

OPERATIONAL PLAN FOR AGRICULTURE AND NATURAL RESOURCES:

PROMOTING SUSTAINABLE FOOD SECURITY IN ASIA AND THE PACIFIC IN 2015-2020

September 2015



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CONTENTS

			Page
ABBRI	VIATIONS		
EXECU	JTIVE SUMMA	lRY	
l.	INTRODU	CTION	1
II.	RATIONA	LE	2
	B. Li C. Ko D. A	griculture and Natural Resources and Food Security in Transforming Asia inkage with the Midterm Review ey Challenges and Issues sian Development Bank Practice and Experience	2 3 4 7
	E. Ev	valuation Recommendations	9
III.		ONS npact and Outcome ey Priorities	10 10 10
IV.	A. BI B. Ri C. TI D. Pa	NTATION OF THE PLAN usiness Processes esource Requirements hematic Considerations artnerships esponsibilities	14 14 16 17 18 18
V.	A. Pe	RING AND REPORTING erformance Indicators eporting Mechanisms	21 21 21
APPEN	IDIX		
	Results Fra	mework for Agriculture and Natural Resources Operational Plan	22

ABBREVIATIONS

ADB - Asian Development Bank

ANR - agriculture and natural resources
CPS - country partnership strategy
CRF - corporate results framework
DMC - developing member country

FAO - Food and Agriculture Organization of the United Nations

GDP – gross domestic product

ICT – information and communication technology
 IFAD – International Fund for Agricultural Development

MTR - midterm review

OPSFS - Operational Plan for Sustainable Food Security in Asia and the Pacific

PPP – public-private partnership

PSOD - Private Sector Operations Department

R&D - research and development

RCI - regional cooperation and integration

SDCC-AR - Sustainable Development and Climate Change Department -

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EXECUTIVE SUMMARY

The Asian Development Bank (ADB) developing member countries (DMCs) remain home to the world's largest number (two-thirds) of hungry and malnourished people, despite the profound positive impacts of development and economic transformation on poverty, standards of living, and overall prosperity in the past decades. As DMCs continue to evolve from low-income to middle-income countries, enhancing food security for their populations is one of the principal means of achieving and sustaining poverty reduction and other Millennium Development Goals as well as preparing for Post-2015 Sustainable Development Goals agenda, in particular the proposed goal to End hunger, achieve food security and improved nutrition and promote sustainable agriculture by 2030. DMCs face several continuing and new challenges to produce and supply more nutritious and safe food to growing middle class and urban populations in the face of shrinking natural resources, degrading environments, climate change and disaster risks, changing demographics and labor profiles, and price and market volatilities.

This Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020 (the Plan) provides guidance for ADB operations in meeting the recommendations of the midterm review of the ADB Strategy 2020 to provide increased emphasis on food security and agriculture productivity. The Plan focuses ADB agriculture and natural resources (ANR) sector operations in four priority areas: (i) increasing the productivity and reducing pre- and postharvest losses of food harvests; (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. These priority areas, including the key elements of the food value chain (production, processing, distribution, and consumption), are highly interconnected, requiring innovative and integrated multisector approaches and interventions to address food security in DMCs more directly. The outcome of the Plan will be improved focus and quality of ADB ANR operations in meeting DMCs' needs, resulting in safe, nutritious, and affordable food for all.

Increased Productivity and Reduced Losses of Food. ADB will support (i) agriculture water management and other productivity enhancing and climate change and disaster-resilient infrastructure and technologies, such as seed industry development and agronomic practices, with increased emphasis on efficiency improvements in land, water, and energy use and public-private partnership (PPP); (ii) efforts to prevent crop losses through enhanced flood protection and drainage, prevention of salinity intrusion, and provision of postharvest storage and processing facilities; and (iii) technological improvement and provision of rural finance to allow farmers to diversify their cropping systems, adopt new technology, and improve on-farm processing and storage. Such physical improvements and financial investments will be supported by enlightened sector policies and reforms.

Improved Market Connectivity and Value Chain Linkages. ADB will support (i) transport, communication, market facilities, and logistics to enable integration of more producers, agribusinesses, and consumers into national, regional, and global food systems; (ii) agribusiness investment and value chain development through finance intermediaries and direct investment; and (iii) information and communications technology services and rural-urban-market linkages. ADB will promote greater agribusiness investment, including Private Sector Operations Department (PSOD) initiatives and PPPs, with the regional departments helping with public infrastructure, policy reform, and the legal framework.

Enhanced Food Safety, Quality, and Nutrition. ADB will support (i) establishment and enforcement of mandatory regulatory systems; (ii) investment in safety and quality control infrastructure and facilities; and (iii) training and education, community outreach programs, and voluntary compliance involving all stakeholders—farmers, industries, and consumers.

Enhanced Management and Climate Resilience of Natural Resources. ADB will support (i) water resources improvement, protection, and integrated utilization, and coastal and marine resources management; (ii) land reclamation, reforestation, and watershed stabilization to reduce soil erosion and nutrient deficiency, and ensure the sustainability of forests and biodiversity; and (iii) enhancement of environmental and resource management standards and legislation, with overall emphasis on climate-smart investment to promote adaptation and mitigation, while targeting smallholders for sustainable yield and income increases.

ADB will tailor its response in implementing the operational plan to specific country priorities and needs. This will ensure proper assessment and understanding of the specific DMC situation; country ownership; appropriate and mutually agreed interventions, including knowledge solutions; and establishment of partnerships.

Given the multifaceted nature of food security, ADB will continue a multisector approach, focusing on increasing positive linkages between the ANR sector and other sectors (including transport, energy, water, environment, finance, education, and health), to ensure that interventions more systematically address the key features of food security. ADB will continue and expand its regional cooperation and integration initiatives in the ANR sector, and increase partnerships in financing, innovation, implementation, monitoring and evaluation, and policy and knowledge solutions.

ADB will ensure more successful uptake of cofinancing on ANR operations with key international agencies, bilateral agencies, regional organizations, private sector, and philanthropic foundations. PSOD will also deepen its support of ANR and food security, including both financial intermediary and direct investment assistance, and with increasing PPP investments. An Innovation and Knowledge Facility for Climate–Smart Agriculture and Food Security is proposed for ADB and development partners to increase donor harmonization, realize efficiency gains and joint impact, and improve transparency in the preparation and implementation of agriculture and food security research, application, and dissemination activities.

ADB will refine ANR staffing and skill mix to support implementation of the Plan. Redefining existing posts and restaffing them as they become vacant (through attrition and retirement) will be necessary in order to support analytical work, knowledge sharing, and project development and implementation. Skill sharing across departments following the one-ADB approach will be undertaken.

ADB will strengthen ANR operations to improve quality of entry and implementation. Through implementation of the Plan, ADB will help improve access to and quality of, adequate, safe, and nutritious food for the poor and vulnerable in Asia and the Pacific.



I. INTRODUCTION

The Asian Development Bank (ADB) midterm review (MTR) of Strategy 2020 recognizes the essential role of investment in agriculture and natural resources (ANR) in advancing food security, a key factor in poverty reduction, as well as in creating and expanding economic opportunities, promoting inclusive economic growth, and reducing vulnerability and inequality. ¹ ANR development activities also link directly with other key priorities identified in the MTR, such as making infrastructure more inclusive, deepening financial inclusion, bridging gender gaps, strengthening integrated disaster risk management, and promoting natural resources management.

Enhancing agricultural productivity along with sustainable natural resources management is seen as an important goal in reducing poverty through improved food security and as a key to achieving the overall agenda of the MTR. These measures are also aligned with the proposed Post-2015 Sustainable Development Goal to End hunger, achieve food security and improved nutrition and promote sustainable agriculture by 2030.²

The Plan reflects the proven pivotal role of agriculture and natural resources in directly contributing to food security and inclusive growth.

This Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020 (the Plan) provides guidance for ADB operations in the ANR sector in assisting its developing member countries (DMCs) to improve their food security situation.³ The Plan reflects the proven pivotal role of the ANR sector in directly contributing to food security and inclusive growth.

ADB. 2008. Strategy 2020: The Long Term Strategic Framework of the Asian Development Bank 2008–2020. Manila. ADB. 2014. Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific. Manila.

² United Nations. Open Working Group proposal for Sustainable Development Goals. https://sustainabledevelopment.un.org/content/documents/1579SDGs%20Proposal.pdf

The ANR sector for the Plan as defined in ADB's Project Classification System includes irrigation; agricultural drainage; rural flood protection; rural market infrastructure; agricultural production; agro-industry, marketing, and trade; agriculture research and application; livestock; fishery; forestry; land-based natural resources management; water-based natural resources management; agricultural 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. Manitla.



II. RATIONALE

A. Agriculture and Natural Resources and Food Security in Transforming Asia

Most Asian countries are experiencing significant economic transformation driven by industrialization, urbanization, trade, modernization, and commercialization of their agriculture sectors, and demographic change as they evolve from low-income to middle-income countries. This has had profound positive impacts on levels of poverty, standards of living, and overall economic activity and prosperity. As the ADB Strategy 2020 indicates, one of the main sources of economic growth over the past decades has been the ANR sector, which has driven growth in much of the region through a rural-based cycle of improving productivity, employment, and consumption, which, in turn has helped fuel industrial growth. Moreover, agriculture remains a source of productivity improvement, employment, and income growth—especially when connected to urban, industrial, and export markets.

