-grid solutions;
   (iii) expanding access to water supply and sanitation; managing rural waste;
   (iv) strengthening cost-effective health and education services;
   (v) promoting sustainable tourism; creating food distribution hubs; and
   (vi) promoting emerging consumer market development in rural areas.

22 The agriculture and natural resources sector include irrigation; agriculture drainage; rural flood protection; rural market infrastructure; agriculture production; agro-industry, marketing, and trade; agriculture research and application; livestock; fishery; forestry; land-based natural resources management; water-based natural resources management; agriculture policy, institutional, and capacity development; and water policy and institutional and capacity development. ADB. 2014. The Project Classification System—Toward Strategy 2020: A User Guide. Manila.
18. **Modern agricultural value chains.** ADB will strengthen its operations in distributing food efficiently from farmers to consumers; reducing post-harvest losses, improving farmer profitability, and providing safe, nutritious, and affordable food. Investments, in public-private partnership, will focus on

(i) market, cold-chain, and modern retail infrastructure development;
(ii) off-grid energy solutions for cold chains including waste-to-energy solutions;
(iii) integration of farmers, agribusinesses, and consumers into efficient and sustainable value chains;
(iv) local value addition for both domestic and export markets;
(v) food safety and traceability development;
(vi) scaling up dissemination of good agriculture practices through digital agriculture services, including on-the-ground applications of technology solutions to reduce water, energy, waste, and greenhouse gas footprints of agribusiness and post-harvest activities;
(vii) sustainable and safe biotechnology solutions; and
(viii) improved access to agribusiness and rural finance.

19. **Food security.** Achieving food security requires building food systems to sustainably produce more with less resources while addressing malnutrition. ADB will support and promote

(i) improved irrigation infrastructure and water delivery services;
(ii) build climate resilience;
(iii) climate-smart and low-carbon food system solutions;
(iv) better-quality farm inputs and mechanization;
(v) modern, sustainable, and responsible corporate farming models;
(vi) youth and women empowerment in modern agriculture;
(vii) knowledge-intensive agriculture; and
(viii) focus on water–food–health nexus to address prevalent malnutrition (Box 1).

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**Box 1: Water–Food–Health Nexus**

There is an intrinsic connection among water, food, and health.

Without adequate and safe water, food production, processing, value addition, marketing, and trade are hampered, leading to rising prices, price spikes, shortages, and adverse market interventions that can lead to social instability and riots. Therefore, developing member countries with high food security risks must work on water security to maintain and to increase food production.

Climate change impacts affect water by prolonging dry days, droughts, or intense and extreme weather events that may cause damage to crops, ultimately affecting food availability at the household level as well as disposable incomes to buy food.

Health is determined, both in children and adults, by the intake of food. Stunting, wasting, and cognitive disabilities in children are caused by lack of nutritious food intake. Although developing member countries have abundant production of grains and staples—and most are affordable except during times of high price spikes—rising and erratic fruit and vegetable prices hinder regular access of such nutritious food to poor families.

Water–food–health have become increasingly critical in achieving sustainable growth as resource scarcity and sector linkages intensify across Asia and the Pacific. Technological developments can help to monitor water use and quality and reduce waste.

B. Operational Approaches

1. Rural Development

20. **Rural-urban connectivity.** Facilitate access to markets and digital technologies to promote trade and generate employment—(i) invest in rural roads for farms to access market; (ii) support expansion of modern information and communication technology (ICT) infrastructure to rural areas; and (iii) integrate consumers into food systems and services in rural areas thereby creating rural income and employment.

21. **Rural health and education.** Promote cost-effective services—(i) tele-health and tele-education by connecting urban-based hospitals and colleges with their satellite branches in the rural areas; and (ii) e-learning programs for technical and vocational education and training on modern farming, agribusiness, and digital agriculture services (e.g., agribusiness marketing and trade, value chain finance, precision farming advisory with real-time and predictive data, drone-based soil assessment and input spraying services, machine equipment rental and cold chain logistics).

22. **Rural development and economic hubs.** Create an enabling environment for rural development—(i) study emerging rural consumer markets and distribution hubs in DMCs; (ii) promote sustainable tourism development; and (iii) strategically invest in road, utility services (reliable power supply, water supply, and sanitation, rural waste management) and high-speed internet infrastructure to support efficient business transactions, mobilize private investment in agri- and non-agri enterprises and generate jobs in rural areas.

2. Agricultural Value Chains

23. **Modern agricultural value chains.** Move food efficiently from farmers to consumers to increase farmers’ profitability and provide safe, nutritious, and affordable food to consumers—(i) invest in modern wholesale markets, postharvest technology and logistics, cold chain infrastructure and retail; (ii) aggregate farmers’ produce by transforming farmers cooperatives into commercial suppliers; (iii) integrate fragmented food markets with digital agriculture services and engage millions of farmers and agribusiness into the modern food system; and (iv) support the reduction of water, energy, and greenhouse gas (GHG) footprints of agribusiness by widely disseminating resource-saving practices and technology solutions, improving postharvest management to minimize food waste.

