

Examples of Setting Indicators for Each Development Strategic Objective **Grant Aid Projects/Standard Indicator Reference (Transportation (Roads, Bridges, Land Transportation, Aviation and Ports))**

Development strategic objectives (*)	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		
2. Toward internationalization and regionalization	2-1. Facilitation of international movement of people and goods	2-1-1. Development of international transportation network (road/railway/airport/port)	Trunk roads and bridges (international)	Operation and effect indicators Annual average daily traffic (AADT)(vehicles/day, vehicles/24 hours)	Annual average daily traffic (vehicles/day, vehicles/12 hours): The annual average daily traffic at a specific point, a representative point in the whole section or the distance-weighted mean annual traffic. The total number of full-size cars, compact cars, etc., or, the number when converted into compact cars (the passenger car unit (PCU)) is used for counting volume of traffic. The duration is represented basically by units of days (24 hours). Representing the duration by 12-hour units is also acceptable. Time Saving (hours): According to measurement survey on time required Average Velocity Increase (km/hour): It is calculated from the above-mentioned time required and the distances before and after the improvements.	The objective of the project was to stimulate the international distribution of goods by constructing a bridge in the Santa Fe area, over the San Juan River which runs along the border between Nicaragua and Costa Rica. The objective of the project was to ensure safer and smoother traffic flows by constructing a new bridge at the point where National Road No. 1 crosses over the Mekong River (Neak Loeung). The objective of the project was to improve the distribution of goods and the movement of people between Phnom Penh and Ho Chi Minh by improving a section of National Road No. 1 (between Phnom Penh and Neak Loeung, about 56 km). The objectives of the project were to achieve smooth traffic flows in the area along the Southern Corridor and to promote traffic and trade between Senegal and Mali as well as with neighboring nations, by constructing bridges in the Southern Corridor which connects the capitals of the two countries. In Phase III a bridge was constructed in Mali which is an inland state. The objective of the project was to stimulate smooth and safe domestic and international distribution of goods, by reconstructing three bridges in the Atlantic Transport Corridor and the East-West Corridor, as part of the Road and Bridge Improvement Program which aims to improve economic infrastructure in order to promote investment, increase productivity and encourage exports that will in turn promote economic growth.	Nicaragua	The Project for Construction of Santa Fe Bridge	2010		
				Operation indicators An increase in the load capacity of paved roads (the axle load) (tons)			Supplementary indicators An increase in the load capacity of paved roads (the axle load) (tons)	The objective of the project was to achieve smoother traffic flows in the East-West Economic Corridor, by improving the road pavement and the road bed on the damaged section of National Road No. 9. Being part of the East-West Economic Corridor which is an important route connecting Laos with neighboring Thailand and Vietnam, National Road No. 9 plays an important role in promoting economic activity in Laos.	Cambodia	The Project for Construction of Neak Loeung Bridge	2010
				Effect indicators			Supplementary indicators An increase in the maximum vehicle tonnage that can pass The number of vehicles such as large vehicles which became able to pass Transport volumes for passengers and cargos (passenger-kilometers or ton-kilometers, or, tons/year at a specific point or section, similarly to the measuring of the volume of traffic) Time Saving (hours) Vehicle Operation Cost Saving (yen (and in the local currency)/year) Average Velocity Increase (km/hour) Decrease of Annual Traffic Impassability Dates due to Disaster (days/year)	Decrease of Annual Traffic Impassability Dates due to Disaster (days/year): According to the statistics compiled by the road administrator	Cambodia	The Project for Improvement of the National Road No. 1 (Phase III)	2009
								The objective of the project was to promote traffic and trade between Senegal and Mali as well as with neighboring nations, by constructing bridges in the Southern Corridor which connects the capitals of the two countries. In Phase III a bridge was constructed in Mali which is an inland state.	Mali	The Project of Construction of Bridges on the Southern Corridor in the Republic of Mali and the Republic of Senegal (Phase III)	2009
								The objective of the project was to stimulate smooth and safe domestic and international distribution of goods, by reconstructing three bridges in the Atlantic Transport Corridor and the East-West Corridor, as part of the Road and Bridge Improvement Program which aims to improve economic infrastructure in order to promote investment, increase productivity and encourage exports that will in turn promote economic growth.	Nicaragua	The Project for Reconstruction of Bridges on Managua - El Rama Road	2011
