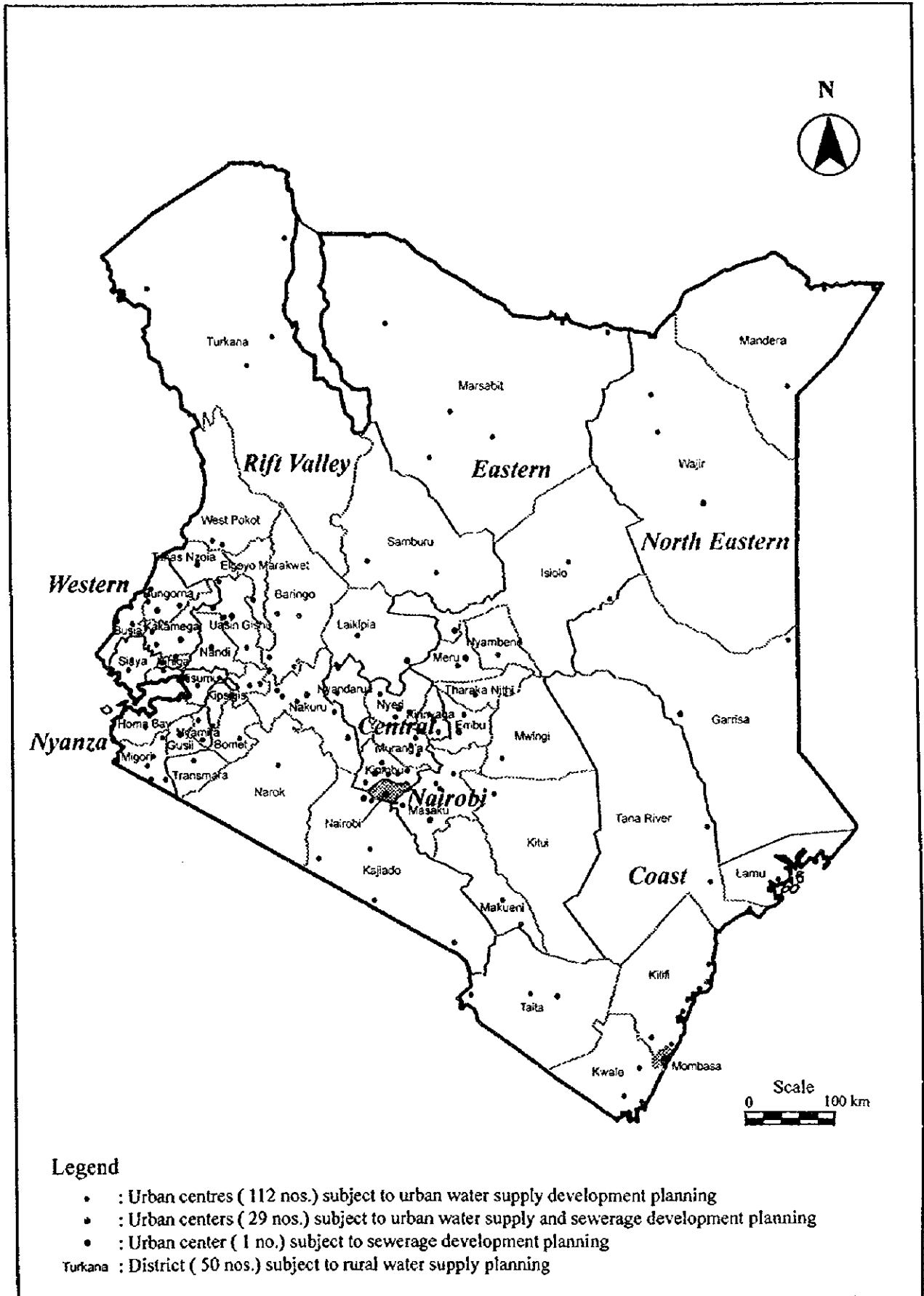
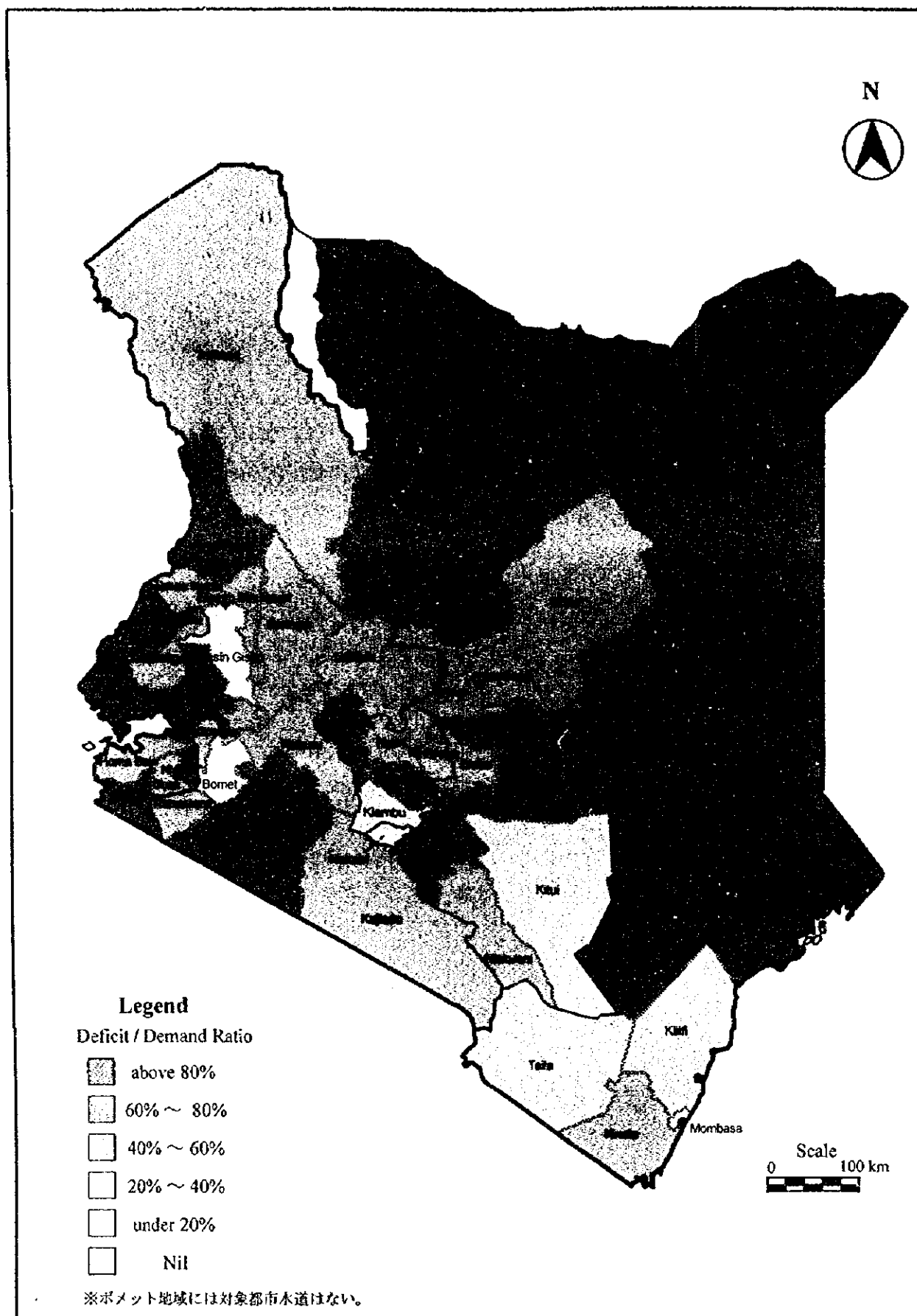