24. **Off-grid energy solutions.** The main constraint to developing cold chain infrastructure in rural areas is the lack of reliable and affordable power supply—(i) promote solar energy to power small and medium enterprises, cold chain and precooling centers; and (ii) support and attract private investments in agricultural waste management including reduction of waste, and collection and treatment of waste for renewable energy production and other energy solutions to support smart farming.

25. **Food safety.** Support food safety standards, traceability, certification development—(i) assess prevailing situation, dialogue with governments to improve policy and regulatory frameworks; (ii) invest in modern testing laboratories and strengthen its staff capacity; (iii) support food processors and distributors on supply chain traceability, and pilot-test blockchain traceability of crop value chains for higher profit realization of farmers; (iv) disseminate good agriculture practices and sustainable biotechnologies to minimize chemical residue in food items (e.g., biochemical, microbial, pheromone-based pesticides) and avoid soil and water pollution.
26. **Affordable rural finance.** Access of small-holder farmers and agribusiness SMEs to financing means remain limited—(i) increase the access through e-commerce, blockchain, and cellphone-based microfinance; (ii) invest in emerging financial services on ICT platforms (e.g., credit profiling of farmers for input finance, digital finance for SMEs with no-collateral); (iii) support risk reduction for agribusiness through credit risk participation (partial credit guarantee, co-investment with value chain partners and financial institutions, crop insurance) and agribusiness transaction-based lending to farmers and SMEs (e.g., warehouse receipt financing, establishing link with supply chain finance); and (iv) promote the rural finance sector (e.g., institutional capacity building, policy reforms, financial literacy and risk mitigation tools) to build capacity and add value to rural development.

3. **Food Security**

27. **Climate-smart agriculture.** Strengthen climate-resilience to increase farm productivity, reduce GHG emissions, and mobilize private green investments—(i) sustainably increase farm productivity and incomes; (ii) strengthen resilience of food systems to climate change and variability (e.g., adopting resilient crop varieties that can withstand drought and submergence, invest in water use efficiency and resilient structures of water and market infrastructure to withstand extreme weather events); (iii) promote low-carbon approaches and reduce agriculture's contribution to GHG emissions through improved farming and livestock practices; and (iv) invest in carbon sinks, such as sustainable forestry and coastal marine ecosystem management, and a credible GHG emission monitoring system to attract private green investments.

28. **Enhanced water service delivery and efficiency.** Promote irrigation modernization with upgraded infrastructure, and operation and management systems to optimize crop production and water productivity, while meeting the water delivery service requirements—(i) generate investments based on rigorous analysis of available resources, sustainable asset and resource management plans, and consultations with farmers and key stakeholders; (ii) promote the applications of high-level technology, such as remote sensing of water productivity, water accounting, automated gate control systems, prepaid smart card water control systems, micro irrigation, and mechanical fertigation; mechanical land preparation equipment; and geographic information system-based asset management systems; and (iii) promote investments in resilience building against natural resource depletion and climate risks (e.g., drainage system to reclaim waterlogged lands, soil salt leaching, saline land management).

29. **Youth and women empowerment in modern farming.** To attract youth and empower women farmers in modern farming, lessen pressure on urban migration—(i) invest in digital agriculture services and mechanization services; (ii) support business development for entrepreneurs and vocational skills training programs for agribusiness; and (iii) provide women farmers with the access to machinery and equipment services, irrigation and other productive assets and enable them to successfully manage farm business and close gender yield gaps.

30. **Knowledge-intensive agriculture.** Promote best practices and technologies to produce more food with less resources sustainably—(i) invest in development and use of new crop varieties, (ii) upscale digital agriculture advisory services cost effectively; (iii) invest in responsible corporate farming models (e.g., greenhouses and animal protein farms), postharvest technologies and supporting infrastructure (e.g., marketing, storage, logistics, and processing), and agricultural input companies that apply sustainable and safe biotechnology for environmental sustainability.

31. **Water-Food-Health Nexus.** Increase food security investment focused on the nexus to address prevalent malnutrition (e.g., chronic undernutrition observed by high stunting rate among
children and increasing obesity and diabetes due to changing dietary intake)—(i) invest in diversification of food supply with good nutrient balance, and support distribution of biofortified staple crop varieties; and (ii) strategically link food production investment with clean water supply and sanitation and public health, particularly targeting at pregnant women and children.

32. **Infrastructure investments in rural hubs.** Improving market connectivity and agriculture value-chain links requires that ADB promote rural hubs of agriculture-related activities that improve rural roads, the power supply including off-grid solutions, access to water supply and sanitation, and e-connectivity (Box 2). These are prerequisites for making peri-urban and rural areas attractive for private sector investors, as a reliable supply of energy is necessary for the establishment of cold chains, logistics hubs, and processing and agribusiness facilities. It will work to improve rural e-connectivity and use smartphone applications for managing and tracking farm-based operations, which can be enabled through upgrading of rural infrastructure in DMCs. Internet-based devices to semi-automate production processes by controlling irrigation or minimizing the use of inputs will also increase efficiencies and reduce waste. However, the cost-effectiveness of applying internet-of-things (IoT) devices, such as sensors, drones, satellite imagery, and satellite-controlled irrigation, and monitoring threats of plant disease outbreaks need economy of scale.