								The objective of the project was to achieve smoother traffic flows in the East-West Economic Corridor, by improving the road pavement and the road bed on the damaged section of National Road No. 9. Being part of the East-West Economic Corridor which is an important route connecting Laos with neighboring Thailand and Vietnam, National Road No. 9 plays an important role in promoting economic activity in Laos.	Laos	The Project for Improvement of National Road No. 9 as East-West Economic Corridor of the Mekong Region	2011
								The objectives of the project were to strengthen the functioning of the international distribution route and to improve the movement of people and goods for the convenience of local residents, by replacing the Awash Bridge (132.4 meters) which would have the biggest impact on the nation, out of all bridges on Ethiopia's A1 Trunk Road, if it collapsed.	Ethiopia	The Project for Replacement of Awash Bridge on A1 Trunk Road	2011
								The objective of the project was to ensure smooth traffic flows and resolve the traffic bottleneck, by replacing the Rukuru Bridge on the main trunk road in Runphi in the Northern Region.	Malawi	The Project for Replacement of South Rukuru Bridge on the Main Road M001	2009

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2. Toward internationalization and regionalization	2-1. Facilitation of international movement of people and goods	2-1-3. Strengthening of safety and security measures (aviation, port and maritime safety)	Enhancement of security management at ports, airports and road traffic systems (measures to control trespassers and the inspection of passengers and luggage), qualitative flight control improvement, etc.	Operation indicators	Basic indicators The implementation of an inspection system which meets international standards (increasing the number of people and products inspected, the expansion of monitoring and security areas, a reduction in the number of accidents and incidents, etc.)		<ul style="list-style-type: none"> With the Overall Goal of "securing the movement of people and the distribution of goods from other countries which are essential for the reconstruction of Afghanistan," the project aimed to improve the equipment at Kabul International Airport in order to improve passenger services at the airport. In order to ensure the safety of airplanes which arrive at and depart from Ninoy Aquino International Airport and to ensure efficient airport operations, the project aimed to restore the functioning and reliability of the approach radar facilities used at the airport which were put in place in 1984 and were frequently breaking down due to considerable deterioration. In order to increase the effectiveness of the radars installed in the Kathmandu International Airport Improvement Project which was completed in 1997 and to ensure safe air traffic control activities, the project improved the air traffic control equipment including the updating of radio equipment which had been in use since before the project was conducted and the construction of weather observation facilities. 	Afghanistan	The Project for Improvement of Equipment of the Kabul International Airport	2008
								The Philippines	The Project for Rehabilitation of the Approach Radar Facility in the Ninoy Aquino International Airport	2006
								Nepal	The Project for Improvement of Existing Air Traffic Services System under the Tribhuvan International Airport Modernization Project	2006
3. Toward balanced development of a whole country (national transportation)	3-1. Improvement of road transportation	3-1-1. Improvement and development of trunk road system	Trunk roads and bridges (domestic)	Operation and effect indicators	Basic indicators Annual average daily traffic(AADT)(vehicles/day, vehicles/24 hours)		<ul style="list-style-type: none"> The objective of the project was to ensure safe and smooth traffic flows by improving a 22.5 km section of the Masasi-Mangaka Road which is subject to Phase III of the project (from the 37.4 km point to the end of the Masasi-Mangaka Road) in the Mtwara Region. The objective of the project was to ensure smooth traffic flows on National Highway 3 in Ethiopia which is an international trunk road connecting Addis Ababa and Sudan, by improving the unpaved section of the road. The objective of the project was to improve the distribution of goods and the movement of people between Phnom Penh and Ho Chi Minh by improving a section of National Road No. 1 (between Phnom Penh and Neak Loeung, about 56 km). The objective of the project was to ensure smooth traffic flows and resolve the traffic bottleneck, by replacing the Rukuru Bridge on the main trunk road in Runphi in the Northern Region. In the Eastern Province, through reconstructing small- and medium-sized bridges on National Highway 5 which connects the Eastern Province and the Central Province, and through reconstructing the Panichan Keni Causeway and bridges on National Highway 15 in the Eastern Province, the project aimed to improve access to the Eastern Province, thereby contributing to the distribution of peace dividends to the people affected by the civil war. 	Tanzania	The Project for the Improvement of Masasi-Mangaka Road (Phase III/III)	2009
