2.2 基本ツール②: セクター用チェックリスト – Basic Tool ②: Sector Checklist (SC)

オートフィルターによる質問の絞込み方法 (Excel2002の場合)
1) 優先検討項目のみ: 1stを選択
2) 詳細検討項目も含める: すべてを選択

Category			Priority (優先度)	Question		Answer	
Large	Medium	Small					
Current water supply conditions, etc.	Indicators from MDGs, etc.	Water coverage (WHO/ UNICEF JMP)	1st	Q1: What is the % of population using house connections (piped into dwelling, yard or plot) in your country as reported in the latest report of JMP of WHO/UNICEF?		Year of the Latest Survey:	
			2nd	Q2: What is the % of population using other improved drinking water sources (public tap/stand pipe, tube well/borehole, protected dug well, protected spring, rainwater collection) in your country as reported in the latest report of JMP of WHO/UNICEF?			
			2nd	Q3: What is the percentage improvement in the population using house connections (piped into dwelling, yard or plot) in your country since the baseline year reported in the latest report of JMP of WHO/UNICEF?		Year of the Baseline Survey:	
		Improved sanitation coverage (WHO/ UNICEF JMP)	2nd	Q4: What is the % of population using improved sanitation facilities? (Flush or pour-flush to piped sewer system, septic tank or pit latrine; Ventilated improved pit latrine; Pit latrine with slab; Ecosan/Compositing toilet; and Mobiliets)		Year of the Latest Survey:	
		Poverty (The World Bank)	1st	Q5: What is the GNI per capita (Atlas method, US$/person/year) of your country in the latest World Development Report or World Development Indicators Database of the World Bank?		Year of the Latest Survey:	
			1st	Q6: What is the % of population below $1 (PPP) per day (poverty ratio) in the latest World Development Report or World Development Indicators Database of the World Bank?		Year of the Latest Survey:	
			2nd	Q7: What is the poverty gap ratio (%) at $1.25 per day, which shows depth of poverty, in the latest World Development Report or World Development Indicators Database of the World Bank?			
		Corruption (Transparency International)	2nd	Q8: What is the rank of your country's corruption perception index reported in the latest Global Corruption Report of Transparency International, out of the total number of the countries assessed? (e.g. in the survey of 2009: Japan, China, Indonesia and Iraq were 18, 72, 126 and 178 out of 180 countries in the ranking).		Year of the Latest Survey:	
	Level of piped water supply services	Consistency	1st	Q9-1: Are there any significant differences in water supply service levels between water utilities with small served populations and water utilities with large served populations? [Yes or No]			
			1st	Q9-2: If Yes, please describe the differences and their reasons.			
			1st	Q10: Is the demarcation of responsibility between urban water utilities and rural water suppliers clear, so that each urban water utility can calculate their current water coverage ratio based on the clear estimation of population under their responsibility? [Yes or No]			
		Continuity	2nd	Q11: How many cities/towns have continuous piped water supply in your country? [1. No cities/towns, 2. Some cities/towns, 3. Half of cities/towns , 4. Majority of cities/towns, 5. Almost all or all cities/towns]			
		Chlorination	2nd	Q12: How well is the chlorination of piped water supply implemented by urban water utilities in your country? [1. Not implemented in most water utilities, 2. Not implemented in some utilities, 3. Mostly implemented but not appropriate at many utilities, 4. Mostly implemented but not appropriate at some utilities, 5. Implemented at all utilities and mostly appropriate]			
Availability and effectiveness of policies, national or regional plans, regulations and guidelines		Policy and plans	1st	Q13: Does the national policy include the following? 1) User-pays principle, 2) Concept of full cost recovery, and 3) Independent accounting system? [1. None of them, 2. Only one of them, 3. Two of them, 4. All of them]			
			1st	Q14: How many water utilities operate under their own independent (ring fenced) accounting system? [1. None, 2. Some, 3. Around half, 4. Most, 5. All]			
			1st	Q15-1: Are there any policies on each of following items at a national or regional level in the water sector? [Yes or No] Q15-2: If Yes, are the policies effectively incorporated into your country's national strategic plan or any other middle or long-term national plans? [Yes or No]	1) Expansion of water supply coverage		
			1st		2) Minimum water service levels including drinking water quality and duration/amount of water supply		
			1st		3) NRW reduction and water saving		
			1st		4) Water supply to the urban poor		
			2nd		5) Water resource development		
			2nd		6) Merging of nearby utilities and clustering of small utilities to improve efficiency (facility integration, financial integration and/or services / office administration integration)		
			2nd		7) Human resource development for the sector		
		Law/ regulation	1st	Q16-1: Are there any laws/regulations on each of followings items? [Yes or No] Q16-2: If Yes, have the laws/regulations been effectively followed by water utilities? [Yes or No]	1) National water supply act or its equivalent (law, regulations)		
			1st		2) Regulations to encourage private sector involvement (Public Private Partnership (PPP), Public Sector Privatization (PSP), Private Finance Initiative (PFI), etc.)		
			1st		3) Licensing systems for contractors installing service connections to ensure construction quality control in order to reduce leakage		
			2nd		4) Local water supply by-law or ordinance		
			2nd		5) Regulations regarding water intake, including conventional rights to the use of natural water and restrictions on groundwater withdrawal to prevent land subsidence		
			2nd		6) Vocational qualifications / certification for utility staff (e.g. for construction supervision, operation of purification plant, water quality testing, accounting, computer programs)		
		Guidelines	1st	Q17-1: Are there any guidelines on each of following items? [Yes or No] Q17-2: If Yes, are the guidelines effective and have the guidelines been followed by water utilities?	1) Water tariff setting		
			1st		2) Water quality standards		
			1st		3) Authorized standards for materials and equipment for water utilities		
			2nd		4) Design of water supply facilities		
			2nd		5) Operation and maintenance of water supply facilities		
			2nd		6) NRW reduction		

Category			Priority (優先度)	Question		Answer	
Large	Medium	Small					
			2nd		7) Bulk water supply		
			2nd		8) Governance / management of water utility		
			2nd		9) Merger / clustering of utilities to improve efficiency (facility integration and/or office administration integration)		
			2nd		10) Environmental impact assessment		
		Integration	2nd	Q18: How well are existing policies, plans, laws, regulations and guidelines integrated without causing conflicts or operational difficulties in the water sector? [1. Not at all, 2. Not very well, 3. Fairly, 4. Well, 5. Very well]			
		Tariff	1st	Q19: Who has general oversight/control over utilities' minimum service levels and water charge levels? [1. Local, regional or national government department, 2. Independent board of stakeholders, 3. Independent service & price regulator, 4. Each utility, 5. Other]			
			2nd	Q20: Does the water supply act (law, regulations or their equivalent) in your country require water utilities to undertake 1) user-pays principle, 2) concept of full cost recovery, 3) independent accounting system; and to achieve an adequate level of water tariff? [1. None of the above, 2. One of the above, 3. Two of the above, 4. Three of the above]		
		Poverty	1st	Q21: How well-defined are the policies on securing funding for poverty alleviation regarding water supply services, in terms of the arrangement or balance between 1) cross-subsidies based on water tariff structures in each water utility, 2) subsidies from local government, 3) subsidies from the water supply sector's supervisory national organization to each utility, and 4) direct subsidies from the organization specializing in poverty alleviation and/or public welfare to each water utility? [1. Not at all, 2. Not very well, 3. Fairly well, 4. Well, 5. Very well]		
			1st	Q22: What proportion of water supply service subsidies for poverty alleviation come from the water sector of the central government, compared to subsidies from other sectors of central government such as welfare sector and subsidies from local governments? [1. None, 2. A little, 3. Some, 4. A reasonable amount, 5. A large amount]		
			2nd	Q23: What proportion of water supply subsidies for poverty alleviation come from the other sectors/ministries of central government or other departments of local government, compared to subsidies from the sector/ministry or department of local government in charge of urban water supply? [1. None, 2. A little, 3. Some, 4. A reasonable amount, 5. A large amount]		
			2nd	Q24-1: Does the urban water sector prohibit water utilities from having free public taps? [Yes or No]			
			2nd		Q24-2: If No, are there any guidelines or clear instruction for the operation and maintenance of the public taps, to avoid wastage of water and use of free water by people other than the intended recipients? [Yes or No]		
		Water quality control	1st	Q25: How many water quality indicators are included in your country's water quality standards as enforceable parameters for water utilities? [1. None, 2. Few, 3. Less than ten, 4. Less than twenty, 5. More than twenty]			
			2nd	Q26: Is there any national laboratory for water quality testing which can support the establishment or revision of water quality standards for drinking water, including the selection of suitable test methods for each water quality indicator? [Yes or No]			
			2nd	Q27: Are there any environmental standards established to protect drinking water sources? [Yes or No]			
Soundness of inter-organizational operations in the sector	Governance/ management	Government	1st	Q28: Does the central government issue updated mandates clearly stating the roles and responsibilities of each organization in the sector, such as the ministry, regulator, utilities, etc? [1. No, 2. Yes, but only to some extent, 3. Yes]			
		Regulatory body	1st	Q29-1: Is there any regulator monitoring the compliance and performance of water utilities in your country? [Yes or No]			
			1st		Q29-2: Does the regulatory body have enough autonomy to control water utilities without being influenced by the politics of personal affairs, budgeting, tariff setting, etc.? [Yes or No]		
			1st	Q30: How well are the regulatory functions covering water utilities in the water sector working? [1. Not working at all, 2. Working a little, 3. Working to some extent, 4. Working well, 5. Working very well]			
			1st	Q31-1: Is the current performance of water utilities statistically understood using performance indicators? [1. No, 2. To some extent, 3. Yes]			
			1st		Q31-2: If 1. or 2., does the regulatory body prepare an annual report in which the performance of each water utility is assessed? [Yes or No]		
			2nd	Q32: Are minimum service levels clearly defined for different types/sizes of water utilities, and agreed with each water utility in writing in your country? [1. Not at all, 2. Defined to some extent but not agreed in writing, 3. Defined clearly but not agreed in writing, 4. Defined clearly and agreed in writing with major urban water utilities, 5. Defined clearly and agreed in writing with most or all the urban water utilities]		
			2nd	Q33: What aspects of water utilities are difficult to regulate?			
		Water utility	1st	Q34: In general, how much positive and negative influence does central government or local governments have over the appointment of top management in water utilities, regarding sustainable capacity development in the water utilities? [1. Strong influence, 2. Some influence, 3 Almost no influence or no influence]			
			1st	Q35: How well is the status of the General Manager defined regarding his/her term, conditions of conduct, and authority? [1. Not at all, 2. Not very well, 3. Fairly well, 4. Well, 5. Very well]			
			1st	Q36: Regarding the utilities in your country which belong to the central or local governments, do the General Managers of these utilities have independent authority for operation and maintenance of facilities (excluding tariff setting and long-term planning)? [1. Not at all, 2. Not very much, 3. Fairly good authority, 4. Good authority and 5. Total authority]		
			1st	Q37: In general, how much positive and negative influence do central government or local governments have over the appointment of staff in water utilities, regarding sustainable capacity development? [1. Strong influence, 2. Some influence, 3. Almost no influence or no influence]			
			2nd	Q38: What kinds of positive and negative influences do politicians have on water utilities in terms of even water distribution to different areas (e.g. different electoral districts)?			
			2nd	Q39: Are water tariffs kept significantly low under any political influence? [1. Yes - very low, 2. Yes - low, 3. No - not low]			
			2nd	Q40: How low are the salary and benefits in your water utility in comparison to those of similarly qualified persons in the corresponding private sector? [1. Less than a half that of the private sector, 2. More than 50% but less than 100% of the private sector, 3. Similar level to private sector, 4. Higher than private sector]			
			2nd	Q41: How well are performance based incentives (pay rises, promotions and bonuses based on individual performance) working in your utility? [1. Do not exist, 2. Exist but not working, 3. Working to some extent, 4. Working fairly well, 5. Working very well]			
	Funding	Investment	1st	Q42: How well are the central and local government procedures for helping water utilities access low-interest funds (including international funds) and subsidies for facility improvement working? [1. Not working at all, 2. Working a little, 3. Working to some extent, 4. Working well, 5. Working very well]			
			2nd	Q43: Does the urban water sector (i.e. supervisory organisations and water utilities) publish publicly accessible information, to help attract external investment from donors and the private sector (e.g. publication of annual reports and future plans on the internet)? [1. No public information, 2. Limited public information , 3. Moderate amount of public information, 4. Good level of public information, 5. Very good level of public information]			
			2nd	Q44: Are the levels of total investment and/or total revenue in the sector monitored every year based on financial statements reported from each utility? [1. Not monitored at all, 2. Total investment is monitored but total revenue is not monitored, 3. Both total investment and total revenue are monitored]			
			2nd	Q45: How much has the overall investment in the urban water supply sector increased in the last five years? [1. Reduced significantly, 2. Reduced slightly, 3. Almost the same level, 4. Increased, 5. Increased greatly]			
		Subsidy	1st	Q46: Does the central government have procedures for providing subsidies or low-interest loans to utilities meeting certain conditions, for capital investment in water source development, and construction of purification plants and/or pipe networks? [1. No procedures, 2. There is an unclear procedure, 3. There is a clear procedure but it is not yet implemented, 4. There is a clear procedure and some implementation, 5. There is a clear procedure and significant implementation]			
			2nd	Q47: Does the sector's supervisory organization have procedures for providing subsidies to small utilities to support mergers/clustering in order to improve their service quality and financial stability? [1. No procedures, 2. There is an unclear procedure, 3. There is a clear procedure but it is not yet implemented, 4. There is a clear procedure and some implementation, 5. There is a clear procedure and significant implementation]			

Category			Priority (優先度)	Question		Answer
Large	Medium	Small				
			2nd	Q48: Is there an inter-ministerial agreement (or equivalent) to provide electricity subsidies to water utilities (whereby the water utility will be supported by the power supply ministry or its agencies)? [1. No such agreement 2. No, but some utilities get electricity at subsidized price, 3. Yes, but subsidies are not significant, 4. Yes, and subsidies are significant]		
		Private sector	1st	Q49: Has the involvement of the private sector in the operation, maintenance and management of water utilities increased significantly in recent years in your country? [1. No increase or decrease, 2. Increased a little, 3. Moderate increase, 4. Large increase]		
			2nd	Q50: How well are water utilities with more private sector involvement working, in comparison with water utilities with less private sector involvement? [1. Much worse, 2. Worse, 3. Similar, 4. Better, 5. Much better]		
			2nd	Q51: How much is private sector involvement in the management of water utilities expected to increase in your country? [1. No change expected, 2. Small increase expected, 3. Moderate increase expected, 4. large increase expected]		
Training at national or regional level		Training centre, etc.	1st	Q52-1: Are there any organizations or independent training centres providing training to staff of multiple water utilities at a national or regional level? [Yes or No]		
			1st		Q52-2: If Yes, please describe the name of main training centre/organization, training courses provided, which type of staff are offered training, and number of trainees.	
			2nd	Q52-3: If Yes, how much improvement is required for each of the following aspects of their training? [1. Huge improvement required, 2. Much improvement required, 3. Some improvement required, 4. A little improvement required, 5. No improvement required]	1-1) Suitability of the venue or building	
			2nd		1-2) Installed facilities, equipment and instruments for training	
			2nd		1-3) Adequate financing of O&M costs of training	
			2nd		2-1) Management capacity for organizing and handling training programs	
			2nd		2-2) Technical and/or communication capacity of the trainers	
			2nd		3-1) Recognition by the central government of the need for training of water utilities' staff; support from local government and regulatory bodies	
			2nd		3-2) Recognition of the need for training among the water utilities	
			2nd		4-1) Incentives for the staff working for the training centre (centre managers, trainers, etc.)	
			2nd		4-2) Incentives for participants from water utilities	
			2nd		4-3) Ease of undertaking training for participants (transportation, fee, timing, etc.)	
			2nd		5-1) Ensuring that programs and materials match policy, regulations, guidelines on water supply	
			2nd		5-2) Ensuring that programs and materials meet the needs of technical staff (e.g. engineers, technicians) in water utilities	
			2nd		5-3) Ensuring programs and materials meet the needs of administration and management staff (e.g. accountants, bill collectors, managers) in water utilities	
			2nd		5-4) Ensuring programs and materials are based on personnel evaluation in water utilities	
			2nd		5-5) Ensuring programs and materials are consistent with public/vocational qualification requirements and certifications	
			2nd		5-6) Ensuring programs and materials are consistent with current research	
			2nd	Q53: Are there any workshops or training centres at a national or regional level which can provide facilities, equipment and technical support to water utilities for the following aspects? [Yes or No]	1) Testing the accuracy of customer and bulk water meters	
			2nd		2) Repair of mechanical or electrical equipment such as pumps	
			2nd		3) Basic operation of different pumps and valves	
			2nd		4) Basic installation of different pipes and fittings	
			2nd		5) Training yard designed for practicing leakage detection	
		Regulator	1st	Q54-1: Have there been any training programs carried out for the regulatory body inside or outside the country? [Yes or No]		
			1st		Q54-2: If Yes, please describe the training programs.	
		Cooperative ties	2nd	Q55-1: Are there any large and/or advanced water utilities which provide training to other utilitie(s) having less capacity? [Yes or No]		
			2nd		Q55-2: If Yes, please name the water utilities providing training, the training courses provided, which employees are targeted for training, and the number of trainees.	
			2nd	Q56-1: Are there any organizations or associations helping to coordinate communication between different national and local stakeholders in the water sector (e.g. between water utilities, consultants, contractors, suppliers, etc)? [Yes or No]		
			2nd		Q56-2: If Yes, please name these organizations.	
			2nd	Q57-1: Are there any organizations conducting continuous research in the water sector? [Yes or No]		
			2nd		Q57-2: If Yes, please name these organizations.	
			2nd	Q58-1: Are there any organizations (e.g. water industry associations, universities) which dispatch lecturers/trainers to water utilities? [Yes or No]		
			2nd		Q58-2: If Yes, please name these organizations, the expertise of dispatched lectures/trainers, the target trainees, and the number of trainees.	
		Training for small contractors	2nd	Q59-1: Are there any training programs on construction quality control for small contractors who install service pipes, water meters and/or branch distribution pipes, etc. (in order to improve their work quality and reduce leakage etc)? [Yes or No]		
			2nd		Q59-2: If Yes, please name the training centre/organization in charge, the type and scale of their training courses and approx. number of contractors receiving training each year.	
Other stakeholders		Beneficiaries	1st	Q60-1: Are there any reports containing socio-economic surveys regarding water supply in your country? [Yes or No]		
			1st		Q60-2: If Yes, please provide information on the reports, such as title, year of survey and implementation organization.	
		Donors	1st	Q61: Is there a well functioning channel for coordination between national/regional governments and donors to discuss and allocate projects, etc? [1. No channel exists, 2. It exists but is not functioning well, 3. It exists and is functioning well]		
			2nd	Q62: Which international donors are contributing significantly to your utility, and what roles do each of the contributing donors perform for your utility?		
		Small suppliers, etc.	2nd	Q63: Does the water sector have good control over small/community water supply systems (initially or notionally developed for irrigation, etc.) and/or water vendors which cannot provide good quality drinking water, in order to prevent people from health problems or prevent licensed urban water utilities from losing their customers? [1. They are not controlled at all, 2. They are not controlled very well, 3. They are fairly well controlled, 4. They are well controlled, 5. They are very well controlled]		
		Others	2nd	Q64-1: Are there any other significant stakeholders in the water sector besides the water utilities? [Yes or No]		
			2nd		Q64-2: If Yes, who are they and what are their roles?	

2.3 基本ツール③ 水道事業体の一般情報記入フォーム – Basic Tool ③: Utility General Form (UGF)

オートフィルターによる質問の絞込み方法（Excel2002の場合）
1) 優先検討項目のみ: 1stを選択
2) 詳細検討項目も含める: すべてを選択

Category	Priority (優先度)	Question		Answer	
Basic information	1st	Q1: Utility name	1) Full name		
	1st		2) Acronym or abbreviated name		
	1st	Q2: Head of water utility	1) Name		
	1st		2) Title		
	2nd	Q3: Contact person	1) Name		
	2nd		2) Title		
	2nd		3) Email address		
	2nd		4) Telephone		
	2nd		5) Fax		
	2nd		6) Mailing address		
	2nd	Q4: In which year was your utility established?			
	2nd	Q5: In which month does the fiscal year start in your utility?			
Utility type and responsibilities	1st	Q6: Does your utility provide the following services?	1) Piped water supply services [Yes or No]		
	1st		2) Wastewater services [Yes or No]		
	1st		3) Stormwater drainage [Yes or No]		
	1st		4) Solid waste services [Yes or No]		
	1st		5) Other, please specify.		
	1st	Q7: What type of utility is it?	1. National government water department (e.g. part of a ministry) - not ring fenced (i.e. financial information for water/wastewater functions is not reported separately from other government activities); 2. Local government water department (e.g. part of a municipality) - not ring fenced (see 1.); 3. National government water department (e.g. part of a ministry) - ring fenced (i.e. financial information for water/wastewater functions are reported separately from other government activities); 4. Local government water department (e.g. part of a municipality - ring fenced (see 3.); 5. Provider wholly owned by local or national government, operating under commercial law; 6. Jointly owned provider (Government and Private) operating under commercial law; 7. Not-for-profit provider operating under commercial law; 8. Privately owned provider operating under commercial law. Note: Generally, the further down the list, the higher the flexibility of management and necessity for governance of the utility.		
	1st	Q8: To what extent is the private sector involved in your utility? Please choose up to 3 from the following: [1. Not at all, 2. Service contract(s), 3. Management contract(s), 4-1. Affermage**1 lease contract(s), 4-2. Other lease contract(s), 5. Concession contract(s), 6. Build, (own,) operate & transfer (BOOT, BOT) contract(s), 7. Full private sector ownership and operation, 8. Other type of public private partnership (PPP) including amalgamation contract]. *Note:* **1 - Under an affermage contract, a private company is paid a fee (referred to as the "operator's water supply rate" or sometimes the "operator's tariff"), which is the price (usually expressed per m^3) for the volume of water produced and sold that the operator requires to cover all the costs of running the system. This price is the parameter that the bidders compete on. The operator's payment is calculated according to a formula set out in the affermage contract, which may contain factors designed to reward performance in certain areas. The operator collects revenue from consumers on behalf of the government according to the tariffs set by the state, retains the amount of their fee, and remits the difference to the government, who uses the balance to pay for investments made by the public authority.			
	1st				
	1st				
	2nd	Q9-1: Are there any fixed assets (water supply facilities, etc.) which your utility uses but does not own? [Yes or No]			
	2nd		Q9-2: If Yes, please specify these assets and their owners.		
	2nd		Q9-3: If Yes, is your utility responsible for including the depreciation of these fixed assets in your utility's financial statement or cost recovery calculations? Please describe how your utility handles and reports the depreciation costs of those fixed assets that are utilised by the utility but owned by others.		
	2nd	Q10-1: Is your utility responsible for the following aspects of water supply, and how does your utility implement them?	1-1) Capital investment for water source development, including construction of intake and raw water transmission facilities [1. Yes, responsible and undertaken without external funding, 2. Yes, responsible but receive external funding , 3. No, not responsible]		
	2nd		1-2) Capital investment for major water supply facilities including purification plants, pump stations, treated water transmission and distribution trunk mains for major service area expansions, major rehabilitation, etc. [1. Yes, responsible undertaken without external funding, 2. Yes, responsible but receive external funding, 3. No, not responsible]		
	2nd		1-3) Capital investment for distribution branch mains and house connections for major service area expansions, major rehabilitation, etc. [1. Yes, responsible and undertaken without external funding, 2. Yes, responsible but receive external funding , 3. No, not responsible]		
	2nd		2-1) O&M for production for your utility [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		
	2nd		2-2) O&M for production for other utilities (bulk supply) [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		

Category	Priority (優先度)	Question		Answer	
	2nd	Q10-2: If your answer is "3. No", which organization is responsible for these aspects?	2-3) O&M of distribution systems other than pipe installation and replacement [1. Yes and do not outsource it, 2. Yes, but outsource it, 3. No]		
	2nd		2-4) Small scale daily replacement/extension of distribution branch mains and installation/replacement of house connections [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		
	2nd		2-5) Leak detection and repair [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		
	2nd		3-1) Reading of customer meters [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		
	2nd		3-2) Billing & collection [1. Yes, responsible and do not outsource it, 2. Yes, responsible but outsource it, 3. No, not responsible]		
	2nd		4-1) If your utility is responsible for other work, please specify and describe how it is undertaken.		
	2nd	Q11-1: Has there been any sector/utility reform or significant change affecting your utility's institutional form, responsibility or organizational structure in recent years? [Yes or No]			
	2nd		Q11-2: If Yes, please describe the reform or significant changes and explain how your utility has been dealing with the transition.		
Reports and databases	1st	Q12-1: Does your utility prepare an annual report? [Yes or No]			
	1st		Q12-2: If Yes, in which year was the latest annual report prepared?		
	1st	Q13-1: Does your utility have a Master Development Plan? [Yes or No]			
	1st		Q13-2: If Yes, when was it prepared?		
	1st		Q13-3: If Yes, what is the target year of the master plan?		
	1st	Q14: Are the following aspects of the water utility's operation computerized or automated?	1) Document management [Yes or No]		
	1st		2) Asset/facility management [Yes or No]		
	2nd		3) Pumping [Yes or No]		
	2nd		4) Treatment [Yes or No]		
	2nd		5) Billing/customer management [Yes or No]		
	2nd		6) Accounting [Yes or No]		
	2nd		7) Complaints management [Yes or No]		
	2nd		8) Personnel systems [Yes or No]		
	2nd		9) Other, please specify.		
Service area	1st	Q15-1: Which areas is the utility responsible for? [1. Only a principal city or town, 2. Multiple cities or towns, 3. Region, state or province, 4. Nation, 5. Other]			
	1st		Q15-2: If 2. Multiple cities or towns, how many cities or towns are under its responsibility?		
	1st		Q15-3: If 5. Other, please describe.		
	1st	Q16: What is the nature of the service areas? [1. Urban, 2. Semi-urban, 3. Rural, 4. Urban, semi-urban and rural, 5. Urban and semi-urban, 6. Semi-urban and rural]			
	1st	Q17: What is the population served with piped water supply ("000 inhabitants) (same as IBD_30 of LPI)			
	2nd	Q18: Size of present service areas (square km)			
	2nd	Q19: Number of piped water supply connections ('000 connections)	1) Domestic (households)		
	2nd		2) Non domestic (industrial, commercial, institutional, other)		
	2nd		3) Bulk water connections		
	2nd		4) Total (same as IBD_41 of LPI)		
	2nd	Q20: Please calculate the average population provided with piped water supply per town or city (= [Q17] / [Q15-2]) ('000 inhabitants/town or city)			
	2nd	Q21: Please calculate average household size of served population (= [Q17] / [Q19-1)]) (persons/domestic connection)			
Facilities	1st	Q22: Which of the following are sources of raw water?	1) Bulk water from another utility/company [Yes or No]		
	1st		2) Storage reservoir/impoundment, [Yes or No]		
	1st		3) Direct abstraction of river water [Yes or No]		
	1st		4) Groundwater and river bed water [Yes or No]		
	1st		5) Other, please specify		
	2nd	Q23-1: Which methods of treatment are used in your utility? [1. Disinfection but not filtration and flocculation, 2. Disinfection and filtration but not flocculation, 3. Disinfection, filtration and flocculation, 4. Other]			
	2nd		Q23-2: If "4. Other", please specify.		

