Grant Aid Projects/Standard Indicator Reference (Rural Water Supply/Groundwater)

Examples of Setting Indicators for Each Development Strategic Objective

Development Strategic objectives (*)	Mid-term objectives	Sub-targets of mid-term objectives	Types of infrastructure	Standard indicators		Policy and methods for setting indicators	Examples of project objectives (getting a clear image of the project)	Country name	Project name	FY of evaluation
3. Sustainable safe water supply	3-3. Improving access to water supply services in rural areas		The construction of wells and hand pumps (level 1)	**Operation indicators**	**Basic indicators** Population supplied with water (number of people) **Supplementary indicators** The water supply amount (m^3/day) The water supply hours (hours)	Population supplied with water (definition): The additional population supplied with safe water by the construction of the relevant facilities; or, in the case of an equipment procurement project, the additional population supplied with safe water by the drilling and construction of wells by the implementing agency using the equipment. Points to note, etc.: It is difficult to strictly compare projects in different countries because the definition may differ depending on the country, as shown in the following examples. (1) The unit water supply amount per person has been set and the population supplied with water per well is strictly counted based on the capacity. (2) The population of the village concerned is counted with the assumption that the wells constructed in one village will cover the entire village population (e.g. 500-1000 people). (3) The population supplied with water per well has been set regardless of the capacity, and the total additional population supplied with water is counted based on the number of successful wells. How to obtain data: Social conditions surveys, data of wells when they were drilled, etc. The water supply amount (definition): The amount of water supplied by the facilities concerned Points to note, etc.: The total water supply amount is expected to increase by the construction of new facilities, but the additional water supply amount is decided by the number of operating hours of the facilities. For example, the additional water supply amount will be different in cases where an operator supplies water for one hour in the morning and one hour in the evening, and in cases where an operator supplies water all in the morning. Therefore, it is not exactly so suitable for an indicator. When a pay-for-use system is not used, it is difficult to accurately measure the amount of water sold. How to obtain data: The water supply amount is calculated based on interviews in the case of "level 1" and based on the amount of water distributed or the number of operating hours in the case of "level 2." The water supply hours (definition): The number of hours water was supplied by the facilities concerned Points to note, etc.: The number of hours water is supplied is dependent upon how the facilities are operated. In general, the construction or improvement of water supply facilities is expected to prolong water supply hours. This may not be always true in the case of "level 1," because the facilities can be considered to be	・The objective of the project was to increase the population who can access safe water, increase the water supply coverage ratio, and to increase the population who can obtain domestic water and water needed to improve their livelihoods, by: the construction of water supply facilities including wells; and the procurement of the equipment and materials needed to maintain the water supply facilities and drill wells, in the Ali Sabieh Region, the Dikhil Region and the Arta Region in southern Djibouti. ・ The objective of the project was to improve access to safe water for residents in the project area, by constructing rural water supply facilities ("level 1" and "level 2") in the Greater Machakos County and the Greater Makueni County.	Djibouti Kenya	The Project for Rural Water Supply in Southern Djibouti The Project for Rural Water Supply (Phase II)	2010 2011
				Effect indicators	**Basic indicators** A reduction of water-borne diseases The percentage of the population supplied with water (%) The percentage of functional facilities **Supplementary indicators** A reduction in the water fetching time The stable water supply The distance to water sources Population benefiting from the improvement in the water supply situation The school enrollment ratio An increase in the employment ratio for women					