付 図



THE AFTERCARE STUDY ON  
 THE NATIONAL WATER MASTER PLAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

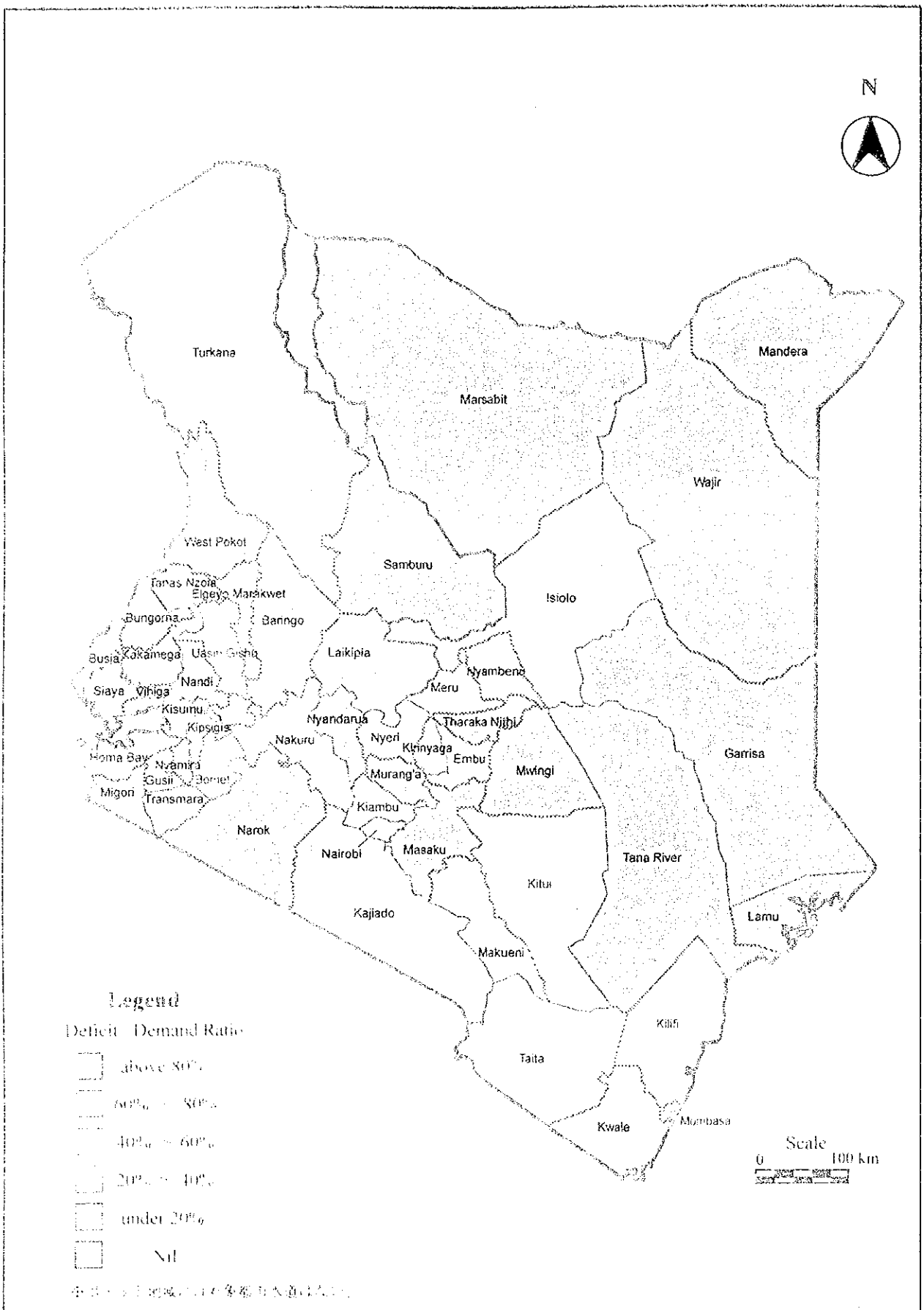
図 - 1.1  
 調査対象位置図



THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN

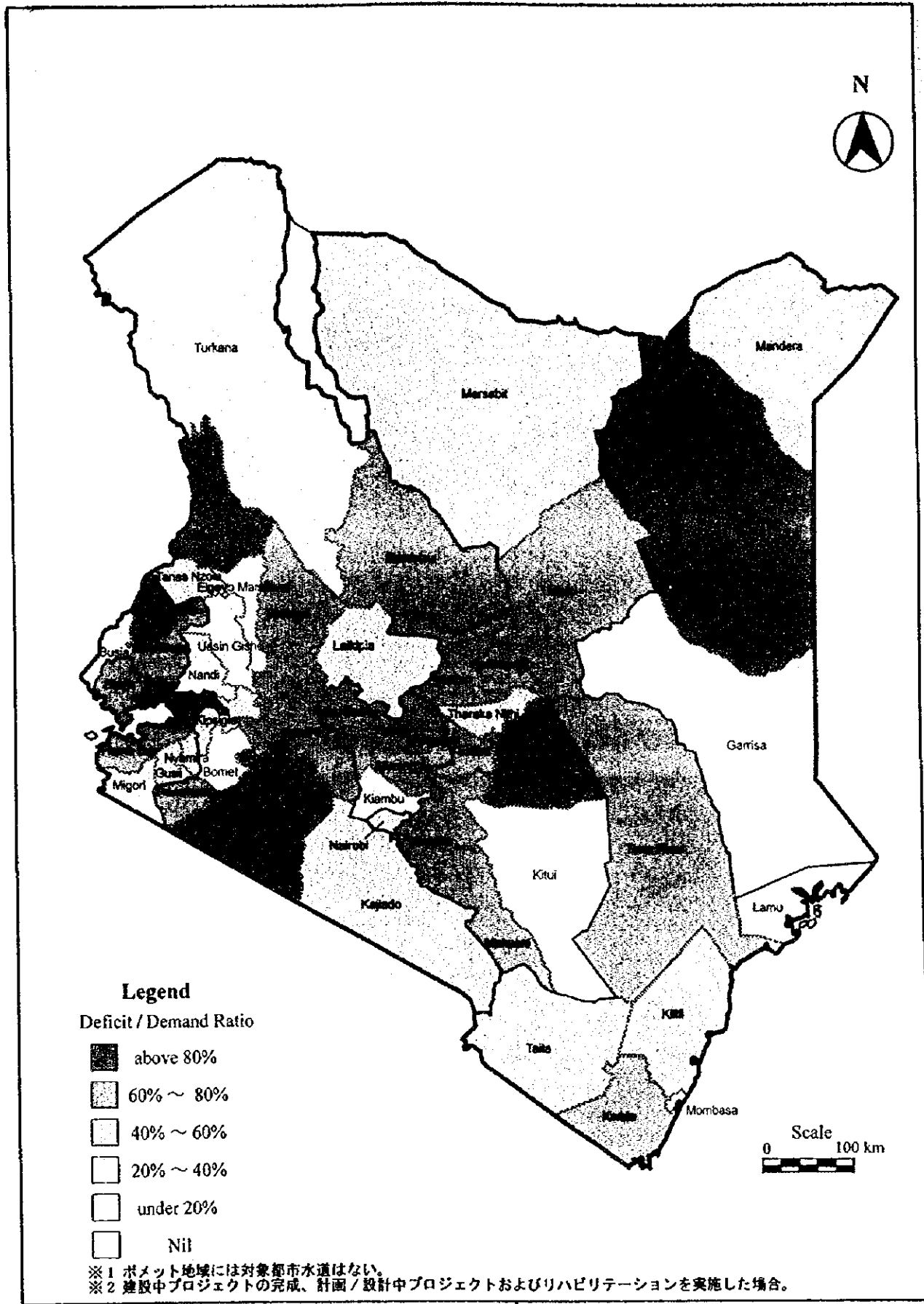
JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.1  
2010年における都市水道地域別  
水不足状況（現状施設のまま、Step 1）



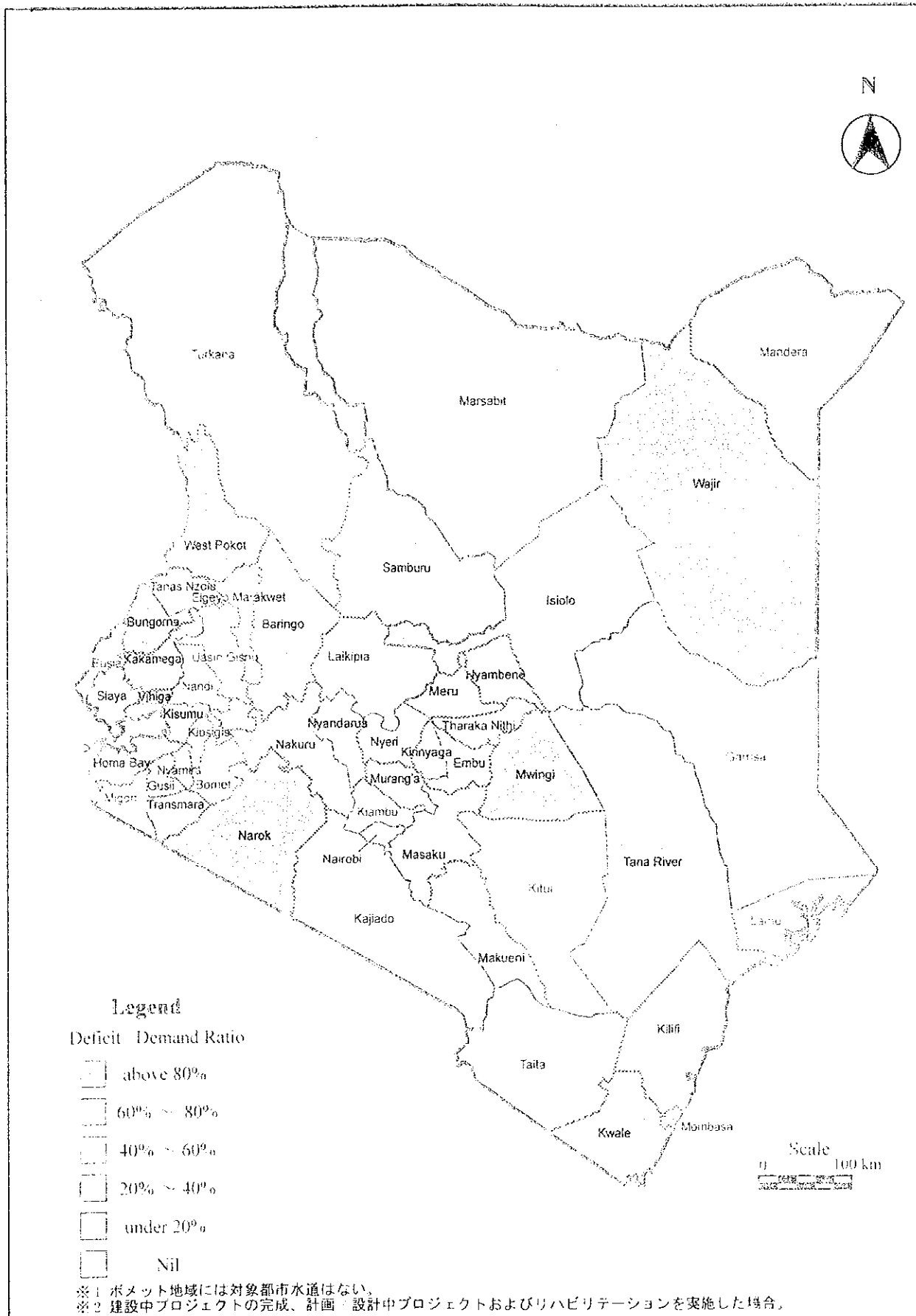
THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.1  
2010 年における都市水道地域別  
水不足状況（現状施設のまま、Step 1）



THE AFTERCARE STUDY ON  
 THE NATIONAL WATER MASTER PLAN  
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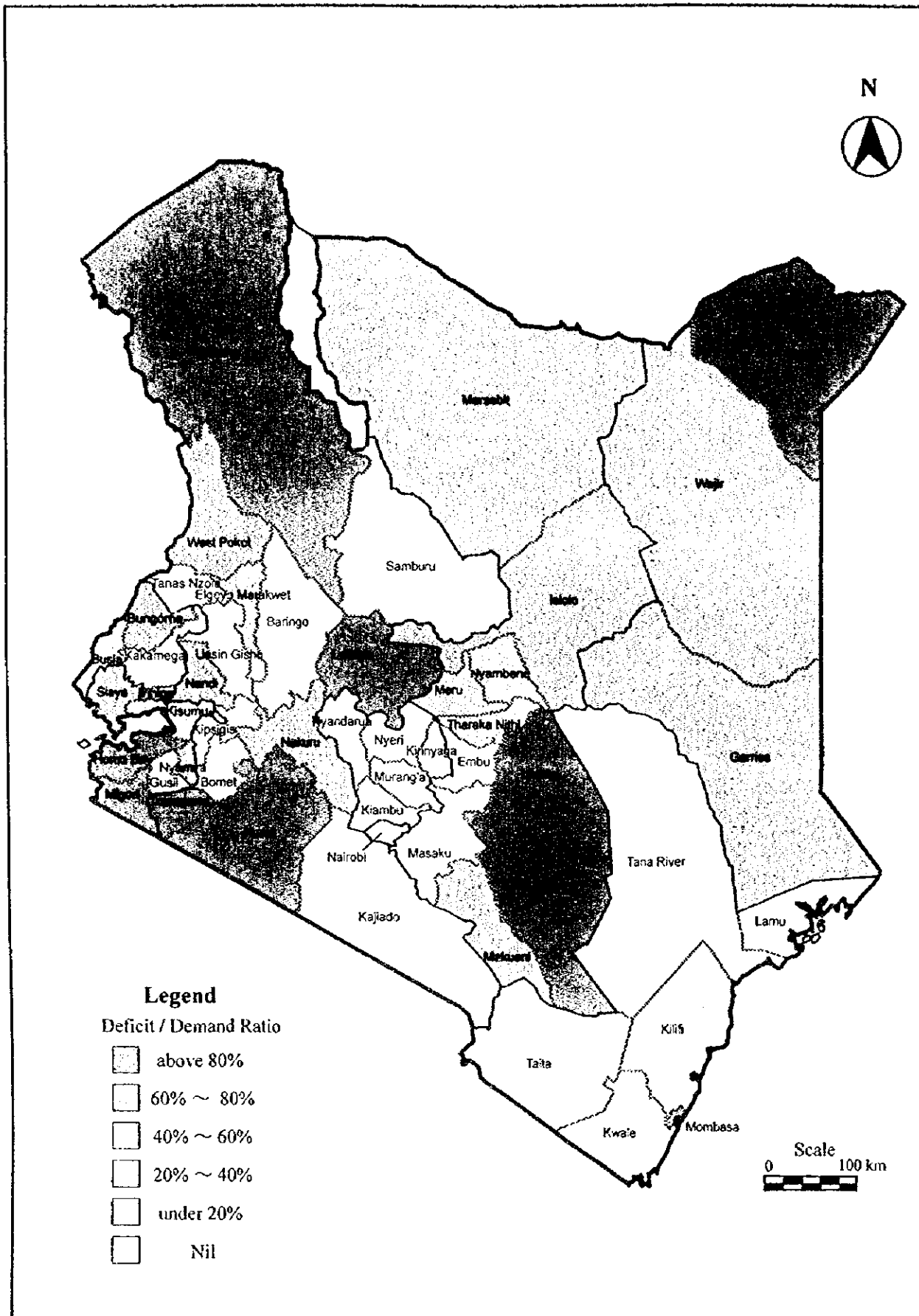
図 - 6.2  
 2010年における都市水道地域別水不足状況  
 (施設増強を行った場合、Step 4)



**THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

図 - 6.2  
2010年における都市水道地域別水不足状況  
(施設増強を行った場合、Step 4)