Nonetheless, Asia and the Pacific remains home to the world's largest number of hungry and malnourished people, most of whom live in rural areas and are dependent to a greater or lesser extent on agriculture (including both on-farm and off-farm activities) for their livelihoods. Of the world's 805 million people chronically undernourished in 2012–2014, two-thirds (526 million people, or an eighth of the region's population) reside in ADB DMCs. The situation in South Asia is particularly serious, with the largest number of malnourished children (under 5 years): 37.3% suffer from stunting, 31.3% are underweight, and 15.3% suffer from acute malnutrition or actual weight loss. Enhancing food security for this large segment of the region's population is one of the principal means of achieving and sustaining poverty reduction, since a major portion of the family expenditures of the poor and people just above the poverty line (in both rural and urban areas) is devoted to food. When adjusted for food insecurity (rising food prices), Asia's extreme poverty rate rose to 27.5% in 2008 and 24.7% in 2010, above the conventionally estimated 23.9% in 2008 and 20.7% in 2010. In view of the limited (but growing) absorptive capacity of the industrial sector, much of the employment and income generation of this segment of the population will continue to be in rural areas and in the ANR sector for some time.

Poverty reduction can thus best be stimulated through increased food security as a result of increased food production and availability (and hence improved access and stable prices) and increased incomes and employment from a modernized and more productive ANR sector.⁷ Investment in the ANR sector thus can

⁴ FAO, IFAD, and WFP. 2014. The State of Food Insecurity in the World 2014. Strengthening the Enabling Environment for Food Security and Nutrition. Rome.

⁵ United Nations Children's Fund, World Health Organization, the World Bank. 2012. UNICEF-WHO-World Bank Joint Child Malnutrition Estimates. UNICEF, New York; WHO, Geneva; the World Bank, Washington D.C.

⁶ ADB. 2014. Key Indicators for Asia and the Pacific 2014. Manila.

Increases in food prices directly impact on the family incomes and purchasing power of the poor or the near poor. In this connection, ADB's Economics and Research Department has reconfirmed that food security is essential for poverty reduction, highlighting the adverse impact of rising food prices on poverty, and the attendant negative effects of food price volatility on population and health. ADB. 2013. Food Security in Asia and the Pacific. Manila.

stimulate innovation, growth, and transformation through modernization of the sector, and at the same time directly reach the region's poor through interventions that directly increase food security, generate employment,

and reduce poverty. A series of recent studies confirms that ANR investments are essential to promoting inclusive growth, reducing poverty and hunger, and promoting environmental stability. In resource-poor low-income countries, a given increase in gross domestic product (GDP) due to agricultural growth reduces poverty five times more than the same GDP increase due to non-agricultural growth.8 Productive public sector investments in agriculture, natural resources, and rural development

Food insecurity persists in Asia and the Pacific despite impressive economic growth: two-thirds of the world's hungry, more than half a billion people, live in the region.

(including research and development [R&D]) have strong payoffs in poverty reduction.⁹

These investments, coupled with an enabling policy environment, make food more available and affordable to both rural and urban poor consumers. Support for enhanced agriculture production and associated value chains accelerates structural transformation and rural-urban linkages. It promotes gender equity and is one of the least-cost climate change adaptation investments, with commensurate, high-yielding mitigation benefits. ANR investments enhance agricultural adaptation to climate change, increase the chances of sustaining productivity, and reduce the pressure to bring new lands into agriculture, effectively avoiding emissions from land-use change with cobenefits for biodiversity protection.

B. Linkage with the Midterm Review

The MTR and its strategic priorities elevate the importance of ANR and food security in ADB future operations. The MTR recommends that for the balance of the Strategy 2020 period ADB should aim to (i) increase the productivity of agriculture and strengthen links with global value chains and food systems; (ii) improve farm-to-market connectivity through transport and communication investments; (iii) promote food safety and quality standards; and (iv) improve the resilience of ANR to the impacts of disasters and climate change. In this context, the MTR clearly states that investment in agriculture development will directly support food security while boosting rural employment, as the ANR sector remains a large absorber of the labor force.

Involvement in the ANR sector will also help to achieve a number of other key MTR recommendations. These are:

- (i) Making infrastructure investments more inclusive through continued investment in infrastructure projects, complemented by investments in education, finance, health, and agriculture. Most ANR sector investments have, in fact, been investments in infrastructure (irrigation, rural infrastructure, flood control, and marketing, processing, and storage facilities).
- (ii) Deepening financial inclusion, by improving and expanding support for microfinance and finance for small and medium-sized enterprises. These activities are closely related to development of the ANR sector. Many ANR projects have included rural finance, microfinance, and medium-scale enterprise funding. These have had a significant effect on improving food production, marketing, storage, and diversification.
- (iii) Narrowing gender gaps through, among other activities, providing access to productive assets, labor-saving technology, employment, and income-earning opportunities. Enhanced

⁸ FAO, WFP, and IFAD. 2012.

The State of Food Insecurity in the World 2012. Economic Growth is Necessary but not Sufficient to Accelerate Reduction of Hunger and Malnutrition. Rome, FAO.

FAO. 2012. The State of Food and Agriculture: Investing in Agriculture for a Better Future. Rome.

L. Christiaensen et al. 2010. The (Evolving) Role of Agriculture in Poverty Reduction - An Empirical Perspective, Journal of Development Economics. Volume 2010/36.

T. Reardon et al. 2012. The Quiet Revolution in Staple Food Value Chains - Enter the Dragon, the Elephant, and the Tiger. Manila: Asian Development Bank. See also H. Binswanger-Mkhize. 2012. India 1960-2010: Structural Change, the Rural Non-farm Sector, and the Prospects for Agriculture. Research paper for the Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Center on Food Security and the Environment. California.

- agriculture production provides a source of all these in a sector with a high degree of female participation.
- (iv) Strengthening integrated disaster risk management, through, among others, investment in standalone projects, such as flood control and early warning projects. Many such projects are integral parts of ANR infrastructure projects, such as irrigation, drainage, and flood control investments.
- (v) Promoting natural resources management through the protection, maintenance, and improvement of the productive potential and performance of land, forests, and water resources. Such projects are an integral part of ANR activities.

All these interconnected priorities directly relate in a number of ways to operations in the ANR sector, and activities within the ANR sector can provide the green growth, inclusiveness, and sustainability aimed at by the MTR.

C. Key Challenges and Issues

Food insecurity is one of the key factors that will affect the region's ability to both grow and achieve greater inclusion.¹² However, attaining food security faces an increasing number of challenges, some continuing and others emerging.

1. Continuing Challenges

Population growth. The world population is predicted to increase to 8.0 billion by 2025 and to 9.6 billion by 2050, while incomes are rising in much of the developing world. To satisfy added consumer demand, by 2050 global food production will have to increase by 60% from its 2005–2007 levels.¹³

Continuing poverty, hunger, and undernutrition. Poverty is inextricably tied up with food security. The poor spend more than 50% of their income on food and about one-fifth spend 70% of their income on food. Decreasing food availability and rising food prices have an equally negative effect on both the urban poor and the rural poor or landless in rural areas. Food scarcity and rising food prices mean less purchasing power for the poor and near poor and, as a result, years and possibly decades of poverty reduction efforts can be wiped out by sudden and sharp increases in food prices.

While the millennium development goal target of halving poverty by 2015 has been generally achieved, those for hunger and undernutrition have not. The post-2015 goals are expected to place even greater importance on food security and elimination of hunger. The Report of the High Level Panel on the Post-2015 Development Agenda has made the elimination of hunger a background theme to post-2015 goals, stating that "we can be the first generation in human history to end hunger and ensure that every person achieves a basic standard of wellbeing." ¹⁵

Less water and land resources, and environment degradation. Feeding more people in Asia and the Pacific poses a major challenge to the already stressed and scarce water resources of the region. About 80% of Asia's freshwater is withdrawn for irrigated agriculture, but irrigation efficiencies remain low at an average of 37%. Surface water scarcity is compounded by the rapid depletion of groundwater aquifers due to unregulated abstraction and increased competition for scarce water between agriculture and industry, between industrial and domestic use, between rural and urban residents, and, in agriculture itself, food versus animal feed and biofuel. Similarly, land suitable for agriculture is becoming scarcer. About a quarter of the world's arable land is degraded. In South Asia, about 43% of total agricultural land is degraded, with 31 million hectares already highly degraded,

¹² ADB. 2014. Inclusion, Resilience, Change: ADB's Strategy 2020 at Mid-Term. Manila.

¹³ FAO. 2014. The State of Food and Agriculture 2014: Innovation in Family Farming. Rome.

¹⁴ ADB. 2013. Food Security in Asia and the Pacific. Manila.

¹⁵ United Nations. 2014. Report of the High Level Panel on the Post-2015 Development Agenda. http://www.post2015hlp.org/the-report/

¹⁶ ADB. 2011. Water Operational Plan 2011–2020. Manila.