				Operation indicators	Supplementary indicators An increase in the load capacity of paved roads (the axle load) (tons)			Ethiopia	The Project for Rehabilitation of Trunk Road, Phase IV	2011
								Cambodia	The Project for Improvement of the National Road No.1 (Phase III)	2009
								Malawi	The Project for Replacement of South Rukuru Bridge on the Main Road M001	2009
								Sri Lanka	The Project for Reconstruction of 5 Bridges in Eastern Province	2010
			Effect indicators	Supplementary indicators An increase in the maximum vehicle tonnage that can pass An increase in large vehicle traffic (vehicles/day) Transport volumes for passengers and cargos (passenger-kilometers or tons/year) Time Saving (hours)/Vehicle Operation Cost Saving (yen (and in the local currency)/year) Average Velocity Increase (km/hour) Decrease of Annual Traffic Impassability Dates due to Disaster (days/year)						

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3. Toward balanced development of a whole country (national transportation)	3-1. Improvement of road transportation	3-1-2. Strengthening of road maintenance system	Road maintenance	Operation indicators	Basic indicators An increase in the number of operable construction machinery units (units) The total length of roads improved (repaired), etc. (km/year) Supplementary indicators The number of times equipment was repaired (times/year)		<ul style="list-style-type: none"> The objective of the project was to improve the operating rate of road construction machinery possessed by the General Corporation for Roads and Bridges (GCRB), by restoring the road construction machinery repairing and maintenance capacity of the Road Construction Machinery Workshop at Nukum, through the updating and improvement of the equipment needed to repair and maintain road construction machinery at the workshop. The objective of the project was to achieve stable regional transportation and local resident traffic accessibility, by appropriately deploying road maintenance equipment and strengthening the road maintenance systems in the Issyk-Kul and Chui Oblasts, thereby contributing to the promotion of regional exchanges of people and the distribution of goods, as well as the revitalization of regional economic and social activities. 	Yemen	The Project for Upgrading and Revitalization of Road Construction Machinery Workshop at Nukum	2010
				Effect indicators	Supplementary indicators A reduction in annual maintenance costs (yen (and in the local currency))					
	3-3. Improvement of maritime transportation	3-3-1. Restoration, improvement and development of ports and port facilities	Improvement of port terminals	Operation and effect indicators	Basic indicators Total Cargoes (tons/year) (1) Containerized cargo volume (tons and TEU/year) (2) Bulk cargo volume (tons/year) (3) General cargo volume (tons/year) Total Passengers (people/year) Supplementary indicators The average overstay time for vessels which have entered the port, the average time vessels wait at anchor offshore (hours) An increase in loading and unloading efficiency, an increase in the cargo handling machinery operating rate Maximum Dead Weight Tonnage (DWT)	Cargo volume = Containerized cargo volume + bulk cargo volume + general cargo volume It depends on the contents of each project whether to adopt total cargoes or any of the three kinds of cargo on the left. When gantry cranes are used as procured equipment, (1), and when grain silos and oil tanks are used, (2), should be effective indicators. TEU represents the cargo volume available in a container 20 feet long.	<ul style="list-style-type: none"> The objectives of the project were to enable safe and efficient boarding and alighting of passengers as well as loading and unloading of cargo, by improving the existing pier in the Mahata area in the Oecusse District in East Timor, thereby contributing to the economic revitalization of the district and the reduction of economic disparities between areas within East Timor, through the expansion of marine transportation between the district and the capital city Dili. The objectives of the project were to improve efficiency and safety when loading and unloading cargo, as well as to improve the navigation safety of vessels entering and leaving Betio Port, by strengthening the functioning of the port through improving the facilities and equipment at the port. 	East Timor	The Oecusse Port Urgent Rehabilitation Project	2010