<table>
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<th>Box 2: Rural Economic Hubs</th>
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<td>Rural hubs are used for promoting rural enterprises, community hubs, rural digital hubs, hubs for promoting empowerment of youth and women, and rural retail hubs. Rural hubs, as proposed in operational priority 5, are growth centers or small towns set amid a sizeable hinterland of rural farming and crop production, where establishment of agroprocessing facilities and agribusinesses would positively impact growth and value addition.</td>
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<td>Transition economies are creating jobs in the services sector, especially consumption and construction; this transformation is well suited around secondary cities and small towns that have potential to grow into sustainable cities instead of promoting densities in already existing, large urban areas.</td>
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<td>Making investments in irrigation, rural infrastructure, flood control, agroprocessing, markets, and storage can be complemented with investments in education, finance, health, and access to advanced technologies and internet of things. This calls for integration of expertise across sectors and themes to address the complex challenges of rural development as well as creating enabling environments in developing member countries. Enabling frameworks and supportive government fiscal and nonfiscal incentives for affordable housing, access to finance, and investments in digital infrastructure can reverse the urban pull factors. Fourth Industrial Revolution technologies, information and communication technology, internet of things, drones, robotics, artificial intelligence, and access to low-cost or free satellite imagery are options for investors in the service industry that can be based in secondary cities instead of megacities. Upgrading rural growth centers as agri-production hubs also reduces the pressure of migration urban areas.</td>
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33. **Improved land utilization and farm modernization.** As mentioned, small and fragmented land holdings need to be consolidated into larger blocks to bring about economies of scale. ADB will test various models using land-lease arrangements through a special vehicle that provides a fair lease fee to smallholder owners, as well as access to finance for young

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entrepreneurs to take up farming, launch agriculture service enterprises, or take up agriculture input supplier functions. Land consolidation, automating mundane and repetitive production steps, and access to satellite-guided irrigation, real-time market information, and online banking and trading can lead to cost savings, reduction of waste, increased efficiencies, improved food safety, a better and timely return to producers, and women’s empowerment.

34. **Improving market connectivity and value chain linkages in rural areas.** Cold storage chains and agrilogistics centers help reduce post-harvest losses. By attracting investors to upgraded infrastructure facilities in rural hubs, and by providing high-speed internet connectivity, ICT, IoT, and high-level technologies can be operationalized to modernize the supply chain. Thus, ADB will work to enable access to ICT to also provide a basis for web-based skills transfer and opportunities of technology-based farm and nonfarm job creation. The widespread use of smartphone technology, satellite tracking and imaging, and blockchain technologies can widen the ambit of efficient and timely handling, tracking of food safety and certifications, trade logistics, e-payments, insurance claims, and consumer feedback, all of which are part of the nonfarm economy. Addressing rural market connectivity and mobility between urban and rural areas using rural roads helps integrate consumers into the food system through agritourism, which increasingly creates rural income and employment. ADB will work to link producers, distributers, wholesalers, and retailers to boost rural–urban, transboundary, and global trade. Rural finance, e-payments, and online banking help redress gender imbalances, while rural education, entrepreneurial training, and imparting of ICT skills will also promote women’s empowerment.

35. **Disaster risk reduction and protection of the environment, natural resources, and productive assets.** While modernizing farming and markets, attention needs to be paid to sustainable systems, disaster risk mitigation, disaster preparedness, and adaptation to climate change. Rural infrastructure needs to be climate-proofed and built in ways that reduce carbon dioxide emissions. Regarding energy supply, use of renewable sources of energy, where feasible, need to be considered. ADB will promote the use of climate-smart and -sustainable agriculture practices, including flood- and drought-resistant crop varieties and appropriate irrigation methods. ADB will undertake land reclamation, reforestation, and watershed management to reduce soil erosion, land degradation, and improve biodiversity. It is thus important to support to agro-biodiversity and conservation of natural lands to enhance fauna and flora diversity for improved agriculture variety and quality.

36. Irrigation, drainage, flood control, and salinity prevention will entail infrastructure investments, thus aligning with the Strategy 2030 priority for continuing infrastructure investments but with a greater focus on food security and rural development. Innovative crop insurance models need to be developed to reduce risk to farmers trying out new crops and technologies as well as to protect farm incomes from catastrophic weather events. ICT, IoT, and satellite technology will enable monitoring and tracking of the environment, watersheds, and agriculture runoff in streams and water bodies; this will improve water quality diagnostics downstream and enable payments for ecosystem services upstream. Compost making, biochar, and carbon finance in agriculture, including carbon credits for soil carbon sequestration in the future, will be initiated to mitigate climate change while enhancing productivity and system resilience.

