

付属資料-6. 1 個別プロジェクトの投資前調査及び設計-実施計画案 (2/3)

Description	Executing Agency	Cost (million)		Implementation Schedule									
		US\$	K£	93	95	2000		2	4	6	8	10	
5. Hydropower Development													
	MOE												
- Low Grand Falls	KPC/ TARDA	21.83	27.50	☆	☆	★	★						
- Oldorko	KPC	5.33	6.71		☆	☆	★	★					
- Magwagwa	KPC/ LBDA	17.00	21.42				★	★					
- Gitaro #3 Extension	KPC/ TRDC					☆	★	★					
- Mutonga	KPC/ TARDA	11.18	14.08			☆	☆	★	★				
Sub-Total of Item 5.		55.33	69.71										
6. River and Flood Works													
(1) Major flood control projects													
	MOWD												
- Kano Plain (Nyando river)	MOWD/ LBDA	1.55	1.96	☆	★	★							
- Nairobi City (Nairobi river, etc)	MOLG	0.81	1.02		☆	★	★						
- Yala Swamp (Yala/Nzoia river)	MOWD/ LBDA	1.33	1.67				☆	★	★				
- Kuja Rivermouth (Kuja river)	MOWD/ LBDA	0.38	0.47						☆	★	★		
- Lunii Rivermouth (Lunii river)	MOWD	0.62	0.78							☆	★	★	
(2) Urban drainage works													
	MOLG												
- Nairobi	MOLG	18.00	22.68	★	★								
- Kiambu	MOLG	0.97	1.22							☆	★	★	
- Thika	MOLG	1.11	1.40							☆	★	★	
- Kerugoya	MOLG	0.58	0.73							☆	★	★	
- Muranga	MOLG	2.36	2.98						☆	★	★	★	
- Olkalou	MOLG	0.45	0.57							☆	★	★	
- Nyeri	MOLG	0.98	1.24				☆	★	★				
- Kiliifi	MOLG	0.37	0.47							☆	★	★	
- Malindi	MOLG	0.57	0.72							☆	★	★	
- Kwale	MOLG	0.54	0.68							☆	★	★	
- Lamu	MOLG	0.53	0.66						☆	★	★	★	
- Mombasa	MOLG	3.49	4.40	☆	★	★							
- Voi	MOLG	0.69	0.87							☆	★	★	
- Wundanyi	MOLG	0.17	0.21							☆	★	★	
- Hola	MOLG	0.56	0.70							☆	★	★	
- Embu	MOLG	0.57	0.72				☆	★	★				
- Isiolo	MOLG	0.27	0.34						☆	★	★	★	
- Kitui	MOLG	0.27	0.34							☆	★	★	
- Mchakos	MOLG	1.66	2.09		☆	★	★						
- Mitabori	MOLG	0.12	0.15		☆	★	★						
- Marsabit	MOLG	0.06	0.08						☆	★	★		
- Meru	MOLG	0.20	0.26			☆	★	★					

Note: ☆ Study ★ Design ■ Study/Design Continues Intermittently
*1 excluding the cost of groundwater source development schemes

付属資料-6. 1 個別プロジェクトの投資前調査及び設計-実施計画案 (3/3)

Description	Executing Agency	Cost (million)		Implementation Schedule																
		US\$	K£	93	95	2000	2	4	6	8	10									
- Garissa	MOLG	0.48	0.60					☆	★	★										
- Mandera	MOLG	0.04	0.05									☆	★	★						
- Wajir	MOLG	0.12	0.15																	
- Kisii	MOLG	1.58	1.99					☆	★	★										
- Kisumu	MOLG	2.51	3.16		☆	★	★													
- Siaya	MOLG	0.07	0.09														☆	★	★	
- Homa Bay	MOLG	0.69	0.87									☆	★	★	★					
- Kajiado	MOLG	0.69	0.87														☆	★	★	
- Kericho	MOLG	0.70	0.88					☆	★	★										
- Nanyuki	MOLG	1.17	1.48					☆	★	★	★									
- Naivasha	MOLG	0.54	0.68	☆	★	★														
- Nakuru	MOLG	3.89	4.90	☆	★	★														
- Narok	MOLG	0.48	0.61														☆	★	★	
- Kitale	MOLG	1.89	2.38					☆	★	★										
- Eldoret	MOLG	2.57	3.24					☆	★	★										
- Kabarnet	MOLG	0.10	0.12																	
- Kapsabet/Baraton	MOLG	0.20	0.25																	
- Iten	MOLG	0.98	1.24																	
- Maralal	MOLG	0.42	0.53														☆	★	★	★
- Lodwar	MOLG	0.13	0.17														☆	★	★	★
- Kapenguria/Makutano	MOLG	0.21	0.26														☆	★	★	★
- Bungoma	MOLG	1.12	1.41																	
- Webuye	MOLG	0.14	0.17																	
- Busia	MOLG	0.07	0.09																	
- Kakamega	MOLG	1.24	1.56					☆	★	★										
(3) Minor river improvement																				
- Various rivers	MOWD	6.75	8.51																	
(4) Improvement of Lower Tana																				
- Lower Tana improvement	MOWD/ TARDA	3.00	3.78																	
Sub-Total of Item 6.		70.99	89.44																	
Total		751.89	947.38																	