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						operable for 24 hours a day. How to obtain data: The operation records, the fuel consumption (when the facility is powered by a generator), etc.				
3. Sustainable safe water supply	3-3. Improving access to water supply services in rural areas		The construction of wells, pumps, communal taps and elevated water tanks (level 2)	**Operation indicators**	**Basic indicators** Population supplied with water (number of people) The water supply amount (m^3/day) **Supplementary indicators** The water supply hours (hours)	A reduction in water-borne diseases (definition): The number of people who contracted diseases caused by water in the area concerned Points to note, etc.: This is the most expected effect of the safe water supply, although the cause-and-effect relationship between the supplied water and the reduced number of people who contracted water-borne diseases cannot be strictly proven epidemiologically. How to obtain data: Obtainment through interviews is appropriate. Data kept by existing public health centers and hospitals can be used, but the number of patients counted could increase if the health center or the hospital was newly built.	・The objective of the project was to supply safe water to the residents of rural villages (19 sites in five governorates) which have low water supply coverage, by developing water supply facilities, etc. in the villages.	Yemen	The Project for Rural Water Supply	2010
				Effect indicators	**Basic indicators** A reduction in water-borne diseases The percentage of the population supplied with water (%) The percentage of functional facilities **Supplementary indicators** A reduction in the water fetching time The stable supply of water The distance to water sources Population benefiting from the improvement in the water supply situation The school enrollment ratio An increase in the employment ratio for women	The percentage of the population supplied with water (definition) = (The population to be provided with the safe water supply by the newly built facilities or the improved facilities) ÷ (the population in the area concerned) Points to note, etc.: It is effective as an indicator in general, but using it for facility improvement projects is difficult in many cases. How to obtain data: Inventory surveys, etc. The percentage of functional facilities (definition) = (The number of functional water supply facilities) ÷ (the number of water supply facilities in the relevant area) Points to note, etc.: It is an effective indicator for facility improvement projects. How to obtain data: Inventory surveys for water supply facilities, etc. A reduction in the water fetching time (definition) = (the average distance from the existing water supply points to homes) - (the average distance from the water supply points to be developed to homes) Points to note, etc.: 1) Please see the explanation of “the distance to water sources” for how to work out the average distance used in the calculation. 2) The social survey method called Time Allocation Studies allows the direct estimation of the water fetching time, but it is highly technical. It takes time and effort. ・ In this method, the activities of women (mainly those who fetch water) in randomly selected households are observed and recorded by researchers at random times or at intervals. 3) Qualitative data may be used, though it cannot be quantified. ・For example, households can be randomly selected and women	・The objective of the project was to increase the population supplied with water and supply safe water sustainably, by constructing water supply facilities in 10 districts in the Tigray Region. ・The objective of the project was to improve access to safe water for residents in the project area, by constructing rural water supply facilities (“level 1” and “level 2”) in the Greater Machakos District and the Greater Makueni District.	Ethiopia Kenya	The Project for Rural Water Supply in Tigray Region The Project for Rural Water Supply (Phase II)	2010 2011

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						in the households can be asked multiple-choice questions as well as being asked for comments on the reduction of the labor and time required to fetch water. → These comments can be used in PR materials. Criticism of the data being "unscientific" can be avoided by randomly selecting those subject to the surveys. How to obtain data: Please see "Points to note, etc." above.				
3. Sustainable safe water supply	3-3. Improving access to water supply services in rural areas		The repair of wells and hand pumps (the repair of level 1 facilities) The repair of wells and hand pumps (the repair of level 1 facilities)	**Operation indicators**	**Basic indicators** Population supplied with water (number of people) **Supplementary indicators** The water supply amount (m^3/day) The water supply hours (hours)	The water supply amount per capita (definition) = (the amount of water distributed) ÷ (population supplied with water) Points to note, etc.: It is effective as an indicator particularly for "level 2." How to obtain data: Operation record, etc. The stable supply of water (definition): Whether or not a stable water supply is possible regardless of whether it is the rainy or dry season Points to note, etc.: It is an effective indicator particularly in cases where the main water source was surface water or shallow wells, in an area with a harsh dry season. However, previously it has not been recognized to be particularly useful as an indicator. How to obtain data: Hydrogeological surveys, data on the volume of pumped water, interviews, etc. The distance to water sources (definition): The distance from residents' homes to the points where they can obtain safe water Points to note, etc.: The following two methods can be considered to estimate the average distance, but both have some difficulties. i) Interviewing users living around the water supply facilities to be developed ・The water sources which users' families use are identified. However, members of the general public can rarely tell the distance and time it takes from water supply points to their homes. ii) Households are sampled and surveying is conducted for those households. ・It is possible to calculate the direct distance to the water supply point using GPS (however, the calculation of the actual distance of the walking route is difficult. Researchers may walk to measure the distance for academic purposes). ・The "average distance" could be longer than that of the baseline survey results because household members from further away may come to fetch water at the newly developed water supply point. ・Care is needed in collecting data on a household basis, because water resources that they use change depending on the season in many cases (data may be inaccurate if the baseline survey and the post-completion survey are conducted in different seasons).	・The objective of the project was to give a stable supply of safe and clean water to residents, by taking the following measures: the construction of water supply facilities at market centers in Mkanda in the Mchinji District and in Santhe in the Kasungu District; the development of operation and maintenance systems for the facilities; the repair of 300 deep wells with hand pumps or the construction of substitute wells in the Mchinji District; the development of operation and maintenance systems for the facilities; and the procurement of equipment for repairing wells.	Malawi	The Project for Selected Market Centres and Rural Water Supply in Mchinji and Kasungu District	2012
				Effect indicators	**Basic indicators** A reduction of water-borne diseases The percentage of the population supplied with water (%) The percentage of functional facilities **Supplementary indicators** A reduction in the water fetching time The stable supply of water The distance to water sources Population benefiting from the improvement in the water supply situation The school enrollment ratio An increase in the employment ratio for women					