	3-4. Improvement of air transportation	3-4-1. Improvement/ Development of airport facilities	Airport facilities	Operation and effect indicators	Basic indicators Number of passengers (people) Cargo Volume (tons) Number of takeoffs and landings by origin and destination (times) Air traffic Volume (airplanes)	Number of passengers (people) · Grasp numbers under the categories of international flight and domestic flight · Grasp numbers of annual total, in the peak month, or on the peak day It is desirable to grasp data of the following three groups. (1) Number of departing passengers (under the categories of foreign citizens and domestic citizens) (2) Number of arriving passengers (under the categories of foreign citizens and domestic citizens) (3) Number of transient passengers (under the categories of foreign citizens and domestic citizens) Air traffic Volume (airplanes): · Grasp numbers under the categories of international flight (over flight and others) and domestic flight · Annual total	<ul style="list-style-type: none"> The objective of the project was to improve safety and convenience for airport users by improving the existing Bamyán Airport, through: paving runways, constructing an airport apron and a passenger terminal building, as well as putting in place the equipment and facilities needed for airplane operations including fire engines, snowplows and aeronautical radio equipment. The project is part of the infrastructural improvement which is a priority field in Japan's assistance for Afghanistan. It is also part of the Afghanistan Regional Resource Corridor Initiative (AR-RCI) which is one of the national priority programs of the Afghanistan government. 	Afghanistan	The Project for Improvement of Existing Bamyán Airport	2011
				Operation indicators	Supplementary indicators An increase in the number of airplanes that can be parked (airplanes)					

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3. Toward balanced development of a whole country (national transportation)	3-4. Improvement of air transportation	3-4-2. Improvement/Development of aeronautical navigation aid system	Aeronautical navigation aid systems (air-route surveillance radars, etc.)	Operation and effect indicators Number of takeoffs and landings by origin and destination (times)	• Grasp numbers under the categories of international flight and domestic flight • Grasp numbers of annual total, the peak month, and the peak day • Grasp number under the categories of regular and temporary (commercial) flights	• The objectives of the project were to improve aircraft operational safety and to respond to the increase in the number of passengers by expanding the aprons and improving their pavement at Kabul International Airport. The project is part of the Kabul Metropolitan Area Development program. • The objectives of the project were to increase the number of flights which arrive at and depart from Kabul International Airport and to increase the number of passengers as well as to improve aircraft operational safety, by improving and repairing the taxiways and aprons at the airport. • The objectives of the project were to meet the standards recommended by the ICAO (the International Civil Aviation Organization) and to improve the safety and efficiency of aircraft operations, by updating deteriorated air navigation facilities and related equipment at Kamuzu International Airport in Malawi. • The objective of the project was to improve air transportation safety in Nepal, by constructing an air-route surveillance radar system and updating the existing airfield control radar system and equipment at Tribhuvan International Airport which is the only international airport in Nepal, thereby contributing to improving transportation between the Kathmandu Valley and areas outside the valley (other countries).	Afghanistan	The Project for Rehabilitation and Expansion of Aircraft Parking Aprons at Kabul International Airport	2011		
				Operation indicators An increase in the number of airplanes that can be parked (airplanes) The navigation lights coverage at the international airport			Basic indicators Runways (%) Taxiways (%) Aprons (%)	Afghanistan	The Project for Rehabilitation of Airfield Pavements at Kabul International Airport	2010	
				The percentage of international flights covered by the surveillance radar safety net (%) The percentage of all the airplanes covered by the surveillance radar safety net (%)			Supplementary indicators A reduction in the number of accidents on taxiways and aprons	Malawi	The Project for the Replacement of Air Navigation System at Kamuzu International Airport	2010	
	3-5. Strengthening of intermodal transportation as well as improvement of issues common to all modes of transportation	3-5-3. Transportation safety measures	Development of transportation safety facilities, etc.		Effect indicators Number and Frequency of Traffic Accidents (Accidents/10,000 Vehicles • km, Number of accidents, Casualties, Yen (and Local currency))	They should be calculated based on traffic accident statistics compiled by the traffic safety agency. Monetary terms can be adopted when amount of human cost and property damage per accident are set.					