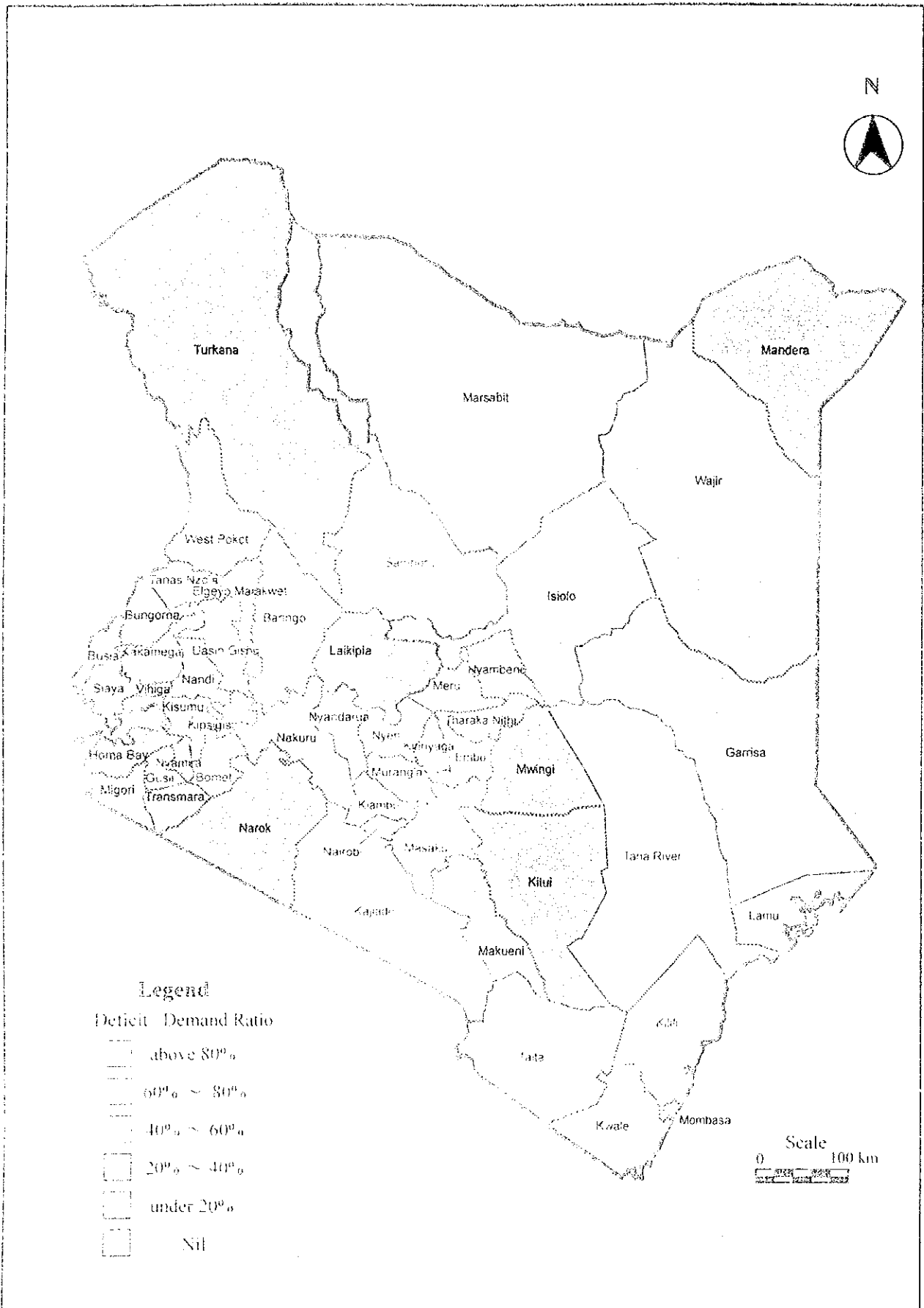


THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.3

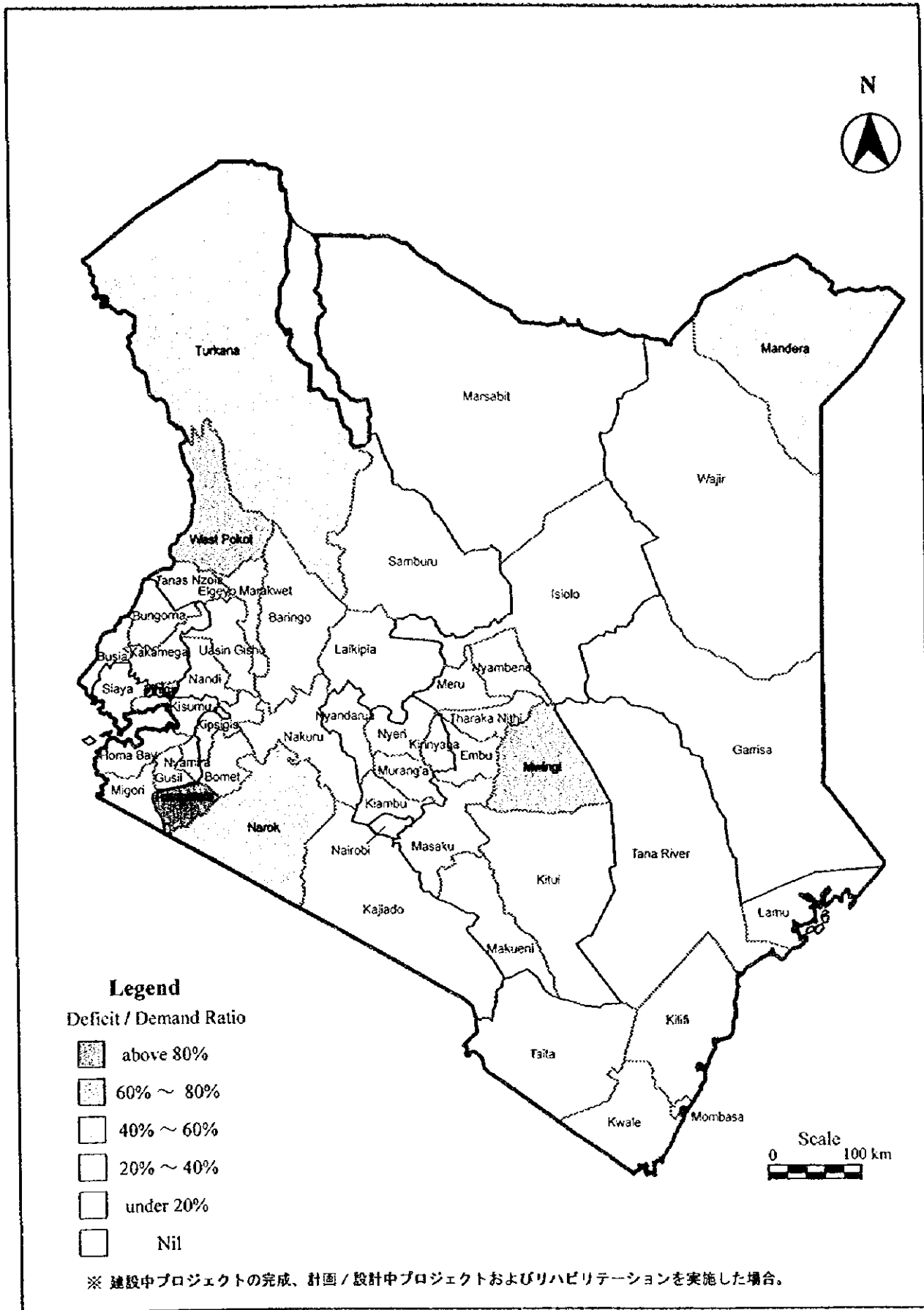
2010年における大規模地方水道地域別  
水不足状況（現状施設のまま、Step 1）



THE AFTERCARE STUDY ON  
 THE NATIONAL WATER MASTER PLAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

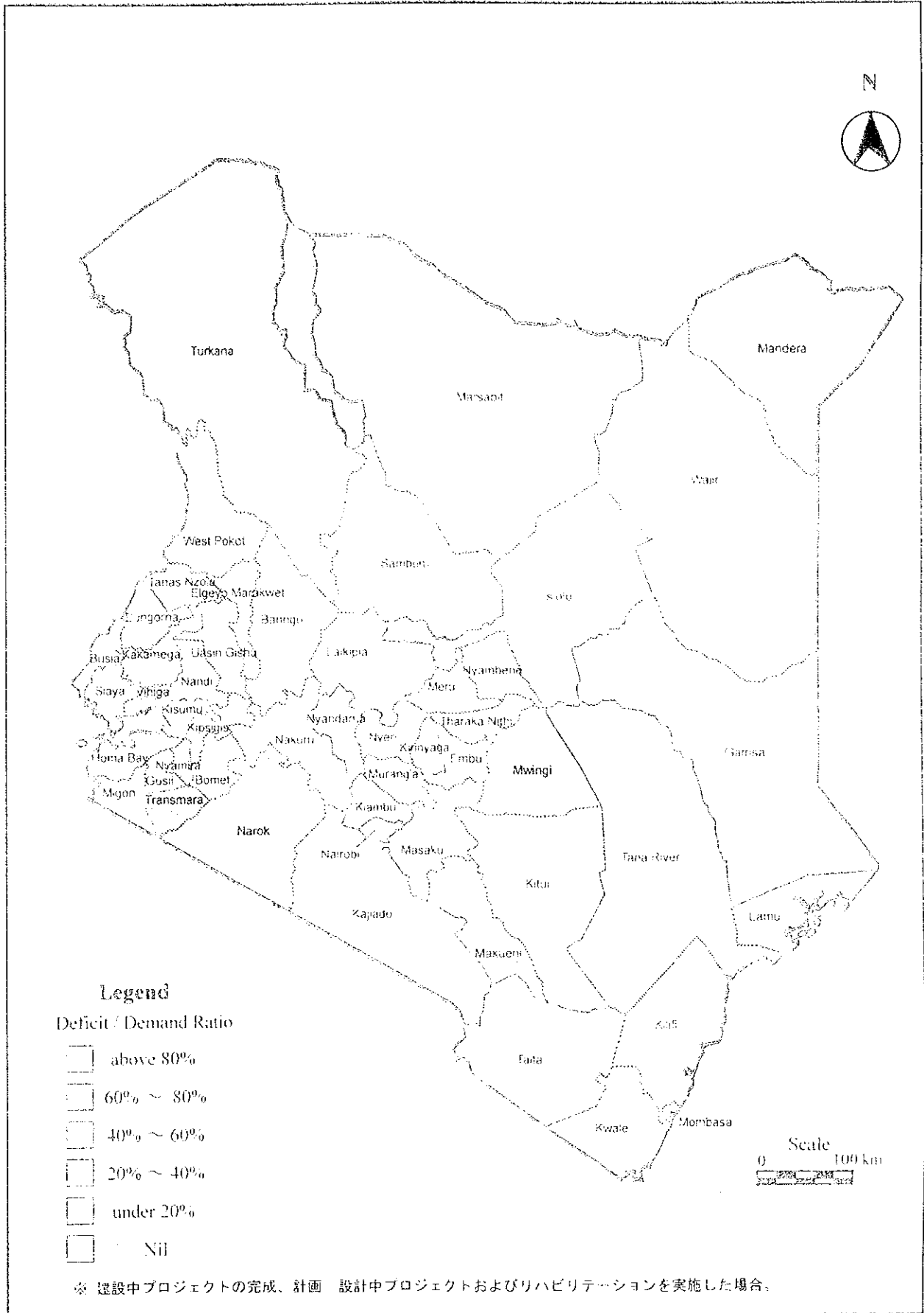
図 - 6.3  
 2010 年における大規模地方水道地域別  
 水不足状況 (現状施設のまゝ、Step 1)





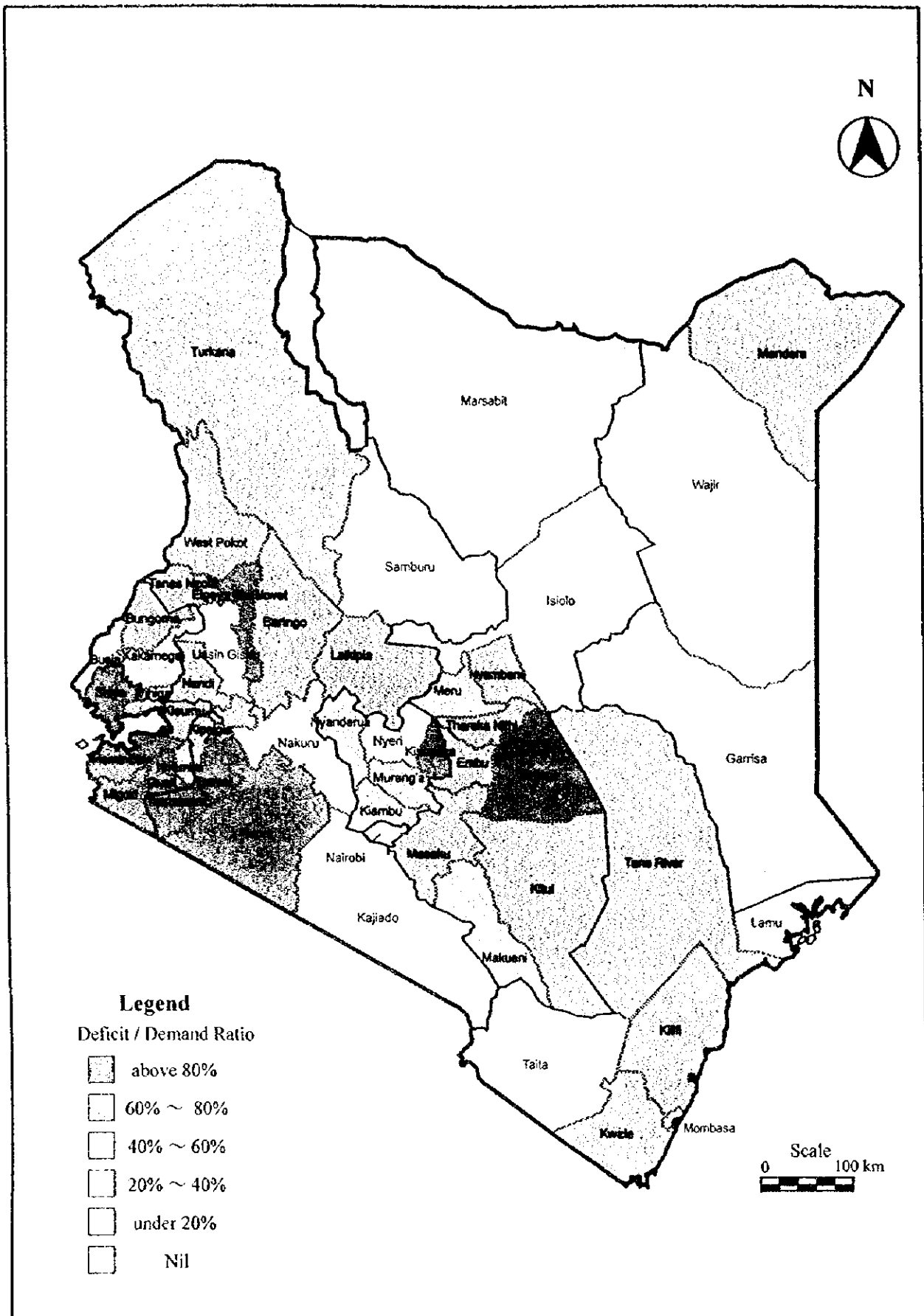
THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.4  
2010 年における大規模地方水道地域別  
水不足状況  
(施設増強を行った場合、Step 4)



THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

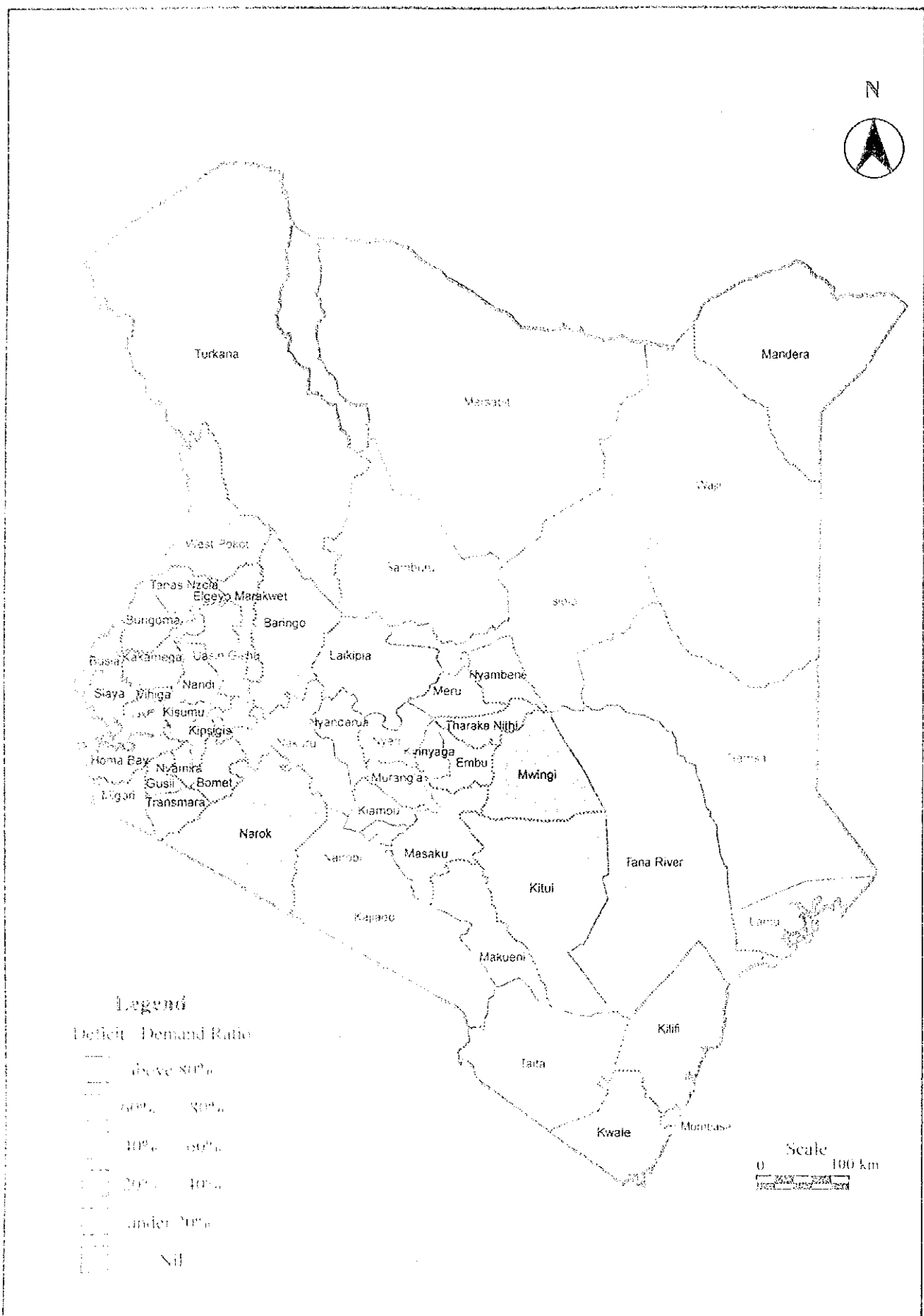
図 - 6.4  
2010 年における大規模地方水道地域別  
水不足状況  
(施設増強を行った場合、Step 4)



THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN

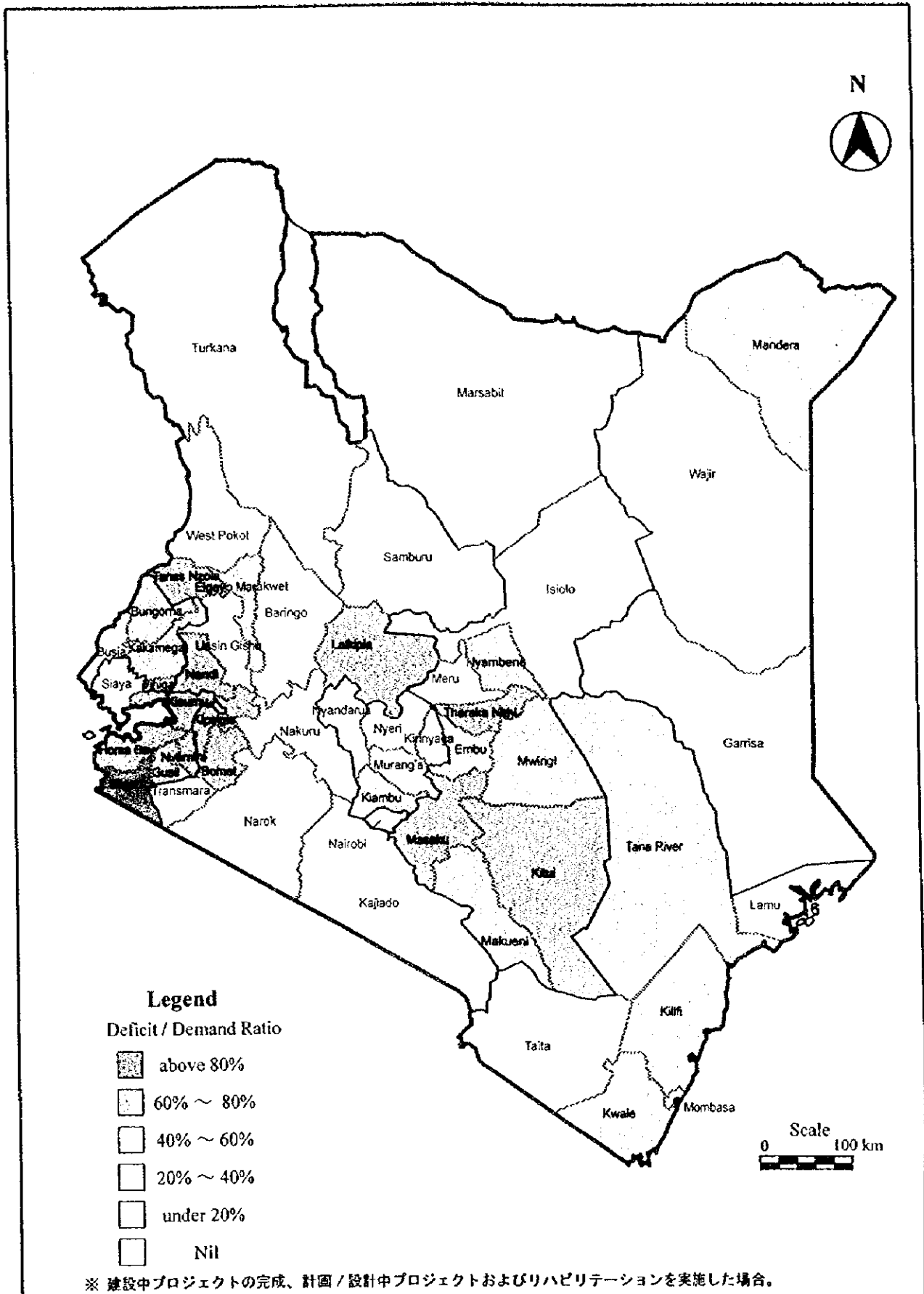
JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.5  
2010 年における小規模地方水道地域別  
水不足状況（現状施設のまま、Step 1）

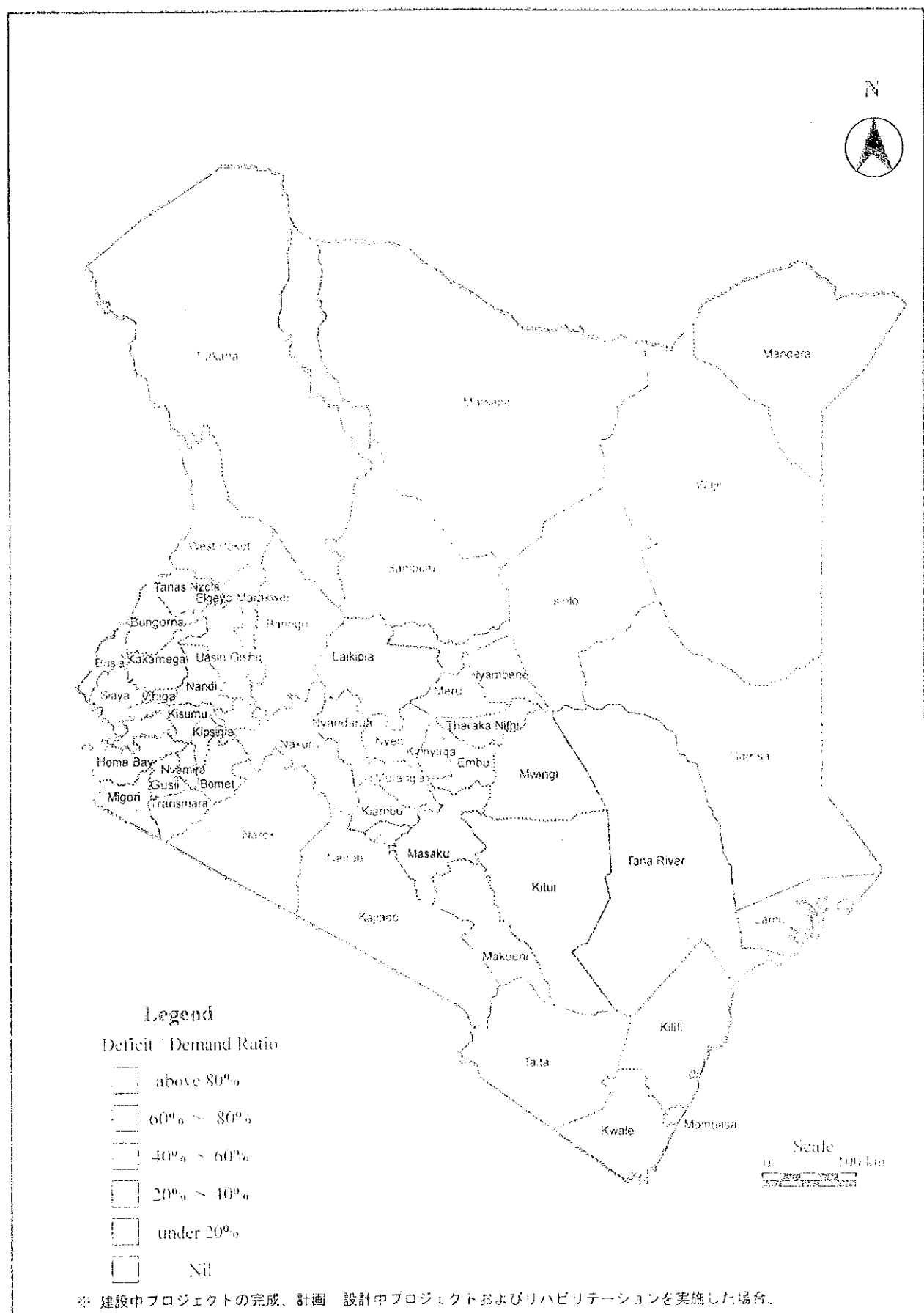


THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 6.5  
2010年における小規模地方水道地域別  
水不足状況（現状施設のまま、Step 1）

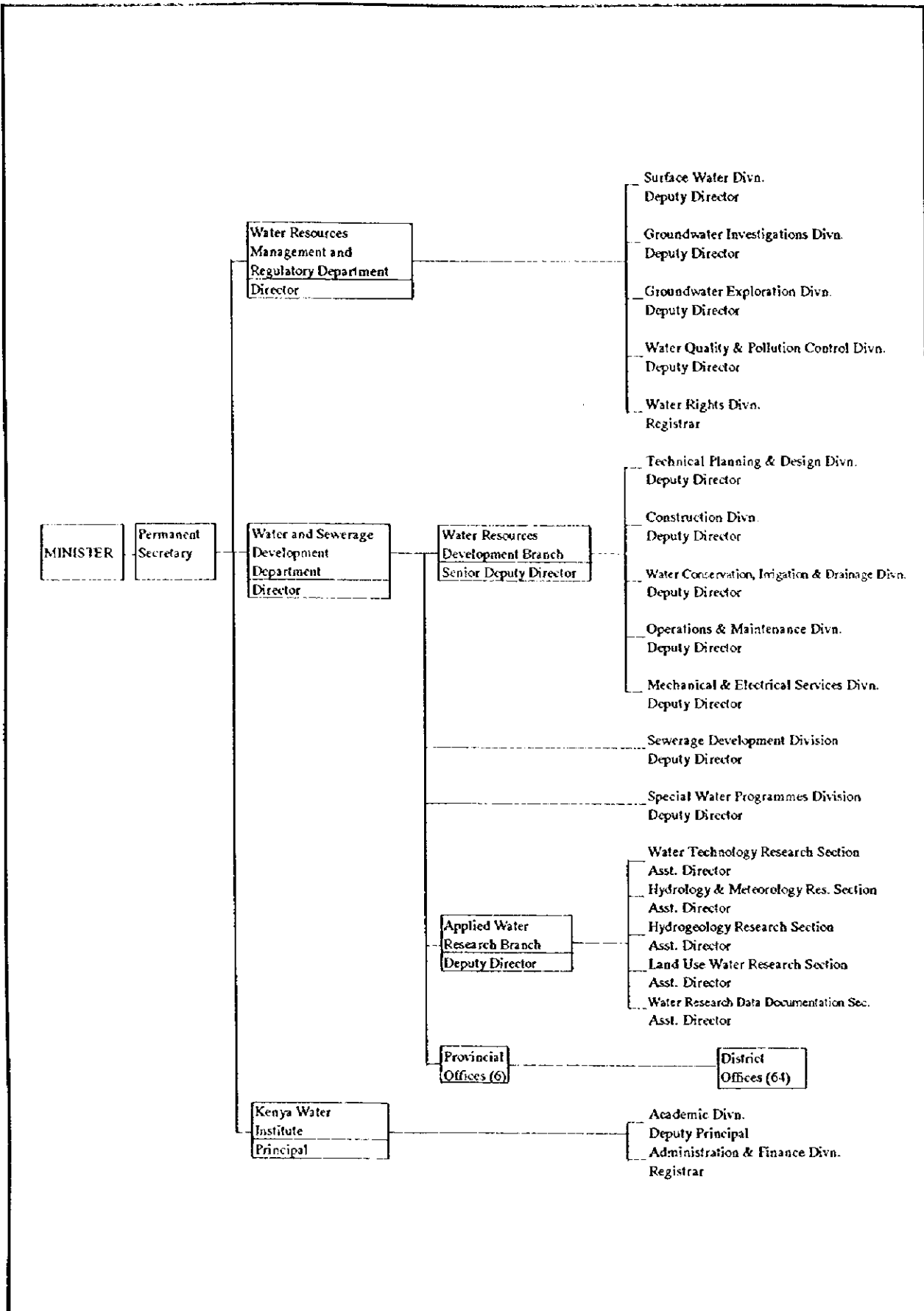


<p><b>THE AFTERCARE STUDY ON THE NATIONAL WATER MASTER PLAN</b></p> <p><b>JAPAN INTERNATIONAL COOPERATION AGENCY</b></p>	<p>図 - 6.6 2010 年における小規模地方水道地域別 水不足状況 (施設増強を行った場合、Step 4)</p>
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THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