2.4 基本ツール④: 水道事業体用基本チェックリスト – Basic Tool ④: Utility Basic Checklist (UBC)

(1) 本体部分 – Main Part

関連する援助タイプが施設投資(FI)とキャパシティ・デベロップメント(CD)の両方の場合には、「主要援助タイプ / 非主要援助タイプ」の順で記述してある（例:「FI / CD」）。
主要援助タイプについては、基本的には各質問が含まれる大カテゴリーと一致している。

この水道事業体用基本チェックリストに含まれる質問は、すべて1st Priorityである。一方、水道事業体用詳細チェックリスト(基本ツール⑤)には、2nd から 4th Priorityまでの質問が含まれている。

レベル4は、途上国の目標となるレベルであり、レベル5は先進国のレベルである。

Category			Project Type (援助形態)	Priority (優先度)	Question (Reference No. of the same indicator if it is included in BT①: LPI)	Level					Answer (1 - 5)
Large	Medium	Small				1: Very Serious	2: Serious	3: Not Good Enough	4: Good	5: Very Good	
						This level reflects the conditions of water utilities which need all-round assistance in all fields.	This level reflects the conditions of water utilities which need broad assistance in many fields.	This level is reflects the conditions of water utilities which need partial assistance in some fields.	This level reflects the conditions which water utilities in developing countries should aim for in the foreseeable future.	This level reflects the conditions of water utilities in developed countries.	
Aspects to be improved mainly by Facility Investment (FI)	Overall		FI/CD	1st	Q1: Existence of long or mid-term plan for facility expansion, rehabilitation, etc.	Long or mid-term plan for facility expansion, rehabilitation, etc. does not exist at all.	Long or mid-term plan for facility expansion, rehabilitation, etc. exists but its target year has already passed.	Long or mid-term plan for facility expansion, rehabilitation, etc. exists but it has not been updated, although its target year has not yet passed.	Updated long or mid-term plan for facility expansion, rehabilitation, etc. exists but there are problems with its timely implementation.	Updated long or mid-term plan for facility expansion, rehabilitation, etc. exists and has encountered few or no problems in its implementation.	
			FI/CD	1st	Q2: Continuity of supply	Mostly intermittent supply, averaging approx. every 4 days or less.	Mostly intermittent supply, averaging approx. every 1-3 days, with some served areas receiving continuous supply.	Intermittent supply and continuous supply are both common in the served areas.	Mostly continuous supply, but still there are some served areas with intermittent supply due to small utilities' inability to employ operators for 24 hours, high water demand during summer, etc.	Continuous supply in all served areas except for special cases such as serious drought.	
			Average_Overall								-
	Expansion	Water supply service coverage	FI	1st	Q3: Overall water supply coverage (IBI 1.1)**1	Less than 50%	50-69%	70-84%	85-94%	95%-100%	
			FI/CD	1st	Q4: Water supply coverage for low income groups	Majority of low income groups (including the urban poor) do not have piped water supply (including public taps/standpipes).	Around a half of low income groups (including the urban poor) do not have piped water supply (including public taps/standpipes).	Majority of low income groups (including the urban poor) have piped water supply (including public taps/standpipes).	Almost all the low income groups (including the urban poor) have piped water supply (including charged public taps/standpipes but excluding free public taps/stand pipes).	Almost all the low income groups have house connections.	
		Purification plant	FI	1st	Q5: Surplus purification capacity OI_2)**2	Less than - 30%	Less than -10%	Less than 0%	0 - 5%	More than 5%	
		Average_Expansion									-
	Rehabilitation/replacement	Conditions of facilities	FI	1st	Q6: Civil structures (such as basins and chambers in water purification plants)	Water leakage from civil structures is common, and some of these problems can only be solved by replacement rather than partial repair.	Water leakage from civil structures is common, but these problems can probably be solved by partial repair.	Water leakage from civil structures happens sometimes.	Water leakage from civil structures is rare.	Water leakage from civil structures almost never happens unless a strong earthquake hits, as regular assessments of facility strength are undertaken.	
			FI	1st	Q7: Transmission and distribution mains**3	More than 75% of transmission and distribution mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	50 - 75% of mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	25 - 49% of mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	10 - 24% of mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	Less than 10% of mains are asbestos pipes, old cast iron pipes (excluding ductile cast iron) or old steel pipes, with rust significantly blocking flow.	
			FI	1st	Q8: Service connections**4	95 - 100% of house connections are more than 25 years old.	80 - 94% of house connections are more than 25 years old.	60 - 79% of house connections are more than 25 years old.	40 - 59% of house connections are more than 25 years old.	0 - 39% of house connections are more than 25 years old.	
			FI/CD	1st	Q9: Mechanical and electrical equipment**5	More than 30% of installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are not operated due to serious failures.	10 -30% of installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are not operated due to serious failures.	Less than 10% of installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are not operated due to serious failures.	Most or all installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are operated, however some or many operate with low performance or low efficiency.	Most or all installed major mechanical and electrical equipment (such as pumps, electrical transformers and generators) are operated. Most operate with appropriate performance and efficiency.	
		Average_Rehabilitation/Replacement									-
	AVERAGE (FI)										-
Aspects to be improved mainly by Capacity Development (CD)		Overall	CD	1st	Q10: O&M of the facilities	Facilities do not have any O&M manuals.	Facilities have O&M manuals which are not effective, leading to O&M deficiencies.	Facilities have O&M manuals which are not effective, however the current O&M is adequate.	Facilities have effective O&M manuals, which are followed reasonably well.	Facilities have effective and comprehensive O&M manuals, which are followed strictly.	
		Distribution network management	CD/FI	1st	Q11: Drawings of pipe facilities	Available paper drawings of existing transmission and distribution trunk mains are quite limited.	Paper drawings are available for most of the existing transmission and distribution trunk mains, but drawings for branch distribution mains are limited.	Small/Medium utilities: Paper drawings are available for most of the existing distribution mains including branch distribution mains. Large utilities: As above, and a primitive GIS has been established for transmission mains, trunk distribution mains, etc.	Small/Medium utilities: Updated CAD files are available for most of the existing transmission and distribution mains. Large utilities: A GIS has been well-established and updated for management of transmission and distribution mains, with reasonable accuracy.	Small/Medium utilities: A map book of existing mains has been prepared for referencing and is periodically updated using CAD. Large utilities: A GIS has been well-established and updated for management of transmission, distribution mains, customer information, etc. with good accuracy.	
			CD/FI	1st	Q12: Zoning of distribution network**6	Proper zoning of distribution areas and proper sub-zoning of networks in each distribution area, based on considerations of topology and/or different water sources, rarely exist or do not exist at all.	Proper zoning of distribution areas exists to some extent, but proper sub-zoning of networks in each distribution area rarely exists or does not exist at all.	Most distribution areas are properly zoned, but proper sub-zoning of networks in each distribution area is still limited.	All the distribution areas are properly zoned, and most distribution areas have proper sub-zoning in their distribution network.	All the distribution areas are properly zoned, and most distribution areas have proper sub-zoning in their distribution network. Multiple water sources, multiple lines of distribution trunk mains, and mutual connections between distribution areas and sub-zones are also considered for improving the stability of water supply.	
			CD/FI	1st	Q13: Water pressure at customer meter points **7	At most or all points, pressure is not between 5-45m.	At approximately half of the points, pressure is not between 5-45m.	At approximately a quarter of the points, pressure is not between 10-45m.	At most points, usual pressure is between 10-45m but pressure drops significantly in the season of maximum water demand.	At most points, pressure is between 15-45m without significant pressure drop in the season of maximum water demand; or continuous and direct water supply with higher pressure to high buildings without using customers's receiving and elevated tanks has been introduced for water quality control.	

Note:

****1**: Overall water supply coverage = (Population served)/(Population within responsible area of the utility)*100 or (Number of households served)/(Number of households within responsible area of the utility)*100
If responsible areas are not clearly understood, please assume the areas where the water utility will hold responsibility in the foreseeable future. The population served includes those who have direct water supply, yard taps and public taps/standpipes.

****2**: Surplus purification capacity = ((Daily treatment capacity - Maximum daily treatment capacity) / Daily treatment capacity) * 100 (unit: %). The daily treatment capacity (m^3/day) is the volume of water per day purified in the current purification plant. The capacity of failed facilities and those under repair facilities is excluded. The maximum daily treatment capacity (m^3/day) is the recorded maximum volume of water per day supplied by the plant in a year.

****3**: An example of expected lifetime of water mains is 50 years.

****4**: Expected lifetime of house connections can be 25 years or more if using corrosion-resistant materials.

****5**: Examples of expected lifetime of mechanical/electrical equipment and instruments are 20 years and 15 years respectively.

****6**: Proper zoning and sub-zoning of distribution networks is a basic requirement for good pressure control, effective reduction of NRW, etc. The concept of zoning and sub-zoning is explained in *(2) Supporting Figures and Table* .

****7**: Conversion table for different units of pressure is shown in *(2) Supporting Figures and Table* .

****8**: NRW (Non-Revenue Water) ratio = (1-(Annual water charged)/(annual water produced))*100
If all the bulk meters necessary for this calculation are not installed, estimation of this average NRW ratio can be carried out based on some data of NRW in some areas. The difference between NRW and UFW (Unaccounted for Water) is explained in *(2) Supporting Figures and Table* .

****9**: Expected lifetime of customer meters is usually between 8 and 10 years, depending on their type and quality.

****10**: Recommended calibration intervals for bulk flow meters are 5 years for wheel/mechanical type and 1 year for electromagnetic and ultrasonic types. The size of district

Category			Project Type (援助形態)	Priority (優先度)	Question (Reference No. of the same indicator if it is included in BT①: LPI)	Level					Answer (1 - 5)
Large	Medium	Small				1: Very Serious	2: Serious	3: Not Good Enough	4: Good	5: Very Good	
						This level reflects the conditions of water utilities which need all-round assistance in all fields.	This level reflects the conditions of water utilities which need broad assistance in many fields.	This level is reflects the conditions of water utilities which need partial assistance in some fields.	This level reflects the conditions which water utilities in developing countries should aim for in the foreseeable future.	This level reflects the conditions of water utilities in developed countries.	
Aspects to be improved mainly by Capacity Development (CD)	Technical aspects	NRW reduction	CD/FI	1st	Q14: NRW ratio (IBI_6.1)**8	More than 50%	36 - 50%	21 - 35%	10 - 20%	Less than 10%	
			CD/FI	1st	Q15: Customer meters**9	There are no customer meters due to a flat-rate system, or the majority of existing customer meters are not functioning.	Functioning customer meters are supposed to be installed for every household, but more than 30% of them are missing or not working well.	Functioning customer meters are supposed to be installed for every household and replaced with new ones periodically, but more than 10% of them are missing or not working well.	Most households have well-functioning customer meters due to rigorous periodical meter exchange.	Almost all households have well-functioning customer meters with good accuracy.	
			CD/FI	1st	Q16: Bulk meters**10	Bulk meters for accurate measurement of water production and basic control of distribution are not installed at most of the places where they should be; or most of the existing bulk meters do not work well due to lack of maintenance.	There are not enough functioning bulk meters installed at the places requiring them for accurate measurement of water production and basic control of distribution; and existing bulk meters are not well maintained.	There are enough functioning bulk meters for accurate measurement of water production and basic control of distribution, but not enough for calculating NRW ratio of each sub-zone (DMA) for effective NRW reduction. Majority of the existing bulk meters are well maintained.	There are enough functioning bulk meters installed for calculating NRW ratio of each sub-zone (DMA) for effective NRW reduction. Most of the existing bulk meters are well maintained, and important meter readings are recorded periodically.	There are enough functioning bulk meters installed (with good accuracy) for calculating NRW ratio of each sub-zone (DMA) for effective NRW reduction. All of the existing bulk meters are well maintained, and important meter readings are recorded periodically and analysed effectively.	
		Water quality control	CD	1st	Q17: Water quality parameters tested at purification plants	Water quality testing is based on a visual observation of water cleanliness.	Water quality testing is based on periodical simple water quality tests for pH, turbidity, chlorine, etc., using handheld water quality testers or pack test kits. The treated water usually meets existing standards for the parameters tested.	Water quality testing is based on periodical laboratory water quality tests for micro-organisms such as coliforms, and general physical and chemical water quality parameters. The treated water usually meets existing standards for the parameters tested.	Water quality testing is based on continuous and daily water quality monitoring using appropriate water quality testing methods and well-maintained apparatus. The treated water usually meets existing standards for basic parameters selected with reference to the WHO guidelines, etc.	Water quality testing is based on continuous and daily water quality monitoring using appropriate water quality testing methods and well-maintained apparatus. The treated water almost always meets existing standards for comprehensive parameters selected in reference to the WHO guidelines, etc.	
			CD	1st	Q18: Drinkability of tap water**11	In many areas, tap water does not meet water quality criteria for some key parameters (including residual chlorine) and it is not drinkable in some areas even after boiling.	In some areas, tap water does not meet water quality criteria for some key parameters (including residual chlorine), but it become drinkable after boiling in all areas.	In some areas, tap water does not meet water quality criteria for full list of parameters (including residual chlorine), but it become drinkable after boiling in all areas.	In all areas, tap water meets the criteria for the full list of parameters (including residual chlorine) with some exceptions (e.g. in the case of seasonal degradation of water source quality). It is usually drinkable directly from the tap with some risk of water quality degradation due to accidental stoppages of water supply, etc.	In all areas, tap water almost always meets all criteria for the full list of parameters (including residual chlorine), and it is almost always drinkable directly from tap without risk, as long as receiving tanks at end users do not contaminate the water.	
		Average_Technical									-
	Non-technical aspects	Financial improvement	CD	1st	Q19: Cost recovery level (OI_4 is the same as IBI_24.1 if the utility provides water supply services only)**12	Only part of the O&M costs (excluding depreciation of water supply facilities) are covered by water charges. (OI_4 < 1)	All O&M costs (except for depreciation of water supply facilities) are fully covered by water charges. (OI_4 ≧ 1)	All O&M and depreciation costs are covered by water charges. (OI_12 ≧ 1, if not, check OI_14)	All O&M, depreciation and financial costs (interest & capital repayments) are covered by water charges. (1 ≦ OI_13 < 1.01, if not, check OI_15 and OI_16)	All O&M, depreciation and financial costs (interest and capital repayments), and costs for own-capital-funded expansion of facilities (to some extent) are covered by water charges. (OI_13 ≧ 1.01)	
			CD	1st	Q20: Collection ratio (IBI_23.2)**13	Less than 60%	60-74%	75-89%	90-94%	More than 95%	
		Organizational development	CD	1st	Q21: Effective personnel management rules and regulations including incentives**14	Working regulations and base salary systems are not clear.	Working regulations and base salary systems are clear, but there is no incentive scheme in place.	Working regulations and base salary systems are clear, but existing incentive schemes are ineffective.	Working regulations and base salary systems are clear, there are effective incentive schemes in place. Some critical rules on occupational health and safety are communicated to staff.	Working regulations and base salary systems are clear, and there are effective incentive schemes in place. Full set of regulations on occupational health and safety are communicated to staff.	
			CD	1st	Q22: Implementation of training**15	Training is quite rare or not provided at all.	A limited number of training programs on some aspects are provided, however there are no incentives for staff to undertake training programs.	There are minimum levels of training required for important aspects, but incentives for staff to undertake training programs are limited.	An adequate number of training programs are provided on important aspects, including management and technical matters. There are enough incentives for staff to undertake training programs.	A wide range of training programs are available. The completion of these training programs is generally a condition of promotion.	
		Public relations	CD	1st	Q23: Complaint handling	A procedure or information system for complaint handling has not been established, and complaints are currently dealt with on an ad-hoc basis.	A procedure or information system for complaint handling has been established, but there is a large backlog of unresolved complaints.	A procedure or information system for complaint handling has been established, but there are usually some complaints resolved.	An effective procedure and information system for complaint handling has been established, and data is recorded and analysed. There can however be a backlog of complaints in a particular season.	An effective procedure and information system for complaint handling has been established, and data is recorded and analysed. Even in peak complaints season, there is no backlog.	
			CD	1st	Q24: Awareness-raising on NRW reduction, water saving, collection of water charges, etc.**16	No or minimal effective awareness-raising activities have been implemented.	A few effective awareness-raising activities have been implemented.	Several effective awareness-raising activities have been implemented.	Many effective awareness-raising activities have been implemented.	Many effective awareness-raising activities are being implemented continuously.	
		Average_Non-technical									-
	AVERAGE (CD)										-
OVERALL AVERAGE (FI & CD)											-
Aspects to be improved mainly by Program Approach			CD/FI	1st	Q25: Laws and regulations covering the water sector**17	A water supply service act or its equivalent does not exist.	A water supply service act or its equivalent exists, but it does not require your utility to have an independent double-entry accounting system.	A water supply service act or its equivalent exists, and it requires your utility to have an independent double-entry accounting system.	Most of the required laws and regulations listed in note **17 have been established.	All of the required laws and regulations listed in note **17 are well established.	
			FI	1st	Q26: Sewerage coverage (IBI_2.1)**18	0%	Less than 5%	Less than 30%	Less than 50%	More than 75%	
Average_Program Approach											-

ultrasonic types. The size of district meter area (DMA) is recommended to be about 1000 - 3000 households.

**11: Key water quality parameters are assumed to be residual chlorine, turbidity, colour, odour, taste, toxic matter and coliform count. Coverage of testing parameters and standards for water quality criteria can refer to the WHO standards if country-specific water quality standards have not been established.

**12: This assessment should be based on financial statements. The supporting financial indicators for judging the level of cost recovery are shown in *(2) Supporting Figures and Table*.

**13: Billing customers and collecting revenue are two different things. The effectiveness of the collections process is measured by this indicator, while NRW ratio (Q14) is based on amount billed and water production. Collection ratio = (Collected revenue at the end of fiscal year)/(Annual amount billed)*100

**14: Personnel management rules and regulations include: 1) working regulations, 2) base salary system, 3) incentive schemes, and 4) occupational health and safety regulations.

**15: Training programs are required for engineers, technicians, administration staff, managers, etc.

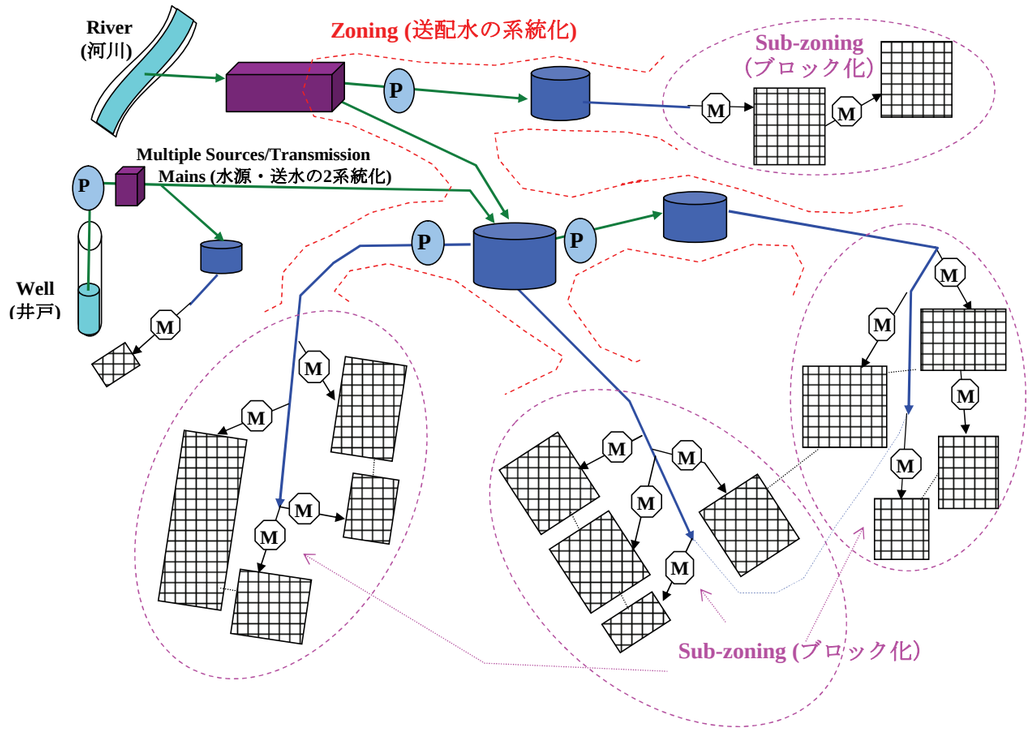
**16: Public awareness can be enhanced through: 1) general public relations & publicity, 2) special promotional programs, 3) monitoring research, 4) painting/writing contests, 5) school education, etc.

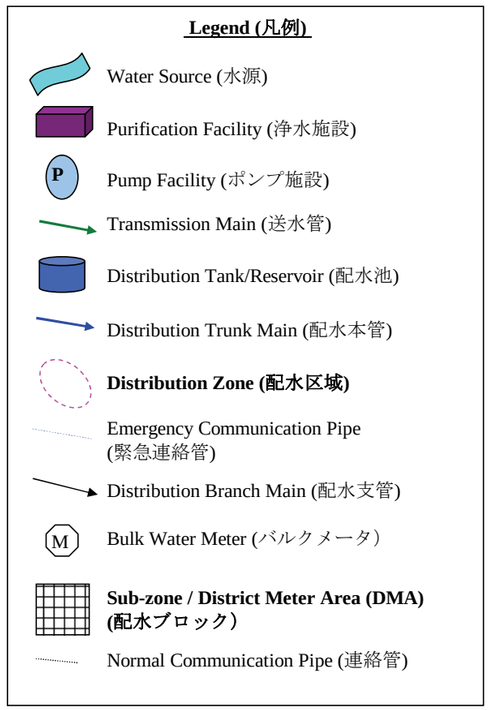
**17: Laws and regulations include: 1) water supply service act, 2) independent "double-entry bookkeeping" accounting requirement for the water utility, 3) water supply service ordinances, 4) regulations related to water intake, including groundwater regulations, 5) labour standards act, 6) road traffic act, etc.

**18: It is assumed that sewerage development does not usually commence until GDP per capita reaches about US$3,000; and becomes full-scale at a GDP per capita of about US$5,000. It is highly possibility that sewerage is minimally developed in the countries and suburban cities where economic levels are low. It is recommended that the water utility explain the level of sanitary facility (toilet) coverage, particularly if it has answered the question on sewerage coverage as level 1(0%) or level 2 (5% or less).

(2) 補助図表 – Supporting Figures and Tables

For Q12: Concept of Zoning and Sub-zoning of Distribution Network

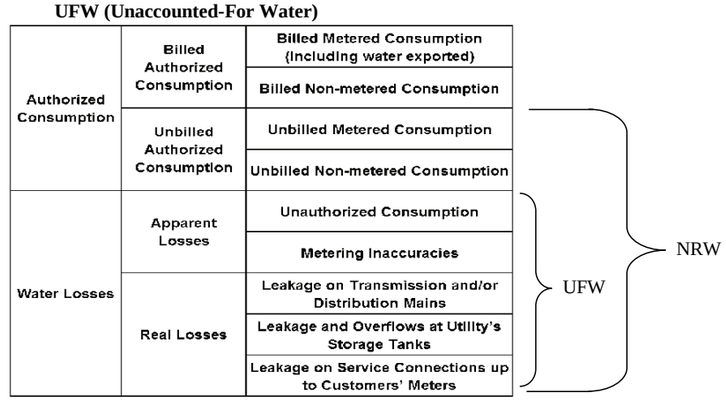




For Q13: Pressure Units Conversion Table

	H_2O Head (m)	Kgf/cm²	Bar	Pascal (Pa) or (N/m²)	Pounds per Square Inch (psi)
H_2O Head (m)	–	0.1	0.09807	9807	1.42
Kgf/cm²	10	–	0.9807	98066	14.2
Bar	10.2	1.02	–	100,000	14.504
Pascal (Pa) or (N/m²)	0.000102	0.0000102	0.00001	–	0.00014504
Pounds per Square Inch (psi)	0.7	0.070307	0.068948	6895	–

For Q14: Water Balance and the Difference between NRW and UFW (Unaccounted-For Water)



For Q19: Table of Supporting Financial Indicators and Data

Info. Type	Category	Reference No. of IBNET Indicator (IBI_), Other Indicator (OI_), IBNET Data (IBD_) and Other Data (OD_)	Name of Supporting Financial Indicator or Name of Supporting Financial Data	Definition of Supporting Financial Indicator or Definition of Supporting Financial Data	Equation with IBNET& Other Data Ref. No.	Answer
Supporting Financial Indicators	Cost Recovery	OI_4 (same as BI_24.1 (if the utility provides water supply services only) and OI_4 in LPI)	Operating ratio for water only, excluding depreciation and financial charges (interest and capital repayments) (%) **1	Total operating (billed) revenue for water / Total operational (O&M) expenses for water services (excluding depreciation). Expressed as a percentage.	=[(IBD_90c)/(IBD_94a)]*100	-
		OI_12	Operating ratio for water only, including depreciation but excluding financial charges (interest and capital repayments) (%)	Total operating (billed) revenue for water / (Total operational (O&M) expenses for water services (including depreciation). Expressed as a percentage.	=[(IBD_90c)/[(IBD_94a)+(OD_16)]]*100	-
		OI_13	Operating ratio for water only, including depreciation and financial charges (interest and capital repayments) (%)	Total operating (billed) revenue for water / (Total operational (O&M) expenses for water services (including depreciation) + Financial charges including interest and capital repayments). Expressed as a percentage.	=[(IBD_90c)/[(IBD_94a)+(OD_16)+(OD_17)+(OD_18)]]*100	-
	Proportion of costs related to cost recovery	OI_14	Ratio of depreciation related to water services to total operating (billed) revenue for water (%)	Depreciation related to water services / Total operating (billed) revenue for water. Expressed as a percentage.	=[(OD_16)/(IBD_90c)]*100	-
		OI_15	Ratio of interest related to water services to total operating (billed) revenue for water (%)	Interest related to water services / Total operating (billed) revenue for water. Expressed as a percentage.	=[(OD_17)/(IBD_90c)]*100	-
		OI_16	Ratio of capital repayments related to water services to total operating (billed) revenue for water (%)	Capital repayments related to water services / Total operating (billed) revenue for water. Expressed as a percentage.	=[(OD_18)/(IBD_90c)]*100	-
Supporting financial data for calculating the above indicators **4	Cost recovery	IBD_90c (same as IBD_90c in LPI)	Total operating (billed) revenue for water (LC/year)	Total billing of water services, connection fees, well abstraction fees, reconnection fees and other operational revenues (including subsidies**2 but excluding all taxes**3), for water services only; as shown in the utility's Profit and Loss statement (P/L).		
		IBD_94a (same as IBD_94a in LPI)	Total operational (O&M) expenses for water, excluding depreciation (LC/year)	Operating expenses excluding depreciation and financing charges (interest and capital repayments) for water supply services (as shown in the utility's Profit and Loss statement (P/L)).		
	Proportion of costs related to cost recovery	OD_16	Depreciation related to water services (LC)	Total of depreciation expenditures and asset shrinkage (if estimated separately).		
		OD_17	Interest related to water services (LC)	Total of interest paid and expenses for bonds handled (if recorded separately).		
		OD_18	Capital repayments related to water services (LC)	Capital repayments - this is the sum of repayments for loans/bonds on previous capital investments related to water services in the year.		

Abbreviation:
LC = Local Currency, P/L = Profit and Loss statement

Note:

**1: According to the Japanese JWWA guidelines, Operating Ratio should be calculated including depreciation into the operational expenses; however the IBNET's definition of Operating Ratio excludes depreciation from the operational expenses. Therefore, the indicator value of OI_4, which is based on IBNET's definition, is higher than that calculated based on the definition of the JWWA Guidelines. The definition of OI_12 uses the definition of Operating Ratio from the JWWA Guidelines.

**2: Subsidies which can be included in "other operational revenues" are external subsidies provided to the water utility, to fully or partially cover water and connection charges for registered low-income customers.

**3: In some countries, special taxes related to water services are collected from residents (in addition to the usual water and connection charges), for activities such as cleaning , use of fire hydrants, etc.

**4: All the data for calculating the supporting financial indicators are reported in the utility's Profit and Loss statement (P/L).