 $^{^{17}}$ F. Miesen. 2013. Valuable Farmland. http://www.dandc.eu/en/article/ifpri-and-zef-politics-and-economics-land-degradation

resulting in severe production and income losses.¹⁸ Land for food production also competes with land for animal feed and biofuel production and conversion for housing, industrial, commercial, and social uses.¹⁹ Land fragmentation poses further challenges to the continued viability of smallholder farms. An estimated 87% of the world's 500 million smallholder farms are based in Asia and the Pacific.²⁰ Farm sizes are generally small and fragmented and tend to get smaller from generation to generation, further increasing production inefficiencies, with operational holdings in many cases of about 0.5 hectares or less.

Environment degradation, such as forest degradation, land-based pollution, soil nutrient degradation, and soil salinization, creates a widening gap between the demand for natural resources for food production and the environment's ability to provide and replenish those resources. Damage to both land and water resources is further threatening prospects for increased food production, continued economic growth, and poverty reduction. Consequently, maintaining the natural capital must be a crucial goal for all DMCs.²¹

Food loss and waste. Food losses in the region are high due to poor pre- and postharvest facilities and services. About 25% of crop and livestock losses happen prior to harvesting due to outbreaks of plant pathogens, pests, and animal disease, ²² while 20% of food losses occur because of lack of proper storage, processing facilities, and poor roads and other logistics infrastructure. ²³ Increased price instability and geopolitics in food trade exacerbate this situation when governments adopt self-sufficiency programs for staple foods and restrictive food trade policies. These often result in losses in the production of nutritious or higher value food in favor of less competitive staple grains.

Food safety. Worldwide, food- and water-borne diarrheal diseases kill an estimated 2 million people annually, including many children. Foods containing pathogens or unsafe chemicals cause over 200 types of diseases and can result in malnutrition, setting up a vicious cycle, especially among young, elderly, and sick persons. Health care systems and ultimately national economies, tourism, and trade can be affected.²⁴

Long-term food price volatility. The food price spike of 2007–2008 was not an isolated event. Further food price increases in 2010–2012, combined with the economic and financial crisis, have highlighted the global and regional significance of food security issues. Food prices are also increasingly interlinked with animal feed, energy, and other commodity prices. Rising and volatile food prices are projected to be the "new norm" in the next 2 decades. Rising food prices will increase the vulnerability of the poor because more than half their income is already devoted to food; volatile food prices will also affect the financial viability of and incentives for food crop production, thus leading to uncertain food supplies.

Women in rural Asia. The female share of agriculture labor in farms is 40%–50% and is increasing (footnote 21). The increasing feminization of agriculture is attributed to substantial migration of men to urban areas or overseas for employment and the young moving out of agriculture. 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%. There is also a direct positive relation between increased agriculture investments and achieving gender equality. ²⁶

Climate variability and change. Climate variability and change are expected to have significant effects on food security in the region. The ANR sector, the major source of food, is both a victim of climate variability

¹⁸ M. Khor. 2013. Land degradation causes \$10 billion loss to South Asia Annually. http://www.twnside.org.sg/title/land-ch.htm

^{1.} Johnson. 2013. China's Great Uprooting: Moving 250 Million into Cities. http://www.nytimes.com/2013/06/16/world/asia/chinas-great-uprooting-moving-250-million-into-cities.html?ref-=asia&_r=o (ADB recognizes "China" as the People's Republic of China)

G. Thapa. 2009. Smallholder Farming in Transforming Economies of Asia and the Pacific: Challenges and Opportunities. Discussion paper prepared for the side event organized during the thirty-third session of IFAD's Governing Council. Rome.

ADB. 2013. Environment Operational Directions 2013–2020: Promoting Transitions to Green Growth in Asia and the Pacific. Manila.

²² K.L. Heong, L. Wong, and J.D. Reyes. 2013. Addressing Planthopper Threats to Asian Rice Farming and Food Security: Fixing Insecticide Misuse. ADB Sustainable Development Working Paper Series No. 27. Manila: ADB.

 $^{^{\}rm 23}$ $\,$ T. Davy. June 2013. Food Wastage: The Irony of Global Gluttony.

http://www.futuredirections.org.au/publications/food-and-water-crises/1119-food-wastage-the-irony-of-global-gluttony.html

²⁴ World Health Organization. 2015. Food Safety. Fact Sheet No. 399. http://www.who.int/campaigns/world-health-day/2015/fact-sheet.pdf

²⁵ FAO. 2011. State of Food and Agriculture 2010–2011. Rome.

ADB and FAO. 2013. Gender Equality and Food Security: Women's Empowerment as a Tool against Hunger. Manila

and change and a significant greenhouse gas emitter. Projections to 2050 for Asia and the Pacific show that with rising temperature, yields of irrigated rice, wheat, and soybeans may decline by 14%–20%, 32%–44%, and 9%–18%, respectively. Prices of rice, wheat, and soybean 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.²⁷ The increasing frequency and intensity of extreme weather events are expected to have more serious and enduring consequences for agriculture, such as through increased plant and livestock disease and pest outbreaks, crop damage, and changes in projected temperature and precipitation.²⁸ Asian agriculture accounts for 37% of world agriculture greenhouse gas emissions, primarily from crop cultivation, raising livestock, land-use changes, and deforestation.²⁹ In addition to the need to adapt agriculture to the impact of climate change, it is essential to adopt practices that also minimize greenhouse gas emissions.

Financing requirements. The Food and Agriculture Organization of the United Nations (FAO) estimated that eradicating hunger by 2025 would require an annual incremental public sector investment of \$50.2 billion, invested in (i) expanded rural infrastructure and market access; (ii) development and conservation of natural resources; (iii) R&D and extension; and (iv) improved rural institutions and expenditure on safety nets (footnote 10). Many international and bilateral institutions are investing in agriculture, notably the multilateral development banks, International Fund for Agriculture Development (IFAD), FAO, and the Consultative Group on International Agricultural Research. Significant past contributions to investments supporting food security and ANR sector development have come from ADB, the European Union, IFAD, Japan, the United States, and the World Bank, but their contributions have varied considerably on an annual basis and have, on a cumulative basis, not come close to meeting the estimated target needs.

2. Emerging Challenges

New, complex and interrelated challenges are emerging to exacerbate the already difficult environment for the ANR sector and food security, particularly urbanization, ageing populations, and structural transformation. These are described below.

Urbanization, rising incomes, and more diversified diets. With greater urbanization and more middle-income earners, consumption trends in many DMCs are changing.³⁰ These trends will increase demand for more diversified diets, with less direct consumption of grains and more demand for meat, dairy products, fish, fruits, and vegetables. This again provides opportunities for the rural population to participate in an expanded market for agricultural products, especially if access to rural areas is made easier through targeted rural infrastructure investments. Such development will require more stringent food safety measures and an increasing awareness and expectation of improved food quality and nutrition.

Increasingly ageing population, especially in rural areas. Populations across the region are ageing and it is often the older generation and younger female population that remain in the rural areas and engage in agriculture production. This demographic shift provides both opportunities and substantial social, economic, and cultural challenges.³¹ Coupled with increasing urbanization and the feminization of agriculture, the ageing process has significant implications for ANR activities and food security.

Structural transformation and inequality. Most DMCs are or will soon be middle-income countries with varying levels of development, capacities, and future prospects. They have undergone and are undergoing significant structural transformation to varying degrees. Though ANR is no longer the largest sector in any country by contribution to GDP, the sector is still the largest employer in developing Asia.³² Structural

²⁷ ADB and IFPRI. 2009. Building Climate Resilience in the Agriculture Sector of Asia and the Pacific. Manila.

W. Easterling et al. 2007. Food, Fibre and Forest products. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge.

²⁹ UNDP. 2012. One Planet to Share: Sustaining human progress in a changing climate. New Delhi

United Nations, Department of Economic and Social Affairs, Population Division. 2012. World Urbanization Prospects, the 2011 Revision. New York. (http://esa.un.org/unup/Documentation/final-report.htm)

³¹ UNFPA. 2012. Ageing in the Twenty-First Century: A Celebration and A Challenge. New York.

³² R. Briones and J. Felipe, 2013. Agriculture and Structural Transformation in Developing Asia: Review and Outlook. ADB Economics Working Paper Series No. 363. Manila.

transformation requires strong economic growth and increased productivity, which also increase inequality. Inequality is increasing both within and between countries; reducing it has become a key challenge for the countries and the region.³³ This is particularly the case when investment is focused on urban areas, with limited investment in agriculture and rural development. Growth in the ANR sector remains key to supporting structural transformation, especially in low-income countries, and in reducing inequality.³⁴ Agriculture growth aimed at economic development reduces food insecurity both through an increase in crop production and an increase in rural incomes, allowing the rural population better access to home-grown and purchased food supplies.

D. Asian Development Bank Practice and Experience

History and strength of ADB in the ANR sector. In its nearly 50-year history, ADB has funded hundreds of ANR projects, starting in 1967 with the first technical assistance on food grain production in Indonesia. Innovations on the farm and the introduction of new technologies have revolutionized food production in the region, giving it a remarkable degree of self-sufficiency in staple foods and economic stability. These innovations and technologies have helped commercial crops to prosper, triggering the growth of agroindustrial ventures and boosting exports. ANR sector development has helped the region achieve food security and set the foundation for DMCs to evolve from low-income to middle-income countries.