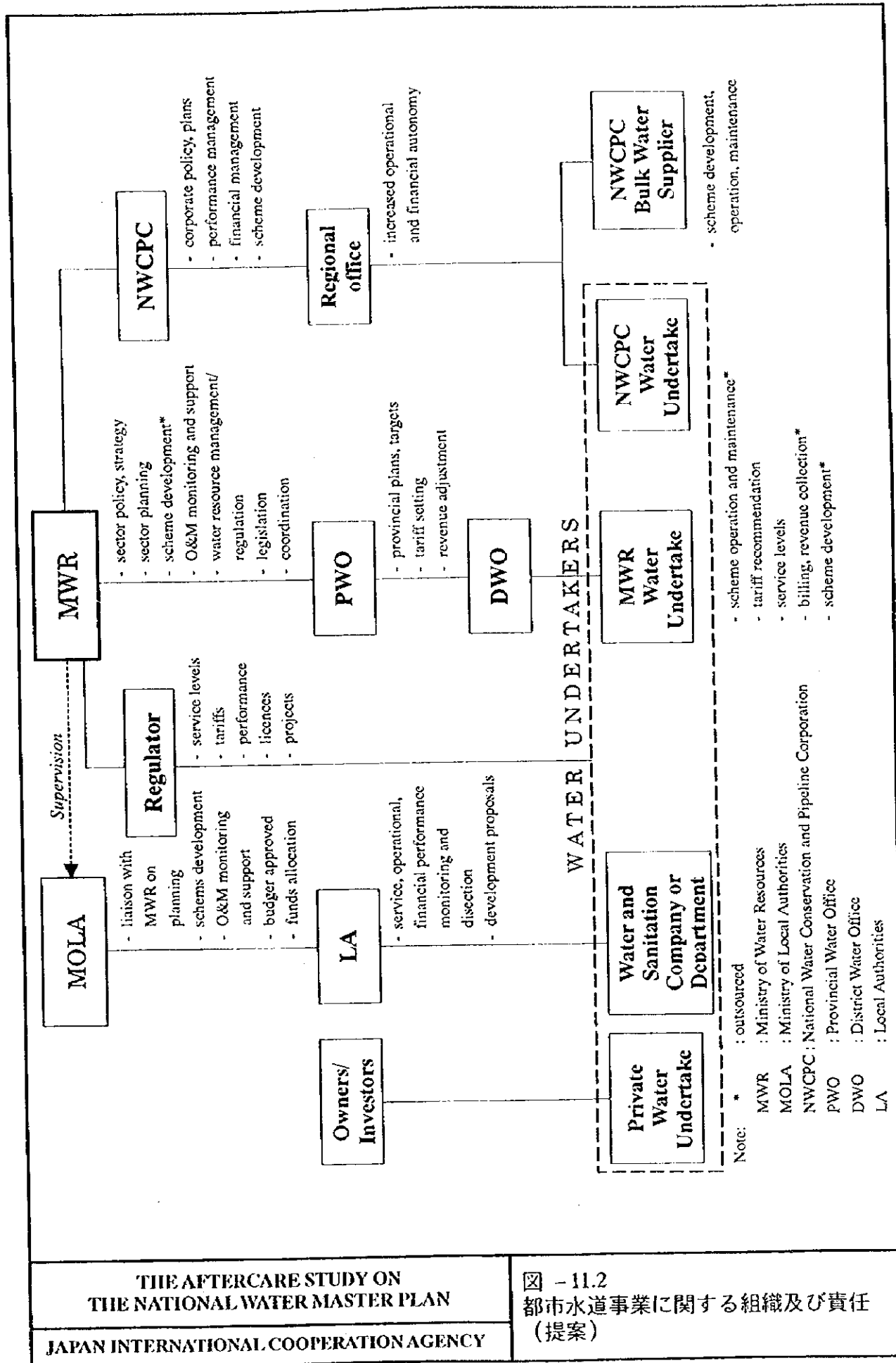
図 - 6.6  
2010 年における小規模地方水道地域別  
水不足状況  
(施設増強を行った場合、Step 4)



THE AFTERCARE STUDY ON THE NATIONAL WATER MASTER PLAN

図 - 11.1 水資源省(MWR)の組織図 (提案)

JAPAN INTERNATIONAL COOPERATION AGENCY

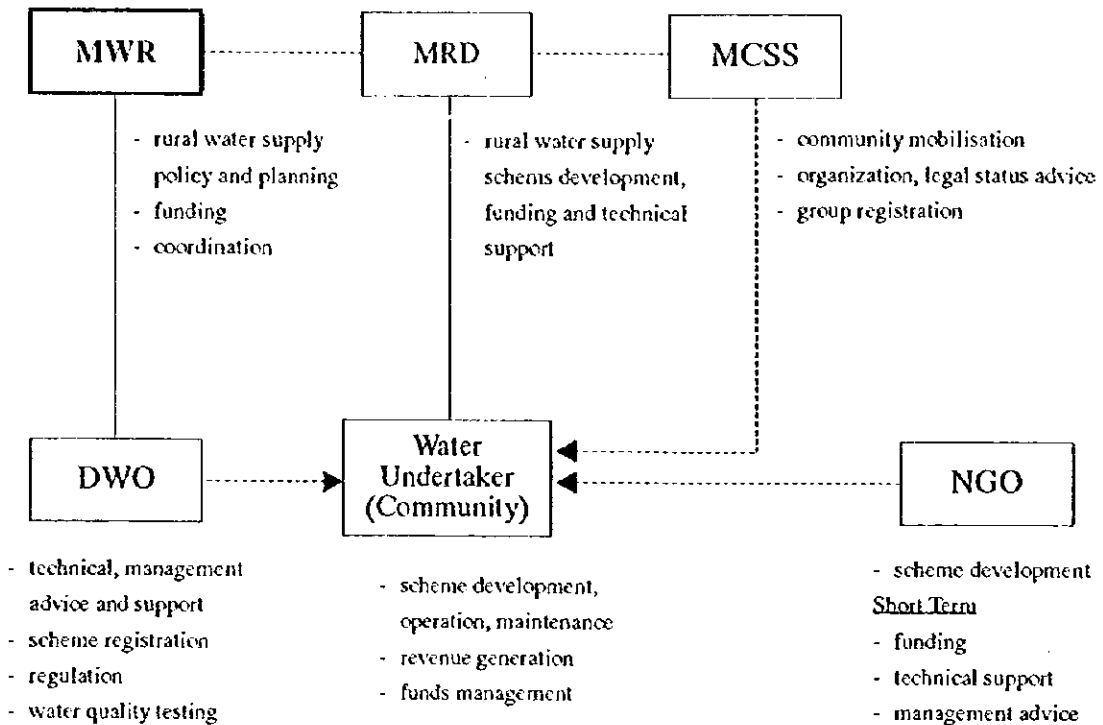


THE AFTERCARE STUDY ON THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 11.2 都市水道事業に関する組織及び責任 (提案)



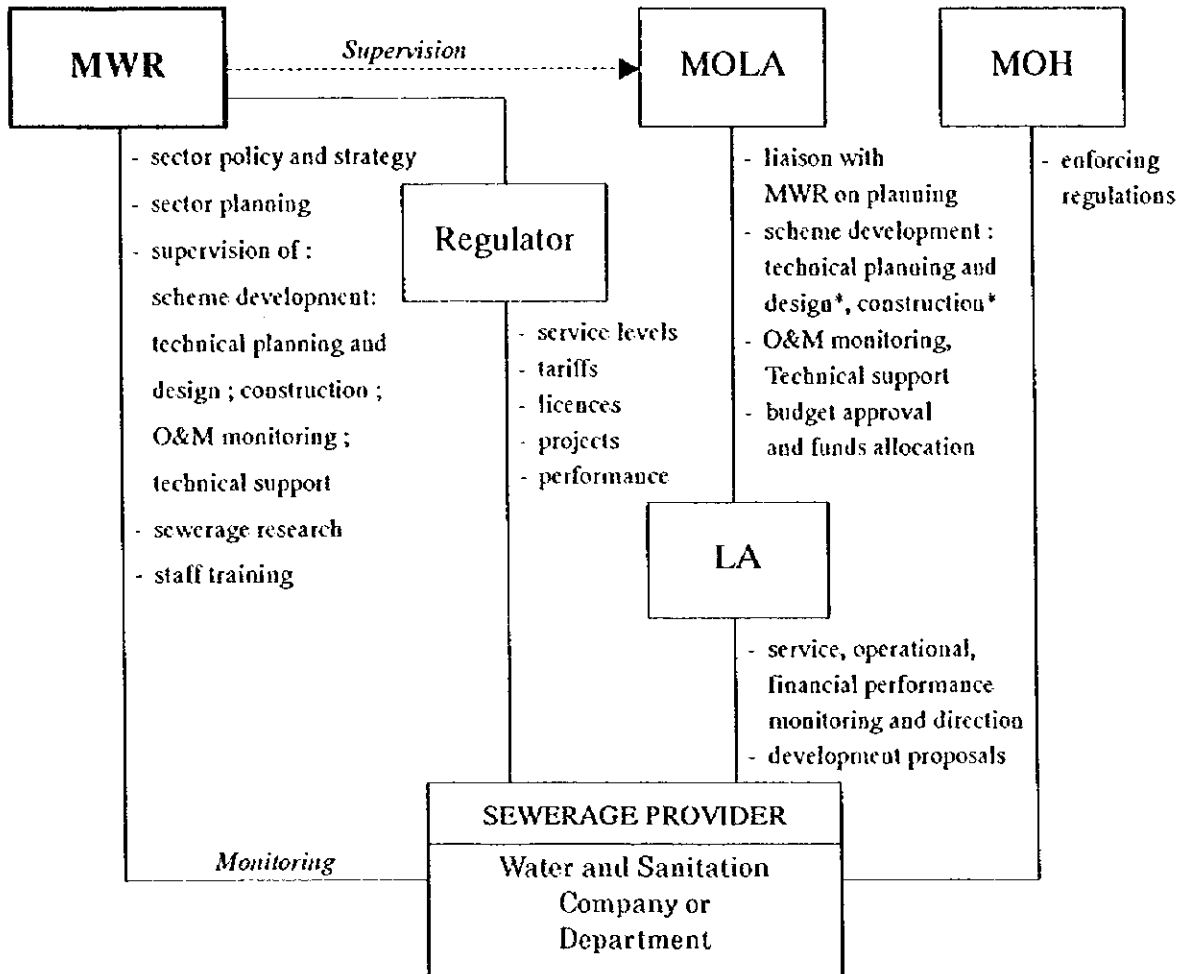


Note : MWR : Ministry of Water Resources  
 MCSS : Ministry of Culture and Social Services  
 DWO : District Water Office  
 NGO : Non Governmental Organization  
 MRD : Ministry of Regional Development

THE AFTERCARE STUDY ON  
 THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 11.3  
 地方水道事業に関する組織及び責任  
 (提案)



Note : \* : outsourced

MWR : Ministry of Water Resources

MOLA : Ministry of Local Authorities

LA : Local Authorities

MOH : Ministry of Health

- scheme operation
- scheme maintenance\*
- tariffs
- billing, revenue collection\*
- scheme development\*

THE AFTERCARE STUDY ON  
THE NATIONAL WATER MASTER PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

図 - 11.4  
下水道事業に関する組織及び責任  
(提案)