37. **Private sector financing.** PSOD will contribute to all three pillars of operational priority 5 through a multisector approach. The first pillar—market connectivity and agriculture value chain linkages improved—will be supported by PSOD infrastructure, finance, and agribusiness operations. Infrastructure operations will focus on growing private sector investment in transport, telecommunications, and energy distribution in rural areas. Rural SMEs and farmers will also be
supported by targeted credit lines to financial intermediaries, as well as through PSOD trade and supply chain finance programs. PSOD will continue to provide direct support to agribusinesses, linking smallholder farmers to markets and adding value to produce for local consumption and export. PSOD will also pursue selective operations in the case of public nonsovereign support for market infrastructure development.

38. The second pillar—agriculture productivity and food security increased—will be supported by PSOD agribusiness operations with agriculture input manufacturers and distributors; sponsors engaged in climate-smart agriculture and sustainable forestry, livestock, and fishery; and food processors and distributors embracing environmentally responsible practices. Finally, the third pillar—food safety enhanced—will be supported by PSOD agribusiness operations with sponsors across the food value chain focusing on quality standards; traceability; and the production of safe, nutritious, affordable food for urban and rural consumers.

39. **Food security and agricultural productivity.** Increased agriculture productivity can be supported by knowledge-intensive agriculture and climate-resilient crop technologies, promoting better-quality farm inputs, mechanization, and improved irrigation. Increased agriculture productivity will improve food availability; however, food also needs to be affordable. Food security needs to be supported by policy measures to stabilize food prices in times of crisis, improving management of buffer food stocks, and putting in place cash transfer and school-feeding schemes. Nutritional deficits could be tackled by promoting food fortification. As part of climate-proofing activities, ADB will invest in enhancing water-harvesting and water-saving irrigation technologies.

40. **Enhancing food safety.** Food safety and quality are essential to ensuring an adequate supply of safe, nutritious food to an increasing urban and globally connected population. This priority is intended to ensure that food is safe to the consumer and leads to a nutritionally balanced diet essential to a healthy and productive life. The use of modern ICT-based tools, such as radio frequency identification tags, quick response (QR), machine-readable codes that can be read by smartphones and electronic readers or cameras, can improve food traceability and ultimately food safety. ADB’s role will be to build ICT-based capacity for laboratories and making testing data available through shared ledgers in government agencies and links with private sector traceability applications. ADB will support effective food safety systems in DMCs through

(i) establishment and enforcement of mandatory regulatory systems and certification;
(ii) investment in safety and quality control infrastructure and facilities;
(iii) ICT-based tools; and
(iv) training and education, community outreach programs, and voluntary compliance involving all stakeholders—farmers, industries, and consumers.

41. The protection of consumers from foodborne diseases requires an integrated approach to ensuring that effective quality measures are carried out at each part of the food value chain. In addition to the supply of safe food, increasing attention to addressing nutrition-related illnesses, malnutrition, undernutrition, and obesity is an essential element of food security interventions.

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24 Due to rapidly increasing disposable income (emergence of middle-income population) coupled with urbanization and changing consumption patterns, the processed food market in Asia has grown rapidly, reaching $260 billion in 2013 and expected to grow by another 70% to $440 billion by 2018 (Euromonitor data. http://www.euromonitor.com/). These more affluent urban consumers particularly demand food safety and quality.

42. **Skills transfer and extension.** Provision of high-speed internet in rural areas opens up a new world of skills transfer possibilities, such as web-based learning, digitally operated coaching via smartphone apps, crop-based extension through apps, and certification courses in collaboration with regional and international private and public sector educational institutions. Introduction of ICT and IoT in the service and agriculture production sector must also feature training to operate the hardware and make use of the digital information emanating from dashboards receiving signals from devices.

43. **Governance and capacity building.** Governance arrangements in rural areas often lack clarity, and among stakeholders, there is unequal distribution of power, voice, and access to information and resources. Implementation of rural development programs will require an enabling environment, capable local governments and decentralized supervision, fiscal and nonfiscal incentives to attract and retain investors, and collaboration of civil society organizations and consumer protection and social safeguards groups to watch over social protection. This will require investments in local government capacity building and support for nongovernment and civil society organizations. E-government systems can be introduced to cut red tape, speed up bureaucratic processes, and provide a platform for feedback and improvement of local government performance. These will also help improve collection of data and statistics and provide public access to such information for monitoring, evaluating, and future planning at the local level.

**C. Major Outputs and Activities**

44. The current lending pipelines for 2019, 2020, and 2021 will be reviewed to identify synergies and links across regions, subregions, DMCs, and sectors that can be packaged and sequenced under the rural development umbrella. This will require a cross-sector approach with or without additional elements that may be deemed necessary. While retrofitting is cumbersome and may not always have the desired results, ADB will assess the current pipeline with a view to start implementation of Strategy 2030. The current agriculture and natural resources lending pipeline provide a good basis to start with the transition to operational plan 5.

45. Implementation of operational priority 5 will require a set of criteria for geographic selection across regions. Recent ADB project designs show a mix of sector investment benefitting multiple sectors in the same geographic location, thus bundling assistance to reach a higher impact; well-defined projects with specific goals contributing to the higher outcome and impact are equally pertinent. Under rural development, sector projects, agriculture sector investments, and digital connectivity can be geolocational and sequenced to achieve the hub effect, thus fulfilling the prerequisites for investments to take place.