Note: ☆ Study ★ Design  Study/Design Continues intermittently
 *1 excluding the cost of groundwater source development schemes

付属資料- 6. 2 流域総合水資源開発計画調査- 実施計画案

District Code	Description	Executing Agency	Cost (million)		Implementation Schedule																	
			US\$	K£	93	95	2000	2	4	6	8	10										
<u>Lake Victoria Drainage Area</u>																						
910 920	1. Sio/Malaba River Basin Study	LBDA	2.0	2.5			★	★	★													
630, 910, 930 760, 770, 830	2. Nzoia/Yala River Basin Study	LBDA	3.0	3.8	★	★	★															
620 720	3. Nyando River Basin Study	LBDA	2.5	3.2	★	★	★															
<u>Rift Valley Drainage Area</u>																						
810, 820 850, 860	4. Kerio River Basin Study (Update)	KUDA	2.0	2.5			★	★	★													
740 240	5. Nakuru and Environs Integrated Water Use Study	NWCPC	3.0	3.8	★	★	★															
710 750	6. Ewaso Ngiro South River Basin Study	ENSRDA	2.5	3.2			★	★	★													
<u>Athi River Drainage Area</u>																						
110, 210, 440 710, 350, 310	7. Athi River Basin Study (Update)	TARDA	4.0	5.0	★	★	★	★	★													
<u>Tana River Drainage Area</u>																						
220, 230, 250 410, 460, 420 430, 360, 510	8. Tana River Basin Study (Update)	TARDA	4.0	5.0			★	★	★	★	★											
730, 240, 840 420, 450, 510	9. Ewaso Ngiro North River Basin Study	ENNRDA	2.5	3.2	★	★	★															
	Total		25.5	32.1																		
Note:		★ Study																				

付属資料-6. 3 都市水道計画のための地下水開発計画調査-実施計画案

District Code	Description	Executing Agency	Cost (million)		Study Schedule															
			US\$	K£	93	95	2000	2	4	6	8	10								
320	1. Msambweni	MOWD/NWCPC	1.6	2.0			☆													
420	2. Isiolo	MOWD/NWCPC	3.6	4.5			☆	☆												
420	3. Garbatula	MOWD/NWCPC	1.6	2.0			☆													
450	4. North Horr	MOWD/NWCPC	1.6	2.0			☆													
450	5. Korr	MOWD/NWCPC	1.6	2.0					☆											
450	6. Kargi	MOWD/NWCPC	1.6	2.0			☆													
450	7. Marsabit	MOWD/NWCPC	3.6	4.5			☆	☆												
450	8. Sololo	MOWD/NWCPC	1.6	2.0			☆													
450	9. Moyale	MOWD/NWCPC	1.6	2.0					☆											
510	10. Mudo Gashe	MOWD/NWCPC	1.6	2.0			☆													
510	11. Ijara	MOWD/NWCPC	1.6	2.0			☆													
510	12. Kotile	MOWD/NWCPC	1.6	2.0			☆													
520	13. Elwak	MOWD/NWCPC	1.6	2.0			☆													
530	14. Wajir	MOWD/NWCPC	5.4	6.8			☆	☆	☆											
530	15. Buna	MOWD/NWCPC	3.6	4.5			☆	☆												
530	16. Bute	MOWD/NWCPC	1.6	2.0			☆													
640	17. Nyabikaye	MOWD/NWCPC	1.6	2.0			☆													
730	18. Rumuruti	MOWD/NWCPC	1.6	2.0			☆													
730	19. Nyahururu	MOWD/NWCPC	3.6	4.5					☆	☆										
840	20. Wamba	MOWD/NWCPC	1.6	2.0			☆													
840	21. Barogoi	MOWD/NWCPC	3.6	4.5			☆	☆												
850	22. Lodwar	MOWD/NWCPC	3.6	4.5					☆	☆										
	TOTAL		51.0	64.3																