図 - 12.1 組織・法制度強化策実施計画

Area/Projects	Executing Agency	Implementation Schedule			
		2000	2005	2010	
<b>1. Improvement in Public Administration</b>					
<i>MWR</i>					
1.1 Establish Sewerage Division	MWR, (MOLA)	■			
1.2 Establish Water Resources Management and Regulation Department	MWR	■			
1.3 Hand over water supply schemes to upgraded LA's	MWR, (MOLA)		■	■	■
1.4 Select community groups to receive water supply schemes and hand over when ready	MWR		■	■	■
1.5 Strengthen support for rural and community water supply schemes	MWR, (NGOs)		■	■	
1.6 Set up independent central regulator for water undertakers and sewerage providers	MWR, (MOLA)			■	
<i>Community Water Supply Schemes</i>					
1.7 Assessment of development options for new and extension schemes	MWR, (MCSS), (NGOs)	■			
1.8 National survey of community schemes	MWR	■			
1.9 Water quality test for community water supply schemes	MWR	■			
<i>Local Authorities and MOLA</i>					
1.10 Commercialise remaining 7 municipal water and sewerage departments (6 under GTZ) and supervise pilot water and sewerage companies	MOLA, (MWR)		■	■	
1.11 Upgrade additional 5 municipalities and appoint as water undertakers	MOLA, (MWR)		■	■	
1.12 Commercialise 5 municipal water and sewerage departments	MOLA, (MWR)		■	■	
<i>NWCPC</i>					
1.13 Hand over water supply schemes to upgraded LA's	MWR		■	■	■
1.14 Apply scheme allocation criteria to receive/hand over water supply schemes from/to MWR	MWR, (NWCPC)	■	■		
1.15 Organisational, operational, financial review	MWR, (NWCPC)	■			
<i>Personnel Administration</i>					
1.16 Establish pay policy for Civil Service	MWR, (Office of the President), (MOF)	■			
1.17 Review Public Service Commission	MWR	■			
<b>2. Amendment to Legislation</b>					
<i>Short Term</i>					
2.1 Water Act modification	MWR	■			
2.2 Changes to other water related legislation	MWR	■			
2.3 Environmental Management and Coordination Bill Long Term		■			
<i>Long Term</i>					
2.4 Draft single comprehensive Water Act	MWR		■	■	
2.5 Enact single environmental and water law	MWR/MOENR			■	■
2.6 Establish single enforcement agency for water and environment	MWR/MOENR			■	■
<i>Implementation of the Law</i>					
2.7 Train provincial and district staff (6 provinces, 64 districts)	MWR, (WAB)	■	■		
2.8 Conduct PR campaign regarding water legislation in districts	MWR, (MOLA), (MOH)	■	■		
<b>3. Improvement in Financial Administration</b>					
3.1 Budgeting and funds allocation (incl. Provincial offices)	MOF, (MOP), (MWR)	■	■		
3.2 Tariff structure and rates for water and sewerage, in MWR, NWCPC and MOLA	MWR, (NWCPC, MOLA)		■	■	
3.3 Improve investment method	MWR, (MOLA)		■	■	■
3.4 Improve billing and collection	MWR, MOLA, Others		■	■	
3.5 Technical Assistance for Legislation and Public Administration Development	MWR, (MOLA)	■	■	■	

図 - 12.2 運転・維持管理改善策実施計画

Area/Projects	Executing Agency	Implementation Schedule				
		2000	2001	2002	2003	2004
<b>1. Water Supply O&amp;M Improvement</b>						
1.1 Establish functional metering system	MWR, (MOLA), (NWCP)	█	█	█	█	
* Establish necessary training courses		█				
* Train staff (meter readers, accountants, meter, technicians)		█	█	█	█	
* Set up, refurbish meter repair shops		█	█	█	█	
* Repair, acquire meters		█	█	█	█	
* Prepare, conduct public awareness campaign		█	█	█	█	
1.2 Leakage control	MWR, (MOLA), (NWCP)	█	█	█	█	█
* Establish new training courses		█				
* Train staff (leakage control technicians)		█	█	█	█	
* Acquire, install master and service meters		█	█	█	█	
* Set up or refurbish detection equipment		█	█	█	█	
* Prepare leak detection programmes		█	█	█	█	
* Implement programmes		█	█	█	█	█
1.3 Customer registration	MWR, (MOLA), (NWCP)		█	█	█	
1.4 Other O&M staff training	MWR, (MOLA), (NWCP)	█	█	█	█	█
1.5 Procurement of water tankers (2 vehicles per province)	MWR	█	█	█	█	
1.6 Technical Assistance at Districts for implementing the improvement programme	MWR, (MOLA), (NWCP)	█	█	█	█	
<b>2. Sewerage O&amp;M Improvement</b>						
2.1 Increase operating revenue in each scheme (obtain funds due from water undertaker)	MOLA, (MWR)	█	█	█	█	█
2.2 Upgrade staff levels and skills in each scheme	MOLA, (MWR)	█	█	█	█	█
* Define organisations, staff levels, skills needed		█				
* Audit of personnel in post		█	█	█	█	
* Identification of vacancies, training needs, nonperforming surplus staff		█	█	█	█	
* Implement above programme		█	█	█	█	█
2.3 Procure facilities, equipment and tools	MOLA, (MWR)	█	█	█	█	█
* Establish minimum overall needs		█	█	█	█	
* Determine minimum net needs		█	█	█	█	
* Acquire agreed numbers		█	█	█	█	█
2.4 Establish preventive maintenance program and standard operating procedures	MOLA, (MWR)	█	█	█	█	
* Prepare detailed sewer inventory		█	█	█	█	
* Prepare maintenance schedule		█	█	█	█	
* Develop work order systems		█	█	█	█	
* Prepare standard operating procedures		█	█	█	█	
2.5 Implement industrial wastewater pre-treatment program	MOLA, (MWR)	█	█	█	█	
* Prepare inventory of dischargers		█	█	█	█	
* Obtain equipment		█	█	█	█	
* Monitor industrial effluents		█	█	█	█	
2.6 Technical Assistance at each facility to implement improvement programme	MOLA, (MWR)	█	█	█	█	

図 - 12.3 (1/3) 都市水道開発実施計画

Province	Code	District	Code	Urban Center	Production Capacity to be expanded (1,000m <sup>3</sup> /day)	Project Base Cost (1,000US\$)		Implementation Schedule			Scenario			
						Reb.	Exp.	2000	2005	2010	A	B	C	
Central	210	Kiambu	U - 2	Githunguri	2.1	56	1,802							
			U - 3	Karuri	4.0	88	0							
			U - 4	Kiambu	2.0	120	0							
			U - 5	Kikuyu	1.7	147	12,492							
			U - 7	Ndumburi	3.4	0	3,849							
			U - 8	Ruiru	17.8	185	9,712							
			U - 9	Thika	0.5	2,641	651							
	220	Kirinyaga	U - 12	Kerugoya/Kutus	5.7	338	3,956							
			U - 16	Wanguru	0.0	286	0							
	230	Muranga	U - 19	Makuyu	0.1	109	0							
			U - 20	Maragua	4.3	45	1,794							
			U - 21	Muranga	14.9	319	8,195							
	240	Nyandarua	U - 28	Nyahururu	19.9	735	233,722							
			U - 30	Oi Kalou	3.9	59	653							
	250	Nyeri	U - 32	Endarasha	1.1	0	27							
U - 33			Karatina	4.9	247	3,779								
U - 36			Nyeri	28.8	634	19,248								
U - 37			Othaya	0.0	933	0								
Coastal	310	Kilifi	U - 38	Kilifi	2.0	544	1,851							
			U - 39	Majengo	0.8	0	1,120							
			U - 40	Malindi	13.6	1,267	31,564							
			U - 41	Mamburi	0.0	111	0							
			U - 42	Marikani	1.4	236	693							
			U - 43	Watamu	1.3	0	1,390							
	320	Kwale	U - 44	Kwale	0.0	723	0							
			U - 45	Lungalanga	0.7	51	735							
			U - 46	Msambweni	5.2	142	3,796							
	330	Lamu	U - 47	Lamu	3.5	117	678							
			U - 49	Mokowe T.C	1.6	66	1,517							
	350	Taita	U - 54	Taveta	0.0	452	0							
			U - 55	Voi	4.7	380	3,648							
			U - 56	Wundanyi	1.4	407	759							
	360	Tana River	U - 58	Garsen	4.3	57	2,723							
U - 59			Ilola	3.8	105	2,038								
Eastern	410	Embu	U - 60	Embu	10.0	655	6,393							
			U - 61	Runyenjes	1.6	62	1,548							
	420	Isiolo	U - 63	Isiolo	9.5	547	10,073							
			U - 64	Madogash	1.0	0	0							
			U - 65	Merti	0.4	33	519							
	430	Kitui	U - 68	Kitui	2.2	365	14,575							
	440	Masaku	U - 69	Athi River	4.5	319	11,971							
			U - 71	Machakos	35.5	627	18,379							
			U - 74	Matuu	4.7	152	3,570							
			U - 77	Tala + Kangundo	7.0	95	5,309							
	450	Marsabit	U - 79	Kargi	2.5	56	1,807							
			U - 80	Korr	2.7	0	1,867							
			U - 82	Marsabit	6.3	65	2,156							
			U - 83	Moyale	3.3	44	2,106							
			U - 84	North Horr	0.8	33	828							
U - 85			Sololo	2.1	33	858								
460	Meru	U - 86	Meru	12.7	570	8,894								
		U - 87	Nkubu	5.0	130	3,728								
470	Nyambene	U - 89	Maua	1.3	106	1,334								
480	Tharaka Nithi	U - 90	Chuka	2.2	99	1,310								
490	Mwingi	U - 91	Mwingi	4.8	145	17,530								
4A0	Makueni	U - 93	Kibwezi	1.1	0	1,185								
		U - 98	Mtito Andei	3.7	454	3,156								
North Eastern	510	Garissa	U - 104	Garissa	10.8	353	0							
			U - 105	Liboi	2.1	63	1,852							
	520	Mandera	U - 108	Etwak	2.2	0	1,901							

図 - 12.3 (2/3) 都市水道開発実施計画

Province	Code	District	Code	Urban Center	Production Capacity to be expanded (1,000m <sup>3</sup> /day)	Project Base Cost (1,000US\$)		Implementation Schedule			Scenario			
						Reb.	Exp.	2000	2005	2010	A	B	C	
	530	Wajir	U - 109	Mandera	4.1	140	735							
			U - 110	Rhamu	4.4	46	3,310							
			U - 113	Bute	0.6	54	541							
			U - 114	Eldas	1.7	36	1,653							
			U - 116	Wajir	9.1	38	9,608							
Nyanza	610	Gusii	U - 117	Kisii	11.0	1,012	13,230							
			U - 119	Ahero	0.1	33	238							
	620	Kisumu	U - 120	Kisumu	60.7	1,172	77,257							
			U - 121	Maseno	8.0	0	5,844							
			U - 122	Muhoroni	0.6	176	0							
			U - 123	Asiro	1.3	0	1,391							
	630	Siaya	U - 125	Siaya	7.4	230	3,518							
			U - 129	Homa Bay	12.0	363	8,257							
	640	Homa Bay	U - 130	Kendu Bay	2.4	221	1,961							
			U - 131	Mbita	1.6	0	1,602							
			U - 133	Oyugis	3.7	955	1,680							
			U - 134	Awendo/Sare	2.3	0	0							
	650	Migori	U - 135	Kehancha	2.0	40	0							
			U - 136	Migori	1.4	184	0							
			U - 137	Nyabikaye	1.2	0	1,183							
U - 138			Rongo	1.8	152	1,581								
660	Nyamaria	U - 139	Keroka	0.8	0	2,084								
		U - 140	Nyamira + Kebutigo	4.8	117	2,280								
Rift Valley	710	Kajiado	U - 141	Kajiado	1.3	533	727							
			U - 142	Magadi	5.2	340	3,709							
			U - 143	Namanga	2.2	111	2,220							
			U - 144	Ngong	2.7	204	0							
			U - 145	Oloitokitoki	13.2	90	12,901							
			U - 146	Ongata Longai	1.1	1,004	0							
	720	Kipsigis	U - 148	Kericho	13.7	778	24,315							
			U - 149	Kipkelion	0.5	41	0							
			U - 151	Londiani	0.8	228	74,957							
			U - 152	Sotik	1.5	0	1,474							
	730	Laikipia	U - 153	Nanyuki	12.4	1,140	6,758							
			U - 154	Rumuruti	1.4	0	23,219							
	740	Nakuru	U - 155	El Burgon	1.9	81	38,127							
			U - 156	Gilgil	2.3	228	1,564							
			U - 157	Molo	3.1	172	7,478							
			U - 158	Naivasha	16.9	171	19,288							
			U - 159	Nakuru	87.6	4,395	149,505							
	750	Narok	U - 163	Narok	9.6	249	27,242							
	760	Trans Nzoia	U - 164	Kitale	20.6	1,847	10,926							
	770	Uasin Gishu	U - 165	Burn Forest	0.5	174	0							
			U - 166	Eldoret	17.5	2,690	29,724							
			U - 167	Lemok	1.6	0	1,594							
			U - 169	Moi's Bridge	0.0	212	0							
			U - 170	Simat	3.0	0	3,462							
			U - 172	Turbo	1.2	127	1,143							
	790	Transmara	U - 174	Kilgoris	3.0	249	2,566							
	810	Baringo	U - 178	Eldama Ravine	0.0	1,129	0							
			U - 179	Kabarnet	26.7	451	38,098							
U - 180			Maji Mazuri	0.2	98	248								
U - 181			Marigat	0.0	146	0								
U - 182			Mogotio	0.4	171	35,672								
820	Elgeyo Marakwet	U - 183	Iten	1.6	95	5,038								
830	Nandi	U - 185	Kapsabet + Baraton	5.7	179	1,479								
840	Samburu	U - 188	Maralal	0.7	184	500								
		U - 189	Wamba	5.3	75	4,865								
850	Turkana	U - 190	Kakuma T.C	3.5	218	3,132								