(3) 結果グラフの自動作成 – Auto-Preparation of Result Graph

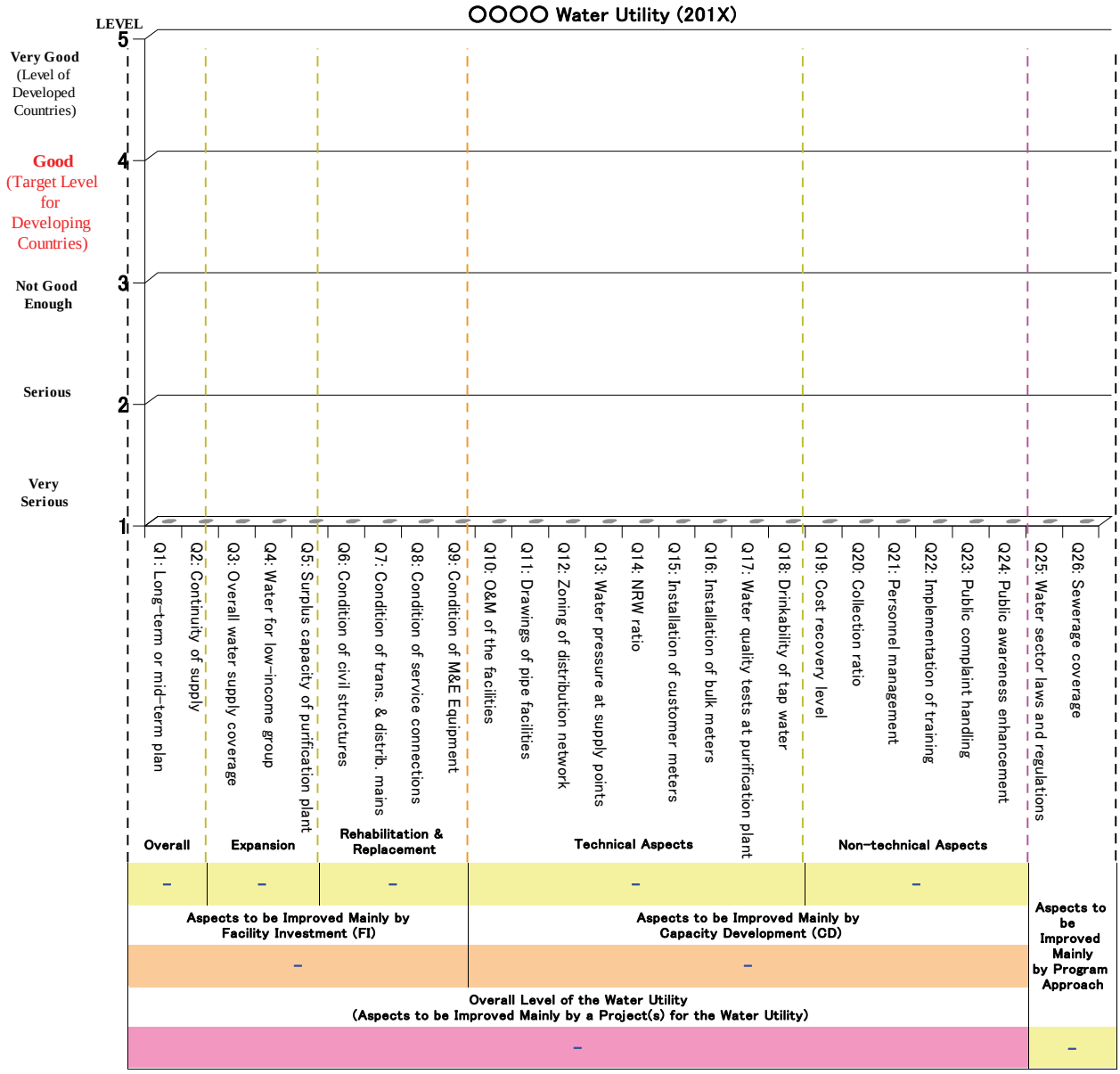


Figure: Results of the Capacity Assessment for 〇〇〇〇 Water Utility using Utility Basic Checklist (Basic Tool ④)

2.5 基本ツール⑤: 水道事業体用詳細チェックリスト - Basic Tool ⑤: Utility Detailed Checklist (UDC)

(1) 本体部分 - Main Part

援助形態による質問の絞り込み方法 (Excel2002の場合)
1) CD関連質問項目: ｵﾌﾟｼｮﾝ→CDを含む
2) FI関連質問項目: ｵﾌﾟｼｮﾝ→FIを含む
注: CD: ｷｬﾊﾟｼﾃｨ･ﾃﾞﾍﾞﾛｯﾌﾟﾒﾝﾄ, FI: 施設投資, CD/FI: 両方だがよりCD, FI/CD: 両方だがよりFI

優先度による質問の絞り込み方法 (Excel2002の場合)
1) 2nd priority の質問のみに絞り込む場合: 2nd を選択
2) 3rd priority の質問まで含める場合: ｵﾌﾟｼｮﾝ→ 2ndと等しい OR 3rdと等しい
3) 4th priority の質問まで含める場合: すべてを選択
注: ﾌﾟﾛｼﾞｪｸﾄの形成段階(援助ｽｷｰﾑの決定等)には、基本ツール④の水道事業体用基本ﾁｪｯｸﾘｽﾄ(UBC)の1st Priorityの質問を用いる

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer	
Large	Medium	Small						
Internal policy		Mission/vision	CD/FI	2nd	Q1: Does your utility publish a mission statement (the duties of the utility) and vision statement (what your utility aims to achieve), or a corporate policy stating its social responsibilities? [Yes or No]			
		Individual policies	CD/FI	2nd	Q2-1: Does your utility have a policy on each of following items? [Yes or No] Q2-2: If Yes, is the policy followed effectively? [Yes or No]	1) Expansion of water supply coverage		
			CD/FI	2nd		2) Minimum water service levels including drinking water quality and duration/amount of water supply		
			CD/FI	2nd		3) NRW reduction and water saving		
			CD/FI	2nd		4) Water supply to the urban poor		
			CD/FI	3rd		5) Water resource development		
			CD/FI	3rd		6) Merging of nearby utilities and clustering of small utilities to improve efficiency (facility integration, financial integration and/or services/office administration integration)		
			CD/FI	3rd		7) Human resource development for the sector		
Facility Investment [FI] - Overall (1st: Q1-Q2/ UBC)	Planning (1st: Q1-Q2/UBC)	Long-term or mid-term planning (1st: Q1-Q2/ UBC)	FI/CD	2nd	Q3-1: Does your utility have its own planning department to prepare a mid-term or long-term (approx.10-20 years) development plan (ie a master plan) ? [Yes or No]			
			FI/CD	3rd		Q3-2: If Yes, how often is the mid-term/long-term plan revised?		
			CD	3rd		Q3-3: If Yes, approximately how many staff understand the outline of the mid/long-term plan (staged system improvement, additional water sources, etc.)? Q3-4: Is this enough capacity for sharing future goals and co-ordinating efforts effectively within the utility?		
			FI/CD	3rd		Q3-5: If Yes, does the latest long-term or mid-term plan include any targets for increasing water supply (eg longer supply hours or continuous supply)?		
			FI/CD	4th		Q3-6: If Yes, does the latest long-term or mid-term plan include any water demand projections which are based on the estimated future population in the area of your utility's responsibility?		
			FI/CD	4th		Q3-7: If Yes, is progress towards the implementation of the plan (e.g. disbursement of budget, measured reduction on NRW, etc.) monitored or evaluated?		
		Short-term planning	CD	2nd	Q4: Which of the following best describes your utility's internal planning process for short-term facility improvements (excluding planning by donors)? [1. Ad-hoc applications , budget allocation for urgent problems only , 2. Budget allocation for facility improvement for the next year only, 3. A short-term facility improvement plan is prepared internally, but budget is not allocated according to the plan, 4. Improvement of facilities is implemented according to internally prepared short-term facility improvement plan (approx. 2-5 years) that identifies targets and resources for change and improvement]			
			CD	3rd	Q5-1: Approximately how many staff are involved in developing facility improvement plans and applying for budget , per year? Q5-2: Is this enough capacity for formulating effective facility improvement plans and securing the required budget every year without failure? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
		Hydraulic analysis (1st: Q1-Q2/ UBC)	CD	3rd	Q6-1: Approximately how many staff have a good understanding of hydraulic analysis of distribution networks (coefficient values for different types of pipes, allocating water demand to networks, etc.)? Q6-2: Is this enough capacity to effectively check all network improvement reports prepared by consultants? [1.Not nearly enough, 2. Not quite enough, 3. Enough]			
	Design and construction supervision (1st: Q2/ UBC)	Design guidelines (1st: Q2/ UBC)	CD	2nd	Q7: How well does your utility use the national guidelines for the design of water supply facilities? [1. Does not use, 2. Rarely use, 3. Use it for occasional reference, 4. Use it for checking design works prepared by consultants, 5. Use it for designing facilities internally]			
			CD	2nd	Q8-1: Does your utility have its own guidelines for the design of any water supply facilities? [Yes or No]			
			CD	2nd		Q8-2: If Yes, please explain why your utility has its own guidelines.		
		Basic design capacity (1st: Q2/ UBC)	CD	3rd	Q9: Does your utility have the capacity to design minor facilities such as small-diameter distribution pipes, valve chambers, etc. and select small pumps properly without the help of consultants? [Yes or No]			
			CD	3rd	Q10: Does your utility have the capacity to prepare Terms of Reference for designing major facilities such as water purification plants, pumping stations, trunk distribution mains etc. without the help of consultants? [Yes or No]			
		Cost control and construction safety	CD	4th	Q11-1: How many staff can explain the structure and components (labour costs, material costs, equipment costs) of the unit price tables for typical construction works such as pipe installation, concreting, earthworks, etc? Q11-2: Is this enough capacity to have control over the quality and price of contractors' construction works? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
			CD	4th	Q12: How well does your utility control safety in construction works? [1. Does not have any safety manuals, 2. Has a safety manual which is not effective and there are many safety problems in construction works, 3. Has a safety manual which is not effective but the construction work safety is adequate, 4. Has an effective safety manual but it is not followed diligently, 5. Have an effective safety manual and it is followed diligently]			
	Overall water supply coverage (1st: Q3/ UBC)		FI	2nd	Q13: Is the extent/boundary of your utility's responsible area clearly defined with respect to future expansion of water supply services? [1. Not clear at all, 2. Clear to some extent, 3. Clear]			
			CD/FI	2nd	Q14: How critical are the following issues for the urban poor,	1) Limited water distribution network coverage in poor urban areas		
			CD/FI	2nd		2) Limited piped water supply volumes to poor urban areas		

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer
Large	**Medium**	**Small**					
Facility Investment [FI] - Expansion (1st: Q3-Q5/ UBC)	**Poor urban areas (1st: Q4/ UBC)**	**Overall (1st: Q4/ UBC)**	CD/FI	2nd	when trying to have house connections? [1. Very serious, 2. Serious, 3. Not very serious, 4. Not serious at all, 5. This problem does not exist]	3) Affordability of periodical water charges	
			CD/FI	2nd		4) Affordability of connection fee (excluding material and construction costs) which is charged by the utility	
			CD/FI	2nd		5) Affordability of other connection costs (material and construction) than connection fee	
			CD/FI	2nd		6) Illegal land ownership status, which disallows application for house connection	
			CD/FI	2nd	Q15-1: Does your utility implement or support any other special program for the urban poor? [1. Yes, 2. No]		
			CD/FI	2nd		Q15-2: If Yes, please describe these special programs.	
		Expansion	FI	2nd	Q16-1: Does your utility have any facility expansion plans to cover more poor urban areas? [1. Yes, 2. No]		
			FI	2nd		Q16-2: If Yes, please describe these expansion plans.	
			FI/CD	4th	Q17: Does your utility collect extra revenue from its existing customers (other than for O&M), to fund the expansion of facilities (distributing network, etc.) into unserved poor urban areas? [1. Not at all, 2. To some extent, 3. Enough for substantial expansion]		
		Public taps	CD/FI	3rd	Q18-1: Does your utility provide any public taps in poor urban areas? [1. Yes - free water, 2. Yes - not free but subsidized, 3. Yes - but not free or subsidized, 4. No.]		
			CD	4th		Q18-2: If Yes (1. or 2.), is over-use or wastage of water controlled at the public taps? [1. not controlled at all, 2. Controlled to some extent, 3. Controlled but not enough, 4. Controlled well, 5. Controlled very well]	
			CD	4th	Q19: Does your utility have adequate staff to facilitate community development in poor urban areas? [1. Yes, 2. No]		
		Shared connections	CD	3rd	Q20-1: Does your utility provide any shared connections (yard taps) for tenants or neighbouring households in poor urban areas? [1. Yes, landlord or representative pays subsidized charges (depending on the number of households, etc.) after collecting from each household, 2. Yes, but landlord or representative pays un-subsidized charges after collecting from each household, 3. Yes, each household pays subsidized water supply charges separately to the utility, 4. Yes, each household pay unsubsidized water supply charges separately to the utility, 5. No]		
			CD	4th		Q20-2: If Yes (1. to 4.), how effectively does your utility collect water charges from customers using shared taps (yard taps) in poor urban areas? [1. Not effectively at all, 2. Not very effectively, 3. Requires some improvement, 4. Effectively, 5. Very effectively]	
		Individual house connections	CD	3rd	Q21: Does your utility provide direct subsidies to reduce water charges for individual house connections in poor urban areas (excluding cross-subsidies through tariffs)? [1. Yes, 2. No]		
			CD	4th	Q22-1: Does your utility conduct any poverty mapping or/and poverty assessment, to target areas or households for subsidies? [1. Yes, 2. No]		
			CD	4th		Q22-2: If 1.Yes, please describe the outline of the poverty mapping or/and household poverty assessment.	
			CD	4th	Q23: Does your utility provide direct subsidies to reduce connection fees for individual house connections and/or installation costs (material and construction, etc.) for poor urban areas (excluding cross-subsidies through tariffs)? [1. Yes, 2. No]		
			CD	4th	Q24: Does your utility provide any easy-payment system (eg spreading payments over multiple periods) for the initial connection fee and/or ongoing fees for individual house connections in poor urban areas (excluding cross-subsidies through tariffs)? [1. Yes, 2. No]		
	Water resources (1st: Q5/ UBC)	**Limitations**	FI	2nd	Q25: How well-developed are the existing water supply sources, when compared to the existing water demand? [1. Very limited, 2. Limited, 3. Slightly limited, 4. Adequate, 5. Surplus water sources available]		
		Type	FI	3rd	Q26: How can your utility develop new water sources for future water supply? [1. Desalination or re-use of wastewater is necessary, 2. Construction of dam or long-distance transmission of water is necessary, 3. Adequate direct river water intakes can be undertaken inside/near the city, 4. Adequate good quality groundwater or river water can be extracted inside/near the city, 5. Other]		
Facility Investment [FI] - Rehabilitation/replacement (1st: Q6-Q10/ UBC)	**O&M standard of facilities (other than laboratory equipment) (1st: Q6-Q10/ UBC)**	**Operation (1st: Q7, Q9-Q10/ UBC)**	FI/CD	3rd	Q27: How well is Supervisory Control And Data Acquisition (SCADA) utilized in operating water transmission, distribution, etc? [1. Not utilized at all, 2. Partially installed but not utilized effectively, 3. Partially installed and utilized well, 4. Fully installed but not working well, 5. Fully installed and working well]		
			CD	4th	Q28: How many of your utility's pump operators close valves gradually at discharge points before turning off pumps, to avoid water hammer? [1. None, 2. Less than half, 3. Around half, 4. Most of them, 5. All of them]		
		Maintenance (1st: Q6-Q10/ UBC)	CD	2nd	Q29: How well does your utility check and repair instruments such as flow meters and pressure gauges (excluding customer meters and laboratory equipment for water quality testing)? [1. Very inadequately, 2. Inadequately, 3. Needs some improvement (check and repair only for high priority failures), 4. Well (regular check and repair for majority of failures), 5. Very well]		
			CD/FI	2nd	Q30: Does your utility have a clear implementation plan for the future replacement of old pipes? [1. No, not at all, 2. We have a implementation plan but it is not clear nor not updated, 3. Yes, we have a clear implementation plan]		
			CD/FI	3rd	Q31: How well does your utility check and repair civil structures at major facilities such as purification plants and distribution reservoirs? [1. Very inadequately, 2. Inadequately, 3. Requires some improvement (check and repair of high priority failures only), 4. Well (regular check and repair for majority of failures), 5. Very well]		
			CD/FI	3rd	Q32: How well does your utility check and repair mechanical and electrical equipment such as pumps and transformers? [1. Very inadequately, 2. Inadequately, 3. Requires some improvement (check and repair of high priority failures only), 4. Well (regular check and repair for majority of failures), 5. Very well]		
			CD	4th	Q33: Does your utility have enough spare parts in storage for the quick repair of facilities? [1. Not nearly enough, 2. Not quite enough, 3. Enough]		
	Distribution network management (1st: Q11-Q13)		CD/FI	2nd	Q34: Do distribution pipes of inadequate diameter, and extra-long service pipes (for remote houses), cause pressure drop in the distribution network? (This creates water shortages at the end of network or installation of unnecessary new pumps, causing more leakage). [1. Yes, and the problem is very serious, 2. Yes, and the problem is serious, 3. Yes, causes some problems but not serious, 4. No, this is not a problem]		
		Overall (1st: Q14/ UBC)	CD/FI	2nd	Q35: Does your utility have clear implementation plan for comprehensive NRW reduction in future years? [1. No, 2. We have an implementation plan but it is not clear or not updated, 3. Yes, we have a clear implementation plan]		
			CD	3rd	Q36-1: How well does your utility understand major components of its NRW (e.g. leakage, illegal water use and apparent loss at meters)? [1. No understanding, 2. Some understanding, 3. Reasonable understanding with some reliable data 4. Well-understood with some reliable data, 5. Well-understood with good confidence in data]		
			CD	4th		Q36-2: If 2. to 5, please describe the percentages of each component of NRW.	
			CD	4th	Q37: Does your utility have its own facility/equipment for testing the accuracy of customer and bulk water meters? [1. No, we do not test water meters, 2. No, but we outsource meter testing, 3. Yes, but not enough, 4. Yes, we have enough]		

Category			Project Type (援助形態)	Priority (優先度)	Question	Answer
Large	Medium	Small				
Capacity Development [CD] -Technical aspects (1st: Q10-Q18/ UBC)	NRW reduction (1st: Q11-Q16/ UBC)	Water meters (1st: Q15-Q16/ UBC)	CD	2nd	Q38: How often does your utility exchange customer meters? [1. Only change obviously broken meters, 2. Change meters which are obviously broken or have suspected failure based on monitoring of household water consumption, 3. Exchange them less than every 10 years, 4. Exchange them every 5-10 years but not in the all served areas, 5. Exchange them every 5-10 years in all served areas]	
			CD	3rd	Q39: What is the approximate average error in customer water meters used by your utility? [1. Don't know, 2. More than 10%, 3. Between 6% to 10%, 4. Between 3% to 5%, 5. Less than 3%]	
			CD	4th	Q40: In which country are the customer meters used by your utility manufactured?	
		Capacity for leakage reduction	CD	2nd	Q41: How much effort does your utility currently make to reduce leakage? [1. Not enough even to fix all surface (visible) leakages reported by customers, 2. Enough to fix surface leakages reported by customers, 3. Making proactive efforts to detect and repair surface leakages by inspecting water pipes, 4. Conducting underground leakage detection and repair as well as reduction of surface leakages , 5. District Meter Areas (DMAs) are being established for well-controlled leakage reduction]	
			CD	3rd	Q42: Approximately how many days on average does it take to fix leakages once they are reported or detected? [1. More than two weeks, 2. Less than two weeks, 3. Less than one week., 4. Less than four days, 5. Less than two days]	
			CD	4th	Q43: How high is your utility's capacity for underground leakage detection? [1. No or almost no staff have any experience in the field, 2. Some staff have related skills, but underground leakage detection is not conducted according to a plan, 3. It is conducted according a plan using only leak sound detection bars, 4. It is conducted according a plan using leak sound detection bars and leak detectors, 5. It is conducted according a plan using correlation leak detection equipment and/or more advanced equipment]	
			CD	4th	Q44: Which is more critical for your utility regarding leakage reduction: lack of equipment or lack of knowledge? [1. Lack of equipment, 2. Lack of knowledge, 3. Both equally critical]	
		Quality control for pipe installation	CD	2nd	Q45-1: Approximately how many staff can properly install (or supervise contractors to install) house connections or small-diameter distribution pipes without causing leakage? Q45-2: Is this enough capacity to control the construction quality of house connection installations or small-diameter distribution pipes, in order to minimize leakage?. [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	3rd	Q46: Does your utility install house connections without using contractors? [1. Yes, 2. No]	
			CD	3rd	Q47: Does your utility, or its contractors, use pre-assembled house connections to reduce leakage? [1. Yes, 2. No]	
			CD	3rd	Q48: Does your utility, or its contractors, conduct pressure leakage tests after installing house connections? [1. Yes, 2. No]	
	Water quality control (1st: Q17-Q18/ UBC)	Water quality testing (1st: Q17-Q18/ UBC)	CD	2nd	Q49: How well are the required water quality tests carried out? [1. Do not have manuals for water quality testing, 2. Have manuals which are not effective and there are many problems in practice, 3. Have manuals which are not effective but the current practice is adequate, 4. Have effective manuals but they are not followed diligently, 5. Have effective manuals which are followed diligently]	
			CD	3rd	Q50-1: Approximately how many staff can utilize instruments to analyze basic water quality parameters (residual chlorine, turbidity, colour, ph, suspended solids, coliforms, ammonium-nitrogen, jar tests, etc.)? Q50-2: Is this enough capacity to ensure appropriate water quality control? [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	3rd	Q51: Does your utility regularly record measured water quality data and undertake statistical analysis (monthly max. min, average, etc)? [1. Not recorded regularly, 2. Recorded but not analysed statistically, 3. Recorded and analysed statistically]	
		Risk management	CD/FI	4th	Q52: Are your utility's water sources adequately protected from serious contamination (eg chemical contamination from nearby industries, disease-causing micro-organisms from nearby villages, livestock, wild animals, etc?) [1. Not protected at all, 2. Protected but not very well, 3 Very well protected]	
			FI/CD	4th	Q53: Does your water utility have the capacity to control water quality during non-typical periods (such as heavy rain which may increase the turbidity of water sources)? [Yes or No]	
		Maintenance of equipment	CD	4th	Q54: How well does your utility undertake periodic checks of laboratory equipment, including calibration, checking chemical supplies, cleanliness, etc? [1. Very inadequately, 2. Inadequately, 3. Could be improved, 4.Well, 5. Very well]	
	Other	Energy efficiency	CD/FI	2nd	Q55: Is there an updated inventory of existing pumps (including rated head, rated flow and kW of each pump)? [Yes or No]	
			CD/FI	2nd	Q56: Does your utility have any plans to save electricity, such as replacement of old pumps, or changing pumping distribution to gravity flow? [1. No, 2. Yes but not implemented yet, 3. Yes, it is being implemented, 4. Yes, it has already been implemented]	
			CD/FI	3rd	Q57: Are the water flow and power consumption of the pumps monitored, to monitor their energy efficiency? [Yes or No]	
			FI/CD	4th	Q58: Is the rated head of existing pumps reasonably close to the actual required head, so that pumps operate at or near optimum efficiency? [Yes or No]	
		Information technology	CD	3rd	Q59: How well is office equipment such as computers, printers, photo copiers, etc. maintained? [1. Very inadequately, 2. Inadequately, 3. Could be improved, 4. Well, 5. Very well]	
			CD/FI	4th	Q60: Are there enough IT specialists or computer-skilled staff at the utility, for example to set local area networks (LAN) with proper security systems? [1. Not nearly enough, 2. Some but not enough, 3. Enough]	
	Problems specific to particular technologies		CD	2nd	Q61: Are there technical problems in any of the existing water purification steps, such as rapid sand filtering or particular hydraulic technologies such as pressure reducing valves, variable speed pumps, etc.? [Yes or No]	
	Future facility expansion and introduction of new technology		CD/FI	2nd	Q62: Does the utility have enough technical capacity to effectively operate and maintain the facilities that are to be expanded, or where new technologies are to be implemented? [Yes or No]	
		Financial stability (1st: Q19/ UBC)	CD/FI	2nd	Q63: Does your water utility have financial objectives to guide its tariff setting, such as full cost recovery of O&M costs? [Yes or No]	
			CD/FI	2nd	Q63-2: If Yes, please briefly state these objectives.	
			CD/FI	3rd	Q64: How much improvement does your utility need to become financially sustainable (ie procurement of funds for facility development and O&M; balancing revenue and expenditure; achieving operational efficiency)? [1. Huge improvement required, 2. Much improvement required, 3. Some improvement required, 4. A little improvement required, 5. Already sustainable]	
			CD/FI	2nd	Q65: Have the following sources of finance been used by your utility for capital investment in the last 10 years? [Yes or No] — 1) Grants from international agencies (multi or bilateral)	
			CD/FI	2nd	2) Government transfers to the utility including subsidies (from central or local government)	
			CD/FI	2nd	3) Borrowing from international financial agencies (multi or bilateral)	
			CD/FI	2nd	4) Government owned banks	

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer	
Large	Medium	Small						
	Financial strength (1st: Q19-Q20/ UBC)	Procurement of funds	CD/FI	2nd		5) Commercial banks or bond holders		
			CD/FI	2nd		6) Funds generated internally by utilities		
			CD	3rd	Q66-1: Approximately how many staff can explain the processes for fund procurement from the possible sources of finance? Q66-2: Is this enough capacity to procure the required funds in a sustainable manner? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
			CD/FI	4th	Q67: Does your utility have any local initiatives to attract funding from the private sector, such as from pipe suppliers or international water utility management companies? [Yes or No]			
		Accounting (1st: Q19/ UBC)	CD	2nd	Q68-1: Is the accounting of your utility part of the general accounting of central or local government? [1. Yes, 2. Yes, but it is also done as independent accounting for analysis, etc., 3. No, the accounting is independent, 4. Other]			
			CD	2nd		Q68-2: If 4. Other, please describe.		
			CD	3rd	Q69-1: Is the accounting system of your utility consistent with internationally accepted double-entry bookkeeping, or is it single-entry bookkeeping? [1. International double-entry bookkeeping, 2. Single-entry bookkeeping, 3. Other]			
			CD	3rd		Q69-2: If Other, please describe.		
			CD	3rd	Q70: Does your utility have any procedures to audit its accounting? [1. No audit procedure, 2. Only internal audit, 3. External audit by central or local government or other public agency, 4. External audit by an independent commercial firm]			
			CD	3rd	Q71: Does your utility include the depreciation of all the water supply facilities in its profit-and-loss (P/L) statement? [1. No although those fixed assets belong to the utility, 2. No, because those fixed assets do not belong to the utility, 3. Yes, but the depreciation is partial or underestimated, 4. Yes, the depreciation is fully estimated]			
			CD	4th	Q72: Is your utility required to follow two different accounting systems by different central/local government departments or agencies? [1. Yes and it is confusing, 2. Yes but it is well handled, 3. No]			
			CD	4th	Q73-1: Approximately how many staff can explain the three most important financial statements (balance sheet, profit and loss statement, and cash flow statement) of your utility are prepared according to appropriate accounting principles? Q73-2: Is this enough capacity to ensure appropriate financial management? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
		Tariffs	CD/FI	3rd	Q74: Does the unit cost of water increase as the consumption increases, in your utility's tariffs for cross-subsidies? [Yes or No]			
			CD/FI	4th	Q75-1: Approximately how many staff can explain the basis/reasoning behind water tariffs and processes for revising them? Q75-2: Is this enough capacity to ensure that customers understand the basis/reasoning behind water tariffs? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
		Budgeting	CD	3rd	Q76: Is the budgeting process of your utility top-down or bottom-up? [1. Top-down, 2. Neither top-down nor bottom-up, 3.Bottom-up]			
			CD	4th	Q77-1: Approximately how many staff can explain the basis/reasoning behind the costs of any outsourced O&M services (e.g. installation of service connections, water quality testing, billing)? Q77-2: Is this enough capacity to avoid over-paying for outsourced O&M services? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
			CD	4th	Q78-1: Approximately how many staff can explain the basis/reasoning behind the costs for any consulting services (e.g. facility planning, design, construction supervision) ? Q78-2: Is this enough capacity to avoid over-paying for consulting services? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
		Meter reading, billing and collection (1st: Q20/ UBC)	CD	2nd	Q79: How organized is your utility's meter reading, billing and collection? [1. There are no manuals for most of these tasks, 2. Have some manuals which are not effective, 3. Have some well-organized manuals, but they are not well followed, 4. Have a complete set of well-organized manuals (or a complete manual), but they are not followed well, 5. Practice is good but manuals are not updated, 6. Have a complete set of well-organized manuals (or a complete manual) and they are followed diligently]			
			CD	3rd	Q80: Are the bill collection and accounting departments or sections separated in your utility, to allow cross-checking and make their responsibilities clear? [1. Yes, they are separated and have a cross-checking function, 2. Yes, they are separated but do not cross-check, 3. No, they are not separated]			
			CD	4th	Q81: How well is corruption by meter readers controlled in your utility (for example by separating meter-reading staff from bill collection staff; encouraging customers to report corrupt meter readers, etc.) [1. Not controlled, 2. Not very well controlled, 3. Some improvement required, 4. Well controlled, 5. Very well controlled]			
			CD	4th	Q82: What proportion of customers pay water charges by bank transfer? [1. None, 2. Less than half, 3. Around half, 4. More than half, 5. Almost all or all]			
	Future facility expansion and increases in O&M cost		FI/CD	2nd	Q83: Does the utility have enough financial capacity to operate and maintain the facilities that are expected to be expanded with a Japanese grant aid or an ODA loan? [Yes or No]			
		Control over necessary expenses	CD	3rd	Q84: How well distributed is the authority to approve procurement of equipment, construction materials, consumables such as ink cartridges for printers, allowances, etc (ie different procurement price caps for different positions)? [1. Not well distributed, 2. Distributed to some extent, 3. Fairly well distributed, 4. Very well distributed]			
			CD	4th	Q85: Is enough transportation (car, motorbike, etc.) provided to meter readers, bill collectors, technical staff working in the field, etc.? [1. Not nearly enough, 2. Not quite enough, 3. Enough]			
		Organizational function and performance (1st: Q21/ UBC)	CD	2nd	Q86: Is your utility's organization structure/chart clearly defined and updated, with each department and section shown? [1. It is not clearly defined or is significantly outdated, 2. It is clearly defined and updated but there are some departments or sections currently not in operation, 3. It is clearly defined and update and all departments shown are currently in operation]			
			CD	3rd	Q87: How well are group's performance based incentives working in your utility, at organization, department, section, and team/unit level? (e.g. pay rises and bonuses based on group's performance)? [1. Do not exist, 2. Exist but are not working, 3. Working to some extent, 4. Working fairly well, 5. Working very well]			
			CD	4th	Q88: Can the salary level of your utility's staff be raised if the cost recovery of your utility improves? [Yes or No]			
			CD	4th	Q89: Does your utility understand its current situation/performance based on performance indicators? [1. No, 2. To some extent, 3. Yes]			
			CD	2nd	Q90: Please describe how difficult it is for your utility to recruit capable staff based on their abilities or past experience.			
			CD	2nd	Q91: How many years (on average) do the staff of your utility work continuously before quitting or retiring? [1. 1 to 5 years, 2. 5 to 10 years, 3. 11 to 20 years, 4. 21 to 30 years, 5. more than 30 years]			