Note : ☆ Study

付属資料-- 6. 4 District 別水資源開発計画調査-実施計画案 (1/2)

District Code	Description	(Basin Study proposed)	Executing Agency	Cost (million)		Implementation Schedule														
				US\$	K£	93	95	2000			2	4	5	8	10					
110	<u>Nairobi Province</u> Nairobi	(Athi)	NCC	-	-	(To be covered by separate studies)														
	<u>Central Province</u>																			
210	Kaimbu	(Athi)	MOWD	2.0	2.5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
220	Kirinyaga	(Tana)	"	2.0	2.5															
230	Muranga	(Tana)	"	2.0	2.5															
240	Nyandarua	(Nakuru)	"	2.0	2.5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
250	Nyeri	(Tana)	"	2.0	2.5															
	<u>Coast Province</u>																			
310	Kilifi		MOWD	2.5	3.2	☆	☆	☆	(WRAP underway for two divisions)											
320	Kwale		"	3.0	3.8	☆	☆	☆												
330	Samu		"	-	-	☆	☆	☆	(WRAP proposed)											
340	Mombasa		"	2.5	3.2	☆	☆	☆												
350	Taiota Taveta		"	2.5	3.2				☆	☆	☆									
360	Tana River	(Tana)	"	-	-	☆	☆	(WRAP proposed)												
	<u>Eastern Province</u>																			
410	Embu	(Tana)	MOWD	2.5	3.2				o	o	o	o	o	o	o	o	o	o	o	o
420	Isiolo	(Ewaso Ngiro N.)	"	-	-	(WRAP proposed)														
430	Kitui	(Tana)	"	2.5	3.2				o	o	o	o	o	o	o	o	o	o	o	o
440	Machakos/Maku	(Athi)	"	-	-	☆	☆	☆	(WRAP proposed)											
450	Marsabit	(Ewaso Ngiro N.)	"	-	-	☆	☆	(WRAP proposed)												
460	Meru	(Tana)	"	-	-	(WRAP completed)														
	<u>North Eastern Province</u>																			
510	Garissa		MOWD	-	-	☆	☆	(WRAP proposed)												
520	Mandera		"	3.0	3.8	☆	☆	☆												
530	Wajir		"	-	-	☆	☆	(WRAP proposed)												

Note: ☆ Study
o River Basin Study (proposed under separate programme)

付属資料-6.4 District 別水資源開発計画調査-実施計画案 (2/2)

District Code	Description	(Basin Study proposed)	Executing Agency																			
				US\$	K£	93	95	2000	2	4	6	8	10									
<u>Nyanza Province</u>																						
610	Kisii/Nyamira		MOWD	2.0	2.52				☆	☆	☆											
620	Kisumu	(Nyando)	"	2.5	3.2	○	○	○	○	☆	☆											
630	Siaya	(Yala)	"	2.0	2.5	○	○	○	○	☆	☆											
640	South Nyanza		"	2.0	2.5				☆	☆	☆											
<u>Rift Valley Province</u>																						
710	Kajiado	(Aithi)	MOWD	-	-	☆	☆	(WRAP underway)														
720	Kericho		"	2.5	3.2			☆	☆	☆												
730	Laikipia	(Ewaso Ngiro N.)	"	-	-	(WRAP completed)																
740	Nakuru	(Nakuru)	"	2.0	2.5	○	○	○	○	☆	☆											
750	Narok	(Ewaso Ngiro N.)	"	2.5	3.2			○	○	○	☆	☆										
760	Trans Nzoia	(Nzoia)	"	2.0	2.5	○	○	○	○	☆	☆											
770	Uasin Gishu	(Nzoia)	"	2.0	2.5	○	○	○	○	☆	☆											
810	Baringo		MOWD	-	-	(WRAP completed)																
820	Elgeyo Marakwt	(Kerio)	"	-	-	(WRAP completed)																
830	Nandi	(Yala)	"	2.0	2.5	○	○	○	○	☆	☆											
840	Samburu	(Ewaso Ngiro N.)	"	-	-	(WRAP completed)																
850	Turkana		"	3.0	3.8	☆	☆	☆														
860	West Pokot		"	-	-	(WRAP completed)																
<u>Western Province</u>																						
910	Bungoma	(Nzoia)	MOWD	2.0	2.5	○	○	○	○	☆	☆											
920	Busia	(Siö)	"	2.0	2.5				○	○	○	☆	☆									
930	Kakamega/Vihig	(Nzoia)	"	2.0	2.5	○	○	○	○	☆	☆											
	Total			59.0	74.3																	
Note:												☆ District Study ○ River Basin Study (proposed under separate programme)										