46. Investments in rural development and food security will be undertaken using a blend of public and private sector investments. Private sector initiatives will play a major role across the entire food and agribusiness value chain, in management and maintenance of market infrastructure, business startups, high-tech services, and educational and skills transfer services. In short, both farm and nonfarm job creation will be the role of private sector.

47. ADB will enter into policy dialogues with DMCs to promote an enabling environment for investments in rural development and food security. Policies will be needed to provide a framework for attracting investors to rural hubs; fiscal incentives will be needed to encourage young entrepreneurs to take up ICT- and IoT-assisted farming, agriculture service provision, agroprocessing, value addition, logistics, and marketing. Investments in rural hubs will widen possibilities of farm- and nonfarm-based income generation. ADB can assist DMCs with policy
advisory support to establish enabling frameworks that are conducive to rolling out upgrading of rural hubs. In particular, attention will be given to public–private partnership (PPP) opportunities appropriate within the framework for rural investments.

**Box 3: Policy to Foster Rural Development**

ADB’s previous policy-based loans have generally not advocated transformative changes. Under operational priority 5, ADB can play a pivotal role in assisting developing member countries (DMCs) in major policy transformation with the aim of creating a conducive and enabling environment to foster rural development. Such enabling policies may generate investment and growth worth billions of dollars as opposed to leveraging a few hundred million dollars through a policy-based loan.

DMC policies and regulations are crucial for achieving economies of scale for production. Farm holdings are small and fragmented; and farmers need incentives to agree to land consolidation and yet retain their ownership or tenure over their land. Such land consolidation must be voluntary and functional. Larger and commercial farms will be able access modern inputs (irrigation, seeds, fertilizers) and technology (internet of things, drones) to improve productivity. Use of ICT and IoT will assist in tracking use of pesticide residue, traceability of product origins, and distinguishing green and organic products.

Smallholder subsistence farming remains unattractive to youth. Enabling policies can attract young people to agriculture through incentives and access to finance and technology with support to building entrepreneurship skills. Development of infrastructure in rural hubs could be undertaken through public–private partnerships where public sector provides financing for infrastructure, and the private sector invests in business development.

48. **Country focus, country groupings, and regional cooperation.** An individual country approach will be necessary to ensure proper assessment and understanding of the specific DMC situation; country ownership; appropriate and mutually agreed interventions, including knowledge solutions; and global, regional, national, and local partnerships. Selectivity is important to have a successful establishment of rural growth hubs—three pilots will be considered in Central Asia, Greater Mekong Subregion, and South Asia.

49. Countries in fragile and conflict-affected situations need considerable and sustained support where the primary focus will be on institutional strengthening in the rural and agriculture productive sector. Essentially policy dialogue, reforms, and capacity building may go together with introduction of smart technology for monitoring and market information. Small island developing states are vulnerable to climate change and disaster-related shocks; these will need specific attention in strengthening disaster-coping mechanisms and nonclimate-related needs for rural development and food security. Low-income countries and lower-middle-income countries (LMICs) may need a substantial investment in rural development and food security to bring a large portion of their rural populations out of the risk of falling below the poverty line. Upper-middle-income countries share some challenges with LMICs, but these differ in intensity and complexity. They are also vulnerable to cyclical economic downturns, as these are more integrated with global markets and international trade.\(^\text{26}\) Upper-middle-income countries are key drivers of the regional economy and will increasingly play a lead role in second-generation regional cooperation and integration interventions and regional public goods.

50. **Major outputs in the short term (2019–2024).** In the short term, the following outputs are envisaged under the operational plan:

(i) design and initiation of two pilot projects in selected DMCs to establish rural hubs for production and growth that contribute to operational plan outcomes;

(ii) scaling up of food safety and phytosanitary measures in one selected area, contributing to enhanced regional integration and trade;

(iii) design and implementation of disaster risk mitigation and environmental protection measures in two DMCs, reducing land degradation, enhancing watershed functions, and improving agro-biodiversity, and

(iv) expansion of PSOD agribusiness project count to reach at least one-third of ADB operations in the agriculture, natural resources, and rural development sector.

51. Any adjustments will be incorporated into the rolling country programs from 2019 to 2024 and indicated in the country operations business plan (COBP). Major changes may entail formulating an interim country partnership strategy (CPS). For DMCs creating new strategies for 2019–2024, this will be done as part of the CPS exercise. Capturing knowledge, testing, and pushing boundaries of rural development solutions will be documented in knowledge products.

52. **Major outputs in the long term (up to 2030).** In the long term, ADB seeks to scale up rural hub establishment in at least three DMCs, bundling and sequencing cross-sector investments under a sovereign and nonsovereign collaboration umbrella; reach all DMCs through nonsovereign assistance in the sector; and reach targets of Strategy 2030 and Sustainable Development Goals 1 and 2 in DMCs.