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer
Large	**Medium**	**Small**					
Capacity Development [CD] - Non-technical aspects (1st: Q19-Q24/ UBC)	**Governance/management/ personnel affairs (1st: Q21-Q22/ UBC)**	**Employment/ transfer/ turnover**	CD	3rd	Q92: Does your utility have any staff dedicated to human resources/personnel affairs? [Yes or No]		
			CD	3rd	Q93: Please describe how difficult it is for your utility to dismiss staff based on lack of skills or poor performance.		
			CD	3rd	Q94: How much negative influence does the frequency of staff transfers in your utility cause on the sustainability of developing staff capabilities? [1. Very serious, 2. Serious, 3. Not very serious, 4. Not serious at all, 5. More positive than negative]		
			CD	4th	Q95: How often (at approximately what average interval) are the following categories of staff transferred?	1) Engineers	
			CD	4th		2) Technicians	
			CD	4th		3) Managers	
			CD	4th		4) Administration staff	
		Personnel management and incentives (1st: Q22/ UBC)	CD	2nd	Q96: How well are duties divided and job descriptions clearly defined for each staff position? (including managers, engineers, technicians, unskilled workers, administration staff of different kinds, etc.)? [1. Not clearly at all, 2. Duties are divided only to some extent and/or job descriptions are not clear, 3. Duties are divided only to some extent, but there are updated job descriptions which are clearly defined, 4. Duties are clearly divided according to updated job descriptions which are clearly defined]		
			CD	2nd	Q97: How well are individual performance based incentives working in your utility (e.g. pay rises, promotions and bonuses based on individual performance)? [1. Do not exist, 2. Exist but not working, 3. Working to some extent, 4. Working fairly well, 5. Working very well]		
			CD	3rd	Q98: Does your utility have a fair evaluation system for individual or unit/team performance? [1. No evaluation system exists, 2. There is an evaluation system but it is not fair, 3. There is a fair evaluation system]		
			CD	3rd	Q99: How clear is the linkage between capacity development of individual staff and improvement of his/her salary or benefits? [1. No linkage, 2. Minimal linkage, 3. Some linkage, 4. Adequate linkage, 5. Strong linkage]		
			CD	3rd	Q100: Is the attendance/working hours of your utility's staff recorded daily, for providing incentives (e.g. overtime payment) or monitoring staff? [1. Not recorded at all, 2. Only recorded partly and it does not provide any control or incentive, 3. Recorded but it does not provide enough control or incentives, 4. Recorded and it provides control but is not used for incentives, 5. Recorded and it provides both control and is used for incentives]		
			CD	4th	Q101-1: Are there any active criteria for promotion to a management position, such as promotion tests, professional qualification requirements, achievement of target performance level, etc.? [Yes or No]		
			CD	4th		Q101-2: If Yes, what are the criteria for promotion to a management position?	
			CD	4th	Q102: Does your utility provide a uniform to the staff operating and maintaining facilities? [1. No, 2. Yes, but not fully utilized, 3. Yes, and fully utilized]		
		Targets and appraisals	CD	4th	Q103: Does your utility have an annual appraisal and target setting system for managers? [Yes or No]		
			CD	4th	Q104: Does your utility have an annual appraisal and target setting system for all staff? [Yes or No]		
			CD	4th	Q105: Does your utility have a reward and recognition programme for all staff? [Yes or No]		
		Communication	CD	3rd	Q106: Are the following types of communication sufficient (in terms of number of meetings and daily communication) for staff to maximize the effectiveness and efficiency of their work? [Yes or No]	1) Communication among General Managers and department heads	
			CD	3rd		2) Communication within each department	
			CD	3rd		3) External communication with the sector's supervisory agencies	
			CD	4th	Q107: How accessible/open is the management of your utility to non-management staff, including field staff to discuss issues or make complaints? [1. Not open at all, 2. Open to a limited extent, 3. Open to some extent, 4. Open, 5. Very open]		
	Training (1st: Q22/ UBC)	**Planning (1st: Q22/ UBC)**	CD	2nd	Q108: How well does your utility's human resources development plan meet the current needs of the utility? [1. No plan exists, 2. It exists but does not meet demand at all, 3. It exists and meets demand to some extent, 4. It exists and meets demand fairly well, 5. It exists and meets demand very well]		
			CD	3rd	Q109: Is your utility's budget for human resource development adequate? [1. Not nearly adequate, 2. Less than adequate, 3. Adequate]		
			CD	4th	Q110: Does your utility have a skills and training strategy for all staff ? [Yes or No]		
		Training programs (1st: Q22/ UBC)	CD	3rd	Q111-1: Does your utility have a training centre for staff ? [Yes or No]		
			CD	3rd		Q111-2: If Yes, please name the training centre and provide the name, scale and contents of each training course provided.	
			CD	3rd	Q112-1: Does the personnel affairs/human resources department of your utility provide any training courses other than those provided by its training centre(s)? [Yes or No]		
			CD	3rd		Q112-2: If Yes, please describe the name, scale and contents of each training course provided.	
			CD	4th	Q113: How much improvement is required in your utility for each of the following aspects of training? [1. Huge improvement required, 2. Much improvement required, 3. Some improvement required, 4. A little improvement required, 5. No improvement required]	1-1) Suitability of training venue or building	
			CD	4th		1-2) Training facilities, equipment and instruments	
			CD	4th		2-1) Management capacity for organizing and delivering training programs	
			CD	4th		2-2) Technical and/or communications skills of trainers	
			CD	4th		3-1) Recognition by the central government, local government and regulatory bodies of the need for training of water utilities' staff, and support from them	
			CD	4th		3-2) Recognition of the need for training among the water utilities	
			CD	4th		4-1) Incentives for the staff working for the training centre (centre managers, trainers, etc.)	
			CD	4th		4-2) Incentives for participants from water utilities	
			CD	4th		4-3) Ease of undertaking training for participants (transportation, fee, timing, etc.)	
			CD	4th		5-2) Ensuring that programs and materials meet the needs of technical staff (e.g. engineers, technicians) in water utilities	
			CD	4th		5-3) Ensuring that programs and materials meet the needs of administration and management staff (e.g. accountants, bill collectors, managers) in water utilities	
			CD	4th		5-3) Ensuring programs and materials meeting the needs of managers in your utility	
			CD	4th		6-1) Incorporation of external training for management, accounting, languages, IT, etc. including those provided by private companies.	
			CD	4th		6-2) Incorporation of international training programs provided by international donors and high-performing international water utilities	
			CD	4th	Q114: Do your utility's staff have to take tests after receiving training? [1. Yes - usually, 2. Yes - occasionally, 3. No]		

Category			Project Type (援助形態)	Priority (優先度)	Question	Answer
Large	Medium	Small				
			CD	4th	Q115-1: Are there any training programs on construction quality control for small contractors to install service pipes, water meters and/or branch distribution pipes, etc. for reducing leakage from pipes? [Yes or No]	
			CD	4th	Q115-2: If Yes, please describe contents of these training course(s) and approx. number of contractors receiving the training each year.	
		On-the-job training	CD	3rd	Q116: How well is OJT (on-the-job training) carried out in your utility, in terms of the number of experienced staff who can provide OJT, recognition of the importance of OJT in your utility, an organized approach for OJT, etc? [1. OJT is not carried out, 2. Some OJT is carried out, but in an unorganized way, 3. Some OJT is carried out in a organized way, 4. OJT is a significant part of the organizational culture and it is carried out systematically]	
			CD	4th	Q117: Does your utility have a culture of knowledge-sharing (senior or experienced staff teach junior or new staff and share all information?) [1. No, 2. Yes - but not active, 3. Yes - it is actively done]	
		Self-learning	CD	4th	Q118 Does your utility provide a supportive environment for the staff to undertake self-learning (eg access to learning materials, equipment, information, communication with other utilities, etc.)? [1. Not supportive at all, 2. Minimal support, 3. Supportive to some extent, 4. Supportive, 5. Very supportive]	
		Staff retention and motivation	CD	2nd	Q119: How serious is the risk of outflow of trained staff from your utility to the private sector, after new training programs are provided without any countermeasure? [1. Very serious, 2. Serious, 3. Not very serious, 4. Not serious at all]	
			CD	3rd	Q120: How do the salary and benefits in your water utility compare to those of similarly qualified persons in the private sector? [1. Less than half that of the private sector, 2. 50 -100% of the private sector, 3. Similar level, 4. Higher than private sector]	
			CD	4th	Q121: Is there a reluctance to change working habits and improve skills among your utility staff? [1. Very strong reluctance, 2. Strong reluctance, 3. Not a strong reluctance]	
			CD	4th	Q122: Please select the answer that most closely describe how your utility pays staff who undergo training: [1. Salary is not paid during training, and training does not increase promotion prospects, 2. Salary is not paid during training, but well-trained staff have good promotion prospects, 3. Salary is paid during training, but training does not increase promotion prospects, 4. Salary is paid during training, and well-trained staff have good promotion prospects]	
	Public relations (1st: Q23-Q24/ UBC)	**Accountability**	CD	3rd	Q123: At what level does your utility publicly disclose information from its annual report? [1. No annual report is prepared, 2. Annual report is prepared but no public information disclosure, 3. Some information is selected from the annual report for disclosure through the internet, etc., 4. Complete annual report is disclosed to customers on request, 5. Complete annual report is disclosed proactively through distribution of the report or publication on the internet.]	
			CD	4th	Q124: How often does your utility publish a public relations newsletter/leaflet? [1. Never, 2. Less than once a year, 3. Once a year, 4. Seasonally, 5. Monthly or more, 6. Project oriented]	
			CD	4th	Q125: Does your utility give customers prior notification of intermittent water supply and temporary restrictions due to construction works or water shortages, etc? [1. Almost no notification, 2. Some notification in an ad-hoc manner, 3. Almost enough notification in an ad-hoc manner, 4. Enough notification in accordance with a prepared manual, 5. Thorough notification as early as possible in accordance with a manual/guideline]	
		Understanding existing and potential customers (1st: Q23/ UBC)	CD	3rd	Q126-1: Are there any socio-economic reports or surveys related to the water supply services of your utility? [Yes or No]	
			CD	3rd	Q126-2: If Yes, please provide information on the report(s) such as title of report, year of survey and implementation organization.	
			CD	3rd	Q127: Are your utility's decision-making process on strategies for the future open to the public, including existing customers, through public hearings, stakeholder meetings, etc ? [1. Not open at all, 2. Open to a limited extent, 3. Open to some extent, 4. Open, 5. Very open]	
			CD	3rd	Q128: How well-developed is your utility's customer information system? [1. Not at all developed, 2. Paper-based system without computerization, 3. Computerized system, but it is not regularly updated and not linked to mapping system, 4. Computerized system, but it is not regularly updated or not linked to mapping system, 5. Regularly updated computerized database linked to mapping system]	
			CD	3rd	Q129: How serious is illegal use of water for your utility? [1. Very serious, 2. Serious, 3. Not very serious, 4. Not serious, 5. Not serious at all]	
			CD	4th	Q130: Is there a procedure for dealing with unhappy customers and unserved customers? [1. No, 2. Yes, to some extent, 3. Yes, it is well established]	
		Existing customer satisfaction and willingness to pay for improvements	CD	2nd	Q131: What proportion of the served population are satisfied with the water supply services provided? (if statistical data is not available, please answer this question based on the general perception of your utility) [1. Almost none, 2. Only residents in some areas, 3. About half, 4. The majority, 5. All or almost all]	
			CD	3rd	Q132-1: How well does your utility understand your existing and potential customers' willingness-to-pay (WtP) for good water supply services? [1. Has no understanding, 2. Has some understanding but little confidence in data, 3. Has some understanding with some confidence in data, 4. Has some understanding based on results of past socio-economic/WtP surveys, 5. Has some understanding based on results of recent surveys, 6. Good understanding based on results of recent surveys]	
			CD	4th	Q132-2. If other than "1. Has no understanding", how high is the average willingness-to-pay of middle-income-level households for continuous water supply with good water quality? [1. They think water should be free, 2. Less than 1 % of income, 3. Less than 3% of income, 4. Less than 5% of income, 5. More than 5 % of income]	
		Unserved population	FI/CD	2nd	Q133: How severely restricted is water consumption for the unserved households in your utility's area of responsibility? [1. Very severe, 2. Severe, 3. Not very severe, 4. Not severe at all, 5. There are no unserved households]	
			FI/CD	3rd	Q134-1: What are the major alternative water sources for the unserved population? [1. Water tanker, 2. Human-powered water carrier (vendor) , 3. Neighborhood natural water , 4. Other]	
			FI/CD	3rd	Q134-2: If Other, please describe.	
			FI/CD	3rd	Q135: How expensive is the major alternative water source among the unserved population, in comparison with your utility's average unit price for domestic water use? [1. There are no alternative sources, 2. More than five times, 3. More than triple, 4. More than double, 5. Higher but less than double, 6. Almost the same, 7. Less]	
			CD	3rd	1) Encouraging water saving at home, school, etc. [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	3rd	2) Reducing illegal connections, including intentional damage to water meters [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	4th	3) Recognizing the importance of a good quality piped water supply [1. Not nearly enough, 2. Not quite enough, 3. Enough]	

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer
Large	Medium	Small					
		Public awareness (1st: Q24/ UBC)	CD	4th	Q136: Does your utility conduct enough public awareness campaigns on the following topics?	4) Reporting visible water leakages [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	4th		5) In the case of intermittent water supply, reducing the use of suction pumps to abstract water from the network (which cause uneven water distribution, pressure drop, and contamination) [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	4th		6) In the case of continuous water supply, direct connection to the network without using a household receiving tank (to avoid degradation of drinking water quality) [1. Not nearly enough, 2. Not quite enough, 3. Enough]	
			CD	4th		7) Other, please specify.	
		Water demand management	CD	3rd	Q137-1: Is your utility controlling the water demand or water consumption of its customers, other than by raising people's awareness of the limitations and importance of water? [1. Yes, 2. No]		
			CD	3rd		Q137-2: If Yes, how?	
		Governance and political influences	FI/CD	2nd	Q138: Is your utility autonomous? [1. Yes, 2. No, 3. In between]		
			CD	3rd	Q139-1: Does your utility have a board of directors or a trust? [Yes or No]		
			CD	3rd		Q139-2: If Yes, do external directors have a strong influence? [Yes or No]	
			CD	3rd	Q140: How well is the status of the General Manager defined regarding his/her term, conditions of conduct, and authority? [1. not at all, 2. not very well, 3. fairly well, 4. well, 5. very well]		
			CD	3rd	Q141-1: Who has general oversight/control of your utility's minimum service levels and water charge levels? [1. Local, regional or national government department, 2. Independent board of stakeholders, 3. Independent service and price regulator, 4. Your utility, 5. Other]		
			CD	3rd		Q141-2: If "Other", please describe.	
			CD	3rd	Q142: Are water tariffs kept significantly low under any political influence? [1. Yes - very low, 2. Yes - low, 3. No - not low]		
			CD	4th	Q143: If your utility belongs to the central or local government, does the General Manager of your utility have independent authority for O&M of facilities (excluding tariff setting, long-term planning and budgeting)? [1. Not at all, 2. Not very much, 3. Fairly good authority, 4. Good authority and 5. Total authority]		
			CD	4th	Q144: How strongly do politicians influence your utility's decisions on the amount of water distributed to different areas? [1. Very strongly, 2. Strongly, 3. Interfere but not strongly, 4. Interfere only a little, 5. No or almost no interference]		
			CD	4th	Q145: How much are the following aspects in your utility subject to influence from central or local government, including influence through external members of its board of directors? [1. Strong influence, 2. Some influence, 3 No or almost no influence]	1) Number of staff	
			CD	4th		2) Staff salaries	
			CD	4th		3) Tariffs	
			CD	4th		4) Appointment of staff	
			CD	4th		5) Appointment of top management	
			CD	4th		6) Budget for O&M	
			CD	4th		7) Budget for development	
			CD	4th		8) Daily operation and management of facilities	
			CD	4th		9) Disconnection for non-payment	
	External influence	**Regulatory bodies**	CD	3rd	Q146: How well does your utility comply with agreements with regulatory bodies, in terms of service levels (water quality, pressure, etc.), cost recovery, expansion and improvement of facilities, etc ? [1. Not at all, 2. Not well, 3. To some extent, 4. Well, 5. Very Well]		
			CD	4th	Q147: Does your utility submit timely and accurate data to regulatory organizations? [1. No, 2. To a little extent, 3. To some extent, 4. Accurate but not timely, 5. Yes, timely and accurate]		
		Procurement	CD	2nd	Q148: How well established are your utility's procurement rules and procedures? [1. Not at all, 2. Not well established, 3. To some extent, 4. Well established, 5. Very well established]		
			CD	3rd	Q149: How well does your utility adhere to existing procurement rules and procedures? [1. Not at all, 2. Not well, 3. To some extent, 4. Well, 5. Very well]		
			CD	4th	Q150-1: Does your utility follow any regulations for registering qualified construction contractors, consulting companies and manufactures/suppliers? [1. Yes, 2. No]		
			CD	4th		Q150-2: If Yes, please describe your utility's practice.	
			CD	4th	Q151-1: Does your utility have any specific functions for reducing corruption (such as an ethics committee, or customer information regarding corruption of utility staff)? [1. Yes, 2. No]		
			CD	4th		Q151-2: If 1.Yes, please describe these anti-corruption functions.	
Countermeasures against external influence, and utilization of existing regulations and guidelines (1st: Q25/ UBC)		**Cooperation with donors, other water utilities, etc.**	FI/CD	2nd	Q152: Which international donors are significantly contributing to your utility, and what is the role of each of the contributing donors?		
			CD	3rd	Q153-1: Are there any cooperative training programs with other water utilities? [Yes or No]		
			CD	3rd		Q153-2: If Yes, please name the other cooperating utilities, and the contents, scale, target trainees and frequency of the training programs.	
			CD	4th	Q154-1: Are there any organizations other than water utilities (e.g. water industry associations, universities) that dispatch lecturers/trainers to your water utility? [Yes or No]		
			CD	4th		Q154-2: If Yes, please describe the name of the organizations, the expertise of dispatched lectures/trainers, the scale and target trainees for the training programs.	
			CD	4th	Q155-1: Are there any formal or informal agreements of assistance with other utilities in case of water shortages, accidents, etc.? [Yes or No]		
			CD	4th		Q155-2: If Yes, please describe these agreements.	
		Other stakeholders	CD	4th	Q156-1: Are there any other significant stakeholders for your utility, except for regulatory bodies? [Yes or No]		
			CD	4th		Q156-2: If Yes, who are they and what are their roles?	

Category			Project Type (援助形態)	Priority (優先度)	Question		Answer	
Large	**Medium**	**Small**						
	Law, regulations and guidelines (1st: Q25/ UBC)	**Regulations (1st: Q25/ UBC)**	CD/FI	3rd	Q157-1: Are there any laws or regulations on each of following items? [Yes or No] Q157-2: If Yes, does your utility effectively comply with these laws or regulations? [Yes or No]	1) National: Water supply act or its equivalent		
			CD/FI	3rd		2) Regulations to encourage private sector involvement (Public Private Partnerships (PPP), Public Sector Privatization (PSP), Private Finance Initiatives (PFI), etc.)		
			CD/FI	3rd		3) Licensing systems for contractors (including small contractors installing service connections), to ensure construction quality control in order to reduce leakage		
			CD/FI	3rd		4) Local: Water supply by-law or ordinance		
			CD/FI	3rd		5) Regulations regarding water intake, including conventional rights to the use of natural water and restrictions on groundwater withdrawal to prevent land subsidence		
			CD/FI	3rd		6) Vocational qualifications / certification for utility staff (e.g. for construction supervision, operation of purification plant, water quality testing, accounting, computer programs)		
		Guidelines	CD/FI	3rd	Q158-1: Are there any guidelines on each of following items? [Yes or No] Q158-2: If Yes, does your utility effectively comply with these guidelines? [Yes or No]	1) Water tariff setting		
			CD/FI	3rd		2) Water quality standards		
			CD/FI	3rd		3) Authorized standards for materials and equipment for water utilities		
			CD/FI	3rd		4) Design of water supply facilities		
			CD/FI	3rd		5) Operation and maintenance of water supply facilities		
			CD/FI	3rd		6) NRW reduction		
			CD/FI	3rd		7) Bulk water supply		
			CD/FI	3rd		8) Governance/management of water utility		
			CD/FI	3rd		9) Merger/clustering of utilities to improve efficiency (facility integration and/or office administration integration)		
			CD/FI	3rd		10) Environmental impact assessment		
		Referencing of Water Supply Services Act	CD	4th	Q159: Does your utility keep copies of updated water industry laws/acts/ordinances well organized for quick referencing? [1. They are scattered over different places, 2. One section keeps the majority of them, but in an unorganized way, 3. One section keeps them all but they are not organized/filed well, 4. They are well-organized in a file or as a book, but recent updates are not included, or the file is not well-utilized, 5. They are well-organized. including all recent updates, and are well-utilized]			
Integration with Projects in other sectors (1st: Q26/ UBC)	**Rural water supply and irrigation**	**Managing boundaries**	CD/FI	3rd	Q160: If rural water supply exists (or will exist) in your utility's jurisdiction and your utility is responsible for it, does your utility have enough capacity to manage this rural water supply? [Yes or No]			
		Community management	CD	4th	Q161: Is it possible for your utility to find capable staff in community management for low-income urban areas? [Yes or No]			
		Water resource allocation	FI	4th	Q162: Does your utility have the potential to threaten rural water supplies by extracting excessively from water sources? [Yes or No]			
		Irrigation	FI	4th	Q163: Does your utility have the potential to increase access to water sources, through discussion with the irrigation sector? [Yes or No]			
	Sewerage and sanitation (1st: Q26/ UBC)	**Sanitation**	FI/CD	3rd	Q164: Does your utility reduce water-borne diseases effectively by optimizing the balance of investment between water supply, sanitation, hygiene education, etc. especially in poor urban areas? [Yes or No]			
		Sewerage (1st: Q26/ UBC)	FI/CD	3rd	Q165: If your utility's water supply operations have a serious impact on the natural environment due to discharge of untreated wastewater, is it possible to develop sewerage or other types of wastewater treatment facilities along with the development of water supply system especially in cities, slums and areas with tourist value? [Yes or No]			
			FI/CD	4th	Q166: Do your utility's water sources need to be protected by installing sewerage in the catchment areas? [Yes or No]			
	Other fields	**Hygiene education**	CD	4th	Q167: Is it possible for your utility to conduct hygiene education along with your utility's other public awareness campaigns (eg for utilization of piped water supply, importance of water quality, water saving, etc)? [Yes or No]			
		Roads	FI	4th	Q168: Can your utility coordinate with road management authorities to synchronize the timing of road construction and pipe installations, to avoid extra costs such as re-paving, etc? [Yes or No]			

(2) 質問の自動選択・着色機能 - Auto Selection & Highlighting of Related Questions

ツール⑤:水道事業体用詳細チェックリストの質問項目を、既に実施した他の基本ツールの結果およびプロジェクトに関連性の高い質問カテゴリー(大・中・小)から絞り込む方法

1) 基本ツール⑤の使用は、事前に基本ツール④の質問（1st Priority）の内、少なくとも当該プロジェクトと関連性が高い質問については回答が分かっていることが前提となっている。
この図において、基本ツール④の内、特に課題となっている質問のカテゴリーの右下に付いているチェックボックスをチェックすると、この図中の基本ツール⑤の類似カテゴリーおよび基本ツール⑤の(1)本体部分の該当する質問が着色表示される。
2) 基本ツール①もしくは②の実施により既に課題となっている分野が分かっている場合には、1)と同様に、この図中の基本ツール⑤の類似カテゴリーおよび本体の該当する質問を着色表示できる。
3) この図中の基本ツール⑤のカテゴリー(大、中、小)の内、当該プロジェクトの重点分野のチェックボックスを直接選択すると、基本ツール⑤の(1)本体部分の該当する質問が着色表示される。

[◉ 日本語 ○ English]

言語を切替るのに少し時間が掛かる。

基本ツール① 業務指標のリスト - List of Performance Indicators (LPI)

既に基本ツール①の結果が分かっている場合に、課題である指標カテゴリーにチェック

業務指標

大 - Large	中 - Medium	小 - Small
主に施設投資（FI）により改善される側面	全般	連続給水実施状況
	拡張	水道普及状況
		支払能力／料金
		水道使用量
	修繕および更新	管網
主にキャパシティ・ディベロップメント（CD）により改善される側面	技術的側面	無収水対策
		水質管理
	非技術的側面	財務管理
		業務効率
		トレーニング
		顧客関係
主にプログラム・アプローチにより改善される側面	上水／下水バランス	普及率のバランス
		収益のバランス

基本ツール④ 水道事業体用基本チェックリスト - Utility Basic Checklist (UBC)

既に基本ツール④の結果が分かっている場合に、課題である指標カテゴリーにチェック

大 - Large	中 - Medium	小 - Small	
主に施設投資（FI）により改善される側面	全般		Q1-2
	拡張	水道普及率	Q3-4
		浄水場	Q5
	修繕および更新	施設の状態	Q6-9
主にキャパシティ・ディベロップメント（CD）により改善される側面	技術的側面	全般	Q10
		配水ネットワーク管理	Q11-13
		無収水削減	Q14-16
		水質管理	Q17-18
	非技術的側面	財政状況改善	Q19-20
		組織開発	Q21-22
		顧客・住民関係	Q23-24
主にプログラム・アプローチにより改善される側面			Q25-26

文字をクリックするとジャンプする。このシートに戻る時は戻るボタンをクリックする。

"戻るボタン"が表示されない場合は、メニューバーの「表示(V)」→「ツールバー(T)」→「戻るボタン」とクリックして"戻るボタン"ツールバーにチェックを入れる。

問題のある分野(中及び小カテゴリー)のチェックボックスを選択すると、この図中の他の基本ツールの類似カテゴリーおよび基本ツール⑤の(1)本体部分の該当する質問が着色表示される。

基本ツール⑤ 水道事業体用詳細チェックリスト - Utility Detailed Checklist (UDC)

大 - Large	中 - Medium	小 - Small	
事業体内部の政策		ミッション／ビジョン	Q1
		各政策	Q2
施設投資（全般）	計画	長・中期計画	Q3
		短期計画	Q4-5
		水理解析	Q6
	設計および施工管理	設計ガイドライン	Q7-8
		設計のための基本能力	Q9-10
		コスト抑制、施工安全性	Q11-12
施設投資（拡張）	全体の水道普及率		Q13
	都市貧困層	全般	Q14-15
		拡張	Q16-17
		公共水栓	Q18-19
		共有接続	Q20
		個別接続	Q21-24
	水源	限度	Q25
		タイプ	Q26
施設投資（修繕および更新）	施設の維持管理状況	運転	Q27-28
		メンテナンス	Q29-33
キャパシティ・ディベロップメント（技術的側面）	配水ネットワーク管理		Q34
	無収水削減	全般	Q35-36
		流量計	Q37-40
		漏水削減能力	Q41-44
		管施工品質管理	Q45-48
	水質管理	水質試験	Q49-51
		リスクマネジメント	Q52-53
		設備のメンテナンス	Q54
	その他	省エネルギー	Q55-58
		ＩＴ	Q59-60
	特定技術の特有な問題点		Q61
	将来の施設拡張と新技術導入		Q62
キャパシティ・ディベロップメント（非技術的側面）	財務力	財務健全性	Q63-64
		資金調達	Q65-67
		会計	Q68-73
		料金	Q74-75
		予算	Q76-78
		検針、請求、料金徴収	Q79-82
	将来の施設拡張と維持管理コストの増加		Q83
	ガバナンス／マネジメント／人事	必要経費の管理	Q84-85
		組織の機能とパフォーマンス	Q86-89
		雇用、転勤、退職	Q90-95
		管理、ボーナス等の動機付け	Q96-102
		目標志向性	Q103-105
		コミュニケーション	Q106-107
	トレーニング	計画	Q108-110
		トレーニングプログラム	Q111-115
		OJT	Q116-117
		自己学習	Q118
		負の環境	Q119-122
	顧客・住民関係	説明責任	Q123-125
		既存、潜在顧客の理解	Q126-130
		既存顧客満足度、改善のための支払意思額	Q131-132
		非給水人口	Q133-135
		住民意識	Q136
		水需要マネジメント	Q137
外部圧力への対応と既存の法制度及びガイドラインの利用	外部からの影響	ガバナンスと政治的影響力	Q138-145
		規制機関	Q146-147
		調達	Q148-151
		ドナー、他水道事業体等との協力	Q152-155
		その他の利害関係者	Q156
	法律、規制、ガイドライン	規制	Q157
		ガイドライン	Q158
		水道法の参照	Q159
他セクターのプロジェクトとの統合的アプローチ	村落給水、灌漑	境界	Q160
		都市貧困層との類似性	Q161
		水源の配分	Q162
		灌漑	Q163
	下水、衛生	衛生施設	Q164
		下水道	Q165-166
	他分野	衛生教育	Q167
		道路	Q168

プロジェクトと関連性の高い分野(大、中、小カテゴリー)のチェックボックスを選択すると、基本ツール⑤の(1)本体部分の該当する質問が着色表示される。

既に基本ツール②の結果が分かっている場合に、課題である質問カテゴリーをチェック （基本ツール⑤のカテゴリーに関連している小カテゴリーにのみにチェックボックスが付いている）

基本ツール②
セクター用チェックリスト – Sector Checklist (SC)