The first ANR sector loan was for the First Modernization of Tea Factories in Sri Lanka for \$2 million, approved on 2 July 1968. ANR investments comprised more than 20% of ADB's total loan portfolio through the 1970s and 1980s. From the late 1980s, the proportion of ANR loans in the total ADB loan portfolio declined significantly from an average of 27% during 1981–1990 to 11% during 1991–2000 and 7% in 2001–2011. The change in emphasis was related to the rapid increase in lending investment in other sectors, while absolute investment in ANR remained static.³⁵

While helping its DMCs to improve the productivity and sustainability of agriculture, enhance the management and development of natural resources, and make rural development sustainable, ADB has gained a wealth of knowledge and experience about the sector and various subsectors throughout Asia and the Pacific. ADB has dozens of international and national experts in both its headquarters and resident missions,

ADB has helped the region achieve food security and set the foundation for its DMCs to evolve from low-income to middle-income countries.

trained in ANR disciplines and experienced in ANR activities in almost all of its DMCs. It has the reputation and status needed to undertake policy dialogue and bring about policy reforms that can significantly improve the efficiency of sector activities. Most importantly, among development agencies in the sector and in the region, ADB has the funding resources to make a significant contribution to meeting the demand for investment and the profile and reputation to help mobilize investments from other sources.

Operational Plan for Sustainable Food Security in Asia and the Pacific (OPSFS). ADB approved in 2009 the OPSFS, which has a multisector approach that emphasizes agriculture productivity, market connectivity, and resilience against shocks and climate change impacts.³⁶ An external review of the OPSFS found that it provided a sound case for investments to improve food security.³⁷ Key recommendations included (i) a new operational plan up to 2020 to provide an extended implementation period, better guidance for operations departments, and a clear link between food and nutrition security; (ii) clearer identification of the direct and indirect investment contributions to food security of each sector, especially ANR; (iii) a monitoring and evaluation framework with clear indicators and targets linked to the ADB corporate results framework (CRF); and (iv) strengthening the skill mix and capacity of members of the Thematic Group on Rural Development and Food Security (Agriculture) (TGRDFS) for enhanced ANR and food security operations and innovations.

³³ ADB. 2012. Asian Development Outlook 2012: Confronting Rising Inequality in Asia. Manila.

³⁴ R. Briones and J. Felipe. 2013. Agriculture and Structural Transformation in Developing Asia: Review and Outlook. ADB Economics Working Paper Series. No. 363 Manila: Asian Development Bank.

³⁵ ADB. 2012. 2012 Annual Evaluation Review. Manila.

³⁶ ADB. 2009. Operational Plan for Sustainable Food Security in Asia and the Pacific. Manila.

³⁷ Agrifood Consulting International. April 2013. Review of ADB Operational Plan for Sustainable Food Security 2010-2012.

Box 1 below summarizes ADB operations in the ANR sector in 2012–2014 versus its pipeline for 2015–2017. Compared to 2012–2014 operations, the 2015–2017 pipeline shows the following features: (i) scaling-up ANR infrastructure support in irrigation, agricultural drainage, and rural flood protection for efficiency and productivity enhancement; (ii) promoting climate-resilient natural resources management and climate-smart agriculture; (iii) enhancing agribusiness investment, logistics, and value chain integration; (iv) enhancing food safety and quality; and (v) increased private sector agribusiness lending, with opportunity to build synergy between public and private sector investments.

Box 1: ANR Sector Operations

In 2012–2014, Asian Development Bank (ADB) approved 36 sovereign agriculture and natural resources (ANR) sector projects amounting to \$2,426.63 million. These projects cover the subsectors of (i) irrigation, agricultural drainage, and rural flood protection (18 projects for \$1,326.96 million); (ii) rural market infrastructure (4 projects for \$202 million); (iii) agribusiness and value chain (4 projects for \$96.5 million); (iv) agriculture production and support (2 projects for \$76 million); and (v) natural resources management (8 projects for \$725.17 million).

For 2015–2017, ADB has a pipeline of 67 sovereign ANR sector projects amounting to \$6,848.33 million. These projects cover the subsectors of (i) irrigation, agricultural drainage, and rural flood protection (21 projects for \$2,782.8 million); (ii) rural market infrastructure (5 projects for \$182 million); (iii) agribusiness and value chain (10 projects for \$796.8 million); (iv) agriculture production and support (5 projects for \$459.9 million); (v) natural resources management (24 projects for \$2,473.83 million); and (vi) food safety and quality (2 projects for \$153 million).

In addition, in 2012–2014, the Private Sector Operations Department (PSOD) supported agribusiness and value chains with \$203 million direct investment and \$523 million investments through finance intermediaries. In its pipeline for 2015, PSOD has over 10 agribusiness direct investments with probability-adjusted total investment of about \$100 million.

ANR project performance improved. Success rates of ANR projects have steadily improved, from 50% during 2006–2008 to 63% during 2009–2011, and further to 75% (which is higher than most of the core sectors) during 2012–2014. The lessons learned from previous loans are being consistently applied in new designs and the designs are more contextually responsive and better implemented. These ratings compare favorably with those of other multilateral organizations (footnote 36). ANR operations have generally achieved the intended thematic results, especially for environmental sustainability, gender, capacity development, and regional cooperation and integration (RCI). These better performing ANR projects provide increased opportunities for sustainable and inclusive growth, poverty reduction, private sector participation, improved partnerships, and enhanced knowledge solutions. However, the sustainability of ANR investments still needs attention. ANR projects are not usually revenue generating, so sustainability depends on, among other factors, adequate budget provision by local governments that may have limited fiscal resources, community participation in operations and maintenance, access to inputs, behavioral changes, and such external factors as weather or market changes.

Increased support by the Private Sector Operations Department. The Private Sector Operations Department (PSOD) has been supporting improved food security and the ANR sector through both financial intermediaries and direct investments in agribusiness. Interventions through financial intermediaries have included (i) credit lines to banks and microfinance institutions (about \$600 million since 2006), (ii) the trade finance program (about \$1.5 billion of food and agriculture trade transactions guaranteed since 2006), and (iii) investments in private equity funds (about \$200 million in food and agriculture equity investments since 2006). Direct

³⁸ ADB. 2015. 2015 Annual Evaluation Review. Manila.

investments approved in 2012–2014 include five direct loans and one equity investment for a total of about \$200 million. These projects have supported private sector investment in climate-resilient farming, postharvest infrastructure, processing, and cold storage facilities. As a result of this increased support to the sector,

Success rates of ANR projects have steadily improved, from 50% during 2006-2008 to 75% during 2012-2014.

thousands of smallholder farmers are expected to benefit from either better access to finance (provided by the financial intermediaries supported by PSOD) or new contract farming opportunities (offered by the agribusiness supported by PSOD).

ANR operations by other multilateral agencies. The World Bank, International Finance Corporation, and IFAD are active in the ANR sector in the region. The World Bank has been providing extensive support for productivity enhancement through irrigation, research and extension, and access to credit and land, including policy reform. The International Finance Corporation supports agribusiness investment, agriculture-related trade finance, agriculture logistics and infrastructure, and food retail.³⁹ IFAD specializes in agriculture technologies and extension services, inclusive financial services, value chain and rural enterprise development, and technical and vocational skills development.⁴⁰

E. Evaluation Recommendations

ADB Independent Evaluation Department evaluations stressed the importance of continued engagement in the ANR sector to support inclusive and environment sustainable growth, noting that ADB ANR sector interventions have increased food crop production, enhanced the purchasing power of the poor and disadvantaged, generated employment, reduced poverty, and stimulated private sector agriculture marketing through the supply and sale of both agriculture inputs and produce.⁴¹ A recent study by the ADB Economics Research and Regional Cooperation Department calls for agriculture and food security to be viewed in the context of the broader economic transformation in Asia, a scaling-up of ANR operations to address food security concerns, and the adoption of food security policies that address both immediate needs and medium- to long-term resilience requirements at national, regional, and global levels (footnote 15). Recommended interventions for ANR operations include (i) revitalizing agricultural productivity while simultaneously addressing the expected impacts of climate change on agriculture, (ii) ensuring that small farmers have the opportunity to engage effectively in modern food value chains, (iii) addressing the dimensions of malnutrition through simple cost-effective interventions that can be added to rural investment projects (e.g., micronutrient supplementation and biofortification), and (iv) increasing attention to the economically strategic nature of food security in providing advice to governments (footnote 10). To achieve better outcomes from ANR investments, four dimensions of efforts were emphasized: fostering public-private partnership (PPP), drawing on cross-sector synergies and complementarities, strengthening intra- and interinstitutional coordination, and improving environmental sustainability.⁴²

³⁹ World Bank Group. 2013. World Bank Group Agriculture Action Plan 2013–2015. Washington D.C.

IFAD. 2011. IFAD Strategic Framework 2011-2 015. Rome.

⁴¹ ADB. 2010. Sector Synthesis Evaluation Study: Performance of ADB Assistance to Agriculture and Natural Resources – Evidence from Post–Completion Evaluations. Manila.

⁴² Evaluation Cooperation Group. 2011. Evaluative Lessons for Agriculture and Agribusiness. Washington, DC.



III. DIRECTIONS

A. Impact and Outcome

The expected impact of the Plan is safe, nutritious, and affordable food for all. The outcome will be improved focus and enhanced quality of ADB ANR operations in meeting DMC needs. In consonance with relevant policies and operational plans, such as on water, environment, and climate change, ⁴³ the Plan will support achieving the MTR agendas of inclusive growth, environmental sustainability, and RCI.