図 - 12.3 (3/3) 都市水道開発実施計画

Province	Code	District	Code	Urban Center	Production Capacity to be expanded (1,000m <sup>3</sup> /day)	Project Base Cost (1,000US\$)		Implementation Schedule									
						Reb.	Exp.	2000	2005	2010	Scenario						
											A	B	C				
			U - 191	Kalokol	0.4	43	27										
			U - 194	Lodwar	5.4	260	150										
			U - 195	Lokitaung	0.7	79	27										
	860	West Pokot	U - 197	Kapenguria	3.4	139	2,833										
			U - 198	Makutano	3.3	101	2,836										
Western	910	Bungoma	U - 199	Bungoma	12.1	641	6,472										
			U - 200	Chapatais	0.0	505	0										
			U - 202	Kikisili	37.1	475	23,414										
			U - 203	Mawalie + Malakisi	1.2	0	1,305										
			U - 205	Webuye	14.9	300	10,159										
	920	Busia	U - 206	Busia	12.7	455	3,422										
			U - 207	Malaba Town	1.3	0	0										
			U - 208	Nambale	1.0	43	1,129										
	930	Kakamega	U - 209	Butere	4.0	74	3,102										
			U - 210	Kakamega	16.9	1,161	10,751										
			U - 211	Mumias	9.2	292	5,340										
	940	Vihiga	U - 213	Luanda	23.6	309	15,331										
U - 214			Mbale	6.3	114	34											
U - 215			Vihiga + Majengo	4.3	41	0											
Total					1,315.1	44,505	1,243,036										

Legend




-  : Feasibility study, detailed design and financial arrangement and pre-construction procedures
-  : Construction period
-  : Pre-construction stage and construction period

図 - 12.4 (1/2) 地方水道開発実施計画

Province	Code	District	Type	Existing Schemes		Proposed Projects			Implementation Schedule								
				Nos.	Nos.	Pro. Cap (1,000m <sup>3</sup> /d)	Cost (1,000US\$)		2000	2005	2010	Scenario					
							Reh	Exp				A	B	C			
Central	210	Kiambu	LS	18	0	0	5,805	0									
			SS	-	1,179	6,736	-	2,374									
	220	Kirinyaga	LS	14	0	0	4,515	0									
			SS	-	0	0	-	0									
	230	Muranga	LS	5	0	0	1,613	0									
			SS	-	1,835	10,475	-	3,633									
	240	Nyandarua	LS	8	0	0	2,580	0									
			SS	-	0	0	-	0									
	250	Nyeri	LS	4	0	0	1,290	0									
			SS	-	0	0	-	0									
Coastal	310	Kilifi	LS	4	0	0	1,290	0									
			SS	-	2,416	13,804	-	4,784									
	320	Kwale	LS	2	0	0	645	0									
			SS	-	2,080	11,833	-	4,115									
	330	Lamu	LS	1	0	0	323	0									
			SS	-	37	207	-	73									
	340	Mombasa	LS	5	6	3,106	1,613	9,395									
			SS	-	0	0	-	0									
	350	Taita	LS	6	0	0	1,935	0									
			SS	-	0	0	-	0									
	360	Tana River	LS	2	0	0	645	0									
			SS	-	123	691	-	241									
Eastern	410	Embu	LS	6	0	0	1,935	0									
			SS	-	645	3,694	-	1,283									
	420	Isiolo	LS	2	0	0	645	0									
			SS	-	0	0	-	0									
	430	Kitui	LS	3	0	0	968	0									
			SS	-	896	5,112	-	1,774									
	440	Masaku	LS	12	0	0	3,870	0									
			SS	-	1,363	7,785	-	2,699									
	420	Marsabit	LS	13	0	0	4,193	0									
			SS	-	0	0	-	0									
	460	Meru	LS	3	0	0	968	0									
			SS	-	0	0	-	0									
	470	Nyambene	LS	10	0	0	3,225	0									
			SS	-	764	4,362	-	1,513									
480	Tharaka Nithi	LS	4	0	0	1,290	0										
		SS	-	110	626	-	218										
490	Mwingi	LS	2	9	6,815	645	15,225										
		SS	-	523	2,985	-	1,856										
4A0	Makueni	LS	4	0	0	1,290	0										
		SS	-	1,344	7,671	-	2,661										
North-Eastern	510	Garissa	LS	7	0	0	2,258	0									
			SS	-	28	151	-	55									
	520	Mandera	LS	6	5	2,594	1,935	7,829									
			SS	-	212	1,199	-	420									
530	Wajir	LS	12	2	665	3,870	914										
		SS	-	10	51	-	20										
Nyanza	610	Gusii	LS	6	0	0	1,935	0									
			SS	-	8,233	47,026	-	16,301									
	620	Kisumu	LS	11	0	0	3,548	0									
			SS	-	610	3,483	-	1,208									
	630	Siaya	LS	14	0	0	4,515	0									
			SS	-	0	0	-	0									
	640	Homa Bay	LS	2	0	0	645	0									
			SS	-	498	2,844	-	956									
	650	Migori	LS	1	0	0	323	0									
			SS	-	3,411	19,486	-	6,754									
660	Nyamira	LS	5	0	0	1,613	0										
		SS	-	1,078	6,160	-	2,134										
Rift Valley	710	Kajiado	LS	7	0	0	2,258	0									
			SS	-	99	561	-	195									
	720	Kipsigis	LS	2	0	0	645	0									
			SS	-	3,537	20,199	-	7,003									



図 - 12.4 (2/2) 地方水道開発実施計画

Province	Code	District	Type	Existing Schemes		Proposed Projects			Implementation Schedule									
				Nos.	Nos.	Pro. Cap	Cost (1,000US\$)		2000	2005	2010	Scenario						
							Reh	Exp				A	B	C				
Central	730	Laikipia	LS	1	0	0	323	0										
			SS	-	593	3,379	-	1,174										
	740	Nakuru	LS	7	0	0	2,258	0										
			SS	-	413	2,378	-	828										
	750	Narok	LS	6	7	5,575	1,935	12,196										
			SS	-	524	2,587	-	1,038										
	760	Trans Nzoia	LS	0	0	0	0	0										
			SS	-	2,864	16,358	-	5,671										
	770	Uasin Gishu	LS	8	0	0	2,580	0										
			SS	-	0	0	-	0										
	780	Bomet	LS	3	0	0	958	0										
			SS	-	4,258	24,327	-	8,431										
	790	Transmara	LS	2	9	7,122	645	15,378										
			SS	-	0	0	-	0										
	810	Baringo	LS	4	0	0	1,290	0										
			SS	-	0	0	-	0										
	820	Elgeyo Marakwet	LS	5	0	0	1,613	0										
			SS	-	816	4,655	-	1,616										
	830	Nandi	LS	3	0	0	968	0										
			SS	-	3,119	17,822	-	6,176										
840	Samburu	LS	8	0	0	2,580	0											
		SS	-	0	0	-	0											
850	Turkana	LS	6	5	2,544	1,935	7,829											
		SS	-	0	0	-	0											
860	West Pokot	LS	5	0	0	1,613	0											
		SS	-	0	0	-	0											
Western	910	Bungoma	LS	14	1	433	4,515	1,566										
			SS	-	767	4,361	-	1,519										
920	Busia	LS	9	0	0	2,903	0											
		SS	-	920	5,249	-	1,822											
930	Kakamega	LS	7	0	0	2,238	0											
		SS	-	4,296	24,543	-	8,506											
940	Vihiga	LS	6	8	6,598	1,935	13,762											
		SS	-	1,522	8,690	-	3,074											
Total			LS	295	52	35,853	95,138	84,147										
			SS	-	51,131	291,969	-	101,239										

Legend

LS : Large scale rural water supply

SS : Small scale rural water supply

□ : Feasibility study, detailed design and financial arrangement and pre-construction procedures

■ : Construction period

▨ : Pre-construction stage and construction period

図 - 12.5 家畜用水給水計画実施計画

Province	Code	District	Nos	Total Storage Capacity (1,000m <sup>3</sup> )	Cost (1,000US\$)	Implementation Schedule										
						2000	2005		2010		Scenario					
						A	B	C								
Central	210	Kisumu	3	150	92											
	220	Kirinyaga	3	150	92											
	230	Muranga	3	150	92											
	240	Nyandarua	4	200	122											
	250	Nyeri	3	150	92											
Coastal	310	Kilifi	3	150	92											
	320	Kwale	7	350	214											
	330	Lamu	2	100	61											
	340	Mombasa	1	50	31											
	350	Taita	2	100	61											
	360	Tana River	14	700	427											
Eastern	410	Embu	5	250	153											
	420	Isiolo	2	100	61											
	430	Kisumu	14	700	427											
	440	Masaku	11	550	336											
	450	Marsabit	15	750	458											
	460	Meru	6	300	183											
	470	Nyambene	5	250	153											
	480	Tharaka Nthi	6	300	183											
	490	Mwingi	7	350	214											
	4A0	Makueni	79	3,550	2,410											
North-Eastern	510	Garissa	58	4,900	2,989											
	520	Mandera	23	1,150	702											
	530	Wajir	39	1,950	1,190											
Nyanza	610	Gusii	5	250	153											
	620	Kisumu	6	300	183											
	630	Siaya	6	300	183											
	640	Homa Bay	4	200	122											
	650	Migori	2	100	61											
	660	Nyamira	4	200	122											
Rift Valley	710	Kajiado	28	1,400	854											
	720	Kipsigis	4	200	122											
	730	Lakipia	8	400	244											
	740	Nakuru	33	1,650	1,007											
	750	Narok	16	800	488											
	760	Trans Nzoia	2	100	61											
	770	Uasin Gishu	5	250	153											
	780	Bomet	6	300	183											
	790	Transmara	3	150	92											
	810	Baringo	44	2,200	1,342											
	820	Elgeyo Marakwet	2	100	61											
	830	Nandi	5	250	153											
	840	Samburu	18	900	549											
850	Turkana	12	600	366												
860	West Pokot	12	600	366												
Western	910	Bungoma	4	200	122											
	920	Busia	3	150	92											
	930	Kakamega	6	300	183											
	940	Vihiga	3	150	92											
Total			299	169,204	30,500											

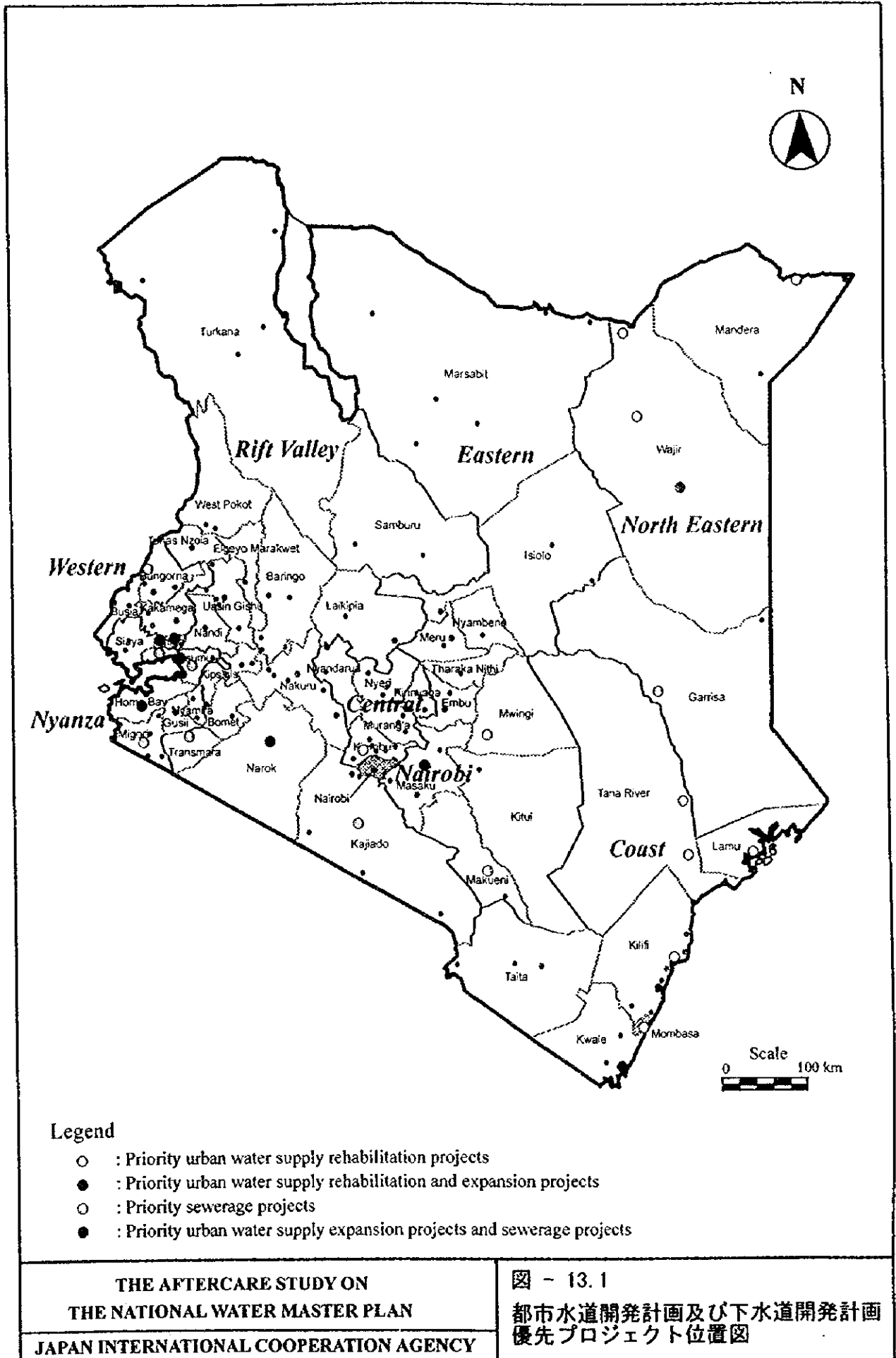
Legend: : Studies, surveys, detailed design, financial arrangements, etc.  
 : Construction