給水の現状等	MDG等からの指標	水道普及率（WHO/UNICEF JMP）	Q1-3
		改善された衛生施設の普及率（WHO/UNICEF JMP）	Q4
		貧困の状況（世界銀行）	Q5-7
		汚職のレベル（トランスペアレンシー・インターナショナル）	Q8
	水道給水のレベル	格差	Q9-10
		継続性	Q11
		塩素処理	Q12
政策、国家／地域計画、規制、ガイドラインの利用状況と効果		政策と計画	Q13-15
		法律／規制	Q16
		ガイドライン	Q17
		統合	Q18
		料金	Q19-20
		貧困	Q21-24
		水質管理	Q25-27
セクター内の組織間のオペレーションの健全性	ガバナンス／マネジメント	政府	Q28
		規制機関	Q29-33
		水道事業体	Q34-41
	財源の調達	投資	Q42-45
		助成金	Q46-48
		民間セクター	Q49-51
国家、地域レベルでのトレーニング		トレーニングセンター等	Q52-53
		規制機関	Q54
		協力関係	Q55-58
		小規模請負業者のトレーニング	Q59
その他の利害関係者		受益者	Q60
		ドナー	Q61-62
		小規模給水業者等	Q63
		その他	Q64

(3) カテゴリー名の和訳変換表 - Translation Table for the Category Names

No.	和	英
1	業務指標	Performance Indicators
2	主に施設投資(FI)により改善される側面	Aspects to be Improved mainly by Facility Investment (FI)
3	主にキャパシティ・ディベロップメント(CD)により改善される側面	Aspects to be Improved mainly by Capacity Development (CD)
4	主にプログラム・アプローチにより改善される側面	Aspects to be Improved mainly by Program Approach
5	主に施設投資(FI)により改善される側面	Aspects to be improved mainly by Facility Investment (FI)
6	主にキャパシティ・ディベロップメント(CD)により改善される側面	Aspects to be improved mainly by Capacity Development (CD)
7	主にプログラム・アプローチにより改善される側面	Aspects to be improved mainly by Program Approach
11	全般	Overall
12	拡張	Expansion
13	水道普及率	Water supply service coverage
14	修繕および更新	Rehabilitation/replacement
15	技術的側面	Technical aspects
16	無収水削減	NRW reduction
17	水質管理	Water quality control
18	非技術的側面	Non-technical aspects
19	財政状況改善	Financial improvement
100	全般	Overall
101	連続給水実施状況	Supply continuity
200	拡張	Expansion
201	水道普及状況	Service coverage
202	支払能力／料金	Affordability/ tariff
203	水道使用量	Water consumption
211	浄水場	Purification plant
300	修繕および更新	Rehabilitation/replacement
301	管網	Pipe network
311	施設の状態	Conditions of facilities
400	技術的側面	Technical Aspects
401	無収水対策	NRW
402	水質管理	Water quality
411	全般	Overall
412	配水ネットワーク管理	Distribution network management
500	非技術的側面	Non-technical aspects
501	財務管理	Financial performance
502	業務効率	Staff efficiency
503	トレーニング	Training
504	顧客関係	Customer relations
511	組織開発	Organizational development
512	顧客・住民関係	Public relations
600	上水／下水バランス	W&WW information
601	普及率のバランス	Service coverage
602	収益のバランス	Revenue
700	事業体内部の政策	Internal policy
701	施設投資(全般)	Facility Investment [FI] - Overall
702	施設投資(拡張)	Facility Investment [FI] - Expansion
703	施設投資(修繕および更新)	Facility Investment [FI] - Rehabilitation/replacement
704	キャパシティ・ディベロップメント(技術的側面)	Capacity Development [CD] -Technical aspects
705	キャパシティ・ディベロップメント(非技術的側面)	Capacity Development [CD] - Non-technical aspects
706	外部圧力への対応と既存の法制度及びガイドラインの利用	Countermeasures against external influence, and utilization of existing regulations and guidelines
707	他セクターのプロジェクトとの統合的アプローチ	Integration with Projects in other sectors
708	計画	Planning
709	設計および施工管理	Design and construction supervision
710	全体の水道普及率	Overall water supply coverage
711	都市貧困層	Poor urban areas
712	水源	Water resources
713	施設の維持管理状況	O&M standard of facilities
714	配水ネットワーク管理	Distribution network management
715	無収水削減	NRW reduction
716	水質管理	Water quality control
717	その他	Other
718	特定技術の特有な問題点	Problems specific to particular technologies
719	将来の施設拡張と新技術導入	Future facility expansion and introduction of new technology
720	財務力	Financial strength
721	将来の施設拡張と維持管理コストの増加	Future facility expansion and increases in O&M cost
722	ガバナンス／マネジメント／人事	Governance/management/personnel affairs
723	トレーニング	Training
724	顧客・住民関係	Public relations
725	外部からの影響	External influence
726	法律、規制、ガイドライン	Law, regulations and guidelines
727	村落給水、灌漑	Rural water supply and irrigation
728	下水、衛生	Sewerage and sanitation
729	他分野	Other fields
801	ミッション／ビジョン	Mission/vision
802	各政策	Individual policies
803	長・中期計画	Long-term or mid-term planning
804	短期計画	Short-term planning
805	水理解析	Hydraulic analysis
806	設計ガイドライン	Design guidelines
807	設計のための基本能力	Basic design capacity
808	コスト抑制、施工安全性	Cost control and construction safety
809	全般	Overall
810	拡張	Expansion
811	公共水栓	Public taps
812	共有接続	Shared connections
813	個別接続	Individual house connections
814	限度	Limitations
815	タイプ	Type
816	運転	Operation
817	メンテナンス	Maintenance
818	全般	Overall
819	流量計	Water meters
820	漏水削減能力	Capacity for leakage reduction
821	管施工品質管理	Quality control for pipe installation
822	水質試験	Water quality testing
823	リスクマネジメント	Risk management
824	設備のメンテナンス	Maintenance of equipment
825	省エネルギー	Energy efficiency
826	IT	Information technology

827	財務健全性	Financial stability
828	資金調達	Procurement of funds
829	会計	Accounting
830	料金	Tariffs
831	予算	Budgeting
832	検針、請求、料金徴収	Meter reading, billing and collection
833	必要経費の管理	Control over necessary expenses
834	組織の機能とパフォーマンス	Organizational function and performance
835	雇用、転勤、退職	Employment/ transfer/turnover
836	管理、ボーナス等の動機付け	Personnel management and incentives
837	目標志向性	Targets and appraisals
838	コミュニケーション	Communication
839	計画	Planning
840	トレーニングプログラム	Training programs
841	OJT	On-the-job training
842	自己学習	Self-learning
843	負の環境	Staff retention and motivation
844	説明責任	Accountability
845	既存、潜在顧客の理解	Understanding existing and potential customers
846	既存顧客満足度、改善のための支払意思額	Existing customer satisfaction and willingness to pay for improvements
847	非給水人口	Unserved population
848	住民意識	Public awareness
849	水需要マネジメント	Water demand management
850	ガバナンスと政治的影響力	Governance and political influences
851	規制機関	Regulatory bodies
852	調達	Procurement
853	ドナー、他水道事業体等との協力	Cooperation with donors, other water utilities, etc.
854	その他の利害関係者	Other stakeholders
855	規制	Regulations
856	ガイドライン	Guidelines
857	水道法の参照	Referencing of Water Supply Services Act
858	境界	Managing boundaries
859	都市貧困層との類似性	Community management
860	水源の配分	Water resource allocation
861	灌漑	Irrigation
862	衛生施設	Sanitation
863	下水道	Sewerage
864	衛生教育	Hygiene education
865	道路	Roads
901	給水の現状等	Current water supply conditions, etc.
902	MDG等からの指標	Indicators from MDGs, etc.
903	水道給水のレベル	Level of piped water supply services
904	政策、国家／地域計画、規制、ガイドラインの利用状況と効果	Availability and effectiveness of policies, national or regional plans, regulations and guidelines
905	セクター内の組織間のオペレーションの健全性	Soundness of inter-organizational operations in the sector
906	ガバナンス／マネジメント	Governance/management
907	財源の調達	Funding
908	国家、地域レベルでのトレーニング	Training at national or regional level
909	その他の利害関係者	Other stakeholders
910	水道普及率(WHO/UNICEF JMP)	Water coverage (WHO/UNICEF JMP)
911	改善された衛生施設の普及率(WHO/UNICEF JMP)	Improved sanitation coverage (WHO/UNICEF JMP)
912	貧困の状況(世界銀行)	Poverty (The World Bank)
913	汚職のレベル(トランスペアレンシー・インターナショナル)	Corruption (Transparency International)
914	格差	Consistency
915	継続性	Continuity
916	塩素処理	Chlorination
917	政策と計画	Policy and plans
918	法律／規制	Law/ regulation
919	ガイドライン	Guidelines
920	統合	Integration
921	料金	Tariff
922	貧困	Poverty
923	水質管理	Water quality control
924	政府	Government
925	規制機関	Regulatory body
926	水道事業体	Water utility
927	投資	Investment
928	助成金	Subsidy
929	民間セクター	Private sector
930	トレーニングセンター等	Training centre, etc.
931	規制機関	Regulator
932	協力関係	Cooperative ties
933	小規模請負業者のトレーニング	Training for small contractors
934	受益者	Beneficiaries
935	ドナー	Donors
936	小規模給水業者等	Small suppliers, etc.
937	その他	Others

2.6 日本語での財務指標の説明 - Explanation on Financial Indicators in Japanese

(1) 水道事業体の業務指標リスト(基①)に含まれる財務指標(1st-3rd Priority)と水道事業体用基本チェックリスト(基④)のQ19用補助財務指標の説明

優先度	指標参照番号 (IBNET指標:IBI_, 他指標:OI)	指標名	指標の定義及び計算式	
1st	IBI_23.2	料金回収率 - W&WW (%)	年間の料金請求額に対する回収した料金のパーセンテージ	=[(IBD_91)/(IBD_90)]*100
1st	IBI_24.1	減価償却費を含めない営業収益比率 - W&WW (%)**1	年間の減価償却費以外の営業費用(運転維持管理費)に対する営業収益(料金の総請求金額)のパーセンテージ、(施設投資による債務(利子と元金)については含まない)**1	=[(IBD_90)/(IBD_94)]*100
2nd	IBI_11.3	給水原価 (US$ / m^3 water sold)**4	USドル換算した年間の単位有収水当たりの水道サービスの運転維持管理費(減価償却費と債務の返済を含まない)**4	=(IBD_94a)/[(IBD_59)*1000000]/(IBD_6)
2nd	IBI_18.3	供給単価 (US$ / m^3 water sold)	USドル換算した年間の単位有収水当たりの水道サービスの営業収益	=(IBD_90c)/(IBD_6)/[(IBD_59)*1000000]
2nd	IBI_19.1	顧客一人当たりの総営業収益の率 - W&WW (% of GNI per capita)	一人当たりの国民総所得に対する顧客一人当たりの上下水道サービスの総営業収益のパーセンテージ	=[[(IBD_90)/(IBD_6)]/[(IBD_5)*(IBD_40)*1000)]]*100
3rd/補助	OI_4 (②)	水道サービスについての減価償却費を含めない営業収支比率(%)**1	水道サービスのみについての、年間の減価償却費及び施設投資による債務(利子と元金)以外の営業費用(運転維持管理費)に対する営業収益(料金の総請求金額)のパーセンテージ)**1	=[(IBD_90c)/(IBD_94a)]*100
3rd	IBI_23.1	売掛金回転期間 - W&WW (日)	年間総営業収益に対する期末売掛金(未回収の料金)の相当分日数	=[(IBD_120)/(IBD_90)]*365
3rd	OI_5	流動比率 - W&WW (%)**6	流動負債に対する流動資産のパーセンテージ)**6	=[(OD_4)/(OD_5)]*100
3rd	OI_6	自己資本構成比率 - W&WW (%)**7	負債・資本合計に対する自己資本金と余剰金の合計のパーセンテージ)**7	=[[(OD_6)+(OD_7)]/(OD_8)]*100
3rd	IBI_25.1	債務返済比率 (%) -W&WW**5	年間の債務(利子と元金)に対する回収した料金のパーセンテージ)**5	=[(IBD_91)/(IBD_114)]*100
3rd	OI_7	固定比率 - W&WW (%)**8	自己資本金 と余剰金の合計に対する固定資産のパーセンテージ)**8	=[(OD_9)/[(OD_6)+(OD_7)]]*100
3rd	OI_8	固定資産回転率 - W&WW (%)**9	固定資産に対する受託工事収益以外の営業収益のパーセンテージ)**9	=[[(IBD_91)-(OD_10)]/(OD_9)]*100
補助	OI_12 (②)	水道サービスについての減価償却費を含めた営業収支比率 (%)**1	水道サービスのみについての、年間の営業費用(減価償却費と運転維持管理費の合計であり、施設投資による債務(利子と元金)については含まない)に対する営業収益(料金の総請求金額)のパーセンテージ**1	=[(IBD_90c)/[(IBD_94a)+(OD_16)]]*100
補助	③: OI_13 (②)	水道サービスについての減価償却費と債務返済を含めた営業収支比率 (%)**1	水道サービスのみについての、減価償却費を含む営業費用と施設投資による債務(利子と元金)の総額に対する営業収益(料金の総請求金額)のパーセンテージ**1	=[(IBD_90c)/[(IBD_94a)+(OD_16)+(OD_17)+(OD_18)]]*100
補助	④: OI_14 (②)	給水収益に対する減価償却費の比率 (%)**10	水道サービスについての営業収益(料金請求額)に対する減価償却費のパーセンテージ**10	=[(OD_16)/(IBD_90c)]*100
補助	⑤: OI_15 (②)	給水収益に対する債務の利子の比率 (%)**11	水道サービスについての営業収益(料金請求額)に対する利子のパーセンテージ**11	=[(OD_17)/(IBD_90c)]*100
補助	⑥: OI_16 (②)	給水収益に対する債務の元金の比率 (%)**12	水道サービスについての営業収益(料金請求額)に対する元金のパーセンテージ**12	=[(OD_18)/(IBD_90c)]*100

(2) 上表の財務指標の計算に必要な財務データの説明

優先度	データ参照番号 (IBNET用データ:IBD_, 他データ:OD_)	データ名	データの定義
1st	IBD_90	総営業収益- W&WW (LC / 年)	上水道及び下水道サービスの利用料金、接続料金、井戸利用料金及び再接続料金の請求額とその他の営業収益の総額であり、その他の営業収益には、営業収益に係る一部の補助金**2を含むが、関連する税収入**3については含まない。(通常、このデータは水道事業体のP/Lに記載されている。
1st	IBD_91	総回収料金- W&WW (LC / 年)	上水道及び下水道サービスについての、実際に回収された料金(通常、P/Lに記載)
1st	IBD_94	減価償却費以外の総営業費用- W&WW (LC / 年)	上水道及び下水道サービスについての、減価償却費を含まない営業費用(債務返済金(利子と元金)についても含まれない)(通常、P/Lに記載)
2nd/補助	IBD_94a	水道サービスについての減価償却費以外の営業費用 (LC / 年)	水道サービスに関する減価償却費以外の営業費用であり、債務(利子と元金)の返済 について含めない (通常、P/Lに記載)
2nd/補助	IBD_90c	水道サービスについての営業収益 (LC / 年)	IBD_90の内、水道サービスに関連する部分 (通常、P/Lに記載)
3rd	IBD_120	期末売掛金 -W&WW (LC)	水道及び下水道サービスの料金として請求されたが、支払い期限を超えて未払いとなっている総額(通常、B/Sに記載)
3rd	IBD_147	水道接続料金 (LC)	家庭用水道接続料金の一括払い額
3rd	OD_4	流動資産 - W&WW (LC)	現金・預金のほか、原則として1年以内に現金化される債権(通常、B/Sに記載)
3rd	OD_5	流動負債 - W&WW (LC)	事業の通常の取引において1年以内に償還しなければならない短期の債務(通常、B/Sに記載)
3rd	OD_6	自己資本金 - W&WW (LC)	開業時における固有資本金、固定資産の取得に当たって繰り入れられる出資金及び固定資産の取得を通じて組み入れた剰余金の合計 (通常、B/Sに記載)
3rd	OD_7	余剰金 - W&WW (LC)	企業の正味財産のうち、資本金の額を超過した部分(通常、B/Sに記載)
3rd	OD_8	負債・資本合計 - W&WW (LC)	貸借対照表における負債と資本の合計(通常、B/Sに記載)
3rd	IBD_114	債務元利未払金 - W&WW (LC / 年)	債務 (利子と元金)の未払い金の総額 (通常、B/Sに記載)
3rd	OD_9	固定資産 - W&WW (LC)	企業の経営に際して、長期(1年以上)に使用するため所有する資産。有形固定資産、無形固定資産及び投資の合計(通常、B/Sに記載)
3rd	OD_10	受託工事収益 (信託業からの収益) - W&WW (LC / 年)	給水装置の新設又は修繕などの工事を行った際の対価として顧客から受け取るもの(通常、P/Lに記載)
補助	OD_16	水道サービスに関する減価償却費 (LC)	減価償却費(及び別途記載されている場合の資産減耗費)の年間総額 (通常、P/Lに記載)
補助	OD_17	水道サービスに関する債務の利子 (LC)	水道サービスに関する資本投資による債務の利子(及び別途記載されている場合の債務取扱諸費)の年間総額 (通常、P/Lに記載)
補助	OD_18	水道サービスに関する債務の元金 (LC)	水道サービスに関する資本投資による債務の元金の年間総返済額 (通常、P/Lに記載)

(3) 左記の指標/データについての追加説明

略語

W = 水道サービス, WW = 下水道サービス, LC = 対象国の通貨単位, FTE = フルタイム換算, B/C = 貸借対照表, P/L = 損益計算書

営業収支比率に関連する説明:

**1: IBI_24.1、OI_4、OI_12、及びOI_13は、コストリカバリーのレベルを示す。日本の水道協会(JWWA)の水道事業ガイドラインQ100では、営業収支比率は、減価償却費を営業費用に含めて計算されている。しかし、IBNETの営業収支比率(IBI_24.1)の定義では、減価償却費を含めずに計算している。そのため、IBNETの営業収支比率(IBI_24.1)の定義を水道サービスのみに応用したOI_4の値は、日本のガイドラインにもとづいて計算される営業収支比率よりも高くなる。また、OI_12については、基本のガイドラインにおける営業収支比率の定義と同様に、減価償却費を含んでおり、O_13については、通常営業費用には含まれない債務返済も含めて営業収支比率を計算している。

**2: IBD_90の営業収益の一部であるその他の営業収益に含まれる補助金は、外部から水道事業体に与えられる補助金の内、貧困者として登録されている顧客の水道料金や接続料金等を部分的もしくは全面的に補うための補助金である。

**3: IBD_90の営業収益に含まれない関連する税収入について、水道及び下水道の料金や接続料金以外に、下水処理水による道路の清掃や消火栓を用いた消火活動等のために別途税金を徴収している地域があるが、このような税金については営業収益に含めない。

IBNETおよび日本の水道協会の水道事業ガイドライン(Q100)等からの説明:

**4: 給水原価(IBI_11.3)は1m3当たりの水が顧客に届くまでの運転維持管理費を示している。IBNETにより、対象国や周辺国における平均的なレベルの確認も可能。

**5: IBI_25.1は、水道事業体の債務返済の難しさを示唆する。過去に、世界銀行とADBがタイ首都圏水道公社(MWA)に対し財務上の制約条件として、150%以上を課したことがある。IBNETにより、対象国や周辺国における平均的なレベルの確認も可能。

**6: 流動比率(OI_5)は、流動負債に対する流動資産の割合であり、1年以内に返済すべき短期債務に対する支払能力を表している。流動比率は100%以上であることが必要であり、100%を下回っていれば不良債務が発生していることになる.200%が理想と考えられており、日本の一般的な企業では、130%～150%が一般的だが、日本の水道事業体では平均値が800%程度と非常に高い。この指標により支払能力を見る場合、単に数値の大小にとどまらず,その要因が流動資産の大小にあるのか、負債にあるのかを確かめることが大切である。例えば、流動比率が100%以下になる場合には、資金繰りが悪く、プリンターのインクの購入や車両のガソリンの購入など日常業務の実施にも悪影響を及ぼす可能性がある。

**7: 自己資本構成比率(OI_6)は、総資本(負債及び資本)に占める自己資本の割合を表しており、財務の健全性を示す指標のひとつである.事業の安定化のためには、この比率を高めていくことが必要である。
水道事業は施設の建設費の大部分を外部(借入資本金)から調達していることから低いものとならざるを得ないが、事業経営の長期的安定化を図るためには自己資本の造成が必要である。例えば、IBI_24.1、OI_4、もしくは、OI_12の営業収支比率が高く、十分な収益が得られている場合にも、借金が多く、経営が困難な場合があるため、この指標により負債の相対的な規模を把握する。過去に、世界銀行とADBがタイ首都圏水道公社(MWA)に対し財務上の制約条件として、25%以上を課したことがある。日本の水道事業体の場合、平均で60%程度である。この指標の他には、OI_7、OI_13やIBI_25.1も負債の影響について把握するのに役立つ。

**8: 固定比率(OI_7)は、自己資本がどの程度固定資産に投下されているかを見る指標であり、100%以下であれば固定資産の投資が自己資本の枠内におさまっていることになる。100%を超えていれば借入金で設備投資を行っていることになり、借入金の償還、利息の負担などの問題が生じる。一般的な企業でも、この比率が100%以下であることは少なく、100%以下の場合には財務上のバランスがとてもよいといえる。水道事業の場合は、借入金で設備投資を行なう度合が高いため、この比率が高くなる場合が多い。日本の水道事業体の場合、平均で140%程度である。例えば、総営業収益により、施設の運転維持管理費用、減価償却費用、過去の施設投資における債務の返済に加えて、将来の施設投資費のための貯蓄ができる状況にあれば、今後固定比率を低下させることができる。また、負債とならない中央政府等からの補助金により、施設投資が行われる場合にも固定比率が低くなるため解釈する際注意が必要である。

**9: 固定資産回転率(OI_8)は、固定資産に対する営業収益の割合であり,期間中に固定資産の何倍の営業収益があったかを示すものである.固定資産回転率は、業種によって大きくことなる。水道事業は施設型の事業であることから、固定資産回転率は重要な指標であり、回転率が高い場合は施設が有効に稼働していることを示し、一方、低い場合は一般的に過大投資になっていることが考えられる。 日本の水道事業体では、2%から20%程度が一般的であり、平均は10%程度である。

**10: 日本の水道事業体の場合、平均値は30%程度である。
**11: 日本の水道事業体の場合、平均値は10%程度である。
**12: 日本の水道事業体の場合、平均値は20%程度である。

3. アセスメントツールの改善 – Improvement of the Assessment Tools

3.1 フィードバックのためのアンケート用紙 – Questionnaire for Feedback

(1) 氏名: 記入例: 高樋　直人

(2) 所属等: 記入例: (株) 日水コン 海外事業部

(3) 試用した国: 記入例: フィリピン、カンボジア、ケニア

(4) 試用した年: 記入例: 2010年

(5) 試用した目的:

記入例:　上記3国における水道セクター及び水道事業体の状態を評価し、プログラム及びプロジェクトの形成を行うため。

(6) 試用したアセスメント・ツールと試用範囲:

		試用範囲				試用目的等
		1st	2nd	3rd	4th	
基本ツール	① 水道事業体の業務指標リスト (LPI)	記入例: ○			–	記入例:　カンボジアの主要な水道事業体の状況を短期間で把握するため。
	② 水道セクター用チェックリスト (SC)			–	–	
	③ 水道事業体の一般情報記入フォーム (UGF)			–	–	
	④ 水道事業体用基本チェックリスト (UBC)		–	–	–	
	⑤ 水道事業体用詳細チェックリスト (UDC)	–				

		参加対象者		試用目的等
		水道事業体	水道セクター	
補助ツール	A: 環境スキャン (ES)			
	B: キャパシティ・脆弱性分析 (CVA)		–	

(7) 試用者のコメント:

記入例:　1st Priorityの指標の内、残留塩素の水質試験実施率が把握できている水道事業体は少ないようである。

フィード・バックの送信先

本ハンドブックにまとめられたキャパシティ・アセスメントの方法論及び各ツールについて、修正が必要な個所やコメント等がありましたら、以下のメールアドレスまでお寄せいただければ幸いです。頂いたフィードバックは、方法論及び各ツールを改善して本ハンドブックを改定する際の参考とさせて頂きます。

JICA 地球環境部 水資源・防災課題支援事務局 E-mail: jicage-water2@jica.go.jp

3.2 基本ツールのメンテナンス方法 – Maintenance of Basic Tools

基本ツール⑤の質問追加手順の例

i) **基本ツール⑤**の追加したい箇所の行を追加し、カテゴリー、質問等を追加する。
ii) i)でカテゴリーを追加した場合は、**カテゴリー名の和訳変換表**にも番号を追加し、カテゴリーを追加しておく。(英文表記のセルには基本ツール⑤の該当セルの内容を参照させる。和文表記のセルには和訳を手入力する。)
iii) i)の追加内容に合わせて**自動選択・着色機能シート**のカテゴリー構成を修正する。
iv) 追加部分の右隅にチェックボックスを追加する。(b.を参照)
v) 追加したチェックボックスのプロパティを出し、linkedcellを入力する。(b.を参照)
vi) linkedcellの文字を白く着色する。
vii) iii)で追加したセルにVLOOKUP関数を入力し、日本語–英語切換できるようにする。(d.を参照)
viii) **自動選択・着色機能シート**のAF～CA列を再表示し、条件付き書式の条件を他のカテゴリーを参考に追加設定する。(f.を参照)
ix) vii)のセルに、他のカテゴリーを参考に条件付き書式を設定する。(a.を参照)
x) AF～CA列を非表示にする。(g.を参照)
xi) **基本ツール⑤**のN～O列を再表示し、条件付き書式の条件を他のカテゴリーを参考に追加設定する。(f.を参照)
xii) N～O列を非表示にする。(g.を参照)
xiii) **自動選択・着色機能シート**から**基本ツール⑤**へのハイパーリンクの設定をする。(e.を参照)

基本ツールのメンテナンスに必要なEXCELの機能(参考)

	機能	目的	修正方法	追加方法	削除方法	注意事項
a.	条件付き書式	重点分野の自動着色	「書式(O)」→「条件付き書式(D)」で「条件付き書式の設定」ダイアログボックスが出る。	「条件付き書式の設定」ダイアログボックスを出して条件を追加する。	「条件付き書式の設定」ダイアログボックスを出して条件を削除する。	条件は3つまでしか設定できない。4つ以上設定する場合は関数をうまく使う必要がある。
b.	チェックボックス	重点分野の選択	「デザインモード」をONにしてチェックボックスの上で右クリック→プロパティ。	「コントロールツールボックス」ツールバーを出す or 既存チェックボックスをコピーする。	「デザインモード」をONにしてからチェックボックスを選択してdelete。	チェックボックスがONの時、linkedcellがTRUEになる。
c.	オプションボタン	日本語–英語切換	「デザインモード」をONにしてオプションボタンの上で右クリック→プロパティ。			切替るのに少し時間が掛かる。
d.	VLOOKUP関数	日本語–英語切換	カテゴリー名の和訳変換表を修正すると訳を修正できる。	カテゴリー名に番号と訳を追加する。	カテゴリー名で削除したい行を削除する。	
e.	ハイパーリンク	指定セルにジャンプする	ハイパーリンクの挿入アイコンをクリック or Ctrl+Kで「ハイパーリンクの挿入」ダイアログボックスが出る。	「ハイパーリンクの挿入」ダイアログボックスを出してハイパーリンクを設定する。	「ハイパーリンクの挿入」ダイアログボックスを出してハイパーリンクを解除する。	
f.	列の再表示		「書式(O)」→「列(C)」→「再表示(U)」で列が再表示される。			
g.	列の非表示		「書式(O)」→「列(C)」→「表示しない(H)」で列が非表示される。			

II. 参考資料

(CD-R 内)

参考資料１．調査全体の概要

1.1　本調査の背景

近年､開発援助において途上国の総体としての課題対処能力を高めて持続的な開発を促進することが援助の役割であるという考えの下、キャパシティ・ディベロップメント（CD）の視点が重視されてきている。

JICA では CD を「途上国の課題対応能力が個人、組織、社会などの複数のレベルの総体として向上していくプロセス」であると定義付けており、事業を進める上での基本概念の 1 つとして整理し、「キャパシティ・アセスメントハンドブック」（2008 年 9 月）等の執務参考資料の充実を図っている。JICA では、水道分野においても、人材育成のあり方の整理、過去の人材育成協力の事例分析、CD チェックリストの試案作成等を行い、「キャパシティ・ディベロップメントに関する事例分析　水道人材育成分野」（2008 年 3 月）として報告書にまとめた。しかし、水道事業の実施を管理する上で、キャパシティ・アセスメントをより一層活用するために、これらの蓄積を基に、その応用を図るための手順を示すツールを整理・開発し、さらにそのツールの普及を図っていくことが必要であったため、本案件が実施される運びとなった。