53. **Activities in the short term (2019–2024).** The main activities are

(i) agree with thematic sectors such as transport, energy, roads, water, finance, gender and social development, PSOD, and the operations departments on selection criteria and scope of programs and projects to be implemented;

(ii) review CPSs and COBPs to identify how operational plan 5 may fit into the existing pipeline;

(iii) provide inputs during revisions and drafting of new plans regarding operational priority 5;

(iv) select, in collaboration with sector thematic groups and operations departments, PSOD, and DMCs, suitable project ideas and concepts for detailed design and initiation regarding operational priority 5;

(v) provide support during designing and implementation of approved projects that fit under the operational plan 5; and

(vi) monitor and report on implementation of operational plan 5.

D. **Expected Results**

54. The expected outcomes of the plan are

(i) climate-resilient rural production hubs integrating producers, agribusinesses, and consumers in efficient value chains promoted;

(ii) disaster risk mitigation and disaster preparedness for protecting environment, natural resources and rural productive assets improved;

(iii) access to safe, nutritious, and affordable food for all improved; and

(iv) inclusive, innovative, resilient, and sustainable private sector investments in rural areas increased.
55. These outcomes are also responsive to recent international calls for revisiting development strategies and rural revitalization programs launched by DMCs (e.g., the People’s Republic of China’s rural revitalization strategy and Uzbekistan’s Presidential Decree on Obod Quislock Program 2018).27

III. IMPLEMENTATION

A. Interdepartment Cooperation

56. Regional departments will

(i) ensure that operational priority 5 is adequately reflected in individual country programs, starting with the 2019 country programming exercise;
(ii) review sector road maps, and reassess balance among sectors in light of Strategy 2030 priorities for new country strategies in 2019–2024 and lending programs beyond 2024;
(iii) identify opportunities for intersector coordination and cooperation to maximize benefits of increased rural development and food security activities;
(iv) monitor rural development and food security investments in all country programs; and
(v) ensure implementation and monitoring, as well as coordination with governance and capacity development initiatives, in ADB and other development partner activities.

57. PSOD will continue to work with strong agribusiness sponsors and strong financial intermediaries to support rural development and food security in the region. The agribusiness investment team will continue to grow and to build up PSOD agribusiness operations across Asia and the Pacific, with a strong focus on underserved markets, sustainable job creation, and inclusion of smallholder farmers in value chains. PSOD’s mandate is to increase private sector investments and financing and to promote business models that are inclusive, innovative, resilient, and sustainable. As such, PSOD’s strategy in the agribusiness sector will be to identify projects that directly contribute to Strategy 2030’s seven operational priorities.

58. PSOD will also continue to target the entire agriculture and food value chain including farm inputs, farming, processing, storage, and distribution. It will use debt and equity instruments to provide long-term financing to established food and agribusiness companies expanding into new geographies, introducing new technologies, or moving into new segments of the value chain. Working capital facilities may also be required to help clients finance inventories and agriculture inputs for farmers. PSOD will also look for opportunities to make an impact in the fast-growing branded food, modern retail, and e-commerce sectors driven by the emergence of an urban middle class. In the more challenging and underserved markets, PSOD will continue to look for opportunities to leverage concessional donor funds to de-risk investment projects.

59. To maximize developmental outcomes, PSOD will provide capacity-building assistance through TA activities. PSOD will work closely with other development institutions, banks, and investors that have recognized agribusiness expertise. In addition, the Office of Public–Private Partnerships will provide transaction advisory services for PPPs on rural development and food security.

60. As indicated in Appendix 2, the Rural Development and Food Security Thematic Group will

(i) assist project officers working on revised country strategies, road maps, and programs, including participation in relevant missions as considered necessary;
(ii) conduct peer reviews, and provide technical guidance in the design of rural development and food security investments;
(iii) monitor changes in country strategies and programs to address operational priority 5 on a regional basis;
(iv) monitor organizational effectiveness and efficiency in operationalizing rural development and food security along with redefining staffing; and
(v) coordinate partner inputs to business development, including design of innovative or complex projects in emerging areas of rural development and food security.

61. The Rural Development and Food Security Thematic Group Secretariat will

(i) support the group in carrying out its activities as described above, in its capacity as secretariat for the thematic group;
(ii) ensure that the operational plan, its implementation arrangements, and the implications thereof are fully understood by all operations departments and divisions through seminars, meetings, and workshops;
(iii) provide guidance to operations departments and resident missions in the implementation of the plan on a regular basis;
(iv) facilitate the mobilization of expertise ADB-wide for implementation of the plan; and
(v) consolidate the actual approval of TA and investments to ascertain whether planned targets are being met, and report on rural development and food security investment achievements.

B. Strategic Partnerships and Coordination

62. ADB will strengthen partnerships in finance, implementation, monitoring and evaluation, and policy and knowledge solutions. These will range from upstream partnerships with development and research communities in view of the international and policy context, academia, and applied research institutions, to downstream project partnerships with cofinanciers and local entities, including cooperatives and civil society organizations.

