

Examples of Setting Indicators for  
Each Development Strategic  
Objective

## Grant Aid Projects/Standard Indicator Reference (Agricultural and Rural Development)

Development strategic objectives (*1)	Mid-term objectives	Sub-targets of mid-term objectives	Types of infrastructure	Standard indicator examples		Policy and methods for setting indicators	Examples of project objectives (project image)	Country name	Project name	FY of evaluation			
1. Sustainable agricultural production	1-2. Improving, maintaining, conserving and managing production infrastructure	Land use and soil conservation	Developing and improving agricultural land	<b>Operation indicators</b>	<b>Basic indicators</b> Area of reclaimed land (ha)		<ul style="list-style-type: none"> <li>The objectives of the project were to improve the productivity and the living standards of small-scale farmers in the project area by taking the following measures: the improvement of agricultural and social infrastructure mainly irrigation facilities (including reclamation and the construction of rural roads), as part of the participatory irrigation development governed by small-scale farmers, based on the agricultural development scheme for Bwanje Valley which is the least developed economically in Malawi.</li> </ul>	Malawi	The Bwanje Valley Irrigation Development Project	2006			
				<b>Effect indicators</b>	<b>Basic indicators</b> Rice yield (t/ha)								
		Water management	Improving irrigation and drainage facilities	<b>Operation indicators</b>	<b>Basic indicators</b> Irrigation coverage (the percentage of farms to which irrigation water is delivered) Area of benefited by the project (ha) Cultivated area by crops (ha) Collection rate of irrigation water charge (%) <b>Supplementary indicators</b> Rate of water users groups (%)				Regarding the factors related to production, it is desirable to check national and provincial data (the data for the province where the project is conducted) at the same time.	<ul style="list-style-type: none"> <li>The objective of the project was to increase the production of rice by supplying a sufficient amount of irrigation water through the improvement, of irrigation facilities, etc. in five municipalities in Cagayan, thereby contributing to poverty reduction.</li> </ul>	The Philippines	The Project for Rehabilitation of Cagayan Irrigation Facilities	2008
				<b>Effect indicators</b>	<b>Basic indicators</b> Production volume of major crops (tons/year) Yield of major crops per unit (tons/ha) Gross annual average farm income (yen/year/household) <b>Supplementary indicators</b> Net annual average farm income (yen/year/household) Operation and maintenance cost per unit area (yen/year/ha)				Regarding the irrigation coverage, coverage in the rainy season and coverage in the dry season should be checked separately.	<ul style="list-style-type: none"> <li>The objective of the project was to contribute to improving agricultural productivity by updating and increasing the number of drainage machines as well as by improving drainage in the Tan Chi area (6,240 ha) which was suffering from damage caused by the flood during heavy rain, due to a capacity shortage and the degradation (malfunctioning) of the drainage system (drainage pumps and drainage canals).</li> </ul>	Vietnam	The Project for Improvement of Drainage System in Tan Chi Agricultural Area	2005
										<ul style="list-style-type: none"> <li>The objective of the project was to resolve bottlenecks of the whole system in the Chokwe Irrigation Scheme by repairing the main irrigation canals in the uppermost reaches of the Chokwe Irrigation Scheme.</li> </ul>	Mozambique	The Project for Rehabilitation of Chokwe Irrigation Scheme (Phase 1)	2006
										<ul style="list-style-type: none"> <li>Through the project, it was expected that a stable supply of irrigation water to the project area would be achieved, and the irrigated land area would be increased from 3,200 ha to 4,368 ha. It was also expected that the improvement in the efficiency of the facilities and the installation of pumps with an appropriate capacity would reduce the annual operation and maintenance expenses by about 10%, and by 35% per unit area. The project also aimed to increase the agricultural output (farmers' income) by about 18%, through the expansion of crop areas for high-value-added crops.</li> </ul>	Egypt	The Project for Rehabilitation of Floating Pump Stations in Upper Egypt (Phase 3)	2007