また、2008 年 10 月 1 日に JBIC との統合により誕生した新 JICA では、資金協力に連動する形で CD に関するコンポーネントを加えていく必要性が増大している。特に、本調査が対象としている事業実施機関である水道事業体においては、その組織・施設を持続的に運営していくためには、技術面のみならず、経営・財務面を含む組織全体の能力向上が不可欠である。そのため、水道事業体の能力またはパフォーマンスを的確に把握するためのキャパシティ・アセスメントの重要性が増している（用語については、パフォーマンス測定、ベンチマーキングといった概念もあるので、総称する場合は、以下では「キャパシティ・アセスメント等」とする)。さらに、開発課題の効果的な解決を目指して、事業のプログラム化の推進が加速されている。このような中、1 つの水道事業体に対して、複数の援助スキームを組み合わせて支援が実施される事例もあり､水道事業体を複数のスキームを通じて継続的にモニタリングできるようなキャパシティ･アセスメント等の指標を統一する必要性が高まっている。

一方、他の援助機関や国際的ネットワークにおいては、水道事業体間の業務指標（PI）がベンチマーキングとして比較されており､またその業務指標の標準化への取り組みが行われてきた。

以上をふまえ、本件では、水道事業体のキャパシティ・アセスメント等の概念を整理し、今後の JICA の取り組みを示唆すると共に、事業の準備・審査・実施・管理において活用できるような、キャパシティ・アセスメント等の方法論を整理することを目的として、効果的

な援助アプローチの検討に必要な基礎情報の収集を実施した。

1.2 本調査の目的

JICA では JBIC との統合後、新たに資金協力を担当することになり、従来以上に、相手国実施機関の能力またはパフォーマンスを把握し、向上させることが重要となっている。そのため、都市水道分野を対象として、実施機関である水道事業体や当該セクターのキャパシティ・アセスメント等の方法等を整理することにより、プロジェクトの準備、審査、実施モニタリング等に役立つ執務参考資料を作成することを目的とする。

1.3 現地調査の対象国

本件における文献レビュー等においては、都市水道分野のキャパシティ・アセスメント等に関する過去の事業を広く対象とするが、作成する方法論を試行するケーススタディーの対象国としては、図 1.1 に示すフィリピン国、カンボジア国、及びケニア国の３ヵ国とした。

図 1.1 ケーススタディーの対象とした３ヵ国

1.4 関係機関等

本件では、水道分野のキャパシティ･アセスメント等に関する内外の機関を広く対象とするが、主に、以下のような機関から、情報収集を行った。

(1) ケーススタディーの対象とする途上国の水道事業体
(2) ケーススタディーの対象とする途上国の水道規制機関
(3) 水道分野のキャパシティ･アセスメント等を実施している主要援助機関（ドナー）
(4) 水道事業体の業績評価の指標の制定に係る研究機関や公的機関 (日本水道協会等)

また、本調査の成果を利用することになる JICA 地球環境部の職員および本調査の作業監理を行う検討委員会のメンバーとのコミュニケーションを重視しつつ本調査を進めた。

1.5 調査団の要員

本件調査は、図 1.2 に示される要員計画に基づいて実施されており、武内、高樋、斎藤、及び森が業務を担当している。ただし、(株)日水コンの前田千夏、間宮健匡、および鈴木香苗、そして(財)水道技術研究センターの山崎章三、石井健睿、小西道生、竹村稔、横山健、松本公明および川崎敬生についても支援業務を行っており、山崎については、現地業務にも同行した。

人月表

	担当業務	氏名	所属先	格付	2009年 11	12	1	2010年 2	3	4	5	6	7	人・月 年度	計 現地	計 国内
現地業務	総括／組織・制度／キャパシティ・アセスメント	武内　辰夫	水道技術研究センター	2				27日間							0.9	
	上水道維持管理	高樋　直人	日水コン	3				27日間							0.9	
	財務/経営2	森　正蔵	日水コン	4				27日間							0.9	
												現地業務小計			2.7	
国内作業	総括／組織・制度／キャパシティ・アセスメント	武内　辰夫	水道技術研究センター	2		15日間			5日間	88日間						3.6
	上水道維持管理	高樋　直人	日水コン	3		24日間				33日間						1.9
	財務/経営1	齋藤　博康	日水コン	2		15日間			5日間	49日間						2.3
	財務/経営2	森　正蔵	日水コン	4			20日間		5日間	20日間						1.5
												国内作業小計				9.3
	報告書	提出時期 (△と報告書名により表示)				△ 業務実施計画書			△ 進捗報告書				△ 最終報告書 広報資料			
		国内作業 (人・月計)														9.3
段階及び合計															2.7	9.3
															12.0	

凡例 ■ 現地業務 □ 国内作業

図 1.2 要員計画

1.6　調査の作業工程

図 1.3 に本件調査で実施した作業の工程を示す。

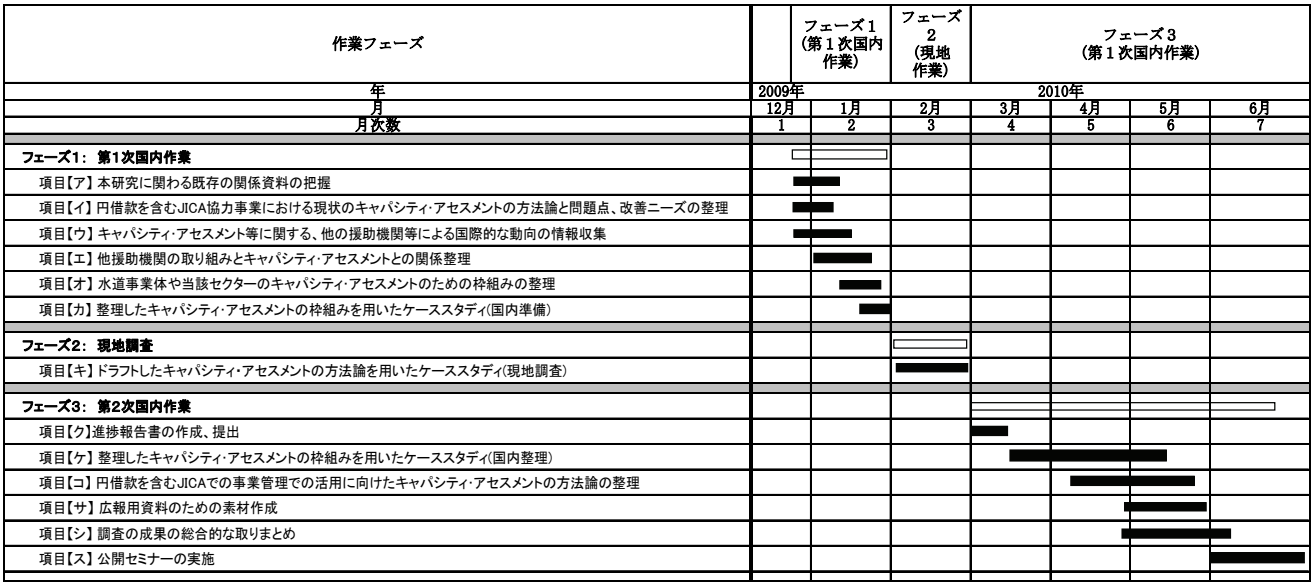


図 1.3 本調査で実施した作業の工程

1.7　方法論検討の流れ

本案件では、方法論の作成を以下の手順で行った。

＜ 方法論作成の手順 ＞

１．第一次国内作業

1) 第１回検討委員会における方向性の確認
2) 既存文献の調査による国内外のキャパシティ・アセスメントやベンチマーキングについての動向について把握
3) JICA 職員等へのヒアリングによるキャパシティ・アセスメントの実施例やニーズの把握
4) 文献調査及びヒアリング結果に基づいた方法論の枠組みと目的別の各アセスメントツールの方向性の提案
5) 第２回検討委員会における方法論の枠組み等の改善
6) 方法論に含まれる各アセスメントツールの作成
7) 第３回検討会における各アセスメントツールの改善の方向性について確認

２．現地作業

1) 現地調査おける各アセスメントツールの試用と方法論の枠組み及び各ツールの改善の検討

３．第二次国内作業

1) 現地調査の結果を踏まえて、方法論の枠組みの改善案の作成と各ツールの大まかな改善を実施
2) 第４回以降の検討委員会における方法論の枠組みの改善案及び各アセスメントツールのさらなる改善の方向性について確認
3) 現地調査及び第４回から第 6 回の検討委員会の結果等に基づいた方法論及び各アセスメントツールの改善
4) 公開セミナーの実施
5) ハンドブック(最終報告書)の作成
6) 英文資料の作成

参考資料２．国内外の動向と必要性の把握

2.1 JICA 及び旧 JBIC の過去の取り組み

表 2.1 に、本ハンドブックの内容に関連する JICA 及び旧 JBIC の過去の取り組み等について書かれている文献のリストを示す。今後方法論の改善における参考とするため、これらの文献の PDF ファイルを CD-R にまとめた。

表 2.1　JICA 及び旧 JBIC 等の関連資料のリスト

分類	発行年月 / 発行機関等 / 資料名 / ファイル形式
1) JICA の執務参考資料	2008.9 JICA キャパシティ・アセスメント・ハンドブック - キャパシティ・ディベロップメントを実現する事業マネジメント.pdf 2008.3 JICA 指標から国を見る - マクロ経済指標、貧困指標、ガバナンス指標の見方.pdf 2007.12 JICA 事業マネジメントハンドブック 初版.pdf 2004.3 JICA キャパシティ・ディベロップメントハンドブック - JICA 事業の有効性と持続性を高めるために.pdf 2004.3 JICA Capacity Development Handbook for JICA Staff - for improving the effectiveness and sustainability of JICA's assistance.pdf 2004.2 JICA プロジェクト評価の手引き - 改訂版 JICA 事業評価ガイドライン.pdf
2) JICA、旧 JBIC 等の調査研究資料等	2009.2 JICA 水道セクター・経営及び維持管理に係るテーマ別評価.pdf 2009 JICA 年次報告.pdf 2008.7 早稲田大学, JICA, JBIC, etc. 「国際開発協力におけるキャパシティ・ディベロップメントと制度変化」アプローチ.pdf 2008.4 JICA キャパシティ・ディベロップメントに向けた知識共有と協調の試み.pdf 2008.3 JICA キャパシティ・ディベロップメントに関する事例分析 水道人材育成分野.pdf 2008.2 JBIC 円借款事業評価研修テキスト.pdf 2006.3 JICA 途上国の主体性に基づく総合的課題対処能力の向上を目指して - キャパシティ・ディベロップメント（CD）.pdf 2000.7 JBIC 上下水道セクターの民営化の動向 - 開発途上国と先進国の経験 -.pdf
3) JICA の水道セクター調査、プログラム形成、経営改善計画の関連資料	2009.9 JICA パラグアイ共和国 水・衛生セクター基礎調査最終報告書 Vol.1 メイン・レポート.pdf 2009.9 JICA インドネシア上水道整備プログラム形成調査 報告書(案）.pdf 2005.5 JICA アゼルバイジャン・グルジア 寒冷地水道分野プロジェクト形成調査報告書.pdf 2004.1 JICA アフリカ地域(マダガスカル・モザンビーク)水分野プロジェクト形成調査報告書.pd 2002.4 JICA ユーゴースラヴィア連邦共和国 保健医療・上下水道分野プロジェクト形成調査結果資料(内部検討資料).pdf 2000.3 JICA ウズベキスタン国 水道事業経営・料金政策改善計画調査最終報告書(和文要約).pdf 1998.12 JICA ウズベキスタン共和国 水道事業経営改善計画調査事前報告書.pdf

2.2　他ドナーの取り組み

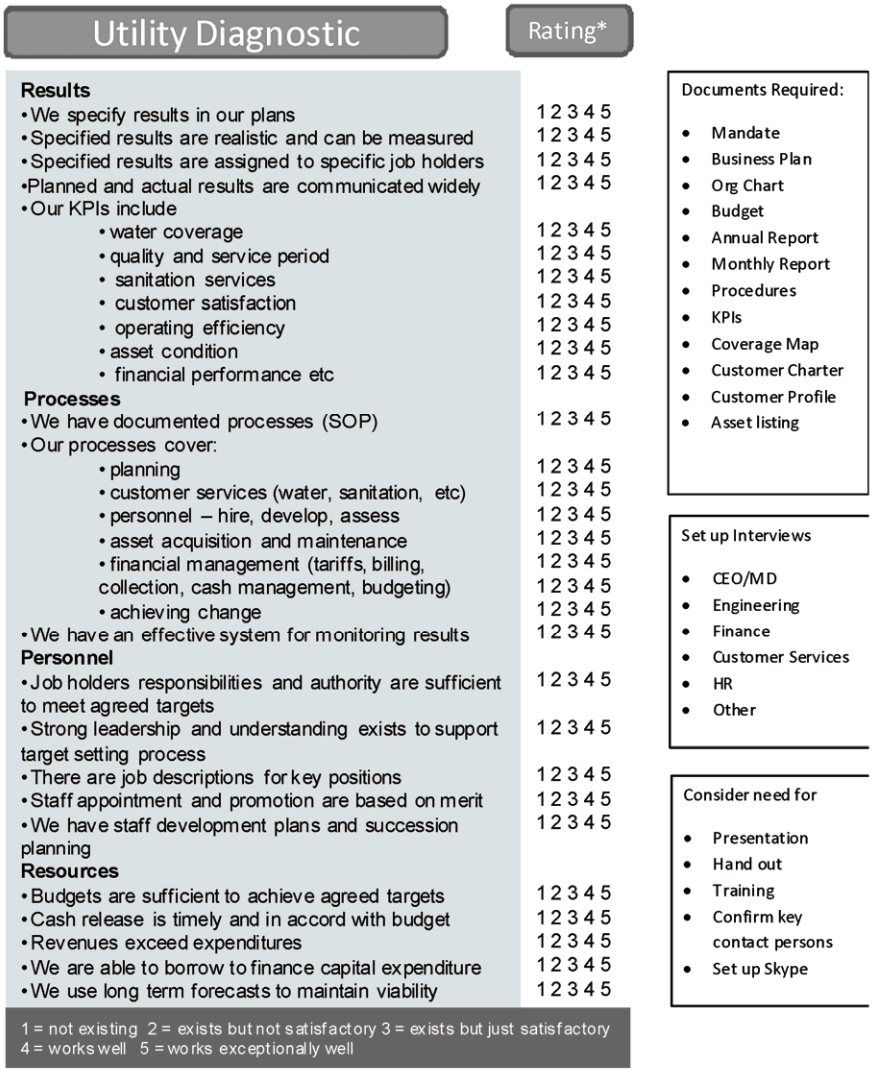
他ドナーの動向についての分析結果は、現地調査前に行った第 3 回検討委員会の調査団プレゼン資料(参考資料 4 の 4.3)のスライド 4 からスライド 18 に記述されており、以下の 4 つの内容がまとめられている。

A. 水道分野での世界的なベンチマーキングの動向
B. IBNET のベンチマーキング用データベース
C. 世界的な Water Operators Partnerships (WOPs) の動向
D. ADB がサポートしている WOPs、ベンチマーキング及び Twinning について

また、現地調査において ADB 及び GTZ にインタビューした結果は、第 4 回検討委員会プレゼン資料(参考資料 4 の 4.4)のスライド 12 とスライド 26 に記述したが、以下に追加説明を加える。

ADB が行っている水道事業体のツイニング・プログラムでは、支援する側の水道事業体が、支援の対象となる水道事業体のキャパシティをアセスメントするため、30 の定性的質問からなる簡易的な診断票（図 2.1）を用いている。この診断票では各質問に対する回答を１から５ランクの中から選択する形式になっているが、回答者の認識によって左右される質問が多く、客観的なアセスメント手法とはなっていない。ツイニング・プログラムにおいては、援助を受ける側のキャパシティを正確にアセスメントし、援助が必要な項目を特定したとしても、最終的には援助を行う側の水道事業体が専門家を提供できる分野内に援助の内容が制限される。また、援助を行う側の水道事業体と受ける側の水道事業体の職員が面談し、良い人間関係を比較的容易に形成できそうかどうかといった相性がとても重要であると認識されている。このような理由から、ツイニング・プログラムにおいては、援助対象となる水道事業体の CA の重要性は高くない。

他のドナーが行っているベンチマーキングはメトリック・ベンチマーキングが中心である。しかし、GTZ の場合は、規制機関等に指標による国内水道事業体の管理方法について技術移転をしており、毎年データを蓄積させることで、国内におけるメトリック・ベンチマーキングをプロセス・ベンチマーキングにまで展開している。WSP の IBNET についても指標値を登録している約 2,000 の水道事業体の内、約 60%の水道事業体が 4 年以上のデータ登録をしているため、プロセス・ベンチマーキングが実施されていると言える。過去に多くのメトリック・ベンチマーキングを行った ADB についても、プロセス・ベンチマーキングへの発展を模索しているようだが、まだ具体的な成果は報告されていない。



(出典: 2009.9 ADB Twinning Guidelines for Water Utility Twins - power of two, boosting performance through twinning)

図 2.1　ツイニングで用いられている診断票

作成している方法論の中で使用している水道事業体の業務指標(PI)は、以下に示す合計 10 種類の他ドナーの関連ガイドライン、途上国を対象としたベンチマーキングプログラム、もしくは途上国の水道規制機関等が用いている情報システムで扱われている指標群を表にまとめて分析することで絞り込作業を行った。

1. 世銀/WSP の The International Benchmarking Network for Water and Sanitation Utilities (IBNET)において、Web 上で管理されている業務指標データベース
2. WHO の Tools for assessing the O&M status of water supply and sanitation in developing countries (2000)
3. SIDA の Water Utility Partnership for Capacity Building Africa - Utility Performance Improvement Plan Framework (2006)

4. WSP 等の Water Operator Partnerships - Africa Utility Performance Assessment (2009)
5. USAID の A Guide for Performance Monitoring and Benchmarking of the Water Supply and Sewerage Sector of Montenegro (2005)
6. WSP の Phase II _ benchmarking urban water utilities in India (2008)
7. ADB Water Utilities Data Book, Second Edition, Asia and Pacific Region (1997)
8. WASREB の Impact - A performance Report of Kenya's Water Services Sub-Sector Issue No 2 (2009)
9. ADB の 2007 Benchmarking and Data Book of Water Utilities in India (2007)
10. ADB の Water in Asian Cities - Utilities' Performance and Civil Society Views (2004)

指標の選択においては、上記の 10 資料において使用された指標の他に、東南アジア水道事業体ネットワーク(SEAWUN)の Web 上データベースで用いている指標、日本の水道事業ガイドラインに含まれる業務指標、IWA が用いている指標等についても第一次国内作業において参考にした。また、現地調査では、訪問した各水道規制機関と水道事業体の間で結ばれた合意書に記載されている業務指標やそれらについて設定されている目標値についても指標選択の参考とした。

指標の選択のため参照した多くの資料では､水道事業体のキャパシティの評価に使用できる定性的な質問項目については記述されていなかったが、IBNET のデータ入力フォーム及び ADB が行った過去のベンチマーキングプログラムの質問票等には、定性的な質問項目についてもいくつか含まれていたため､新たな方法論に含まれる定性的質問から成るチェックリストを作成する上でそれらの質問項目を参考とした。また、水道事業体の一般的な情報について把握するための質問票の作成においても､IBNET のデータ入力フォーム及び ADB のベンチマーキング用質問票等を参考にした。

また、本調査では、定量的な指標を用いたベンチマーキング及び定性的な質問から成るチェックリストの他に、水道事業体及び水道セクターのキャパシティ・アセスメントを行うための２つの参加型手法(環境スキャンと脆弱性分析)についても提案した。これらの参加型手法は JICA の「キャパシティ・アセスメント・ハンドブック」（2008 年 9 月）の別添資料 1 でまとめられている他ドナー等で過去に使用された多数のキャパシティ･アセスメントのツールの中から選択し、都市水道用に作り替えたものである。

表 2.2 に、本ハンドブックの内容に関連する他ドナー及び上水道関連機関等の過去の取り組み等について書かれている文献のリストを示す。また、表 2.3 に現地調査の対象水道事業体及びセクター機関の関連資料リストを示す。 今後方法論の改善における参考とするため、これらの文献の PDF ファイルを CD-R にまとめた。

表 2.2 他の援助機関等の関連資料のリスト

分類	発行年月 / 発行機関等 / 資料名 / ファイル形式
1) World Bank、WSP、IBNET	2009.6 WSP, etc. Water Operator Partnerships - africa utility performance assessment.pdf 2009.5 WSP Performance Improvement Planning - enhancing water services through

	performance agreements .pdf 2009.2 World Bank Public-Private Partnerships for Urban Water Utilities - a review of experiences in developing countries.pdf 2008.9 WSP Phase II Benchmarking Urban Water Utilities in India.pdf 2007.4 World Bank Shandong Province IBNET Urban Water Assessment, Final Report.pdf 2007 WSP The Water Operators Partnerships - Africa - an action program.pdf 2006.5 WSP Benchmarking Performance - urban water sector in south asia.pdf 2005.4 WRc. IBNET International Benchmarking Network Helps Utilities Improve Performance.pdf 2004.1 World Bank Innovative Contracts, Sound Relationships - urban water sector reform in senegal.pdf 2004 World Bank Monitoring & Evaluation - some tools, methods & approaches.pdf 2004 World Bank A Handbook for Development Practitioners - ten steps to a results-based monitoring and evaluation system.pdf 2003.10 World Bank Water Supply and Sanitation in Poverty Reduction Strategy Papers in Sub-Saharan Africa - developing a benchmarking review and exploring the way forward.pdf 2002.9 World Bank Sector Organization, Governance, and the Inefficiency of African Water Utilities, Volume 1.pdf 2002.4 World Bank A Water Scorecard - a discussion and examples of the use of performance benchmarking.pdf 2001.3 World Bank Utility Benchmarking - public reporting of service performance.pdf 1999.5 World Bank Benchmarking Water and Sanitation Utilities - a start-up kit.pdf 1996.9 World Bank Performance Monitoring Indicators Handbook.pdf 1996.5 World Bank Water & Wastewater Utilities - indicators 2nd edition.pdf Downloaded Toolkits, etc. from the IBNET Web Page including the followings IBNET_indicator_calculator_Sept_04_v3.xls IBNET_data_entry_Sept_04_v3.xls IBNET_Data_and_Indicator_Lists_Sept_04_v2.xls Example of TOR for performance benchmarking, local consultants.doc Example of TOR for performance benchmarking, international consultants.doc 1-IBNETWaterBenchmarkingv02.doc Instructions.doc IBNETinputdatadefinitionsSept04 (Data).doc IBNETindicatordefinitionsSept04 (Indicators).doc
2) ADB、SEAWUN	2009.9 ADB Twinning Guidelines for Water Utility Twins - power of two, boosting performance through twinning.pdf 2008.8 ADB Power of Two - boosting performance through twinning.pdf 2007.11 ADB&SEAWUN Data Books of Southeast Asian Water Utilities 2005.pdf 2007.3 ADB Technical Assistance Report - supporting water operators' partnership in Asia.pdf 2007 ADB 2007 Benchmarking and Data Book of Water Utilities in India.pdf 2007 SEAWUN Benchmarking-Survey-Questionnaire(English).pdf 2007 SEAWUN Benchmarking-Survey-Questionnaire-Guide(English).pdf 2005.6 SEAWUN Benchmarking Survey for 2003 - databook of data and results.pdf 2004.1 ADB Water in Asian Cities - utilities' performance and civil society views.pdf

	2003 ADB Asian Water Supplies - reaching the urban poor.pdf 1997 ADB Water Utilities Data Book, Second Edition, Asia and Pacific Region.pdf
3) GTZ	2009.8 GTZ All Inclusive - How Regulation in Water and Sanitation can be Pro-poor - lessons from Sub-Saharan Africa.pdf 2009.3 GTZ Case Study - water kiosks.pdf 2009.2 GTZ Water Sector Reform Program, Kenya - interim evaluation 2008, brief report.pdf 2009.1 GTZ, etc. Yemen Urban Water Supply and Sanitation Sector Reform.pdf 2009.1 GTZ Water Sector Reform Program, Zambia - interim evaluation 2008, brief report.pdf 2009 NAWASCO Urban and Peri-urban Water Supply and Sanitation Sector Report 2008-9 2008.11 GTZ Cooperation Programme - institutional development of the water sector Yemen. interim evaluation 2008.pdf 2008.1 GTZ Water Supply and Sanitation Sector Reforms in Kenya, Tanzania, Uganda and Zambia - challenges and lessons.pdf 2007.12 GTZ MDG Monitoring for Urban Water Supply and Sanitation - catching up with reality in Sub-Saharan Africa.pdf 2007.12 GTZ Capacity Development in the Water Sector - how GTZ supports sustainable water management and sanitation.pdf 2007.10 GTZ&KfW Water - A key to Sustainable Development - German development cooperation in the Yemeni water sector.pdf 2006 GTZ, etc. Planning Jordan's Water Future - lessons learnt from the water sector planning support project.pdf 2006 GTZ Casesheet - regulation and supervision in water supply and sanitation (WSS).pdf 2005.11 GTZ Private Sector Participation - theoretical insights and practical experience in WATSAN (water and sanitation) and solid waste.pdf 2004.11 GTZ, etc. The Informations System of the National Water Supply and Sanitation Council (NWASCO) in Zambia.pdf 2004.7 GTZ&WSP Communication Strategy for the Water Sector Reforms Programme.pdf 2004.4 GTZ Sharing the Experience on Regulation in the Water Sector (SOWAS) - working group on regulation and PSP in Sub Saharan Africa.pdf 2004 GTZ, etc. National Strategies for Sustainable Development - challenges, approaches and innovations in strategic and co-ordinated action based on a 19 country analysis.pdf 1993.3 GTZ Water Sector Reform Zambia - proposal on the phased reorganization of the water supply and sanitation sector and the strengthening of water resources management in Zambia.pdf
4) IWA	2008.6 IWA Water Utility Management International - special issue benchmarking.pdf 2007.12 IWA Water Utility Benchmarking for Managerial and Policy Decisions - lessons from developing countries.pdf 2006 IWA Performance Indicators for Water Supply Services, Second Edition.pdf 2002 IWA Process Benchmarking in the Water Industry - towards a worldwide approach.pdf 2000.10 IWA Losses From Water Supply Systems - standard terminology and recommended performance measures.pdf 2000.9 IWA Technical Performance Indicators - IWA best practise for water mains and the first steps in serbia.pdf 2000 IWA Review of Worldwide Benchmarking Activity.pdf
5) 他の国際機関 (援助機関、NGO、ISO)	2009.5 OECD Strategic Financial Planning for Water Supply and Sanitation.pdf 2009 UNDP Handbook on Planning, Monitoring and Evaluating for Development Results.pdf 2009 Transparency International, etc. Global Corruption Report 2009.pdf

	2008 UNICEF&WHO Joint Monitoring Report.pdf 2008 Transparency International, etc. Global Corruption Report 2008 - corruption in the water sector.pdf 2007.12 ISO 英和対訳版 ISO24512 (飲料水事業のマネジメント及び飲料水サービスの評価に関するガイドライン).pdf 2007.12 ISO 英和対訳版 ISO24510 (飲料水及び下水サービスに関する活動 - ユーザ・サービスの評価及び向上に関するガイドライン).pdf 2007.4 OFWAT International Comparison of Water and Sewerage Service 2007 Report.pdf 2006.4 SIDA Water Utility Partnership for Capacity Building Africa - utility performance improvement plan framework.pdf 2005.9 USAID A Guide for Performance Monitoring and Benchmarking of the Water Supply and Sewerage Sector of Montenegro.pdf 2000.9 AfricaDBG Sectoral and Project Performance Indicators in the Water Supply and Sanitation sub-sector.pdf 2000 WHO Tools for Assessing the O&M Status of Water Supply and Sanitation in Developing Countries.pdf 1992.11 USAID Performance Indicators for Selected Water Supply and Sanitation Utilities in Ecuador.pdf
6) 海外の大学及び研究機関	2009.4 Gaming in a Benchmarking Environment - a non-parametric analysis of benchmarking in the water sector.pdf 2008.2 Incorporating Service Quality into Yardstick Regulation.pdf 2007.1 Designing Incentives in Local Public Utilities - an international comparison of the drinking water sector.pdf 2007 MJCA Establishment of Performance Indicators for Water Supply Services Industry in Malaysia.pdf 2006.11 Conflict Resolution - benchmarking water utility performance.pdf 2006.6 PURC Consistency in Performance Rankings - the Peru water sector.pdf 2006.3 Using Internal Incentive Contracts to Improve Water Utility Performance - the case of uganda's NWSC.pdf 2005.4 PURC Service Quality and Prospects for Benchmarking - evidence from the Peru water sector.pdf 2003 PURC Benchmarking in the Latin American Water Sector - the case of Peru.pdf
7) 日本の水道関連機関	2009.10 JWRC HotNews 水事業体パートナーシップ（WOPs）などについて (その３）.pdf 2009.10 JWRC HotNews 水事業体パートナーシップ（WOPs）などについて (その２）.pdf 2009.9 JWRC HotNews 水事業体パートナーシップ（WOPs）などについて (その 1）.pdf 2008.2 JWRC HotNews インドにおける水道事業ベンチマーキング.pdf 2006.5-8 JWWA 第 2 回 IWA ワークショップ「効率的水道経営」に関する報告 (水道協会誌に掲載）.pdf 2005.2 JWWA Guidelines for the management and assessment of a drinking water supply Q100 - English.pdf 2005.1 JWWA 水道事業ガイドライン Q100 - Japanese.pdf 2004.9-12 JWWA 第 1 回 IWA ワークショップ「効率的水道経営」に関する報告 (水道協会誌に掲載）.pdf