					Effect indicators Decrease of Annual Traffic Impassability Dates due to Disaster (days/year)			Basic indicators An increase in the maximum vehicle tonnage that can pass The number of vehicles such as large vehicles which became able to pass (vehicles/day)	Nicaragua	The Project for Construction of Santa Fe Bridge	2010
					(For road facilities and bridges) slope protection measures, the enhancement of seismic adequacy, etc.			Supplementary indicators An increase in the maximum vehicle tonnage that can pass The number of vehicles such as large vehicles which became able to pass (vehicles/day)	Laos	The Project for Improvement of National Road No. 9 as East-West Economic Corridor of the Mekong Region	2011
3-5-4. Disaster management							Sri Lanka	The Project for Reconstruction of 5 Bridges in Eastern Province	2010		
							Ethiopia	The Project for Replacement of Awash Bridge on A1 Trunk Road	2011		

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3. Toward balanced development of a whole country (national transportation)	3-5. Strengthening of intermodal transportation as well as improvement of issues common to all modes of transportation	3-5-4. Disaster management	(For road facilities and bridges) slope protection measures, the enhancement of seismic adequacy, etc.			<ul style="list-style-type: none"> The objective of the project was to ensure safe and efficient traffic flows by reconstructing six bridges on Nias Island which are structurally dangerous due to damage caused by earthquakes. Some of the six bridges are on Provincial Road No. 75 which is the only trunk road on the island connecting Gunungsitoli (the largest city on the island) and Teluk Dalam (the second largest city on the island) 	Indonesia	The Project for Improvement of Bridges in Nias Island	2009
4. Toward sustainable urban development and improvement of urban life (urban transportation)	4-1. Improvement and development of urban transportation infrastructure	4-1-1. Traffic capacity increase of arterial roads, intersections and bridges under the jurisdiction of central government	Road facilities and bridges (urban areas)	Operation and effect indicators Basic indicators Annual average daily traffic(AADT) (vehicles/day, vehicles/24 hours)		<ul style="list-style-type: none"> The objectives of the project were to ensure safe and smooth traffic flows in Bujumbura City and to reduce transportation costs through the alleviation of congestion, by improving the road network of the city. The objective of the project was to improve the road network by rehabilitating and repairing Poids Lourds Avenue in Kinshasa City. The objectives of the project were to save transportation times, resolve congestion and reduce annual maintenance costs, by rehabilitating, improving and expanding the width of the bottleneck section of the trunk road in Blantyre City, which is the largest commercial city in Malawi. 	Burundi	The Project for Rehabilitation of Roads and Infrastructures for Bujumbura City	2010
				Operation indicators An increase in the load capacity of paved roads (the axle load) (tons)					
	4-2. Improvement and development of urban public transportation services	4-2-1. Improvement of bus services	Improvement of buses	Operation and effect indicators Basic indicators Carrying capacity of buses (10,000 passenger-kilometers/day)		<ul style="list-style-type: none"> The objective of the project was to increase the carrying capacity of public transport systems within Burundi and those going to neighboring countries, by providing public transport buses and the necessary equipment for the public transport system across the country. The objectives of the project were to improve bus services and to increase the carrying capacity of public buses, by updating route buses in Vientiane City owned by the public bus corporation which have become dilapidated. 	Burundi	The Rehabilitation of Public Transportation Project	2009
				Operation indicators Basic indicators The number of operable buses The number of bus services (services/day) The number of bus routes The bus route length (km)					
							Malawi	The Project for Improvement of Blantyre City Roads (Phase II)	2010