B. Key Priorities

Aligning with MTR recommendations, ADB ANR sector operations will focus on four priority areas, as considered appropriate given individual country circumstances: (i) increasing the productivity and reducing pre- and postharvest losses of food; (ii) improving market connectivity and value chain linkages; (iii) enhancing food safety,

The expected impact of the Plan is safe, nutritious, and affordable food for all, through better focus and quality of operations.

quality, and nutrition; and (iv) enhancing management and climate resilience of natural resources. These priority areas, including the key functional activities of the food value chain (production, processing, distribution, and consumption), are highly interconnected, requiring innovative and integrated multisector approaches and interventions to more directly address food security in

DMCs. Emphasis will be given to qualitative improvement in project results, along with progressive increase of project investment in agribusiness, value chains and logistics, safety and quality of agricultural products, and climate-smart agriculture. Boxes 2–5 highlight recent and ongoing projects that have promoted new approaches and innovations that can be replicated and/or adapted in future pipeline activities.

1. Increased Productivity and Reduced Losses of Food

Improving resource efficiency. The quality and management of land and water must be improved to increase the supply and availability of food. In view of the current situation in Asia (and much of the Pacific) where available land and water resources are currently already being used for production, the primary goal will be to increase production efficiency. To do this, in synergy with the Water Operational Plan (footnote 17), ADB will continue to support irrigation development and water resources management by either providing irrigation (where facilities do not already exist) or by rehabilitation and upgrading to improve the efficiency of existing irrigation systems, many of which are operating at low water-efficiency levels.

⁴³ ADB. 2011. Water Operational Plan 2011-2020. Manila; ADB. 2013. Environment Operational Directions 2013 – 2020: Promoting Transitions to Green Growth in Asia and the Pacific. Manila; ADB. 2010. Addressing Climate Change in Asia and the Pacific: Priorities for Action. Manila.

Reducing pre- and postharvest losses. ADB will support efforts to prevent crop losses through enhanced flood protection and drainage, prevention of salinity intrusion, and provision of postharvest storage and processing facilities. Many parts of the region suffer from chronic annual flooding, with concomitant crop losses; provision of drainage and salinity intrusion prevention infrastructure raises overall yields and provides the opportunity to both raise crop yields and produce food in previously uncultivated areas. With private sector partnering on operations and management, provision of postharvest and storage facilities can both improve the quality of produce and reduce crop losses.

Promoting climate-resilient crop varieties, technologies, and practices. ADB will support productivity-enhancing and resilience-building technologies, such as seed industry development and agronomic practices, with efficiency improvements in land, water, and energy use and increased PPP. Agriculture productivity can also be improved by diversifying cropping systems and adopting new technology. Through close coordination with the finance sector group, rural finance can also be provided to rural entrepreneurs to establish processing and transport businesses and other small and medium enterprises to serve the sector and promote production. At the same time, such measures as innovative crop insurance need to be developed to reduce risk for farmers trying out new crops and technologies as well as to protect farm incomes from catastrophic weather events.

Investments in this priority area meet many of the MTR requirements. Investments in irrigation, drainage, flood control, and salinity prevention will entail infrastructure investments, thus aligning with the priority for continuing infrastructure investments but with a greater focus on food security and the ANR sector. The construction of infrastructure and increased agriculture activities (including planting, maintenance, harvesting, and transport) will enhance employment opportunities in some of the poorer parts of the region. Increased crop sales and increased employment will generate growth. Rural finance provision (especially microfinance programs aimed at women) and enhanced incomes will help redress gender imbalances, providing for more inclusive growth.

Box 2: Enhancing Productivity through Business Agriculture

Productivity improvements through crop diversification and infrastructure upgrading, respectively, are exemplified in the following projects.

A project in Bangladesh took an innovative approach to providing credit and extension services through competitive nongovernment organizations, and was successful in increasing the domestic supply of high-value crops and beneficiaries' incomes by 21%–56%. The project activities were scaled-up to a national program under a second loan (Loan 2649: Second Crop Diversification Project [\$40 million approved in June 2010]), for which the government recently requested additional financing due to its success.^a

In India, an irrigation development project rehabilitated and upgraded 144 minor and medium irrigation systems covering 173,984 hectares (ha). The project also provided capacity building support for the water users' associations, including training on improved water management and farming practices. Crop yields increased from 2.4 ton/ha to 5.9 ton/ha for wet season paddy and from 1.1 ton/ha to 1.4 ton/ha for dry season wheat. Cropping intensity increased from 110% to 124%. Annual income of the average size farm of 1.7 ha increased by 154%.

^a ADB. 2000. Loan to Bangladesh for Northwest Crop Diversification Project. Manila (Loan 1782-BAN, \$46.3 million, approved in November 2000). ^b ADB. 2005. Loan to India for Chhattisgarh Irrigation Development Project. Manila (Loan 2159-IND, \$46.1 million, approved in March 2005).

2. Improved Market Connectivity and Value Chain Linkages

Market infrastructure development. Improved market connectivity is essential for efficient agriculture and food value chain integration. ADB will support transport, communication, market facilities, and logistics to enable integration of more producers, agribusinesses, and consumers into local, national, regional, and global food systems. Improved connectivity requires increased and sustainable rural-urban linkages. Use of information and communications technology (ICT) will be promoted, such as radio programs and mobile phones to provide technical and market information.

Agribusiness development. ADB will promote greater agribusiness investment, including PSOD initiatives and PPP, with the regional departments helping with public infrastructure, policy reform, and legal framework. To ensure that smallholder farmers, women, the poor, and disadvantaged groups can purchase inputs, market their crops, and are not excluded from modernizing value chains, various stakeholders will be connected through value chain infrastructure, logistics systems, contract farming, effective postharvest systems, access to finance, trade facilitation, and promotion of small and medium enterprises.

The positive impact of improved rural access and agribusiness development on agriculture production and inclusive growth is well documented.⁴⁴ Such investments also have positive gender impacts and positive impacts on disadvantaged groups by enhancing their access to employment opportunities and such services as schools and health centers, stimulating rural entrepreneurs.

Box 3: Agribusiness Value Chain and Logistics

The following projects show how private sector support can improve direct access of smallholders to technology, financial services, and markets, thereby promoting inclusive business.

An initiative in Pakistan is helping 6,000 unbanked dairy farmers to avail of formal credit from a local bank, disseminating essential farm management technologies, and engaging the farmers in emerging quality dairy supply chains that cater to urban markets.^a

Support is being provided for a leading Indian spice processing company to invest in new processing facilities, including an extraction plant in Cambodia, and expand its contract farming with 5,000 additional smallholder farmers in India and Cambodia.^b

In Samoa, a project has established a risk sharing arrangement with two participating commercial banks to enable agribusinesses to avail of finance and provide essential business support services to develop supply value chains for agriculture exports.

A loan has been provided for establishing a large cold chain facility and an international best practice warehouse and logistics management in Tianjin, People's Republic of China (PRC). Upgrading the food value chain facilities is expected to expand shelf life and reduce spoilage of traded agricultural produce, including Mongolia's export of meat and dairy products to the PRC, projected to increase by 25% during 2013-2017.d

- ADB. 2013. Financial Inclusion and Dairy Growth Facility (Pakistan). Manila. (\$35 million partial credit guarantee approved in October 2013).
 ADB. 2014. Spice Value Chain Development Project (India and Cambodia). Manila (\$10 million equity, \$6.5 million loan, and \$5 million grant).
 ADB. 2014. Grant to Samoa for Agribusiness Support Project. Manila (Grant 0392-SAM, \$5 million approved in May 2014).
 ADB. 2012. Tedahang Cold Chain Logistics (People's Republic of China). Manila. (Up to CNY150 million loan approved in August 2012).

3. Enhanced Food Safety, Quality, and Nutrition

Food safety and quality are essential to ensuring an adequate supply of safe and nutritious food to an increasing urban and globally connected population.⁴⁵ This priority is intended to ensure that food produced is safe to the consumer and leads to a nutritionally balanced diet essential to a healthy and productive life. ADB will support effective food safety systems in DMCs through (i) establishment and enforcement of mandatory regulatory systems; (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. 46 The protection of consumers from food-borne 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, including malnutrition, undernutrition, and obesity is an essential element of food security interventions.

I. Ali and E. Pernia. 2003. Infrastructure and Poverty Reduction - What is the Connection. Economics and Research Department Policy Brief Series. No. 13. Manila: ADB.

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.

FAO and WHO. Assuring Food Safety and Quality: Guidelines for Strengthening National Food Control Systems. Rome

This type of investment directly promotes food security by providing consumers with confidence in the safety and nutritional value of the food they are purchasing, thus providing producers with a confident and vibrant market, and in turn stimulating production, trade, and regional integration.

Box 4: Enhancing Food Safety and Quality

A loan to Viet Nam in 2009 has made substantial contributions to establishing a comprehensive regulatory framework for food safety in the country as well as capacity building of VietGap certification agencies and relevant government institutions that are critical in widely disseminating good agriculture practices.