表 2.3　現地調査の対象水道事業体及びセクター機関の関連資料のリスト

分類	発行年月 / 発行機関等 / 資料名 / ファイル形式
1) フィリピン国マニラ	2008.9 MWCI Second Rate Rebasing, Business Plan Update, September 2008 .pdf 2008.3 Study on Wastewater Management Know-how Transfer to the Metropolitan Manila Development Authority by the City of Yokohama.pdf 2008.2 Philippines Water Supply Sector Roadmap (Draft).pdf 2008.1 MWCI Rate Rebasing, Approved Business Plan, January 2008.pdf 2008 MWCI Sustainability Report.pdf 2008 MWCI Annual Report.pdf 2007.3 福岡アジア都市研究所 アジア地域における都市貧困層への水給水に関する研究 pdf.pdf 2006.2 日本福祉大学 マニラ上下水道事業の外資参加・民営化の功罪.pdf 2005.11 SKM&DCCD Eng.Corp. Water Supply, Sewerage, and Sanitation Master Plan for Metro Manila Vol.1 to Vol.5.pdf 2003.7 ユーティーシーイー&日本 PFI 協会 フィリピン･アンガット給水拡大事業民活導入に係るテーマ別評価調査 - マニラ首都圏上下水道庁の事例研究.pdf
2) カンボジア国プノンペン及びコンポンチャム	2009.1 JWRC 水道技術ジャーナル - 北九州市水道局の国際貢献.pdf 2008.10 ADB Completion Report - Cambodia Provincial Towns Improvement Project.pdf 2008 厚生労働省 水道国際貢献推進調査業務報告書 4. カンボジア王国の水道事業.pdf 2006.6 JICA カンボジア国 水道事業人材育成プロジェクト終了時評価報告書.pdf 2006.2 JICA カンボジア国 プノンペン市上水道整備計画調査(フェーズ 2)最終報告書要約.pdf 2006.2 JICA The study on the master plan of Greater Phnom Penh water supply (phase 2) in the Kingdom of Cambodia, Final Report Vol.1-3.pdf 2003.10 JICA カンボジア王国 水道事業人材育成プロジェクト実施協議報告書.pdf
3) ケニア国メルー	2009.6 MWI Water Sector Reforms - Improving sector performance for the benefit of all Kenyans.pdf 2009 WASREB Impact Report 2009 - a performance report of Kenya's water services sub-sector, Issue No.2.pdf 2009 WASREB Annual Report 2008.pdf 2008.7 MWI Implementation Plan for the National Water Services Strategy.pdf 2007.11 World Bank Kenya Water and Sanitation Service Improvement Project including Technical Assistance.pdf 2007.10 MEWASS Annual Report.doc 2007.10 JICA 国際協力研究　通巻 46 号　複数援助形態の活用による水道事業の独立採算経営支援　本文.pdf 2007 MWI A handbook on the Water Sector Performance Indicators.pdf 2001.2 JICA The Study on Institutional Improvement and Rehabilitation of Water Supply Systems for 10 Local Towns in the Republic of Kenya, Final Report Vol.1, Vol.2B Meru Town.pdf

2.3　キャパシティ・アセスメントの必要性の把握

JICA の各援助スキームの各フェーズにおけるキャパシティ･アセスメント等の実施状況(実施の有無)、実施目的、現在の方法論(手順等)、留意点、現状の問題点･課題、改善の方向性等について調べるため、表 2.4 に示す日程で JICA の職員等へのヒアリングを行った。

表 2.4　実施したヒアリングの日程

実施日	ヒアリング対象者の所属と氏名
12 月 17 日	JICA 地球環境部 次長 水資源・防災グループ長　坂田 章吉
	JICA 地球環境部 水資源・防災グループ 防災第二課 課長　益田 信一
	JICA 企画部 開発課題課　調査役　伊藤 圭介
	JICA 審査部 次長　渡辺 泰介
12 月 18 日	JICA 地球環境部 水資源第一課 兼 第二課 調査役 (上水道) 川越 信幸 (円借款担当、東京都水道局から出向)
	JICA 地球環境部 水資源・防災グループ 水資源第一課 調査役　植木 雅浩 （評価部から地球環境部に異動）
12 月 24 日	JICA 地球環境部 水資源・防災グループ 水資源第二課　小島 岳晴
	JICA 東南アジア第一・大洋州部 東南アジア第一課 兼 東南アジア第二課 (インドネシア) 調査役　田中 耕太郎 （旧 JBIC 職員）
	JICA 債権管理部 債権管理第二課　調査役　三牧 純子
	JICA 地球環境部 客員専門員　讃良 貞信 （上水道計画）
12 月 25 日	東京都水道局 山本係長 （旧 JBIC 開発セクター部円借款担当）
同席者	JICA 地球環境部 水資源・防災グループ 水資源第一課 企画役　松本 重行

これにより、JICA の水道事業体や水道セクターを対象とした事業におけるキャパシティ・アセスメント等の現状を把握するとともに、問題点･課題と改善のニーズについて検討した。技術協力のみではなく、資金協力の関連業務及び中長期の戦略的対応への方法論の適応に関する改善ニーズ等についても把握するように努めた。また、ヒアリングでは、ケーススタディーへの要望や成果品のイメージについても確認した。ヒアリングの結果から得られて新たに作成する方法論及び成果品のイメージを以下に示す。

ヒアリング結果等からの方法論のイメージ

- 既存の CA 及びベンチマーキング（BM）手法の適応・改善を中心に作成する。
- 適切な項目・指標を用いて CA 手法を改善するため以下の点に注意する。

  - 目的別に、チェックリストを作成し、項目・指標群を整理する。
  - 定量的指標、回答選択式の質問、及び回答記述式の質問を適切に使い分ける。
  - 指標の意味と評価する際のレベル感を説明する。
  - 一部の指標については分母及び分子の数値を確認するようにする。
  - 途上国向きの指標については、最大限他ドナー等の検討結果を参考にし、どうしても必要な場合のみ新たな指標を作成する。
- コア・キャパシティについては、短期間である程度把握できる手法を模索・試行する。
- 援助のタイプごと(CD もしくは施設投資)に整理する。

<u>成果品のイメージ</u>

- 報告書の本編はハンドブックのような形でまとめ、付録にケーススタディーの結果、他ドナーの動向、参考文献を入れる。
- 図表により方法論のコンセプト等をわかりやすく説明すると同時に、用語の説明等を加える。
- 英語版の資料は、国際会議等で使用できるものとする。

参考資料３．現地調査の結果等

3.1　　現地調査の内容

本調査では、第一次国内作業でドラフトした方法論を JICA が重点を置いているアジア及びアフリカ地域で試用してケーススタディーを行うために、約１か月の現地調査を行った。現地調査の対象国としたのは、フィリピン、カンボジア、ケニアである。これらの国において、アセスメントの対象とする水道事業体及び規制機関に加えて、情報交換のため他ドナーについても訪問し、情報収集及びディスカッションを行った。このケーススタディーでは、試作した方法論の適用可能性の確認や適用に際しての留意点の抽出を行うとともに、キャパシティ･アセスメントの結果を判定し、協力内容の構想・計画につなげていく際の相場観を、実例に基づいて整理することを目的とした。方法論についてはその枠組みの改善だけでなく、目的別に作成した各アセスメントツールの構造や、含まれる指標・質問の数や内容についても検討した。表 3.1 及び表 3.2 に、現地調査の工程、訪問先及び面会者リストを示す。

この現地調査では、水道セクター及び水道事業体の情報収集には焦点を当てず、方法論の枠組み及び各アセスメントツールの改善点を抽出するため、訪問先とのディスカッションに焦点を当てた。

また、現地調査を円滑かつ効果的に行うため、邦人に加えて、各訪問先機関の状況に精通したローカルスタッフを、各訪問国で短期間雇用した。その結果、全ての訪問先で内容の濃いディスカッションができた。

この現地調査では、対象とした全ての水道事業体で「水道事業体のキャパシティの概要把握用チェックリスト」を試用した。他のチェックリスト等については訪問先ごとに質問内容を適宜選択し、実施した。ただし、一部の訪問先では面会者が多忙であったことから、内容を極力絞ったアセスメントを試行した。また、規制機関との意見交換を行うため、世銀の WSP が管理している IBNET の Web 上データベースに登録された対象国の複数の水道事業体の業務指標データ等を用いたベンチマーキングについても試行した。

表 3.1 に示したように、**フィリピンでは、**民間の水道事業体であるマニラ・ウォーター(MWCI)を訪問すると共に、その規制機関であるマニラ首都圏上下水道庁（MWSS）を訪問した。ただし、マニラ首都圏上下水道庁は全国の水道事業体を監督する規制機関ではないため、マニラ国の水道セクター全体のアセスメントは十分にできなかった。アジア開発銀行(ADB)での面会者は、アセスメント手法全般について理解が乏しかったものの、WOPs と Twining については話を聞くことができた。

カンボジアでは、他ドナーへの訪問は行っていないが、規模及びパフォーマンスが異なる２つの水道事業体（大規模：プノンペン水道公社(PPWSA)、中小規模：コンポンチャム水道局(KCWS)）を訪問した。しかしながら、本件の現地調査で対象としたマニラ・ウォーター(MWCI)とプノンペン水道公社(PPWSA)のパフォーマンスはそれぞれの国の No.1 であり、また、現地調査をとおしてコンポンチャム水道局(KCWS)とケニアのメルー上下水道信託会社(MEWASS)についてもそれぞれの国で五本の指に入ることが分かった。このため、レベルが低い水道事業体において、作成した各アセスメントツールを試すことはかなわなかった。

ケニアでは、水道の規制機能が２つの組織に分担されていたので、両方の組織 (水サービス規制機関(WASREB)及びタナ水サービス企業団(TWSB))を訪問した。メルー上下水道信託会社(MEWASS)への訪問の前後に、タナ水サービス企業団(TWSB)へ計２回訪問することで、水道事業体と規制機関の認識の違いや期待されるアセスメントの信頼性について、検討することができた。また、メルー上下水道信託会社(MEWASS)では、チェックリスト項目の有効性を判断するため、浄水場等についても視察した。さらに、ケニアで訪問したドイツ技術協力公社(GTZ)では、規制機関の水道事業体情報システムおよび水道セクターのリフォームについて話を聞き、関連資料を収集した。

表 3.1 現地調査の工程と訪問先

			調査団			
			総括／組織・制度／キャパシティアセスメント	上水道維持管理	財務／経営	技術顧問
			武内　辰夫	高樋　直人	森　正蔵	山﨑　章三
1	2010/2/2	火	マニラ到着			
2	2/3	水	ＪＩＣＡフィリピン事務所訪問、マニラ・ウォーター訪問 (1 回目)			
3	2/4	木	団内ミーティング、ADB 訪問			
4	2/5	金	マニラ首都圏上下水道庁訪問、マニラ・ウォーター訪問 (２回目)			
5	2/6	土	資料整理			
6	2/7	日	資料整理			
7	2/8	月	団内ミーティング、ＪＩＣＡフィリピン事務所報告			
8	2/9	火	プノンペンへ移動			
9	2/10	水	プノンペン水道公社訪問、ＪＩＣＡカンボジア事務所訪問			
10	2/11	木	団内ミーティング			
11	2/12	金	鉱工業・エネルギー省水道部訪問 (１回目)、団内ミーティング			
12	2/13	土	資料整理			
13	2/14	日	コンポンチャムへ移動			
14	2/15	月	コンポンチャム水道局訪問 (1 回目)			
15	2/16	火	コンポンチャム水道局訪問 (２回目)、プノンペンへ移動			
16	2/17	水	ＪＩＣＡカンボジア事務所報告、鉱工業・エネルギー省水道部訪問 (２回目)			
17	2/18	木	ナイロビへ移動			
18	2/19	金	ＪＩＣＡケニア事務所訪問、ニエリへ移動、タナ水サービス企業団訪問（１回目）、メルーへ移動			
19	2/20	土	資料整理			
20	2/21	日	資料整理			
21	2/22	月	メルー上下水道信託会社訪問 (1 回目)			
22	2/23	火	浄水場等視察、メルー上下水道信託会社訪問 (２回目)			
23	2/24	水	ニエリへ移動、タナ水サービス企業団訪問（２回目）、ナイロビへ移動			
24	2/25	木	水サービス規制機関訪問 (1 回目)			水サービス規制機関訪問 (1 回目)、ケニア出国
25	2/26	金	水サービス規制機関訪問 (２回目)、ＪＩＣＡケニア事務所報告			帰国
26	2/27	土	ケニア出国			
27	2/28	日	ドバイ待機(天候不良のためナイロビードバイ便が遅延)			
28	2010/3/1	月	代替フライトにて帰国			

表 3.2 各訪問先における面会者リスト（1／2）

項目	年月日	時間	場所	面談目的	面談者氏名	所属	部署	役職	メールアドレス	備考
1	2010/2/3	9:00 – 9:45	マンダリンホテル	業務指示	Mr. Rolando E. ROCA	CEST, Incorporated		Water Engineer	rolandoeroca@yahoo.com.ph	現地アシスタント（元マニラ水道職員）
2		10:30 – 11:30	JICA事務所	挨拶、業務内容説明	岩瀬　誠	JICA Philippine Office		所員	iwase.makoto@jica.go.jp	本調査担当員
					Ms. Flerida C. Chan		Poverty Reduction Section	Senior Program Officer	chanflerida.pp@jica.go.jp	
3		13:00 – 16:00	マニラウォータ分室（MWCI）	調査	Mr. Virgilio C. Rivera, Jr.	Manila Water	Regulation & Corporate Development	Group Director	perry.rivera@manilawater.com	
					Ms. Grace M. Sta. Ana	Manila Water	New Business Development Regulation & Corporate Development Group	Senior Manager	grace.staana@manilawater.com	
					熊坂和宏	三菱商事	マニラ支店、機械グループ	環境・水事業開発担当部長	kazuhiro.kumasaka@mitsubishicorp.com	
4	2010/2/4	16:30 – 20:00	アジア開発銀行本部（ADB）	調査	Mr. Michael White	Asian Development Bank	Energy & Water Division Southeast Asia Department	Urban Development Specialist	mewhite@adb.org	元日本工営プロジェクト担当員
5	2010/2/5	9:00 – 12:00	首都圏上下水道庁（MWSS）	調査	Ms. Estrella T. Decena Zaldivar	Metroplitan Waterworks & Sewerage System	Administration & Legal Affairs	Deputy Administrator	starzaldivar@yahoo.com	
					Mr. Leonor C. Cleofas, Ceso IV	Metroplitan Waterworks & Sewerage System	Operations	Deputy Administrator	bcleofas@philonline.com.ph	
					Mr. Timoteo C. Villaroman	Metroplitan Waterworks & Sewerage System	Technical Regulation	Deputy Administrator	nictomvill@yahoo.com	
					Mr. Melchior I. Acosta, Jr	Metroplitan Waterworks & Sewerage System	Customer Service Regulation	Deputy Administrator	miacosta@pldtdsl.net	
					Ms. Goldelio G. Rivera, CPA	Metroplitan Waterworks & Sewerage System	Financial Regulation	Deputy Administrator		
					Mr. Randolph A. Sakai	Metroplitan Waterworks & Sewerage System	Tariff Control & Monitoring Department	Manager	randy_sakai@yahoo.com	
					Other several persons	Metroplitan Waterworks & Sewerage System				Observers
6		14:00 – 16:00	マニラウォータ本社（MWCI）	追加調査	Karoline V, Constantino-Sangalang	Manila Water	Financial Planning & New Business Corporate & Governance Group	Monitoring & Control Manager	karoline.sangalang@manilawater.com	
					Ms. Grace M. Sta. Ana	Manila Water	New Business Development Regulation & Corporate Development Group	Senior Manager	grace.staana@manilawater.com	
					熊坂和宏	三菱商事	マニラ支店、機械グループ	環境・水事業開発担当部長	kazuhiro.kumasaka@mitsubishicorp.com	
					Mr. Michael White	Asia Development Bank				
7	2010/2/8	16:00 – 17:00	JICA事務所	調査結果報告	松田教男	JICA Philippine Office		所長	matsuda.norio@jica.go.jp	
					永石雅史			次長	nagaishi.masafumi@jica.go.jp	
					岩瀬　誠			所員	iwase.makoto@jica.go.jp	本調査担当員
					Ms. Flerida C. Chan		Poverty Reduction Section	Senior Program Officer	chanflerida.pp@jica.go.jp	
					桑江直人		貧困削減班	所員		
8	2010/2/10	9:00 – 15:30	プノンペン水道公社本部（PPWSA）	調査	Dr. Ing (Ph.D.) CHEA Visoth	Phnom Penh Water Supply Authority	Procurement & Training	Assistant General Director	chea@ppwsa.com.kh	
9		16:00 – 17:00	JICA事務所	挨拶、業務内容説明	野中博之	JICA Cambodia Office		Project Formulation Advisor	nonaka.hiroyuki@jica.go.jp	本調査担当員
10	2010/2/12		ホリデイ・ビラホテル	業務指示	Mr. Teang Sokhom	Mekong River Commission	Fiood Management& Mitigation Programme	National Short Term Expert	teangsokhom@gmail.com	現地アシスタント
11		9:00 – 12:00	鉱工業・エネルギー省（DPWS）	調査	Mr. Tan Sokchea	Ministry of Industry, Mines &		Director of Potable Water Supply	pmu_mime@online.com.kh	
					Mr. Sorn Savnin	Ministry of Industry, Mines &		Deputy Director of Potable Water Supply	s.savnin@gmail.com	
12	2010/2/15	9:00 – 16:15	コンポンチャム水道（KCWS）	調査	Mr. Preap Somala	Kompom Cham Water Supply		Director		
					Mr. Nhuot On	Kompom Cham Water Supply	Production Sector	Chief		
					Mr. Tri Teang Hong	Kompom Cham Water Supply	Water Supply Network Sector	Chief		
					Mr. Teng Sa Voenn	Kompom Cham Water Supply	Water Supply Network Sector	Vice-chief		
					Mr. Chhit Chang Roeun	Kompom Cham Water Supply	Business Sector	Chief		
					Mr. Ton Peng An	Kompom Cham Water Supply	Business Sector	Vice-chief		
					Mr. Kheng Kim In	Kompom Cham Water Supply	Administration Sector	Chief		
13	2010/2/16	8:00 – 12:00	コンポンチャム水道（KCWS）	追加調査	Mr. Preap Somala	Kompom Cham Water Supply		Director		
					Mr. Nhuot On	Kompom Cham Water Supply	Production Sector	Chief		
					Mr. Tri Teang Hong	Kompom Cham Water Supply	Water Supply Network Sector	Chief		
					Mr. Teng Sa Voenn	Kompom Cham Water Supply	Water Supply Network Sector	Vice-chief		
					Mr. Chhit Chang Roeun	Kompom Cham Water Supply	Business Sector	Chief		
					Mr. Ton Peng An	Kompom Cham Water Supply	Business Sector	Vice-chief		
					Mr. Kheng Kim In	Kompom Cham Water Supply	Administration Sector	Chief		

表 3.2 各訪問先における面会者リスト（2／2）

項目	年月日	時間	場所	面談目的	面談者氏名	所属	部署	役職	メールアドレス	備考
14	2010/2/17	10:30 – 11:30	JICA事務所	調査結果報告	小林雪治	JICA Cambodia Office		次長	kobayashi.yukiharu@jica.go.jp	
					野中博之	JICA Cambodia Office		Project Formulation Advisor	nonaka.hiroyuki@jica.go.jp	本調査担当員
15		15:30 – 17:30	鉱工業・エネルギー省 (DPWS)	調査	Mr. Som Savnin	Ministry of Industry, Mines &		Deputy Director of Potable Water Supply	s.savnin@gmail.com	
					Mr. Som Sethy	Ministry of Industry, Mines &		Officer		
					Mr. Pich Sambattrattanak	Ministry of Industry, Mines &	Department of Potable Water Supply	Deputy of Project Office	p.sambattrattanak@gmail.com	
					Mr. Lens Samphoos	Ministry of Industry, Mines &		Officer		
					Mr. Unn Dara	Ministry of Industry, Mines &		Officer		
16	2010/2/19	8:00 – 8:45	JICA事務所	挨拶、業務内容説明	井上陽一	JICA Kenya Office		環境分野担当	inoue.yoichi@jica.go.jp	本調査担当員
17		9:00 – 10:30	現地コンサル事務所	業務指示	Mr. James N Njoroge	Mangat I.B. Patel & Partners		Senior Design Engineer (Civil)	njorogebaba@yahoo.com	現地アシスタント
18		14:00 – 16:15	タナ水サービス企業団 (TWSB)	調査	Mr. Moses M. Naivasha	Tana Water Services Board		Chief Executive Officer	mosnaivasha@yahoo.com	
					Mr. Philip Gichuki	Tana Water Services Board		Technical Manager	gichukiphil@yahoo.com	
					Mr. Nicholos Kanyeke	Tana Water Services Board		Finance Manager		
					Mr. Ngugi M. Daniel	Tana Water Services Board		Water Supply Providers Manager		
					Ms. Lusy D.Kihamba	Tana Water Services Board		Human Resoruce & Admini Manager		
					Other two persons	Tana Water Services Board				
19	2010/2/22	900 – 17:15	メルー市上下水道信託公社	調査	Mr. Stanley Mbae	Meru Water & Sewerage Services		General Manager	mbaes@mewass.or.ke	
					Mr. Nteere Matthew	Meru Water & Sewerage Services		Commercial Manager	nteerem@mewass.or.ke	
					Mr. George N. Karanja	Meru Water & Sewerage Services		Technical Manager	georgek@mewass.or.ke	
20	2010/2/23	9:30 – 13:30	メルー市上下水道信託公社	施設調査	Mr. William K. Muriithi	Meru Water & Sewerage Services		Distribution		
					Mr. Moses Ndwiga Munyl	Meru Water & Sewerage Services		Assistant Engineer		
					袴田つねみ	JOCV			tsune81@hotmail.com	
21		15:30 – 17:30	メルー市上下水道信託公社	追加調査	Mr. Stanley Mbae	Meru Water & Sewerage Services		General Manager	mbaes@mewass.or.ke	
					Mr. Nteere Matthew	Meru Water & Sewerage Services		Commercial Manager	nteerem@mewass.or.ke	
					Mr. George N. Karanja	Meru Water & Sewerage Services		Technical Manager	georgek@mewass.or.ke	
22	2010/2/24	10:00 – 12:30	タナ水サービス企業団 (TWSB)	追加調査	Mr. Ngugi M. Daniel	Tana Water Services Board		Water Supply Providers Manager		
					Mr. Philip Gichuki	Tana Water Services Board		Technical Manager	gichukiphil@yahoo.com	
					Ms. Lusy D.Kihamba	Tana Water Services Board		Human Resoruce & Admini Manager		
23	2010/2/25	9:00 – 12:10	水サービス規制機関 (WASREB)	調査	Mr. Robert N. Gakubia	Water Services Regulatory Board		CEO	gakubia@wasreb.go.ke	
					Mr. Peter M. Njaggah	Water Services Regulatory Board		Head of Regulatory Services	njaggah@wasreb.go.ke	
					Mr. Richard Cheruiyot	Water Services Regulatory Board		Inspectorate Manager	cheruiyot@wasreb.or.ke	
24	2010/2/26	9:00 – 12:00	水サービス規制機関 (WASREB)	追加調査	Mr. Robert N. Gakubia	Water Services Regulatory Board		CEO	gakubia@wasreb.go.ke	
					Mr. Peter M. Njaggah	Water Services Regulatory Board		Head of Regulatory Services	njaggah@wasreb.go.ke	
					Mr. Richard Cheruiyot	Water Services Regulatory Board		Inspectorate Manager	cheruiyot@wasreb.or.ke	
25	2010/2/26	14:00-16:00	水灌漑省内 GTZ	調査	Mr.Andre Lannerding	GTZ in Ministry of Water & Irrigation, Kenya		Regulatory Economist	andre.lammerding@gtz.de	
26		16:30-17:00	JICAナイロビ事務所	調査結果報告	井上陽一	JICA Kenya Office		環境分野担当	inoue.yoichi@jica.go.jp	本調査担当員

3.2　現地調査の主な成果

現地調査では、方法論及び各アセスメントツールの改善に関しては、以下の点で特に成果があったと言える。

- 方法論全体の枠組みを改善するための、いくつかの視点が見つかったため、方法論の枠組みの修正案を作成することができた。
- 水道事業体のベンチマーキング用指標がかなり絞り込まれると同時に、水道事業体間の比較をするメトリック・ベンチマーキング用の指標と各水道事業体のパフォーマンスを経年的にモニタリングするためのプロセス・ベンチマーキングに適した指標の分類作業がほぼ完了した。
- セクターのキャパシティの概要把握用チェックリストの改善のために必要な、新たな視点を多く発見した。
- 水道事業体のキャパシティの概要把握用チェックリストについては、多くの改善点が見つかり、チェックリストの構造及び質問内容の改善に繋がった。
- 水道事業体のキャパシティの詳細把握用チェックリストについては、大まかなチェックができたと同時に、不必要な指標及び質問の削除と重要なカテゴリーについての指標及び質問の拡充が進んだ。
- ２つの参加型手法(環境スキャン及びキャパシティ脆弱性分析)を２回ずつ試すことができたため、その有効性を判断するための材料が得られた。

3.3　対象水道事業体のアセスメント結果

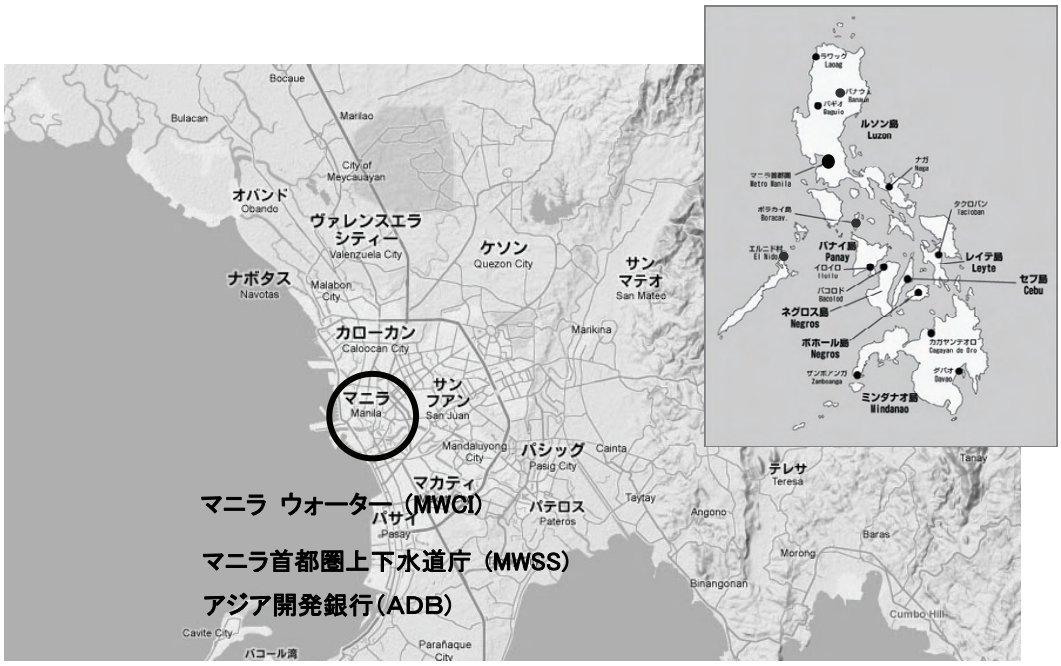
訪問した 4 水道事業体のキャパシティの概要把握結果の要点を示す。

水道事業体のキャパシティの概要把握用チェックリストによる４水道事業体のアセスメント結果

- 水道事業体のキャパシティの概要把握用チェックリストは比較的簡単に使用でき、水道事業体とのディスカッションがスムーズに、関連する問題に広がりやすい。
- 繰り返し試用するなかで、不要な問題と追加すべき問題等が明らかになった。
- カンボジアのプノンペン水道公社(PPWSA)及びフィリピンのマニラウォーター(MWCI)は、国内 No.1 であり、カンボジアのコンポンチャム水道局(KCWS)及びケニアのメルー上下水道信託会社(MEWASS)は、国内で 5 本の指に入るとの情報を規制機関等から得たが、それらの情報にある程度見合った結果が得られた。

- 総合平均点から判断すると、キャパシティの高さは、プノンペン水道公社(PPWSA)、マニラ・ウォーター(MWCI)、コンポンチャム水道局(KCWS)、メルー上下水道信託会社(MEWASS)の順となった。
  - プノンペン水道公社は全体的に良い。
  - マニラ・ウォーターは特に財務、経営、マネジメント、トレーニング等のソフト面が強い。
  - コンポンチャムは水源が良いことが、当初の予想よりアセスメント結果が良くなったことに影響している。
  - メルーでは、給水を行うべき地域について責任範囲が明らかでないため、水道普及率が適切に計算できないといった問題もあった。
  - カンボジアは法制度整備の遅れが重大な問題であり、水道事業体の評価に影響した。
- ただし、個別の質問に対する回答レベルを平均した総合平均得点と、水道事業体全体のレベルについて主観的な感覚を聞いた質問（Q1）の結果との間にはズレが生じた。