付属資料-6. 5 データ収集及び水管理プログラム (1/2)

District Code	Description	Executing Agency	Cost (million)		Implementation Schedule															
			US\$	K£	93	95	2000		2	4	6	8	10							
	1. <u>Surface Water Management</u>																			
	(1) Hydrological data management																			
	(a) Reinstatement of river water level gauging stations	MOWD	1.6	2.0	☆	☆	☆	☆	☆	☆	☆									
	(b) Reinforcement of MOWD database system	MOWD	0.2	0.3			☆	☆												
	(c) Reinforcement of regional offices' activities	MOWD	2.0	2.5	☆	☆	☆	☆												
	(2) Water abstraction permit data - review and upgrading, including water use survey for Upper Athi and Upper Tana basins	MOWD	2.5	3.2	☆	☆	☆													
	(3) Assessment of river maintenance discharge	MOWD	Included in (2) above			☆	☆	☆												
	(4) Reinforcement of water use monitoring/control activities	MOWD	2.0	2.5	☆	☆	☆	☆												
	Sub-total		8.3	10.5																
	2. <u>Groundwater Resources Management</u>																			
	(1) Groundwater data management	MOWD	0.1	0.1			☆	☆												
	(2) Assessment of groundwater potential	MOWD	-	-	☆	☆	☆	☆	☆	☆	☆									
	Sub-total		0.1	0.1																
	3. <u>Water Quality and Pollution Control</u>																			
	(1) Water quality monitoring programme																			
	(a) Surface water quality monitoring programme	MOWD	2.5	3.2	☆	☆														
	(b) Groundwater quality monitoring programme	MOWD	3.0	3.8			☆	☆	☆											
	(2) Establishment of water quality standards	MOWD	1.5	1.9					☆	☆	☆									
	(3) Enforcement of water pollution control	MOWD	6.5	8.2	☆	☆	☆	☆	☆	☆	☆									
	Sub-total		13.5	17.0																
Note:																				
		☆ Study																		

付属資料-6. 5 データ収集及び水管理プログラム (2/2)

District Code	Description	Executing Agency	Cost (million)		Implementation Schedule																
			US\$	K£	93	95	2000					2	4	6	8	10					
	4. Domestic/Industrial Water Supply																				
	(1) Inventory list of water supply facilities	MOWD	-	-	☆	☆															
	(2) Measurement of water supply	MOWD	20	25.2	☆	☆	☆	☆	☆	☆	☆										
	Sub-total		20	25.2																	
	5. Irrigation Inventory/Water Use Record																				
	(1) Inventory list of irrigation schemes	MOA	-	-	☆	☆															
	(2) Irrigation water use record	MOA	-	-	☆	☆	☆	☆	☆	☆	☆										
	6. Livestock and Wildlife Water Facilities Inventory																				
	(1) Inventory survey	MOLD MOTW	-	-	☆	☆	☆														
	(2) Livestock/wildlife population survey	DRSRS	2.0	2.5		☆					☆										
	Sub-total		2.0	2.5																	
	7. Hydropower Resources Survey																				
	Update of National Power Development Plan	MOE	3.0	3.8			☆				☆										
	8. River/Flood Control Works																				
	(1) Inventory survey of rivers and river facilities	MOWD	-	-	☆	☆															
	(2) Formulation of river improvement works	MOWD	-	-	☆	☆	☆														
	(3) Urban drainage hydrological studies - Installation of hourly rainfall gauges	KMD	0.1	0.1	☆	☆	☆	☆	☆	☆											
	Sub-total		0.1	0.1																	
	Total		47.0	59.2																	
Note:		☆ Study																			