63. ADB will continue to coordinate and share development responsibilities with the World Bank, especially on policy matters. ADB has also worked closely with the European Union and its member states in cofinancing agriculture and natural resources projects and coordinating such activities. In terms of agencies specifically devoted to rural development and food security, ADB will deepen its key partnerships with the Food and Agriculture Organization of the United Nations and International Fund for Agricultural Development, which have proven beneficial over past decades for DMCs in mobilizing cofinancing and skilled expertise as well as knowledge sharing. ADB is also working with the World Wildlife Fund for Nature on conservation and ecosystems in the region and is a co-convener (with the European Bank for Reconstruction and Development) of the Multilateral Development Bank Working Group on Food and Water Security. Further, it is
coordinating food security efforts in highly vulnerable, food-insecure DMCs with the World Food Programme, as well as mobilizing funds for agriculture research and new technology development in partnership with members of the Consultative Group on International Agriculture Research, such as the International Food Policy Research Institute, International Rice Research Institute, and International Water Management Institute, the private sector, and civil society organizations.

64. ADB will continue supporting research and development and innovations in the agriculture and natural resources sector, which have been the basis for enhanced productivity, decreased crop losses, improved value chains, increased food quality and safety, and climate change management. To provide and ensure increased long-term technical support to rural development and food security, the level of research and development funding should be commensurate with the complexity and volume of work.

C. Emerging Areas

65. Emerging areas requiring increased expertise and knowledge include (i) agribusiness value-chain development to expand both sovereign and nonsovereign investment portfolios, exploiting a significant potential for ADB; and (ii) ICT applications to agriculture and natural resources management, agribusiness services (i.e., value chain and supply chain finance, digital finance, marketing, and extension services), and basic services in rural areas.

D. Knowledge Priorities and Approaches

66. The Rural Development and Food Security Thematic Group will focus on leveraging internal knowledge and bringing in external knowledge, knowledge production on prioritized innovation areas, and enhanced quality and relevance. It will produce reports on knowledge services and enhanced knowledge sharing and partnerships and cultivate knowledge partnerships.
## IV. PROPOSED RESULTS FRAMEWORK AND INDICATORS

<table>
<thead>
<tr>
<th>Pillar</th>
<th>Description</th>
<th>Indicator with Achievement Rate Target</th>
<th>Subpillars</th>
</tr>
</thead>
</table>
| 1      | Rural development enhanced | Number of people benefitting from increased rural investments | Rural infrastructure improved  
Non-farm economic activities increased  
Rural healthcare, education, and financial services expanded  
Selected rural areas developed as economic hubs |
| 2      | Efficiency of agricultural value chains improved | Number of farmers with improved market access | Wholesale and agri-logistics centers developed and improved  
Cold chain infrastructure and modern retail facilities established and improved  
Farmers and agribusinesses integrated into efficient value chains  
Food safety and traceability standards promoted |
| 3      | Food security increased | Number of hectares with higher productivity | Climate-resilient irrigation infrastructure and water delivery services improved  
Quality, climate-resilient inputs and technologies supported  
Subsistence farming transitioned to business-oriented and commercial farming  
Modern, sustainable and responsible corporate farming models and knowledge-intensive agriculture promoted |
# APPENDIX 1. SECTOR AND THEMATIC APPROACHES: CONTRIBUTIONS OF SECTOR AND THEMATIC GROUPS TO OPERATIONAL PRIORITY 5