			Support activities for the creation of water users associations (as a soft component)	<p><b>Operation indicators</b> Rate of water users group formulated (%)</p> <p><b>Effect indicators</b> Collection rate of irrigation water charge (%)</p>		<p>In the areas along the levees of the Mekong River, the Tonlé Sap River and the Bassac River near the capital city Phnom Penh, a type of agriculture called Colmatage has been conducted since the 1940s. In the system, silty soil containing nutrients is channeled to the hinterlands when the rivers swell during the rainy season, using irrigation canals dug at right angles to the rivers. This made the areas the most fertile dry-field cropping areas in Cambodia. However, due to the civil war which lasted for over 20 years, the Colmatage irrigation system was left unmaintained and considerable damage and degradation left the system unable to support sufficient agricultural production. Therefore, the objectives of the project were to contribute to increasing the crop areas and yield as well as securing a stable supply of food for the target area and improving farmers' living standards, by improving the Colmatage irrigation system in the area and establishing a system for the maintenance of the irrigation system by the beneficiary farmers.</p>	Cambodia	The Project for Improvement of Facilities of Colmatage Systems in Kandal Province along the Mekong River	2006
1. Sustainable agricultural production	1-4. Capacity building for research and development	Strengthening testing, research and technological development	Equipment for testing and research institutes	<p><b>Operation indicators</b> Experimental equipment operating rate (%)</p> <p><b>Effect indicators</b> Number of testing and inspection reports</p>		<p>Agriculture in China needs the following changes among others in order to achieve sustainable development in the 21st century: (1) switching from traditional agriculture to modern agriculture; (2) switching from extensive farming management to intensive farming management; and (3) securing a stable supply of food for its population which is forecasted to reach 1.6 billion by the end of the 21st century. In light of the situation, the project aimed to strengthen research and development as well as extension abilities for practical agricultural technologies at the Chinese Academy of Agricultural Sciences, with the aim of establishing agricultural technologies.</p>	The People's Republic of China	The Project for Improvement of Equipment for Japan China Research and Development Center for Agriculture Technology	2005
3. Promoting vitality in rural areas	3-2. Improving the distribution and sale of food	Improvement of market infrastructure	Bridges and feeder roads	<p><b>Operation indicators</b> Average time required to transport agricultural products to markets (minutes)</p> <p><b>Effect indicators</b>  <b>Basic indicators</b>  Increase in farmers' income in the target area through streamlining and increases in distribution in the target area  Increase in the amount of agricultural products transported  <b>Supplementary indicators</b>  Increase in the amount of perishable products distributed (such as fruits - a good example to get an idea would be peaches.)</p>		<p>The objectives of the project were to ensure safe and smooth traffic flows as well as to streamline distribution in agrarian reform communities, by constructing a bridge over the Umiray River that separates Quezon and Aurora provinces.</p> <p>The objectives of the project were to achieve the stable supply of agricultural water and improve access to markets by improving irrigation facilities and rural roads in the Dehsabz area, which is a suburb situated north of Kabul City. The project is part of the "Kabul Metropolitan Area Development" in the Rolling Plan for the Islamic Republic of Afghanistan.</p>	The Philippines	The Project for the Bridge Construction for Expanded Agrarian Reform Communities Development, Phase II (Umiray Bridge)	2011
							Afghanistan	The Project for Rehabilitation of Small Irrigation Facilities and Village Accessibility in Dehsabz Area, Kabul Province	2011

					Average time required to cross rivers (seconds) Decrease of Annual Traffic Impassability Dates due to swollen rivers and flooding disasters (days/year) Increase in agricultural product transportation capacity				
		Improvement of rural roads	Rural road construction / maintenance equipment, rural roads and bridges	<b>Operation indicators</b>	<b>Basic indicators</b> Operating rate of rural road construction/maintenance equipment (%) Annual average daily traffic volume (vehicles/day, vehicles/12 hours) <b>Supplementary indicators</b> Increase in the load capacity of paved roads ( axle load) (tons)	<ul style="list-style-type: none"> <li>The objectives of the project were to ensure safe and smooth traffic flows as well as to streamline distribution in agrarian reform communities, by constructing a bridge over the Umiray River that separates Quezon and Aurora provinces.</li> <li>The objective of the project was to promote the construction of rural roads (161 km of rural roads and 74 km of farming roads, a total of 235 km) in six districts in Eastern Bhutan in the period between 2006 and 2009 (three years), by procuring rural road improvement equipment.</li> <li>The objective of the project was to promote the improvement of 278 sections of farm roads (a total of 2,766 km) across the country in the period between 2005 and 2007 (three years), by procuring construction equipment for farm road improvement across the country.</li> <li>The objectives of the project were to achieve the stable supply of agricultural water and improve access to markets by improving irrigation facilities and rural roads in the Dehsabz area, which is a suburb situated north of Kabul City. The project is part of the "Kabul Metropolitan Area Development" in the Rolling Plan for the Islamic Republic of Afghanistan.</li> </ul>	The Philippines	The Project for the Bridge Construction for Expanded Agrarian Reform Communities Development, Phase II (Umiray Bridge)	2011
				<b>Effect indicators</b>	<b>Basic indicators</b> Total length of rural roads improved (km) Annual average daily traffic (AADT) (vehicles/day, vehicles/12 hours) Time Saving (hours) Increase in agricultural incomes through streamlined process of collection and shipment of agricultural products <b>Supplementary indicators</b> Vehicle Operation Cost Saving (hours, yen (and in the local currency)/year) Average Velocity Increase (km/hour) Decrease of Annual Traffic Impassability Dates due to swollen rivers and flooding disasters (days/year)		Bhutan	The Project for Improvement of Machinery and Equipment for Construction of Rural Agricultural Road (phase 2)	2009
							Nicaragua	The Project for Complementation and Amplification of Construction Equipment for the Rehabilitation and Maintenance of the Rural Roads	2009
							Afghanistan	The Project for Rehabilitation of Small Irrigation Facilities and Village Accessibility in Dehsabz Area, Kabul Province	2011
3. Promoting vitality in rural areas	3-2. Improving the distribution and sale of food	Development of stockpiling systems	Development of stockpiling and storage warehouses	<b>Operation indicators</b>	<b>Basic indicators</b> Amount of food reserves (Mt) Population receiving food aid (households or people)	<ul style="list-style-type: none"> <li>The objective of the project was to increase stockpiling capacity by constructing warehouses for rice in the Bogra District in northwestern Bangladesh which is the nation's granary, thereby contributing to the stable supply of food including during disasters and contributing to the food security of the country.</li> </ul>	Bangladesh	The Project for Improvement of the Capacity of Public Food Storage in the People's Republic of Bangladesh	2012