付属資料- 6. 6 環境関連調査-実施計画案

District Code	Description	Executing Agency	Cost (million)		Implementation Schedule																
			US\$	Kf	93	95	2000	2	4	6	8	10									
<u>Regional Environmental Study</u>																					
750	1. Mara river environmental study	NES	1.5	1.9		☆	☆	○	○	○	○	○	○	○	○	○	○	○	○	○	○
350	2. Lake Jipe environmental study	NES	1.5	1.9				☆	☆	○	○	○	○	○	○	○	○	○	○	○	○
850	3. Lake Turkana environmental study	NES	2.0	2.5				☆	☆	○	○	○	○	○	○	○	○	○	○	○	○
<u>Environmental Impact Assessment and Management Guidelines</u>																					
	4. Preparation of environmental guidelines	NES	2.5	3.2	△	△	△	△	☆	☆	☆	☆									
	Total		7.5	9.5																	
<p>Note: ☆ Study △ Data and information accumulation ○ Monitoring</p>																					

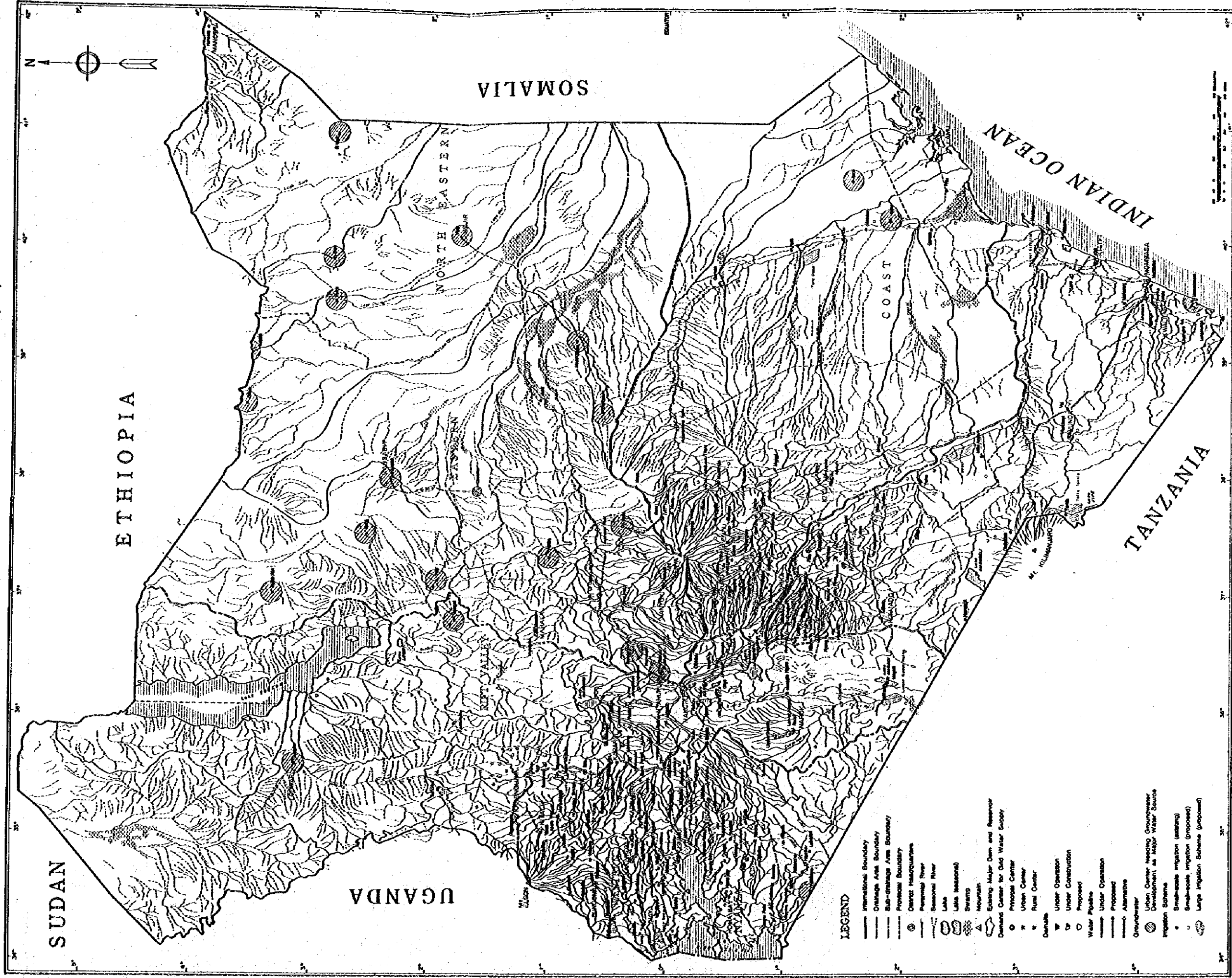
付属資料-6. 7 調査研究費用支出計画

(Unit: thousand US\$)