							The Lao People's Democratic Republic	The Project for Improvement of Transportation Capacity of Public Bus in Vientiane Capital	2010

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5. Toward sustainable rural development and improvement of rural life (rural transportation)	5-1. Improvement of rural transportation infrastructure	5-1-1. Provision of basic transportation infrastructure and services to secure civil minimum	Rural roads and bridges (domestic)	Operation and effect indicators Basic indicators Annual average daily traffic(AADT) (vehicles/day, vehicles/12 hours)		<ul style="list-style-type: none"> The objective of the project was to facilitate traffic flows and the distribution of goods by constructing a bridge in Manmunai over the Batticaloa Lagoon. Thereby, the project aimed to contribute to post-disaster reconstruction and flood control measures, as well as promoting socioeconomic development in the Eastern Province and providing a symbol of the consolidation of peace in reconstruction efforts. 	Sri Lanka	The Project for Construction of Manmunai Bridge	2011	
				Operation indicators An increase in the load capacity of paved roads (the axle load) (tons)						Supplementary indicators An increase in the load capacity of paved roads (the axle load) (tons)
				Effect indicators Basic indicators Time Saving (hours)						Supplementary indicators Transport volumes for passengers and cargos (passenger-kilometers or tons/year) Vehicle Operation Cost Saving (yen (and in the local currency)/year) Average Velocity Increase (km/hour) Decrease of Annual Traffic Impassability Dates due to Disaster (days/year) An improvement in access to social infrastructure (schools, health centers, etc.) (people/day)
				<ul style="list-style-type: none"> The objective of the project was to ensure traffic flows throughout the year, by constructing suspension bridges, truss bridges, reinforced concrete bridges and continuous box girder bridges at about 28 river crossing points which cause long-term transportation route holdups due to the swelling of rivers in the rainy season. The crossing points are on 11 provincial roads in five districts situated along the Sindhuli Road in the central part of Nepal. 			Nepal	The Project for the Improvement of Community Access	2009	
						<ul style="list-style-type: none"> The objective of the project was to ensure safe and efficient traffic flows by reconstructing six bridges on Nias Island which are structurally dangerous due to damage caused by earthquakes. Some of the six bridges are on Provincial Road No. 75 which is the only trunk road on the island connecting Gunungsitoli (the largest city on the island) and Teluk Dalam (the second largest city on the island). 	Indonesia	The Project for Improvement of Bridges in Nias Island	2009	
		5-1-2. Enhancement of transportation safety and reliability	Roads and bridges (safety)	Effect indicators Basic indicators Decrease of Annual Traffic Impassability Dates due to Disaster (days/year)		<ul style="list-style-type: none"> The objective of the project was to facilitate traffic flows and the distribution of goods by constructing a bridge in Manmunai over the Batticaloa Lagoon. Thereby, the project aimed to contribute to post-disaster reconstruction and flood control measures, as well as promoting socioeconomic development in the Eastern Province and providing a symbol of the consolidation of peace in reconstruction efforts. 	Sri Lanka	The Project for Construction of Manmunai Bridge	2011	
						<ul style="list-style-type: none"> The objective of the project was to ensure safe and efficient traffic flows by reconstructing six bridges on Nias Island which are structurally dangerous due to damage caused by earthquakes. Some of the six bridges are on Provincial Road No. 75 which is the only trunk road on the island connecting Gunungsitoli (the largest city on the island) and Teluk Dalam (the second largest city on the island). 	Indonesia	The Project for Improvement of Bridges in Nias Island	2009	

(*) The development strategic objective "1. Capacity development of the transportation sector" 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.