The project involved harmonizing the regulatory framework for tea, fruits, and vegetables, and streamlining institutional responsibilities for certification, monitoring, inspection, and enforcement. As of end 2014, the project had invested in safe agriculture zones (SAZs) in 16 participating provinces and generated positive economic, social, and environmental benefits to over 17,800 households. The SAZ scheme is expected to cover up to 178,780 hectares of land under fruit, tea, and vegetable crops; raise productivity by 20%–60%; and create employment opportunities for unskilled labor.^a

^a ADB. 2009. Loan to Viet Nam for Quality and Safety Enhancement of Agriculture Products and Biogas Development. Manila (Loan 2513-VIE, \$95 million, approved in March 2009).

4. Enhanced Management and Climate Resilience of Natural Resources

Almost all DMCs are facing increased degradation of both water- and land-based natural resources. The Plan will promote (i) water resources improvement, protection, and integrated utilization, with an emphasis on efficiency gains and pollution control, including more cross-sector integration; (ii) reduction of soil erosion and nutrient deficiency and ensuring the sustainability of forests and biodiversity (land reclamation, reforestation, and watershed stabilization); (iii) preservation of ecosystems and management of coastal and marine resources; (iv) enhancement of environmental and resource management standards and legislation; and (v) measures to respond to climate change. Emphasis will be given to climate-smart investment to promote climate change adaptation and mitigation, while targeting smallholders for sustainable yield and income increases.

Such investments will be both infrastructure-based (including upgrading existing infrastructure to climate-proofed standards) and policy-based (enhanced environmental and resource management standards and legislation). The former types of investment will meet the priorities of continued infrastructure investments with a more inclusive focus, strengthening integrated disaster risk management and promoting natural resources management. The latter types of investment will focus more closely on natural resources management aspects. Carbon financing in agriculture, including carbon credits for soil carbon sequestration, compost making, and biochar, will be initiated to mitigate climate change while enhancing productivity and system resilience.

Box 5: Delivering Sustainable Resource Use

A project in southern Shanxi Province, People's Republic of China, has been disseminating water-saving farming technologies, such as drip irrigation, and providing credit to some 48,000 farmers in order to upgrade production and agroprocessing enterprises, with the aim of providing high-value agricultural produce that meets the food safety and quality standards being introduced by the project.

The project is helping farmers to move from traditional low-income farming—mainly of maize and wheat—to high-value farm production by adopting technologies and practices that ensure environmental sustainability and increase farm income. It is also strengthening farm-market linkages by supporting on-farm and industrial agroprocessing and marketing and capacity-building and training of farmers, farmer associations, and technical support agencies.

By March 2015, about 38,800 farmers (45% females) had benefited from significantly increased productivity and farm income. Vegetation coverage in the project area had also increased slightly. ^a

^a ADB. 2009. Loan to People's Republic of China for Shanxi Integrated Agricultural Development. Manila (Loan 2607-PRC, \$100 million, approved in December 2009).



IV. IMPLEMENTATION OF THE PLAN

A. Business Processes

1. Sovereign Operations - A Country Focus

DMCs vary widely in their resources, level of development, implementation capacities, and development issues and challenges with regard to food security status, levels of poverty, and state of the natural environment. An individual country approach will be necessary to ensure that (i) there is proper assessment and understanding of the specific DMC situation; (ii) country ownership is assured; (iii) interventions including knowledge solutions are appropriate and mutually agreed on; and (iv) global, regional, national, and local partnerships are established.

Short-term measures (2015–2017). In line with the MTR priorities and recommendations, ADB and DMC governments will reexamine existing country strategies and programs to see how investments in the ANR

The Plan will take an individual country approach to ensure proper understanding of the specific DMC situation, country ownership, appropriate interventions, and establishment of local and national, as well as regional and global, partnerships.

sector can be enhanced, taking into consideration each DMC's development plans and priorities as well as ADB's comparative advantages. Any adjustments will be incorporated into the rolling country programs from 2015 to 2017 and indicated in the country operations business plan. Major changes may entail formulating an interim country partnership strategy (CPS). For countries making new strategies for 2015–2017, this will be done as part of the CPS exercise.

Medium-term measures (up to 2020). In the medium term, to provide and maintain an enhanced focus on

the ANR sector and food security for countries that consider them a priority. A review of the current sector assessment or a new assessment with a stronger food security focus will be undertaken as part of the CPS. The assessments will start with an examination of the government's own ANR and food security plans and priorities. ADB will then work with the DMC to prioritize and conduct a comprehensive country food security assessment to (i) assess the nature, scope, and significance of food security issues and problems; (ii) analyze the respective government and development partners' programs and capacities; (iii) assess the need for ADB's role, either continuing or new; and (iv) identify the key sectors and related policy, investment, knowledge, and capacity building interventions where required. Consequently an ANR sector roadmap with linkage to other sectors for improved food security will be updated. On this basis, an augmented level of ANR investments will be included in future CPSs and Country Operations Business Plans for countries deeming agriculture and food security a high priority.

Policy dialogues. Physical improvements and financial investments in ANR will need to be backed up by enlightened sector policies. This is a potentially important point of intervention for ADB to assist with promoting food security either through program lending, sector lending, results-based lending, or multitranche financing. Policy dialogue and effective planning will be essential for designing tailored responses to DMCs. The policy, legislative, regulatory, and institutional issues associated with the differing challenges and needs of DMCs are substantial. National food systems are affected by policies on agriculture, climate change, environment and natural resources, nutrition, poverty, trade, tariff and nontariff restrictions to imports and exports, and governance. Therefore national policy analyses need to be comprehensive and knowledge driven. ADB will agree to a strategic approach with DMCs for continuing analysis, dialogue, policy development and implementation, design and implementation of investment programs, and effective monitoring and feedback for policy and program improvement.

Food crisis and emergency support. Extreme weather events, such as floods, droughts, or cyclones may cause, among other things, food crises. ADB's disaster and emergency assistance policy defines 'emergency' as an unforeseen circumstance requiring immediate action where local capacity is insufficient to address and manage traumatic events, involving deaths, injuries, displacement of people, disease, disability, food insecurity, damage or loss of infrastructure, weakened or destroyed public administration, and reduced public safety and security. A food crisis will qualify as an emergency under the policy if the impact of rising regional or global food prices or crop failure in a DMC poses serious disruptions to the economy and/or society, and where the impact is beyond the financial and/or institutional absorptive capacity of the DMC.

2. Private Sector Operations and Public-Private Partnership

Expanded partnerships with the private sector will be actively sought through increased collaboration among regional departments, PSOD, and the Office of Public-Private Partnership to work more closely together to integrate and synergize sovereign and nonsovereign operations and promote more PPPs. Closer and more

integrated communication has begun with PSOD staff working on agribusiness investments. This link will be strengthened through increased and regular consultations to improve the identification, planning, and implementation of sovereign and nonsovereign operations. PSOD operations have shorter lead and processing times and are more market responsive than public sector planning and

Expanded partnerships with the private sector will be actively sought.

operations; however, private sector initiatives will be pursued in tandem with public sector investment when appropriate to realize the full benefits of having both public and private operations under one roof. Further, the revised sector assessments will assess the potential for PPPs in furthering food security. The Public-Private Partnership Operational Plan 2012–2020 identifies a clear role for regional departments in initiating and strengthening PPPs in their DMCs. 48

Strong sponsors from a credit perspective and best practices for implementation are key elements of PSOD investments. In addition to the instruments used in the past, PSOD will consider innovative transactions to maximize its development impact, such as (i) partial risk guarantees to banks lending to farmers, (ii) supply chain finance, (iii) dedicated and experienced agribusiness private equity funds with successful track record in food and agribusiness investments, (iv) project finance to well-structured PPP projects, and (v) direct equity investments in agribusiness companies that have long-term financial viability prospects and have the potential for scalable impact. More technical assistance and the use of concessional Asian Development Fund resources to support inclusive businesses will be explored, consistent with the MTR recommendation to increase support to inclusive businesses. PSOD agribusiness investments have the potential to benefit millions of smallholder farmers directly and contribute to public goods, such as food security, food safety, and reduced soil and water pollution, thus benefiting the wider DMC populations.

⁴⁷ ADB. 2004. Disaster and Emergency Assistance Policy. Manila

⁴⁸ ADB. 2012. Public-Private Partnership Operational Plan 2012 – 2020: Realizing the Vision for Strategy 2020—the Transformational Role of Public-Private Partnership in Asian Development Bank Operations. Manila.

3. Regional Cooperation and Integration

Integral to each of the four priority areas, RCI plays a key role in ensuring agriculture development and food security through South-South cooperation, knowledge sharing and transfer, trade facilitation, and trade liberalization. RCI is particularly critical in managing food security during crises and in easing tension concerning food exports. ADB will expand its RCI initiatives in the ANR sector, such as (i) the core agriculture support program in the Greater Mekong Subregion; (ii) strengthening the regional rice reserve system of the Association of Southeast Asian Nations member states; and (iii) enhancing smallholder farmer productivity, pre- and postharvest management and value chain development, upgrading food safety, and institutionalizing mechanisms for control of transboundary animal and plant diseases in the South Asian Association for Regional Cooperation member countries. ADB will also continue to support RCI initiatives on the management of critical ecosystems in the region, such as coastal and marine resources management in the coral triangle, and biodiversity conservation and corridors initiatives for the Greater Mekong Subregion. Regional investment projects will be undertaken as well, such as regional climate-friendly agribusiness value chain development covering Cambodia, the Lao People's Democratic Republic, and Myanmar. Regional policy frameworks, regulatory systems for such issues as transboundary disease controls and regional biosafety, and trade integration will be considered for delivering regional public goods.