図 - 12.6 下水道開発実施計画

Province	Code	District	Code	Urban Center	Project Cost (US\$)		Implementation Schedule										
					Treatment Works	Sewer Reticulation	2000	2005			2010			Scenario			
							A	B	C								
Nairobi	110	Nairobi	U-1	Nairobi Dundura	42,224,000	33,535,000											
			U-1	Nairobi Kariobangi	9,897,000	33,662,000											
Rift Valley	740	Nakuru	U-159	Nakuru-town	7,782,000	11,333,000											
			U-159	Nakuru-Njoro	6,425,000	3,966,000											
Coastal	340	Mombasa	U-52	Mombasa Phase I	48,225,000	5,884,000											
			U-52	Mombasa Phase II	0	11,936,000											
Nyanza	620	Kisumu	U-120	Kisumu Phase I	4,561,000	13,587,000											
			U-120	Kisumu Phase II	5,022,000	24,304,000											
Rift Valley	770	Uasin Gishu	U-166	Eldoret Conventional	0	7,597,000											
			U-166	Eldoret Ponds	0	7,597,000											
Eastern	440	Masaku	U-71	Machakos Phase I	1,579,000	561,000											
			U-71	Machakos Phase II	1,793,000	343,000											
Central	250	Nyeri	U-35	Nyeri Conventional	2,340,000	17,000											
			U-35	Nyeri Kiganjo	3,368,000	7,225,000											
Rift Valley	760	Trans Nzoia	U-164	Kitale conventional	943,000	3,811,000											
			U-164	Kitale Pond	4,388,000	3,818,000											
Western	930	Kakamega	U-210	Kakamega Shirere	3,691,000	2,761,000											
			U-210	Kakamega Kiambi	0	2,751,000											
Central	210	Kiambu	U-9	Thika	3,255,000	2,630,000											
Rift Valley	740	Nakuru	U-158	Naivasha	3,864,000	5,469,000											
			U-148	Kericho	3,441,000	3,978,000											
Coastal	310	Kitifi	U-40	Mahindi	2,675,000	4,732,000											
Western	910	Bungoma	U-205	Webuye	2,468,000	3,464,000											
Nyanza	610	Gusii	U-117	Kisii	1,183,000	3,391,000											
South Eastern	510	Garissa	U-104	Garissa	2,029,000	4,059,000											
Western	910	Bungoma	U-199	Bungoma	2,278,000	3,191,000											
			920	Busia	U-206	Busia (South Teso)	1,874,000	3,917,000									
Rift Valley	730	Lakipia	U-153	Nanyuki	1,009,000	2,249,000											
Eastern	410	Embu	U-60	Embu	1,233,000	1,443,000											
			420	Isiolo	U-63	Isiolo	516,000	1,729,000									
Rift Valley	710	Kajiado	U-146	Ongata Longai	1,094,000	1,795,000											
Central	230	Maragua	U-20	Maragua	1,078,000	1,768,000											
Rift Valley	750	Narok	U-163	Narok	1,044,000	1,708,000											
Nyanza	640	Homabay	U-129	Homabay	774,000	597,000											
Central	210	Kiambu	U-8	Ruiru	952,000	1,545,000											
South Eastern	530	Wajir	U-116	Wajir	857,000	1,455,000											
Central	230	Muranga	U-21	Muranga	189,000	689,000											
Central	240	Nyandarua	U-28	Nyahururu	144,000	401,000											
Coastal	310	Kitifi	U-38	Kitifi	767,000	1,261,000											
South Eastern	520	Mandera	U-109	Mandera	686,000	1,454,000											
Eastern	440	Masaku	U-69	Atthi River	583,000	980,000											
Rift Valley	830	Nandi	U-185	Kapsabet	0	721,000											
Rift Valley	710	Kajiado	U-144	Ngong	582,000	864,000											
Coastal	350	Taita	U-55	Voi	499,000	730,000											
Rift Valley	810	Baringo	U-179	Kabarnet	478,000	716,000											
Central	210	Kiambu	U-40	Kiambu	0	415,000											
Central	250	Nyeri	U-33	Karatina	553,000	863,000											
Central	210	Kiambu	U-6	Limuru	242,000	130,000											
Total					116,495,000	231,458,000											

Legend [ ] : Feasibility study, detailed design and financial arrangement and pre-construction procedures

[ ] : Construction period



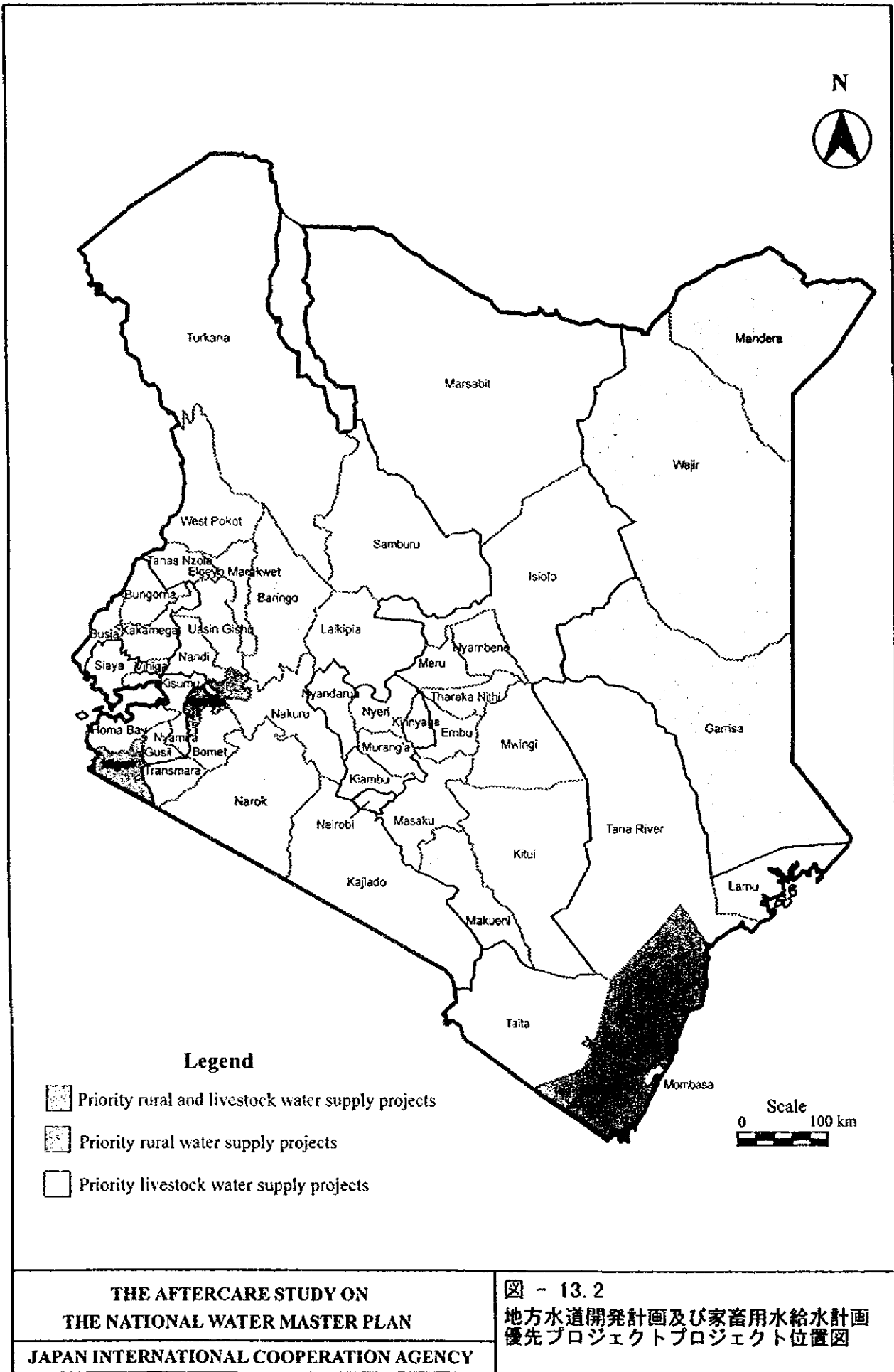


図 - 13.2  
地方水道開発計画及び家畜用水給水計画  
優先プロジェクトプロジェクト位置図

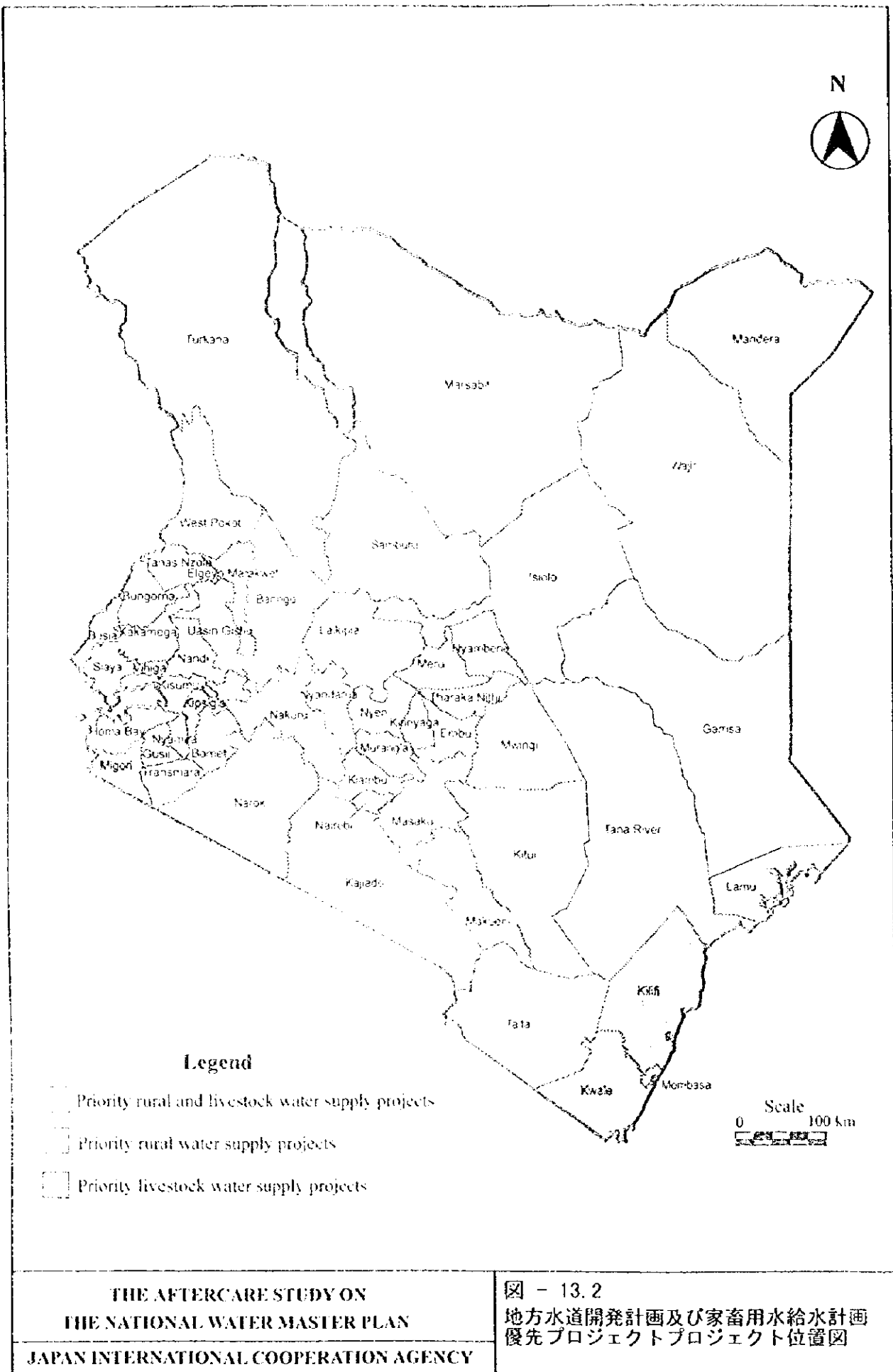


図 - 13.2  
地方水道開発計画及び家畜用水給水計画  
優先プロジェクトプロジェクト位置図













JICA