Development Sector	Development Project	Year												Total						
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004		2005	2006	2007	2008	2009	2010
1	D&I Water Supply	24,119	24,119	24,119	24,119	24,119	24,119	24,119	24,119	26,351	26,351	26,351	26,351	26,351	26,350	26,350	26,350	26,351	456,459	
	(1) Urban water supply	19,525	19,525	19,525	19,525	19,525	19,525	19,525	19,525	10,321	10,321	10,321	10,321	10,321	10,320	10,320	10,320	10,320	259,406	
	(2) Rural water supply	4,594	4,594	4,594	4,594	4,594	4,594	4,594	4,594	16,030	16,030	16,030	16,030	16,030	16,030	16,030	16,030	16,031	197,053	
2	Sewerage Development	3,937	3,937	3,937	3,937	3,937	3,937	3,937	3,937	2,137	2,137	2,137	2,138	2,138	2,138	2,138	2,138	2,138	52,872	
3	Irrigation Development	7,604	7,648	1,990	655	2,673	2,296	5,610	6,861	1,770	1,992	9,722	7,967	385	1,766	1,466	42	42	42	60,331
	(1) Major irrigation projects	7,561	7,605	1,947	612	2,630	2,253	5,567	6,818	1,727	1,949	9,679	7,924	342	1,723	1,424	0	0	0	59,761
	(2) Small irrigation schemes	43	43	43	43	43	43	43	43	43	43	43	43	43	42	42	42	42	770	
4	Livestock Water Development	2,334	2,334	2,334	2,334	2,334	2,334	2,334	2,334	3,705	3,705	3,705	3,705	3,705	3,703	3,703	3,703	3,703	55,715	
	(1) Source development	2,128	2,128	2,128	2,128	2,128	2,128	2,128	2,128	3,322	3,322	3,322	3,322	3,322	3,321	3,321	3,321	3,321	50,240	
	(2) Water points in nomadic pasturage land	206	206	206	206	206	206	206	206	383	383	383	383	383	382	382	382	382	5,475	
5	Hydropower Development	3,638	4,525	8,163	7,275	12,138	12,138	0	3,724	3,724	0	0	0	0	0	0	0	0	0	55,325
6	River and Flood Works	5,510	5,510	5,780	5,262	5,262	5,435	5,435	5,435	2,636	2,636	2,761	2,761	2,969	2,844	2,844	2,637	2,637	70,987	
	(1) Major flood control projects	518	518	788	270	270	443	443	443	0	0	125	124	332	207	207	0	0	4,688	
	(2) Urban drainage works	4,242	4,242	4,242	4,242	4,242	4,242	4,242	4,242	2,261	2,261	2,261	2,261	2,261	2,262	2,262	2,262	2,262	56,549	
	(3) Minor river improvement	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	6,750	
	(4) Improvement of Lower Tana	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	375	3,000	
	Sub-total of Item A	47,142	48,073	66,323	43,582	50,463	50,259	41,435	46,410	40,323	36,821	44,676	42,921	35,548	36,804	36,502	34,870	34,871	751,889	
B.	River Basin Study	1,833	4,467	5,300	4,267	3,767	2,933	2,133	800	0	0	0	0	0	0	0	0	0	25,500	
C.	Groundwater Resources Study	6,400	27,200	5,000	8,800	1,600	2,000												51,000	
D.	District Water Sources Study	6,556	6,556	6,556	6,556	6,556	6,555	6,555	6,555										59,000	
E.	Data Collection/Water Management	213	6,693	7,693	8,193	6,693	5,018	4,998	7,499	0	0	0	0	0	0	0	0	0	47,000	
F.	Environmental Study	313	313	406	406	513	513	680	680	368	368	368	368	368	367	367	367	367	7,500	
	Sub-total Items A to F	62,457	95,302	71,278	71,804	69,592	67,278	55,801	61,944	47,246	37,189	45,044	43,289	35,916	37,172	36,869	35,237	35,238	941,889	
G.	Additional Study	18,737	27,990	21,383	21,541	20,878	20,183	16,740	18,583	14,174	11,157	13,513	12,987	10,775	11,151	11,061	10,571	10,571	282,567	
GRAND TOTAL		81,193	121,292	92,661	93,345	90,470	87,461	72,541	86,527	61,420	48,346	58,557	56,276	46,690	48,323	47,929	45,808	45,808	1,224,455	

卷末添付図

水資源開發計畫圖



水文情报图