4. Multisector Linkages

Development activities entail, one way or another, the use of a country's natural resources. Uses may be complementary or competitive, especially when they entail limited resources, such as water and land. Given the multifaceted nature of food security, ADB will continue to use a multisector approach, focusing on increasing

ADB will continue to use a multisector approach, focusing on increasing positive linkages between ANR and related sectors.

positive linkages between the ANR sector and other sectors (including transport, energy, water, environment, finance, education, and health) to ensure that interventions more systematically address the key multi-dimensional features of food security. These will include interventions to address resilience in disaster prone areas, measures to enhance the complementary use and conservation of resources in the water-energy-food-climate change nexus, measures to

enhance rural-urban linkages through improved transport and value chain integration, and measures to increase access to rural finance.

B. Resource Requirements

1. ANR Investments

The Plan will support fulfilling the MTR recommendation that ADB will commit \$2.0 billion annually to address country-specific and regional constraints to food security and reduce the vulnerability of poor populations to food price increases. As with the implementation of the OPSFS, not all of these funds will be spent within the ANR sector, but since ANR sector investments have been shown to be particularly effective in promoting inclusive growth and reducing poverty, investments in the sector are expected to expand significantly over earlier levels.⁴⁹

PSOD will continue to use the current range of modalities in support of ANR and food security. It is envisaged that the current level of 2–3 investments for about \$250 million annually will gradually increase to 4–6 investments for about \$500 million annually by 2020 (including both financial intermediary and direct investment assistance, and with increasing PPPs).

This does not, however, imply a decrease in funding in other sectors contributing to food security since the \$2 billion is a target, not a ceiling, and there is no reason for future funding to be limited by the notional allocation.

2. ANR Research and Development

Small investments in research have been shown to have large long-term returns for the sector. ADB will continue supporting R&D and innovations in the ANR sector that have been the basis for enhanced productivity, decreased crop losses, improved value chains, increased food quality and safety, and climate change impact management. To provide and ensure increased long-term technical support to the ANR sector, two measures are recommended. First is restoring the level of ANR R&D funding to at least \$5 million per year as stipulated in the current ANR Research Policy developed in 1995,⁵⁰ endorsed by the Independent Evaluation Department Special Evaluation Study in 2000,⁵¹ and further recommended by the Special Evaluation Study Update in 2008.⁵² The second is the establishment of an Innovation and Knowledge Facility for Climate Smart Agriculture and Food Security through the combined use of ADB and cofinancing funds.

The proposed facility will help finance innovations and piloting in technologies and management practices, as well as knowledge products, that (i) expand productivity inclusively through efficient resource use and access; (ii) improve the connectivity of food and agriculture-based value chains locally, nationally, and globally; (iii) enhance the resilience of agriculture and food value chains to economic and natural shocks, including the effects of climate change; and (iv) promote food safety, biosecurity, nutrition, and quality management. The facility will provide an opportunity for ADB and development partners to increase donor harmonization, realize efficiency gains and joint impact, and improve transparency in the preparation and implementation of agriculture and food security research, application, and dissemination activities.

3. Cofinancing

Through joint efforts of regional departments, Office of Cofinancing Operations, and Sustainable Development and Climate Change Department - Agriculture, Rural Development and Food Security Unit (SDCC-AR), ADB will ensure more successful uptake of cofinancing on ANR operations with key international agencies, bilateral agencies, regional organizations, private sector, and philanthropic foundations. In December 2014, ADB and IFAD signed a Framework Cofinancing Agreement which will improve the efficiency of cofinancing by minimizing detailed negotiations for each transaction and streamlining methods and practices. Greater efforts will also be made to assist DMCs to gain access to global funds, such as the Global Agriculture and Food Security Program, Global Environment Facility, and Green Climate Fund.

C. Thematic Considerations

Good governance and capacity building. The Second Governance and Anticorruption Action Plan identifies comprehensive outcomes, actions, accountabilities, and responsibilities in addressing governance and corruption risks across ADB's operations. Similarly, the Capacity Development Action Plan identifies key outputs relevant for ANR. These will be fully taken into account during the design of ANR operations. Measures will be pursued through policy reforms and actions to address institutional weaknesses in DMC capacities to address food security and related ANR issues.

Gender mainstreaming. The Gender Equality and Women's Empowerment Operational Plan directly applies to ANR and food security interventions. ADB will continue to ensure that gender equality issues are directly addressed in the design of ANR and multisector food security interventions by addressing inequality and vulnerability among women from the perspectives of access to (i) productive assets; (ii) finance; (iii) business development; (iv) extension services, technology, and training; (v) agriculture and non-agriculture employment; (vi) safe, adequate, and nutritious food (including children's food); (vii) information; (viii) representation in decision making in both formal and informal institutions; and (ix) basic infrastructure. The TGRDFS will

ADB. 1995. The Bank's Policy on Agriculture and Natural Resources Research. Manila.

ADB. 2000. Special Evaluation Study on Policy Implementation and Impact of Agriculture and Natural Resources Research. Manila.

⁵² ADB. 2008. Special Evaluation Study Update on Policy Implementation and Impact of Agriculture and Natural Resources Research. Manila

⁵³ ADB. 2006. Second Governance and Anticorruption Action Plan (GACAP II). Manila

⁵⁴ ADB. 2007. Integrating Capacity Development into Country Programs and Operations. Manila (currently being updated)

⁵⁵ ADB. April 2013, Gender Equality and Women's Empowerment Operational Plan, 2013-2020: Moving the Agenda Forward in Asia and the Pacific. Manila.

work with the gender thematic group in monitoring the percentage of ANR projects classified as effective gender mainstreaming or gender equity compared to other sectors, to emphasize numerically how the ANR sector contributes in a meaningful way to gender equality as a key driver of change. ADB will increase gender mainstreaming in ANR sovereign investments to 75%.

Knowledge solutions. Guided by the Knowledge Management Directions and Action Plan 2013–2015,⁵⁶ ANR knowledge solutions will be increasingly partnership-based to promote excellence and innovation. To learn and adopt more innovative approaches in ADB operations, the Thematic Group on Rural Development and Food Security (Agriculture) will identify key internal sources and external centers of excellence and knowledge hubs that provide the most relevant and useful knowledge. ADB will seek advice from an external advisory group of eminent persons in enhancing its ANR and food security operations and knowledge solutions, and will promote South-South cooperation, ICT, and web-based knowledge dissemination.

D. Partnerships

ADB will strengthen partnerships in the ANR sector in financing, 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.

ADB will continue to coordinate and share development responsibilities with the World Bank, especially on policy matters. ADB has worked closely with the European Union and its member states in cofinancing ANR

ADB will continue to use a multisector approach, focusing on increasing positive linkages between ANR and related sectors.

projects and coordinating ANR activities. In terms of agencies specifically devoted to the ANR sector, ADB will deepen its key partnerships with FAO and IFAD, which have proven beneficial over past decades for ADB DMCs in mobilizing cofinancing and skilled expertise as well as knowledge sharing. ADB is working with the WWF for Nature on preserving ecosystems in the region. ADB is also a co-convenor (with the European Bank for

Reconstruction and Development) of the Multilateral Development Banks Working Group on Food and Water Security. ADB 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 Agricultural 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.

E. Responsibilities

The figure below summarizes the preceding discussion on the implementation of the Plan. Major actors in implementing the Plan will be the regional departments and their environment, natural resources, and agriculture divisions; PSOD; TGRDFS; and SDCC-AR. Other departments will provide support and guidance as part of their regular activities, particularly when their involvement is indicated as important for enhanced food security.

Regional departments will

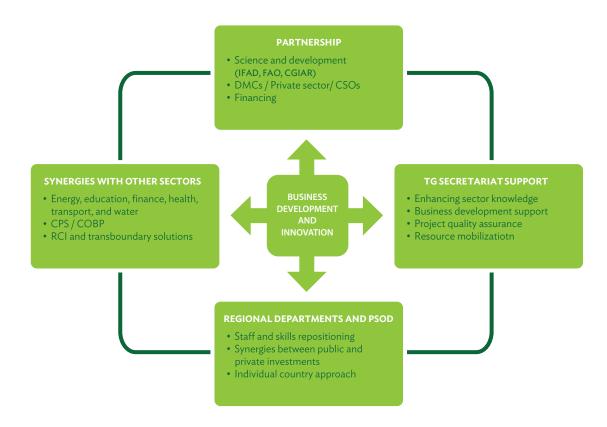
- (i) ensure that MTR recommendations for the ANR sector are adequately reflected in individual country programs, starting with the 2015 country programming exercise;
- (ii) review sector roadmaps and reassess balance among sectors in light of MTR priorities, for new country strategies in 2015–2017 and lending programs beyond 2017;

⁵⁶ ADB. 2013. Knowledge Management Directions and Action Plan (2013-2015). Manila.

- (iii) identify opportunities for intersector coordination and cooperation to maximize the benefits of increased ANR sector activities, for example, focusing new ANR activities in areas where improved transport facilities are being provided or where disaster prevention is planned; and
- (iv) monitor ANR and non-ANR food security investments in all country programs.