3-6. Improving the rural living environment	Rural electrification (*2) and the development of water supply systems	Rural water supply wells	<b>Operation indicators</b>	<b>Basic indicators</b> Population supplied with water (people) Amount of water supplied (m <sup>3</sup> /day) <b>Supplementary indicators</b> Number of hours water was supplied (hours) Number of wells newly dug in the relevant villages (wells)		The objectives of the project were to improve the productivity and the living standards of small-scale farmers in the project area by taking the following measures: the improvement of agricultural and social infrastructure mainly irrigation facilities, as part of the participatory irrigation development governed by small-scale farmers, based on the agricultural development scheme for Bwanje Valley which is the least developed economically in Malawi.	Malawi	The Bwanje Valley Irrigation Development Project	2006
			<b>Effect indicators</b>	<b>Basic indicators</b> Water supply coverage (%) <b>Supplementary indicators</b> Amount of water supplied per capita (L/person/day)					
3-8. Improving the health and education standard of rural residents	Improving health and medical services	Rural road improvement equipment and rural roads	<b>Operation indicators</b>	<b>Basic indicators</b> Operating rate for rural road improvement equipment (%)		The objective of the project was to promote the improvement of 278 sections of farm roads (a total of 2,766 km) across the country in the period between 2005 and 2007 (three years), by procuring construction equipment for farm road improvement across the country.	Nicaragua	The Project for Completion and Amplification of Construction Equipment for the Rehabilitation and Maintenance of the Rural Roads	2009
			<b>Effect indicators</b>	<b>Basic indicators</b> Total length of rural roads improved (km) Number of health centers to which access was improved <b>Supplementary indicators</b> Reduction in access times to the target facilities (hours)					
	Expansion of education services	Rural road improvement equipment, rural roads and bridges	<b>Operation indicators</b>	<b>Basic indicators</b> Operating rate for rural road improvement equipment (%)		The objective of the project was to promote the improvement of 278 sections of farm roads (a total of 2,766 km) across the country in the period between 2005 and 2007 (three years), by procuring construction equipment for farm road improvement across the country.	Nicaragua	The Project for Completion and Amplification of Construction Equipment for the Rehabilitation and Maintenance of the Rural Roads	2009
			<b>Effect indicators</b>	<b>Basic indicators</b> Total length of rural roads improved (km) Number of education facilities to which access was improved Number of students who became able to commute to schools due to the opening of bridges <b>Supplementary indicators</b> Reduction in access times to the target facilities (hours) Improvements in the enrollment ratio for elementary school first graders and the completion ratio					
						The objectives of the project were to improve roads, construct bridges and improve irrigation canals by improving construction machinery, vehicles, supporting equipment, survey equipment and facility construction equipment that are needed to improve basic infrastructure as well as by giving guidance on construction management techniques, in the Achacachi Province in the La Paz Department.	Bolivia	The Project for the Improvement of Village Development Equipment in the La Paz Department	2010

(\*1) The development strategic objective "2. Stable food supply" was omitted because it does not apply to any grant aid projects. The mid-term objectives and the sub-targets of mid-term objectives which do not apply to grant aid projects were also omitted.

(\*2) Indicators for "Rural electrification" will be added if there are applicable grant aid projects.