3.4 フィリピンでの調査結果の概要



3.4.1 MWCI: マニラ・ウォーター

- 全体的に高いパフォーマンスであり、特にソフト面が強い。
- 活力あるマネジメントとトレーニングの充実（Asian Institute of Management, United

Utility, Cross-posting) が特徴。

- 公共水栓を全て廃止し、NRW を削減する一方で、貧困層への特別プログラム、コミュニティーの組織化、接続費用の分割払い等の貧困層対策とビジネスとしての展開。
- マニラ・ウォーターのビジネスプラン（5 年毎に作成）の中で目標値が設定されている 24 指標を参考にできた。
- マニラ・ウォーターでは経営に関連する指標（NRW の率、1 m^3 当たりの給水原価、消費水量の推移、営業収益比率等）に特に注目して事業運営を行っている。少ない指標数で判断できる。
- 水道施設の減価償却及び施設拡張のための資金も水道料金から賄っているが、ドナー等による Capital の投入が必要。
- 水道だけ見て援助の必要性を判断するのではなく、下水道に対する援助の必要性を見落とさないようにしてほしいとの意見あり。
- 政府の銀行を通じたドナーからの資金調達の可能性。

3.4.2 MWSS: マニラ首都圏上下水道庁

- 民間 2 社との 25 年のコンセッション契約（40 年が良いとの話も）。
- 当日、チェックリストに対する書面での回答もあり。
- ５年毎に更新するビジネスプランの中で、施設拡張の目標及びサービス向上の目標と共に、料金の設定が計画される。料金は、所得の５％を目安。
- 貧困層への水道料金は一般のそれより減額している。
- 民間 2 社に対する KPIs のベンチマーキングを行っている。
- 水道事業体の施設投資の実施状況についても指標によりモニタリング。
- マニラ・ウォーターに加えて、マニラッドも改善しつつある。
- 水道のトレーニング施設は、地方水道公社（LWUA)の本部にある、また地方にも何箇所かある。
- 法制度が充実しており、政治家の負の影響は少ない。
- 民活のレベルよりも、水道事業体の規模の影響が大きい。
- 規制機関へのトレーニングが必要性（フロリダに研修機関あり）。
- メーターの性能テストを行う施設の重要性。

3.4.3 ADB: アジア開発銀行

- ベンチマーキングの指標数を７～10 程度にできないかを検討している人がいる。ADB の文献である Asian Water Supplies – reaching the urban poor の 2nd Edition の中で提案される可能性あり。

- SEAWUN 等の WOPs には自立性等の面で多くの問題があり、National Water Association の方が効果的だと考える。
- 現在、ADB、USAID 及び IWA から成る Water-Link がツイニングを世界的にリード。ADB の費用負担は渡航費と滞在費が中心。成果が出ているツイニングは、今後拡大する予定。日本の水道事業体及び JICA の参加に期待。
- 対象水道事業体のアセスメントよりも、Expert Utility（支援する側の水道事業体）のキャパシティと相性を重視。また、ツイニングを通じて対象水道事業体の重要を把握し、施設投資等の優良案件を発掘したい。
- アセスメント方法とベンチマーキングについては担当外、ADB の小中水道事業体の人材育成に係る戦略についても知らなかったが、他の職員へ追加質問できる可能性はある。

3.5 カンボジアでの調査結果の概要

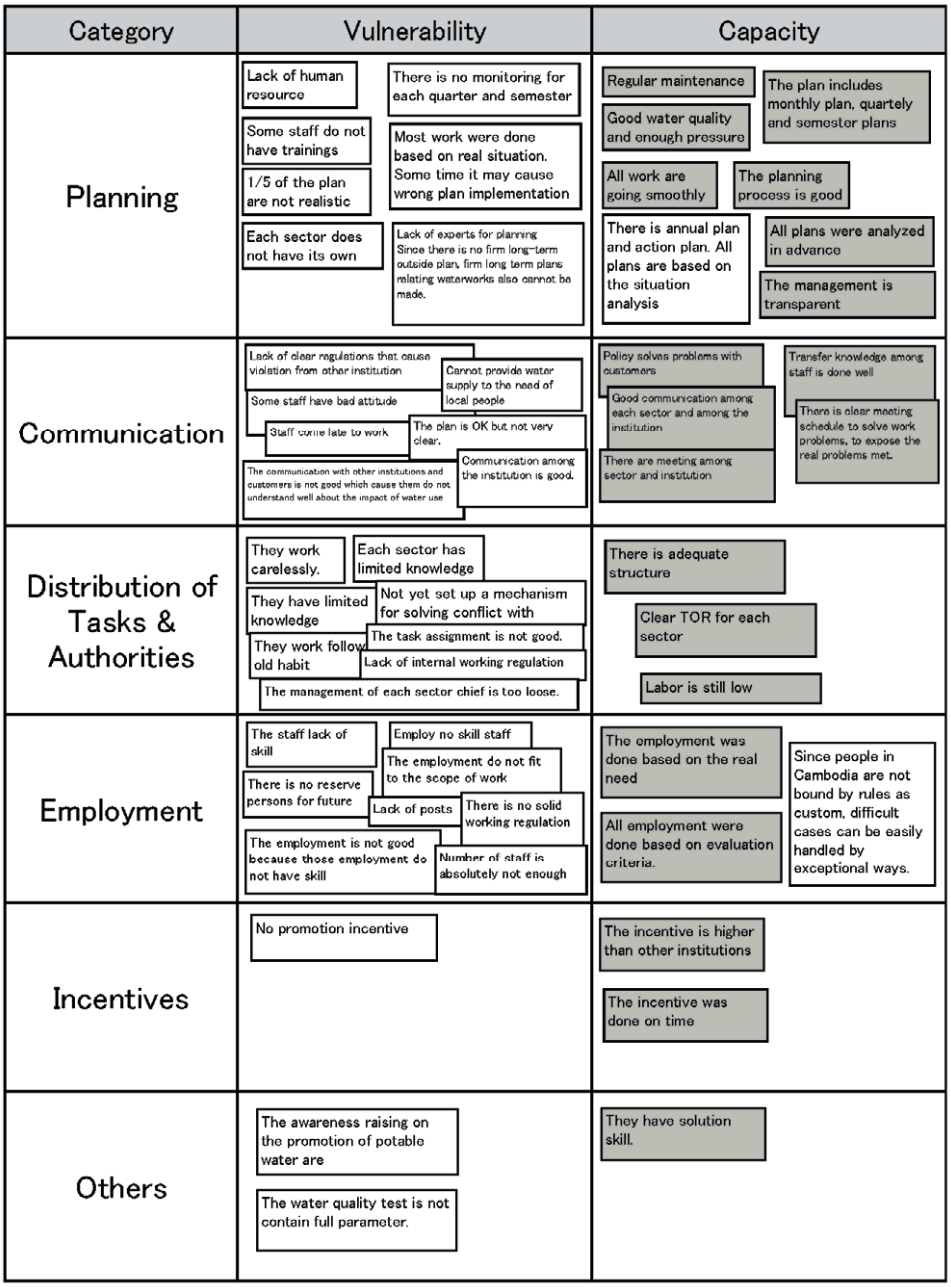
3.5.1 PPWSA: プノンペン水道公社

- 全体的に高いパフォーマンス

- Autonomy の利点は、1) 干渉されない雇用、 2) インセンティブの設定（区画ごとの NRW 削減目標と報酬等）、3) Cost recovery が全体の給料向上につながるなど。 昨年、やっと 2 人のエンジニアの雇用。料金は総理大臣が最終判断。
- トレーニングの充実と修了試験による評価。
- 徹底した個人評価システム、不適切な評価者にはペナルティー
- プノンペン人口の 10%程度の貧困層にも水道を供給。
- 給水管の取付費用は$50 だが、補助金を出している。Poverty Assessment - free, 70%, 50%, etc.
- 事前に組み立てられた給水管を自分たちで取り付ける。1600mm の管まで自分たちで施工できる。
- GIS 整備の遅れ、ホームページがない等が数少ない弱点。
- 研修センターを準備中、周辺の事業体も受け入れたいので JICA の援助を期待。
- マニラ・ウォーターとは違い、下水道は担当していない。
- 需要管理をしていないが、一人当たりの家庭用水使用量が 70L 程度と低い。

3.5.2 KCWS: コンポンチャム水道局

- 都市人口約 8 万人。給水人口約 53%。
- MIME/DPWS とのベンチマーキングについてのディスカッションにおいて、KCWS は水質の良いメコン川の伏流水を利用しており、配水管網も新しいため、同規模の他の公共水道と比べパフォーマンスが高いと説明された。
- 漏水は中国製のメーターをクラスＣに交換してからは大きく改善。
- 供給エリア内・外で供給を望む貧困層から強い要望。苦情のエスカレート時には、減価償却費を管路の拡張にまわす。
- 給料のベースレベルが低すぎで、家族経営的な全員（29 人）一律のインセンティブしか設定できない。
- ローンの利子と元金は、政府が払っている。
- 参加型手法における General Manager のコントロールが感じられた。
- 計画力のなさ（水源、管路等）と会計の混乱（2 つのシステム）が Autonomy へ移行する上での障害。
- 漏水調査機器が不十分、継続的なトレーニングセンターの建設支援と費用負担のお願い。

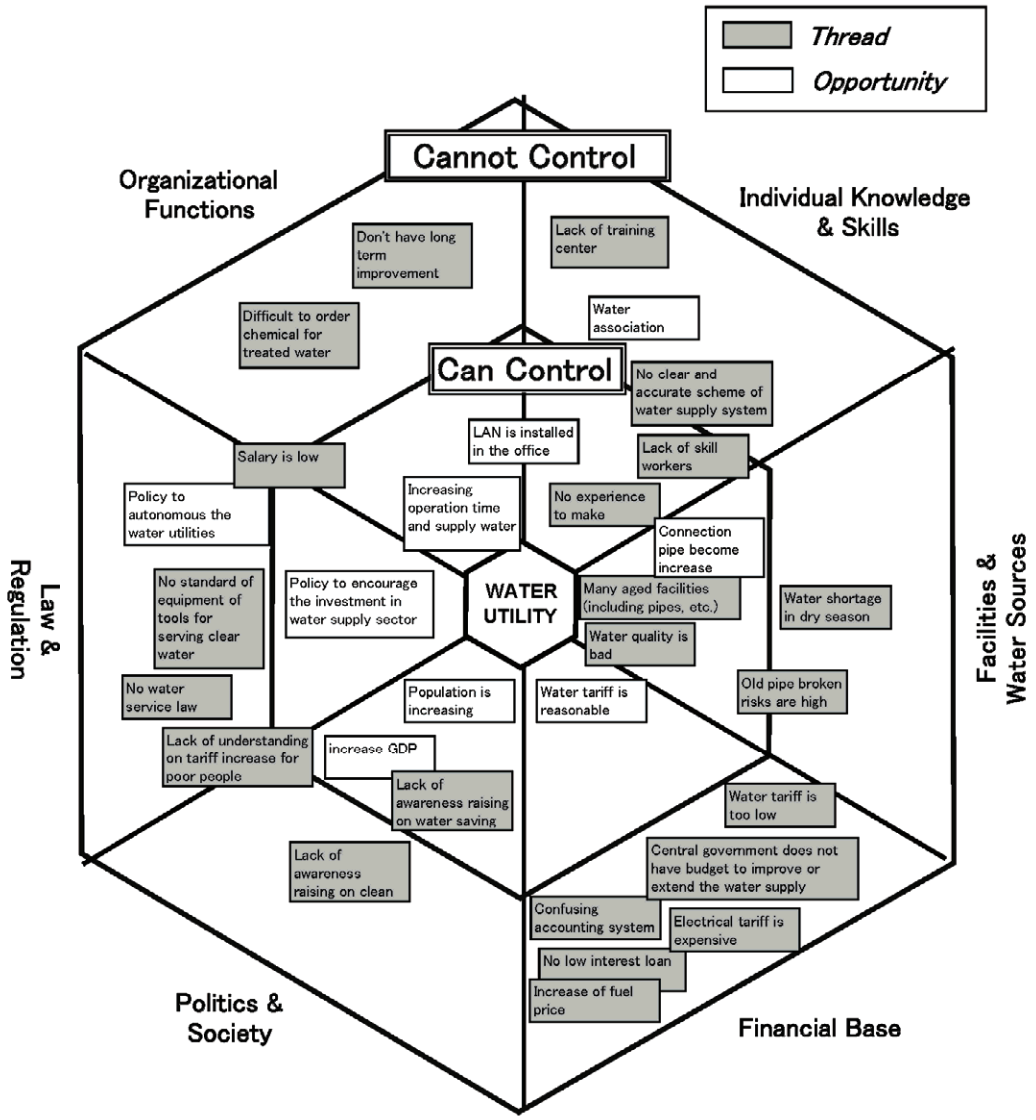


カンボジアのコンポンチャム水道局(KCWS)でキャパシティ・脆弱性分析(CVA)の実施例

3.5.3 MIME/DPWS: 鉱工業・エネルギー省の水道部

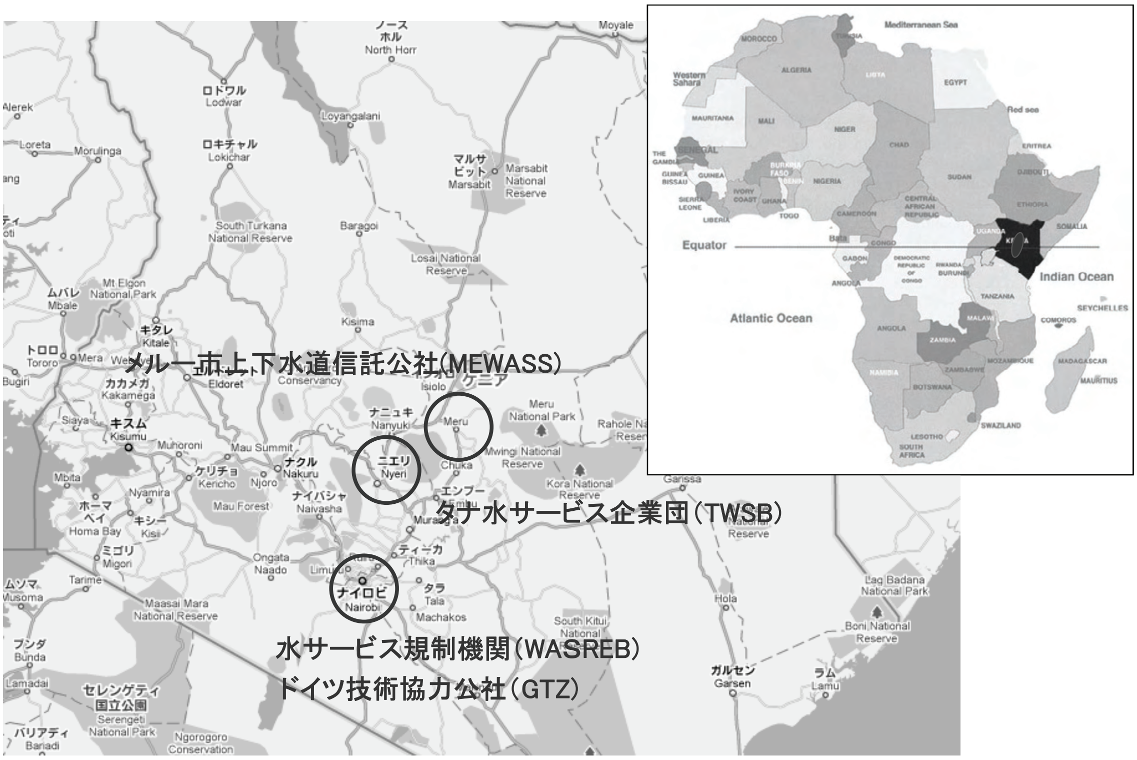
- 州都は主に公営、中小の町には現在９６の民営水道事業体。

- 公営は比較的上手く運営されているが、小規模の民営が水質や技術力に多くの問題があり、規制だけでなく支援が必要。
- 法制度の整備が遅れており、MIME の命令書のみで水道事業体を管理（Key PIs として普及率、無収水率、経営収益比率を使用)。NRW は 20%以下にすることを目標。
- 水道料金の適正化は、MIME の重要な役割だが、地方部の料金は高い。
- MIME/DPWS は、職員の給料が低く、全体的に若い組織。水道事業体の職員は副業を行いにくいので、給料レベル/インセンティブの向上が必要。
- 水道部に対する規制機関としてのトレーニングが必要
- 国のトレーニングセンターがない。JICA の援助を期待。今は、水道協会の設立に協力している。大学で、上下水道について教えていないことも問題。国立研究所が管轄下にあり、そこで水質の基準などを管理しているがトレーニングが必要。



カンボジアの鉱工業・エネルギー省の水道部(MIME/DPWS)での環境スキャン(ES)の実施例

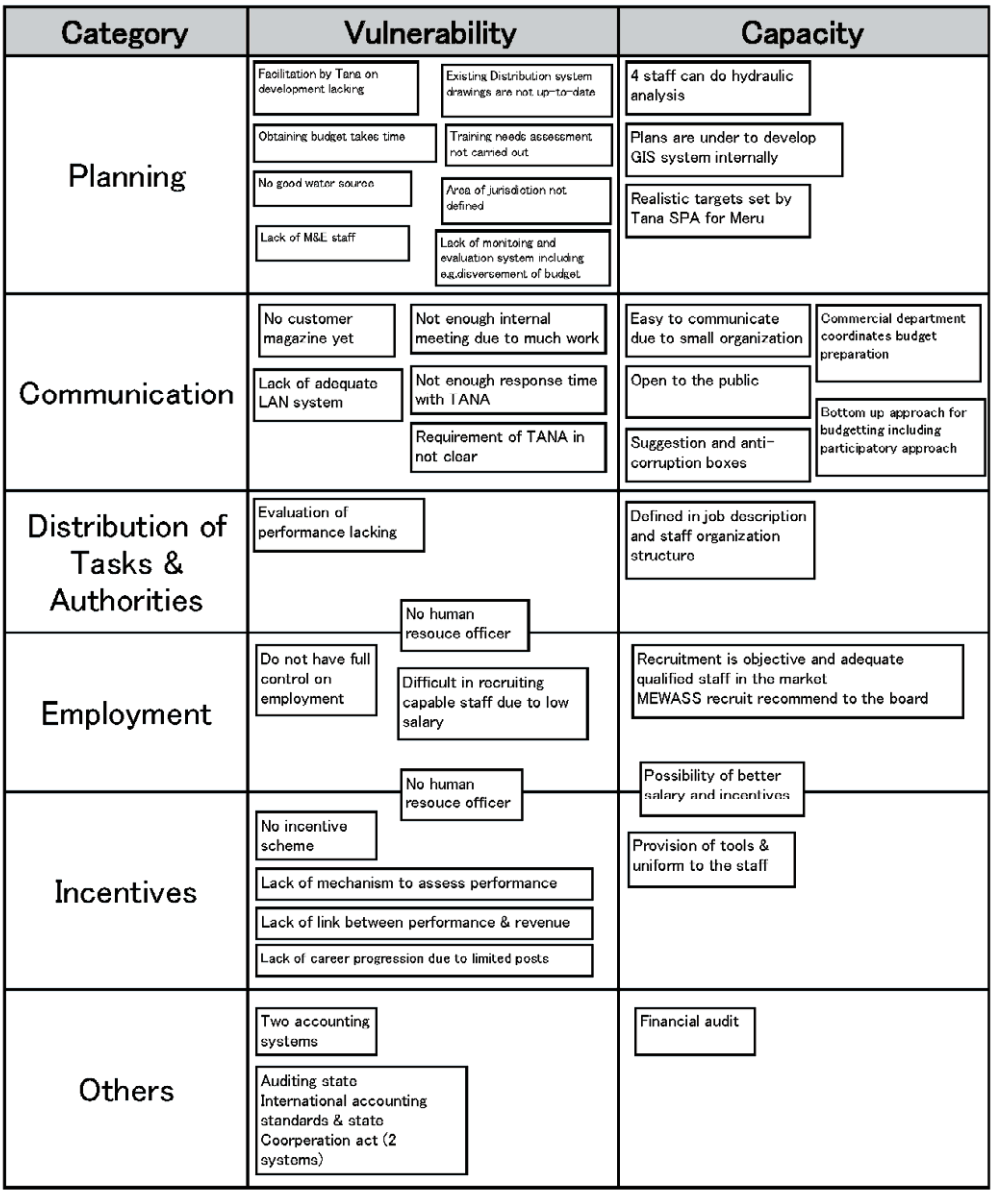
3.6　　ケニアでの調査結果の概要



3.6.1　　**MEWASS:** メルー上下水道信託会社

- 事前にチェックリスト等に対する回答あり。
- 市の人口は約 12 万人。給水エリアはその約半分。
- 水道普及率は約 73%であるが、実際には接続率（給水すべき地域の境界がこれまでは不明）。
- ケニア内では比較的高いパフォーマンスのはずだが...
- DMA 毎の管理で無収水率は 28%だが、高水圧の問題あり。
- 蛇口での塩素濃度基準の達成度が 95%程度なのは、各家庭の大型受水槽の後でサンプリングする場合があるからと言っていたが...
- 施設の見学により、チェックリストの有効性がある程度確認できたが、塩素消毒だけで配水されている湧き水について知り、さらに水質について疑問を持った。
- 人事担当者がおらず、インセンティブスキームがない。また、必要なトレーニングの把握ができていない。
- メルーを入れて 4 水道事業体のみにメーターの検査装置がある。
- 外部から来た 4 人が管網の水理解析をすることができる。

- 貧困対策として、ウォーター・キオスクを設置し、料金は格安。
- 検針員の汚職への対策等も行っている。



ケニアのメルー上下水道信託会社(MEWASS)でのキャパシティ・脆弱性分析(CVA)の実施例

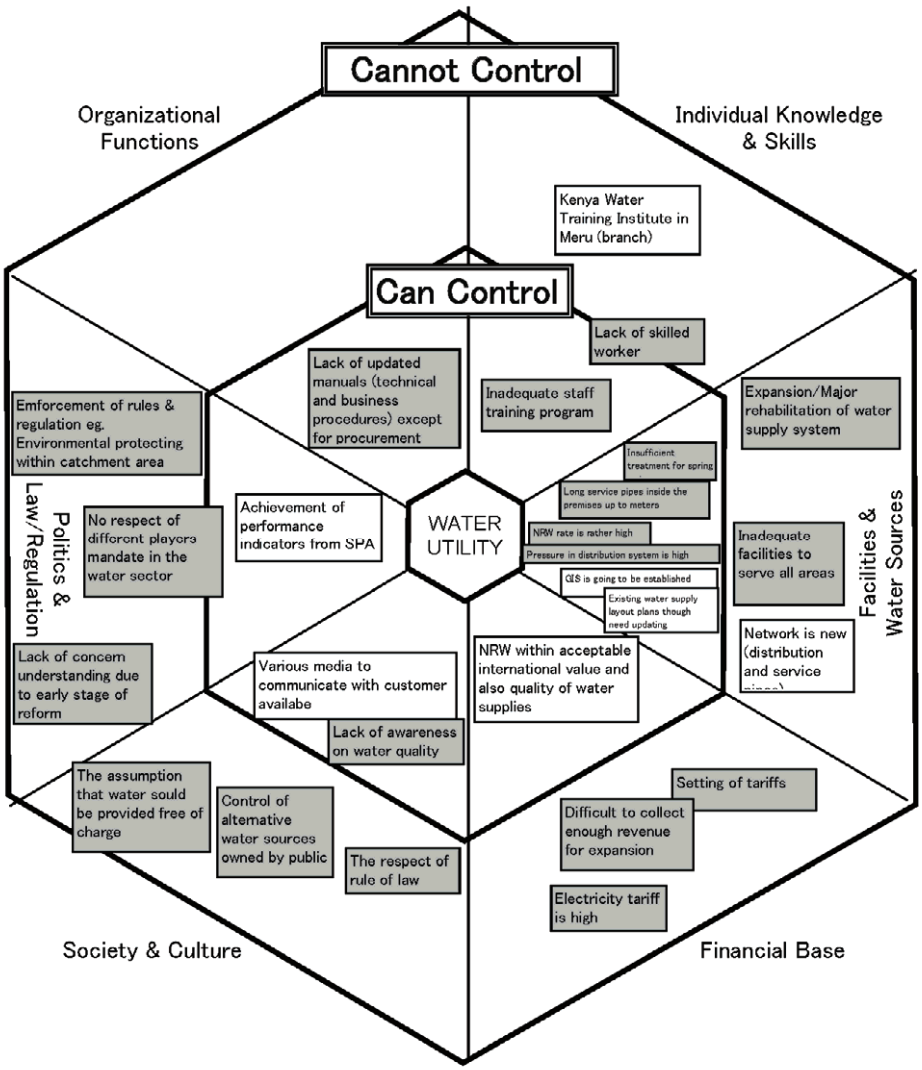
3.6.2 TWSB: タナ水サービス企業団

- メルーを入れて 4 水道事業体のみにメーターの検査装置がある。
- 外部から来た 4 人が管網の水理解析をすることができる。

- 貧困対策として、ウォーター・キオスクを設置し、料金は格安。
- 検針員の汚職への対策等も行っている。

MEWASS と TWSB の認識の相違

- TWSB が浄水場や配水本管の拡張整備を行い、料金徴収、施設の維持管理、配水支管の整備は MEWASS の責任とされているが、施設拡張の目標設定と責任範囲のあいまいさが課題。
- MEWASS は、収入の 10%を TWSB の運営資金として、1%を WASREB の運営資金として納めているが、さらに収入の 30%を配水支管の拡張に使用するように TWSB から指示されている。これは、収入の不足、配水本管の未整備、浄水能力の不足などのため実現されていない。その一方で、TWSB は独自の民間資金の獲得を MEWASS に期待している。
- MEWASS のための施設拡張計画の策定は TWSB の責任だが、JICA の支援で作られた古い計画は更新されていない。
- TWSB は、ケニア山周辺の水源を開発し、小規模の水道事業体をクラスタリングして、それぞれに自然流下で良好な水をバルク供給したいといっていたが、構想止まり。数年前に、水資源管理を含む Environmental Management の調査を JICA に依頼したが、進展していない。MEWASS では、この構想は話題にもならなかった。
- MEWASS は、コミュニティー水道という代替サービスがあるため料金値上げをすると顧客が逃げると考えている。しかし、TWSB は、飲料水の水質についての啓発活動を行えば、料金の値上をしても住民は MEWASS の水道を使いたがると考えている。
- ポンプ故障に対処するための職員の雇用についても、意見が異なる。



ケニアのメルー上下水道信託会社(MEWASS)及びタナ水サービス企業団(TWSB)での
環境スキャン(ES)の実施例

3.6.3 WASREB: 水サービス規制機関

- 職員は 22 名。Autonomous であり、政治家の影響は受けていない。
- 多くのガイドライン、制度、報告書の作成を担当している。
- 水道事業体のガバナンスやマネジメントの改善にも取り組んでいるので参考になる。
- 規制機関のためのトレーニングは、GTZ、WSP 等から受けている。
- ベンチマーキングでは、順位付けして公開することで、市民から水道事業体へのプ

レッシャーを高めている。

- 水道事業体の維持管理費の 30%を人件費にまわせるといった、ルールがあるが、インセンティブとしての効果は不明。
- 資金配分に関わるドナーとの調整は、水灌漑省が行っており、WASREB は関与していない。
- 水灌漑省は、水セクターのマスタープランを更新できていない。

2009 版 WASREB のベンチマークにおける水道事業体用のスコアリング・システム

Indicator		Maximum		Minimum	
		Performance	Score	Performance	Score
Collection efficiency		>90%	30	<50%	0
Unaccounted for Water (UfW)		<20%	30	>70%	0
Water quality	Drinking water quality	>95%	20	<80%	0
	Compliance with residual chlorine tests	>95%	10	<50%	0
Hours of supply	Population >100,000	20-24hrs	20	<8hrs	0
	Population <100,000	>16hrs	20	<4hrs	0
Cost Recovery (O&M)		>130%	20	<70%	0
Metering ratio		100%	20	<50%	0
Staffing (No. of staff per 1000 con-nections)	Large & Very large companies	<5	20	>20	0
	Medium & Small companies (with less than 3 towns)	<7	20	>20	0
	Medium & Small companies (with more than 3 towns)	<9	20	>25	0
Water coverage		>90%	20	<30%	0
Sanitation coverage		>90%	10	<20%	0
Total maximum Score			200		

3.6.4 GTZ: ドイツ技術協力公社

- セクターのキャパシティ・アセスメントの手法は、定まっていない。
- 複数の国で規制機関等が使用する水道事業体 PI の情報システムの構築のサポートを実施（Zambia, Tanzania & Kenya で過去に実施、これから Albania & Palestine)。
- ケニアで、水道事業体から提供されるデータの精度は向上している。
- これらの PI の情報システムの構築において、世銀の IBNET とは協調していない。
- WHO、UNICEF 及び UN-HABITAT による、途上国の上水道及びサニテーションの普及についての Joint Monitoring programme (JMP)には注目しているが、データの精度があまり高くない。

- セクター・リフォームへの長期的な支援の経験も多い。
- 施設拡張計画策定能力の向上のための技術協力は有効
- ケニアでの既存下水道の稼働率は 20%程度であり、ドナー間の協力が必要だと言っていた。