PSOD will continue to work with strong financial intermediaries and strong agribusiness sponsors to support ANR and food security in the region. A dedicated agribusiness investment team was created in PSOD in January 2015 to support this effort, and this team is expected to grow with the increasing volume of PSOD projects in the sector. The Office of Public-Private Partnership will provide transaction advisory services for PPP on agriculture and food security.

Figure: Implementation of the Operational Plan



CGIAR = Consultative Group on International Agricultural Research, COBP = Country Operations Business Plan, CPS = country partnership strategy, CSO = civil society organization, DMC = developing member country, FAO = Food and Agriculture Organization of the United Nations, IFAD = International Fund for Agricultural Development, PSOD = Private Sector Operations Department, RCI = regional cooperation and integration, TG = thematic group.

Source: Asian Development Bank.

The TGRDFS will

- (i) assist and backstop ANR sector project officers working on revised country strategies, roadmaps, and programs, including participation in relevant missions as considered necessary;
- (ii) peer review and provide technical guidance in the design of ANR investments;
- (iii) monitor changes in country strategies and programs to address the MTR recommendations for food security and ANR operations on a regional basis;
- (iv) monitor organizational effectiveness and efficiency in operationalizing food security along with redefining ANR staffing; and
- (v) coordinate partner inputs to business development, including design of innovative or complex projects in emerging areas of ANR.

SDCC-AR will

- (i) backstop and support the group in carrying out its activities as described above, in its capacity as secretariat for the TGRDFS;
- (ii) ensure that the Plan, its implementation arrangements, and the implications thereof are fully understood by all operation departments and divisions, through seminars, meetings, and workshops;
- (iii) provide guidance to operation departments and resident/regional missions in the implementation of the Plan on a regular and routine basis;
- (iv) facilitate the mobilization of expertise bank-wide for implementation of the Plan; and
- (v) consolidate the actual approval of ANR technical assistance and investments to ascertain whether planned targets are being met, and report on food security and ANR investment achievements.

Staffing levels and skills mix. ADB will refine ANR staffing and skill mix to support the implementation of the Plan. Redefining existing posts and restaffing them as they become vacant (through attrition and retirement) will be necessary to support analytical work, knowledge sharing, project development and implementation, innovation, and forward looking. Staff training programs tailored to the future requirements of ANR and food security will be developed and implemented. Skill sharing across departments following the one-ADB approach will be undertaken. Secondments from sector organizations, such as FAO and IFAD, will also be explored to complement ADB skill strengths.



V. MONITORING AND REPORTING

A. Performance Indicators

The results framework in the appendix provides the initial basis for the monitoring and evaluation of ADB's operations in ANR and food security. During the implementation of the Plan, the indicators will be reviewed and improved by the TGRDFS to provide a systematic, consistent, and measurable set of indicators for ANR and food security operations.⁵⁷

Level I indicators are primarily the same as those in the overall ADB CRF, with one additional indicator (number of people in the region who are undernourished), which is readily available from FAO food security statistics. Level II indicators measure ADB's contribution to the achievement of Level I goals. Currently there is only one CRF indicator that reflects ANR performance: "hectares of land improved through irrigation, drainage and/ or flood management." This indicator does not adequately reflect the significance of ANR in ADB operations. Several indicators have been added to capture the non-irrigation infrastructure part of ANR and food security. These can be used to strengthen the link between design and monitoring frameworks of ANR projects and the CRF.

Level III Indicators assess project preparation and implementation efficiency. Strategic focus indicators are also provided. Level IV indicators identify the human and budgetary resources and business process efficiency improvement required to implement the Plan.

B. Reporting Mechanisms

SDCC-AR and the TGRDFS, through the review process for new projects and technical assistance, will ensure that one or more indicators from the results framework are incorporated in the design and monitoring framework for each project and technical assistance. An annual report on food security operations will be prepared with the Strategy and Policy Department as part of the development effectiveness reporting process.

The classification of investment projects and technical assistance as contributions to food security is currently variable and subjective. The TGRDFS recommends that the project classification information system add one check box on whether and, if yes, by what percentage, a project or technical assistance contributes to food security so that ADB can better monitor all food security interventions.

Food security and the ANR sector are both diversified and multidimensional, requiring interventions and support from a range of sectors and subsectors. The scope of indicators is substantial and the array used to measure key parameters, such as productivity, is variable. There is scope for identifying and improving a key set of indicators for both food security and ANR that can be used within ADB to provide a more consistent and systematic measurement of key indicators.

Appendix.

Results Framework for Agriculture and Natural Resources Operational Plan, 2015-2020

		Baseline (Year or Period)	2020 Target
	I. ANR Progress in Asia and the Pacific		
	From ADB Results Framework (Level I)		
1	Population living on less than \$1.25 (PPP) per day (%)	20.7 (2010)	
2	Countries with high income inequality (% of countries with Gini coefficient exceeding 0.4)	22.2 (2000–2010)	
3	Underweight children under 5years old (%)	23.5 (2010)	
4	Under-5 child mortality (number per 1,000 live births) • Female	43.1 (2011) 44.6 (2010)	
	• Male	45.4 (2010)	
	Other Development Indicators		
5	Land area covered by forests (%)	22.7 (2010)	
6	Number of people undernourished (million)	529.9 (2011–2013)	
	II. ADB Contribution to ANR Results		
Quali	ty of completed sector operations		
7	Completed ANR loans and grants		
-	Rated successful or highly successful (%)	71 (2011–2013 annual	80
	Rated likely sustainable (%)	average) 71 (2011–2013 annual average)	80
8	Completed ANR technical assistance projects rated successful or highly successful (%)	96 (2011–2013 annual average)	96
ANR	results indicators		
9	Country-level domestic food price index	current levels (2014)	Monitor
10	Production of staple crops (rice and wheat) (ton)	913,169,000 (2012)	Monitor
11	Direct beneficiaries supported by agriculture productivity investments (number and % female)	current level (2014)	Above baseline
12	Households involved in commercial agricultural production and marketing (number)	current level (2014)	Above baseline
13	Households with reduced flood risks (number)	current level (2014)	Above baseline
14	Households with improved rural market access (number)	current level (2014)	Above baseline
15	End borrowers of ANR microfinance loan or small and medium-sized enterprise loan reached (number)	current level (2014)	Above baseline

Appendix (continued)

		Baseline (Year or Period)	2020 Target		
16	Food safety standards formulated, published, and legislated	current levels (2014)	All DMCs		
17	Land improved through irrigation, drainage, and/or flood management (hectare)	100,000 (2013)	Monitor		
18	Rural roads built or upgraded (kilometer)	current level (2014)	Monitor		
	III. Operational Management of the ADB ANR P	rogram			
19	Level of annual funding for research in ANR	\$1 million (2012–2014 annual average)	\$5 million		
20	Level of annual funding for nonsovereign ANR operations	\$100 million (2012–2014 annual average)	\$250 million		
21	Official cofinancing for ANR projects	\$175.8 million (2013)	Monitor		
Quality	at entry and during implementation				
22	Quality at entry of sovereign projects rated satisfactory (%)	88 (2012)	At least 85%		
23	Sovereign projects rated satisfactory during implementation (%)	87 (2012)	At least 85%		
Strategic focus Sovereign projects (loans and grants) supporting (%)					
24	Environmental sustainability	48 (2013)	Monitor		
25	Regional cooperation and integration	17 (2013)	Monitor		
26	Private sector development	41 (2013)	Monitor		
27	Governance and capacity development	53 (2013)	Monitor		
28	Gender mainstreaming	60 (2013)	75		
	IV. Organizational Management of the ADB ANR	Program			
Human	resources (sufficient staff resources maintained, and staff motivation and diver	sity increased)			
29	Staff in ANR divisions in regional departments, PSOD staff dedicated to agribusiness, and SDCC-AR staff increased with strategic revision of positions as needed				
30	Staff training programs for upgrading Thematic Group on Rural Development and Food Security (Agriculture) members skills and knowledge (number of participant and % of group members)				
Budgetary resources (budget efficiency and adequacy improved)					
31	31 Technical assistance to complete activities scheduled in the Operational Plan provided				
Process efficiency and client orientation (business process efficiency and client orientation improved)					
32	32 Formal mechanism adopted for classifying food security projects				
33	Country food security assessments undertaken				

ADB= Asian Development Bank, ANR = agriculture and natural resources, DMC = developing member country, PPP = purchasing power parity, PSOD = Private Sector Operations Department, SDCC-AR = Sustainable Development and Climate Change Department - Agriculture, Rural Development and Food Security Unit. Source: Asian Development Bank.

OPERATIONAL PLAN FOR AGRICULTURE AND NATURAL RESOURCES:

Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020

The Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020 guides ADB in meeting the recommendations of the midterm review of the ADB Strategy 2020 to provide increased emphasis on footd security and agriculture productivity. The plan, which builds on the earlier Operational Plan for Sustainable Food Security in Asia and the Pacific (2010–2014), focuses ADB agriculture and natural resources (ANR) sector operations in four priority areas: (i) increasing the productivity and reducing pre– and postharvest losses of food harvests; (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. The outcome will be improved focus and quality of ADB ANR operations in meeting developing member country needs toward safe, nutritious, and affordable food for all.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to the majority of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.