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						How to obtain data: Please see "Points to note, etc." above.				
3. Sustainable safe water supply	3-3. Improving access to water supply services in rural areas		The repair of wells, pumps, communal taps and elevated water tanks (the repair of level 2 facilities)	**Operation indicators**	**Basic indicators** Population supplied with water (number of people) The water supply amount (m^3/day) **Supplementary indicators** The water supply hours (hours)	Population benefiting from the improvement in the water supply situation (definition): The population who can benefit from the quantitative and qualitative improvement of water, the increased number of hours water is supplied, the reduced water charges, etc. when compared to before the project was implemented Points to note, etc.: It is effective as an indicator particularly for facility improvement projects, but it is necessary to define what "improvement in the water supply situation" means. For example, if the improvement of an aging facility which had been supplying water did not change the quality of water, the quantity of water, or the number of hours water is supplied, etc., then the effect of the project measured by this indicator should be considered zero.	・The project aimed to achieve the sustainable supply of safe water to the projected population in 2019 at 19 project sites in the Tambacounda Region (15 sites), the Matam Region (two sites), the Thies Region (one site) and the Louga Region (one site), by improving and expanding the existing water supply facilities in the sites.	Senegal	The Project for Drinking Water Supply in the region of Tambacounda	2009
				Effect indicators	**Basic indicators** A reduction in water-borne diseases The percentage of the population supplied with water (%) The percentage of functional facilities **Supplementary indicators** A reduction in the water fetching time The stable supply of water The distance to water sources Population benefiting from the improvement in the water supply situation The school enrollment ratio An increase in the employment ratio for women					

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3. Sustainable safe water supply	3-3. Improving access to water supply services in rural areas		Equipment for drilling wells (rigs) Equipment for drilling wells (rigs)	**Operation indicators**	**Basic indicators** The number of wells drilled with rigs (per year) Population supplied with water (number of people) The water supply amount (m^3/day) **Supplementary indicators** The water supply hours (hours)	The school enrollment ratio (definition): The percentage of children enrolled in school in the area concerned Points to note, etc.: Some examples of this data are shown in the World Bank's guide (p. 16 of the separate document). ・Other survey examples also suggest that the enrollment ratio and the rate of school absenteeism or attendance should be considered separately. ・The number of days absent changes depending on the season. For example, some students have to travel further to fetch water in the dry season. Another common reason would be that they are absent from school because they help with the farming in the farming season. How to obtain data: Please see "Points to note, etc." above.	・The objective of the project was to secure water that is available all year round, by procuring the equipment needed for the Department of Development Affairs (DDA), the Ministry for Progress of Border Areas and National Races and Development Affairs to construct deep wells, in order to develop new water resources in the central dry zone.	Myanmar	The Provision of Equipment for Rural Water Supply Project in the Central Dry Zone	2011
				Effect indicators	**Basic indicators** A reduction of water-borne diseases The percentage of the population supplied with water (%) **Supplementary indicators** A reduction in the water fetching time The stable supply of water The distance to water sources Population benefiting from the improvement in the water supply situation The school enrollment ratio An increase in the employment ratio for women	An increase in the employment ratio for women (definition): A change in the percentage of women who have a stable job in the relevant area Points to note, etc.: Some examples are shown in the above-mentioned World Bank's guide (p. 16 of the separate document) as an indicator for "Gender and social Inclusion" and "Income/consumption." However, the guide also states, "We are aware of no evaluation that demonstrate the impacts of WSS (water supply and sanitation) programs on poverty, including income, consumption levels, or gender and ethnic inclusion" (p. 6-7). ・Even if the labor needed to fetch water is reduced, there may be many areas which do not have employment opportunities anyway. It might be better to collect qualitative data on women's perception. How to obtain data: Please see "Points to note, etc."	・The project provided the equipment and materials needed to drill wells in the Beni and Pando Departments in the northern part of Bolivia.	Bolivia	The Project for Drink Water Provision in Rural Area of Beni & Pando Prefectures	2012

(*) Development strategic objectives "1. Promoting integrated water resource management," "2. Water resource conservation," "4. Improving access to sanitary facilities and improving hygiene activities" and "5. Mitigating water-related disasters" were omitted because they do not apply to any "Rural Water Supply/Groundwater" projects. The mid-term objectives and the sub-targets of mid-term objectives which do not apply to "Rural Water Supply/Groundwater" projects were also omitted.