<table>
<thead>
<tr>
<th>Sector and Thematic Group</th>
<th>Contributions to Operational Priority 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Enhance productivity and modernize agriculture, and develop skills linked to the agriculture value chain. Ensure equity and improve the quality of rural education institutions and connectivity. Develop entrepreneurship opportunities and cross-sector skills through partnerships.</td>
</tr>
<tr>
<td>Energy</td>
<td>Enable the use of modern technologies to access energy and to improve rural education, health, and other social services. Increase deployment of renewable energy technologies in agriculture and off-grid mini- and micro-grid systems to facilitate and to sustain rural development and to help ensure food security.</td>
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<tr>
<td>Finance</td>
<td>Promote value-chain finance and access to diverse financial services to smallholder farmers, women entrepreneurs, and youth, and use of blockchain. Provide rural finance and e-banking, especially products to promote women empowerment in rural areas. Design and offer financial risk protection solutions to cover crop losses through disasters or climatic factors.</td>
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<tr>
<td>Health</td>
<td>Assist in promoting and tracking production and sale of safe, nutritious food. Raise awareness, promote intake of nutritious foods, and improve nutrition security. Improve access to health services in rural areas especially through the use of high-level technologies such as telemedicine. Monitor improved nutritional status, particularly reduced chronic undernutrition of children.</td>
</tr>
<tr>
<td>Transport</td>
<td>Provide rural roads to selected rural growth hubs to improve connectivity. Promote accessibility and cost of rural transport. Reduce losses through transport system improvements and logistics. Contribute to achieving Sustainable Development Goal 9.1.1: Proportion of the rural population who live within 2 kilometers of an all-season road.</td>
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<tr>
<td>Urban</td>
<td>Assist in rural revitalization and rural–urban integration by planning and implementing in rural areas high-level services that are generally provided in urban areas. Assist with investments in decentralized sanitation systems, including innovative, rural toilet systems that transform waste into fertilizer.</td>
</tr>
<tr>
<td>Sector and Thematic Group</td>
<td>Contributions to Operational Priority 5</td>
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<tr>
<td>Enhance rural–urban connectivity through investments in connector roads from inner towns to main roads, and port and logistics facilities to strengthen access to country and regional markets.</td>
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<tr>
<td>Promote irrigation system efficiency, integrated flood risk management, innovation and technology, sustainable resource management, and waste recovery and reuse to ensure rural development and food security. Expand work on the water–food–energy nexus.</td>
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<tr>
<td>Review ADB pipeline investments to make them more climate-smart and -resilient through promoting ecosystem- and community-based adaptation, utilizing low-emission energy sources, identifying crop varieties with lower water demands, and integrating agroforestry principles for agriculture project investments that will improve resilience and reduce greenhouse gas emissions.</td>
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<tr>
<td>Support rural and rural-centered infrastructure and technology that reduces women’s time poverty; enhances women’s safety, mobility, and affordability concerns; and/or maximizes marketing opportunities. Expand women’s jobs and value increase in their products in agribusiness value chains and access to finance therein. Improve productivity of women farmers through training and skills development in climate-smart agriculture technologies, practices, and crop varieties; improved access to rural finance, land, and other rural assets and productive resources; and boost voices in natural resource management through community-based groups. Enhance women’s voices in food security and safety decision making.</td>
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<tr>
<td>Promote sustainable use and management of natural resources in rural communities to enhance food safety and food security. Increase access to finance to develop micro, small, and medium-sized enterprises that help promote rural development. Increase access to basic services in rural areas.</td>
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<tr>
<td>Address the social dimensions of rural development. Strengthen rural livelihoods through inclusive business and cash-for-work or food-for-work programs. Promote food security through social assistance programs, which enable the rural poor to smooth consumption during slack agriculture seasons when prices are volatile and there is less demand for labor.</td>
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<tr>
<td>Promote sustainable and climate-smart agriculture and value chains through interventions that add value, integrate with global food systems, and boost farmer incomes; reduce soil erosion, improve biodiversity, and encourage sustainable rural infrastructure development incorporating nature-based solutions; and enhance food</td>
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<tr>
<td>Sector and Thematic Group</td>
<td>Contributions to Operational Priority 5</td>
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<td>safety, maximizing related market-based instruments, voluntary schemes, and certification programs to incentivize sustainable agriculture practices.</td>
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<tr>
<td>Regional Cooperation and Integration</td>
<td>Promote agriculture trade facilitation programs.</td>
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<td></td>
<td>Strengthen agribusiness value-chain projects.</td>
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<td></td>
<td>Undertake agriculture logistics projects.</td>
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<td></td>
<td>Promote agriculture cross-border e-commerce projects.</td>
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<tr>
<td>Public–Private Partnerships</td>
<td>Provide technical advice to regional departments in engaging and working with the private sector in the development of projects in the agriculture sector, agroprocessing, and agriculture value-chain infrastructure.</td>
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</tbody>
</table>
### APPENDIX 2. INTERDEPARTMENT COOPERATION MATRIX FOR OPERATIONAL PRIORITY 5

<table>
<thead>
<tr>
<th>Activities of the Sector and Thematic Group</th>
<th>Areas of Cooperation</th>
<th>Cooperation with</th>
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<tbody>
<tr>
<td>Agriculture, Rural Development and Food Security Unit (SDCC-AR) will (i) backstop and support the group in carrying out its activities in its capacity as secretariat for the Thematic Group on Rural Development and Food Security (Agriculture); (ii) ensure that the plan, its implementation arrangements, and implications thereof are fully understood by all operations departments and divisions through seminars, meetings, and workshops; (iii) provide guidance to operations departments and resident missions in the implementation of the plan on a routine basis; (iv) facilitate the mobilization of expertise throughout ADB for implementation of the plan; and (v) consolidate the actual approval of technical assistance and investments to ascertain whether planned targets are being met, and report on food security and agriculture and natural resource investment achievements.</td>
<td>Assist agriculture and natural resources sector project officers working on revised country strategies, road maps, and programs, including participation in relevant missions as considered necessary.</td>
<td>Regional operations departments and resident missions</td>
</tr>
<tr>
<td></td>
<td>Review sector road maps and reassess balance among sectors considering Strategy 2030 priorities for new country strategies in 2019–2024 and lending programs beyond 2024.</td>
<td>Resident missions, regional operations departments</td>
</tr>
<tr>
<td></td>
<td>Identify opportunities for intersector coordination and cooperation to maximize benefits of increased rural development and food security activities.</td>
<td>Regional operations departments</td>
</tr>
<tr>
<td></td>
<td>Monitor investments in all country programs.</td>
<td>Resident missions, regional secretariats, regional departments</td>
</tr>
<tr>
<td></td>
<td>Provide suggestions and guidance on public–private partnerships (PPPs) and private sector investment promotion in rural development and food security.</td>
<td>Private Sector Operations Department (PSOD), PPP Thematic Group</td>
</tr>
</tbody>
</table>